Zulu® Embedded:
Customizable, open source Java for embedded, IoT, and bundling solutions. Based on OpenJDK.™

INTRODUCING ZULU® EMBEDDED

Zulu Embedded is a fully certified, completely customizable and 100% open source Java Virtual Machine for ISVs and embedded devices. Zulu Embedded binaries are based on source code from the OpenJDK project (openjdk.java.net) and are designed to allow companies to leverage the latest advances in Java SE (Standard Edition) for use cases requiring a Java runtime. With extended support for multiple Java versions (e.g. 8, 7 and 6), Zulu Embedded is ideal for devices that require regular Java updates (e.g. bug fixes and security patches), including older or end-of-life versions of Java. Zulu Embedded can be customized to meet the specific needs of your embedded device, including operating system, CPU architecture (x86, Arm, PPC, SPARCv9), bitness (32- or 64-bit), Java patch level, and disk and memory sizes (including Compact Profiles).

FULLY CERTIFIED STANDARDS COMPLIANT

Each Zulu Embedded binary is verified compliant with the Java SE specifications using the OpenJDK Community Technology Compatibility Kit (TCK) licensed from Oracle. The TCK is a suite of more than 120K unit tests which ensures that each binary build of OpenJDK meets all the specifications of the individual JSRs (Java Specification Requests) for a given version of Java SE (e.g. Java 8). Each Zulu Embedded binary carries additional protection granted by passing the TCKs as defined by the Java Specification Participation Agreement and provides extensive intellectual property rights to compatible and specification compliant implementations. Azul issues a certificate of No License Restriction for every production supported binary.

AZUL ZULU GUARANTEE: CERTIFIED NON-CONTAMINATING

Every commercial Zulu binary is 100% open source, but importantly also verified to ensure non-contamination. Through the use of specifically developed tools and analysis techniques, Azul scans and analyzes the more than 7 million lines of OpenJDK sources and the full set of build artifacts and object materials that are produced from the OpenJDK sources, including intermediate and dynamically-generated source files. This analysis covers all topological paths and relationships between any code that might run on the resulting Zulu build and all internal components. Azul verifies that the relationships between the multitude of open source and third party licenses that exist in OpenJDK used by Zulu and any code that may run on Zulu will not result in contamination, and do not impose any requirements or restrictions on licensing of the code that runs on the Zulu JDK or JRE.

Our license verification processes and tools ensure that your Java code is never contaminated by GPL or any other licenses that could require placing extra restrictions on the use or distribution of your code, forced sharing of your code under some specific terms, or mandate the purchase of additional third-party licenses.

TIMELY MAINTENANCE UPDATES

Azul provides Zulu Embedded subscribers with continuous access to the latest Java CPUs (Critical Patch Updates) for all supported Zulu versions (currently 8, 7, and 6). These CPUs contain both Java SE bug fixes as well as security patches. Out-of-band patches may also be delivered based on the severity of the vulnerability, as defined by NIST Common Vulnerability Scoring System version 3 (CVSS v3).

24x7x365 SUPPORT OFFERINGS

While Java is a mature language, the Java runtime is a complex piece of code with no guarantees that it's completely bug free or secure. As such, Azul offers companies and their embedded teams timely access to out-of-cycle patches to ensure their embedded applications are always running. Azul support offerings include a dedicated support team that can I) triage Java problems, II) identify offending code and perform root cause analysis and III) issue temporary patches or security fixes without any dependency on any other company.

With more than 13 years delivering mission-critical support for Global 1000 accounts, Azul has the dedicated teams and deep Java domain expertise to provide the commercial support that embedded product teams need to ensure their Java applications keep running smoothly.

ZULU EMBEDDED BENEFITS

100% Open Source
Zulu Embedded builds are based on the OpenJDK open source project and licensed under GPLv2 with Classpath Exception. They meet the Java SE (Standard Edition) specifications for versions 8, 7 and 6.

Certified & Verified
All Zulu Embedded binaries are certified Java SE compliant by passing the OpenJDK Community Technology Compatibility Kit (TCK) which provides additional IP protection and are also verified 100% open source by Azul, so no additional licenses are required.

Extended Product Life Cycles
Zulu Embedded versions are actively updated and maintained for at least ten years for each major Java SE release (e.g. Java 6), providing extended product life cycles for your most important embedded use cases.

World-class Support
Azul's support and engineering teams have the deep Java domain expertise to provide the commercial support services (including root-cause analysis and out-of-cycle patches) that embedded teams need to ensure their Java applications keep running smoothly.

Customizable
Zulu Embedded can be customized to meet any device requirements, including operating system, CPU architecture (x86, Arm, PPC, SPARCv9), bitness (32- or 64-bit), Java patch level, and disk and memory sizes.

Ease of Migration
OpenJDK is the reference implementation of Java SE and Zulu Embedded builds are available at specific patch levels (8u131 is one example) and packages (.MSI) to make migration from existing Java platforms seamless.

Zulu Embedded Features

- Verified 100% free and open source and based on OpenJDK
- Java SE compliant as certified by OpenJDK Community TCKs
- Performance parity with Oracle, including JIT compilation
- Customizable packaging from JDK to JRE to Compact Profiles
- 100% of source code verified and certified non-contaminating
- Multiplatform support:
  - Java 8, 7, and 6, plus future Long Term Support releases
  - Windows, Linux, Solaris 10 and 11, QNX 7.0 and macOS
  - x86-32, x86-64, Arm32, Arm64, PPC32, PPC64, SPARCv9
- Continuous access to Java CPUs and security patches
- Extended product life cycles and access to preview versions (Java 9)

Use Cases for Zulu Embedded

- Internet of Things (IoT)
- Home & Building Automation
- Healthcare
- Manufacturing Automation
- Networking Equipment
- ISVs
- Automotive
- Online Storage/NAS
- Consumer Electronics
- Home Gateways
- Point of Sale (POS) Systems

About Azul Systems

Azul Systems, the industry's only company exclusively focused on Java and the Java Virtual Machine (JVM), builds fully supported, standards-compliant Java runtime solutions for global enterprises, ISVs and OEMs. Azul is a member of the Executive Committee of the Java Community Process (JCP) and the Eclipse Foundation.

SUPPORTED PLATFORMS

Hardware
- Intel/AMD x86 and x64, Arm v6,v7,v8 Cortex 32-bit, Arm v8 Cortex 64-bit PowerPC32 and -64, SPARCv9

Platform/OS
- Linux: 32/64-bit
  - RHEL 6 & 7 or later
  - SLES 12 SP1, 11 SP4
  - CentOS 6 & 7 or later
  - Ubuntu 16.04, 14.04, 12 04
  - Debian Jessie, Wheezy, Stretch
  - Wind River Linux
  - Oracle Linux, Raspbian Linux, Alpine Linux, Angstrom Linux
- Windows: 32/64-bit
  - 7, 8, 8.1, 10/IoT, 2008 R2, 2012, 2012 R2
- macOS Sierra, High Sierra
- QNX 7.0
- Hypervisors: VMware, Hyper-V, KVM
- Cloud: Azure, AWS, Google, Snappy, Docker
- CoreOS
- Solaris v10 and v11

Java Versions
- Java 8, 7, 6
- All Java patch levels

Packaging
- Standard packages:
  - ZIP, MSI, RPM and DEB
  - Custom packages upon request

Bundles
- Full JDK, headful JRE, headless JRE, Compact Profiles 3, 2, and 1.
- Memory sizing from 11 MB to 250+ MB
- Security, device APIs, extra fonts

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