Electronic Version v1.1 Stylesheet Version v1.1

| SUBMISSION TYPE: | NEW ASSIGNMENT |
|-----------------------|----------------|
| NATURE OF CONVEYANCE: | ASSIGNMENT |

CONVEYING PARTY DATA

| Name | Execution Date |
|-----------------|----------------|
| Scott E. JOYCE | 03/25/2013 |
| Bruce R. RABE | 03/25/2013 |
| Norman M. MILES | 03/25/2013 |

RECEIVING PARTY DATA

| Name: | EMC Corporation |
|-----------------|------------------|
| Street Address: | 176 South Street |
| City: | Hopkinton |
| State/Country: | MASSACHUSETTS |
| Postal Code: | 01748 |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 13837707 |

CORRESPONDENCE DATA

Fax Number: 5083664688

Correspondence will be sent via US Mail when the fax attempt is unsuccessful.

Phone: 508-616-2900

docket@bainwoodhuang.com Email:

Correspondent Name: M. Ari Behar, Esq.

Address Line 1: Bainwood, Huang & Associates, Inc.

Address Line 2: 2 Connector Road

Westborough, MASSACHUSETTS 01581 Address Line 4:

| ATTORNEY DOCKET NUMBER: | 1003-225 |
|-------------------------|-----------------------------|
| NAME OF SUBMITTER: | M. Ari Behar, Esq. |
| Signature: | /Michael Ari Behar #58,203/ |
| | |

REEL: 030459 FRAME: 0872

PATENT

| Date: | 05/21/2013 |
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| Total Attachments: 9 source=1003-225-Assignment#page1.tif | |
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| source=1003-225-Assignment#page9.tif | |

PATENT REEL: 030459 FRAME: 0873

Attorney Docket No.: 1003-225 EMC Docket No.: EMC-12-927

ASSIGNMENT

WHEREAS, I, Norman M. Miles, as the original inventor or an original joint inventor 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

ADAPTIVE GUI PRE-FETCHING

which is further identified by Attorney Docket Number 1003-225;

WHEREAS, EMC Corporation (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 St., Hopkinton, MA 01748, USA 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, I 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 me had this assignment and sale not been made; I 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. I 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 assigned of the entire right, title and interest therein;

AND, I hereby further agree for myself and my 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

PATENT ASSIGNMENT Attorney Docket No.: 1003-225

EMC Docket No.: EMC-12-927

interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

AND, I 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;

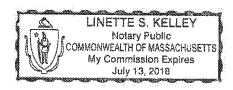
AND I hereby authorize the attorneys at Bainwood Huang & Associates LLC to insert here in parentheses (13/837,707 March 15, 2013) the application number and filing date of said application (or foreign counterpart application) to facilitate the recording or other official processing of this Assignment.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my seal as set forth below:

PATENT ASSIGNMENT Attorney Docket No.: 1003-225

EMC Docket No.: EMC-12-927

Date: Norman M. Miles Legal name of inventor: Residence: 10 Donovan Dr. Bedford, MA 01730 Citizenship: US Mailing Address: Same as above STATE/COMMONWEALTH OF Massachusetts
COUNTY OF Middlesex __, 2013, then personally appeared before me the above-named Norman M. Miles known to me through satisfactory evidence of identification [__] employee identification card; [X] driver's license; [__] (other) to be the person whose name is subscribed to the foregoing Assignment and acknowledged that he/she executed the same as his/her free act and deed for the purposes therein contained. Print Name: My Commission expires 67/13 / 2018



Attorney Docket No.: 1003-225 EMC Docket No.: EMC-12-927

ASSIGNMENT

WHEREAS, I, Scott E. Joyce, as the original inventor or an original joint inventor 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

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which is further identified by Attorney Docket Number 1003-225;

WHEREAS, EMC Corporation (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 St., Hopkinton, MA 01748, USA 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, I 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 me had this assignment and sale not been made; I 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 filling any such applications for Letters Patent. I 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, I hereby further agree for myself and my 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

Attorney Docket No.: 1003-225 EMC Docket No.: EMC-12-927

interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

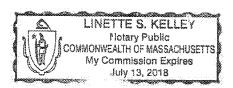
AND, I do hereby authorize and request the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said application or applications based thereon to said ASSIGNEE, its successors, assigns, and legal representatives;

AND I hereby authorize the attorneys at Bainwood Huang & Associates LLC to insert here in parentheses (13/837,707 March 15, 2013) 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, I have hereunto set my hand and affixed my seal as set forth below:

Attorney Docket No.: 1003-225 EMC Docket No.: EMC-12-927

| Date: 2/25/13 | MA () |
|--|---|
| | Inventor's Signature |
| Legal name of inventor: | Scott E. Joyce |
| Residence: | 3 Angela Dr. |
| | Foxboro, MA 02035 |
| Citizenship: | US |
| Mailing Address: | Same as above |
| STATE/COMMONWEALTH OF | Massachusetts Middlesex |
| me the above-named <u>Scott E. Joyce</u> know identification [] employee identification | , 2013, then personally appeared before two to me through satisfactory evidence of card; [X] driver's license; [_] (other) to be the person whose name is subscribed to |
| | dged that he/she executed the same as his/her |
| | Notary Public |
| | Print Name: Linette S. Kelley |
| | My Commission expires <u>67</u> / <u>13</u> / <u>201</u> 8 |



Attorney Docket No.: 1003-225 EMC Docket No.: EMC-12-927

ASSIGNMENT

WHEREAS, I, <u>Bruce R. Rabe</u>, as the original inventor or an original joint inventor 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

ADAPTIVE GUI PRE-FETCHING

which is further identified by Attorney Docket Number 1003-225;

WHEREAS, EMC Corporation (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 St., Hopkinton, MA 01748, USA 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, I 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 me had this assignment and sale not been made; I 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. I 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, I hereby further agree for myself and my 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

Attorney Docket No.: 1003-225 EMC Docket No.: EMC-12-927

interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

AND, I 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 I hereby authorize the attorneys at Bainwood Huang & Associates LLC to insert here in parentheses (13/837,707 March 15, 2013) 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, I have hereunto set my hand and affixed my seal as set forth below:

Attorney Docket No.: 1003-225 EMC Docket No.: EMC-12-927

Date: Bruce R. Rabe Legal name of inventor: Residence: 91 Maple Place Dedham, MA 02026 Citizenship: US Mailing Address: Same as above STATE/COMMONWEALTH OF Massachusetts
COUNTY OF M: Alle Sex **COUNTY OF** On this 25 day of March, 2013, then personally appeared before me the above-named Bruce R. Rabe known to me through satisfactory evidence of identification [__] employee identification card; [X] driver's license; [__] (other) to be the person whose name is subscribed to the foregoing Assignment and acknowledged that he/she executed the same as his/her free act and deed for the purposes therein contained. Print Name: My Commission expires 07 / 13 / 2018

