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PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
BAR HAREL	10/31/2019
URI SHABI	10/30/2019
MAOR RAHAMIM	10/31/2019

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:	16669834

CORRESPONDENCE DATA

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DALY, CROWLEY, MOFFORD & DURKEE, LLP **Correspondent Name:**

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ATTORNEY DOCKET NUMBER:	DELL-089PUS	
NAME OF SUBMITTER:	MARISA J.DUBUC	
SIGNATURE:	/Marisa J. Dubuc/	
DATE SIGNED:	11/06/2019	

Total Attachments: 4

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PATENT REEL: 050932 FRAME: 0388

ASSIGNMENT

WHEREAS, we, Bar Harel, Uri Shabi and Maor Rahamim, 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 AMORTIZED EXECUTION OF UPDATES TO A HARDENED HASH TABLE and identified as Attorney Docket No. DELL-089PUS, the specification of which:

	X]	is being executed on even date herewith and is about to be filed in the United States Patent Office;
Second .	proof.	was filed on as U.S. Application No
]	was patented under U.S. Patent Noon

WHEREAS, EMC IP Holding Company LLC (hereinafter "ASSIGNEE"), a Delaware limited liability company 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 me;

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;

Internations - Chalidential

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Atty. Dekt. No.: DELL-089PUS

Client Case No.: 116419.01

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 Atty. Dckt. No.: DELL-089PUS

Client Case No.: 116419.01

Date: 10/31/2019 Inventor's Signature Bar Harel Print full name of first inventor: 31/4 Ringelblum Street Residence: Beer Sheva ISRAEL Israel Citizenship: Same as above Mailing Address: naZho text here Date: 30/10/2019 Inventor's Signature Uri Shabi Print full name of first inventor: 3 Hareut Street Residence: Tel Mond **ISRAEL** Israel Citizenship:

Same as above

Mailing Address:

PATENT

Atty. Dckt. No.: DELL-089PUS

Client Case No.: 116419.01

Date: 10/31/2019

Inventor's Signature

Print full name of first inventor:

Maor Rahamim

Residence:

5 Kaplan Street

Ramia

ISRAEL

Citizenship:

Israel

Mailing Address:

Same as above

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