



Azul Zulu builds of OpenJDK

October 2022 Quarterly Update

Release Notes

Revision 1.3

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Revision History

Revision	Date	Description
0.1	October 18, 2022	Initial version of the document.
0.2	October 18, 2022	Updated version numbers.
0.3	October 18, 2022	Updated lists with issues.
0.4	October 18, 2022	Updated "What's New" and "Supported Platforms".
0.5	October 18, 2022	Added JDK-8281181 to "What's New".
0.6	October 18, 2022	Added ZuluFX bug fixes.
0.7	October 18, 2022	Fixes: correct listing of affected versions.
0.8	October 18, 2022	Fix JFX tpl download link and remove JDK6.
0.9	October 18, 2022	Added initial CVE list.
1.0	October 18, 2022	Added full CVE list.
1.1	October 20, 2022	Added TPL document for Zulu 6.
1.2	October 20, 2022	Added Zulu 6 to searchable CVE page.
1.3	November 9, 2022	Added note about Early Access builds.

Release Details

This release is a quarterly update release for Azul Zulu Builds of OpenJDK version 19, 17, 15, 13, 11, 8, 7, and 6. The following table lists detailed information on the Azul Zulu versions released with the current update.

Azul Zulu Version*	Update Type**	JDK Version	Based on		JavaFX Version
			Azul Zulu Version	JDK Version	
19.30.11 (CA) 19.30.12 (SA)	PSU	19.0.1+10	19.28	19.0.0+36	19.0.1+100
17.37.14 (SA)	CPU	17.0.4.1.101+2	17.36	17.0.4.1+1	18.0.2.0.101+101
17.38.21 (CA) 17.38.22 (SA)	PSU	17.0.5+8	17.37	17.0.4.1.101+2	19.0.1+100
15.43.14 (SA)	CPU	15.0.8.0.101+2	15.42	15.0.8+4	18.0.2.0.101+101
15.44.13 (CA) 15.44.14 (SA)	PSU	15.0.9+5	15.43	15.0.8.0.101+2	19.0.1+100
13.51.14 (SA)	CPU	13.0.12.0.101+2	13.50	13.0.12+4	18.0.2.0.101+101
13.52.15 (CA) 13.52.16 (SA)	PSU	13.0.13+5	13.51	13.0.12.0.101+2	19.0.1+100
11.59.16 (SA)	CPU	11.0.16.1.101+3	11.58	11.0.16.1+1	18.0.2.0.101+101
11.60.19 (CA) 11.60.20 (SA)	PSU	11.0.17+8	11.59	11.0.16.1.101+3	19.0.1+100
8.65.0.14 (SA)	CPU	8u351-b02	8.64	8u345-b01	8u351-b01
8.66.0.15 (CA) 8.66.0.16 (SA)	PSU	8u352-b08	8.65	8u351-b02	8u352-b01
7.57.0.14 (SA)	CPU	7u361-b02	7.56	7u352-b01	N/A
6.51 (SA)	CPU	6b151	6.49	6b149	N/A

NOTE

Zulu 6 (SA) is not part of the release of October 18th, but will be available later.

* Azul provides two types of distribution packages for each Java version:

- **SA** distributions are tested, certified, and commercially supported Azul Zulu builds of OpenJDK. Azul ensures that the software that uses the Accessible APIs of the product does not have to include specific licenses and that such use does not contaminate the code or intellectual property of such software with any license requirements.
- **CA** are Azul Zulu builds of OpenJDK that are free to download and use.

NOTE

Both SA and CA distributions may contain Early Access builds noted with `-ea-` in their filename. Early Access builds may not be TCK certified.

** Update type:

- **CPU** (Critical Patch Updates) contain fixes to security vulnerabilities and critical bug fixes. Azul Zulu CPU releases are generally based on prior-cycle PSU releases, with only security fixes applied. They provide a low-risk vehicle for the potentially urgent deployment of security fixes when issues of sufficient severity arise. CPU releases are available in SA distributions.
- **PSU** (Patch Set Updates) incorporates all fixes in the corresponding CPU, as well as additional non-security bug fixes. Azul Zulu PSU releases incorporate both security fixes and other changes that align the release contents with the associated OpenJDK project quarterly release. PSU releases are available in SA and CA distributions.

Supported Platforms

This section provides information about the operating systems that are supported in this update release of Azul Zulu.

Operating System

	Azul Zulu Version							
	6	7	8	11	13	15	17	19
Windows (x86 32/64-bit)								
Windows Server 2022	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Windows Server 2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Windows Server 2016	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Windows Server 2012 R2	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Windows 11	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Windows 10	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Windows 8.1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Windows (ARM 64-bit)								
Windows 11	n/a	n/a	n/a	n/a	n/a	n/a	Yes	Yes
Windows 10	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a
Linux (x86 32/64-bit)								
RHEL 9.x	n/a	Yes	Yes	Yes	Yes	Yes	Yes	Yes
RHEL 8.x	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
RHEL 7.x	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SLES 15	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SLES 12	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CentOS Stream	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ubuntu 22.04	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ubuntu 20.04	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ubuntu 18.04	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Debian 11	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Debian 10	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Debian 9	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Wind River 8.x	n/a	Yes	Yes	n/a	n/a	n/a	n/a	n/a

CoreOS	n/a	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Alpine Linux 3.11 or later	n/a	n/a	Yes	Yes	Yes	Yes	Yes	Yes
Linux (ARM 64-bit)								
Ubuntu 20.04	n/a	n/a	Yes	Yes	Yes	Yes	Yes	Yes
Ubuntu 18.04	n/a	n/a	Yes	Yes	n/a	n/a	n/a	n/a
Alpine Linux 3.11 or later	n/a	n/a	Yes	Yes	n/a	n/a	Yes	Yes
Linux with kernel 3.10.x and glibc 2.23	n/a	n/a	Yes	Yes	n/a	n/a	n/a	n/a
Linux (ARM 32-bit Hard-Float)								
Ubuntu 18.04 [1]	n/a	n/a	Yes	Yes	n/a	n/a	Yes	n/a
Raspbian 10 Buster [1]	n/a	n/a	Yes	Yes	n/a	n/a	Yes	n/a
Raspbian 9 Stretch [1]	n/a	n/a	Yes	Yes	n/a	n/a	n/a	n/a
Linux with kernel 3.10.x and glibc 2.9 [1]	n/a	n/a	Yes	Yes	n/a	n/a	n/a	n/a
Linux (ARM 32-bit Soft-Float) [2]								
Linux with kernel 2.6.34 and glibc 2.5 [3]	n/a	n/a	Yes	Yes	n/a	n/a	n/a	n/a
Debian 7 Wheezy [4]	n/a	n/a	Yes	Yes	n/a	n/a	n/a	n/a
Linux with kernel 3.10.x and glibc 2.9 [4]	n/a	n/a	Yes	Yes	n/a	n/a	n/a	n/a
Linux (MIPS 32-bit) [5]								
Linux with kernel 4.9.59 and glibc 2.9 [6]	n/a	n/a	Yes	n/a	n/a	n/a	n/a	n/a
Linux (PowerPC 64-bit Big Endian)								
Linux with kernel 3.8.13 and glibc 2.22 [7]	n/a	n/a	Yes	n/a	n/a	n/a	n/a	n/a
Linux (PowerPC 32-bit Hard-float and SPE)								

Linux with kernel 3.12.37 and glibc 2.20 [8]	n/a	n/a	Yes	n/a	n/a	n/a	n/a	n/a
QNX (ARMv7 32-bit Hard-Float ABI)								
QNX 7.0	n/a	n/a	Yes	n/a	n/a	n/a	n/a	n/a
MacOS (x86 64-bit)								
macOS 12	n/a	Yes	Yes	Yes	Yes	Yes	Yes	Yes
macOS 11	n/a	Yes	Yes	Yes	Yes	Yes	Yes	Yes
MacOS (Apple Silicon)								
macOS 12	n/a	Yes	Yes	Yes	Yes	Yes	Yes	Yes
macOS 11	n/a	n/a	Yes	Yes	Yes	Yes	Yes	Yes
Solaris (x86 and Sparc)								
Solaris 11	n/a	Yes	Yes	Yes	n/a	n/a	n/a	n/a
Solaris 10	n/a	Yes	Yes	n/a	n/a	n/a	n/a	n/a

1. Bundles with the C1 compiler were tested on ARMv6/ARMv7/ARMv8 hardware. Bundles with both C1 and C2 compilers were tested on ARMv7/ARMv8 hardware.
2. Bundles with the C1 compiler will use FPU, if it is present and available, to speed up floating point operations. Bundles with both C1 and C2 compilers require FPU.
3. Bundles with the C1 compiler. Tested on ARMv5 hardware.
4. Bundles with the C1 compiler were tested on ARMv6 and ARMv7 hardware. Bundles with both C1 and C2 compilers were tested on ARMv7 hardware.
5. MIPS32r2 ISA, Big Endian, FPU in 32-bit mode or equivalent emulation.
6. Linux soft-float O32 MIPS ABI
7. Bundles for this platform were tested on QorIQ® T4240-RDB.
8. Hard-Float EABI bundles were tested on QorIQ® T1024RDB. SPE ABI bundles were tested on NXP® P2020RDB.

What's New

NV Builds are no longer available

Starting from the October 2022 release, we stop providing NV configurations for Azul Zulu Builds of OpenJDK. For paying customers, we recommend using free Azul Zulu Builds of OpenJDK (CA configurations) instead.

Please email us at support@azul.com if you have issues with this change.

Removal of OpenJSSE from some Azul Zulu Builds of OpenJDK

1. OpenJSSE/Legacy8uJSSE is no longer included in free Azul Zulu Builds of OpenJDK (CA configurations).
2. OpenJSSE/Legacy8uJSSE is no longer included in Azul Zulu Builds of OpenJDK for Java 8 Compact Profile 1 configurations for 32-bit Arm platforms.

Connection limit for HttpServer can be configured

The HttpServer can now be optionally configured with a maximum connection limit by setting the `jdk.httpserver.maxConnections` system property. A value of `0` or a negative integer is ignored and considered to represent no connection limit. In case of a positive integer value, any newly accepted connections will be first checked against the current count of established connections and if the configured limit has been reached, the newly accepted connection will be closed immediately.

Changes for containers regarding thread pool size calculation and number of available CPUs

With the October 2022 PSU release of Java 11 and 17, the default calculation of available CPU cores changes, following [JDK-8281181](#). Previously, the number of available CPU cores was in some situations calculated based on the lower bound defined in the environment. With the change in this release, the lower bound isn't used anymore and the calculation is only based on the upper limit of the environment. If in container-based systems no upper limit is defined, the total number of CPUs on the host machine is read as upper limit.

A situation where a change occurs is, for example, a Kubernetes container where neither CPU requests nor CPU Limits are set, as previously the JVM would select only 1 CPU

core as available in this situation while after the change, it selects all available CPU cores of the environment which can lead to higher resource usage as thread pools of various open source frameworks are using this calculation for sizing. To verify if your systems are affected, check especially those where no upper limit is defined.

In case you need to switch back to the previous calculation, add

```
-XX:+UseContainerCpuShares to the Java command line.
```

Other terms used for the CPU definitions:

- lower bound: CPU Requests, cgroups cpu.shares
- upper limit: CPU Limits, cgroups cpu.cfs_quota_us

To check the current setting, for example, to compare previous and current Java versions in your environment, use the following to display the actually used number of default GC threads by the JVM:

```
java -XX:+PrintFlagsFinal -version | grep GCThreads
```

Libs msvcp140_1.dll and msvcp140_2.dll are now included in the configurations with JavaFX functionality

On Windows platforms Visual Studio runtime libraries are redistributed with the JavaFX build so that JavaFX applications can run on systems that don't have them installed already. The main C runtime library is msvcp140.dll. Additional C functionality has been added to msvcp140_1.dll and msvcp140_2.dll neither of which are shipped.

Recently, WebKit has started using some functions that are only found in msvcp140_2.dll. These libraries needed to be included as part of the JavaFX build along with msvcp140.dll (which is already included).

Notice of Upcoming Changes

- Zulu 13 and 15 are EOL in March 2023 (January 2023 update release is the last one for these versions).

Known Issues

There are no new known issues to report in this release.

IANA Time Zone Database version

This release of Azul Zulu comes with **IANA Time Zone Database version 2022c**.

Fixed Issues

This section covers all issues that were fixed in this release.

Fixed Common Vulnerabilities and Exposures

This section summarizes Common Vulnerabilities and Exposures (CVE) fixed in this release.

CVE #	Component	Protocol	Remote Exploit w/o Auth.	Base Score	Attack Vector	Attack Complex	Privileges Req'd	User Interact	Scope	Confidentiality	Integrity	Availability	Azul Zulu Versions Affected	Notes
CVE-2022-21618	JGSS	Kerberos	Yes	5.3	Network	Low	None	None	Unchanged	None	Low	None	19, 17, 15, 13, 11	Note 2
CVE-2022-21626	Security	HTTPS	Yes	5.3	Network	Low	None	None	Unchanged	None	None	Low	15, 13, 11, 8, 7, 6	Note 2
CVE-2022-21628	Lightweight HTTP Server	HTTP	Yes	5.3	Network	Low	None	None	Unchanged	None	None	Low	19, 17, 15, 13, 11, 8, 7, 6	Note 1
CVE-2022-21619	Security	Multiple	Yes	3.7	Network	High	None	None	Unchanged	None	Low	None	19, 17, 15, 13, 11, 8, 7	Note 2
CVE-2022-21624	JNDI	Multiple	Yes	3.7	Network	High	None	None	Unchanged	None	Low	None	19, 17, 15, 13, 11, 8, 7, 6	Note 2
CVE-2022-39399	Networking	HTTP	Yes	3.7	Network	High	None	None	Unchanged	None	Low	None	19, 17, 15, 13, 11	Note 1
CVE-2022-32215	Oracle GraalVM Enterprise Edition: Node (Node.js)	HTTPS	Yes	9.1	Network	Low	None	None	Unchanged	High	High	None	None	
CVE-2022-21634	Oracle GraalVM Enterprise Edition: LLVM Interpreter	Multiple	Yes	7.5	Network	Low	None	None	Unchanged	None	None	High	None	

CVE #	Component	Protocol	Remote Exploit w/o Auth.	Base Score	Attack Vector	Attack Complex	Privileges Req'd	User Interact	Scope	Confidentiality	Integrity	Availability	Azul Zulu Versions Affected	Notes
CVE-2022-21597	Oracle GraalVM Enterprise Edition: JavaScript	HTTP	Yes	5.3	Network	Low	None	None	Unchanged	Low	None	None	None	

Notes:

ID	Notes
1	This vulnerability applies to Java deployments that load and run untrusted code (e.g., code that comes from the internet) and rely on the Java sandbox for security. This vulnerability does not apply to Java deployments, typically in servers, that load and run only trusted code (e.g., code installed by an administrator).
2	This vulnerability applies to Java deployments that load and run untrusted code (e.g., code that comes from the internet) and rely on the Java sandbox for security. This vulnerability can also be exploited by using APIs in the specified Component, e.g., through a web service which supplies data to the APIs.

NOTE

The corresponding patch for CVE-2022-32215 also addresses CVE-2022-32212, CVE-2022-32213, CVE-2022-32214, CVE-2022-32222, CVE-2022-32223, CVE-2022-35255, and CVE-2022-35256. But none of these issues are applicable to Azul Zulu Builds of OpenJDK.

Non-CVE Security Fixes

The following table summarizes non-CVE security fixes implemented in this release.

OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
JDK-8028265	19, 17, 15, 13, 11, 8, 7, 6	Add legacy tz tests to OpenJDK	CPU
JDK-8291040	19, 17, 15, 13, 11, 8	Upgrade WebKit	CPU
JDK-8290547	19, 17, 15, 13, 11	Update font handling	CPU
JDK-8290540	19, 17, 15, 13, 11, 8, 7, 6	Freer typing of fonts	CPU
JDK-8288508	19, 17, 15, 13, 11, 8, 7	Enhance ECDSA usage	CPU
JDK-8287446	19, 17, 15, 13, 11	Enhance icon presentations	CPU
JDK-8286519	19, 17, 15, 13, 11, 8, 7, 6	Better memory handling	CPU
JDK-8286511	19, 17, 15, 13, 11, 8, 7, 6	Improve macro allocation	CPU
JDK-8285662	19, 17, 15, 13, 11, 8, 7, 6	Better permission resolution	CPU
JDK-8282252	19, 17, 15, 13, 11, 8, 7, 6	Improve BigInteger/Decimal validation	CPU
JDK-8292579	19, 17, 15, 13, 11, 8, 7, 6	(tz) Update Timezone Data to 2022c	CPU

OpenJDK Bug Fixes

The following table describes the OpenJDK changes implemented in this release.

OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
JDK-8293429	11	[11u] minor update in attribute style	CPU
JDK-8282252	19, 17, 15, 13, 11, 8, 7, 6	Improve BigInteger/Decimal validation	CPU
JDK-8289853	19, 17, 15, 13, 11	Update HarfBuzz to 4.4.1	CPU
JDK-8286533	15, 13, 11, 8, 7, 6	Key X509 usages	CPU
JDK-8147862	8, 7	Null check too late in sun.net.httpserver.ServerImpl	CPU
JDK-8285662	19, 17, 15, 13, 11, 8, 7, 6	Better permission resolution	CPU
JDK-8286526	19, 17, 15, 13, 11, 8, 7	Improve NTLM support	CPU
JDK-8286519	19, 17, 15, 13, 11, 8, 7, 6	Better memory handling	CPU
JDK-8286511	19, 17, 15, 13, 11, 8, 7, 6	Improve macro allocation	CPU
JDK-8287446	19, 17, 15, 13, 11	Enhance icon presentations	CPU
JDK-8290334	19, 17, 15, 13, 11	Update FreeType to 2.12.1	CPU
JDK-8256372	15, 13	[macos] Unexpected symbol was displayed on JTextField with Monospaced font	CPU
JDK-8286918	19, 17, 15, 13, 11, 8, 7	Better HttpServer service	CPU
JDK-8179863	7	Missing copyrights in some jaxp files	CPU
JDK-8286910	19, 17, 15, 13, 11, 8, 7, 6	Improve JNDI lookups	CPU

OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
JDK-8028265	19, 17, 15, 13, 11, 8, 7, 6	Add legacy tz tests to OpenJDK	CPU
JDK-8290540	19, 17, 15, 13, 11, 8, 7, 6	Freer typing of fonts	CPU
JDK-8292579	19, 17, 15, 13, 11, 8, 7, 6	(tz) Update Timezone Data to 2022c	CPU
JDK-8289366	19, 17, 15, 13, 11	Improve HTTP/1.1 client usage	CPU
JDK-8286077	19, 17, 15, 13, 11	Wider MultiByte conversions	CPU
JDK-8288508	19, 17, 15, 13, 11, 8, 7	Enhance ECDSA usage	CPU
JDK-8290547	19, 17, 15, 13, 11	Update font handling	CPU
JDK-8290082	17	[PPC64] ZGC C2 load barrier stub needs to preserve vector registers	PSU
JDK-8290020	17	Deadlock in leakprofiler::emit_events during shutdown	PSU
JDK-8290004	17, 11	[PPC64] JfrGetCallTrace: assert(_pc != nullptr) failed: must have PC	PSU
JDK-8289910	17	unify os::message_box across posix platforms	PSU
JDK-8289856	17, 11	[PPC64] SIGSEGV in C2Compiler::init_c2_runtime() after JDK-8289060	PSU
JDK-8289799	17, 11	Build warning in methodData.cpp memset zero-length parameter	PSU
JDK-8289697	17	buffer overflow in MTLVertexCache.m: MTLVertexCache_AddGlyphQuad	PSU

OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
JDK-8289695	17	[TESTBUG] TestMemoryAwareness.java fails on cgroups v2 and crun	PSU
JDK-8289569	17, 11	[test] java/lang/ProcessBuilder/Basic.java fails on Alpine/musl	PSU
JDK-8289549	17, 15, 13, 11	ISO 4217 Amendment 172 Update	PSU
JDK-8289486	17, 15, 13, 11	Improve XSLT XPath operators count efficiency	PSU
JDK-8289477	17, 11	Memory corruption with CPU_ALLOC, CPU_FREE on muslc	PSU
JDK-8289471	17, 11	Issue in Initialization of keys in ErrorMsg.java and XPATHErrorResources.java	PSU
JDK-8289197	17	[17u] Push of backport of 8286177 did not remove assertion	PSU
JDK-8289147	17	unify os::infinite_sleep on posix platforms	PSU
JDK-8289127	17	Apache Lucene triggers: DEBUG MESSAGE: duplicated predicate failed which is impossible	PSU
JDK-8289044	17	ARM32: missing LIR_Assembler::cmove metadata type support	PSU
JDK-8288992	17	AArch64: CMN should be handled the same way as CMP	PSU
JDK-8288985	17	P11TlsKeyMaterialGenerator should work with ChaCha20-Poly1305	PSU
JDK-8288928	11	Incorrect GPL header in pnglibconf.h (backport of JDK-8185041)	PSU
JDK-8288865	11, 8	[aarch64] LDR instructions must use legitimized addresses	PSU
JDK-8288781	17, 11	C1: LIR_OpVisitState::maxNumberOfOperands too small	PSU
JDK-8288763	11, 8	Pack200 extraction failure with invalid size	PSU

OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
JDK-8288754	17, 11	GCC 12 fails to build zReferenceProcessor.cpp	PSU
JDK-8288599	19, 17	com/sun/management/OperatingSystemMXBean/TestTotalSwap.java: Expected total swap size ... but getTotalSwapSpaceSize returned ...	PSU
JDK-8288467	17, 11	remove memory_operand assert for spilled instructions	PSU
JDK-8288360	17, 11	CI: cilInstanceKlass::implementor() is not consistent for well-known classes	PSU
JDK-8288303	17	C1: Miscompilation due to broken Class.getModifiers intrinsic	PSU
JDK-8288003	17	log events for os::dll_unload	PSU
JDK-8288000	17	compiler/loopopts/TestOverUnrolling2.java fails with release VMs	PSU
JDK-8287917	19, 17	System.loadLibrary does not work on Big Sur if JDK is built with macOS SDK 10.15 and earlier	PSU
JDK-8287902	17	UnreadableRB case in MissingResourceCauseTest is not working reliably on Windows	PSU
JDK-8287896	17	PropertiesTest.sh fail on msys2	PSU
JDK-8287895	17	Some langtools tests fail on msys2	PSU
JDK-8287824	17	The MTPerLineTransformValidation tests has a typo in the @run tag	PSU
JDK-8287741	17, 11	Fix of JDK-8287107 (unused cg1 freezer controller) was incomplete	PSU
JDK-8287735	17	Provide separate event category for dll operations	PSU
JDK-8287672	17, 15, 13, 11	jtreg test com/sun/jndi/ldap/LdapPoolTimeoutTest.java fails intermittently in nightly run	PSU
JDK-8287663	17, 11	Add a regression test for JDK-8287073	PSU

OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
JDK-8287508	8	The tests added to jdk-8 by 8235385 are to be ported to jdk-11	PSU
JDK-8287463	17, 15, 13, 11	JFR: Disable TestDevNull.java on Windows	PSU
JDK-8287432	17, 11	C2: assert(tn.in(0) != __null) failed: must have live top node	PSU
JDK-8287396	17	LIR_Opr::vreg_number() and data() can return negative number	PSU
JDK-8287223	17, 11	C1: Inlining attempt through MH::invokeBasic() with null receiver	PSU
JDK-8287132	8	Retire Runtime.runFinalizersOnExit so that it always throws UOE	PSU
JDK-8287125	17	[macos] Multiple jpackage tests fail/timeout on same host	PSU
JDK-8287113	17	JFR: Periodic task thread uses period for method sampling events	PSU
JDK-8287107	17, 11	CgroupSubsystemFactory.setCgroupV2Path asserts with freezer controller	PSU
JDK-8287091	17	aarch64 : guarantee(val < (1ULL << nbits)) failed: Field too big for insn	PSU
JDK-8287073	17, 11	NPE from CgroupV2Subsystem.getInstance()	PSU
JDK-8286870	17	Memory leak with RepeatCompilation	PSU
JDK-8286869	17	unify os::dir_is_empty across posix platforms	PSU
JDK-8286638	17	C2: CmpU needs to do more precise over/underflow analysis	PSU
JDK-8286625	17	C2 fails with assert(In.is_Store() && In.is_LoadStore()) failed: no node with a side effect	PSU
JDK-8286582	17, 11	Build fails on macos aarch64 when using --with -zlib=bundled	PSU

OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
JDK-8286573	17	Remove the unnecessary method Attr#attribTopLevel and its usage	PSU
JDK-8286314	17, 11	Trampoline not created for far runtime targets outside small CodeCache	PSU
JDK-8286277	17, 15, 13	CDS VerifyError when calling clone() on object array	PSU
JDK-8286266	17	[macos] VoiceOver : Moving JTable column to be the first column JVM crashes	PSU
JDK-8286211	17, 11	Update PCSC-Lite for SUSE Linux to 1.9.5	PSU
JDK-8286177	17, 11	C2: "failed: non-reduction loop contains reduction nodes" assert failure	PSU
JDK-8286122	17	[macos]: App bundle cannot upload to Mac App Store due to info.plist embedded in java exe	PSU
JDK-8286114	17, 11	[test] show real exception in bomb call in sun/rmi/runtime/Log/checkLogging/CheckLogging.java	PSU
JDK-8285923	17	[REDO] JDK-8285802 AArch64: Consistently handle offsets in MacroAssembler as 64-bit quantities	PSU
JDK-8285820	17, 11	C2: LCM prioritizes locally dependent CreateEx nodes over projections after 8270090	PSU
JDK-8285696	17, 11	AlgorithmConstraints:permits not throwing IllegalArgumentException when 'alg' is null	PSU
JDK-8285693	17, 11	Create an automated test for JDK-4702199	PSU
JDK-8285617	17	Fix java/awt/print/PrinterJob/ImagePrinting/PrintARG BImage.java manual test	PSU
JDK-8285497	8	Add system property for Java SE specification maintenance version	PSU

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JDK-8285400	8	Add '@apiNote' to the APIs defined in Java SE 8 MR 3	PSU
JDK-8285398	17, 11	Cache the results of constraint checks	PSU
JDK-8285380	17, 11	Fix typos in security	PSU
JDK-8285301	17	C2: assert(!requires_atomic_access) failed: can't ensure atomicity	PSU
JDK-8285097	17, 11	Duplicate XML keys in XPATHErrorResources.java and XSLTErrorResources.java	PSU
JDK-8285081	17, 15, 13, 11	Improve XPath operators count accuracy	PSU
JDK-8284977	19, 17	MetricsTesterCgroupV2.getLongValueEntryFromFile fails when named value doesn't exist	PSU
JDK-8284956	17, 11	Potential leak awtImageData/color_data when initializes X11GraphicsEnvironment	PSU
JDK-8284950	17, 11	CgroupV1 detection code should consider memory.swappiness	PSU
JDK-8284944	17, 11	assert(cnt++ < 40) failed: infinite cycle in loop optimization	PSU
JDK-8284898	17, 11	Enhance PassFailJFrame	PSU
JDK-8284883	17	JVM crash: guarantee(sect<end() & sect<limit()) failed: sanity on AVX512	PSU
JDK-8284882	11	SIGSEGV in Node::verify_edges due to compilation bailout	PSU
JDK-8284694	17, 11	Avoid evaluating SSLAlgorithmConstraints twice	PSU
JDK-8284686	17	Interval of < 1 ms disables ExecutionSample events	PSU
JDK-8284680	17, 11	sun.font.FontConfigManager.getFontConfig() leaks charset	PSU

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JDK-8284675	17	"jpackage.exe" creates application launcher without Windows Application Manifest	PSU
JDK-8284535	17, 11	Fix PrintLatinCJKTest.java test that is failing with Parse Exception	PSU
JDK-8284521	17	Write an automated regression test for RFE 4371575	PSU
JDK-8284367	17, 11	JQuery UI upgrade from 1.12.1 to 1.13.1	PSU
JDK-8284358	17	Unreachable loop is not removed from C2 IR, leading to a broken graph	PSU
JDK-8284294	17	Create an automated regression test for RFE 4138746	PSU
JDK-8284077	17, 11	Create an automated test for JDK-4170173	PSU
JDK-8284067	17	jpackage'd launcher reports non-zero exit codes with error prompt	PSU
JDK-8284014	17	Menu items with submenus in JPopupMenu are not spoken on macOS	PSU
JDK-8283903	17, 11	GetContainerCpuLoad does not return the correct result in share mode	PSU
JDK-8283849	17, 11, 8	AsyncGetCallTrace may crash JVM on guarantee	PSU
JDK-8283803	17, 11	Remove jtreg tag manual=yesno for java/awt/print/PrinterJob/PrintGlyphVectorTest.java and fix test	PSU
JDK-8283712	17, 11	Create a manual test framework class	PSU
JDK-8283624	17, 11	Create an automated regression test for RFE-4390885	PSU
JDK-8283623	17, 11	Create an automated regression test for JDK-4525475	PSU
JDK-8283621	17, 11	Write a regression test for CCC4400728	PSU

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JDK-8283597	17	[REDO] Invalid generic signature for redefined classes	PSU
JDK-8283562	17	JDK-8282306 breaks gtests on zero	PSU
JDK-8283507	17, 11	Create a regression test for RFE 4287690	PSU
JDK-8283493	17, 11	Create an automated regression test for RFE 4231298	PSU
JDK-8283457	17	[macos] libpng build failures with Xcode13.3	PSU
JDK-8283441	17, 15, 13, 11	C2: segmentation fault in ciMethodBlocks::make_block_at(int)	PSU
JDK-8283277	17, 15, 13, 11	ISO 4217 Amendment 171 Update	PSU
JDK-8283245	17, 11	Create a test for JDK-4670319	PSU
JDK-8283087	17, 11	Create a test or JDK-4715503	PSU
JDK-8283015	17, 11	Create a test for JDK-4715496	PSU
JDK-8282947	17, 15, 13, 11	JFR: Dump on shutdown live-locks in some conditions	PSU
JDK-8282937	17	Write a regression test for JDK-4820080	PSU
JDK-8282936	17	Write a regression test for JDK-4615365	PSU
JDK-8282933	17, 11	Create a test for JDK-4529616	PSU
JDK-8282860	17, 11	Write a regression test for JDK-4164779	PSU
JDK-8282789	17, 11	Create a regression test for the JTree usecase of JDK-4618767	PSU
JDK-8282778	17	Create a regression test for JDK-4699544	PSU
JDK-8282640	17	Create a test for JDK-4740761	PSU
JDK-8282555	17, 11	Missing memory edge when spilling MoveF2I, MoveD2L etc	PSU
JDK-8282548	17, 11	Create a regression test for JDK-4330998	PSU

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JDK-8282477	17	[x86, aarch64] vmassert(_last_Java_pc == NULL, "already walkable"); fails with async profiler	PSU
JDK-8282467	17	add extra diagnostics for JDK-8268184	PSU
JDK-8282407	17	Missing ')' in MacResources.properties	PSU
JDK-8282351	17	jpackage does not work if class file has <code>\$\$</code> in the name on windows	PSU
JDK-8282343	17, 11	Create a regression test for JDK-4518432	PSU
JDK-8282306	17	os::is_first_C_frame(frame*) crashes on invalid link access	PSU
JDK-8282280	17, 15, 13, 11	Update Xerces to Version 2.12.2	PSU
JDK-8282234	17, 11	Create a regression test for JDK-4532513	PSU
JDK-8282071	15, 13	Update java.xml module-info	PSU
JDK-8282046	17	Create a regression test for JDK-8000326	PSU
JDK-8282007	17	Assorted enhancements to jpackage testing framework	PSU
JDK-8281988	17, 11	Create a regression test for JDK-4618767	PSU
JDK-8281745	17, 11	Create a regression test for JDK-4514331	PSU
JDK-8281738	17, 11	Create a regression test for checking the 'Space' key activation of focused Button	PSU
JDK-8281628	17, 15, 13, 11	KeyAgreement : generateSecret intermittently not resetting	PSU
JDK-8281569	17, 11	Create tests for Frame.setMinimumSize() method	PSU
JDK-8281535	17, 11	Create a regression test for JDK-4670051	PSU
JDK-8281297	17	TestStressG1Humongous fails with guarantee(is_range_uncommitted)	PSU

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JDK-8281183	17	RandomGenerator:NextDouble() default behavior partially fixed by JDK-8280950	PSU
JDK-8280963	8	Incorrect PrintFlags formatting on Windows	PSU
JDK-8280950	17	RandomGenerator:NextDouble() default behavior non conformant after JDK-8280550 fix	PSU
JDK-8280913	17, 11	Create a regression test for JRootPane.setDefaultButton() method	PSU
JDK-8280696	17	C2 compilation hits assert(is_dominator(c, n_ctrl)) failed	PSU
JDK-8280550	17	SplittableRandom#nextDouble(double,double) can return result >= bound	PSU
JDK-8279622	17, 11	C2: miscompilation of map pattern as a vector reduction	PSU
JDK-8279385	11	[test] Adjust sun/security/pkcs12/KeytoolOpensslInteropTest.java after 8278344	PSU
JDK-8279370	17	jdk.jpackage/share/native/applauncher/JvmLauncher.cpp fails to build with GCC 6.3.0	PSU
JDK-8279032	17, 11	compiler/loopopts/TestSkeletonPredicateNegation.java times out with -XX:TieredStopAtLevel < 4	PSU
JDK-8278758	15, 13	runtime/BootstrapMethod/BSMCalledTwice.java fails with release VMs after JDK-8262134	PSU
JDK-8278612	17	[macos] test/jdk/java/awt/dnd/RemoveDropTargetCrashTest crashes with VoiceOver on macOS	PSU
JDK-8278609	17	[macos] accessibility frame is misplaced on a secondary monitor on macOS	PSU
JDK-8278344	11	sun/security/pkcs12/KeytoolOpensslInteropTest.java test fails because of different openssl output	PSU

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JDK-8278311	17	Debian packaging doesn't work	PSU
JDK-8278233	17	[macos] tools/jpackage tests timeout due to /usr/bin/osascript	PSU
JDK-8278067	17, 11	Make HttpURLConnection default keep alive timeout configurable	PSU
JDK-8277795	15, 13	LDAP connection timeout not honoured under contention	PSU
JDK-8277493	17	[REDO] Quarantined jpackage apps are labeled as "damaged"	PSU
JDK-8277429	17	Conflicting jpackage static library name	PSU
JDK-8276837	17	[macos]: Error when signing the additional launcher	PSU
JDK-8276546	17	[IR Framework] Whitelist and ignore CompileThreshold	PSU
JDK-8275887	17, 11	jarsigner prints invalid digest/signature algorithm warnings if keysize is weak/disabled	PSU
JDK-8275689	17, 11	[TESTBUG] Use color tolerance only for XRender in BlitRotateClippedArea test	PSU
JDK-8274856	17	Failing jpackage tests with fastdebug/release build	PSU
JDK-8274597	17	Some of the dnd tests time out and fail intermittently	PSU
JDK-8274517	17, 11	java/util/DoubleStreamSums/CompensatedSums.java fails with expected [true] but found [false]	PSU
JDK-8274506	11	TestPids.java and TestPidsLimit.java fail with podman run as root	PSU
JDK-8274434	17	move os::get_default_process_handle and os::dll_lookup to os_posix for POSIX platforms	PSU
JDK-8273526	11	Extend the OSContainer API pids controller with pids.current	PSU

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JDK-8273506	17	java Robot API did the 'm' keypress and caused /awt/event/KeyEvent/KeyCharTest/KeyCharTest.html is timing out on macOS 12	PSU
JDK-8273115	17	CountedLoopEndNode::stride_con crash in debug build with -XX:+TraceLoopOpts	PSU
JDK-8273040	17	Turning off JpAllowDowngrades (or Upgrades)	PSU
JDK-8272815	17	jpackage --type rpm produces an error: Invalid or unsupported type: [null]	PSU
JDK-8272806	15, 13	[macOS] "Apple AWT Internal Exception" when input method is changed	PSU
JDK-8272736	17	[JVMCI] Add API for reading and writing JVMCI thread locals	PSU
JDK-8272720	15, 13	Fix the implementation of loop unrolling heuristic with LoopPercentProfileLimit	PSU
JDK-8272472	15, 13	StackGuardPages test doesn't build with glibc 2.34	PSU
JDK-8272417	17	ZGC: fastdebug build crashes when printing ClassLoaderData	PSU
JDK-8272398	11	Update DockerTestUtils.buildJdkDockerImage()	PSU
JDK-8272352	17, 11	Java launcher can not parse Chinese character when system locale is set to UTF-8	PSU
JDK-8271344	17	Windows product version issue	PSU
JDK-8271078	17, 11	jdk/incubator/vector/Float128VectorTests.java failed a subtest	PSU
JDK-8271010	11	vmTestbase/gc/lock/malloc/malloclock04/TestDescription.java crashes intermittently	PSU
JDK-8270312	17, 11	Error: Not a test or directory containing tests: java/awt/print/PrinterJob/XparColor.java	PSU

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JDK-8270090	17, 11	C2: LCM may prioritize CheckCastPP nodes over projections	PSU
JDK-8269556	17	sun/tools/jhsdb/JShellHeapDumpTest.java fails with RuntimeException 'JShellToolProvider' missing from stdout/stderr	PSU
JDK-8269517	11	compiler/looptests/TestPartialPeelingSinkNodes.java crashes with -XX:+VerifyGraphEdges	PSU
JDK-8269285	15, 13	Crash/miscompile in CallGenerator::for_method_handle_inline after JDK-8191998	PSU
JDK-8269039	17, 15, 13, 11	Disable SHA-1 Signed JARs	PSU
JDK-8268894	15	forged ASTs can provoke an AIOOBE at com.sun.tools.javac.jvm.ClassWriter::writePosition	PSU
JDK-8268361	15, 13	Fix the infinite loop in next_line	PSU
JDK-8267880	11	Upgrade the default PKCS12 MAC algorithm	PSU
JDK-8267271	11	Fix gc/arguments/TestNewRatioFlag.java expectedNewSize calculation	PSU
JDK-8267180	11	Typo in copyright header for HashesTest	PSU
JDK-8266881	11	Enable debug log for SSLEngineExplorerMatchedSNI.java	PSU
JDK-8266774	11	System property values for stdout/err on Windows UTF-8	PSU
JDK-8266675	11	Optimize IntHashTable for encapsulation and ease of use	PSU
JDK-8266490	11	Extend the OSContainer API to support the pids controller of cgroups	PSU
JDK-8266461	11	tools/jmod/hashes/HashesTest.java fails: static @Test methods	PSU

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JDK-8266460	11	java.io tests fail on null stream with upgraded jtreg/TestNG	PSU
JDK-8266250	11	WebSocketTest and WebSocketProxyTest call assertEquals(List<byte[]>, List<byte[]>)	PSU
JDK-8266082	15, 13	AssertionError in Annotate.fromAnnotations with -Xdoclint	PSU
JDK-8265360	17	several compiler/whitebox tests fail with "private compiler.whitebox.SimpleTestCaseHelper(int) must be compiled"	PSU
JDK-8265100	11	(fs) WindowsFileStore.hashCode() should read cached hash code once	PSU
JDK-8265020	11	tests must be updated for new TestNG module name	PSU
JDK-8264792	17, 15, 13, 11	The NumberFormat for locale sq_XK formats price incorrectly.	PSU
JDK-8264666	17	Change implementation of safeAdd/safeMult in the LCMSImageLayout class	PSU
JDK-8264400	11	(fs) WindowsFileStore equality depends on how the FileStore was constructed	PSU
JDK-8262134	15, 13	compiler/uncommontrap/TestDeoptOOM.java failed with "guarantee(false) failed: wrong number of expression stack elements during deopt"	PSU
JDK-8262085	11	Hovering Metal HTML Tooltips in different windows cause IllegalArgExc on Linux	PSU
JDK-8261354	15, 13	SIGSEGV at MethodIteratorHost	PSU
JDK-8261160	11	Add a deserialization JFR event	PSU
JDK-8260632	15	Build failures after JDK-8253353	PSU
JDK-8260589	8	Crash in JfrTraceIdLoadBarrier::load(_jclass*)	PSU

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JDK-8259707	15	LDAP channel binding does not work with StartTLS extension	PSU
JDK-8258946	11	Fix optimization-unstable code involving signed integer overflow	PSU
JDK-8257623	11	vmTestbase/nsk/jvmti/ResourceExhausted/resexhausted001/TestDescription.java shouldn't use timeout	PSU
JDK-8257569	15, 13	Failure observed with JfrVirtualMemory::initialize	PSU
JDK-8257534	17	misc tests failed with "NoClassDefFoundError: Could not initialize class java.util.concurrent.ThreadLocalRandom"	PSU
JDK-8257467	15, 13	[TESTBUG] -Wdeprecated-declarations is reported at sigset() in exesigtest.c	PSU
JDK-8256844	17	Make NMT late-initializable	PSU
JDK-8255729	11	com.sun.tools.javac.processing.JavacFiler.FilerOutputStream is inefficient	PSU
JDK-8255724	17, 11	[XRender] the BlitRotateClippedArea test fails on Linux in the XR pipeline	PSU
JDK-8253916	11	ResourceExhausted/resexhausted001 crashes on Linux-x64	PSU
JDK-8253353	15	Crash in C2: guarantee(n != NULL) failed: No Node	PSU
JDK-8252051	15, 13	Make mlvmJvmtiUtils strncpy uses GCC 10.x friendly	PSU
JDK-8251152	11	ARM32: jreg c2 Test8202414 test crash	PSU
JDK-8249875	15, 13	GCC 10 warnings -Wtype-limits with JFR code	PSU
JDK-8247818	15, 13	GCC 10 warning stringop-overflow with symbol code	PSU

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JDK-8247546	11	Pattern matching does not skip correctly over supplementary characters	PSU
JDK-8245527	15	LDAP Channel Binding support for Java GSS/Kerberos	PSU
JDK-8245263	8	Enable TLSv1.3 by default on JDK 8u for Client roles	PSU
JDK-8242565	13	Policy initialization issues when the denyAfter constraint is enabled	PSU
JDK-8242188	11	error in jtreg test jdk/jfr/api/consumer/TestRecordedFrame.java on linux-aarch64	PSU
JDK-8239902	11	[macos] Remove direct usage of JSlider, JProgressBar classes in CAccessible class	PSU
JDK-8239423	11	jdk/jfr/jvm/TestJFRIntrinsic.java failed with -XX: -TieredCompilation	PSU
JDK-8239265	11	JFR: Test cleanup of jdk.jfr.api.consumer package	PSU
JDK-8238586	11	[TESTBUG] vmTestbase/jit/tiered/Test.java failed when TieredCompilation is disabled	PSU
JDK-8238268	11	Many SA tests are not running on OSX because they do not attempt to use sudo when available	PSU
JDK-8238203	11	Return value of GetUserDefaultUILanguage() should be handled as LANGID	PSU
JDK-8238196	11	tests that use SA Attach should not be allowed to run against signed binaries on Mac OS X 10.14.5 and later	PSU
JDK-8236823	11	Ensure that API documentation uses minified libraries	PSU
JDK-8235870	11	C2 crashes in IdealLoopTree::est_loop_flow_merge_sz()	PSU

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JDK-8235218	8	Minimal VM is broken after JDK-8173361	PSU
JDK-8233019	8	java.lang.Class.isPrimitive() (C1) returns wrong result if Klass* is aligned to 32bit	PSU
JDK-8230708	11	Hotspot fails to build on linux-sparc with gcc-9	PSU
JDK-8227651	19, 17	Tests fail with SSLProtocolException: Input record too big	PSU
JDK-8226976	11	SessionTimeOutTests uses == operator for String value check	PSU
JDK-8223575	11	add subspace transitions to gc+metaspace=info log lines	PSU
JDK-8223543	17, 11	[TESTBUG] Regression test java/awt/Graphics2D/DrawString/LCDTextSrcEa.java has issues	PSU
JDK-8221871	11	javadoc should not set role=region on <section> elements	PSU
JDK-8220744	11	[TESTBUG] Move RedefineTests from runtime to serviceability	PSU
JDK-8219149	11	ProcessTools.ProcessBuilder should print timing info for subprocesses	PSU
JDK-8219074	11	[TESTBUG] runtime/containers/docker/TestCPUAwareness.java typo of printing parameters (period should be shares)	PSU
JDK-8218128	11	vmTestbase/nsk/jvmti/ResourceExhausted/resexhausted003 and 004 use wrong path to test classes	PSU
JDK-8217332	11	JTREG: Clean up, use generics instead of raw types	PSU
JDK-8217170	11	gc/arguments/TestUseCompressedOopsErgo.java timed out	PSU

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JDK-8215291	11	Broken links when generating from project without modules	PSU
JDK-8214427	11, 8	probable bug in logic of ConcurrentHashMap.addCount()	PSU
JDK-8214078	11	(fs) SecureDirectoryStream not supported on arm32	PSU
JDK-8213695	11	gc/TestAllocateHeapAtMultiple.java is slow in some configs	PSU
JDK-8212904	11	JTextArea line wrapping incorrect when using UI scale	PSU
JDK-8212096	19, 17	javax/net/ssl/ServerName/SSLExplorerMatchedSNI.java failed intermittently due to SSLException: Tag mismatch	PSU
JDK-8211002	17	test/jdk/java/lang/Math/PowTests.java skips testing for non-corner-case values	PSU
JDK-8210722	11	JAXP Tests: CatalogSupport2 and CatalogSupport3 generate incorrect messages upon failure	PSU
JDK-8210107	11	vmTestbase/nsk/stress/network tests fail with Cannot assign requested address (Bind failed)	PSU
JDK-8209736	11	runtime/RedefineTests/ModifyAnonymous.java fails with NullPointerException when running in CDS mode	PSU
JDK-8208471	11	nsk/jdb/unwatch/unwatch002/unwatch002.java fails with "Prompt is not received during 300200 milliseconds"	PSU
JDK-8207936	15	TestZipFile failed with java.lang.AssertionError exception	PSU

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JDK-8203277	11	preflow visitor used during lambda attribution shouldn't visit class definitions inside the lambda body	PSU
JDK-8201793	8	(ref) Reference object should not support cloning	PSU
JDK-8194873	8	right ALT key hotkeys no longer work in Swing components	PSU
JDK-8193780	8	(ref) Remove the undocumented "jdk.lang.ref.disableClearBeforeEnqueue" system property	PSU
JDK-8193462	11	Fix Filer handling of package-info initial elements	PSU
JDK-8186143	11	keytool -ext option doesn't accept wildcards for DNS subject alternative names	PSU
JDK-8183372	11	Refactor java/lang/Class shell tests to java	PSU
JDK-8178969	17	[TESTBUG] Wrong reporting of gc/g1/humongousObjects/TestHeapCounters test.	PSU
JDK-8178832	8	(ref) jdk.lang.ref.disableClearBeforeEnqueue property is ignored	PSU
JDK-8175797	8	(ref) Reference::enqueue method should clear the reference object before enqueueing	PSU
JDK-8173361	8	various crashes in JvmtiExport::post_compiled_method_load	PSU
JDK-8173339	8	AArch64: Fix minimum stack size computations	PSU
JDK-8169468	17, 11	NoResizeEventOnDMChangeTest.java fails because FS Window didn't receive all resizes!	PSU
JDK-8164804	11	sun/security/ssl/SSLSocketImpl/CloseSocket.java makes not reliable time assumption	PSU

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JDK-8159694	17, 11	HiDPI, Unity, java/awt/dnd/DropTargetEnterExitTest/MissedDragExitTest.java	PSU
JDK-8155742	8	[Windows] robot.keyPress(KeyEvent.VK_ALT_GRAPH) throws java.lang.IllegalArgumentException in windows	PSU
JDK-8150669	8	C1 intrinsic for Class.isPrimitive	PSU
JDK-8143847	8	Remove REF_CLEANER reference category	PSU
JDK-8139348	11	Deprecate 3DES and RC4 in Kerberos	PSU
JDK-8136354	8	[TEST_BUG] Test java/awt/image/RescaleOp/RescaleAlphaTest.java with Bad action for script	PSU
JDK-8130895	8	Test javax/swing/system/6799345/TestShutdown.java fails on Solaris11 Sparcv9	PSU
JDK-8079267	17	[TEST_BUG] Test java/awt/Frame/MiscUndecorated/RepaintTest.java fails	PSU
JDK-8071507	8	(ref) Clear phantom reference as soft and weak references do	PSU
JDK-8069343	11	Improve gc/g1/TestHumongousCodeCacheRoots.java to use jtreg @requires	PSU
JDK-8049228	8	Improve multithreaded scalability of InetAddress cache	PSU
JDK-8039955	8	[TESTBUG] jdk/lambda/LambdaTranslationTest1 - java.lang.AssertionError: expected [d:1234.000000] but found [d:1234,000000]	PSU

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JDK-8028998	17	[TEST_BUG] [macosx] java/awt/dnd/DropTargetEnterExitTest/MissedDragExitTest.java failed	PSU
JDK-8017175	17, 11	[TESTBUG] javax/swing/JPopupMenu/4634626/bug4634626.java sometimes failed on mac	PSU
JDK-7186258	8	InetAddress\$Cache should replace currentTimeMillis with nanoTime for more precise and accurate	PSU
JDK-7131823	17, 15, 13, 11, 8	bug in GIFImageReader	PSU
JDK-6854300	17, 11	[TEST_BUG] java/awt/event/MouseEvent/SpuriousExitEnter/SpuriousExitEnter_3.java fails in jdk6u14 & jdk7	PSU
JDK-6782021	17	It is not possible to read local computer certificates with the SunMSCAPI provider	PSU
JDK-6606767	11	resexhausted00[34] fail assert(!threadOwnsLocks(), "must release all locks when leaving VM")	PSU
JDK-8293354	15	fastdebug build broken after JDK-8281866	PSU
JDK-8293180	19	JQuery UI license file not updated	PSU
JDK-8292852	11	[11u] TestMemoryWithCgroupV1 fails after JDK- 8292768	PSU
JDK-8292688	8	Support Security properties in security.testlibrary.Proc	PSU
JDK-8292654	19	G1 remembered set memory footprint regression after JDK-8286115	PSU
JDK-8292487	19	Back out the fix forJDK-8281962 from jdk19u	PSU

OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
JDK-8292240	19	CarrierThread.blocking not reset when spare not activated	PSU
JDK-8292051	19	jdk/internal/misc/TerminatingThreadLocal/TestTerminatingThreadLocal.java failed "AssertionError: Expected terminated values: [666] but got: []"	PSU
JDK-8291897	19	TerminatingThreadLocal(s) not registered from virtual thread(s)	PSU
JDK-8291713	11	assert(!phaseExceeding_node_budget()) failed: sanity after JDK-8223389	PSU
JDK-8291640	19	java/beans/XMLDecoder/8028054/Task.java should use the 3-arg Class.forName	PSU
JDK-8291633	17	Build failures with GCC 11, Alpine 3 due to incompatible casts from nullptr	PSU
JDK-8291595	17	[17u] Delete files missed in backport of 8269039	PSU
JDK-8291570	11	[TESTBUG] Part of JDK-8250984 absent from 11u	PSU
JDK-8290886	11	[11u]: Backport of JDK-8266250 introduced test failures	PSU
JDK-8290813	11	jdk/nashorn/api/scripting/test/ScriptObjectMirrorTest.java fails: assertEquals is ambiguous	PSU
JDK-8290695	19	Change milestone to fcs for releases: jdk-11.0.17, jdk-17.0.5, jdk-19.0.1	PSU
JDK-8290456	17	remove os::print_statistics()	PSU
JDK-8290417	17, 15	CDS cannot archive lamda proxy with useImplMethodHandle	PSU
JDK-8290246	17, 11	test fails "assert(init != __null) failed: initialization not found"	PSU
JDK-8290198	11	Shenandoah: a few Shenandoah tests failure after JDK-8214799 11u backport	PSU

OpenJFX Bug Fixes

The following table describes the OpenJFX changes implemented in this release.

OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
JDK-8285881	19, 17, 15, 13, 11, 8	Update WebKit to 614.1	CPU
JDK-8289587	19, 17, 15, 13, 11, 8	IllegalArgumentException: Color.rgb's red parameter (-16776961) expects color values 0-255	CPU
JDK-8289952	19, 17, 15, 13, 11, 8	Visual Studio libs msvcp140_1.dll and msvcp140_2.dll missing from build	CPU
JDK-8291040	19, 17, 15, 13, 11, 8	Upgrade WebKit	CPU
JDK-8291630	19, 17, 15, 13, 11, 8	Update attribution in webkit.md file	CPU
JDK-8266554	8	Change default macOS min version for aarch64 to 11.0	CPU
JDK-8292609	19, 17, 15, 13, 11, 8	Cherry-pick WebKit 614.1 stabilization fixes	CPU
JDK-8289751	17, 15, 13, 11	Multiple unit test failures after JDK-8251483	PSU
JDK-8289606	17, 15, 13, 11	CustomSecurityManagerTest fails on Mac M1	PSU
JDK-8289396	17, 15, 13, 11	Fix warnings: Null pointer access: The variable instance can only be null at this location	PSU
JDK-8289395	17, 15, 13, 11	Fix warnings: Varargs methods should only override or be overridden by other varargs methods	PSU
JDK-8289390	17, 15, 13, 11	Fix warnings: type parameter E is hiding the type E	PSU
JDK-8289381	17, 15, 13, 11	Fix warnings: The assignment to variable has no effect	PSU
JDK-8289255	17, 15, 13, 11	update Eclipse .classpath and other configuration files	PSU

OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
JDK-8289171	17, 15, 13, 11	Blank final field 'dialog' may not have been initialized in scene.control.Dialog:521	PSU
JDK-8288450	19, 17, 15, 13, 11, 8	Update attribution in gstreamer.md file	PSU
JDK-8288449	19, 17, 15, 13, 11, 8	Update attribution in glib.md file	PSU
JDK-8288137	17, 15, 13, 11	The set of available printers is not updated without application restart	PSU
JDK-8286774	17, 15, 13, 11	Replace openjdk.java.net with openjdk.org	PSU
JDK-8286678	19, 17, 15, 13, 11	Fix mistakes in FX API docs	PSU
JDK-8285253	17, 15, 13, 11	Update boot JDK to 18.0.1	PSU
JDK-8284676	17, 15, 13, 11	TreeTableView loses sort ordering when applied on empty table	PSU
JDK-8283402	17, 15, 13, 11	Update to gcc 11.2.0 on Linux	PSU
JDK-8283346	17, 15, 13, 11	Optimize observable ArrayList creation in FXCollections	PSU
JDK-8279297	17, 15, 13, 11	Remove Shape::setMode method	PSU
JDK-8277785	17, 15, 13, 11	ListView scrollTo jumps to wrong location when CellHeight is changed	PSU
JDK-8276056	17, 15, 13, 11	Control.skin.setSkin(Skin) fails to call dispose() on discarded Skin	PSU
JDK-8274771	17, 15, 13, 11	Map, FlatMap and OrElse fluent bindings for ObservableValue	PSU
JDK-8268225	17, 15, 13, 11	Support :focus-visible and :focus-within CSS pseudoclasses	PSU
JDK-8251483	17, 15, 13, 11	TableCell: NPE on modifying item's list	PSU

OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
JDK-8291906	19, 17, 15, 13, 11	Bindings.createXxxBinding inherit incorrect method docs	PSU
JDK-8291588	17, 15, 13, 11	Update boot JDK to 18.0.2	PSU
JDK-8291502	17, 15, 13, 11	Mouse or touch presses on a non-focusable region don't clear the focusVisible flag of the current focus owner	PSU
JDK-8290393	17, 15, 13, 11	Code sample in javadoc of ObservableValue flatMap is incorrect	PSU
JDK-8290348	17, 15, 13, 11	TreeTableView jumping to top	PSU
JDK-8290331	17, 15, 13, 11	Binding value left null when immediately revalidated in invalidation listener	PSU

Azul Zulu Bug Fixes

The following table describes the Azul Zulu bug fixes implemented in this release.

Issue ID	Azul Zulu Version	Synopsis	CPU/PSU
ZULU-38511	17, 11	All CRS modules should be loaded by boot class loader (again)	CPU
ZULU-40937	8, 7	Add vendor info to the release file	CPU
ZULU-40049	8, 7, 6	update external freetype to 2.12.1	CPU
ZULU-38740	11	Use system harfbuzz on Solaris	CPU
ZULU-38317	11	[REGRESSION] CPU test for JDK-8268506 started failing since 11.54	CPU
ZULU-40079	11	HarfBuzz breaks linux-arm32/64 builds	CPU
ZULU-40293	8	Zulu with CRIU crossbuild fails with 'undefined reference to JVM_Exit'	PSU
ZULU-40290	8	Solaris builds broken by JDK-8287132	PSU

Issue ID	Azul Zulu Version	Synopsis	CPU/PSU
ZULU-40078	17	Tests fail with "Internal Error (c1_LIRAssembler_arm.cpp:1487)"	PSU
ZULU-39528	15	Correct WX state changing in the jvmti code generation rules	PSU
ZULU-39458	8	Most of embedded platform crashes after 8233019	PSU
ZULU-39280	11, 8	backout fix for JDK-8288763	PSU
ZULU-38521	17, 11	Failure in java/lang/SecurityManager/CheckAccessClassInPackagePermissions.java - Module module com.azul.crs.client has not been granted ("java.lang.RuntimePermission" "accessClassInPackage.sun.net.www.protocol.http")	PSU
ZULU-38477	11	Failure in multiple AWT/Swing font tests - libfontmanager.so: symbol __cxa_vec_ctor: referenced symbol not found	PSU
ZULU-38460	11, 8	api.java.util.stream.DoubleStream.concat.ConcatParallel3: SIGSEGV on checkpoint	PSU
ZULU-38454	17, 11	Add one more package to grant codeBase "jrt:/com.azul.crs.client" in default.policy: "accessClassInPackage.sun.net.www.protocol.http"	PSU
ZULU-38301	17, 11, 8	Failure in several regression tests sun/security/krb5/auto/* and java/time/tck/java/time/chrono/* - Unexpected exit from test [exit code: -1073740791]	PSU
ZULU-37671	17, 11	Failure in 19 tests in serviceability/sa/ and sun/tools/jhsdb/ - Unable to deduce type of thread from address	PSU

Issue ID	Azul Zulu Version	Synopsis	CPU/PSU
ZULU-35379	8	[ppc] ShouldNotCall() error (atomic_linux_ppc.inline.hpp)	PSU
ZULU-34602	17, 11	Failure in vmTestbase/nsk/jdi/ReferenceType/instances/instances003/instances003.java - com.sun.jdi.ObjectCollectedException	PSU
ZULU-18413	15	Failure in vmTestbase/nsk/jvmti/RedefineClasses/StressRedefine/TestDescription.java - SIGBUS (0xa) at pc=0x00000001096f4048, pid=20199, tid=56323	PSU
ZULU-18388	15	Failure in test vmTestbase/vm/runtime/defmeth/scenarios/Stress_redefine/TestDescription.java - SIGBUS (0xa) at pc=0x00000001096f4048, pid=58599, tid=38403	PSU
ZULU-41097	13	Failure in java/security/Policy/SignedJar/SignedJarTest.java - RuntimeException: Check Permission :("java.lang.RuntimePermission" "setIO")	PSU
ZULU-6517	11	[C/R] a couple of SIGSEGVs on checkpoint for java.util.Collections tests	PSU
ZULU-40966	11	Fix 2 Address Sanitizer (ASAN) sscanf buffer overflows - any testcase	PSU
ZULU-40964	17, 11, 8	Processing of VM_METHOD_FIRST_CALLED at client side	PSU
ZULU-40934	8	Failure in 6 hotspot compiler tests - The stack size specified is too small, Specify at least 640k	PSU
ZULU-40511	8	[REGRESSION] Test sun/security/ssl/SSLEngineImpl/CloseInboundException.java fails since 8.66.0.14	PSU

Issue ID	Azul Zulu Version	Synopsis	CPU/PSU
ZULU-40300	8	Zulu CR fails with 'undefined symbol: _ZN13ServiceThread17is_service_threadEP6Thread'	PSU

Azul Zulu Builds of OpenJDK with JavaFX Bug Fixes

The following table describes the Azul ZuluFX bug fixes implemented in this release.

Issue ID	Azul Zulu Version	Synopsis	CPU/PSU
ZULU-40310	19, 17, 15, 13, 11, 8	WebKit: enable JS JIT for macos-aarch64	CPU
ZULU-38629	17, 15, 13, 11	unit tests for graphics and web modules fail with jdk19	PSU

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