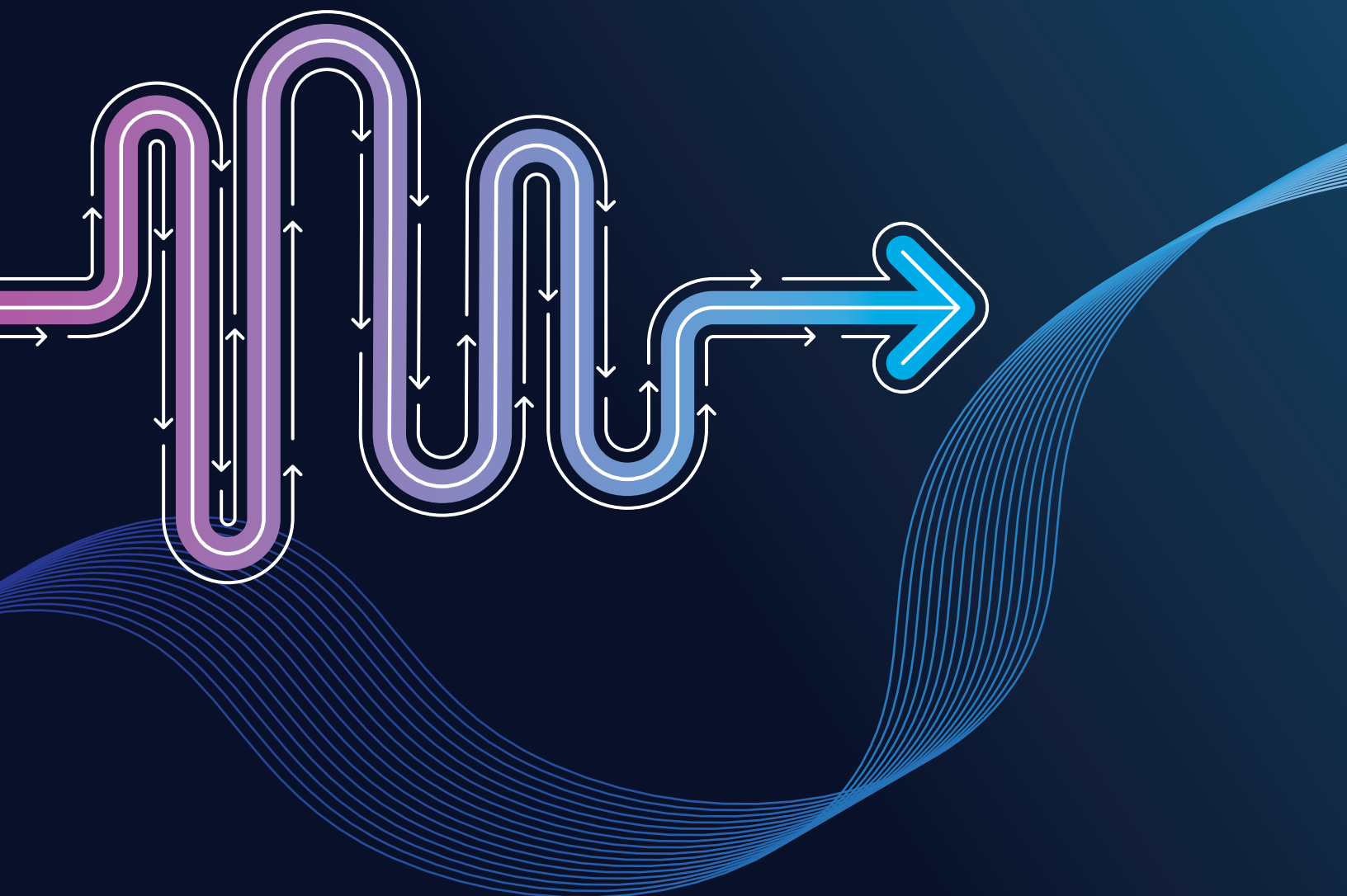


A Comprehensive Guide to Selecting an OpenJDK Distribution Provider





Introduction: What Do You Need in an OpenJDK Distribution?

All OpenJDK distributions are built using the same source code. So when looking for a new provider of OpenJDK builds, focus on the services that are delivered alongside the builds – and these can vary significantly.

This guide provides eight important factors to consider when evaluating OpenJDK distribution providers. Use this guide to determine if changing providers is the right move for you – and if so, which one.

Top 8 Considerations When Choosing an OpenJDK Distribution

Most organizations see similar trends and challenges in the way they use Java – especially when it comes to meeting performance SLAs and controlling how to consume cloud resources, so we’ve compiled our “top 8” list of considerations.

1. Support for more Java versions & platforms
2. Critical patch updates
3. 100% Java SE compatible
4. Trusted, predictable, and easy to work with
5. Support roadmap for your Java versions
6. SLAs for updates
7. Value-based pricing structure
8. Backported security fixes on an SLA



1

Support for More Java Versions & Platforms

Older versions of Java

As of August 2021, there were 20 versions of Java, including three Long-Term Support (LTS) releases. It's easy to find support for the most current LTS release, but there are fewer providers who support older versions. For example, Azul is one of only two providers who supports JDK 6 and 7.

Different distributions may offer various maintenance and support lengths. Some distributions may also commit to supporting a version after they stop providing the scheduled updates. In this passive support phase, users can still report issues, and the developer may provide a special update containing a fix.

Keep your options open

Seek a provider who supports the operating systems and chip sets your organization currently uses, and operating systems and architectures that you may want to move to in the future. Your provider should work with Windows, Linux, macOS, and Solaris.

Comparison: Support for More Java Versions & Platforms

	Azul Platform Core	Oracle Java SE	Amazon Corretto	Red Hat OpenJDK	Eclipse Temurin
Multi-platform (Windows, Linux, macOS, Solaris)	●	●	●	●	●
LTS (Java 8, 11, 17...) and Feature Releases (Java 12, 13, 14...)	●	●	●	●	●
Java 7 extended support	●				
Java 6 extended support	●				



2

Critical Patch Updates

Quarterly updates typically contain several hundred changes. The majority are bug fixes and minor enhancements, with typically fewer than 20 security patches per release. In the last 10 years, the largest number of security patches in an update was 37. This means that the risk of a security patch impacting the stability of an application is much lower than the risk from a non-security-related change.

For this reason, Oracle and Azul offer two versions of each update:

- **Critical Patch Update (CPU):** This update contains only the changes related to security patches
- **Patch Set Update (PSU):** This update includes all the changes, security, bug fixes, performance enhancements, and everything else

Importance of CPUs

A bug fix in JDK 8 in July 2020 prevented popular applications like Hadoop, Cluster, and Solr from running.

The security-only update (CPU) didn't contain the breaking change from the previous quarter, so organizations could safely deploy it into production without compromising the application stability.

Comparison: Critical Patch Releases

	Azul Platform Core	Oracle Java SE	Amazon Corretto	Red Hat OpenJDK	Eclipse Temurin
Free quarterly updates (single builds combining security & enhancements)	●	●	●	●	●
Security-only quarterly updates (fit for urgent deployment)	●	●			

3

100% Java SE Compatible

The Java Technology Compatibility Kit (TCK) ensures compatibility between different implementations of the Java specification. The TCK ensures that an application that runs on one TCK-tested distribution will run the same way on any other distribution that has also passed the TCK test suite so you can exchange Oracle JDK for Azul Zulu Builds of OpenJDK, as an example.

Passing the TCK also carries an additional benefit critical for commercial use: Conforming implementations inherit the right to use all the intellectual property in the specification defining that Java version. With TCK testing, it is easy to find a distribution that meets the exact needs of your organization.



Comparison: 100% Java SE Compatible

	Azul Platform Core	Oracle Java SE	Amazon Corretto	Red Hat OpenJDK	Eclipse Temurin
Based on OpenJDK	●	●	●	●	●
TCK tested (guaranteed Java SE compliance)	●	●	●	●	●

4

Trusted, Predictable, and Easy to Work With

When assessing potential OpenJDK providers, consider these critical criteria:

Track record. Providers with real expertise have a track record of supporting the Java platform and participating in the processes and standards bodies that move Java forward. Here are some examples:

- [The Java Community Process \(JCP\)](#) develops and maintains Java technology standards. Gil Tene, Azul's cofounder and CTO, is one of the longest-serving members and a former Member of the Year.
- [The OpenJDK Vulnerability Group](#) collects CVEs to enable new patches
- [Friends of OpenJDK](#) (Foojay) and the Adoptium Working Group are online community forums.
- [The Java SE Expert Group](#) includes drafts and comments of OpenJDK specifications.

Customer references. A potential partner's list of existing customers is a good place find out if that organization is a fit for your own. It will help you determine the level of expertise they have in your industry and market and whether they can handle the complexity of your organizational needs.

See some of [Azul's customer references](#).

5

Support Roadmap for the Java Versions You Use

Releases designated as LTS are the same ones Oracle and the OpenJDK community designates. Eight years of LTS support might sound long, but many organizations are seeking 20 years of support. Azul recently extended support of Java 8 until 2043.

You can find more details in the [Azul Support Roadmap](#).



Comparison: Support Roadmap for Your Java Versions

	Azul Platform Core	Oracle Java SE	Amazon Corretto	Red Hat OpenJDK	Eclipse Temurin
Commercial support - production lifecycle	8 years (+2 years)	5 years (+3 years)	6 years	6 years	6 years

6 SLAs for Updates

The services offered by commercial support providers for OpenJDK can vary widely by breadth (Java versions, associated platforms, and underlying architectures) and length of support. It's also important to understand how a provider defines support and whether those services are covered by a service-level agreement (SLA).

Here are some differences in the delivery of OpenJDK support that you'll want to consider:

- Basic help-desk support versus deep root-cause analysis, dedicated account managers, monthly strategy calls, best practice consulting, and quarterly security briefings.
- Quarterly updates delivered as a Patch Set Update (PSU) versus curated stabilized builds (which is what Oracle and Azul refer to as a Critical Patch Updates [CPUs]).

Comparison: Service Levels

	Azul Platform Core	Oracle Java SE	Amazon Corretto	Red Hat OpenJDK	Eclipse Temurin
24x7x365 Support (1-hour SLA)	●		◐	●	
Security- only Quarterly Updates (fit for urgent deployment)	●	●			

7 Value-Based Pricing Structure

On January 23, 2023, Oracle quietly replaced the online link to the Oracle Java SE Subscription Global Price List with a link to a new Oracle Java SE Universal Subscription Global Price List.

The new pricing seemed straightforward. Instead of counting processors and authorized users, organizations needing an Oracle Java SE subscription would count their employees. But how? The fine print contained a complex definition of "employees" that includes part-time employees and even contractors, whether they use Java or not. The new pricing for Oracle Java SE was disconnected from actual Java usage and could result in a massive price increase. The more employees, the larger the price increase.

Azul has a simple price structure based on the number of vCores in use. You can run a comparison between Oracle and Azul pricing on our [online calculator](#).



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Backported Security Fixes on an SLA

Getting the highest levels of reliability from Java runtimes requires more than free updates. Users need timely, continuous access to updates – and they need them backported to older versions. A newly discovered vulnerability that got fixed in a current feature release probably existed in many older Java versions, too.

The OpenJDK project doesn't provide any formal support. Users can report any bugs through the Oracle Java Bug Database, but there are no guarantees or SLAs for when or if a bug will be addressed.

Commercially supported distributions of OpenJDK provide a formal support channel to receive reports of issues 24/7/365 via a web form or email (and sometimes phone). Many support contracts will include an SLA specifying how quickly the support team will respond to a ticket. This may be as little as an hour, so you know problems in mission-critical applications get attention as quickly as possible.

Azul provides both industry-leading SLAs and deep root cause analysis. This approach can save time and resources by eliminating the need for multiple fixes.

Comparison: Backported Fixes on an SLA

	Azul Platform Core	Oracle Java SE	Amazon Corretto	Red Hat OpenJDK	Eclipse Temurin
24x7x365 Support (1-hour SLA)	●		◐	●	
Engineering capacity to root-cause & fix bugs(independent from OpenJDK)	●	●		◐	



Comparison: OpenJDK Distributions and Commercial Support Services

On the following pages you can review matrices for OpenJDK distributions and commercial support services so you can make an informed decision.

Comparison: OpenJDK Distribution Comparison Matrix

Products and Features	Azul Platform Core	Oracle Java SE	Amazon Corretto	Red Hat OpenJDK	Eclipse Temurin
Based on OpenJDK	●	●	●	●	●
100% open source, freely available (no field of use restrictions)	●		●	●	●
TCK tested (guaranteed Java SE compliance)	●	●	●	●	●
Patent grant (inherited patent rights to use the JDK)	●	●	●	●	●
Free quarterly updates (single builds combining security & enhancements)	●	◐	●	●	●
Performance parity with Oracle Java SE	●	●	●	●	●
Multi-platform (Windows, Linux, macOS, Solaris)	●	●	◐	◐	●
Native Alpine Linux (musl libc)	●		●		●
Multiple installers & packages (.tar, deb, MSI, DMG, JDK/JRE)	●	◐	◐	◐	●

Comparison: OpenJDK Distribution Comparison Matrix

Products and Features	Azul Platform Core	Oracle Java SE	Amazon Corretto	Red Hat OpenJDK	Eclipse Temurin
Java Flight Recorder and Mission Control (for Java 8)	●	●	●	●	●
OpenFX (JavaFX)	●	●	◐		
LTS (Java 8, 11, 17...) and Feature Releases (Java 12, 13, 14...)	●	●	●	◐	●
Java 7 extended support	●				
Java 6 extended support	●				
32-bit support	●	●		●	◐
Java Web Start and Applets	◐	●			
Security-only quarterly updates (fit for urgent deployment)	●	●			



Comparison: Commercial Support Services

Java Offerings for the Enterprise	Azul Platform Core (support for)		Oracle Java SE	Amazon Corretto	Red Hat OpenJDK	Eclipse Temurin
	Azul Zulu Builds of OpenJDK	Eclipse Temurin				
Wide Variety of Support Platforms and Environments	●	◐	●	◐ (AWS only)	● (RHEL/Windows only)	◐
24x7x365 Support (1-hour SLA)	●	●		◐	●	
SLA for Quarterly Updates (guaranteed timely access)	●	●	●	●	●	
Security-only Quarterly Updates (fit for urgent deployment)	●		●			
Out-of-cycle Critical Fixes (independent from OpenJDK)	●	◐		●	●	
Commercial Support Production Lifecycle	8 years (+2 years)	6 years	5 years (+3 years)	6 years	6 years	6 years

Comparison: Commercial Support Services

Java Offerings for the Enterprise	Azul Platform Core (support for)		Oracle Java SE	Amazon Corretto	Red Hat OpenJDK	Eclipse Temurin
	Azul Zulu Builds of OpenJDK	Eclipse Temurin				
Advanced Product Enhancements (e.g. Fonts, JFR, TLS 1.3, FX)	●		◐	◐		
Dedicated Global Java Support Team	●	●	◐		◐	
Engineering capacity to root-cause & fix bugs (independent from OpenJDK)	●	●	●		◐	
Patent and Non-Contamination Indemnification	●	◐	N/A		◐	
Non-Contamination Certifications and Source Code "Cleansing"	●		N/A			



Your Big Takeaways: Azul Platform Core Enhancements

"The functionality of Azul is equivalent to Oracle's for server/embedded JREs. When migrating, it is truly a zero-effort drop-in replacement."



"The satisfaction of thousands of SAS customers demonstrates the quality of the Azul Zulu Builds of OpenJDK and Azul as a great Java support partner."



"By adopting Azul Platform Core and teaming with Azul, we can ensure that our customer always have access to secure, certified, and tested builds of Java that have been fully integrated into our Ignition platform."



Conclusion: Make the Decision That's Right for You

All OpenJDK distributions are built using the same source code, but there are critical differences including versions supported, platforms supported, and critical patch updates.

Azul provides commercial support for more versions and platforms than any other vendor, and it is the only provider other than Oracle to provide critical patch updates. Azul's price advantage vs Oracle is another difference maker.

Azul is the only company 100% focused on Java, with five Java champions.

[Learn more.](#)

Contact Azul

385 Moffett Park Drive, Suite 115
Sunnyvale, CA 94089 USA
+1.650.230.6500
www.azul.com