

## 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>
JUNPING FRANK ZHAO	12/05/2016
FENGHAO ZHANG	12/08/2016
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	EMC IP HOLDING COMPANY LLC
<b>Street Address:</b>	176 SOUTH STREET
<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>
Application Number:	15270586
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	
<i>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.</i>	
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<b>ATTORNEY DOCKET NUMBER:</b>	EMC-15-0380(CN1)US
<b>NAME OF SUBMITTER:</b>	AMANDA BERNIER
<b>SIGNATURE:</b>	/Amanda Bernier/
<b>DATE SIGNED:</b>	12/08/2016
<b>Total Attachments: 4</b>	
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**ASSIGNMENT**

**WHEREAS**, we, Junping Frank Zhao and Fenghao Zhang 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 *METHOD AND DEVICE FOR CHECKING FALSE SHARING IN DATA BLOCK DELETION* (Application), 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 \_\_\_\_\_ 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 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;

**AND**, we hereby authorize our attorneys, EMC IP Holding Company LLC, 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: Dec. 5, 2016

Zhao Junping  
Inventor's Signature

Print full name of inventor Junping Frank Zhao  
Residence Level 18, Block D, Tsinghua Science Park  
No. 1 Zhongguancun East Road, Haidian District  
100084 Beijing, CN  
Citizenship CN  
Mailing Address Same as above

I, Liang Xu (name of first witness), whose residential address is  
8F, Tsinghua Science Park  
was personally present and did see Junping Frank Zhao (name of person signing the assignment),  
who is personally known to me, execute the above assignment.

Liang Xu (signature of first witness)  
Signed at 8F, Tsinghua Science Park (location of witness signature)  
on this day, 5, Dec, 2016 (date of signature).

I, SANPING LI (name of second witness), whose residential address is  
Tsinghua Science Park, Unit D, 8th Floor, Beijing 100084  
was personally present and did see Junping Frank Zhao (name of person signing the assignment),  
who is personally known to me, execute the above assignment.

SANPING LI (signature of second witness)  
Signed at Tsinghua Science Park, Unit D, 8th Floor (location of witness signature)  
on this day, December 5th, 2016 (date of signature).

Date: 2016.12.8

Fenghao Zhang  
Inventor's Signature

Print full name of inventor

Fenghao Zhang

Residence

Room 23, 2 Group, Tanhua Village, W

Chongqing, CN

Citizenship

CN

Mailing Address

Same as above

I, Willie Kou (name of first witness), whose residential address is  
No.5, Dan Ling Street, Haidian District, Beijing  
was personally present and did see Fenghao Zhang (name of person signing the assignment),  
who is personally known to me, execute the above assignment.

Willie Kou (signature of first witness)  
Signed at No.5, Dan Ling Street, Haidian District, Beijing (location of witness signature)  
on this day, 12.8, 2016 (date of signature).

I, Chaoyin Li (name of second witness), whose residential address is  
No.5 Dan Ling Street, Haidian District, Beijing  
was personally present and did see Fenghao Zhang (name of person signing the assignment),  
who is personally known to me, execute the above assignment.

Chaoyin Li (signature of second witness)  
Signed at No.5, Dan Ling Street, Haidian District, Beijing (location of witness signature)  
on this day, 12.8, 2016 (date of signature).p