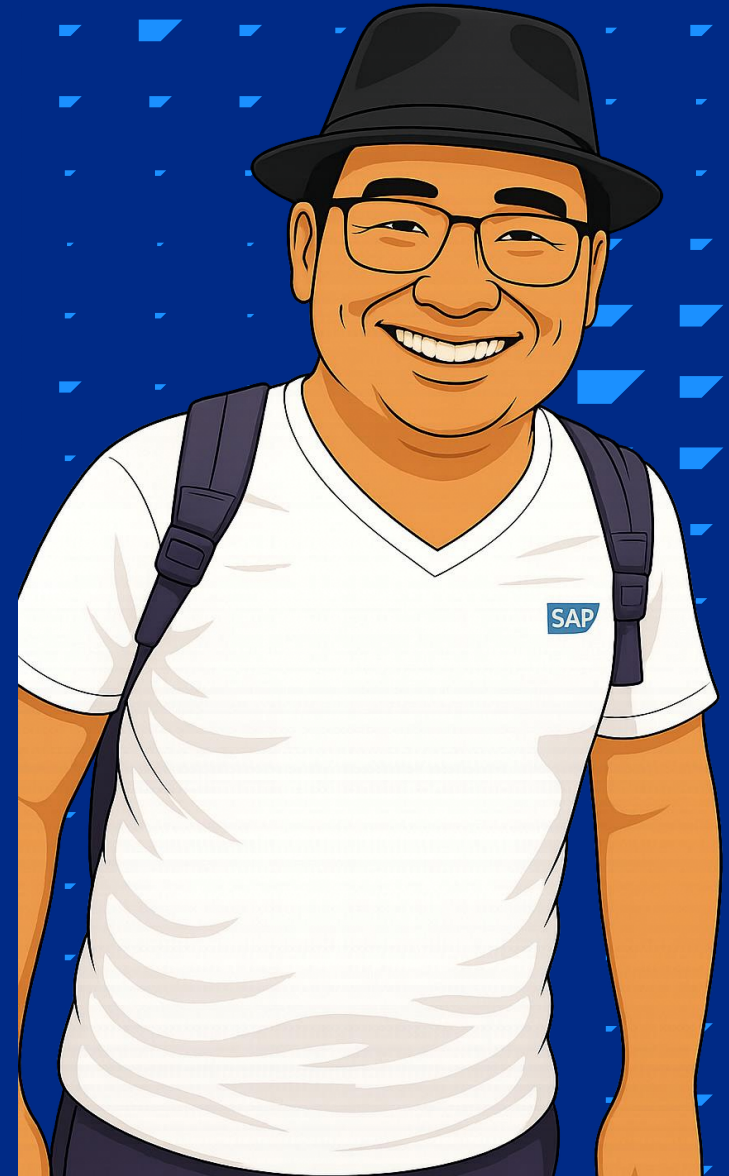


Java Upgrade Journey From 8 to 25

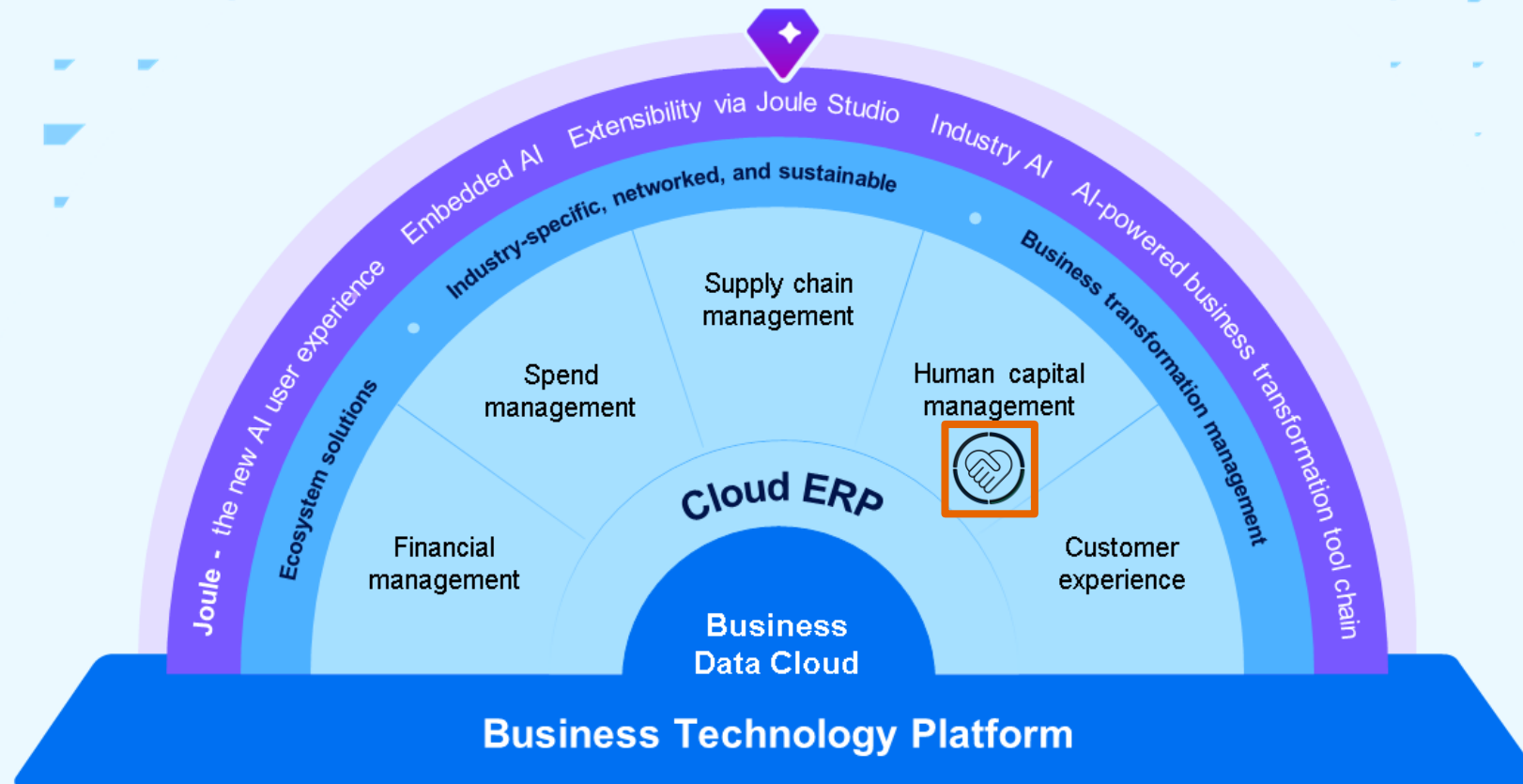
Amos SHI
A Happy Developer
Mar 20, 2026



Scope

Adoption of our suite through RISE and GROW

SAP Business Suite remains the one destination for all customers – bringing together Apps, Data and AI



B2105 Release Blocker: JDK-8170547

JDK / JDK-8170547

RE: SAP JVM 8 SignatureParser.java#L96 Performance issue fix needed for SAP SuccessFactors Employee Central New Hire transaction (ECT-165329)

To: [redacted] ✓ Shi, Amos; +6 others

Cc: [redacted] +9 others

Wed 2021-05-05 02:57

Hi colleagues,

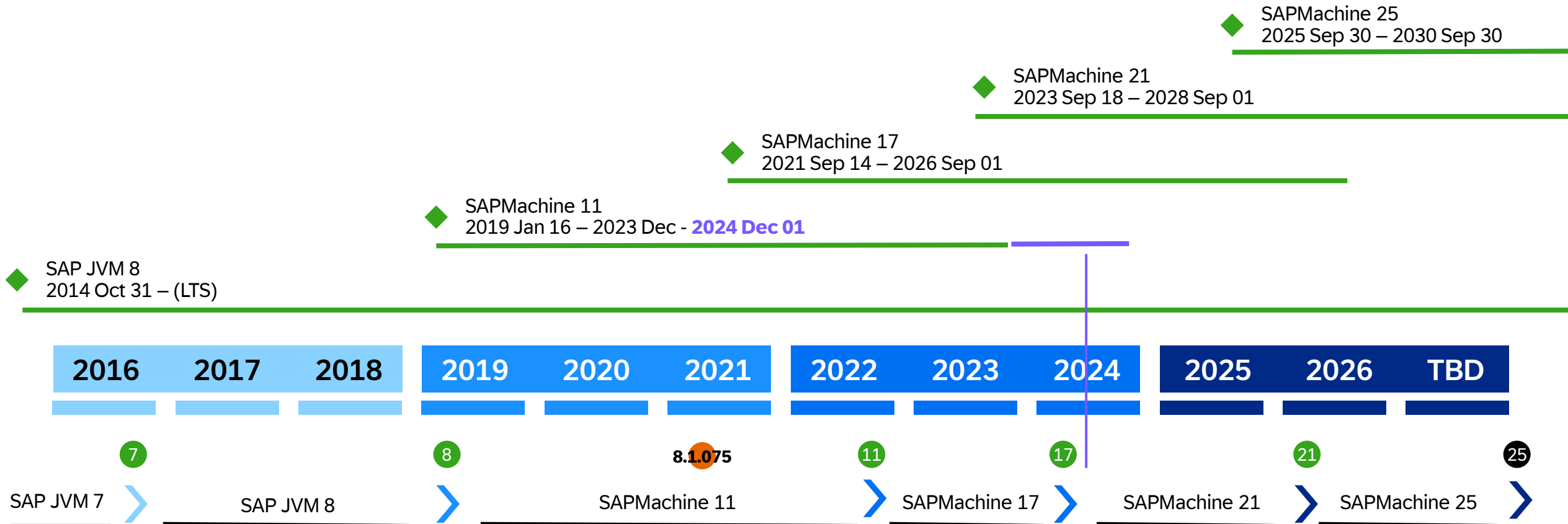
we delivered **SAP JVM 8.1.075** that contains the requested fix. Please try if this fixes your performance issue.

Best regards,

[redacted]

PUBLIC - SAP and

Journey



Context (as of 2022)



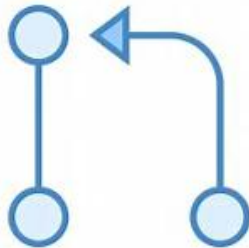
20+ Different
Server Types



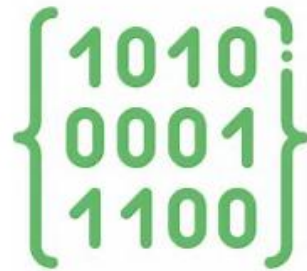
600+ Internal
Lib Jars



800+ External
3rd Party Lib Jars



8K ~ 6K
PR Merge
per Month



10,000,000+
lines of code



With 2 decades
Code history



2K+ Active Developers in multiple Time zones

Top Effort: 3rd Party Libraries



01

Easy Library: Apache commons, ASM, Byte buddy, FasterXML, FreeMaker, gson, javassist, joda, log4j,

02

Backward-Incompatible Library: javax to Jakarta, Spring Framework, Hibernate, SAML, Mockito,

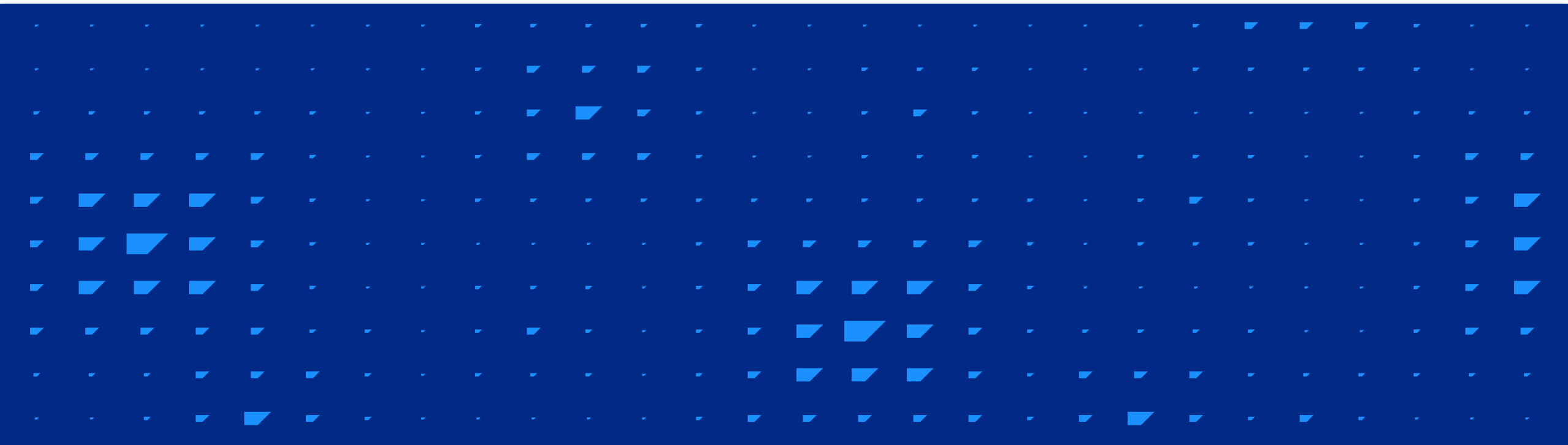
03

Dead/Retired Library: Cglib, PowerMock, Jmock, DWR, ...

04

Commercial Library

Success Factors





Executive Support

Re: BizX SAP JVM Major V

Move Delete Re

Re: BizX SAP JVM Major Versio

 Bear, Meg

To: [Redacted]

I don't think we can wait past 22.11

-M

**Meg Bear**
CEO | President | Board Member | Advisor

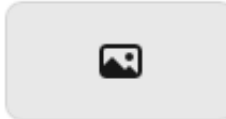
**SAP SuccessFactors**
Full-time · 4 yrs 2 mos

President

Jul 2021 - Oct 2023 · 2 yrs 4 mos
San Francisco Bay Area

Led SAP SuccessFactors' transformation to a \$2B+ business, achieving double-digit year-over-year growth and significant margin expansion. Provided strategic leadership to a 4,000+ global workforce spanning go-to-market, customer success, operations, and product engineering teams.

Launched the new market category of Human Experience Management (HXM) in 2019, redefining how HR technology can make work better by putting people at the center of business. Co-creating a more adaptable and dynamic future of work together with more than 10,000 global customers.

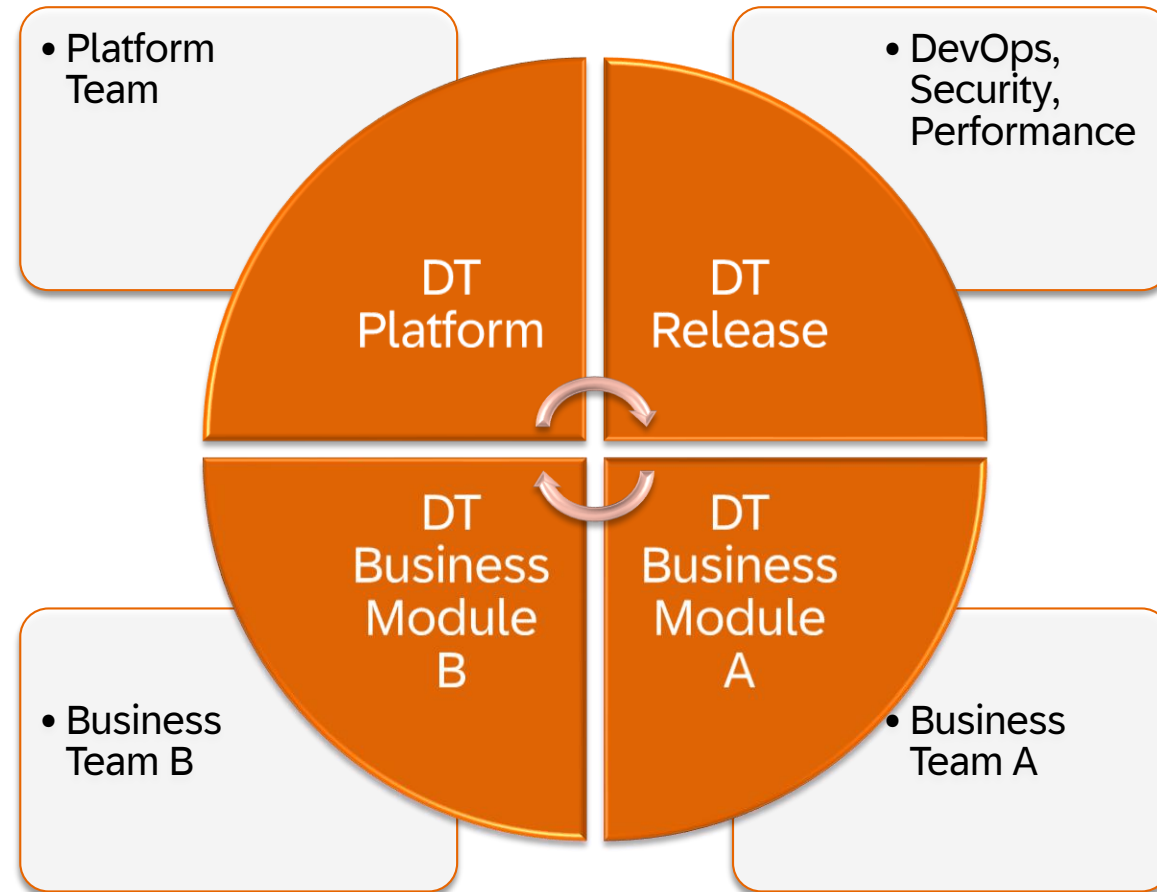


 **Revenue & Profit Growth, Go To Market and +2 skills**

Executive support is essential, as a JVM upgrade requires involvement from the organization's most specialized technical experts. Given the number of concurrent business initiatives, securing the necessary talent requires careful prioritization and competition for limited expert resources.



Dynamic Team



A dynamic team has been established, drawing one expert from each major module group. By combining deep business knowledge with strong technical expertise, this team forms a robust cross-organizational unit. Empowered to make decisions and execute rapidly, the virtual team significantly accelerates progress.

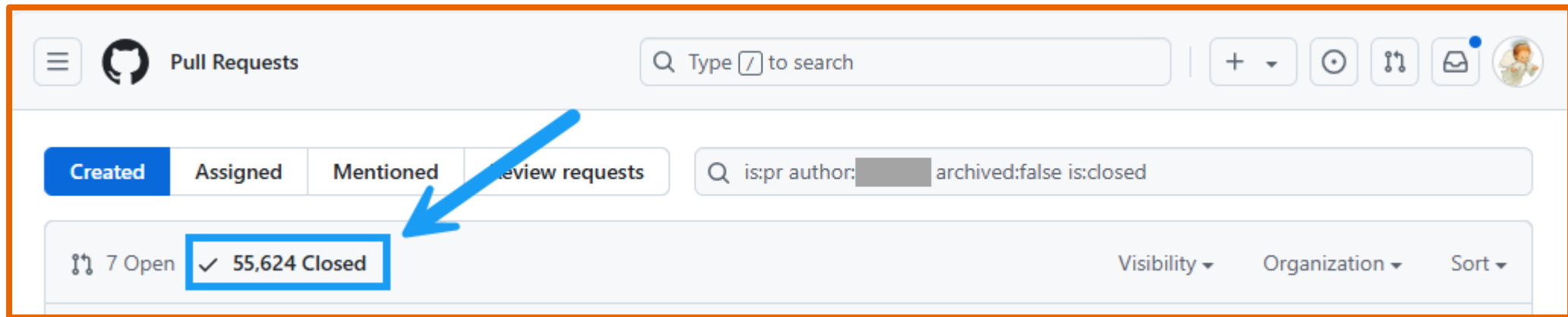


Automations

OpenRewrite[®] by Moderne



./jq



For the JVM upgrade effort, we leveraged industry-standard automation tools and complemented them with internally developed automation scripts. This automation framework enables us to generate hundreds of pull requests per day, rapidly validate code changes through the pipeline, and efficiently merge pull requests once all checks have passed.



Power User



**Code owner review required**

Waiting on code owner review

[Show all reviewers](#)

 1 pending reviewer

▼

**All checks have passed**

6 successful checks

[Hide all checks](#)

 **CD Official-PR Status** — commit status

Required

[Details](#)

 **Dependency Check** — Dependency check pass

Required

[Details](#)

 **Gradle Build Scan** — commit status

[Details](#)

 **SonarQube Code Analysis** Successful in 9m — Quality Gate passed

Required

[Details](#)

 **XRay Plugin Check** — commit status

[Details](#)

 **continuous-integration/jenkins/pr-merge** — This commit looks good

[Details](#)

**Merging is blocked**

Merging can be performed automatically with 1 approving review.

☒ **Merge without waiting for requirements to be met (administrators only)**

Merge pull request ▼

You can also [open this in GitHub Desktop](#) or view [command line instructions](#).

Code owner approval can be bypassed, allowing pull requests to be merged without code owner approval, provided the pipeline validations are successfully met.



Dedicated Pipeline

SFV4 ⓘ - au_recruiting_master_0_76539_260320 ✓

Started: 03/19/2026 9:21 PM

Duration: 3hr 8min 26sec



Jenkins

Welcome to DP Ops server. This Jenkins is configured and managed 'as code'.
Github SelfService

3rd Libs Analyzer [14]

3rd-party-lib-upgrade-b2605 [655]

3rd-party-lib-upgrade-b2605-failed [0]

BBM [4]

BizX Component Sanity Check [2]

Branching [21]

DEC [1]

DP Service [10]

DevProd-Utils [20]

ENG Self-Service Job [7]

GBS [4]

Github-SelfService [26]

Karma-Test [3]

Pull-Request-Exception [1]

SAPMACHINE25 [669]

Security-Scan [1]

SonarQube-Prod [677]

SonarQube-Prod_failed [0]

System [11]

Test [13]

Wet-Repo [1]

all [3390]

b2605 [621]

b2605-failed [0]

master [669]

master-failed [0]

master-gbs [643]

master-gbs-failed [0]

The pipeline validation process requires substantial computing resources. To ensure that Java upgrade-related pull requests progress smoothly, we have provisioned dedicated hardware resources along with a specialized DevOps configuration.



Community

Common Issues and Solutions

- `java.lang.ClassNotFoundException`: `javax.annotation.PostConstruct`, `javax.xml.bind.JAXBException`, `javax.activation.DataSource`, `sun.reflect.Reflection`, `com.sun.istack.localization.Localizable`, `com.sun.xml.stream.buffer.XMLStreamBuffer`, `org.glassfish.gmbal.ManagedObjectManager`, etc.
- The import `jdk.nashorn` / `javax.rmi.PortableRemoteObject` cannot be resolved
- The import `org.jmock.lib.legacy` cannot be resolved
- `java.lang.Error`: `javax.xml.soap.SOAPException`: Unable to create SAAJ meta-factory: Provider `com.sun.xml.internal.messaging.saaj.soap.SAAJMetaFactoryImpl` not found
- `java.lang.ClassFormatError`: Method `<clinit>` is not static in class file ...
- Caused by: `java.io.IOException`: Can not attach to current VM.
- `java.lang.IllegalAccessError`: class `java.lang.System` (in module `java.base`) cannot access class `javax.print.PrintException`
- The type `sun.reflect.generics.reflectiveObjects.NotImplementedException` is not accessible
- Caused by: `java.lang.ClassFormatError`: Nest member class_info_index 321 has bad constant type in class file `com/successfactors/...`
- Caused by: `java.lang.reflect.InaccessibleObjectException`: Unable to make protected final `java.lang.Class`
- `java.lang.RuntimeException`: Class file too large!
- `java.lang.UnsupportedOperationException` at `java.base/java.lang.invoke.VarForm.getMemberName(VarForm.java:118)`
- ...



Support Channel

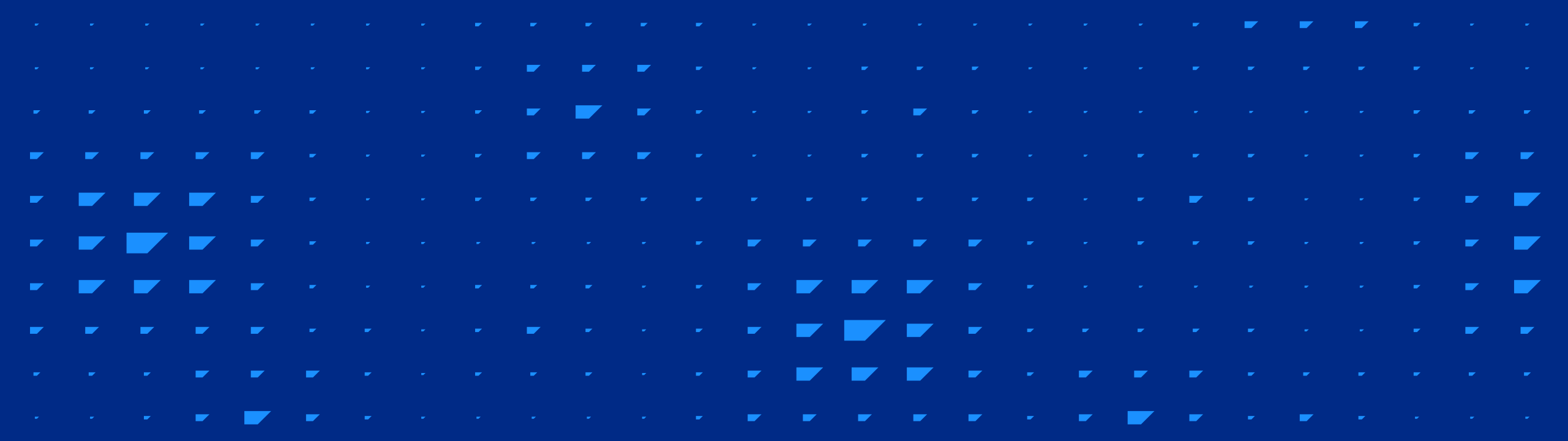


Weekly Meeting

The JVM upgrade effort directly involves contributions from approximately 200–300 engineers. Establishing a centralized community to share common issues, solutions, and practical experiences is essential for accelerating progress and maintaining alignment across all teams.

Feedbacks

- Enable and Adopt Class-File API | Like Transition from Joda-Time to java.time
 - Java 25 upgrade is blocked by the required Gradle 9.x upgrade due to ASM dependencies: **~half year delay**
 - Mockito depends on ByteBuddy; JaCoCo is incompatible with ByteBuddy
 - org.springframework.cglib – repackaging cglib
- Javadoc with Visual Diagrams: Accelerate Understanding of (Legacy) Code
 - Support for PlantUML-style visualizations
 - Support for Graphviz-style diagrams
 - Enable faster comprehension of AI-generated code
- Multiple JSON Libraries in Use
 - Diverse JSON libraries: org.json, Gson, Jackson (org.fasterxml.jackson), Groovy JSON (org.codehaus.groovy.groovy-json), and others
 - jakarta.json (JSON-P) as JSON processing API for new codes
- Recompile Legacy Libraries with Modern JDK Versions
 - Spring Framework 5.x was originally compiled for Java 8
 - Recompiling with Java 21 delivers notable performance gains



Thank you.

Amos SHI

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CA 94583

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