

Main

Welcome to the TSAN Project!

The goal of this [Project](#) is to explore and incubate a Thread SANitizing (TSAN) feature that could be integrated into the HotSpot JVM and the JVM Tool Interface (JVM TI). This includes working, evaluating, and incubating a [Thread Sanitizer implementation](#) for Java.

The rest of this page will provide basic information for downloading, building, and testing Java TSAN.

Note: Java TSAN is not working yet and will not be able to provide any data race information yet. The information below is really how to build/test for developers and testers:

Prerequisites

Java TSAN is dependent on the [C/C++ ThreadSanitizer implementation for GCC/LLVM](#). Java TSAN requires [a new API](#) for proper symbolization of Java stack traces, which is only available in update-to-date versions of C/C++ ThreadSanitizer. This requires building OpenJDK with LLVM 7.0 or later, or GCC 9 or later. Currently we recommend developers and testers use [LLVM 8.0](#).

Building

Java TSAN implementation is in the "tsan" branch in the Mercurial repository. Developers need to clone this branch:

```
hg clone --branch tsan http://hg.openjdk.java.net/tsan/dev jdk-tsan
```

Java TSAN exists as a JVM feature "tsan", which is enabled by default on the "tsan" branch in the repository. It can be disabled with the configure flag "--with-jvm-features=-tsan".

To build OpenJDK with LLVM, pass the configure flags "--with-toolchain-type=clang --with-toolchain-path=<path_to_llvm_root_dir>/bin".

Running

Note: the method of including the TSAN runtime in the JVM is not finalized and could change in the future.

Run Java with TSAN enabled:

```
./images/jdk/bin/java -XX:+ThreadSanitizer
```

Testing

The tests for TSAN are at `test/hotspot/jtreg/tsan/`

```
make jdk-image test-image  
make test TEST="hotspot/jtreg/tsan"
```

Resources

- [TSAN Project](#)
- [TSAN JEP proposal](#)
- [Repositories](#)
- Mailing list: [tsan-dev](#)

Recent space activity



Man Cao

Main updated May 15, 2019 • [view change](#)



Jean Christophe Beyler

Main updated Apr 23, 2019 • [view change](#)

Arthur Eubanks

Space contributors

- [Man Cao](#) (40 days ago)
- [Jean Christophe Beyler](#) (62 days ago)
- [Arthur Eubanks](#) (82 days ago)
- [Iris Clark](#) (102 days ago)



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Iris Clark

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