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PATENT ASSIGNMENT

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	Declaration Regarding Ownership of Application and supporting documents
CONVEYING PARTY DATA	
Name	Execution Date
Steve Wang	10/14/2008
RECEIVING PARTY DATA	
Name:	International Business Machines Corporation
Street Address:	New Orchard Road
City:	Armonk
State/Country:	NEW YORK
Postal Code:	10504
PROPERTY NUMBERS Total: 1	
Property Type	Number
Application Number:	11962144
CORRESPONDENCE DATA	
Fax Number:	(518)449-0047
<i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i>	
Email:	ldukes-brown@hoffmanwarnick.com
Correspondent Name:	Hoffman Warnick LLC
Address Line 1:	75 State Street, 14th Floor
Address Line 4:	Albany, NEW YORK 12207
ATTORNEY DOCKET NUMBER:	CAM920070166US1
NAME OF SUBMITTER:	John W. LaBatt
Total Attachments: 7 source=CAM920070166US1_SignedDeclarationOwnership#page1.tif source=CAM920070166US1_SignedDeclarationOwnership#page2.tif source=CAM920070166US1_SignedDeclarationOwnership#page3.tif source=CAM920070166US1_SignedDeclarationOwnership#page4.tif source=CAM920070166US1_SignedDeclarationOwnership#page5.tif source=CAM920070166US1_SignedDeclarationOwnership#page6.tif	

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Steve Wang

Conf. No.: 7519

Serial No.: 11/962,144

Art Unit: 2161

Filing Date: 12/21/2007

Examiner: Unknown

Title: Method and system for bit streaming
for data centric applicationsDocket No.: CAM920070166US1
(IBMRA-0014)Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450**DECLARATION REGARDING OWNERSHIP OF APPLICATION**


Sir:


I, Ayla Lari, an Intellectual Property Law Attorney for International Business
Machines Corp. (IBM), hereby declare that:

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2. On information and belief, the Agreement assigned all rights to any Developments, including inventions conceived by Steve Wang, which: (a) relate to the actual or anticipated business or research or development of IBM; or (b) are suggested by or result from any task or work performed by Steve Wang for or on behalf of IBM or its subsidiaries, while Steve Wang was employed by IBM;
3. On information and belief, the Agreement obligated Steve Wang to disclose any such Developments in writing to the IBM Intellectual Property Law Department;

4. On information and belief, the attached Disclosure CAM8-2006-0398 (the Disclosure) was created by Steve Wang to disclose an invention conceived by Steve Wang to the IBM Intellectual Property Law Department as part of his obligation under the Agreement;
5. On information and belief, the Disclosure describes an invention conceived by Steve Wang that: (a) relates to the actual or anticipated business or research or development of IBM; and/or (b) was suggested by or resulted from a task or work performed by Steve Wang for or on behalf of IBM or its subsidiaries;
6. On information and belief, the above-referenced patent application seeks patent protection for the invention described in the Disclosure; and
7. On information and belief, as a result of items 1-6, IBM is the exclusive owner of the above-referenced patent application.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent which this verified statement is directed.


Ayla Lari, IP Law Attorney for IBM
Reg. No. 43,739


Date



766917

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- 766917 1/27/03
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12. This Agreement shall be governed by the laws of the State of New York, as if it had been executed and fully performed within such state. If any provision of this Agreement is unenforceable as law, the remainder shall remain in effect.

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My Agreement, and my acknowledgment of receipt of a copy of this Agreement, are indicated by my signature below.

<u>KLADONG WANG</u>	<u>[Signature]</u>	<u>766917</u>	<u>1/27/2003</u>
Employee's Full Name (please print)	Employee's Signature	Employee Serial	Date
<u>Judith St Michel</u>	<u>[Signature]</u>	<u>142703</u>	
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Title of Document	Date of Document	Name of Witness on Document


Signed: _____
Date: _____
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	Disclosure CAM8-2006-0398
	Prepared for and/or by an IBM Attorney - IBM Confidential
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* **Title of disclosure (in English)**

Method and System for JCR (Java Content Repository) Binary Streaming for Data Centric Applications

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Final deadline reason	
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Attorney/Patent professional	Ayla A Larl/Cambridge/IBM@IBMUS
Submitted date	12/22/2006 08:07:16 AM MST
* Owning division	LOT

To add inventors to this disclosure, you may select names from a Name and Address book located on your workspace or type the full Lotus Notes name of each inventor.

Inventors (like assignees) MUST use the Lotus Notes Address of the country their working contract applies to.

Example: John Inventor/Germany/IBM

Inventors: Steve Wang/Raleigh/IBM

Inventor Name	Inventor Serial	Div/Dept	Inventor Phone	Manager Name
> WANG, STEVE	765917	BM/OIFA	441-3905	Saraceni, Thomas A.

> denotes primary contact

Main Idea for Disclosure CAM8-2006-0398

Prepared for and/or by an IBM Attorney - IBM Confidential

Archived On 05/18/2007 01:07:41 AM

Title of disclosure (in English)

Method and System for JCR (Java Content Repository) Binary Streaming for Data Centric Applications

Main Idea

1. Background: What is the problem solved by your invention? Describe known solutions to this problem (if any). What are the drawbacks of such known solutions, or why is an additional solution required? Cite any relevant technical documents or references.

The JCR (Java Content Repository, JSR 170: <http://jcp.org/en/jsr/detail?id=170>) is catching momentum in the Web based content management system (CMS). The applications based on JCR are easily customizable with JCR node types for modeling, and are encapsulated of diversified back-end database systems by the higher level JCR API. All data stored in JCR are represented with XML node schema and can be serialized to file system. The serialized node file contains the data properties and their path information. To process the serialized XML node files with higher performance is critical for enterprise data centric applications such as archive and restore and migration. The XML node files can be large because it can store actual binary content within the XML nodes. It is not uncommon to have ten's of Meg Bytes (MB) JCR XML node files for a typical repository. There is no efficient XML processor that can handle large XML files with both parsing and manipulating the states of XML elements such as DOM or SAX. One such processor might be good in parsing only (SAX) but not sufficient in maintaining states or vice versa with prohibit memory consumption (DOM). This invention intends to address the problem with JCR binary streaming technique that can greatly improve performance for such data centric applications.

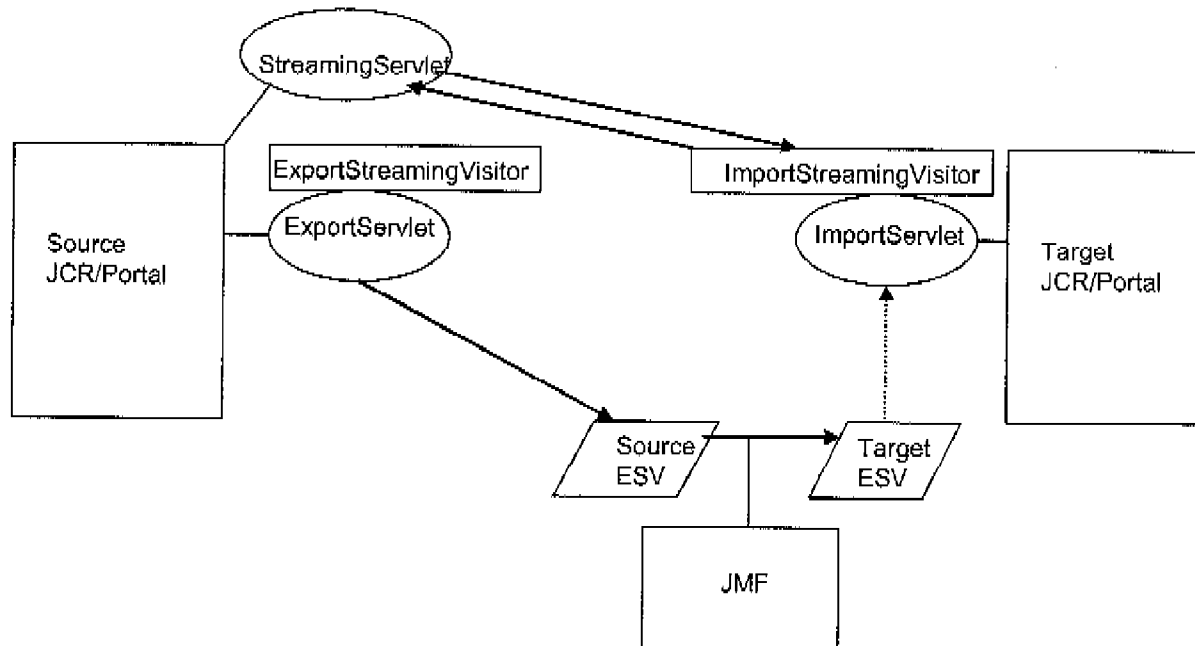
2. Summary of Invention: Briefly describe the core idea of your invention (saving the details for questions #3 below). Describe the advantage(s) of using your invention instead of the known solutions described above.

The JCR binary streaming saves the node property path and other relevant retrieving information within the serialized XML node files so that the intended large binary data remains inside the content repository after the corresponding node being serialized. Any data centric application that requires processing of the serialized XML node file is now dealing with a much reduced sized XML file. This can improve the performance greatly in terms of memory usage and processing speed for XML processors such as DOM. During the consuming phase of the data centric applications, the binary data property is streamed from its source JCR repository into the target repository by looking up through its original property path and other retrieving information.

3. Description: Describe how your invention works, and how it could be implemented, using text, diagrams and flow charts as appropriate.

The JCR binary streaming involves two phases. The first phase is when the JCR nodes are serialized. The concerned binary property path is obtained and serialized into its property value along with a unique token to identify that this property is a streaming property. Other relevant retrieving information such as source server is also serialized. The data centric applications can process the serialized node file as usual with any XML processors such as DOM or SAX parser. The second phase happens during consuming or import. The data centric applications will identify the property being streamed by the unique property token. The path and other info saved in the streamed property allow the consuming applications to successfully retrieve the actual binary data by streaming through from the source JCR repository with the saved property path.

A system with JCR binary streaming for a data centric application called JCR Migration Framework (JMF) for a WebSphere Portal environment has been constructed. The migration between two JCR repository migrates the user data saved in the source application model to the user data of a target application model that is based on JCR. The migration exports to XML node files on a file system, transforms and imports to a target system. The following diagram illustrates the implementation:



Here is the description for each components above:

Source JCR/Portal: the source JCR repository in a WebSphere Portal environment

Target JCR/Portal: the target JCR repository in a WebSphere Portal environment

ExportServlet : servlet to handle exporting of nodes for a source JCR repository

ImportServlet: servlet to handle importing of nodes to a target JCR repository

ExportStreamingVisitor: a visitor that writes the binary property with unique identifier, property path and other relevant information such as source server.

ImportStreamingVisitor: a visitor that identifies the binary property and calls the StreamingServlet to stream the binary property from source JCR

StreamingServlet: servlet to handle streaming a binary property request and to stream out the actual binary property data to the requester

Source ESV: the exported system view of the source JCR repository with XML node files

Target ESV: the transformed XML node files

JMF: JCR Migration Framework that transforms the source nodes to the target nodes according to certain transform rules

The binary streaming of the JCR properties allows migration to export less data, parse efficiently with much reduced sized XML node files during transform for those nodes that contain large binary data, and streaming from the source JCR repository for faster import.

Hoffman Warnick LLC

Intellectual Property Law
www.hwdpatents.com

75 State Street – 14th Floor
Albany, NY 12207
Phone: (518) 449-0044
Fax: (518) 449-0047

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