PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
JIBING DONG	10/13/2017
JIAN GAO	10/13/2017
JAMIN KANG	10/13/2017
HONGPO GAO	10/13/2017
XINLEI XU	10/13/2017
NAIZHONG CHIU	10/12/2017
RONALD D. PROULX	10/12/2017
SHAOQIN GONG	10/13/2017

RECEIVING PARTY DATA

Name:	EMC IP HOLDING COMPANY, LLC
Street Address:	176 SOUTH STREET
City:	HOPKINTON
State/Country:	MASSACHUSETTS
Postal Code:	01748

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15787095

CORRESPONDENCE DATA

Fax Number: (617)523-6850

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.

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ATTORNEY DOCKET NUMBER:	113454.00293/109339
NAME OF SUBMITTER:	TONI M. SOUSA
SIGNATURE:	/Toni M. Sousa/

DATE SIGNED:	10/18/2017

Total Attachments: 10

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ASSIGNMENT

WHEREAS, we, Jibing Dong, Jian Gao, Jamin Kang, Hongpo Gao, Xinlei Xu, Naizhong Chiu, Ronald D. Proulx and Shaoqin Gong, 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 for Improving I/O Performance By Introducing Extent Pool Level I/O Credits and User I/O Credits Throttling on Mapped RAID (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: 2017. 10. 13.

Jibing Dong
Inventor's Signature

Print full name of inventor: Jibing Dong
Residence: Beijing, China

Citizenship: China
Mailing Address: 2-2903 Building 5, Zaoyuanxiang No. 3
Qingyuan Street, Daxing District
Beijing, China

I, Sun Lei (name of first witness), whose residential address is
7/F, Block D, Tsighua Science Park, HaiDian District, Beijing, P.R.C
was personally present and did see Jibing Dong (name of person signing the assignment), who is personally known to me, execute the above assignment.

Sun Lei (signature of first witness)
Signed at 7/F, Block D, Tsighua Science Park, HaiDian District, Beijing, P.R.C (location of witness signature)
on this day, 10. 13, 2017 (date of signature).

I, Qingyun Liu (name of second witness), whose residential address is
7F, Block D, Tsinghua Science Park, No.1 Zhongguancun East Rd., Beijing
was personally present and did see Jibing Dong (name of person signing the assignment), who is personally known to me, execute the above assignment.

Qingyun Liu (signature of second witness)
Signed at the same as above (location of witness signature)
on this day, 10/13, 2017 (date of signature).

Date: 2017.10.13

Inventor's Signature

Print full name of inventor Jian Gao

Residence Beijing, China

Citizenship China

Mailing Address
601# Building 16, Rongfeng 2008
Guanganmen Wai Street, Xicheng District
Beijing, China

I, Sun Lei (name of first witness), whose residential address is 7/F, Block D, Tsinghua Science Park, HaiDian District, Beijing, P.R.C was personally present and did see Jian Gao (name of person signing the assignment), who is personally known to me, execute the above assignment.

Sun Lei (signature of first witness)
Signed at 7/F, Block D, Tsinghua Science Park, HaiDian District, Beijing, P.R.C (location of witness signature)
on this day, 10.13, 2017 (date of signature).

I, Qingyun Liu (name of second witness), whose residential address is 7F, Block D, Tsinghua schence park, No.1 Zhongguanan East Rd., Beijing was personally present and did see Jian Gao (name of person signing the assignment), who is personally known to me, execute the above assignment.

Qingyun Liu (signature of second witness)
Signed at the same as above (location of witness signature)
on this day, 10/13, 2017 (date of signature).

Date: 2017.10.13

Jamin Kang
Inventor's Signature

Print full name of inventor: Jamin Kang
Residence: Beijing, China

Citizenship: China
Mailing Address: 902 Building 13, Wenhuiyuan, Haidian District
Beijing, China

I, Sun lei (name of first witness), whose residential address is 7/F, Block D, Tsinghua Sciena Park, HaiDian District, Beijing, P.R.C was personally present and did see Jamin Kang (name of person signing the assignment), who is personally known to me, execute the above assignment.

Sun lei (signature of first witness)
Signed at 7/F, Block D, Tsinghua Science Park, HaiDian District, Beijing, P.R.C (location of witness signature)
on this day, 10. 13, 2017 (date of signature).

I, Qingyun Liu (name of second witness), whose residential address is 7F, Block D, Tsinghua Schenee Park, No.1 Zhongguancun East Rd., Beijing was personally present and did see Jamin Kang (name of person signing the assignment), who is personally known to me, execute the above assignment.

Qingyun Liu (signature of second witness)
Signed at the same as above (location of witness signature)
on this day, 10/13, 2017 (date of signature).

Date: 2017.10.13

Hongpo Gao
Inventor's Signature

Print full name of inventor: Hongpo Gao
Residence: Beijing, China

Citizenship: China
Mailing Address: 5-301 Building 1, Longyue Street No 10,
Changping District, Beijing, China

I, Sun Lei (name of first witness), whose residential address is 7F, Block D, Tsinghua Science Park, HaiDian District, Beijing, P.R.C was personally present and did see Hongpo Gao (name of person signing the assignment), who is personally known to me, execute the above assignment.

Sun Lei (signature of first witness)
Signed at 7/F. Block D, Tsinghua Science Park. HaiDian District, Beijing P.R.C (location of witness signature)
on this day, 10. 13., 2017 (date of signature).

I, Qingyun Lin (name of second witness), whose residential address is 7F, Block D, Tsinghua Science Park, NO.1 ZhongGuancun East Rd., Beijing was personally present and did see Hongpo Gao (name of person signing the assignment), who is personally known to me, execute the above assignment.

Qingyun Lin (signature of second witness)
Signed at the same as above (location of witness signature)
on this day, 10 . 13, 2017 (date of signature).

Date: 2017. 10. 13 Xinlei Xu.
Inventor's Signature

Print full name of inventor: Xinlei Xu
Residence: Beijing, China

Citizenship: China
Mailing Address: 6-6-602, Zhongyuan, TianTongYuan
Changping District, Beijing, China

I, Sun Lei (name of first witness), whose residential address is
7/F, Block D, Tsinghua Science Park, HaiDian District, Beijing, P.R.C
was personally present and did see Xinlei Xu (name of person signing the assignment), who is personally known to me, execute the above assignment.

Sun Lei (signature of first witness)
Signed at 7/F, Block D, Tsinghua Science Park, HaiDian District, Beijing P.R.C (location of witness signature)
on this day, 10. 13, 2017 (date of signature).

I, Qingyun Liu (name of second witness), whose residential address is
7F, Block D, Tsinghua Science Park, No.1 Zhongguancun East Rd., Beijing
was personally present and did see Xinlei Xu (name of person signing the assignment), who is personally known to me, execute the above assignment.

Qingyun Liu (signature of second witness)
Signed at the same as above (location of witness signature)
on this day, 10/13, 2017 (date of signature).

Date: 10-12-2017

Inventor's Signature

Print full name of inventor:	Naizhong Chiu
Residence:	Newton, MA
Citizenship:	United States
Mailing Address:	15 Shumaker Path Newton, MA 02459

I, Greg LAZAR (name of first witness), whose residential address is 10 Rockdale Hill Circle Upton MA was personally present and did see Naizhong Chiu (name of person signing the assignment), who is personally known to me, execute the above assignment.

(signature of first witness)

Signed at 228 South Street Hopkinton, MA (location of witness signature)

on this day, 09/12/2017, 2017 (date of signature).

I, Marion Meirlaen (name of second witness), whose residential address is 27 Harmony Drive, Millville MA 01529 was personally present and did see Naizhong Chiu (name of person signing the assignment), who is personally known to me, execute the above assignment.

Marion Meirlaen (signature of second witness)

Signed at 228 South St, Hopkinton MA (location of witness signature)

on this day, 09/12/2017, 2017 (date of signature).

Date: 10/12/2017

Inventor's Signature

Print full name of inventor: Ronald D. Proulx
Residence: Boxborough, MA

Citizenship: United States
Mailing Address: 50 Whitney Lane
Boxborough, MA 01719

I, SHUYU LEE (name of first witness), whose residential address is 99 SKYLINE DR, ACTON, MA 01720 was personally present and did see Ronald D. Proulx (name of person signing the assignment), who is personally known to me, execute the above assignment.

(signature of first witness)
Signed at 228 SOUTH ST, HOPKINTON (location of witness signature)
on this day, Oct 12, 2017 (date of signature).

I, Robert Foley (name of second witness), whose residential address is 705C Ridgefield Circle Clinton MA was personally present and did see Ronald D. Proulx (name of person signing the assignment), who is personally known to me, execute the above assignment.

(signature of second witness)
Signed at 228 South St Hopkinton MA (location of witness signature)
on this day, 10/12, 2017 (date of signature).

Date: 2017. 10. 13

Shaoqin Gong
Inventor's Signature

Print full name of inventor: Shaoqin Gong
Residence: Beijing, China

Citizenship: China
Mailing Address: No. 29, Chengfu Road
Haidian District, Beijing, China

I, Sun Lei (name of first witness), whose residential address is 7/F, Block D, Tsinghua Science Park, Hai Dian District, Beijing, P.R.C was personally present and did see Shaoqin Gong (name of person signing the assignment), who is personally known to me, execute the above assignment.

Sun Lei (signature of first witness)
Signed at 7/F, Block D, Tsinghua Science Park, Hai Dian District, Beijing. P.R.C (location of witness signature)
on this day, 10. 13, 2017 (date of signature).

I, Qingyun Liu (name of second witness), whose residential address is 7F, Block D, Tsinghua schence Park, NO.1 Zhongguancun East Rd., Beijing was personally present and did see Shaoqin Gong (name of person signing the assignment), who is personally known to me, execute the above assignment.

Qingyun Liu (signature of second witness)
Signed at the same as above (location of witness signature)
on this day, 10/13, 2017 (date of signature).