504455801 07/13/2017

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
PENG CHEN	06/26/2017
KEVIN KUN YANG	06/23/2017
YU WEN	06/23/2017
VENOY QIANG MA	06/22/2017
HARLEY HUA WANG	06/22/2017

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:	15629612

CORRESPONDENCE DATA

Fax Number:

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.

Email: amanda.bernier@emc.com

Correspondent Name: EMC IP HOLDING COMPANY LLC

Address Line 1: 176 SOUTH STREET

Address Line 4: HOPKINTON, MASSACHUSETTS 01748

ATTORNEY DOCKET NUMBER:	EMC-16-0023.02	
NAME OF SUBMITTER:	AMANDA M. BERNIER	
SIGNATURE:	/Amanda M. Bernier/	
DATE SIGNED:	07/13/2017	

Total Attachments: 7

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> PATENT REEL: 043000 FRAME: 0102

504455801



PATENT REEL: 043000 FRAME: 0103

PATENT/Joint Assignment EMC Docket No.: EMC-16-0023(CN1)US

ASSIGNMENT

WHEREAS, we, Peng Chen, Kevin Kun Wen, Yu Wen, Venoy Qiang Ma and Harley Hua, 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 APPARATUS FOR ADJUSTING THROUGHPUT OF STORAGE DEVICE* (Application), the specification of which:

[]	is being executed on even date herewith and is about to be filed in the United States Patent Office;
[X]	was filed on June 21, 2017 as U.S. Application No. 15/629,612;
[]	was patented under U.S. Patent Noon

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,

PATENT REEL: 043000 FRAME: 0104 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 (15/629,612 filed June 21, 2017) 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:

PATENT/Joint Assignment EMC Docket No.: EMC-16-0023(CN1)US

Date: Sun 26 2017	. Pary Chan
	Inventor's Signature
Print full name of inventor	Peng Chen
Residence	Room 11-22, Unit 3, Building 9, No. 12
	610041 Chengdu, CN
Citizenship	CN
Mailing Address	Same as above
. I. al	
I, ZNUO CHEN (nan	ne of first witness), whose residential address is Aistrict, Chang du, Sichuan, China
was personally present and did see Peng Cher	(name of person signing the assignment), who is
personally known to me, execute the above as	
	.
Zhuo Chen Signed at EMC China COE, Chengo	(Signature of first witness) (a) office (location of witness signature) 20 17 (date of signature).
on this day, <u>12na.i.</u>) une,	2011 (date of signature).
I, Victor 2 hany (nam	re of second witness), whose residential address is
was personally present and did see Peng Chen	(name of person signing the assignment), who is
personally known to me, execute the above as	signment.
Vitor 2 hang	(Signature of second witness)
Signed at FM (Line (OT	([pn q da off gocation of witness signature)
on this day, 71 hank	(Signature of second witness) (Length off (docation of witness signature) 20 (date of signature).
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Date: <u>Jun 23</u> 2017	KeVin Kun lany Inventor's Signature
Print full name of inventor	Kevin Kun Yang
Residence	Jincheng Institution of Sichuan University
	610000 Chengdu, CN
Citizenship	CN
Mailing Address	Same as above
I, Victor Shang	(name of first witness), whose residential address is
was personally present and did see Key	vin Kun Yang (name of person signing the assignment),
who is personally known to me, execut	
	(Signature of first witness) (Signature of first witness) (Iocation of witness signature) (date of signature).
tun fun low to fine who is personally known to fine, execut	(name of second witness), whose residential address is
Zhuo Chen Signed at FMB, China (OF, on this day, 2)nd, June	(Signature of second witness) Chengau of (left) (location of witness signature) 20 17 (date of signature).

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PATENT/Joint Assignment EMC Docket No.: EMC-16-0023(CN1)US

Date: 7017/6/23	Yu Wen
, ,	Inventor's Signature
Print full name of inventor	Yu Wen
Residence	Room 601, Unit 3, No. 101 Xinman Roa
	Wuhou District
	610000 Chengdu, CN
Citizenship	CN
Mailing Address	Same as above
	(name of first witness), whose residential address is \[\langle \rangle \ran
personally known to me, execute the	e above assignment.
Victor 2 hans	(Signature of first witness)
Signed at (Chinn / p	L chen q du offic (location of witness signature)
on this day, 33nd. June	(Signature of first witness) (Signature of first witness) (Location of witness signature) (date of signature).
I, <u>Zhuo Chen</u>	
Shenghang Road #33	·S . High Tech district , chenydu , Sichuan , China
was personally present and did see \(\frac{1}{2} \)	Yu Wen (name of person signing the assignment), who is
personally known to me, execute the	above assignment.
zhuo Chen	(Signature of second witness)
Signed at EMC China COE	(Signature of second witness) (Chengola Office (location of witness signature)
on this day 33 / Turns	20 17 (data of signature)

-5-

Date: June 22, 2017	Vehey Riang Ma Inventor's Signature	
	Inventor's Signature	
Print full name of inventor	Venoy Qiang Ma	
Residence	Room 822201, No 169, Second Binhe Road,	
	Huayang town, Shuangliu County	
	610000 Chengdu, CN	
Citizenship	CN	
Mailing Address	Same as above	
I, Zhuo Chen (nam	district, Chengdu, Sichuan, China	
Shengbang Road, #333 , High tech	<u>district, Chengdu, Sichuan, China</u>	
was personally present and did see Venoy Qia	ng Ma (name of person signing the assignment),	
who is personally known to me, execute the ab	pove assignment.	
zhuo Chen(Signature of first witness) Chengolu office (location of witness signature) 20_17_ (date of signature).	
Signed at EMC China COE, C	Chengelu office (location of witness signature)	
on this day, 22ad, June,	20 <u>17</u> (date of signature).	
,		
I, Victor 2 han) (nam	e of second witness), whose residential address is	
I, Victor 2 han my (name of second witness), whose residential address is Han fine Road ftz by ling ling district (hong du, Sich was 1 Christy		
was personally present and did see Venoy Qia	ang Ma (name of person signing the assignment),	
who is personally known to me, execute the ab	oove assignment.	
ę.		
Victor 2hang (Signature of second witness)	
Signed at EMC China Cot.	(Length of Cocation of witness signature)	
on this day, 2 land June,	Signature of second witness) (Length of Cocation of witness signature) 20 (date of signature).	

Date: 6/22/2017	- Harley Wang
	Inventor's Signature
Print full name of inventor	Harley Hua Wang
Residence	St Shengbang 333, Hight Tech District
	610041 Chengdu, CN
Citizenship	CN
Mailing Address	Same as above
i, <u>Zhao Chen</u> (Shengbong Road #333 , Hig	name of first witness), whose residential address is h Tech district, changelu, Sichum, ching Hua Wang (name of person signing the assignment),
was personally present and did see <u>Harley</u>	Hua Wang (name of person signing the assignment),
who is personally known to me, execute the	
	A .
Zhuo Chen	(Signature of first witness)
Signed at <u>FMC China COF</u> , Ch	(Signature of first witness) (Signature of first witness) (Iocation of witness signature) (date of signature).
on this day, <u>//red) une</u>	, 20 <u>1</u> (date of signature).
I, Victor 2 hang (Hua Run Road #36 Ling Siang	name of second witness), whose residential address is
was personally present and did see Harley	Hua Wang (name of person signing the assignment),
who is personally known to me, execute the	ne above assignment.
Victor Zhang	(Signature of second witness)
Signed at C China (06,	(Signature of second witness) (herads offic (location of witness signature) , 20 (date of signature).
on this day, 7) \ 1.	, 20 (date of signature).

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