



Worldwide Cloud Services Partner

Alibaba Position Statement JCP Elections 2020

Why Alibaba?

Over the years, Java has proliferated in Alibaba. Many applications are written in Java. In fact, thousands of Java developers have written more than a billion lines of Java code. Alibaba has customized most of its Java software based on the rich open-source ecosystem. These Java programs are developed for online trading, payments and logistics operations. Alibaba uses the full spectrum of Java technologies, including middleware (Apache Tomcat, Jetty, Netty, etc), big data (Spark, HBase, Drill, Flink), modularity (OSGi), in memory database (ElasticSearch) and security.

Alibaba's investment in OpenJDK dated back to 2010. To cater for the specific needs to run large-scale eCommerce applications, we identified the requirements and optimized these features in our customized version derived from OpenJDK. Our customized OpenJDK version is tailored for runtime performance, predictable and consistent garbage collection, production-time profiling for critical online Java applications. We will continue to innovate Java infrastructure technology based on OpenJDK. Alibaba is now user of the OpenJDK Community TCK, which will help us on compatibility for our contributions back to OpenJDK community.

We are looking forward to contributing more to OpenJDK and JCP by being an EC member.

Alibaba and the Java Community

Alibaba operates leading online and mobile marketplaces in retail and wholesale trade, as well as cloud computing and other services. We provide technology and services to enable consumers, merchants, and other participants to conduct commerce in our ecosystem. We turn our experience gained from running millions of JVM instances into practical technologies and contribute them back to the OpenJDK community. We helped backport Java Flight Recorder (JFR) into OpenJDK 8u.

As a Java advocator in China, Alibaba has attracted a number of young developers to learn and use Java. We published an open-source book, Alibaba Java Coding Guidelines, which consolidates the best programming practices over the years from Alibaba Group. We worked through the GreenTea JUG community and talented researchers in China to promote and advocate the Java technology. We hosted JUG activities quarterly and have delivered a series of technical talks on cutting-edge Java technologies, covering JVM, middleware, application

development, to Java developers across China and East Asia.

Alibaba is an active member in many open-source communities. We participate and contribute not only in the OpenJDK community but also other open-source communities that would help advance the Java technology but need collaborations from the Java world. We are elected as the member of the advisory board of the GraalVM project. We contributed survivor space support to the native image garbage collector and many other missing features such as the serialization support to GraalVM native image. We contributed our web-based heap analysis framework — Jifa — as an open-source project to the Eclipse Foundation. Alibaba is also a core member of the Cloud Native Computing Foundation. We are excited to make Java embrace the cloud native technology.

Alibaba's JCP Representatives

Kingsum Chow is a principal engineer at Alibaba Cloud Intelligence System Software Hardware Co-Optimization driving software performance optimization at the scale of data center. Since receiving Ph.D. in Computer Science and Engineering from the University of Washington in 1996, he has been working on performance, modeling and analysis of software applications. He has been issued more than 23 patents. He has presented more than 110 technical papers (40 since joining Alibaba China in 2016). He also appeared four times in JavaOne keynotes.

Sanhong Li is the chief JVM architect at Alibaba. He has been working on Java since 2004, where he began at Intel Asia-Pacific R&D Lab implementing JSR135. He joined IBM in 2008 to improve runtime security on OSGi platform. He progressed to working on the development of IBM's Java Virtual Machine in 2010, where he led a project to develop multi-tenancy technology for the JVM. In 2014, he joined in Alibaba to lead the development for Alibaba JDK, a customized OpenJDK version. Sanhong Li has presented at local and international conferences such as JVM language summit, JavaOne and QCon. He co-leads Shanghai Java User Group and co-chairs APMCon. He has authored over 10 technical papers and a number of technical patents.

Tianxiao Gu is a senior engineer at Alibaba. He received his PhD in computer science from Nanjing University China in 2017. He has been conducting research in VM-based dynamic updating and runtime recovery of Java applications since 2009. Tianxiao has broad research interests in programming languages. He has published 20 technical papers and authored 3 patents. His recent work focuses on improving VM startup and performance for cloud native computing.