



## Azul Zulu builds of OpenJDK

July 2024 Quarterly Update

Release Notes

Revision 1.1

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## Revision History

Revision	Date	Description
0.1	July 16, 2024	Initial version of the document.
0.2	July 16, 2024	Content changes.
1.0	July 16, 2024	Added CVE info.
1.1	July 17, 2024	Added changes to RootCA certificates.

## Release Details

This release is a July 2024 quarterly update release for Azul Zulu Builds of OpenJDK version 22, 21, 17, 11, 8, 7, and 6.

The following table describes which Azul Zulu versions are published with this release.

Azul Zulu Version (*)	Update Type (**)	JDK Version	Based on		JavaFX Version
			Azul Zulu Version	JDK Version	
22.32.15 (CA) 22.32.21 (CA) 22.32.16 (SA)	PSU	22.0.2+9	22.30	22.0.1+8	22.0.2+101
21.35.18 (SA)	CPU	21.0.3.0.101+4	21.34	21.0.3+9	22.0.1.0.101+100
21.36.17 (CA) 21.36.18 (SA)	PSU	21.0.4+7	21.35	21.0.3.0.101+4	22.0.2+101
17.51.16 (SA)	CPU	17.0.11.0.101+3	17.50	17.0.11+9	22.0.1.0.101+100
17.52.17 (CA) 17.52.18 (SA)	PSU	17.0.12+7	17.51	17.0.11.0.101+3	22.0.2+101
11.73.14 (SA)	CPU	11.0.23.0.101+2	11.72	11.0.23+9	19.0.7.0.101+100
11.74.15 (CA) 11.74.16 (SA)	PSU	11.0.24+8	11.73	11.0.23.0.101+2	19.0.8+101
8.79.0.14 (SA)	CPU	8u421-b02	8.78	8u412-b08	8u421-b01

8.80.0.17 (CA) 8.80.0.18 (SA)	PSU	8u422-b05	8.79	8u421-b02	8u422-b02
7.71.0.18 (SA)	CPU	7u431-b04	7.69	7u421-b02	N/A
6.65.0.16 (SA)	CPU	6b165	6.63	6b163	N/A

(\*) 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 doesn't have to include specific licenses and that such use doesn't 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.

## What's New

## Support for QNX 7.1 in Azul Zulu 8

QNX 7.0 is updated to QNX 7.1 for Azul Zulu 8. This configuration is tested on AM335x ARM Cortex-A8-based boards.

## SBOM for Azul Zulu Builds

Software Bill Of Material (SBOM) is now available for all Azul Zulu Builds of OpenJDK. These SBOMs are provided in the [CycloneDX format](#) and describe what was used next to the standard OpenJDK to build the Azul Zulu binaries. An SBOM is essential for the software supply chain compliance and security monitoring processes. SBOMs are available to Azul customers via the Azul Support team.

## CustomJSSE for Azul Zulu Builds 21

Starting from this release, Custom Security Providers are now available for Azul Zulu Builds of OpenJDK for Java 21. Previously, they were only available for Java 11 and 17. Custom Security Providers enable custom extensions to the standard Java SE security mechanisms (such as the [FIPS 140-2](#) compliance mode).

## New Property for ZIP64

Recent improvements related to the validation of the ZIP64 Extra Fields may trigger errors in ZipFileSystem during the processing of some archives that do not conform with the ZIP-specification. To provide backwards compatibility, and to allow you to suppress the validation errors, a new property is introduced:

```
jdk.compatibility.nio.zipfs.disableZip64ExtraFieldValidation
```

## Dependencies Updates for Zulu Builds with OpenJFX DEB Packages

The list of dependencies has been updated for the DEB packages of Azul Zulu Builds of OpenJDK With OpenJFX. This cleanup removes dependencies on transitional packages and allows Zulu FX DEB packages to install on Ubuntu 24.04:

- `libgl1-mesa-glx` removed.

- `libpango1.0-0` changed to `libpango-1.0-0`.
- `libgdk-pixbuf2.0-0` changed to `libgdk-pixbuf-2.0-0` | `libgdk-pixbuf2.0-0`.

## Changes to the RootCA Certificates

Following a trend led by the Mozilla and Chrome browsers regarding CA certificate policies (see this [conversation](#) and [message](#) for more details), the RootCA

`GLOBALTRUST 2020` from CA certs has been removed. If this impacts you, you can add the certificate back by running the following command:

```
keytool -importcert -file <my-crt-file-location> -cacerts -storepass  
changeit -noprompt -alias <my-alias>
```

## Notification of Changes

The following configuration changes are applied. That doesn't mean Azul doesn't accept support requests for Zulu on these platforms, you are still fully covered even if you keep using them. However, it means that testing on these platforms gets reduced. If you're still using this platform, please let us know at [support@azul.com](mailto:support@azul.com).

## Reduced Testing in this Release

In this release, Azul reduced the priority of testing Zulu for the following environment:

- JavaFX support on CentOS 6
- Wind River Platform

## Notification of Upcoming Changes

In the next release (October 2024 Quarterly Update Release), Azul will reduce the priority of testing Zulu for the following environments:

- RHEL 7
- Debian 10

## Toolchain Changes

### Toolchain Changes for Windows

Starting from July 2024, Azul Zulu Builds, version 6 and 7, for Windows are compiled with Microsoft Visual Studio 2017. This means that the builds will no longer include the `mscvr100.dll` library provided by the Microsoft Visual C++ 2010 SP1 Redistributable Package (x86/x64), which was included by default in earlier builds. Applications that depend on the presence of this dll in the JDK/JRE will fail to run with the new builds. There are two possible workarounds for this problem:

- Install Microsoft Visual C++ 2010 SP1 Redistributable Package.
- Rebuild the application using a modern version of Visual Studio.

### Toolchain Changes for macOS



The toolchain used to build Azul Zulu 8 and Azul Zulu 11 on macOS x86\_64 has been upgraded from Xcode 11.3.1 to Xcode 12.3.

## Supported Platforms

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

### Azul Zulu Builds of OpenJDK Without and With OpenJFX

Some versions of Azul Zulu are available in different packages for specific platforms, as indicated in this overview table with:

-  : Build of OpenJDK without OpenJFX.
-  : Build of OpenJDK without and with OpenJFX.

#### NOTE

The list of supported configurations and platform includes, but is not limited to, the table below. Don't hesitate to [contact Support](#) if you have issues with Azul Zulu Builds of OpenJDK on any other platform or configuration.



Operating System	Azul Zulu Version						
	6	7	8	11	17	21	22
Windows (x86 32/64-bit)							
Windows Server 2022	✓	✓	☑	☑	☑	☑ [1]	☑ [1]
Windows Server 2019	✓	✓	☑	☑	☑	☑ [1]	☑ [1]
Windows Server 2016	✓	✓	☑	☑	☑	☑ [1]	☑ [1]
Windows 11	✓	✓	☑	☑	☑	☑ [1]	☑ [1]
Windows 10	✓	✓	☑	☑	☑	☑ [1]	☑ [1]
Windows (ARM 64-bit)							
Windows 11	n/a	n/a	n/a	n/a	✓	✓	n/a
Linux (x86 32/64-bit)							
RHEL 9.x	n/a	✓	☑	☑	☑	☑ [1]	☑ [1]
RHEL 8.x	✓	✓	☑	☑	☑	☑ [1]	☑ [1]
RHEL 7.x	✓	✓	☑	☑	☑	☑ [1]	☑ [1]
SLES 15	✓	✓	☑	☑	☑	☑ [1]	☑ [1]
SLES 12	✓	✓	☑	☑	☑	☑ [1]	☑ [1]
CentOS Stream	✓	✓	☑	☑	☑	☑ [1]	☑ [1]

Ubuntu 22.04								[1]	[1]
Ubuntu 20.04								[1]	[1]
Ubuntu 18.04								[1]	[1]
Debian 12								[1]	[1]
Debian 11								[1]	[1]
Debian 10								[1]	[1]
Wind River 8.x	n/a			n/a	n/a	n/a	n/a	n/a	n/a
CoreOS	n/a						n/a	n/a	n/a
Alpine Linux 3.11 or later	n/a	n/a							
Amazon Linux 2023	n/a	n/a							
Linux (ARM 64-bit)									
Ubuntu 22.04	n/a	n/a							
Ubuntu 20.04	n/a	n/a							
Ubuntu 18.04	n/a	n/a							
Debian 12	n/a	n/a							
Debian 11	n/a	n/a							
Alpine Linux 3.11 or later	n/a	n/a							
Amazon Linux 2023	n/a	n/a							
Linux with kernel 3.10.x and glibc 2.23 [2] [3]	n/a	n/a			n/a	n/a	n/a	n/a	n/a
Linux (ARM 32-bit Hard-Float)									
Ubuntu 18.04 [4]	n/a	n/a				n/a	n/a	n/a	n/a

Raspbian 10 Buster [4]	n/a	n/a	✓	✓	✓	n/a	n/a
Raspbian 9 Stretch [4]	n/a	n/a	✓	✓	n/a	n/a	n/a
Linux with kernel 3.10.x and glibc 2.9 [4] [5]	n/a	n/a	✓	✓	n/a	n/a	n/a
Linux (ARM 32-bit Soft-Float) [6]							
Linux with kernel 2.6.34 and glibc 2.5 [7]	n/a	n/a	✓	✓	n/a	n/a	n/a
Debian 7 Wheezy [8]	n/a	n/a	✓	✓	n/a	n/a	n/a
Linux with kernel 3.10.x and glibc 2.9 [8]	n/a	n/a	✓	✓	n/a	n/a	n/a
Linux (MIPS 32-bit) [9]							
Linux with kernel 4.9.59 and glibc 2.9 [10]	n/a	n/a	✓	n/a	n/a	n/a	n/a
Linux (ppc64 Big Endian)							
Linux with kernel 3.8.13 and glibc 2.22 [11]	n/a	n/a	✓	n/a	n/a	n/a	n/a
Linux (ppc32 Hard-float and SPE)							
Linux with kernel 3.12.37 and glibc 2.20 [12]	n/a	n/a	✓	n/a	n/a	n/a	n/a
QNX							
QNX 7.0 ARMv7 32-bit Hard-Float ABI	n/a	n/a	✓	n/a	n/a	n/a	n/a
QNX 7.1 ARMv8 32-bit Hard-Float ABI	n/a	n/a	✓	n/a	n/a	n/a	n/a
MacOS (x86 64-bit)							
macOS 12+	n/a	✓	✓✓	✓✓	✓✓	✓✓	✓✓
MacOS (Apple Silicon)							
macOS 12+	n/a	n/a	✓✓	✓✓	✓✓	✓✓	✓✓



Solaris (x86 and Sparc)							
Solaris 11	n/a	✓	✓	✓	n/a	n/a	n/a
Solaris 10	n/a	✓	✓	n/a	n/a	n/a	n/a

1. Build of OpenJDK (with and without OpenJFX) only for 64-bit.
2. Bundles with the Checkpoint/Restore (with the `criu` suffix) functionality require kernel 4.4.0+.
3. Bundles compiled with GCC 9 (with the `gcc9` suffix) require glibc 2.29.
4. 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.
5. Bundles with the CRaM (with the `cr` suffix) functionality require glibc 2.13.
6. Bundles with the C1 compiler use FPU, if it is present and available, to speed up floating point operations. Bundles with both C1 and C2 compilers require FPU.
7. Bundles with the C1 compiler. Tested on ARMv5 hardware.
8. Bundles with the C1 compiler were tested on ARMv6 and ARMv7 hardware. Bundles with both C1 and C2 compilers were tested on ARMv7 hardware.
9. MIPS32r2 ISA, Big Endian, FPU in 32-bit mode or equivalent emulation.
10. Linux soft-float O32 MIPS ABI
11. Bundles for this platform were tested on QorIQ® T4240-RDB.
12. Hard-Float EABI bundles were tested on QorIQ® T1024RDB. SPE ABI bundles were tested on NXP® P2020RDB.

## Azul Zulu Builds of OpenJDK With CRaC

### NOTE

Currently, CRaC is only available for the specified Linux systems, in version 17, 21, and 22 of Azul Zulu Builds of OpenJDK. For development, you can use the CRaC Java library on any platform and simulate the CRaC functionality.

-  : Build of OpenJDK with full CRaC support.
-  : Build of OpenJDK with CRaC support for development purposes. These provide a simulated checkpoint/restore mechanism to be used for development and testing.

Operating System	Azul Zulu Version					
	17		21		22	
	x86 64-bit	ARM 64-bit	x86 64-bit	ARM 64-bit	x86 64-bit	ARM 64-bit
Linux	✓	✓	✓	✓	✓	✓
Alpine Linux 3.11+	✓	✓	✓	✓	✓	✓
Windows	✓	n/a	✓	n/a	✓	n/a
macOS	✓	✓	✓	✓	✓	✓

## IANA Time Zone Data Version

This release of Azul Zulu comes with IANA Time Zone Database version **2024a**.

## Known Issue

### Wildcard Expansion in Zulu 6

In Zulu 6, wildcard expansion for command-line arguments behaves differently because of an upgrade of the underlying Microsoft Windows library and an incompatible change in Visual Studio 2017 with `setargv.obj`. For example, for an empty current directory, the asterisk (\*) wasn't expanded before, but now gets expanded to an empty set of arguments.

## 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
<a href="#">CVE-2024-21147</a>	Hotspot	Multiple	Yes	7.4	Network	High	None	None	Unchanged	High	High	None	22, 21, 17, 11, 8	Note 1
<a href="#">CVE-2024-21140</a>	Hotspot	Multiple	Yes	4.8	Network	High	None	None	Unchanged	Low	Low	None	22, 21, 17, 11, 8, 7, 6	Note 1
<a href="#">CVE-2024-21145</a>	2D	Multiple	Yes	4.8	Network	High	None	None	Unchanged	Low	Low	None	22, 21, 17, 11, 8, 7	Note 1
<a href="#">CVE-2024-21131</a>	Hotspot	Multiple	Yes	3.7	Network	High	None	None	Unchanged	None	Low	None	22, 21, 17, 11, 8, 7, 6	Note 1
<a href="#">CVE-2024-21138</a>	Hotspot	Multiple	Yes	3.7	Network	High	None	None	Unchanged	None	None	Low	22, 21, 17, 11, 8, 7, 6	Note 1
<a href="#">CVE-2024-21144</a>	Concurrency	Multiple	Yes	3.7	Network	High	None	None	Unchanged	None	None	Low	11, 8, 7, 6	Note 2
<a href="#">CVE-2024-27983</a>	Oracle GraalVM for JDK: Node (Node.js)	HTTP/2	Yes	8.2	Network	Low	None	None	Unchanged	None	Low	High	None	

### Notes:

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

## 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
<a href="#">JDK-8320097</a>	6, 7, 8, 11, 17, 21, 22	Improve Image transformations	CPU,PSU
<a href="#">JDK-8323390</a>	6, 7, 8, 11, 17, 21, 22	Enhance mask blit functionality	CPU,PSU
<a href="#">JDK-8325345</a>	8, 11, 17, 21, 22	Enhance Thread handling	CPU,PSU
<a href="#">JDK-8325600</a>	6, 7, 8, 11, 17, 21, 22	Better symbol storage	CPU,PSU
<a href="#">JDK-8327413</a>	11, 17, 21, 22	Enhance compilation efficiency	CPU,PSU

## OpenJDK Fixes and Enhancements

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

OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
<a href="#">JDK-7147740</a>	6	add assertions to check stack alignment on VM entry from generated code (x64)	CPU,PSU
<a href="#">JDK-7157073</a>	6	G1: type change size_t to uint for region counts / indexes	CPU,PSU
<a href="#">JDK-8026708</a>	6	guarantee(codelet_size > 0 && (size_t)codelet_size > 2*K) failed: not enough space for interpreter generation	CPU,PSU
<a href="#">JDK-8028539</a>	6, 7	Endless loop in native code of sun.java2d.loops.ScaledBlit	CPU,PSU
<a href="#">JDK-8043264</a>	6, 7	hdsis library not picked up correctly on expected paths	CPU,PSU

OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
<a href="#">JDK-8043301</a>	6	Duplicate definitions in vm/runtime/sharedRuntimeTrans.cpp versus math.h in VS2013	CPU,PSU
<a href="#">JDK-8081202</a>	6, 7	Hotspot compile warning: "Invalid suffix on literal; C++11 requires a space between literal and identifier"	CPU,PSU
<a href="#">JDK-8150688</a>	6, 7	Fix os_windows siglabel	CPU,PSU
<a href="#">JDK-8196880</a>	6, 7	VS2017 Addition of Global Delete Operator with Size Parameter Conflicts with Arena's Chunk Provided One	CPU,PSU
<a href="#">JDK-8196882</a>	6, 7	VS2017 Hotspot Defined vsnprintf Function Causes C2084 Already Defined Compilation Error	CPU,PSU
<a href="#">JDK-8196884</a>	6, 7	VS2017 Multiple Type Cast Conversion Compilation Errors	CPU,PSU
<a href="#">JDK-8197864</a>	6	VS2017 (C4334) Result of 32-bit Shift Implicitly Converted to 64 bits	CPU,PSU
<a href="#">JDK-8197868</a>	6, 7	VS2017 (C2065) 'timezone': Undeclared Identifier in share/runtime/os.cpp	CPU,PSU
<a href="#">JDK-8202076</a>	6, 7	test/jdk/java/io/File/WinSpecialFiles.java on windows with VS2017	CPU,PSU
<a href="#">JDK-8204872</a>	6, 7	[8u] VS2017: more instances of "error C3680: cannot concatenate user-defined string literals with mismatched literal suffix identifiers"	CPU,PSU
<a href="#">JDK-8205440</a>	6	[8u] DWORD64 required for later Windows compilers	CPU,PSU
<a href="#">JDK-8205677</a>	6, 7	[8u] casts and type change for 8u to enable later Windows compilers	CPU,PSU



OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
<a href="#">JDK-8206454</a>	6, 7	[8u] os::current_stack_pointer() fails to compile on later Windows compilers (warning C4172: returning address of local variable)	CPU,PSU
<a href="#">JDK-8211124</a>	6, 7	HotSpot vm_version.cpp should recognise updated VS2017	CPU,PSU
<a href="#">JDK-8211714</a>	6, 7	Need to update vm_version.cpp to recognise VS2017 minor versions	CPU,PSU
<a href="#">JDK-8235243</a>	6, 7	handle VS2017 15.9 and VS2019 in abstract_vm_version	CPU,PSU
<a href="#">JDK-8235325</a>	7	build failure on Linux after 8235243	CPU,PSU
<a href="#">JDK-8310923</a>	11	Refactor Currency tests to use JUnit	CPU,PSU
<a href="#">JDK-8334653</a>	11, 17, 21	ISO 4217 Amendment 177 Update	CPU,PSU
<a href="#">JDK-7001133</a>	21	OutOfMemoryError by CustomMediaSizeName implementation	PSU
<a href="#">JDK-8015739</a>	11, 17	Background of JInternalFrame is located out of JInternalFrame	PSU
<a href="#">JDK-8025439</a>	8	[TEST BUG] [macosx] PrintServiceLookup.lookupPrintServices doesn't work properly since jdk8b105	PSU
<a href="#">JDK-8042380</a>	11, 17	Test javax/swing/JFileChooser/4524490/bug4524490.java fails with InvocationTargetException	PSU
<a href="#">JDK-8061729</a>	11	Update java/net tests to eliminate dependency on sun.net.www.MessageHeader and some other internal APIs	PSU
<a href="#">JDK-8069389</a>	8	CompilerOracle prefix wildcarding is broken for long strings	PSU
<a href="#">JDK-8158048</a>	11	Fix failure message from jtreg gtest wrapper	PSU

OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
<a href="#">JDK-8159454</a>	8	[TEST_BUG] javax/swing/ToolTipManager/7123767/bug7123767.java: number of checked graphics configurations should be limited	PSU
<a href="#">JDK-8159690</a>	8	[TESTBUG] Mark headful tests with @key headful.	PSU
<a href="#">JDK-8159927</a>	11, 17, 21	Add a test to verify JMOD files created in the images do not have debug symbols	PSU
<a href="#">JDK-8163229</a>	17	several regression tests have a main method that is never executed	PSU
<a href="#">JDK-8163921</a>	11, 17	URLConnection default Accept header is malformed according to HTTP/1.1 RFC	PSU
<a href="#">JDK-8177107</a>	17	Reduce memory footprint of java.lang.reflect.Constructor/Method	PSU
<a href="#">JDK-8185862</a>	17, 21, 22	AWT Assertion Failure in ::GetDIBits(hBMDC, hBM, 0, 1, 0, gpBitmapInfo, 0) 'awt_Win32GraphicsDevice.cpp', at line 185	PSU
<a href="#">JDK-8187759</a>	11, 17, 21, 22	Background not refreshed when painting over a transparent JFrame	PSU
<a href="#">JDK-8198321</a>	8	javax/swing/JEditorPane/5076514/bug5076514.java fails	PSU
<a href="#">JDK-8203691</a>	8	[TESTBUG] Test /runtime/containers/cgroup/PlainRead.java fails	PSU
<a href="#">JDK-8213714</a>	17	AttachingConnector/attach/attach001 failed due to "bind failed: Address already in use"	PSU
<a href="#">JDK-8214400</a>	11	Update hotspot application/jcstress jtreg tests wrappers to use jcstress 0.5	PSU
<a href="#">JDK-8218917</a>	11	KeyEvent.getModifiers() returns inconsistent values for ALT keys	PSU
<a href="#">JDK-8220202</a>	11	Simplify/standardize method naming for HtmlTree	PSU

OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
<a href="#">JDK-8223696</a>	17, 21	java/net/httpclient/MaxStreams.java failed with didn't finish within the time-out	PSU
<a href="#">JDK-8235834</a>	8	IBM-943 charset encoder needs updating	PSU
<a href="#">JDK-8238169</a>	22	BasicDirectoryModel getDirectories and DoChangeContents.run can deadlock	PSU
<a href="#">JDK-8239965</a>	8	XMLEncoder/Test4625418.java fails due to "Error: Cp943 - can't read properly"	PSU
<a href="#">JDK-8240756</a>	8	[macos] SwingSet2:TableDemo:Printed Japanese characters were garbled	PSU
<a href="#">JDK-8241951</a>	11	SA core file tests failed to find core file for signed binaries on OSX 10.15	PSU
<a href="#">JDK-8243010</a>	11	Test support: Customizable Hex Printer	PSU
<a href="#">JDK-8248194</a>	11	Need better support for running SA tests on core files	PSU
<a href="#">JDK-8253980</a>	11	javax/swing/plaf/synth/7158712/bug7158712.java fails on windows	PSU
<a href="#">JDK-8255031</a>	11	Update java/util/prefs/AddNodeChangeListener.java to report more failure info	PSU
<a href="#">JDK-8256152</a>	8	tests fail because of ambiguous method resolution	PSU
<a href="#">JDK-8256660</a>	11, 17	Disable DTLS 1.0	PSU
<a href="#">JDK-8258855</a>	8	Two tests sun/security/krb5/auto/ReplayCacheTestProc.java and ReplayCacheTestProcWithMD5.java failed on OL8.3	PSU
<a href="#">JDK-8259866</a>	21	two java.util tests failed with "IOException: There is not enough space on the disk"	PSU

OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
<a href="#">JDK-8260540</a>	17	serviceability/jdwp/AllModulesCommandTest.java failed with "Debuggee error: 'ERROR: transport error 202: bind failed: Address already in use'"	PSU
<a href="#">JDK-8261404</a>	11	Class.getReflectionFactory() is not thread-safe	PSU
<a href="#">JDK-8261433</a>	22	Better pkcs11 performance for libpkcs11:C_EncryptInit/libpkcs11:C_DecryptInit	PSU
<a href="#">JDK-8262017</a>	8	C2: assert(n != __null) failed: Bad immediate dominator info.	PSU
<a href="#">JDK-8263659</a>	11	Reflow GTestResultParser for better readability	PSU
<a href="#">JDK-8263940</a>	11, 17	NPE when creating default file system when default file system provider is packaged as JAR file on class path	PSU
<a href="#">JDK-8264152</a>	11	javax/net/ssl/DTLS/RespondToRetransmit.java timed out	PSU
<a href="#">JDK-8264322</a>	17	Generate CDS archive when creating custom JDK image	PSU
<a href="#">JDK-8266242</a>	17, 21	java/awt/GraphicsDevice/CheckDisplayModes.java failing on macOS 11 ARM	PSU
<a href="#">JDK-8267796</a>	11, 17	vmTestbase/nsk/jvmti/scenarios/hotswap/HS201/hs201t002/TestDescription.java fails with NoClassDefFoundError	PSU
<a href="#">JDK-8267938</a>	11	(sctp) SCTP channel factory methods should check platform support	PSU
<a href="#">JDK-8268916</a>	8	Tests for AffirmTrust roots	PSU
<a href="#">JDK-8268974</a>	11, 17	GetJREPath() JLI function fails to locate libjava.so if not standard Java launcher is used	PSU
<a href="#">JDK-8269258</a>	11	java/net/httpclient/ManyRequestsLegacy.java failed with connection timeout	PSU

OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
<a href="#">JDK-8269914</a>	17	Factor out heap printing for G1 young and full gc	PSU
<a href="#">JDK-8270018</a>	17	Add scoped object for g1 young gc JFR notification	PSU
<a href="#">JDK-8270199</a>	11	Most SA tests are skipped on macosx-aarch64 because all executables are signed	PSU
<a href="#">JDK-8272315</a>	17	Improve assert_different_registers	PSU
<a href="#">JDK-8272651</a>	17	G1 heap region info print order changed by JDK-8269914	PSU
<a href="#">JDK-8272916</a>	17	Copyright year was modified unintentionally in jlink.properties and ImagePluginStack.java	PSU
<a href="#">JDK-8273153</a>	11, 17	Consolidate file_exists into os:file_exists	PSU
<a href="#">JDK-8273774</a>	17	CDSPluginTest should only expect classes_nocoops.jsa exists on supported 64-bit platforms	PSU
<a href="#">JDK-8273831</a>	11	PrintServiceLookup spawns 2 threads in the current classloader, getting orphaned	PSU
<a href="#">JDK-8273979</a>	17	move some os time related functions to os_posix for POSIX platforms	PSU
<a href="#">JDK-8275334</a>	17	Move class loading Events to a separate section in hs_err files	PSU
<a href="#">JDK-8275868</a>	17	ciReplay: Inlining fails with "unloaded signature classes" due to wrong protection domains	PSU
<a href="#">JDK-8276125</a>	11	RunThese24H.java SIGSEGV in JfrThreadGroup::thread_group_id	PSU
<a href="#">JDK-8276227</a>	17	ciReplay: SIGSEGV if classfile for replay compilation is not present after JDK-8275868	PSU
<a href="#">JDK-8276932</a>	17	G1: Annotate methods with override explicitly in g1CollectedHeap.hpp	PSU

OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
<a href="#">JDK-8278067</a>	8	Make HttpURLConnection default keep alive timeout configurable	PSU
<a href="#">JDK-8278527</a>	21	java/util/concurrent/tck/JSR166TestCase.java fails nanoTime test	PSU
<a href="#">JDK-8278893</a>	17	Parallel: Remove GCWorkerDelayMillis	PSU
<a href="#">JDK-8280030</a>	17	[REDO] Parallel: More precise boundary in ObjectStartArray::object_starts_in_range	PSU
<a href="#">JDK-8280056</a>	17, 21	gtest/LargePageGtests.java#use-large-pages failed "os.release_one_mapping_multi_commits_vm"	PSU
<a href="#">JDK-8280113</a>	17	(dc) DatagramSocket.receive does not always throw when the channel is closed	PSU
<a href="#">JDK-8280377</a>	17	MethodHandleProxies does not correctly invoke default methods with varargs	PSU
<a href="#">JDK-8280546</a>	11, 17	Remove hard-coded 127.0.0.1 loopback address	PSU
<a href="#">JDK-8280835</a>	17	jdk/javadoc/tool/CheckManPageOptions.java depends on source hierarchy	PSU
<a href="#">JDK-8281507</a>	11	Two javac tests have bad jtreg <code>@clean</code> tags	PSU
<a href="#">JDK-8281658</a>	17, 21	Add a security category to the java -XshowSettings option	PSU
<a href="#">JDK-8282017</a>	11	sun/net/www/protocol/https/HttpsURLConnection/B6216082.java fails with "SocketException: Unexpected end of file from server"	PSU
<a href="#">JDK-8282094</a>	17	[REDO] Parallel: Refactor PSCardTable::scavenge_contents_parallel	PSU
<a href="#">JDK-8283349</a>	11, 17	Robustness improvements to java/util/prefs/AddNodeChangeListener.jar	PSU

OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
<a href="#">JDK-8285452</a>	17	Add a new test library API to replace a file content using FileUtils.java	PSU
<a href="#">JDK-8286045</a>	17	Use ForceGC for cleaner test cases	PSU
<a href="#">JDK-8286311</a>	17	remove boilerplate from use of runTests	PSU
<a href="#">JDK-8286705</a>	11	GCC 12 reports use-after-free potential bugs	PSU
<a href="#">JDK-8286740</a>	17	JFR: Active Setting event emitted incorrectly	PSU
<a href="#">JDK-8286781</a>	17	Replace the deprecated/obsolete gethostbyname and inet_addr calls	PSU
<a href="#">JDK-8288936</a>	21	Wrong lock ordering writing G1HeapRegionTypeChange JFR event	PSU
<a href="#">JDK-8288989</a>	21	Make tests not depend on the source code	PSU
<a href="#">JDK-8289401</a>	17	Add dump output to TestRawRSACipher.java	PSU
<a href="#">JDK-8289643</a>	17	File descriptor leak with ProcessBuilder.startPipeline	PSU
<a href="#">JDK-8290126</a>	17	Add a check in JavadocTester for "javadoc should not crash"	PSU
<a href="#">JDK-8290203</a>	11	ProblemList vmTestbase/nsk/jvmti/scenarios/capability/CM03/cm03t001/TestDescription.java on linux-all	PSU
<a href="#">JDK-8290885</a>	17	java/lang/ProcessBuilder/PipelineLeaksFD.java fail: More or fewer pipes than expected	PSU
<a href="#">JDK-8290901</a>	17	Reduce use of -source in langtools tests	PSU
<a href="#">JDK-8291226</a>	8	Create Test Cases to cover scenarios for JDK-8278067	PSU
<a href="#">JDK-8291637</a>	8	HttpClient default keep alive timeout not followed if server sends invalid value	PSU

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<a href="#">JDK-8291638</a>	8	Keep-Alive timeout of 0 should close connection immediately	PSU
<a href="#">JDK-8291753</a>	17	Add JFR event for GC CPU Time	PSU
<a href="#">JDK-8293069</a>	21	Make -XX:+Verbose less verbose	PSU
<a href="#">JDK-8293562</a>	8	KeepAliveCache Blocks Threads while Closing Connections	PSU
<a href="#">JDK-8293563</a>	11	[macos-aarch64] SA core file tests failing with sun.jvm.hotspot.oops.UnknownOopException	PSU
<a href="#">JDK-8293850</a>	21	need a largest_committed metric for each category of NMT's output	PSU
<a href="#">JDK-8293887</a>	11	AArch64 build failure with GCC 12 due to maybe-uninitialized warning in libfdlibm k_rem_pio2.c	PSU
<a href="#">JDK-8294137</a>	11, 17	Review running times of java.math tests	PSU
<a href="#">JDK-8294156</a>	11, 17	Allow PassFailJFrame.Builder to create test UI	PSU
<a href="#">JDK-8294699</a>	17, 21	Launcher causes lingering busy cursor	PSU
<a href="#">JDK-8294985</a>	21	SSL Engine throws IAE during parsing of X500Principal	PSU
<a href="#">JDK-8295026</a>	17	Remove unused fields in StyleSheet	PSU
<a href="#">JDK-8295111</a>	21, 22	dpkg appears to have problems resolving symbolically linked native libraries	PSU
<a href="#">JDK-8295343</a>	11, 17	sun/security/pkcs11 tests fail on Linux RHEL 8.6 and newer	PSU
<a href="#">JDK-8295944</a>	17	Move the Http2TestServer and related classes into a package of its own	PSU
<a href="#">JDK-8296137</a>	17	diags-examples.xml is broken	PSU



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<a href="#">JDK-8296190</a>	17	TestMD5Intrinsics and TestMD5MultiBlockIntrinsics don't test the intrinsics	PSU
<a href="#">JDK-8296610</a>	17	java/net/URLConnection/SetAuthenticator/HTTTPSetAuthenticatorTest.java failed with "BindException: Address already in use: connect"	PSU
<a href="#">JDK-8297082</a>	11, 17	Remove sun/tools/jhsdb/BasicLauncherTest.java from problem list	PSU
<a href="#">JDK-8297292</a>	17	java/nio/channels/FileChannel/FileExtensionAndMap.java is too slow	PSU
<a href="#">JDK-8297445</a>	17	PPC64: Represent Registers as values	PSU
<a href="#">JDK-8297449</a>	11, 17	Update JInternalFrame Metal Border code	PSU
<a href="#">JDK-8297645</a>	17	Drop the test/jdk/java/net/httpclient/reactivestreams-tck-tests/TckDriver.java test	PSU
<a href="#">JDK-8297695</a>	17	Fix typos in test/langtools files	PSU
<a href="#">JDK-8297798</a>	11	Timeout with DTLSOverDatagram test template	PSU
<a href="#">JDK-8298413</a>	17	[s390] CPUInfoTest fails due to uppercase feature string	PSU
<a href="#">JDK-8298939</a>	17	Refactor open/test/jdk/javax/rmi/ssl/SSLSocketParametersTest.sh to jtreg java test	PSU
<a href="#">JDK-8299023</a>	11, 17, 21	TestPLABResize.java and TestPLABPromotion.java are failing intermittently	PSU
<a href="#">JDK-8299677</a>	11	Formatter.format might take a long time to format an integer or floating-point	PSU
<a href="#">JDK-8299858</a>	11, 17	[Metrics] Swap memory limit reported incorrectly when too large	PSU

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<a href="#">JDK-8301183</a>	17, 21	(zipfs) jdk/jdk/nio/zipfs/TestLocOffsetFromZip64EF.java failing with ZipException:R0 on OL9	PSU
<a href="#">JDK-8301381</a>	17	Verify DTLS 1.0 cannot be negotiated	PSU
<a href="#">JDK-8302069</a>	11, 17	javax/management/remote/mandatory/notif/Notif ReconnectDeadlockTest.java update	PSU
<a href="#">JDK-8302512</a>	11, 17	Update IANA Language Subtag Registry to Version 2023-02-14	PSU
<a href="#">JDK-8302907</a>	17	[PPC64] Use more constexpr in class Register	PSU
<a href="#">JDK-8303457</a>	17	Introduce convenience test library APIs for creating test servers for tests in test/jdk/java/net/httpclient	PSU
<a href="#">JDK-8303466</a>	8, 11, 17	C2: failed: malformed control flow. Limit type made precise with MaxL/MinL	PSU
<a href="#">JDK-8303525</a>	21	Refactor/cleanup open/test/jdk/javax/rmi/ssl/SSLSocketParameters Test.java	PSU
<a href="#">JDK-8303773</a>	21	Replace "main.wrapper" with "test.thread.factory" property in test code	PSU
<a href="#">JDK-8303891</a>	21	Speed up Zip64SizeTest using a small ZIP64 file	PSU
<a href="#">JDK-8303959</a>	21	tools/jpackage/share/RuntimePackageTest.java fails with java.lang.AssertionError missing files	PSU
<a href="#">JDK-8303972</a>	17, 21	(zipfs) Make test/jdk/jdk/nio/zipfs/TestLocOffsetFromZip64EF. java independent of the zip command line	PSU
<a href="#">JDK-8304074</a>	8	[JMX] Add an approximation of total bytes allocated on the Java heap by the JVM	PSU
<a href="#">JDK-8304761</a>	11, 17	Update IANA Language Subtag Registry to Version 2023-03-22	PSU

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<a href="#">JDK-8304839</a>	21	Move TestScaffold.main() to the separate class DebugeeWrapper	PSU
<a href="#">JDK-8304927</a>	17	Update java/net/httpclient/BasicAuthTest.java to check basic auth over HTTP/2	PSU
<a href="#">JDK-8305072</a>	22	Win32ShellFolder2.compareTo is inconsistent	PSU
<a href="#">JDK-8305169</a>	17	java/security/cert/CertPathValidator/OCSP/GetAndPostTests.java – test server didn't start in timely manner	PSU
<a href="#">JDK-8305645</a>	11, 17, 21	System Tray icons get corrupted when Windows primary monitor changes	PSU
<a href="#">JDK-8305819</a>	17	LogConfigurationTest intermittently fails on AArch64	PSU
<a href="#">JDK-8305874</a>	11, 17	Open source AWT Key, Text Event related tests	PSU
<a href="#">JDK-8305931</a>	11, 17, 21	jdk/jfr/jcmd/TestJcmdDumpPathToGCRoots.java failed with "Expected chains but found none"	PSU
<a href="#">JDK-8305942</a>	11, 17	Open source several AWT Focus related tests	PSU
<a href="#">JDK-8305943</a>	11, 17	Open source few AWT Focus related tests	PSU
<a href="#">JDK-8305962</a>	11	update jcstress to 0.16	PSU
<a href="#">JDK-8306031</a>	11, 17	Update IANA Language Subtag Registry to Version 2023-04-13	PSU
<a href="#">JDK-8306040</a>	17, 21	HttpResponseInputStream.available() returns 1 on empty stream	PSU
<a href="#">JDK-8306067</a>	11, 17	Open source AWT Graphics, GridBagLayout related tests	PSU
<a href="#">JDK-8306634</a>	11, 17	Open source AWT Event related tests	PSU
<a href="#">JDK-8306714</a>	11, 17	Open source few Swing event and AbstractAction tests	PSU

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<a href="#">JDK-8306838</a>	11, 17	GetGraphicsTest needs to be headful	PSU
<a href="#">JDK-8306941</a>	11	Open source several datatransfer and dnd AWT tests	PSU
<a href="#">JDK-8307083</a>	11	Open source some drag and drop tests 3	PSU
<a href="#">JDK-8307411</a>	17	Test java/foreign/channels/TestAsyncSocketChannels.java failed: IllegalStateException: Already closed	PSU
<a href="#">JDK-8307423</a>	17	[s390x] Represent Registers as values	PSU
<a href="#">JDK-8307955</a>	11	Prefer to PTRACE_GETREGSET instead of PTRACE_GETREGS in method 'ps_proc.c::process_get_lwp_regs'	PSU
<a href="#">JDK-8308021</a>	11, 17	Update IANA Language Subtag Registry to Version 2023-05-11	PSU
<a href="#">JDK-8308144</a>	21	Uncontrolled memory consumption in SSLFlowDelegate.Reader	PSU
<a href="#">JDK-8308453</a>	21	Convert JKS test keystores in test/jdk/javax/net/ssl/etc to PKCS12	PSU
<a href="#">JDK-8309142</a>	21	Refactor test/langtools/tools/javac/versions/Versions.java	PSU
<a href="#">JDK-8309218</a>	22	java/util/concurrent/locks/Lock/OOMEInAQS.java still times out with ZGC, Generational ZGC, and SerialGC	PSU
<a href="#">JDK-8309409</a>	17	Update HttpInputStreamTest and BodyProcessorInputStreamTest to use hg.openjdk.org	PSU
<a href="#">JDK-8309527</a>	17	Improve test proxy performance	PSU
<a href="#">JDK-8309630</a>	17	Clean up tests that reference deploy modules	PSU

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<a href="#">JDK-8309752</a>	21	com/sun/jdi/SetLocalWhileThreadInNative.java fails with virtual test thread factory due to OpaqueFrameException	PSU
<a href="#">JDK-8309757</a>	21	com/sun/jdi/ReferrersTest.java fails with virtual test thread factory	PSU
<a href="#">JDK-8309763</a>	17, 21	Move tests in test/jdk/sun/misc/URLClassPath directory to test/jdk/jdk/internal/loader	PSU
<a href="#">JDK-8309871</a>	21	jdk/jfr/api/consumer/recordingstream/TestSetEndTime.java timed out	PSU
<a href="#">JDK-8309890</a>	17, 21	TestStringDeduplicationInterned.java waits for the wrong condition	PSU
<a href="#">JDK-8310031</a>	17	Parallel: Implement better work distribution for large object arrays in old gen	PSU
<a href="#">JDK-8310070</a>	21	Test: javax/net/ssl/DTLS/DTLSWontNegotiateV10.java timed out	PSU
<a href="#">JDK-8310072</a>	22	JComboBox/DisabledComboBoxFontTestAuto: Enabled and disabled ComboBox does not match in these LAFs: GTK+	PSU
<a href="#">JDK-8310228</a>	21	Improve error reporting for uncaught native exceptions on Windows	PSU
<a href="#">JDK-8310234</a>	21	Refactor Locale tests to use JUnit	PSU
<a href="#">JDK-8310355</a>	21	Move the stub test from initialize_final_stubs() to test/hotspot/gtest	PSU
<a href="#">JDK-8310380</a>	11	Handle problems in core-related tests on macOS when codesign tool does not work	PSU
<a href="#">JDK-8310513</a>	21, 22	[s390x] Intrinsicify recursive ObjectMonitor locking	PSU
<a href="#">JDK-8310731</a>	21	Configure a javax.net.ssl.SNIMatcher for the HTTP/1.1 test servers in java/net/httpclient tests	PSU

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<a href="#">JDK-8310818</a>	11, 17, 21	Refactor more Locale tests to use JUnit	PSU
<a href="#">JDK-8310913</a>	21	Move ReferencedKeyMap to jdk.internal so it may be shared	PSU
<a href="#">JDK-8311792</a>	21	java/net/httpclient/ResponsePublisher.java fails intermittently with AssertionError: Found some outstanding operations	PSU
<a href="#">JDK-8311823</a>	21	JFR: Uninitialized EventEmitter::_thread_id field	PSU
<a href="#">JDK-8311881</a>	21	jdk/javax/swing/ProgressMonitor/ProgressTest.java does not show the ProgressMonitorInputStream all the time	PSU
<a href="#">JDK-8311893</a>	17	Interactive component with ARIA role 'tabpanel' does not have a programmatically associated name	PSU
<a href="#">JDK-8311964</a>	17, 21	Some jtreg tests failing on x86 with error 'unrecognized VM options' (C2 flags)	PSU
<a href="#">JDK-8312014</a>	21	[s390x] TestSigInfoInHsErrFile.java Failure	PSU
<a href="#">JDK-8312194</a>	11, 17, 21	test/hotspot/jtreg/applications/ctw/modules/jdk_crypto_ec.java cannot handle empty modules	PSU
<a href="#">JDK-8312218</a>	21	Print additional debug information when hitting assert(in_hash)	PSU
<a href="#">JDK-8312320</a>	17, 21	Remove javax/rmi/ssl/SSLSocketParametersTest.sh from ProblemList	PSU
<a href="#">JDK-8312383</a>	11, 17, 21, 22	Log X509ExtendedKeyManager implementation class name in TLS/SSL connection	PSU
<a href="#">JDK-8312498</a>	21	Thread::getState and JVM TI GetThreadState should return TIMED_WAITING virtual thread is timed parked	PSU
<a href="#">JDK-8312777</a>	21	notifyJvmtiMount before notifyJvmtiUnmount	PSU

OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
<a href="#">JDK-8312916</a>	17	Remove remaining usages of -Xdebug from test/hotspot/jtreg	PSU
<a href="#">JDK-8313081</a>	8	MonitoringSupport_lock should be unconditionally initialized after 8304074	PSU
<a href="#">JDK-8313206</a>	11	PKCS11 tests silently skip execution	PSU
<a href="#">JDK-8313307</a>	17	java/util/Formatter/Padding.java fails on some Locales	PSU
<a href="#">JDK-8313394</a>	21	Array Elements in OldObjectSample event has the incorrect description	PSU
<a href="#">JDK-8313612</a>	21	Use JUnit in lib-test/jdk tests	PSU
<a href="#">JDK-8313702</a>	11, 17, 21	Update IANA Language Subtag Registry to Version 2023-08-02	PSU
<a href="#">JDK-8313710</a>	21	jcmod: typo in the documentation of JFR.start and JFR.dump	PSU
<a href="#">JDK-8313899</a>	21	JVMCI exception Translation can fail in TranslatedException.<clinit>	PSU
<a href="#">JDK-8314164</a>	22	java/net/URLConnection/URLConnectionExpectContinueTest.java fails intermittently in timeout	PSU
<a href="#">JDK-8314220</a>	11	Configurable InlineCacheBuffer size	PSU
<a href="#">JDK-8314275</a>	22	Incorrect stepping in switch	PSU
<a href="#">JDK-8314283</a>	11, 17	Support for NSS tests on aarch64 platforms	PSU
<a href="#">JDK-8314552</a>	11	Fix javadoc tests to work with jtreg 7	PSU
<a href="#">JDK-8314573</a>	21	G1: Heap resizing at Remark does not take existing eden regions into account	PSU
<a href="#">JDK-8314824</a>	21	Fix serviceability/jvmti/8036666/GetObjectLockCount.java to use vm flags	PSU

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<a href="#">JDK-8314828</a>	21	Mark 3 jcmd command-line options test as vm.flagless	PSU
<a href="#">JDK-8314830</a>	11	runtime/ErrorHandling/ tests ignore external VM flags	PSU
<a href="#">JDK-8314832</a>	17, 21	Few runtime/os tests ignore vm flags	PSU
<a href="#">JDK-8314835</a>	17	gtest wrappers should be marked as flagless	PSU
<a href="#">JDK-8314975</a>	21	JavadocTester should set source path if not specified	PSU
<a href="#">JDK-8315071</a>	11, 17, 21	Modify TrayIconScalingTest.java, PrintLatinCJKTest.java to use new PassFailJFrame's builder pattern usage	PSU
<a href="#">JDK-8315117</a>	11, 17, 21	Update Zlib Data Compression Library to Version 1.3	PSU
<a href="#">JDK-8315373</a>	21	Change VirtualThread to unmount after freezing, re-mount before thawing	PSU
<a href="#">JDK-8315485</a>	21	(fs) Move java/nio/file/Path/Misc.java tests into java/nio/file/Path/PathOps.java	PSU
<a href="#">JDK-8315503</a>	21	G1: Code root scan causes long GC pauses due to imbalanced iteration	PSU
<a href="#">JDK-8315559</a>	21	Delay TempSymbol cleanup to avoid symbol table churn	PSU
<a href="#">JDK-8315605</a>	21	G1: Add number of nmethods in code roots scanning statistics	PSU
<a href="#">JDK-8315609</a>	11, 17, 21	Open source few more swing text/html tests	PSU
<a href="#">JDK-8315652</a>	17, 21	RISC-V: Features string uses wrong separator for jtreg	PSU
<a href="#">JDK-8315663</a>	11, 17, 21	Open source misc awt tests	PSU



OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
<a href="#">JDK-8315677</a>	11, 17, 21	Open source few swing JFileChooser and other tests	PSU
<a href="#">JDK-8315726</a>	11, 17	Open source several AWT applet tests	PSU
<a href="#">JDK-8315741</a>	11, 17, 21	Open source few swing JFormattedTextField and JPopupMenu tests	PSU
<a href="#">JDK-8315824</a>	11, 17, 21	Open source several Swing Text/HTML related tests	PSU
<a href="#">JDK-8315834</a>	11, 17, 21	Open source several Swing JSpinner related tests	PSU
<a href="#">JDK-8315889</a>	11, 17, 21	Open source several Swing HTMLDocument related tests	PSU
<a href="#">JDK-8315898</a>	17, 21	Open source swing JMenu tests	PSU
<a href="#">JDK-8315998</a>	21	Remove dead ClassLoaderDataGraphKlassIteratorStatic	PSU
<a href="#">JDK-8316002</a>	21	Remove unnecessary seen_dead_loader in ClassLoaderDataGraph::do_unloading	PSU
<a href="#">JDK-8316017</a>	11, 17	Refactor timeout handler in PassFailJFrame	PSU
<a href="#">JDK-8316053</a>	11, 17, 21	Open some swing tests 3	PSU
<a href="#">JDK-8316138</a>	8, 11, 17, 21, 22	Add GlobalSign 2 TLS root certificates	PSU
<a href="#">JDK-8316142</a>	11, 17	Enable parallelism in vmTestbase/nsk/monitoring/stress/lowmem tests	PSU
<a href="#">JDK-8316154</a>	11, 17, 21	Opensource JTextArea manual tests	PSU
<a href="#">JDK-8316164</a>	11, 17, 21	Opensource JMenuBar manual test	PSU
<a href="#">JDK-8316186</a>	17, 21	RISC-V: Remove PlatformCmpxchg<4>	PSU
<a href="#">JDK-8316228</a>	21	jcmm tests are broken by 8314828	PSU
<a href="#">JDK-8316242</a>	11, 17, 21	Opensource SwingGraphics manual test	PSU

OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
<a href="#">JDK-8316328</a>	22	Test <code>jdk/jfr/event/oldobject/TestSanityDefault.java</code> times out for some heap sizes	PSU
<a href="#">JDK-8316451</a>	21	6 <code>java/lang/instrument/PremainClass</code> tests ignore VM flags	PSU
<a href="#">JDK-8316460</a>	21	4 <code>javax/management</code> tests ignore VM flags	PSU
<a href="#">JDK-8316462</a>	17	<code>sun/jvmstat/monitor/MonitoredVm/MonitorVmStartTerminate.java</code> ignores VM flags	PSU
<a href="#">JDK-8316559</a>	21	Refactor some <code>util/Calendar</code> tests to JUnit	PSU
<a href="#">JDK-8316563</a>	17, 21	<code>test tools/jpackage/linux/LinuxResourceTest.java</code> fails on CentOS Linux release 8.5.2111 and Fedora 27	PSU
<a href="#">JDK-8316608</a>	11, 17, 21	Enable parallelism in <code>vmTestbase/gc/vector</code> tests	PSU
<a href="#">JDK-8316669</a>	21	<code>ImmutableOopMapSet</code> destructor not called	PSU
<a href="#">JDK-8316670</a>	21	Remove effectively unused <code>nmethodBucket::_count</code>	PSU
<a href="#">JDK-8316696</a>	21	Remove the testing base classes: <code>IntlTest</code> and <code>CollatorTest</code>	PSU
<a href="#">JDK-8316924</a>	21	<code>java/lang/Thread/virtual/stress/ParkALot.java</code> times out	PSU
<a href="#">JDK-8316959</a>	21	Improve <code>InlineCacheBuffer</code> pending queue management	PSU
<a href="#">JDK-8317007</a>	21	Add bulk removal of dead <code>nmethods</code> during class unloading	PSU
<a href="#">JDK-8317235</a>	21	Remove Access API use in <code>nmethod</code> class	PSU
<a href="#">JDK-8317287</a>	11, 17, 21	[ <code>macos14</code> ] <code>InterJVMGetDropSuccessTest.java</code> : Child VM: abnormal termination	PSU
<a href="#">JDK-8317299</a>	22	<code>safepoint</code> scalarization doesn't keep track of the depth of the JVM state	PSU

OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
<a href="#">JDK-8317350</a>	21	Move code cache purging out of CodeCache::UnloadingScope	PSU
<a href="#">JDK-8317440</a>	21	Lock rank checking fails when code root set is modified with the Servicelock held after JDK-8315503	PSU
<a href="#">JDK-8317507</a>	8, 11, 17	C2 compilation fails with "Exceeded _node_regs array"	PSU
<a href="#">JDK-8317600</a>	21	VtableStubs::stub_containing() table load not ordered wrt to stores	PSU
<a href="#">JDK-8317631</a>	21	Refactor ChoiceFormat tests to use JUnit	PSU
<a href="#">JDK-8317677</a>	21	Specialize Vtablestubs::entry_for() for VtableBlob	PSU
<a href="#">JDK-8317804</a>	22	com/sun/jdi/JdwpAllowTest.java fails on Alpine 3.17 / 3.18	PSU
<a href="#">JDK-8317809</a>	21	Insertion of free code blobs into code cache can be very slow during class unloading	PSU
<a href="#">JDK-8317965</a>	21	TestLoadLibraryDeadlock.java fails with "Unable to load native library.: expected true, was false"	PSU
<a href="#">JDK-8318109</a>	21	Writing JFR records while a CHT has taken its lock asserts in rank checking	PSU
<a href="#">JDK-8318158</a>	22	RISC-V: implement roundD/roundF intrinsics	PSU
<a href="#">JDK-8318322</a>	11, 17, 21	Update IANA Language Subtag Registry to Version 2023-10-16	PSU
<a href="#">JDK-8318410</a>	8	jdk/java/lang/instrument/BootClassPath/BootClassPathTest.sh fails on Japanese Windows	PSU
<a href="#">JDK-8318455</a>	21	Fix the compiler/sharedstubs/SharedTrampolineTest.java and SharedStubToInterpTest.java	PSU

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<a href="#">JDK-8318580</a>	11, 17, 21	"javax/swing/MultiMonitor/MultimonVImage.java failing with Error. Can't find library: /open/test/jdk/java/awt/regtesthelpers" after JDK-8316053	PSU
<a href="#">JDK-8318585</a>	21	Rename CodeCache::UnloadingScope to UnlinkingScope	PSU
<a href="#">JDK-8318599</a>	11, 17, 21	URLConnection cache issues leading to crashes in JGSS w/ native GSS introduced by 8303809	PSU
<a href="#">JDK-8318603</a>	22	Parallelize sun/java2d/marlin/ClipShapeTest.java	PSU
<a href="#">JDK-8318696</a>	22	Do not use LFS64 symbols on Linux	PSU
<a href="#">JDK-8318720</a>	21	G1: Memory leak in G1CodeRootSet after JDK-8315503	PSU
<a href="#">JDK-8318727</a>	11, 17, 21	Enable parallelism in vmTestbase/vm/gc/concurrent tests	PSU
<a href="#">JDK-8318757</a>	21	VM_ThreadDump asserts in interleaved ObjectMonitor::deflate_monitor calls	PSU
<a href="#">JDK-8318809</a>	11, 17	java/util/concurrent/ConcurrentLinkedQueue/WhiteBox.java shows intermittent failures on linux ppc64le and aarch64	PSU
<a href="#">JDK-8318854</a>	11, 17, 21	[macos14] Running any AWT app prints Secure coding warning	PSU
<a href="#">JDK-8318962</a>	21	Update ProcessTools javadoc with suggestions in 8315097	PSU
<a href="#">JDK-8318986</a>	21	Improve GenericWaitBarrier performance	PSU
<a href="#">JDK-8319048</a>	17, 21	Monitor deflation unlink phase prolongs time to safepoint	PSU
<a href="#">JDK-8319128</a>	11, 17	sun/security/pkcs11 tests fail on OL 7.9 aarch64	PSU

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<a href="#">JDK-8319136</a>	11, 17	Skip pkcs11 tests on linux-aarch64	PSU
<a href="#">JDK-8319153</a>	21	Fix: Class is a raw type in ProcessTools	PSU
<a href="#">JDK-8319265</a>	21	TestLoadLibraryDeadlock.java fails on windows-x64 "Unable to load b.jar"	PSU
<a href="#">JDK-8319268</a>	17	Build failure with GCC8.3.1 after 8313643	PSU
<a href="#">JDK-8319338</a>	17, 21	tools/jpackage/share/RuntimeImageTest.java fails with -XX:+UseZGC	PSU
<a href="#">JDK-8319372</a>	17	C2 compilation fails with "Bad immediate dominator info"	PSU
<a href="#">JDK-8319376</a>	21	ParallelGC: Forwarded objects found during heap inspection	PSU
<a href="#">JDK-8319382</a>	22	com/sun/jdi/JdwpAllowTest.java shows failures on AIX if prefixLen of mask is larger than 32 in IPv6 case	PSU
<a href="#">JDK-8319436</a>	11	Proxy.newProxyInstance throws NPE if loader is null and interface not visible from class loader	PSU
<a href="#">JDK-8319437</a>	21	NMT should show library names in call stacks	PSU
<a href="#">JDK-8319548</a>	22	Unexpected internal name for Filler array klass causes error in VisualVM	PSU
<a href="#">JDK-8319567</a>	21	Update java/lang/invoke tests to support vm flags	PSU
<a href="#">JDK-8319568</a>	21	Update java/lang/reflect/exeCallerAccessTest/CallerAccessTest.java to accept vm flags	PSU
<a href="#">JDK-8319571</a>	21	Update jni/nullCaller/NullCallerTest.java to accept flags or mark as flagless	PSU
<a href="#">JDK-8319574</a>	21	Exec/process tests should be marked as flagless	PSU
<a href="#">JDK-8319578</a>	21	Few java/lang/instrument ignore test.java.opts and accept test.vm.opts only	PSU

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<a href="#">JDK-8319647</a>	21	Few java/lang/System/LoggerFinder/modules tests ignore vm flags	PSU
<a href="#">JDK-8319648</a>	21	java/lang/SecurityManager tests ignore vm flags	PSU
<a href="#">JDK-8319650</a>	21	Improve heap dump performance with class metadata caching	PSU
<a href="#">JDK-8319651</a>	21	Several network tests ignore vm flags when start java process	PSU
<a href="#">JDK-8319672</a>	21	Several classloader tests ignore VM flags	PSU
<a href="#">JDK-8319676</a>	21	A couple of jdk/modules/incubator/ tests ignore VM flags	PSU
<a href="#">JDK-8319677</a>	21	Test jdk/internal/misc/VM/RuntimeArguments.java should be marked as flagless	PSU
<a href="#">JDK-8319713</a>	21	Parallel: Remove PSAdaptiveSizePolicy::should_full_GC	PSU
<a href="#">JDK-8319757</a>	21	java/nio/channels/DatagramChannel/Interruptible OrNot.java failed: wrong exception thrown	PSU
<a href="#">JDK-8319876</a>	21	Reduce memory consumption of VM_ThreadDump::doit	PSU
<a href="#">JDK-8319896</a>	21	Remove monitor deflation from final audit	PSU
<a href="#">JDK-8319955</a>	21	Improve dependencies removal during class unloading	PSU
<a href="#">JDK-8320005</a>	8, 11, 17, 21, 22	Allow loading of shared objects with .a extension on AIX	PSU
<a href="#">JDK-8320061</a>	21	[nmt] Multiple issues with peak accounting	PSU
<a href="#">JDK-8320113</a>	11, 17, 21	[macos14] : ShapeNotSetSometimes.java fails intermittently on macOS 14	PSU

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<a href="#">JDK-8320129</a>	11, 17, 21	"top" command during jtreg failure handler does not display CPU usage on OSX	PSU
<a href="#">JDK-8320275</a>	21	assert(_chunk->bitmap().at(index)) failed: Bit not set at index	PSU
<a href="#">JDK-8320303</a>	11, 17	Allow PassFailJFrame to accept single window creator	PSU
<a href="#">JDK-8320331</a>	21	G1 Full GC Heap verification relies on metadata not reset before verification	PSU
<a href="#">JDK-8320342</a>	11, 17, 21	Use PassFailJFrame for TruncatedPopupMenuTest.java	PSU
<a href="#">JDK-8320343</a>	21	Generate GIF images for AbstractButton/5049549/bug5049549.java	PSU
<a href="#">JDK-8320349</a>	21	Simplify FileChooserSymLinkTest.java by using single-window testUI	PSU
<a href="#">JDK-8320365</a>	21	IPPPrintService.getAttributes() causes blanket re-initialisation	PSU
<a href="#">JDK-8320370</a>	21	NMT: Change MallocMemorySnapshot to simplify code.	PSU
<a href="#">JDK-8320515</a>	21	assert(monitor->object_peek() != nullptr) failed: Owned monitors should not have a dead object	PSU
<a href="#">JDK-8320525</a>	21	G1: G1UpdateRemSetTrackingBeforeRebuild::distribute _marked_bytes accesses partially unloaded klass	PSU
<a href="#">JDK-8320570</a>	17, 21	NegativeArraySizeException decoding >1G UTF8 bytes with non-ascii characters	PSU
<a href="#">JDK-8320681</a>	17, 21	[macos] Test tools/jpackage/macosx/MacAppStoreJlinkOptionsTest.java timed out on macOS	PSU
<a href="#">JDK-8320692</a>	21, 22	Null icon returned for .exe without custom icon	PSU

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<a href="#">JDK-8320707</a>	21, 22	Virtual thread test updates	PSU
<a href="#">JDK-8320712</a>	17, 21	Rewrite BadFactoryTest in pure Java	PSU
<a href="#">JDK-8320714</a>	21	java/util/Locale/LocaleProvidersRun.java and java/util/ResourceBundle/modules/visibility/VisibilityTest.java timeout after passing	PSU
<a href="#">JDK-8320715</a>	21	Improve the tests of test/hotspot/jtreg/compiler/intrinsics/float16	PSU
<a href="#">JDK-8320890</a>	22	[AIX] Find a better way to mimic dl handle equality	PSU
<a href="#">JDK-8320924</a>	21	Improve heap dump performance by optimizing archived object checks	PSU
<a href="#">JDK-8320943</a>	11, 17	Files/probeContentType/Basic.java fails on latest Windows 11 - content type mismatch	PSU
<a href="#">JDK-8321075</a>	21, 22	RISC-V: UseSystemMemoryBarrier lacking proper OS support	PSU
<a href="#">JDK-8321107</a>	17, 21	Add more test cases for JDK-8319372	PSU
<a href="#">JDK-8321151</a>	22	JDK-8294427 breaks Windows L&F on all older Windows versions	PSU
<a href="#">JDK-8321163</a>	21	[test] OutputAnalyzer.getExitValue() unnecessarily logs even when process has already completed	PSU
<a href="#">JDK-8321182</a>	21	SourceExample.SOURCE_14 comment should refer to 'switch expressions' instead of 'text blocks'	PSU
<a href="#">JDK-8321270</a>	21	Virtual Thread.yield consumes parking permit	PSU
<a href="#">JDK-8321276</a>	21	runtime/cds/appcds/dynamicArchive/DynamicSharedSymbols.java failed with "17 2: jdk/test/lib/apps ' missing from stdout/stderr"	PSU
<a href="#">JDK-8321408</a>	22	Add Certainly roots R1 and E1	PSU
<a href="#">JDK-8321480</a>	22	ISO 4217 Amendment 176 Update	PSU



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<a href="#">JDK-8321489</a>	11, 17, 21, 22	Update LCMS to 2.16	PSU
<a href="#">JDK-8321713</a>	21	Harmonize executeTestJvm with create[Limited]TestJavaProcessBuilder	PSU
<a href="#">JDK-8321718</a>	21	ProcessTools.executeProcess calls waitFor before logging	PSU
<a href="#">JDK-8321812</a>	21	Update GC tests to use execute[Limited]TestJava	PSU
<a href="#">JDK-8321815</a>	21, 22	Shenandoah: gc state should be synchronized to java threads only once per safepoint	PSU
<a href="#">JDK-8321925</a>	11, 17, 21	sun/security/mscapi/KeytoolChangeAlias.java fails with "Alias <246810> does not exist"	PSU
<a href="#">JDK-8321972</a>	22	test runtime/Unsafe/InternalErrorTest.java timeout on linux-riscv64 platform	PSU
<a href="#">JDK-8322078</a>	22	ZipSourceCache.testKeySourceMapping() test fails with The process cannot access the file because it is being used by another process	PSU
<a href="#">JDK-8322098</a>	22	os::Linux::print_system_memory_info enhance the THP output with /sys/kernel/mm/transparent_hugepage/hpage_pmd_size	PSU
<a href="#">JDK-8322159</a>	22	ThisEscapeAnalyzer crashes for erroneous code	PSU
<a href="#">JDK-8322163</a>	22	runtime/Unsafe/InternalErrorTest.java fails on Alpine after JDK-8320886	PSU
<a href="#">JDK-8322239</a>	11, 17, 21	[macos] a11y : java.lang.NullPointerException is thrown when focus is moved on the JTabbedPane	PSU
<a href="#">JDK-8322417</a>	22	Console read line with zero out should zero out when throwing exception	PSU
<a href="#">JDK-8322477</a>	21	order of subclasses in the permits clause can differ between compilations	PSU

OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
<a href="#">JDK-8322484</a>	22	22-b26 Regression in J2dBench-bimg_misc-G1 (and more) on Windows-x64 and macOS-x64	PSU
<a href="#">JDK-8322503</a>	17, 21, 22	Shenandoah: Clarify gc state usage	PSU
<a href="#">JDK-8322511</a>	11	[11u] JfrCheckpointThreadClosure::do_thread crashes when fetching thread_id	PSU
<a href="#">JDK-8322725</a>	8, 11, 17, 21, 22	(tz) Update Timezone Data to 2023d	PSU
<a href="#">JDK-8322726</a>	22	C2: Unloaded signature class kills argument value	PSU
<a href="#">JDK-8322772</a>	22	Clean up code after JDK-8322417	PSU
<a href="#">JDK-8322783</a>	11, 22	prioritize /etc/os-release over /etc/SuSE-release in hs_err/info output	PSU
<a href="#">JDK-8322790</a>	22	RISC-V: Tune costs for shuffles with no conversion	PSU
<a href="#">JDK-8322818</a>	21	Thread::getStackTrace can fail with InternalError if virtual thread is timed-parked when pinned	PSU
<a href="#">JDK-8322846</a>	21	Running with -Djdk.tracePinnedThreads set can hang	PSU
<a href="#">JDK-8322858</a>	17, 21	compiler/c2/aarch64/TestFarJump.java fails on AArch64 due to unexpected PrintAssembly output	PSU
<a href="#">JDK-8322920</a>	17, 21	Some ProcessTools.execute* functions are declared to throw Throwable	PSU
<a href="#">JDK-8322943</a>	22	runtime/CompressedOops/CompressedClassPointers.java fails on AIX	PSU
<a href="#">JDK-8322945</a>	22	Problemlist runtime/CompressedOops/CompressedClassPointers.java on AIX	PSU
<a href="#">JDK-8322962</a>	21, 22	Upcall stub might go undetected when freezing frames	PSU

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<a href="#">JDK-8323002</a>	21	test/jdk/java/lang/Thread/virtual/stress/GetStackTraceALotWhenPinned.java times out on macosx-x64	PSU
<a href="#">JDK-8323021</a>	22	Shenandoah: Encountered reference count always attributed to first worker thread	PSU
<a href="#">JDK-8323065</a>	22	Unnecessary CodeBlob lookup in CompiledIC::internal_set_ic_destination	PSU
<a href="#">JDK-8323086</a>	22	Shenandoah: Heap could be corrupted by oom during evacuation	PSU
<a href="#">JDK-8323154</a>	22	C2: assert(cmp != nullptr && cmp->Opcode() == Op_Cmp(bt)) failed: no exit test	PSU
<a href="#">JDK-8323170</a>	21, 22	j2dbench is using outdated javac source/target to be able to build by itself	PSU
<a href="#">JDK-8323210</a>	17, 21, 22	Update the usage of cmsFLAGS_COPY_ALPHA	PSU
<a href="#">JDK-8323276</a>	21	StressDirListings.java fails on AIX	PSU
<a href="#">JDK-8323296</a>	21	java/lang/Thread/virtual/stress/GetStackTraceALotWhenPinned.java#id1 timed out	PSU
<a href="#">JDK-8323331</a>	22	fix typo hpage_pdm_size	PSU
<a href="#">JDK-8323428</a>	22	Shenandoah: Unused memory in regions compacted during a full GC should be mangled	PSU
<a href="#">JDK-8323515</a>	22	Create test alias "all" for all test roots	PSU
<a href="#">JDK-8323519</a>	17, 21, 22	Add applications/ctw/modules to Hotspot tiered testing	PSU
<a href="#">JDK-8323552</a>	22	AbstractMemorySegmentImpl#mismatch returns -1 when comparing distinct areas of the same instance of MemorySegment	PSU
<a href="#">JDK-8323595</a>	21	is_aligned(p, alignof(OopT))) assertion fails in Jetty without compressed OOPs	PSU

OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
<a href="#">JDK-8323635</a>	21	Test gc/g1/TestHumongousAllocConcurrentStart.java fails with -XX:TieredStopAtLevel=3	PSU
<a href="#">JDK-8323657</a>	22	Compilation of snippet results in VerifyError at runtime with -release 9 (and above)	PSU
<a href="#">JDK-8323664</a>	22	java/awt/font/JNICheck/FreeTypeScalerJNICheck. java still fails with JNI warning on some Windows configurations	PSU
<a href="#">JDK-8323670</a>	22	A few client tests intermittently throw ConcurrentModificationException	PSU
<a href="#">JDK-8323685</a>	21, 22	PrintSystemDictionaryAtExit has mutex rank assert	PSU
<a href="#">JDK-8323717</a>	11, 17	Introduce test keyword for tests that need external dependencies	PSU
<a href="#">JDK-8323782</a>	22	Race: Thread::interrupt vs. AbstractInterruptibleChannel.begin	PSU
<a href="#">JDK-8323801</a>	22	<s> tag doesn't strikethrough the text	PSU
<a href="#">JDK-8323964</a>	22	runtime/Thread/ThreadCountLimit.java fails intermittently on AIX	PSU
<a href="#">JDK-8323994</a>	11, 17, 21, 22	gtest runner repeats test name for every single gtest assertion	PSU
<a href="#">JDK-8324041</a>	22	ModuleOption.java failed with update release versioning scheme	PSU
<a href="#">JDK-8324050</a>	17, 22	Issue store-store barrier after re-materializing objects during deoptimization	PSU
<a href="#">JDK-8324121</a>	21, 22	SIGFPE in PhaseDealLoop::extract_long_range_checks	PSU
<a href="#">JDK-8324123</a>	21	aarch64: fix prfm literal encoding in assembler	PSU

OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
<a href="#">JDK-8324236</a>	21	compiler/ciReplay/TestInliningProtectionDomain.java failed with RuntimeException: should only dump inline information for ... expected true, was false	PSU
<a href="#">JDK-8324238</a>	11, 17, 21	[macOS] java/awt/Frame/ShapeNotSetSometimes/ShapeNotSetSometimes.java fails with the shape has not been applied msg	PSU
<a href="#">JDK-8324243</a>	17, 21, 22	Compilation failures in java.desktop module with gcc 14	PSU
<a href="#">JDK-8324280</a>	22	RISC-V: Incorrect implementation in VM_Version::parse_satp_mode	PSU
<a href="#">JDK-8324347</a>	22	Enable "maybe-uninitialized" warning for FreeType 2.13.1	PSU
<a href="#">JDK-8324577</a>	17, 21	[REDO] - [IMPROVE] OPEN_MAX is no longer the max limit on macOS >= 10.6 for RLIMIT_NOFILE	PSU
<a href="#">JDK-8324598</a>	11, 17, 22	use mem_unit when working with sysinfo memory and swap related information	PSU
<a href="#">JDK-8324632</a>	11, 17, 21, 22	Update Zlib Data Compression Library to Version 1.3.1	PSU
<a href="#">JDK-8324637</a>	22	[aix] Implement support for reporting swap space in jdk.management	PSU
<a href="#">JDK-8324646</a>	21, 22	Avoid Class.forName in SecureRandom constructor	PSU
<a href="#">JDK-8324647</a>	22	Invalid test group of lib-test after JDK-8323515	PSU
<a href="#">JDK-8324648</a>	21, 22	Avoid NoSuchMethodError when instantiating NativePRNG	PSU
<a href="#">JDK-8324668</a>	17, 21	JDWP process management needs more efficient file descriptor handling	PSU

OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
<a href="#">JDK-8324733</a>	11, 17, 21, 22	[macos14] Problem list tests which fail due to macOS bug described in JDK-8322653	PSU
<a href="#">JDK-8324753</a>	22	[AIX] adjust os_posix after JDK-8318696	PSU
<a href="#">JDK-8324817</a>	21	Parallel GC does not pre-touch all heap pages when AlwaysPreTouch enabled and large page disabled	PSU
<a href="#">JDK-8324824</a>	17, 21	AArch64: Detect Ampere-1B core and update default options for Ampere CPUs	PSU
<a href="#">JDK-8324874</a>	22	AArch64: crypto pmull based CRC32/CRC32C intrinsics clobber V8-V15 registers	PSU
<a href="#">JDK-8324933</a>	21, 22	ConcurrentHashMap::statistics_calculate synchronization is expensive	PSU
<a href="#">JDK-8324998</a>	21	Add test cases for String.regionMatches comparing Turkic dotted/dotless I with uppercase latin I	PSU
<a href="#">JDK-8325024</a>	21	java/security/cert/CertPathValidator/OCSP/OCSP Timeout.java incorrect comment information	PSU
<a href="#">JDK-8325028</a>	21, 22	(ch) Pipe channels should lazily set socket to non-blocking mode on first use by virtual thread	PSU
<a href="#">JDK-8325074</a>	22	ZGC fails assert(index == 0    is_power_of_2(index)) failed: Incorrect load shift: 11	PSU
<a href="#">JDK-8325095</a>	21, 22	C2: bailout message broken: ResourceArea allocated string used after free	PSU
<a href="#">JDK-8325096</a>	8	Test java/security/cert/CertPathBuilder/akiExt/AKISerialNumber.java is failing	PSU

OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
<a href="#">JDK-8325137</a>	11, 17, 21	com/sun/management/ThreadMXBean/ThreadCpuTimeArray.java can fail in Xcomp with out of expected range	PSU
<a href="#">JDK-8325150</a>	8, 11, 17, 21, 22	(tz) Update Timezone Data to 2024a	PSU
<a href="#">JDK-8325179</a>	22	Race in BasicDirectoryModel.validateFileCache	PSU
<a href="#">JDK-8325203</a>	17, 21, 22	System.exit(0) kills the launched 3rd party application	PSU
<a href="#">JDK-8325254</a>	17	CKA_TOKEN private and secret keys are not necessarily sensitive	PSU
<a href="#">JDK-8325255</a>	21, 22	jdk.internal.util.ReferencedKeySet::add using wrong test	PSU
<a href="#">JDK-8325313</a>	22	Header format error in TestIntrinsicBailOut after JDK-8317299	PSU
<a href="#">JDK-8325326</a>	11, 17, 21, 22	[PPC64] Don't relocate in case of allocation failure	PSU
<a href="#">JDK-8325372</a>	17, 21	Shenandoah: SIGSEGV crash in unnecessary_acquire due to LoadStore split through phi	PSU
<a href="#">JDK-8325432</a>	17, 21, 22	enhance assert message "relocation addr must be in this section"	PSU
<a href="#">JDK-8325437</a>	21	Safepoint polling in monitor deflation can cause massive logs	PSU
<a href="#">JDK-8325470</a>	22	[AIX] use fclose after fopen in read_psinfo	PSU
<a href="#">JDK-8325496</a>	17, 22	Make TrimNativeHeapInterval a product switch	PSU
<a href="#">JDK-8325567</a>	21, 22	jspawnhelper without args fails with segfault	PSU
<a href="#">JDK-8325579</a>	11, 17, 21, 22	Inconsistent behavior in com.sun.jndi.ldap.Connection::createSocket	PSU

OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
<a href="#">JDK-8325587</a>	22	Shenandoah: ShenandoahLock should allow blocking in VM	PSU
<a href="#">JDK-8325590</a>	22	Regression in round-tripping UTF-16 strings after JDK-8311906	PSU
<a href="#">JDK-8325613</a>	21, 22	CTW: Stale method cleanup requires GC after Sweeper removal	PSU
<a href="#">JDK-8325621</a>	21, 22	Improve jspawnhelper version checks	PSU
<a href="#">JDK-8325672</a>	22	C2: allocate PhaseIdealLoop::_loop_or_ctrl from C2::comp_arena()	PSU
<a href="#">JDK-8325730</a>	22	StringBuilder.toString allocation for the empty String	PSU
<a href="#">JDK-8325743</a>	21, 22	test/jdk/java/nio/channels/unixdomain/SocketOptions.java enhance user name output in error case	PSU
<a href="#">JDK-8325763</a>	22	Revert properties: vm.opt.x.*	PSU
<a href="#">JDK-8325862</a>	17, 21, 22	set -XX:+ErrorFileToStderr when executing java in containers for some container related jtreg tests	PSU
<a href="#">JDK-8325876</a>	17, 22	crashes in docker container tests on Linuxppc64le Power8 machines	PSU
<a href="#">JDK-8325908</a>	21	Finish removal of IntlTest and CollatorTest	PSU
<a href="#">JDK-8325927</a>	8	[8u] Backport of JDK-8170552 missed part of the test	PSU
<a href="#">JDK-8326000</a>	22	Remove obsolete comments for class sun.security.ssl.SunJSSE	PSU
<a href="#">JDK-8326006</a>	11, 17, 21, 22	Allow TEST_VM_FLAGLESS to set flagless mode	PSU
<a href="#">JDK-8326101</a>	11, 17, 21, 22	[PPC64] Need to bailout cleanly if creation of stubs fails when code cache is out of space	PSU
<a href="#">JDK-8326106</a>	22	Write and clear stack trace table outside of safepoint	PSU



OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
<a href="#">JDK-8326140</a>	17, 21, 22	src/jdk.accessibility/windows/native/libjavaaccessbridge/AccessBridgeJavaEntryPoints.cpp ReleaseStringChars might be missing in early returns	PSU
<a href="#">JDK-8326201</a>	11, 17, 21, 22	[S390] Need to bailout cleanly if creation of stubs fails when code cache is out of space	PSU
<a href="#">JDK-8326351</a>	11, 17, 21, 22	Update the Zlib version in open/src/java.base/share/legal/zlib.md to 1.3.1	PSU
<a href="#">JDK-8326360</a>	22	Update the Zlib version in open/src/java.base/share/legal/zlib.md to 1.3	PSU
<a href="#">JDK-8326446</a>	21, 22	The User and System of jdk.CPULoad on Apple M1 are inaccurate	PSU
<a href="#">JDK-8326496</a>	21, 22	[test] checkHsErrFileContent support printing hserr in error case	PSU
<a href="#">JDK-8326521</a>	11, 17, 21, 22	JFR: CompilerPhase event test fails on windows 32 bit	PSU
<a href="#">JDK-8326529</a>	11, 17, 21, 22	JFR: Test for CompilerCompile events fails due to time out	PSU
<a href="#">JDK-8326591</a>	11, 17, 21	New test JmodExcludedFiles.java fails on Windows when --with-external-symbols-in -bundles=public is used	PSU
<a href="#">JDK-8326638</a>	11, 17, 21, 22	Crash in PhaseldealLoop::remix_address_expressions due to unexpected Region instead of Loop	PSU
<a href="#">JDK-8326643</a>	11, 17, 21, 22	JDK server does not send a dummy change_cipher_spec record after HelloRetryRequest message	PSU
<a href="#">JDK-8326661</a>	11, 17, 21	sun/java2d/cmm/ColorConvertOp/ColConvTest.java assumes profiles were generated by LCMS	PSU

OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
<a href="#">JDK-8326718</a>	21	Test java/util/Formatter/Padding.java should timeout on large inputs before fix in JDK-8299677	PSU
<a href="#">JDK-8326824</a>	21	Test: remove redundant test in compiler/vectorapi/reshape/utils/TestCastMethods.java	PSU
<a href="#">JDK-8326936</a>	17, 21, 22	RISC-V: Shenandoah GC crashes due to incorrect atomic memory operations	PSU
<a href="#">JDK-8326938</a>	11	[11u] JDK-8214908 broke two CTW tests	PSU
<a href="#">JDK-8326942</a>	17	[17u] Backout "8325254: CKA_TOKEN private and secret keys are not necessarily sensitive"	PSU
<a href="#">JDK-8326948</a>	21	Force English locale for timeout formatting	PSU
<a href="#">JDK-8326974</a>	21, 22	ODR violation in macroAssembler_aarch64.cpp	PSU
<a href="#">JDK-8327036</a>	21	[macosx-aarch64] SIGBUS in MarkActivationClosure::do_code_blob reached from Unsafe_CopySwapMemory0	PSU
<a href="#">JDK-8327040</a>	22	Problemlist ActionListenerCalledTwiceTest.java test failing in macos14	PSU
<a href="#">JDK-8327059</a>	17, 21, 22	os::Linux::print_proc_sys_info add swappiness information	PSU
<a href="#">JDK-8327096</a>	21	(fc) java/nio/channels/FileChannel/Size.java fails on partition incapable of creating large files	PSU
<a href="#">JDK-8327136</a>	11, 17, 21	javax/management/remote/mandatory/notif/NotifReconnectDeadlockTest.java fails on libgraal	PSU
<a href="#">JDK-8327137</a>	22	Add test for ConcurrentModificationException in BasicDirectoryModel	PSU
<a href="#">JDK-8327180</a>	21	Failed: java/io/ObjectStreamClass/ObjectStreamClassCaching.java#G1	PSU

OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
<a href="#">JDK-8327261</a>	21	Parsing test for Double/Float succeeds w/o testing all bad cases	PSU
<a href="#">JDK-8327391</a>	22	Add SipHash attribution file	PSU
<a href="#">JDK-8327468</a>	21, 22	Do not restart close if errno is EINTR [macOS/linux]	PSU
<a href="#">JDK-8327474</a>	21	Review use of java.io.tmpdir in jdk tests	PSU
<a href="#">JDK-8327486</a>	21	java/util/Properties/PropertiesStoreTest.java fails "Text 'xxx' could not be parsed at index 20" after 8174269	PSU
<a href="#">JDK-8327501</a>	22	Common ForkJoinPool prevents class unloading in some cases	PSU
<a href="#">JDK-8327631</a>	17, 21, 22	Update IANA Language Subtag Registry to Version 2024-03-07	PSU
<a href="#">JDK-8327799</a>	21	JFR view: the "Park Until" field of jdk.ThreadPark is invalid if the parking method is not absolute	PSU
<a href="#">JDK-8327971</a>	21	Multiple ASAN errors reported for metaspace	PSU
<a href="#">JDK-8327988</a>	21	When running ASAN, disable dangerous NMT test	PSU
<a href="#">JDK-8327989</a>	17, 21	java/net/httpclient/ManyRequest.java should not use "localhost" in URIs	PSU
<a href="#">JDK-8327990</a>	22	[macosx-aarch64] Various tests fail with -XX:+AssertWXAtThreadSync	PSU
<a href="#">JDK-8327998</a>	17, 21	Enable java/lang/ProcessBuilder/JspawnhelperProtocol.java on Mac	PSU
<a href="#">JDK-8328037</a>	21	Test java/util/Formatter/Padding.java has unnecessary high heap requirement after JDK-8326718	PSU
<a href="#">JDK-8328066</a>	17, 21, 22	WhiteBoxResizeTest failure on linux-x86: Could not reserve enough space for 2097152KB object heap	PSU

OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
<a href="#">JDK-8328075</a>	22	Shenandoah: Avoid forwarding when objects don't move in full-GC	PSU
<a href="#">JDK-8328165</a>	17, 21, 22	improve assert(idx < _maxlrg) failed: oob	PSU
<a href="#">JDK-8328166</a>	17, 21, 22	Epsilon: 'EpsilonHeap::allocate_work' misuses the parameter 'size' as size in bytes	PSU
<a href="#">JDK-8328168</a>	17, 21, 22	Epsilon: Premature OOM when allocating object larger than uncommitted heap size	PSU
<a href="#">JDK-8328194</a>	11, 17, 21	Add a test to check default rendering engine	PSU
<a href="#">JDK-8328316</a>	22	Finisher cannot emit if stream is sequential and integrator returned false	PSU
<a href="#">JDK-8328366</a>	22	Thread.setContextClassLoader from thread in FJP commonPool task no longer works after JDK-8327501	PSU
<a href="#">JDK-8328524</a>	11, 17, 21, 22	[x86] StringRepeat.java failure on linux-x86: Could not reserve enough space for 2097152KB object heap	PSU
<a href="#">JDK-8328540</a>	11, 17, 21	test javax/swing/JSplitPane/4885629/bug4885629.java fails on windows hidpi	PSU
<a href="#">JDK-8328555</a>	21	hidpi problems for test java/awt/Dialog/DialogAnotherThread/JaWSTest.java	PSU
<a href="#">JDK-8328589</a>	21, 22	unify os::breakpoint among posix platforms	PSU
<a href="#">JDK-8328592</a>	21	hprof tests fail with -XX:-CompactStrings	PSU
<a href="#">JDK-8328604</a>	21, 22	remove on_aix() function	PSU
<a href="#">JDK-8328638</a>	17, 21, 22	Fallback option for POST-only OCSP requests	PSU
<a href="#">JDK-8328702</a>	21, 22	C2: Crash during parsing because sub type check is not folded	PSU

OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
<a href="#">JDK-8328703</a>	21, 22	Illegal accesses in Java_jdk_internal_org_jline_terminal_impl_jna_linux_CLibraryImpl_ioctl0	PSU
<a href="#">JDK-8328709</a>	21, 22	AIX os::get_summary_cpu_info support Power 10	PSU
<a href="#">JDK-8328744</a>	21, 22	Parallel: Parallel GC throws OOM before heap is fully expanded	PSU
<a href="#">JDK-8328776</a>	21, 22	[AIX] remove checked_vmgetinfo, use vmgetinfo directly	PSU
<a href="#">JDK-8328809</a>	8	[8u] Problem list some CA tests	PSU
<a href="#">JDK-8328812</a>	11, 17, 21, 22	Update and move siphash license	PSU
<a href="#">JDK-8328822</a>	21, 22	C2: "negative trip count?" assert failure in profile predicate code	PSU
<a href="#">JDK-8328825</a>	8, 11, 17, 21, 22	Google CAInterop test failures	PSU
<a href="#">JDK-8328938</a>	21	C2 SuperWord: disable vectorization for large stride and scale	PSU
<a href="#">JDK-8328953</a>	22	JEditorPane.read throws ChangedCharSetException	PSU
<a href="#">JDK-8328957</a>	21	Update PKCS11Test.java to not use hardcoded path	PSU
<a href="#">JDK-8328988</a>	17, 21, 22	[macos14] Problem list LightweightEventTest.java which fails due to macOS bug described in JDK-8322653	PSU
<a href="#">JDK-8328997</a>	17, 21, 22	Remove unnecessary template parameter lists in GrowableArray	PSU
<a href="#">JDK-8329013</a>	17, 21, 22	StackOverflowError when starting Apache Tomcat with signed jar	PSU

OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
<a href="#">JDK-8329109</a>	21, 22	Threads::print_on() tries to print CPU time for terminated GC threads	PSU
<a href="#">JDK-8329134</a>	22	Reconsider TLAB zapping	PSU
<a href="#">JDK-8329163</a>	21, 22	C2: possible overflow in PhasdealLoop::extract_long_range_checks()	PSU
<a href="#">JDK-8329213</a>	17, 21, 22	Better validation for com.sun.security.ocsp.useget option	PSU
<a href="#">JDK-8329223</a>	17, 21, 22	Parallel: Parallel GC resizes heap even if -Xms = -Xmx	PSU
<a href="#">JDK-8329510</a>	22	Update ProblemList for JFileChooser/8194044/FileSystemRootTest.java	PSU
<a href="#">JDK-8329528</a>	22	G1 does not update TAMS correctly when dropping retained regions during Concurrent Start pause	PSU
<a href="#">JDK-8329544</a>	8	[8u] sun/security/krb5/auto/ReplayCacheTestProc.java cannot find the testlibrary	PSU
<a href="#">JDK-8329545</a>	21, 22	[s390x] Fix garbage value being passed in Argument Register	PSU
<a href="#">JDK-8329570</a>	17, 21, 22	G1: Excessive is_obj_dead_cond calls in verification	PSU
<a href="#">JDK-8329605</a>	21, 22	hs_errfile generic events - move memory protections and nmethod flushes to separate sections	PSU
<a href="#">JDK-8329656</a>	22	assertion failed in MAP_ARCHIVE_MMAP_FAILURE path: Invalid immediate -5 0	PSU
<a href="#">JDK-8329663</a>	21, 22	hs_err file event log entry for thread adding/removing should print current thread	PSU
<a href="#">JDK-8329823</a>	17, 21, 22	RISC-V: Need to sync CPU features with related JVM flags	PSU

OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
<a href="#">JDK-8329840</a>	21, 22	Fix ZPhysicalMemorySegment::_end type	PSU
<a href="#">JDK-8329850</a>	21, 22	[AIX] Allow loading of different members of same shared library archive	PSU
<a href="#">JDK-8329862</a>	21, 22	libjli GetApplicationHome cleanups and enhance jli tracing	PSU
<a href="#">JDK-8329958</a>	22	Windows x86 build fails: downcallLinker.cpp(36) redefinition	PSU
<a href="#">JDK-8329961</a>	21, 22	Buffer overflow in os::Linux::kernel_version	PSU
<a href="#">JDK-8330011</a>	21, 22	[s390x] update block-comments to make code consistent	PSU
<a href="#">JDK-8330027</a>	22	Identity hashes of archived objects must be based on a reproducible random seed	PSU
<a href="#">JDK-8330094</a>	17, 21, 22	RISC-V: Save and restore FRM in the call stub	PSU
<a href="#">JDK-8330156</a>	17, 21, 22	RISC-V: Range check auipc + signed 12 imm instruction	PSU
<a href="#">JDK-8330242</a>	17, 21, 22	RISC-V: Simplify and remove CORRECT_COMPILER_ATOMIC_SUPPORT in atomic_linux_riscv.hpp	PSU
<a href="#">JDK-8330275</a>	21, 22	Crash in XMark::follow_array	PSU
<a href="#">JDK-8330464</a>	21, 22	hserr generic events - add entry for the before_exit calls	PSU
<a href="#">JDK-8330523</a>	17, 21, 22	Reduce runtime and improve efficiency of KeepAliveTest	PSU
<a href="#">JDK-8330524</a>	21, 22	Linux ppc64le compile warning with clang in os_linux_ppc.cpp	PSU
<a href="#">JDK-8330576</a>	22	ZYoungCompactionLimit should have range check	PSU
<a href="#">JDK-8330615</a>	21, 22	avoid signed integer overflows in zip_util.c readCen / hashN	PSU

OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
<a href="#">JDK-8330748</a>	22	ByteArrayOutputStream.writeTo(OutputStream) pins carrier	PSU
<a href="#">JDK-8330806</a>	8, 11	test/hotspot/jtreg/compiler/c1/TestLargeMonitorOffset.java fails on ARM32	PSU
<a href="#">JDK-8330814</a>	22	Cleanups for KeepAliveCache tests	PSU
<a href="#">JDK-8330815</a>	17, 21, 22	Use pattern matching for instanceof in KeepAliveCache	PSU
<a href="#">JDK-8331031</a>	21, 22	unify os::dont_yield and os::naked_yield across Posix platforms	PSU
<a href="#">JDK-8331167</a>	21, 22	UBSan enabled build fails in adlc on macOS	PSU
<a href="#">JDK-8331298</a>	21, 22	avoid alignment checks in UBSAN enabled build	PSU
<a href="#">JDK-8331344</a>	22	No compiler replay file with CompilerCommand MemLimit	PSU
<a href="#">JDK-8331466</a>	21, 22	Problemlist serviceability/dcmd/gc/RunFinalizationTest.java on generic-all	PSU
<a href="#">JDK-8331714</a>	22	Make OopMapCache installation lock-free	PSU
<a href="#">JDK-8331746</a>	22	Create a test to verify that the cmm id is not ignored	PSU
<a href="#">JDK-8331750</a>	11	[11u] JDK-8259530 is not backported correctly to 11u	PSU
<a href="#">JDK-8331790</a>	11	[11u] Remove problemlist entries after backport of JDK-8228649	PSU
<a href="#">JDK-8331791</a>	8	[8u] AIX build break from JDK-8320005 backport	PSU
<a href="#">JDK-8331885</a>	22	C2: meet between unloaded and speculative types is not symmetric	PSU



OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
<a href="#">JDK-8331894</a>	22	[jdk22] compiler/print/CompileCommandMemLimit.java fails after backporting JDK-8325095	PSU
<a href="#">JDK-8331942</a>	17, 21, 22	On Linux aarch64, CDS archives should be using 64K alignment by default	PSU
<a href="#">JDK-8331980</a>	8	[8u] Problem list CAInterop.java#certignarootca test	PSU
<a href="#">JDK-8332253</a>	21, 22	Linux arm32 build fails after 8292591	PSU
<a href="#">JDK-8332490</a>	22	JMH org.openjdk.bench.java.util.zip.InflaterInputStream s.inflaterInputStreamRead OOM	PSU
<a href="#">JDK-8333093</a>	22	Incorrect comment in zAddress_aarch64.cpp	PSU
<a href="#">JDK-8334441</a>	11, 17, 21	Mark tests in jdk_security_infra group as manual	PSU
<a href="#">JDK-8334711</a>	11	[TEST_BUG] Compilation failed of MimeFormatsTest/MimeFormatsTest.java	PSU
<a href="#">JDK-8335552</a>	8	[8u] JDK-8303466 backport to 8u requires 3 ::Identity signature fixes	PSU

## OpenJFX Fixes and Enhancements

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

OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
<a href="#">JDK-8329705</a>	8, 11, 17, 21, 22	Add missing Application thread checks to platform specific a11y methods	CPU,PSU
<a href="#">JDK-8196617</a>	8	FX print tests fail with NPE in some environments	PSU
<a href="#">JDK-8301312</a>	11	Create implementation of NSAccessibilityButton protocol	PSU

OpenJDK Patch ID	Azul Zulu Version	Synopsis	CPU/PSU
<a href="#">JDK-8306329</a>	8	Update ICU4C to 73.1	PSU
<a href="#">JDK-8322251</a>	8, 11, 17, 21, 22	[Linux] JavaFX is not displaying CJK on Ubuntu 23.10 and later	PSU
<a href="#">JDK-8324326</a>	8, 11, 17, 21, 22	Update ICU4C to 74.2	PSU
<a href="#">JDK-8328749</a>	8, 11, 17, 21, 22	Remove unused imports in javafx.web	PSU
<a href="#">JDK-8328752</a>	8, 11, 17, 21, 22	Fix missing @Overrides in javafx.web	PSU
<a href="#">JDK-8329011</a>	8, 11, 17, 21, 22	Update SQLite to 3.45.3	PSU
<a href="#">JDK-8330462</a>	11, 17, 21, 22	StringIndexOutOfBoundsException when typing anything into TextField	PSU
<a href="#">JDK-8331748</a>	8, 11, 17, 21, 22	Update libxml2 to 2.12.6	PSU
<a href="#">JDK-8332328</a>	11, 17, 21, 22	[GHA] GitHub Actions build fails on Linux: unable to find gcc-13	PSU
<a href="#">JDK-8332539</a>	8, 11, 17, 21, 22	Update libxml2 to 2.12.7	PSU

## Fixes and Enhancements Specific to Azul Zulu Builds of OpenJDK

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

Issue ID	Azul Zulu Version	Synopsis	CPU/PSU
ZULU-58709	7	upgrade to Visual Studio 2017 for zulu7	CPU,PSU
ZULU-61018	6, 7	[7u] align ostream.cpp with 8u after JDK-8049253	CPU,PSU

Issue ID	Azul Zulu Version	Synopsis	CPU/PSU
ZULU-61038	6, 7	[7u] hotspot build fails due to narrowing conversion warning in ad_x86_64.cpp	CPU,PSU
ZULU-61549	6	upgrade to Visual Studio 2017 for zulu6	CPU,PSU
ZULU-61560	7	-XX:+UnlockDiagnosticVMOptions -XX:+PrintInterpreter -version unexpected behavior on Zulu 7 with upgrade to VS2017	CPU,PSU
ZULU-61562	7	UnsatisfiedLinkError on awt.dll, Zulu 7 with upgrade to VS2017	CPU,PSU
ZULU-61786	6	[6u] remove <i>declspec(dllimport)</i> specifier for <i>initenv</i> to align with 7u	CPU,PSU
ZULU-62116	6	com/sun/jdi test failures after ZULU-58709	CPU,PSU
ZULU-62139	6, 7	java/nio/channels test failures after ZULU-58709	CPU,PSU
ZULU-63122	11, 17, 21	Provide option for zipfs to ignore invalid extra field	CPU,PSU
ZULU-63267	11, 17, 21	Adjust jdk.zipfs permissions after ZULU-63122	CPU,PSU
ZULU-56476		Unprivileged restore by CRIU may result in segfault	PSU
ZULU-58705	8	Bump minimum target version for zulu8 fx to centos:7	PSU
ZULU-59230	11	fastdebug build fails on solaris	PSU
ZULU-59418	8	QNX7.1 JTREG java/nio/channels/Asynchronous* java.lang.InternalError: ionotify failed: 11	PSU
ZULU-59870	17, 21, 22	Disable rseq in libc on checkpoint	PSU
ZULU-60195		CRIU fails restore on glibc < 2.25	PSU
ZULU-60352	17, 21, 22	Use crac-cru 1.6.1	PSU
ZULU-60367		Cannot uninstall zulu-fx-8 on opensuse & unclean uninstall on others RPM-based	PSU
ZULU-60463	17, 21, 22	CRaCResetStartTime breaks cgroups caching	PSU

Issue ID	Azul Zulu Version	Synopsis	CPU/PSU
ZULU-60477		add copyright file to deb packages	PSU
ZULU-60480		Linux CRaC on MacOS: Docker	PSU
ZULU-60484	17, 21, 22	Assertion error in os::cleanup_memory()	PSU
ZULU-60491	17, 21, 22	Closing CompileLog leads to SIGSEGV	PSU
ZULU-60493	17, 21, 22	Checkpoint fails with CheckUnhandledOops	PSU
ZULU-60674	8, 11	Change to Xcode 12.3 for building on macOS x86_64	PSU
ZULU-60675	17, 21, 22	JVM log filename is not recomputed on restore	PSU
ZULU-61037	17, 21, 22	VM options for CRaC compression	PSU
ZULU-61039	17, 21, 22	CRaC: Restore errors are not visible	PSU
ZULU-61942	11	build on solaris fails after JDK-8210988	PSU
ZULU-61943	8	Resource flags are not set for j2gss.dll and sspi_bridge.dll	PSU
ZULU-62231	17, 21	Compilation error with gcc-14	PSU
ZULU-62531	17, 21, 22	CRaC VM options are not consistent	PSU
ZULU-62660	8	QNX71 oj-reg io-nio java/nio/channels/AsynchronousSocketChannel/Basic.java	PSU
ZULU-63172		zulu-fx deb should not depend on transitional packages	PSU
ZULU-63174	21, 22	sun.nio.ch.Pollers does not handle checkpoint	PSU
ZULU-63262		Restore races PIDs in non-containerized envs after ZULU-60480	PSU
ZULU-63330	17, 21, 22	JVM initialization change after ZULU-62531	PSU
ZULU-63336	11	solaris: libawt fails to use isinf() after JDK-8210988	PSU
ZULU-63490	17, 21, 22	Fix deprecation notice for CRaC options	PSU

Issue ID	Azul Zulu Version	Synopsis	CPU/PSU
ZULU-63526		Cannot install zulu-fx-{8,11,17,21} on Debian 10, Ubuntu 18.04, 20.04 after ZULU-63172	PSU
ZULU-63755	22	CRaC: CPUFeatures: error on centos7 build with pre-set env GLIBC_TUNABLES and -XX:CPUFeatures=generic	PSU

## Fixes and Enhancements Specific to Azul Zulu Builds of OpenJDK With JavaFX

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

Issue ID	Azul Zulu Version	Synopsis	CPU/PSU
ZULU-38524	8, 11, 17, 21, 22	[FX][WEBKIT] unit test javafx.scene.web.MiscellaneousTest.testFontFace fail on win32	PSU
ZULU-38525	8, 11, 17, 21, 22	[jfx][webkit] test avafx.scene.web.FileReaderTest hang on win32	PSU
ZULU-55581	8, 11	win32: glib build is broken after JDK-8318386	PSU
ZULU-56532	8, 11, 17, 21, 22	tests for testRT18097 fail with bundled jfx	PSU
ZULU-57795	11	control tests are broken after JDK-8311127	PSU
ZULU-58163	17, 21, 22	VersionInfoTest fails with bundled jfx	PSU
ZULU-58936	8	linux: glib build is broken after JDK-8318386	PSU
ZULU-60353	8	tests in test.javafx.print package fail on wi2019 for zulu8	PSU
ZULU-60472	8, 11	Test window doesn't receive focus	PSU

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