

## PATENT ASSIGNMENT COVER SHEET

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<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
SHUO LV	01/29/2018
WILSON HU	01/29/2018
HUAN CHEN	01/30/2018
ZHIQIANG LI	01/30/2018
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	EMC IP HOLDING COMPANY, LLC
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<b>City:</b>	HOPKINTON
<b>State/Country:</b>	MASSACHUSETTS
<b>Postal Code:</b>	01748
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	15883544
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<b>ATTORNEY DOCKET NUMBER:</b>	113454.00313/109393.02
<b>NAME OF SUBMITTER:</b>	TONI M. SOUSA
<b>SIGNATURE:</b>	/TONI M. SOUSA/
<b>DATE SIGNED:</b>	01/30/2018
<b>Total Attachments: 6</b>	
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## ASSIGNMENT

**WHEREAS**, we, Shuo LV, Wilson HU, Huan CHEN, and Zhiqiang LI, 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 System and Method Accelerated Random Write Layout For Bucket Allocation With In Hybrid Storage Systems (Application), the specification of which:

☒ [ X ] is being executed on even date herewith and is about to be filed in the United States Patent Office;

☐ [ ] was filed on \_\_\_\_\_ as U.S. Application No. \_\_\_\_\_;

☐ [ ] was patented under U.S. Patent No. \_\_\_\_\_ on \_\_\_\_\_.

**WHEREAS**, EMC IP Holding Company, LLC (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the State of Delaware 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;

**AND**, we hereby authorize our attorneys, EMC Corporation, to insert here in parenthesis ( ) the application number and filing date of said Application (or foreign counterpart application) to facilitate the recording or other official processing of this Assignment.

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

Date: 2018.1.29

Shuo LV

Inventor's Signature

Print full name of inventor

Shuo LV

Residence

Beijing, CHINA

Citizenship

China

Mailing Address

901, Unit 1, Building 1, No. 8

West Third Ring Road

Haidian District

Beijing, CHINA

I, Chao. han (name of first witness), whose residential address is Block D. SP Tower Tsinghua Science Park, Zhongguancun Dong Road, Beijing was personally present and did see Shuo LV (name of person signing the assignment), who is personally known to me, execute the above assignment.

Chao. han (signature of first witness)  
Signed at Block D. SP Tower Tsinghua Science Park (location of witness signature)  
on this day, 1.29, 2018 (date of signature).

I, Jiasheng. Lin (name of second witness), whose residential address is Block D. SP Tower Tsinghua Science Park, Zhongguancun Dong Road was personally present and did see Shuo LV (name of person signing the assignment), who is personally known to me, execute the above assignment.

Jiasheng. Lin (signature of second witness)  
Signed at Block D. SP Tower Tsinghua Science Park (location of witness signature)  
on this day, 1.29, 2018 (date of signature).

Date: Jan 29, 2018

Wilson Hu

Inventor's Signature

Print full name of inventor:

Wilson HU

Residence:

Beijing, CHINA

Citizenship:

China

Mailing Address:

18-2-1101, No. 19 Hufang Road

Xi Cheng District

Beijing, CHINA

I, Qiao Sheng Zhou (name of first witness), whose residential address is Dong Block D SP Tower Tsinghua Science Park Zhong Guan Cun Road Beijing was personally present and did see Wilson HU (name of person signing the assignment), who is 100084 China personally known to me, execute the above assignment.

Qiao Sheng Zhou (signature of first witness)  
Signed at Block D SP Tower Tsinghua Science Park Beijing (location of witness signature)  
on this day, Jan 29, 2018 (date of signature).

I, Lester Zhang (name of second witness), whose residential address is Block D SP Tower Tsinghua Science Park Zhong Guan Cun Dong Road Beijing was personally present and did see Wilson HU (name of person signing the assignment), who is 100084 China personally known to me, execute the above assignment.

Lester Zhang (signature of second witness)  
Signed at Block D SP Tower Tsinghua Science Park Beijing (location of witness signature)  
on this day, Jan 29, 2018 (date of signature).

Date: 2018.1.30

Huan Chen

Inventor's Signature

Print full name of inventor:

Huan CHEN

Residence:

Beijing, CHINA

Citizenship:

China

Mailing Address:

8F, Block D, SP Tower Tsinghua Science Park  
Zhongguancun Dong Road  
100084 Beijing, CHINA

I, Mike Zhao (name of first witness), whose residential address is  
Block D, SP Tower Tsinghua Science Park, Zhongguancun Dong Road, Beijing, 100084, China.  
was personally present and did see Huan CHEN (name of person signing the assignment), who is  
personally known to me, execute the above assignment.

Mike Zhao (signature of first witness)  
Signed at Block D, SP Tower Tsinghua Science Park, Beijing, China (location of witness signature)  
on this day, Jan. 30, 2018 (date of signature).

I, Eric Ni (name of second witness), whose residential address is  
Block D, SP Tower, Tsinghua Science Park, Zhongguancun Dong Road, Beijing, China, 100084  
was personally present and did see Huan CHEN (name of person signing the assignment), who is  
personally known to me, execute the above assignment.

Eric Ni (signature of second witness)  
Signed at Block D, SP Tower Tsinghua Science Park, Beijing, China (location of witness signature)  
on this day, Jan. 30, 2018 (date of signature).

Date: 2018.1.30 Zhiqiang Li  
Inventor's Signature

Print full name of inventor: Zhiqiang LI  
Residence: Beijing, CHINA

Citizenship: China  
Mailing Address: Block D, Tsinghua Science Park  
No. 1 Zhongguancun East Road  
Haidian District  
Beijing, CHINA

I, Weibing Zhang (name of first witness), whose residential address is  
Block D SP Tower, Tsinghua Science Park, Zhongguancun Dong Road, Beijing  
was personally present and did see Zhiqiang LI (name of person signing the assignment), who is  
personally known to me, execute the above assignment.

Weibing Zhang (signature of first witness)  
Signed at Block D SP Tower Tsinghua Science Park (location of witness signature)  
on this day, 1.30, 2018 (date of signature).

I, Solon Yan (name of second witness), whose residential address is  
Block D SP Tower, Tsinghua Science Park, Zhongguancun Dong Road, Beijing  
was personally present and did see Zhiqiang LI (name of person signing the assignment), who is  
personally known to me, execute the above assignment.

Solon Yan (signature of second witness)  
Signed at Block D SP Tower, Tsinghua Science Park (location of witness signature)  
on this day, 1.30, 2018 (date of signature).