

# The Parallel Java 2 Library Computer Science

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### The Parallel Java 2 Library

#### **THE PARALLEL JAVA 2 LIBRARY - sc14.supercomputing.org**

THE PARALLEL JAVA 2 LIBRARY Cluster Parallel Programming in 100% Java Multicore worker task Monte Carlo estimation of  $\pi$  Features: • One master process • Multiple multicore worker processes, one per cluster node • Interprocess communication via tuple space Design Weak scaling performance (10 nodes, 40 cores, 26 GHz) Parallel job with

#### **THE PARALLEL JAVA 2 LIBRARY - Computer Science**

Feb 18, 2014 · THE PARALLEL JAVA 2 LIBRARY Map-Reduce Parallel Programming in 100% Java Map-reduce job configuration Configure multiple mapper tasks Configure reducer task Mapper class Process one line of an input file Extract relevant information Record and reduce output (key, value) Specify order of reducer inputs

#### **Subset Sum Problem Parallel Solution**

Figure 2: Parallel program design flow SubsetSumSmpjava is a parallel version of subset sum problem implemented using parallel java 2 library [2] As shown in the above algorithm, one base case for loop and two inner for loops are parallelized For each core, a team thread will execute and start filling the 2-D table For all cores, the

#### **Maximum Independent Set in a Graph**

For parallel program: java pj2 debug=makespan cores=1 SeqMaxIS "RandomGraph(20,40,142863)" 10 As we are using Parallel Java 2 Library by Prof Alan Kaminsky, we can use the configurations specified in the documentation to modify the flow or performance of the parallel program

#### **PARALLEL PROGRAMMING IN JAVA - Computer Science**

To introduce Parallel Java (PJ)— — An API and middleware for parallel programming in 100% Java Parallel Programming in Java Workshop—C

CSCNE 2007— April 20, 2007—Revised 22-Oct-2007 Page 2

## **A Test Suite for High-Performance Parallel Java**

In this paper we present a set of parallel Java programs based on the Java Thread concept as well as the Java Remote Method Invocation (RMI) to serve as a test suite to measure the suitability of the Java OOP (Object-Oriented-Programming) methodology to be used for large scale applications in engineering and science We

### **PCJ - a Java library for heterogeneous parallel computing**

Java SE 7, Sockets Direct Protocol (SDP), which increases network performance over InfiniBand connections The application using PCJ library is run as typical Java application using Java Virtual Machine (JVM) In the multinode environment one (or more) JVM has to be started on each node PCJ library takes care on this

### **FlumeJava: easy, efficient data-parallel pipelines**

Java library centered around a few classes that represent parallel collections Parallel collections support a modest number of parallel operations which are composed to implement data-parallel computations An entire pipeline, or even multiple pipelines, can be implemented in a single Java program using the FlumeJava ab-

### **Data Parallelism in Java - Vanderbilt University**

Challenge #2: Continuing to meet challenge #1 as processor library, and framework design The Java language had thread support from day 1 But early support was mostly useful for asynchrony, not The invoke-in-parallel step waits for both halves to complete Then performs the combination step

### **Working with Native Libraries in Java**

Safe Harbor Statement The preceding is intended to outline our general product direction It is

### **M-JavaMPI: A Java ...**

passing, M-JavaMPI, load balancing, Java, cluster computing, parallel computing ~ ~ ~ 1 Introduction ~ ~ The Message Passing Interface (MPI) is a widely adopted communication library for parallel and distributed computing Although the existing MPI standard specifies

### **Movie Recommendation Using Map Reduce**

The project uses Parallel Java 2 Library [4] for implementation A Sequential Algorithm and Design 1 Read the dataset and create the shared resources (ArrayLists) 2 Read the Input data (movie ID and ratings) and create the ArrayList for the input user 3 Call the computeSimilarity method to compute the

### **Teaching Parallel Programming Using Java**

parallel applications using a Java MPI-like software called MPJ Express [5], which implements the mpiJava 1:2 API specification [6]—this is equivalent to MPI version 1:1 Being a Java MPI library, MPJ Express allows writing parallel Java applications for clusters ...

### **Preparing an Online Java Parallel Computing Course**

2) Reinforcing those fundamental concepts with practical experience using both standard parallel Java programming constructs and a custom parallel programming library [13] to express parallel programs This includes reasoning about the abstract and real performance of these parallel programs 3) Using a partially flipped classroom by

### **Applying Source Level Auto-Vectorization to Aparapi Java**

these SIMD instructions In this thesis, we present a vector library that implements all of the major SIMD instructions in functions that are accessible

to Java through JNI function calls This brings the benefits of general purpose SIMD functionality to Java This thesis also works with the data parallel Aparapi Java extension to bring these SIMD

### **Efficiency of Thread-parallel Java Programs from Scientific ...**

2 Java thread parallelism and scheduling Thread creation: In contrast to most other programming languages where the operating system and a specific thread library like Pthreads [2] or C-Threads are responsible for the thread management, Java has a direct support for multi-threading integrated in the language, see, eg, [8] The

### **JOPI: A Java Object-Passing Interface**

available methods in Java, a daring programmer may write a parallel program, but the complexity of the task deters almost all from tackling this intricate task Message Passing Interface [12] is a library of routines provided for users who wish to write parallel and distributed programs

### **A DEVICE LEVEL COMMUNICATION LIBRARY FOR THE HPJAVA ...**

low-level Java messaging platform which has the potential to be used as a common API for implementing libraries like Adlib and its relatives Key Words Distributed Software Systems and Applications, Compiler and Runtime Support, Parallel and Distributed Compiler, Java Section 2 ...

### **Benchmarking HPJava: Prospects for Performance**

parallel language features and the popular, library-oriented, SPMD style, omitting some basic assumptions of the HPF model Here, we will discuss a Java-based HPSPMD language, called HPJava HPJava extends the Java language with some additional syntax and pre-defined classes for handling distributed arrays, and a few new control constructs

### **Collective Communications for Scalable Programming**

Currently HPJava is supplied with one library for parallel computing-a Java version of the Adlib library of collective operations on distributed arrays [14] A version of the mpiJava[1] binding of MPI can also be called directly from HPJava programs Figure 1 summarizes an HPJava communication libraries stack