# 2021 Jakarta EE Developer Survey Report

# Agenda

- Executive Summary
- Introduction
- Key Findings
- Recommendations
- Demographics

# Executive Summary

- **The Jakarta EE community is looking for faster support** from existing Java EE / Jakarta EE and cloud vendors.
- **Java EE 8, Jakarta EE 8 & Jakarta EE 9** hits the mainstream with **75% adoption**.
- Use of the **hybrid architecture approach** for implementing Java systems in the cloud has **increased since last year with 29% adoption** reported in 2021 (up from 23% in 2020) **outpacing monolith,** which was ahead of hybrid last year.
- **Over 48%** of respondents have either already **migrated to Jakarta EE or plan to** within the next 6-24 months.

# Executive Summary

- **Spring/Spring Boot** continues to be **the leading framework** for building cloud native applications (60%), **with its share increasing by 16 points** (up from 44% in 2020).
- **Jakarta EE is emerging as the second place cloud native framework with 47%** usage in this year's survey.
- **MicroProfile adoption** has **increased to 34%** (vs 29% in 2020).
- The **popularity of microservices holds steady with a nominal increase**, with the usage of the microservices architecture for implementing Java systems in the cloud increasing since last year (43% in 2021 vs 39% in 2020).

# Introduction

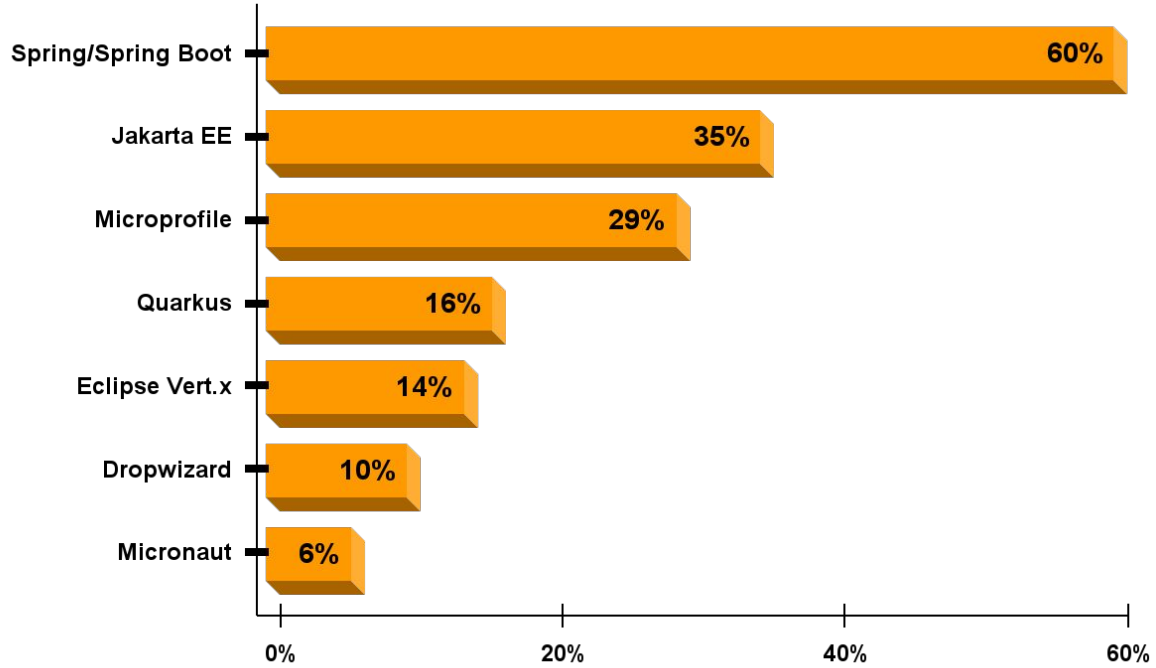
The objective of this survey was **to help Java ecosystem stakeholders better understand the requirements, priorities, and perceptions of enterprise developer communities** and gain a better understanding of how the cloud native world for enterprise Java is unfolding and what that means for their strategies and businesses. From April 6 to May 31, 2021, **940 individuals participated** in the survey.

The survey was promoted on social media, on the Jakarta.ee website, newsletters, blogs and through partners, including Jakarta EE Ambassadors, JUG leaders and Java Champions.

# Key Findings

# Key Takeaway 1

**Spring/Spring Boot continues to be the leading framework** for building cloud native applications (60%), with its share increasing by 16 points (up from 44% in 2020).



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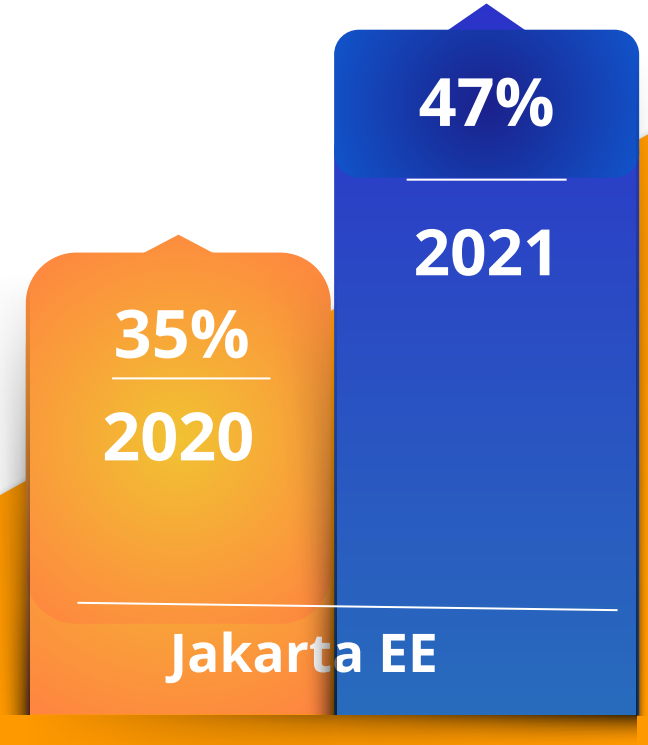
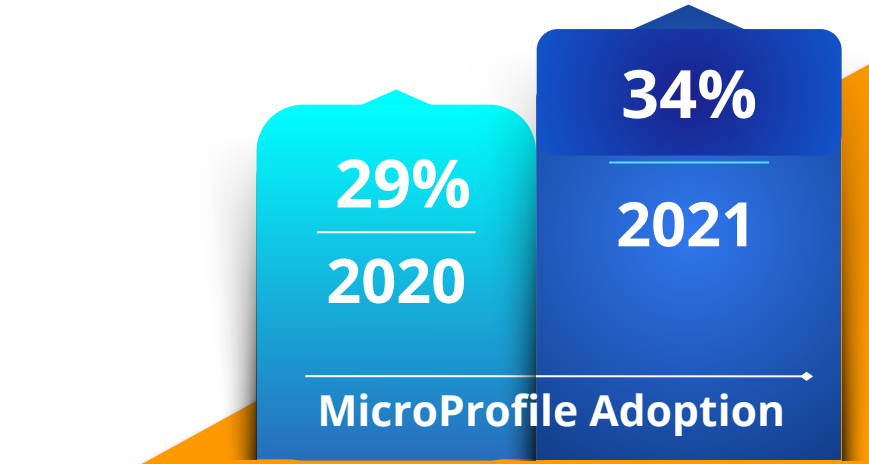
# Key Takeaway 2




With the delivery of Jakarta EE 9 in December 2020, Jakarta EE continues to fulfill its promise of **accelerating business application development for the cloud**, emerging as the second most used cloud native framework at 47% in this year's survey.

# Key Takeaway 3




**MicroProfile adoption has increased to 34%**
(vs 29% in 2020)



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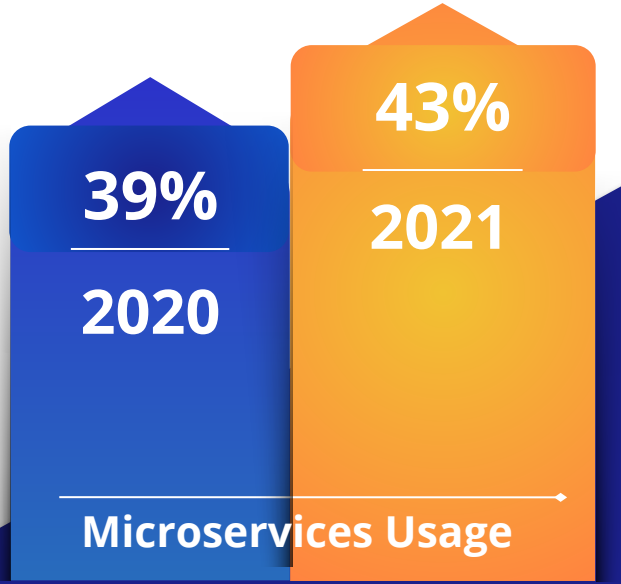
# Key Takeaway 4




**The popularity of microservices holds steady** with a nominal increase, with the usage of the microservices architecture for implementing Java systems in the cloud increasing since last year.



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# Key Takeaway 5

## Top three Jakarta EE community priorities:

### 1st priority

**Native integration with Kubernetes** has increased since last year (2021: 63% vs 2020: 47%)

### 2nd priority

**Better support for microservices** (54% up from 41% in 2020)

### 3rd priority

**Faster pace of innovation** (33%)

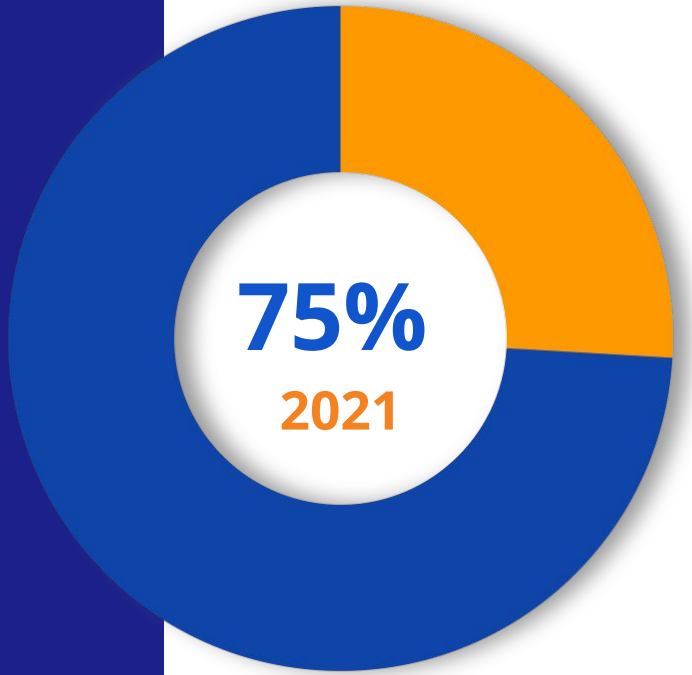
# Key Takeaway 6

The Jakarta EE community is looking for **faster support from existing Java EE / Jakarta EE or cloud vendors** (29%). With **the rise of Jakarta EE**, developers are looking past single vendor microservices frameworks in favor of vendor-neutral standards for building Java microservices.

# Key Takeaway 7

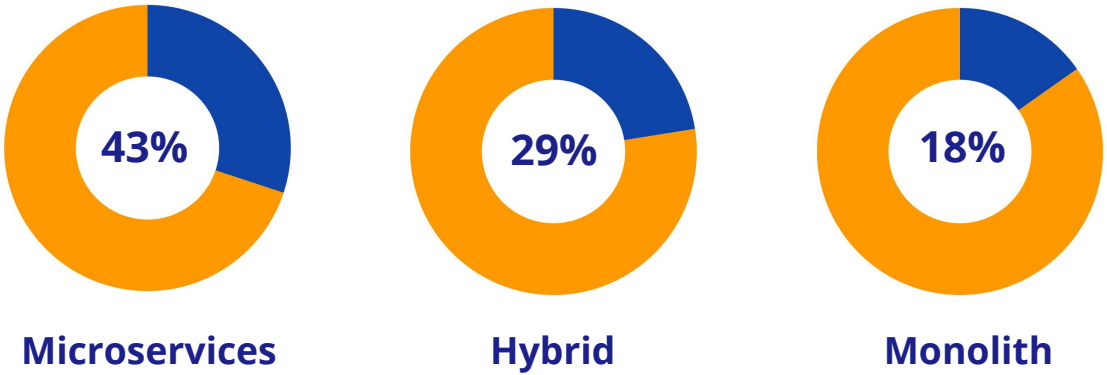
**Java EE 8, Jakarta EE 8 & Jakarta EE 9 hits the mainstream with 75% adoption.**

Despite only shipping in December 2020, **Jakarta EE 9 usage has grown to 9%**. Driven by the contributions of a diverse global community of dedicated developers and vendors, building on the success of Jakarta EE 8, followed by Jakarta EE 9, we have seen **continued growth**.



# Key Takeaway 8

**Top three architectural approaches for implementing Java systems in cloud:**



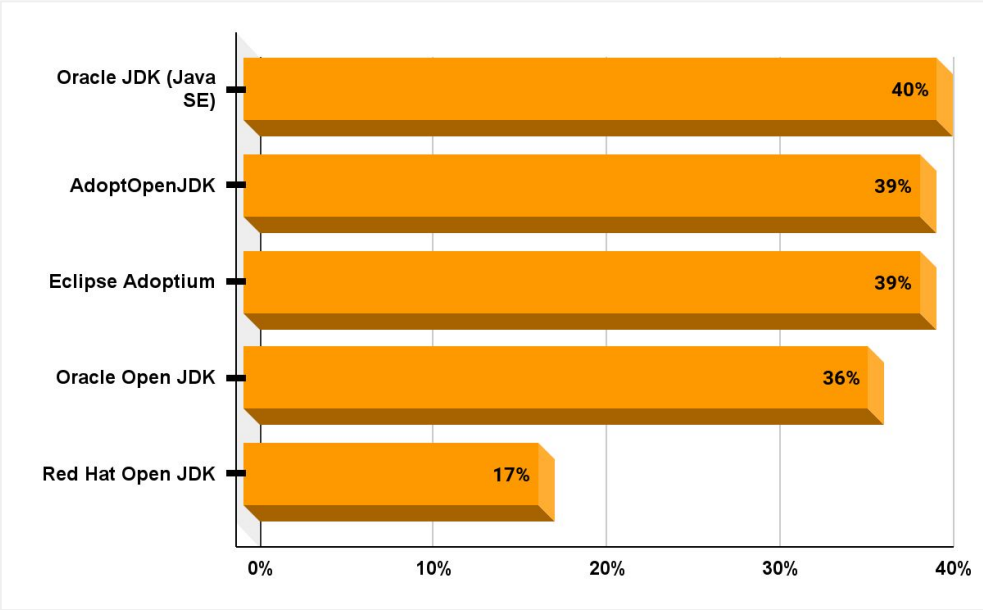

Use of the hybrid architecture approach for implementing Java systems in the cloud has increased since last year with **29% adoption** reported in 2021 (up from 23% in 2020) and has **outpaced monolith**, which was ahead of hybrid last year.

# Key Takeaway 9

Over **48%** of respondents have either already migrated to Jakarta EE or plan to within the next **6-24 months**.

# Key Takeaway 10

**Oracle JDK (Java SE) at 40% and AdoptOpenJDK / Eclipse Adoptium at 39% are the top JDK distributions used in production applications.** The AdoptOpenJDK builds of OpenJDK at 39% are the most popular in production, followed by Oracle Open JDK at 36% and Red Hat Open JDK at 17%.



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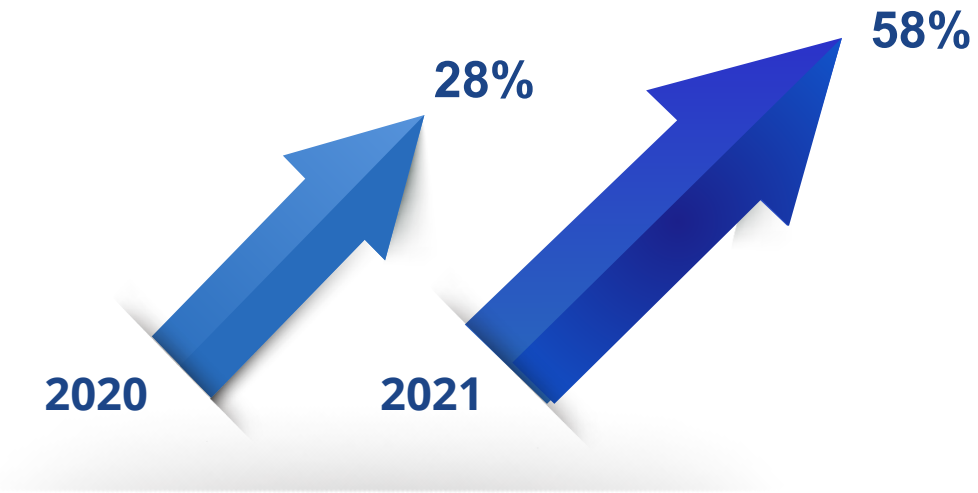
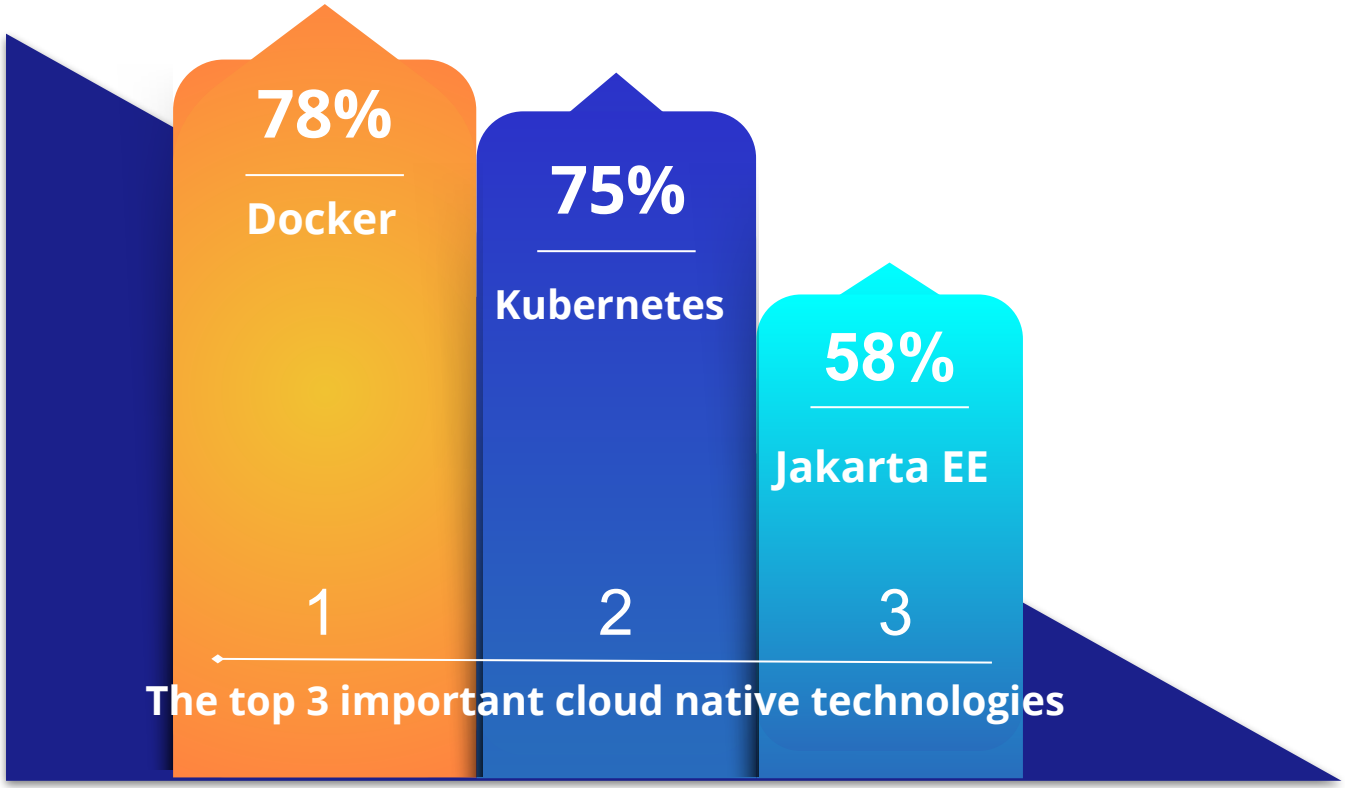
# Key Takeaway 11

**Java 11 use has surged to 58%** (28% in 2020). Sitting at 11% usage, enterprises stick to LTS releases with the next being Java 17.



# Key Takeaway 12



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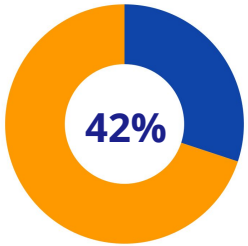
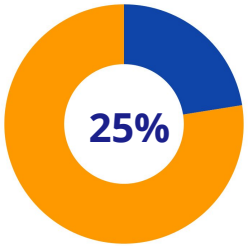
# Key Takeaway 13

## The top 5 runtimes/implementations used are:




1

**Apache TomCat**

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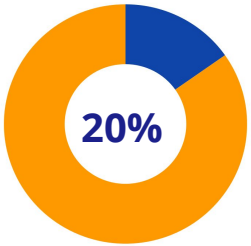
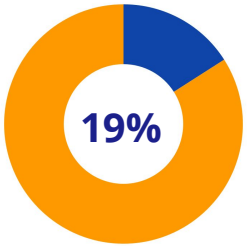
**WildFly**




3

**Quarkus**

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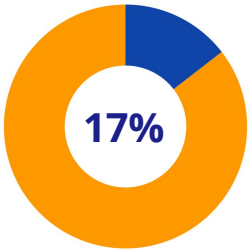
**Eclipse Jetty**




5

**JBoss Enterprise Application Platform**



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# Key Takeaway 14

**The top four specifications that received the most feature requests (the most popular Specifications identified by the respondents) are:**

# Key Takeaway 15

**The top four Specifications that have been requested to be added to the platform:**

# Recommendations
## Enterprises

**Require Flexible Platforms Built for Application Portability and Scalability:** Enterprises should choose platforms that flexibly enable the development of traditional business applications and cloud native business applications. IT decision-makers are encouraged to embrace technologies that are built for application portability, interoperability and interchangeability, based on open enterprise Java specifications and backed by vibrant multi-vendor ecosystems.

**Should Influence Technology Evolution:** Enterprises should actively engage in shaping open technologies that provide a migration path for their skilled Java developers, and enable them to participate in developer communities while directly influencing the technology and learning best practices.

# Recommendations

## Platform and software vendors:

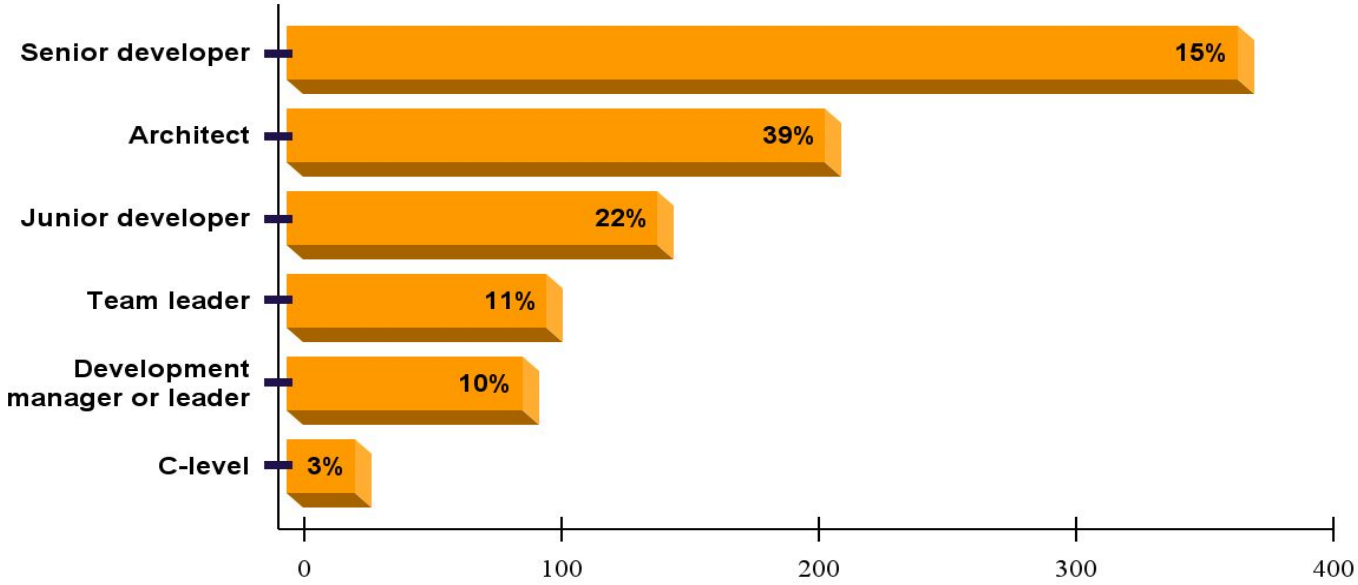
**Need Architectural Flexibility:** Vendors should incorporate a single, cohesive enterprise Java framework they can use to develop and support cloud-based microservices architectures as well as traditional monolithic architectures. Ideally, framework evaluation criteria should include support for innovative technologies, such as MicroProfile, Docker containers, and Kubernetes orchestration.

**Leverage New Innovations With Low Risk:** These capabilities can be extended to your customers to enable the evolution of existing corporate applications in a way that makes the most of existing technology and infrastructure investments. Compete by enabling your enterprise customers to develop new, cloud native applications that increase agility, consistency, and automation.

# Demographics

# Roles

**What best describes your role?**



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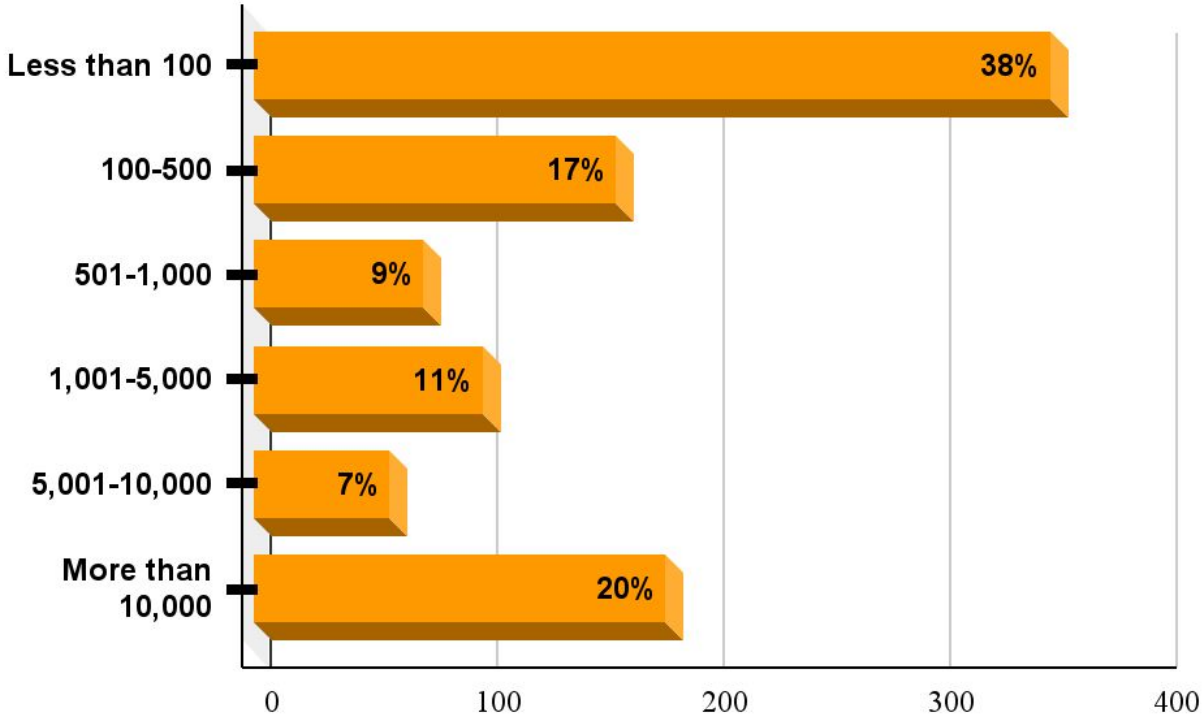
# Employees

**How many employees work in your organization?**



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# Industries

IT

23%

Software

29%

Computer & Electronics Manufacturing

5%

Education

7%

Financial Services

15%

Government

7%

Retail & Consumer Services

4%

Telecommunications

4%

Healthcare & Pharmaceutical

3%

Manufacturing

2%

Energy/Utilities

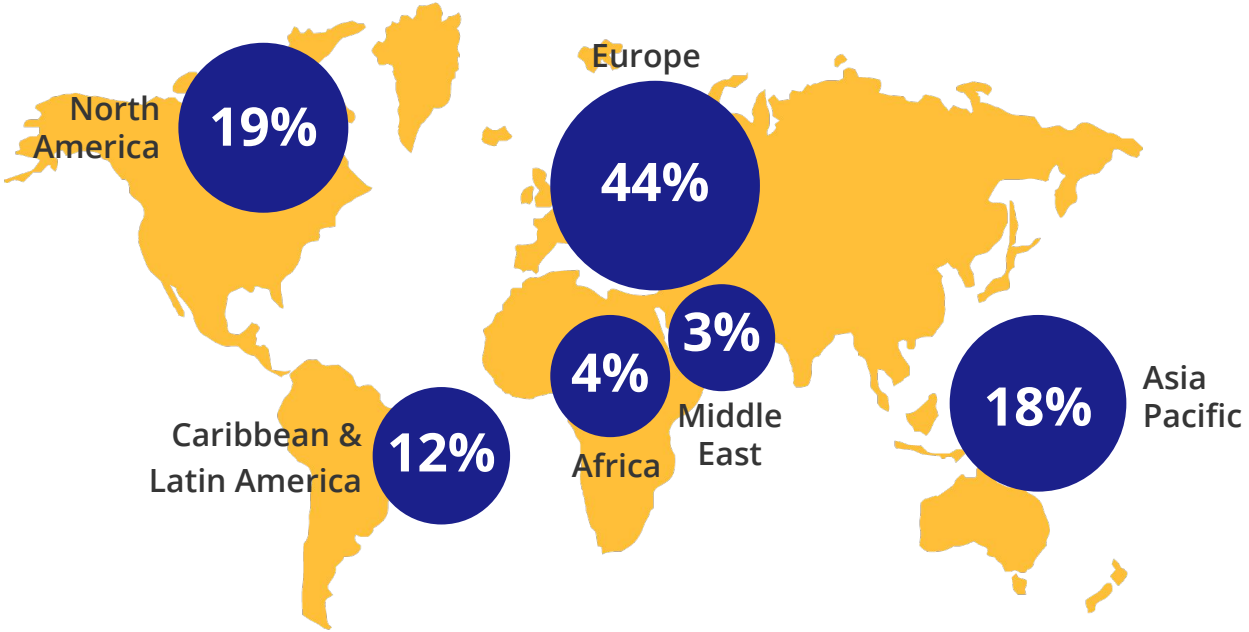
2%

Hospitality

0%

# Regions

**What region are you personally located in?**



# THANK YOU!

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