504343070 04/28/2017

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4389758

SUBMISSION TYPE:		NEW ASSIGNMENT		
NATURE OF CONVEYANCE:		ASSIGNMENT	ASSIGNMENT	
CONVEYING PARTY D	ΑΤΑ			
		Name	Execution Date	
RAVI RANGAPURAM			04/28/2017	
PAVAN KUMAR DATTA	TREYA A	TI	04/28/2017	
SRIDHAR SURAMPUDI			04/28/2017	
RECEIVING PARTY DA	ТА			
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City:	HOPKIN	ITON		
State/Country:	MASSACHUSETTS			
Postal Code:	01748			
	Total: 1		-	
Property Type		Number	_	
Application Number:	1	5581163		
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	JMBER:	EMC-16-0295 (EM1.137U) GEOFFREY T. STANIFORD		
AME OF SUBMITTER:	JMBER:	, ,		
NAME OF SUBMITTER: SIGNATURE:	JMBER:	GEOFFREY T. STANIFORD		
ATTORNEY DOCKET NU NAME OF SUBMITTER: SIGNATURE: DATE SIGNED: Total Attachments: 5	JMBER:	GEOFFREY T. STANIFORD /GEOFFREY T. STANIFORD/		
NAME OF SUBMITTER: SIGNATURE: DATE SIGNED: Total Attachments: 5 source=EMC_16_0295_E	M1_137_	GEOFFREY T. STANIFORD /GEOFFREY T. STANIFORD/ 04/28/2017 Assignment#page1.tif		
NAME OF SUBMITTER: SIGNATURE: DATE SIGNED: Total Attachments: 5 source=EMC_16_0295_E source=EMC_16_0295_E	M1_137_ M1_137_	GEOFFREY T. STANIFORD /GEOFFREY T. STANIFORD/ 04/28/2017 Assignment#page1.tif Assignment#page2.tif		
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PATENT REEL: 042175 FRAME: 0600

ASSIGNMENT

WHEREAS, we, <u>Ravi Rangapuram</u>, <u>Pavan Kumar Dattatreya Ati</u> and <u>Sridhar Surampudi</u> 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 IDENTIFYING CHANGED FILES IN INCREMENTAL BLOCK-BASED BACKUPS TO BACKUP INDEXES, 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 limited liability company 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.

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

PATENT REEL: 042175 FRAME: 0602

Date:

28-An -201

R. Ron Kill

Inventor's Signature

Print full name of first inventor:	Ravi Rangapuram
Residence:	#104 B Block, Sai Krupa Elite, Doddanakundi
	Bangalore, Karnataka 560037
	India
Citizenship:	India
Mailing Address:	Same as above
1 Manimath DJ	_ (name) whose residential address is

1000, I Block, I Stage Nage Bhavi, Bang 1016 - 560772 was personally present and did see <u>Ravi Range Deam</u> (name of person signing the assignment) who is personally known to me, execute the above assignment.

D.J.Ma	Munt	(signature of first witness)
Signed at	Banga Lore	(location of witness signature)
on this day	28 04	of 2017. (date of signature)

I <u>P. Rauh Shankal</u> (name) whose residential address is 4404, Ram Lowini Reday Ni laya, Minne Kolala, Rangalore - 560 Was personally present and did see <u>Rau Ranga bulan</u> (name of person signing the assignment) who is personally known to me, execute the above assignment.

amk (signature of second witness)

Signed at ______ Bangalole (location of witness signature) on this day ______ 0f 2017. (date of signature)

-3-

Date: 28-4-2017 Inventor's Signature Pavan Kumar Dattatreya Ati Print full name of second inventor: **Residence:** Flat #103, Tribhuvan Paradise Kaverappa Layout, Panathur Ext., Kaadubisanahalli Bangalore, Karnataka 500103 India India Citizenship: Mailing Address: Same as above 1 Manjunoth T (name) whose residential address is #1050, P Block, T Stage Nagar bhougi Dangalore - 56057 2_ was personally present and did see <u>Roon Romat Oalt also</u> mame of person signing the assignment) who is personally #1050, 7 Block known to me, execute the above assignment. hti ዓ)) - M (signature of first witness) Bangalore, (location of witness signature) Signed at 28 D4 of 20 17. (date of signature) on this day P. Ravi shankal (name) whose residential address is 560037 present and did see Range Kurnet Da talting (name of person signing the assignment) who is personally known to me, execute the above assignment. (signature of second witness) (location of witness signature) Signed at

-3-

on this day _____ 28 04 of 2017. (date of signature)

Date:

28-4-2017

Inventor's S

Print full name of third inventor:	Sridhar Surampudi
Residence:	Flat #1, 1ª Floor, Sri Krishna Residency, Road No. 1
	Srinagar Colony, Near Morampudi Junction
	Rajahmundry, Andhra Pradesh 533103
	India
Citizenship:	India
Mailing Address:	Same as above

1 Manunath DJ	(name) whose residential address is	
#1050. IBlock, IStag	e Nagal Bhavi, Bangalore - 560072	was p

#1050. 1 Block, 1 Stage Nages Bhave, Bangaloke - 560072 was personally present and did see <u>Solution Susanopools</u> (name of person signing the assignment) who is personally known to me, execute the above assignment.
D.J. Mariumett (signature of first witness)
Signed at Bagalee (location of witness signature)
on this day 28 04 of 2017. (date of signature)

Ravi Sharkar (name) whose residential address is

40471 RANLANNI REDIN NILAUAI TIONNER ALDUAIT KOMMEN DE ETUS Twas personally
present and did see Siddal Susander di (name of person signing the assignment) who is personally
known to me, execute the above assignment.

P. Kussan ___ (signature of second witness) Bangalore ____ (location of witness signature) Signed at _____ 4 of 2017. (date of signature) X on this day_

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PATENT REEL: 042175 FRAME: 0605

RECORDED: 04/28/2017