## 504846979 03/30/2018

# PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4893716

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

#### **CONVEYING PARTY DATA**

Name	Execution Date
ABHISHEK GUPTA	03/23/2018
ROB T. JOHNSON	03/29/2018
SRINATH PREMACHANDRAN	03/23/2018
RICHARD P. SPILLANE	03/27/2018
SANDEEP RANGASWAMY	03/23/2018
JORGE GUERRA DELGADO	03/23/2018
KAPIL CHOWKSEY	03/23/2018
WENGUANG WANG	03/23/2018

### **RECEIVING PARTY DATA**

Name:	VMWARE, INC.
Street Address:	3401 HILLVIEW AVENUE
City:	PALO ALTO
State/Country:	CALIFORNIA
Postal Code:	94304

### **PROPERTY NUMBERS Total: 1**

Property Type	Number
Application Number:	15927016

#### **CORRESPONDENCE DATA**

**Fax Number:** (650)427-4818

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.

**Phone:** 650-427-4267

**Email:** ipadmin@vmware.com

Correspondent Name: VMWARE, INC.

Address Line 1: 3401 HILLVIEW AVENUE

Address Line 2: ATTN: JAMES KIRYAKOZA

Address Line 4: PALO ALTO, CALIFORNIA 94304

ATTORNEY DOCKET NUMBER:	E007
NAME OF SUBMITTER:	RYAN W. ELLIOTT
SIGNATURE:	/Ryan W. Elliott/

504846979 REEL: 045401 FRAME: 0864

DATE SIGNED:	03/30/2018
Total Attachments: 6	
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PATENT REEL: 045401 FRAME: 0865

# ASSIGNMENT

For good and valuable consideration, the receipt of which is hereby acknowledged, I, an ASSIGNOR named below.

*		VA
Abhishek GUPTA	of	Sunnyvale, CA
Rob T. JOHNSON	of	Palo Alto, CA
Srinath PREMACHANDRAN	of	Fremont, CA
Richard P. SPILLANE	of	Mountain View, CA
Sandeep RANGASWAMY	of	Mountain View, CA
Jorge GUERRA DELGADO	of	Fremont, CA
Kapil CHOWKSEY	of	Cupertino, CA
Wenguang WANG	of	Santa Clara, CA

hereby sell, assign, transfer and set over to

ASSIGNEE: VMware, Inc., a Delaware corporation, having a principal place of business at 3401 Hillview Avenue, Palo Alto, California 94304, U.S.A. (VMware), its successors, assigns and legal representatives,

my entire right, title and interest throughout the world, including all rights to claim priority, in and to the invention(s) disclosed in:

U.S. Patent Application executed on or a	bout the date of this Assignment,
X U.S. Patent Application No.: 15/927.0	
U.S. Provisional Application No.:	_, filed on;
International Application No.: PCT/	, filed on
and	

ENTITLED: REDUCED BANDWIDTH QUERIES IN BE-TREES USING APPROXIMATE MEMBERSHIP QUERY DATA STRUCTURES

and identified by Attorney Docket Number: E007

and naming inventor(s) as follows:

INVENTOR(S): Abhishek GUPTA of Sunnyvale, CA; Rob T, JOHNSON of Palo Alto, CA; Srinath PREMACHANDRAN of Fremont, CA; Richard P. SPILLANE of Mountain View, CA; Sandeep RANGASWAMY of Mountain View, CA; Jorge GUERRA DELGADO of Fremont, CA; Kapil CHOWKSEY of Cupertino, CA; Wenguang WANG of Santa Clara, CA

including without limitation, my entire right, title and interest in and to any and all United States and foreign applications (including any and all provisional, international, regional and foreign national applications) for said invention(s), including divisionals, continuations, continuations-in-part, renewals, substitutes and extensions thereof, and in and to any and all patents of every country or region that may be granted or have been granted for said invention(s), including any reissues and reexaminations thereof -the foreign applications including, without limitation, all applications for patents, utility models and designs which

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**PATENT** REEL: 045401 FRAME: 0866 ASSIGNMENT E007

may hereafter be filed for the invention(s) in any country or countries foreign to the United States, and all forms of industrial property protection, including, without limitation, patents, utility models, inventor's certificates and designs which may be granted for the invention(s) in any country or countries foreign to the United States and all extensions, renewals and reissues thereof.

I authorize ASSIGNEE to apply for patents of foreign countries for said invention(s); to claim all rights of priority without further authorization from me, which priority rights include rights derived from any United States application (provisional or otherwise) under the Patent Laws of the United States, the International Convention for the Protection of Industrial Property, or any other international agreement or the domestic laws of the country in which any such application is filed, as may be applicable; and to own in its own name all applications, all patents and inventor's certificates in all countries based on the invention(s).

I agree to execute any and all documents requested by ASSIGNEE, its successors, assigns, legal representatives, or nominees, at their reasonable expense, in connection with filing and prosecution of any and all United States and foreign applications (including international, regional, and foreign national applications), enforcement of all patents, and maintenance of all rights in the invention(s), patents, inventor's certificates and applications for patents or inventor's certificates based on any of the invention(s); and generally to do everything possible to aid ASSIGNEE, its successors, assigns, legal representatives, and nominees, at their request and reasonable expense, in obtaining, enforcing, and maintaining patents and inventor's certificates for said invention(s) in all countries. In particular, I agree to provide to ASSIGNEE, its successors, assigns, legal representatives, or nominees, at their request and at their reasonable expense, all information known to or ascertainable by me and all documents and other materials and objects pertaining to the invention(s) that are in the possession of or accessible to me; and further, at any trial, hearing, deposition or other legal proceeding where I am called as a witness by ASSIGNEE, its successors, assigns, legal representatives, or nominee. I agree to testify to all facts pertaining to the invention(s) for which I am competent to testify.

I hereby covenant that I have full right to convey the entire interest that is being assigned by this Assignment, and that no assignment, sale, license, agreement, or encumbrance has been or will be made or entered into that would conflict with this Assignment.

I authorize and request the Commissioner of Patents and Trademarks of the United States, and any official of any country or countries foreign to the United States, whose duty it is to issue patents or other evidence or forms of industrial property protection on applications as aforesaid, to issue any U.S. Letters Patent or any other patent or property right that may be granted for said invention(s) to ASSIGNEE, its successors or assigns.

Executed on	3/23/18 Date	, byAbhishek GUPTA		
	Date	, by:_	Rob T. JOHNSON	•
	03-23-2018 Date	, by	Stroath PREMACHANDRAN	~

3/27/2018	by	ALBALLE.
Date		Richard P. SPILLAND
63 23 20 %,	by	Sandeep RANGASWAMY
16.8		manual of
3/23/17	by	
Date		Jorge GWERRA DELGADO
3/23/18	by	4-Undy
Date	77.4	Kapil CHOWKSEY
A2688		West Control from the Control of the
3/23/18	, by	
Date		Wenguang WANG

## **ASSIGNMENT**

For good and valuable consideration, the receipt of which is hereby acknowledged, I, an ASSIGNOR named below,

Abhishek GUPTA	of	Sunnyvale, CA
Rob T. JOHNSON	of	Palo Alto, CA
Srinath PREMACHANDRAN	of	Fremont, CA
Richard P. SPILLANE	of	Mountain View, CA
Sandeep RANGASWAMY	of	Mountain View, CA
Jorge GUERRA DELGADO	of	Fremont, CA
Kapil CHOWKSEY	of	Cupertino, CA
Wenguang WANG	of	Santa Clara, CA

hereby sell, assign, transfer and set over to

ASSIGNEE: VMware, Inc., a Delaware corporation, having a principal place of business at 3401 Hillview Avenue, Palo Alto, California 94304, U.S.A. (VMware), its successors, assigns and legal representatives,

my entire right, title and interest throughout the world, including all rights to claim priority, in and to the invention(s) disclosed in:

U.S. Patent Application executed on or about the date of this Assignment,				
X U.S. Patent Application No.: 15	<u>/927,016</u> , fil	ed on <u>03-20-2018</u>		
U.S. Provisional Application No.:	, filed on;			
International Application No.: PC	<u>T/, filed on </u>			
and				

ENTITLED: REDUCED BANDWIDTH QUERIES IN Bε-TREES USING APPROXIMATE MEMBERSHIP QUERY DATA STRUCTURES

and identified by Attorney Docket Number: E007

and naming inventor(s) as follows:

INVENTOR(S): Abhishek GUPTA of Sunnyvale, CA; Rob T. JOHNSON of Palo Alto, CA; Srinath PREMACHANDRAN of Fremont, CA; Richard P. SPILLANE of Mountain View, CA; Sandeep RANGASWAMY of Mountain View, CA; Jorge GUERRA DELGADO of Fremont, CA; Kapil CHOWKSEY of Cupertino, CA; Wenguang WANG of Santa Clara, CA

including without limitation, my entire right, title and interest in and to any and all United States and foreign applications (including any and all provisional, international, regional and foreign national applications) for said invention(s), including divisionals, continuations, continuations-in-part, renewals, substitutes and extensions thereof, and in and to any and all patents of every country or region that may be granted or have been granted for said invention(s), including any reissues and reexaminations thereof –the foreign applications including, without limitation, all applications for patents, utility models and designs which

 ASSIGNMENT E007

may hereafter be filed for the invention(s) in any country or countries foreign to the United States, and all forms of industrial property protection, including, without limitation, patents, utility models, inventor's certificates and designs which may be granted for the invention(s) in any country or countries foreign to the United States and all extensions, renewals and reissues thereof.

I authorize ASSIGNEE to apply for patents of foreign countries for said invention(s); to claim all rights of priority without further authorization from me, which priority rights include rights derived from any United States application (provisional or otherwise) under the Patent Laws of the United States, the International Convention for the Protection of Industrial Property, or any other international agreement or the domestic laws of the country in which any such application is filed, as may be applicable; and to own in its own name all applications, all patents and inventor's certificates in all countries based on the invention(s).

I agree to execute any and all documents requested by ASSIGNEE, its successors, assigns, legal representatives, or nominees, at their reasonable expense, in connection with filing and prosecution of any and all United States and foreign applications (including international, regional, and foreign national applications), enforcement of all patents, and maintenance of all rights in the invention(s), patents, inventor's certificates and applications for patents or inventor's certificates based on any of the invention(s); and generally to do everything possible to aid ASSIGNEE, its successors, assigns, legal representatives, and nominees, at their request and reasonable expense, in obtaining, enforcing, and maintaining patents and inventor's certificates for said invention(s) in all countries. In particular, I agree to provide to ASSIGNEE, its successors, assigns, legal representatives, or nominees, at their request and at their reasonable expense, all information known to or ascertainable by me and all documents and other materials and objects pertaining to the invention(s) that are in the possession of or accessible to me; and further, at any trial, hearing, deposition or other legal proceeding where I am called as a witness by ASSIGNEE, its successors, assigns, legal representatives, or nominee, I agree to testify to all facts pertaining to the invention(s) for which I am competent to testify.

I hereby covenant that I have full right to convey the entire interest that is being assigned by this Assignment, and that no assignment, sale, license, agreement, or encumbrance has been or will be made or entered into that would conflict with this Assignment.

I authorize and request the Commissioner of Patents and Trademarks of the United States, and any official of any country or countries foreign to the United States, whose duty it is to issue patents or other evidence or forms of industrial property protection on applications as aforesaid, to issue any U.S. Letters Patent or any other patent or property right that may be granted for said invention(s) to ASSIGNEE, its successors or assigns.

Executed on		, by	
	Date		Abhishek GUPTA
	3/29/2018	, by	more
	Date		Rob T. JOHNSON
		by	
	Date	, by _	Srinath PREMACHANDRAN

ASSIGNMENT E007

	by _	
Date	, <u>,</u> _	Richard P. SPILLANE
	, by _	
Date		Sandeep RANGASWAMY
	, by _	
Date	, 0, _	Jorge GUERRA DELGADO
	1	
Date	, by _	Kapil CHOWKSEY
	, by _	
Date		Wenguang WANG

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