PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
ASIF KHAN	06/25/2018
SHELESH CHOPRA	06/25/2018
MATTHEW DICKEY BUCHMAN	06/25/2018
BHARAT BHUSHAN	06/25/2018
KRISHNENDU BAGCHI	06/25/2018

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:	16022604

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: paula.hardilek@chamberlainlaw.com

Correspondent Name: PAULA HARDILEK

Address Line 1: 1200 SMITH ST., 14TH FLOOR HOUSTON, TEXAS 77002

ATTORNEY DOCKET NUMBER: 170360-021800US

NAME OF SUBMITTER: ALY Z. DOSSA

SIGNATURE: /Aly Z. Dossa/

DATE SIGNED: 06/29/2018

Total Attachments: 7

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PATENT REEL: 046239 FRAME: 0511

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PATENT REEL: 046239 FRAME: 0512

PATENT/Joint Assignment EMC Docket No.: 111061.01: 170360-021800US

ASSIGNMENT

WHEREAS, we, Asif Khan, Shelesh Chopra, Matthew Dickey Buchman, Bharat Bhushan, and Krishnendu Bagchi, 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 <u>SYSTEM AND METHOD FOR BACKUP TOPOLOGY MAP</u>, 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 Noon

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,

PATENT REEL: 046239 FRAME: 0513 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: 25 th June 2010	M. A. V
	Inventor's Signature
Print full name of first inventor:	Asif KHAN
Residence:	Bangalore, India
Citizenship:	India
Mailing Address:	c/o EMC IP Holding Company LLC 176 South Street Hopkinton, MA 01748
I Makesh Folly A.V. 253. T. Dassol all: Eagure was personally present and did see the assignment) who is personally known	(name) whose residential address is Low -57 Axi Klos (name of person signing on the first of the property of
- Chesh-	(signature of first witness)
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on this day 25 ^{4 L} Tune	
the assignment) who is personany know	
6 paloop 5 hankas p.H	
Signed at BANHALICE	(location of witness signature)
anthis day 25th JUNE	of 20 18 (date of signature)

Date: June 25, 2018	LAREA
	Inventor's Signature
Print full name of second inventor:	Shelesh CHOPRA
Residence:	Bangalore, India
Citizenship:	India
Mailing Address:	e/o EMC IP Holding Company LLC 176 South Street Hopkinton, MA 01748
the assignment) who is personally known	(signature of first witness)
Signed at Bagolote	(location of witness signature)
on this day 25th June	of 20 <u>(g</u> . (date of signature)
I GNALOOF SHANKAR. D.H (name) whose residential address is FLAT.3 19, SUMUVHA & PAL APRETMENT JP Nagas 5th phak, Bungalon 560078 was personally present and did see SHELEGH CHOPRA (name of person signing the assignment) who is personally known to me, execute the above assignment. buckop blanks. LM (signature of second witness) Signed at 8 th 6ALOPE (location of witness signature) on this day 25th June of 2018. (date of signature)	
on this day 23 VVII	of 2016. (date of signature)

Date: June 25th, 2018	-1/2
	Inventor's Signature
Print full name of third inventor:	Matthew Dickey BUCHMAN
Residence:	Seattle, WA, US
Citizenship:	United States
Mailing Address:	e/o EMC IP Holding Company LLC 176 South Street Hopkinton, MA 01748
the assignment) who is personally known to	<u>D. Buckman.</u> (name of person signing
Signed at Pengalose	(location of witness signature)
on this day 25th Tune of	
I GLAROOF SHAMKAR, D.H (name) whose residential address is <u>FLM 319 SUMUKHA OFACARPATMENT J.P. WAGAN 5th phone is Banglore - J.R.</u> was personally present and did see <u>MATTHEN D. BUCHMAN</u> (name of person signing the assignment) who is personally known to me, execute the above assignment. Magoop Shankan D.H. (signature of second witness)	
Signed at BANGALORE	
th or	(location of witness signature) 20_\8. (date of signature)

Date: 2518 June 2018	eld Bake
	Inventor's Signature
Print full name of fourth inventor:	Bharat BHUSHAN
Residence:	Bangalore, India
Citizenship:	India
Mailing Address:	c/o EMC IP Holding Company LLC 176 South Street Hopkinton, MA 01748
· *	
I Mohash Feldy A.V. 252. T. Dozadall Royals was personally present and did see Fla the assignment) who is personally known to	(name) whose residential address is no -5 +
Class.	
Signed at Ruge (etc.	(location of witness signature)
on this day 25 th Tune o	f 20 <u>18</u> . (date of signature)
I SUAROOP SHANKAR D.H	(name) whose residential address is NT,J.P.Fagux S ^M pkase, BANGALORE - 5600He L+ Bhuskan(name of person signing
Was nersonally present and did see REALS	it bhuthus (name of person signing
the assignment) who is personally known	to me, execute the above assignment.
buaroop shankar 104	(signature of second witness)
	(location of witness signature)
on this day 25th Tune o	f 20 18, (date of signature)

Date: 25th June 2018	Ongch-
	Inventor's Signature
Print full name of fifth inventor:	Krishnendu BAGCHI
Residence:	Bangalore, India
Citizenship:	India
Mailing Address:	c/o EMC IP Holding Company LLC 176 South Street Hopkinton, MA 01748
the assignment) who is personally knowl	
Qoss	(signature of first witness)
Signed at Rangolote	(location of witness signature)
on this day 25th Tung	of 20 18. (date of signature)
me assignment) with is personally andw	
Shapp Shankay DH	(signature of second witness)
	(location of witness signature)
on this day 25th JUNE	of 20 18. (date of signature)