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OpenLogic

REPORT

2025 State of Open Source Report

Open Source Software Usage, Market Trends, and Analysis

Executive Summary

The 2025 State of Open Source Report provides critical insights into the current trends, challenges, and priorities shaping open source software (OSS) adoption among organizations worldwide. The findings highlight both opportunities and obstacles for companies of all sizes leveraging OSS across industries and regions. Key findings include:

1. **OSS Adoption Surges Despite Challenges**
   - 96% of organizations reported increasing or maintaining their use of OSS, with 26% significantly increasing utilization last year.
   - The top reason cited for OSS adoption continues to be cost reduction, with "no license cost/overall cost reduction" emerging as the primary driver for the second consecutive year.
   - Organizations are focusing investments on cloud and container software, data technologies, and programming languages, with large enterprises also prioritizing analytics.
2. **Persistent Usage of End-of-Life (EOL) Software**
   - 26% of organizations are still using EOL CentOS, including 40% of large enterprises. Alarmingly, 25% of these enterprises have yet to decide on a migration plan.
   - Enterprises using EOL software such as CentOS and AngularJS are nearly three times more likely to fail compliance audits.
3. **Low Confidence in Big Data Management**
   - Nearly half (47%) of organizations handling Big Data reported low confidence in managing those platforms.
   - The complexity and rapid evolution of open source data technologies is a factor, with more than 75% naming lack of personnel and skill gaps as a top barrier.
4. **Challenges in Security and Compliance**
   - Across industries, organizations are struggling with security and compliance management. Key pain points include keeping up with updates and patches, meeting security requirements, and maintaining EOL versions of software.

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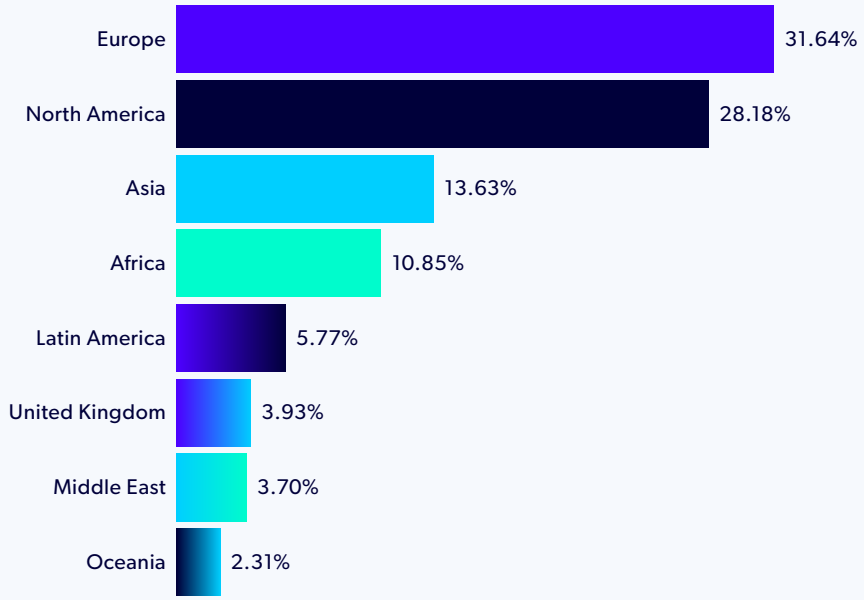
About the Survey

The 2025 State of Open Source Report is based on an anonymous survey conducted between September 17 and December 20, 2024. The survey received 433 responses from individuals all over the world working with open source software in their organizations.

We started by asking respondents some initial demographic and firmographic questions about location, industry, organization size, and title.

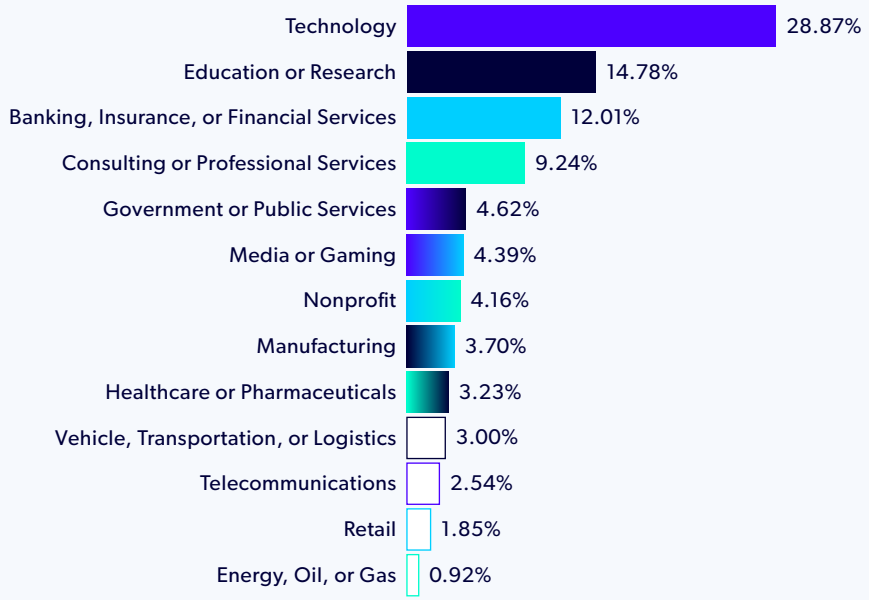
Region

This year for the first time, we received the greatest response from Europe, comprising almost a third of the survey population (31.64%). North America came in second (28.18%), followed by Asia (13.63%) and Africa (10.85%).



Industry

Just like last year, the largest percentage of this year's respondents — more than a quarter — work in the technology sector. Education or research and banking, insurance, or financial services were the next most represented verticals in the 2025 survey population.

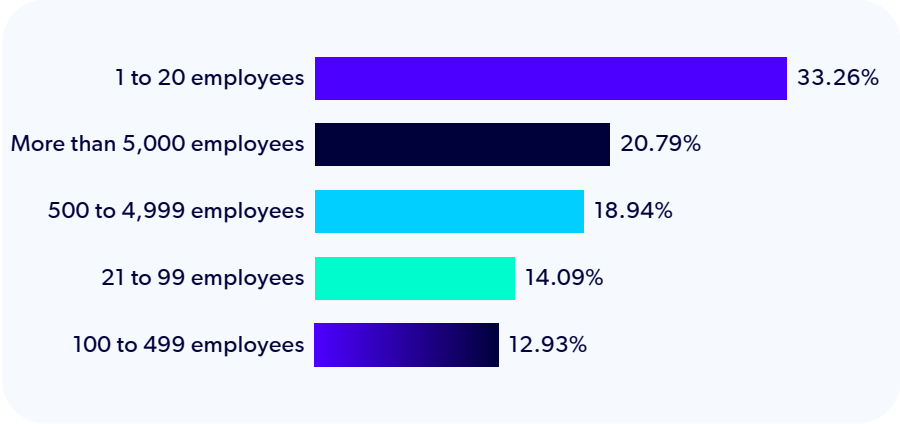


Organization Size

Organizations of all sizes work with open source, and the following graph shows the breakdown by size for our survey takers. Interestingly, more than half (roughly 54%) work for either the smallest companies and startups (20 employees or fewer) or the largest enterprises (more than 5,000 employees). Having a robust number of responses from these two groups makes it possible to see how size impacts an organization's priorities, preferences, and challenges working with OSS.

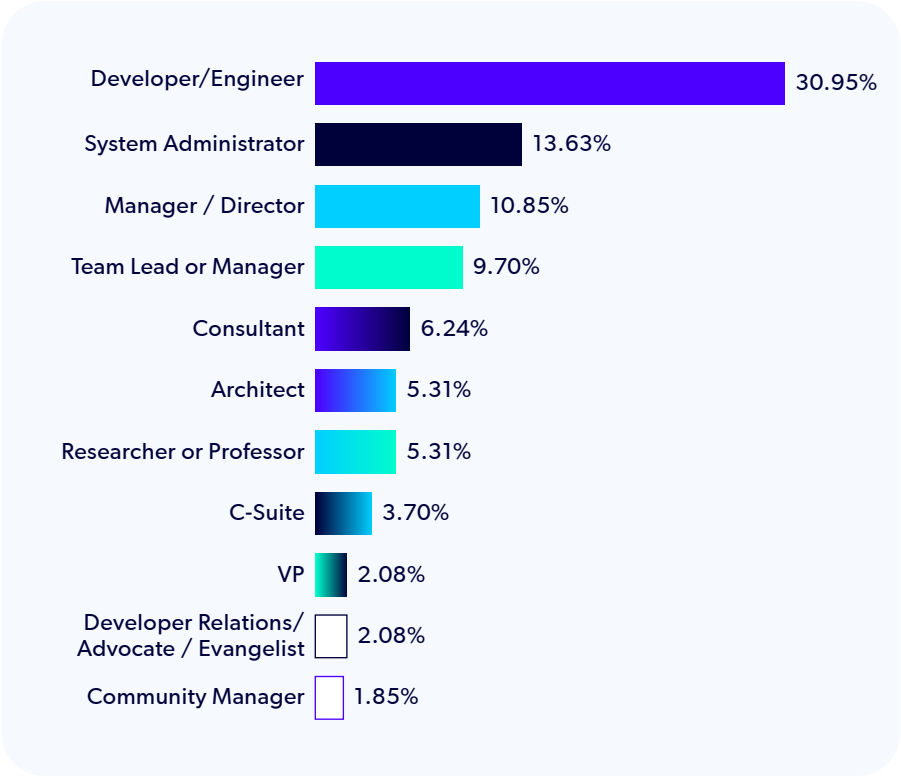
Unsurprisingly, there is a correlation between company size and number of servers in IT infrastructure; more than 50% of respondents from the largest companies deploy more than 1,000 servers (and 28% deploy 10,000+), whereas nearly 80% of companies with fewer than 20 employees are deploying 10 or fewer.

Looking at a cross-section of region and size, a slightly higher percentage of respondents working for the largest enterprises are located in North America (37.78%) compared to Europe (25.56%) while those working for smaller companies (headcount under 100) are predominantly based in Europe (73.43%) compared to North America (37.67%).



Job Title

Nearly half (49.89%) of our respondents are hands-on practitioners working as systems administrators, developers, engineers, and architects. Roughly a fifth (20.55%) are in manager, team lead, and director positions, and a little over 5% are in executive leadership roles. The remainder identify as consultants, professors, researchers, community managers or evangelists/advocates.



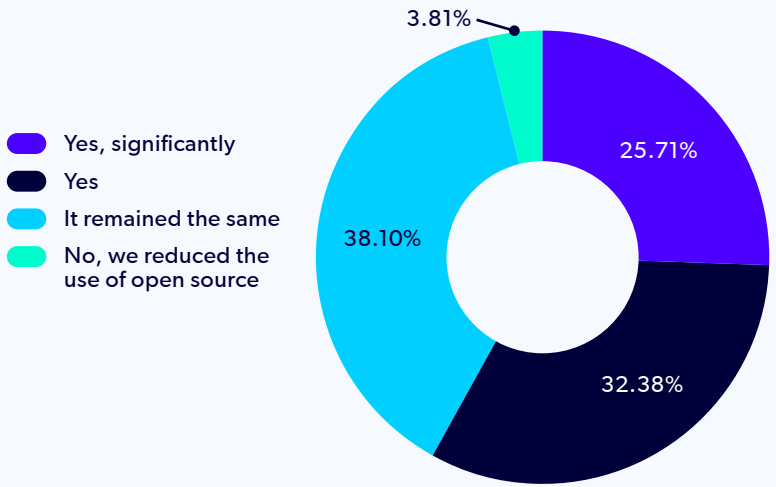
Open Source Usage, Investment, and Support Challenges

Next, we asked if organizations are using more or less open source this year, what kinds of technologies they are investing in, and what obstacles they encounter.

Open Source Software Usage: Did It Grow, Stay the Same, or Decline?

96% of organizations either increased or maintained their use of open source software in the past year — and a quarter (25.71%) reported a significant increase.

HAS YOUR ORGANIZATION INCREASED THE USE OF OPEN SOURCE SOFTWARE OVER THE LAST YEAR?



Here's the breakdown of responses by company size:

Number of Employees	Significantly Increased OSS	Increased OSS	Remained the Same
More than 5,000	34.15%	34.15%	21.95%
500 to 4,999	11.43%	40.00%	45.71%
100-499	30.56%	33.33%	33.33%
21-99	7.69%	42.31%	46.15%
1-20	31.94%	23.61%	43.06%

96% of organizations increased or maintained their OSS usage last year. Slightly more than a third (34%) of the largest enterprises reported a significant increase.

68% of the largest enterprises increased or significantly increased their OSS use last year. For the other size brackets, we saw greater percentages than in previous years saying their OSS usage stayed the same. Adopting new technologies often requires additional personnel, which may not be possible in this economic climate, particularly for smaller companies and early-stage startups. As we have seen year after year, finding and retaining individuals with the necessary skills and experience continues to be a pain point for many teams when it comes to their OSS usage.

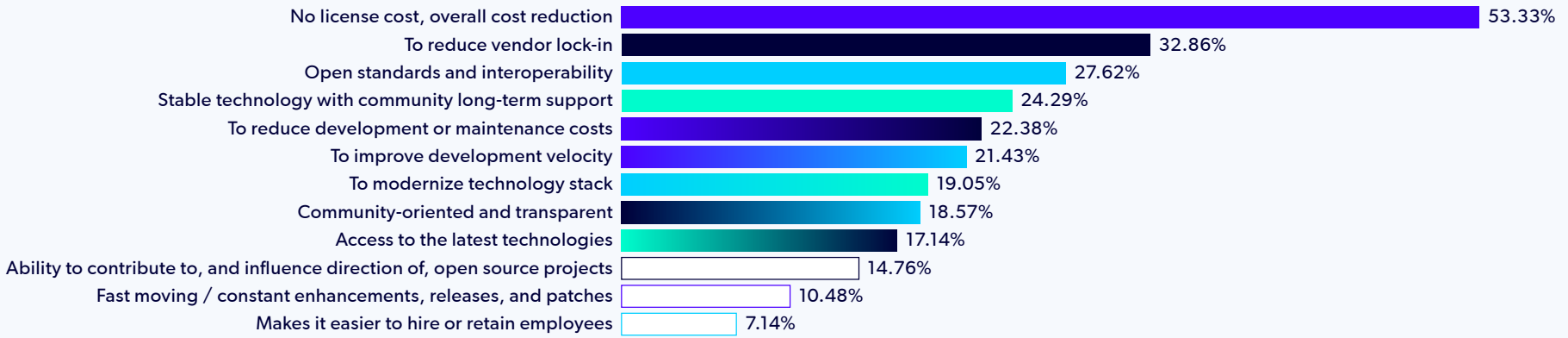
By industry, technology had the highest percentage (37%) of respondents noting significant increase of OSS.

Why Organizations Are Choosing Open Source Software

What is motivating organizations to adopt open source over proprietary software? In previous years, no license cost/cost reduction was a factor, but not the primary one — but that has definitively shifted. For the second year in a row, cost savings is the top reason to use OSS for organizations of all sizes. Last year, it was selected by 37% and that number jumped to 53% this year, with about a 20-point gap separating it from the next most popular reason (to reduce vendor lock-in).

Also notable: Fewer respondents overall selected improving development velocity and having access to the latest technologies than in past years, though individuals working for larger companies were more likely to rank them.

Reducing costs is the #1 reason organizations choose open source, regardless of size.



Digging into the responses by industry, no license cost was selected by 92% of those working in government/public sector, where the threat of underfunding (and defunding) looms large for many agencies. Other industries where cost savings is particularly important include retail (67%), banking (62%), telecommunications (60%), and manufacturing (57%) where the operational scale likely makes proprietary license costs unsustainable.

We speculate that ongoing economic headwinds and uncertainty are behind this trend — businesses are taking a hard look at their IT spend and increasingly switching to free open source alternatives, as well as evaluating managed services to determine if they can host OSS equivalents at lower or more predictable costs.

Regionally, the one outlier is Asia – improving development velocity came in first, with cost reduction and access to the latest technologies tied for second.

Let's take a closer look at the other reasons that made the top 5 this year:

To Reduce Vendor Lock-In

Avoiding vendor-lock in is a high priority for consulting/professional services, and in Europe, North America, and Latin America.

Open Standards and Interoperability

All but the largest enterprises ranked open standards and interoperability highly, and it's particularly important in Europe.

Stable Technology With Community Long-Term Support

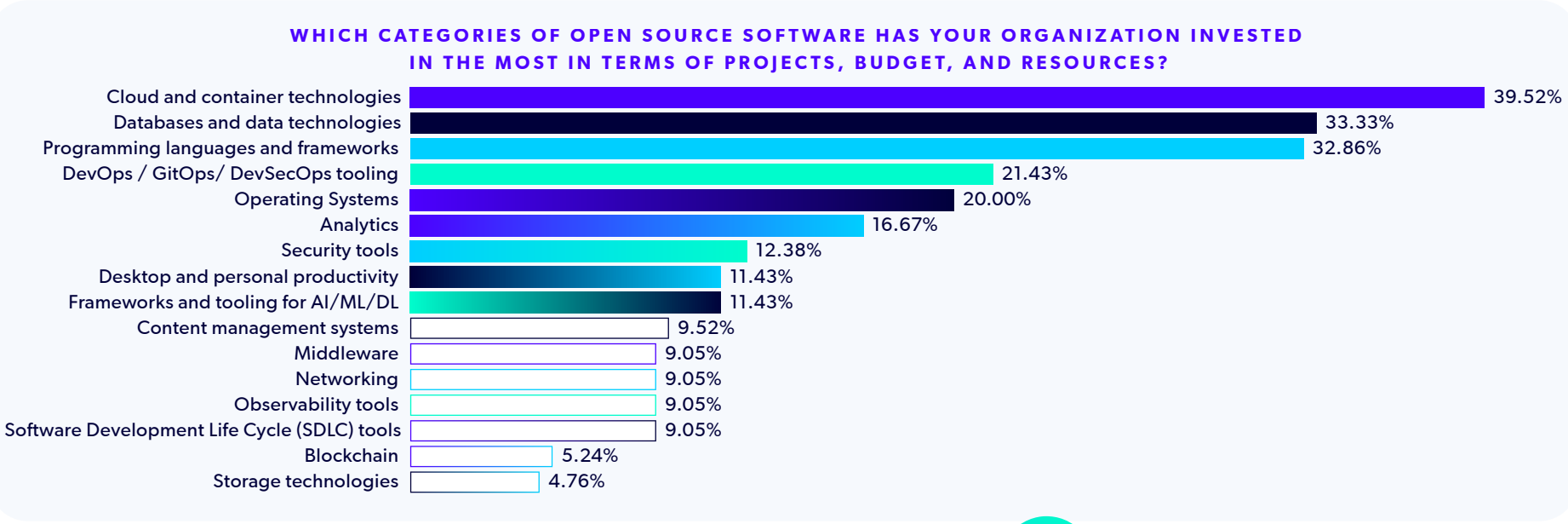
This reason captured about the same percentage of responses last year, but slipped from 3rd to 4th in the overall ranking.

To Reduce Development or Maintenance Costs

This was a new option we added this year and it got the most votes from respondents working at mid-size companies (500 to 5,000 employees).

Open Source Investment

We asked respondents to pick the top five technology types receiving the most investment from their organization:



Our survey population this year is investing most heavily in cloud and container technologies, followed closely by databases/data technologies, and programming languages and frameworks. Each of these categories was chosen by a third or more of our respondents, with only a few percentage points of difference between them.

Data technologies and containers have occupied the top two spots here before, but programming languages and frameworks saw a boost this year — which indicates that more organizations are developing OSS and not just consuming it. It's the #1 investment area for the smallest companies (1-20 employees), suggesting that they are creating in-house solutions instead of purchasing software off the shelf.

About 40% of organizations are investing in cloud and container technologies.

Choosing open source languages helps prevent vendor lock-in and reduces licensing costs, which we know from the previous question are both top priorities. There have also been recent price increases on proprietary language distributions like Oracle Java, which we will touch on in more detail in the programming languages section of the report.

Open Source Support Challenges and Barriers to Adoption

In the survey, we asked a few different questions about the challenges of deploying OSS. First, we provided a list of challenges that organizations might encounter working with open source and asked respondents to rate them on a scale of 1 to 5, where 1 denotes not challenging, 3 is somewhat challenging, and 5 is very challenging.

More OSS Investment Insights:

- As companies increase in size, so does their investment in DevOps/GitOps/DevSecOps. It's also the top investment for the vehicle/transportation/logistics industry, suggesting that the automation that industry relies on extends to their software processes as well.
- The UK and North America are investing more in operating systems than the rest of the world.
- Analytics is the #2 investment area for the largest enterprises, as well as in Asia.

For two of the options — finding and selecting OSS that meets license policies and infrastructure scalability and performance issues — the most common rating was 1, indicating that most find them not challenging. It is reassuring to see that licensing complexity is not a barrier for this year's survey population, and that organizations are, for the most part, not struggling to scale using OSS or running into issues related to performance.

For all the other challenges, however, more than 50% of respondents gave them a 3 or higher, identifying them as somewhat to very challenging. The most challenging issues, with the highest weighted averages, were:

1. Keeping up with updates and patches
2. Meeting security and compliance requirements
3. Maintaining end-of-life (EOL) versions

These three are, of course, very connected — keeping up with updates and patches and maintaining end-of-life versions are key to meeting security and compliance requirements. Every year the responses to this question remind us that it is an uphill battle for organizations to stay on the latest versions and/or have access to security updates and patches for EOL software in their stacks. As we will show later in the report, many organizations are still on CentOS and AngularJS and there is a strong correlation between being on EOL software and failing compliance audits.

Keeping up with updates and patches, meeting security and compliance requirements, and maintaining EOL versions are the most challenging aspects of working with OSS.

Here's a more detailed breakdown of how our respondents rated challenges:

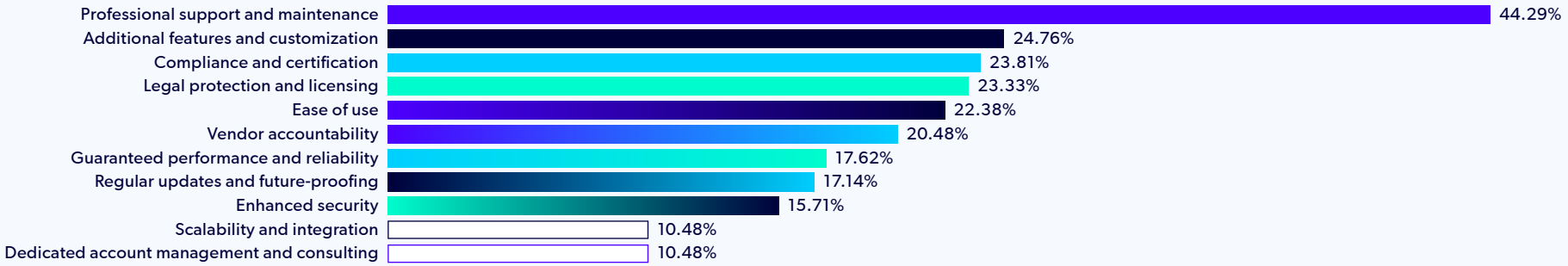
Challenge	Percentage of >3 Responses (Somewhat to Very Challenging)
Keeping up with updates and patches	63.81%
Meeting security and compliance policies	60.00%
Maintaining EOL versions	58.57%
Installations, Configurations, and Upgrade Issues	57.14%
Not enough personnel	56.66%
Lack of skills, experience, and proficiency	53.80%
Lack of high-level, real-time technical support	51.91%

Region and Industry Insights:

- Asia finds maintaining EOL versions most challenging: 71.43% of respondents rated it as a 4 or 5. This correlates with high (compared to other regions) CentOS and Angular.js usage — 33% and 30%, respectively.
- Respondents working in manufacturing characterized more things as very challenging compared to other industries. This could be because automation is critical to this segment, and that requires changes to multiple systems at once to ensure everything works together, which can be especially difficult at scale.
- Meeting security and compliance requirements and keeping up with updates and patches are significant challenges in government/public services and the finance sector, likely due to external regulations.

We followed up this question with a few more to better understand OSS adoption barriers and how organizations are responding to challenges. We asked:

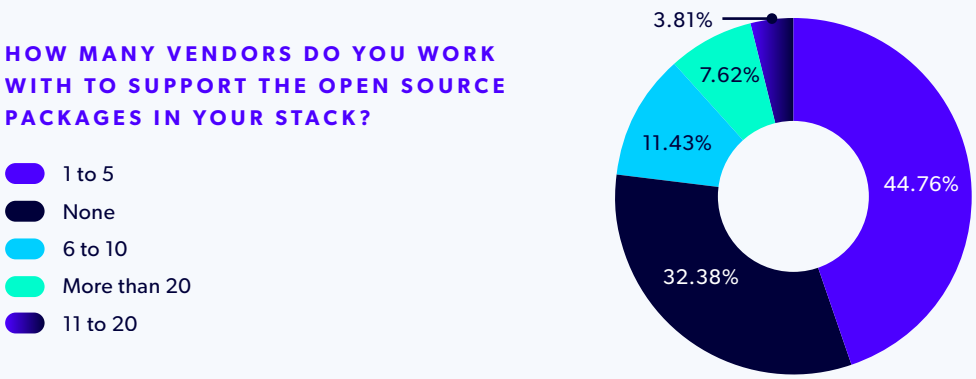
IN CASES WHERE YOU ARE USING THE PROPRIETARY VERSION OF OPEN SOURCE-BASED SOFTWARE, WHAT IS KEEPING YOU FROM SWITCHING TO THE OPEN SOURCE TECHNOLOGY?



44% said professional support and maintenance, which was the most popular answer by a wide margin, with 20 points between it and the #2 reason (additional features and customization). The gap widens further in the most regulated industries (technology, finance, energy, manufacturing, healthcare, and transportation), where 60% selected professional support and maintenance.

Next, we asked:

HOW MANY VENDORS DO YOU WORK WITH TO SUPPORT THE OPEN SOURCE PACKAGES IN YOUR STACK?



While 45% said they work with 1-5 vendors, when we looked at company size, we discovered that 27% of organizations with more than 5,000 employees have more than 20 vendors. That's a lot of support contracts to manage.

Finally, we asked:

HOW ARE YOU ADDRESSING THE SHORTAGE OF OPEN SOURCE SOFTWARE SKILLS?

Professional support and maintenance is the main reason companies choose proprietary software over OSS.

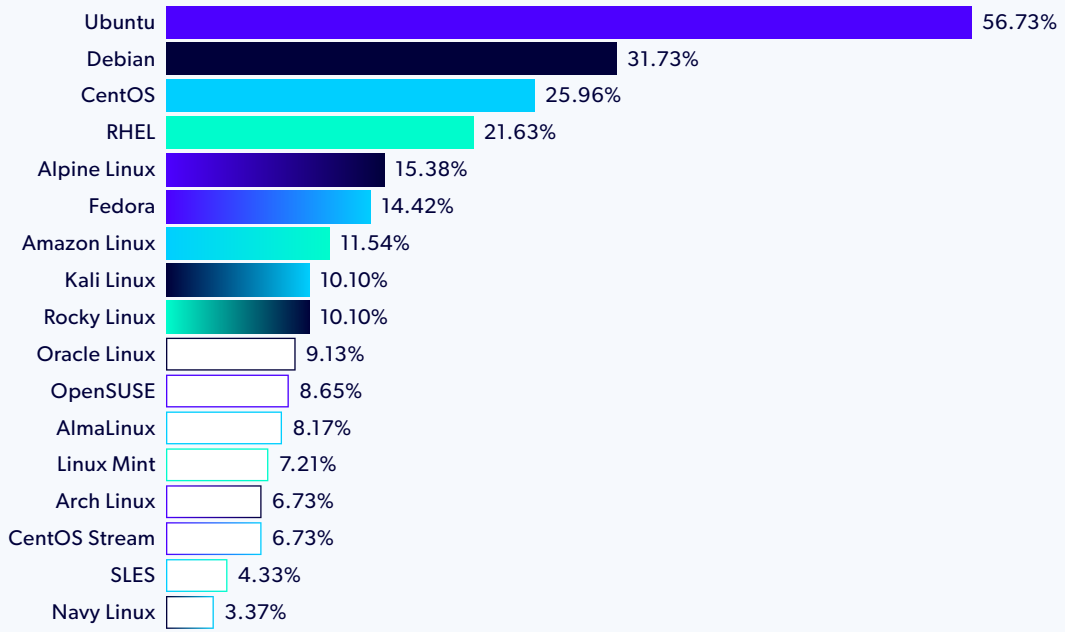
27% of the largest enterprises have more than 20 support vendors.

It's good to see that projects are, for the most part, not being delayed and interesting that it's a fairly even split between organizations that are hiring contractors or partnering with vendors vs. upskilling their workforce. Regionally, Asia and North America are slightly more likely to outsource talent, whereas Europe and Latin America are focusing more on providing training.

Open Source Linux Distributions

For the third year in a row, Ubuntu is the most used Linux distribution, selected by more than half (56.73%) of our respondents. Debian is being used by 31.73% and 25.96% are still on CentOS despite all versions now being EOL.

WHICH OPEN SOURCE LINUX DISTRIBUTIONS DOES YOUR ORGANIZATION USE TODAY?



Despite all versions being EOL, CentOS is the third most used Linux distribution, and more than a quarter of our respondents are still on it.

Ubuntu is most used regardless of company size and in all regions except Asia, where CentOS is the top distribution (and Ubuntu is tied for second place with Fedora). By industry, it is also dominant except for in the banking/finance vertical, where RHEL is more popular, followed by CentOS, and Ubuntu is third.

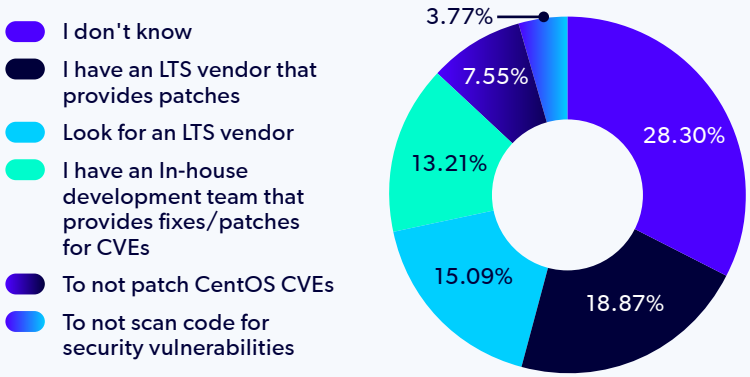
A Snapshot of CentOS Usage Post-EOL

CentOS 7 reaching end-of-life in June 2024 was a major event in the Enterprise Linux world and we were curious to see what usage would look like as a result. Here's what we found:

- CentOS is still the 3rd most used distribution overall (same as last year).
- 40% of the largest enterprises remain on CentOS.
- While CentOS usage declined in North America and Europe in the past year, other parts of the world (particularly Asia and Latin America) have been slower to migrate to a new distro.

For those who selected CentOS, we asked four follow-up questions:

WHAT IS YOUR PLAN IN THE EVENT OF NEWLY DISCLOSED CENTOS VULNERABILITIES (CVES)?

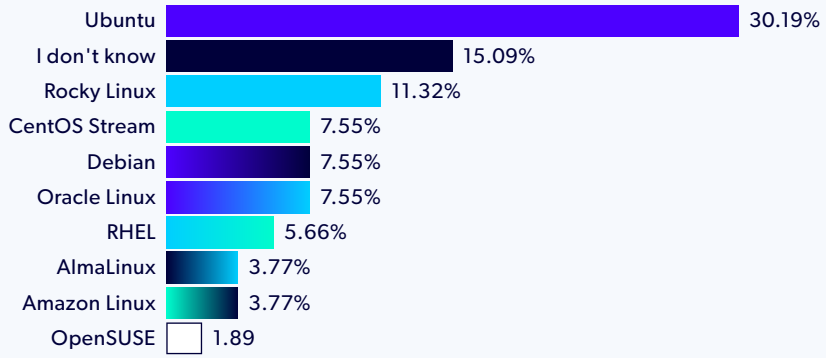


A CVE impacting your operating system has the potential to cause massive problems and presents significant risk, so it is especially worrisome that 28% don't have a plan in place to address new CentOS CVEs. When we segment by company size, that number jumps to 38% for the largest enterprises.

While those big companies are the most likely to have an LTS vendor, still only 25% of them do. Fortunately, only about 11% are taking a head-in-the-sand approach by not scanning or patching CVEs, putting their infrastructure at risk. (Still, we wish that number was zero).

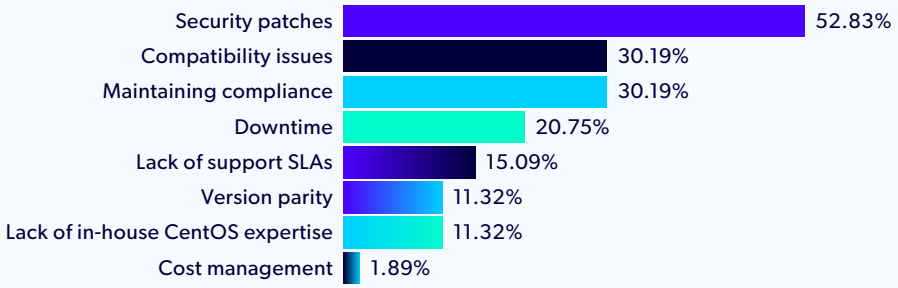
28% of organizations on CentOS don't know what they will do in the event of newly disclosed CVEs.

WHAT OPERATING SYSTEM ARE YOU PLANNING TO REPLACE CENTOS WITH?



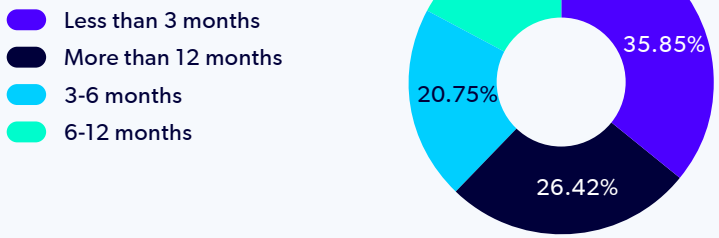
When asked where they intend to migrate, Ubuntu was the top pick everywhere except in Europe, where 27% of respondents said "I don't know" compared to 18% who selected Ubuntu. While 15% overall said "I don't know," interestingly 25% of the largest enterprises gave that response.

WHAT ARE YOUR BIGGEST CHALLENGES IN MANAGING YOUR (NOW END-OF-LIFE) CENTOS SERVERS?



Security patches was the top answer, with more than 50% of respondents citing it, which makes sense in light of the fact that only 13% can patch in-house and only 19% have an LTS provider to provide patches.

HOW LONG DO YOU ANTICIPATE YOUR MIGRATION OFF CENTOS WILL TAKE?



83% of CentOS users cited security patches or maintaining compliance as their biggest challenge post-EOL.

43% think migrating off CentOS will take more than 6 months.

As one might expect, these timelines correlate to company size — bigger companies (who are likely to have thousands of servers) expect their migrations will take longer. Anecdotally, we are hearing from our CentOS LTS customers that migrations are proving more complex and taking more time than anticipated, even for smaller businesses.

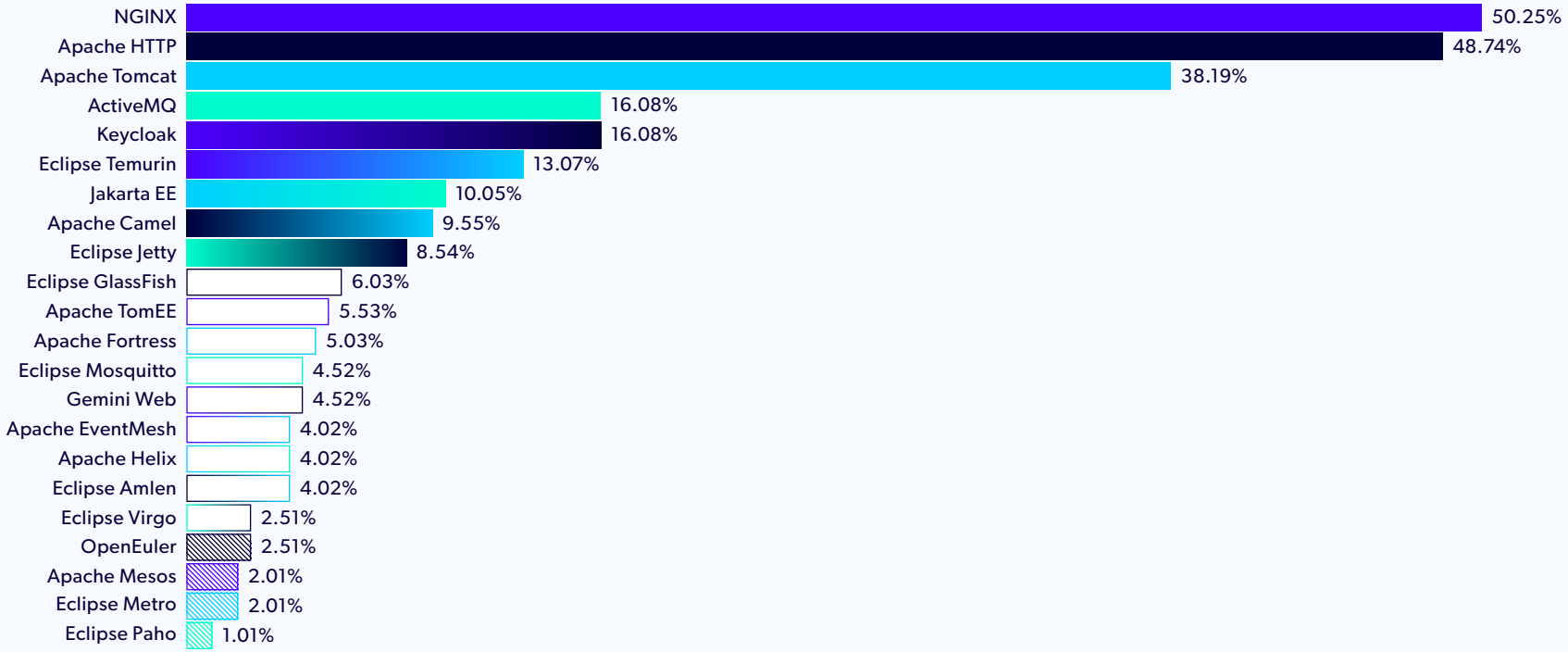
Open Source Infrastructure Software

Not much has changed over the last 12 months in this category: NGINX, Apache HTTP, and Tomcat are still the three most popular infrastructure technologies, in that order. NGINX and Apache HTTP usage is pretty even, with just 1.5% difference between them, and 71% of organizations are deploying both.

Other infrastructure technologies with double-digits usage include ActiveMQ, Keycloak, Jakarta EE, and Eclipse Temurin. Take a look:

71% of organizations use both NGINX and Apache as HTTP web servers.

WHICH OF THESE OPEN SOURCE INFRASTRUCTURE TECHNOLOGIES DOES YOUR ORGANIZATION USE TODAY?



Comparing NGINX, Apache, and Tomcat by industry, some trends emerge:

Industry	Top Web Infrastructure Technology
Banking, Insurance, or Financial Services	Tomcat
Consulting or Professional Services	NGINX
Education or Research	Tie – NGINX and Apache HTTP
Energy, Oil, or Gas	Tie – NGINX and Apache HTTP
Government or Public Services	Tie – NGINX and Apache HTTP
Healthcare or Pharmaceuticals	Tie – Tomcat, NGINX, and Apache HTTP
Manufacturing	Tie – Tomcat, NGINX, and Apache HTTP
Media or Gaming	NGINX
Nonprofit	Apache HTTP
Retail	Apache HTTP
Technology	NGINX
Telecommunications	Apache HTTP
Vehicle, Transportation, or Logistics	NGINX

Tomcat, being the web server of choice for Java-based applications, unsurprisingly finds its niche in the most enterprise of industries: Banking, Insurance, and Financial Services. Because they can serve content from a variety of different languages and backends, Apache and NGINX are the clear choice for companies not using Java or using a mix of technologies in their web stacks. NGINX in particular shines as a performant reverse proxy, and often sits in front of even Tomcat-based services.

Org Size Matters:

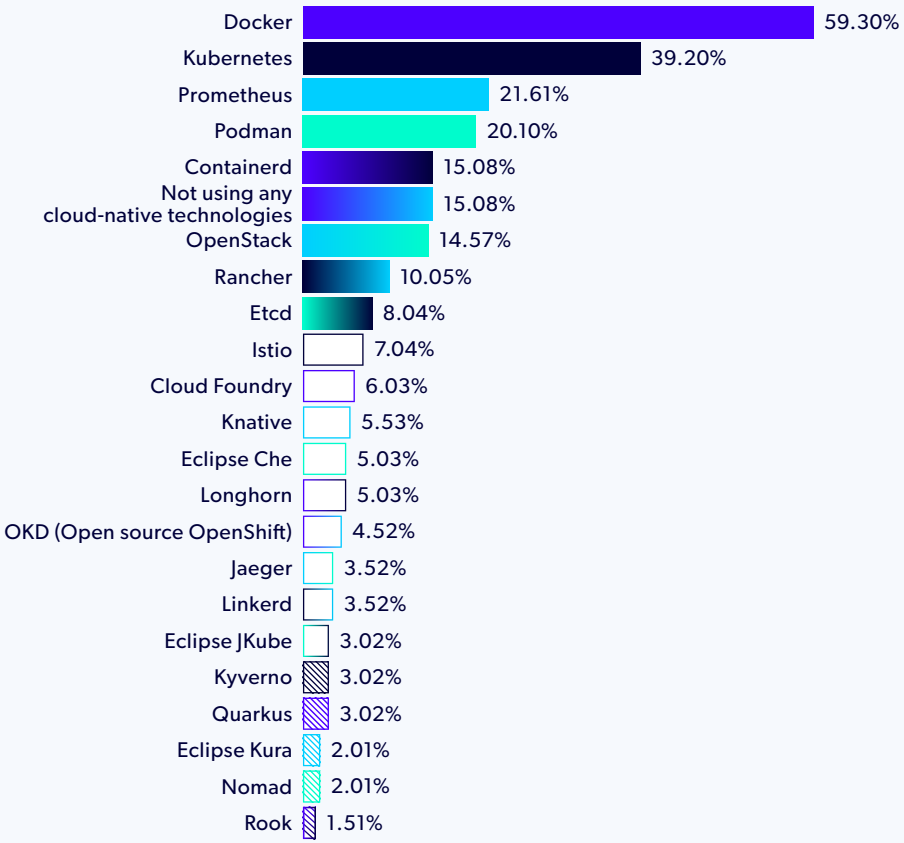
NGINX is the most used infrastructure technology for companies with up to 5,000 employees. For larger employers, Apache HTTP remains more popular.

Cloud-Native Open Source Technologies

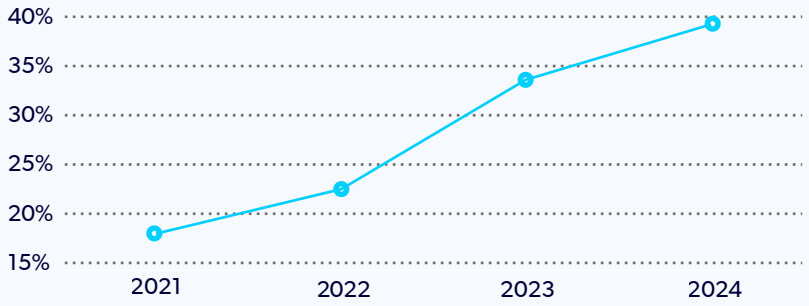
As evidenced by the open source investment question, cloud-native and containerization software is unquestionably on the rise. But which technologies are organizations favoring?

The 15% who said they are not using any cloud-native technologies predominantly work for organizations with 20 or fewer employees. Generally, we're seeing more adoption in this category across all regions and industries. Kubernetes in particular has grown remarkably; usage has more than doubled, from 18% in 2021 to 39% in 2024:

WHICH CLOUD-NATIVE OPEN SOURCE TECHNOLOGIES DOES YOUR ORGANIZATION USE TODAY?



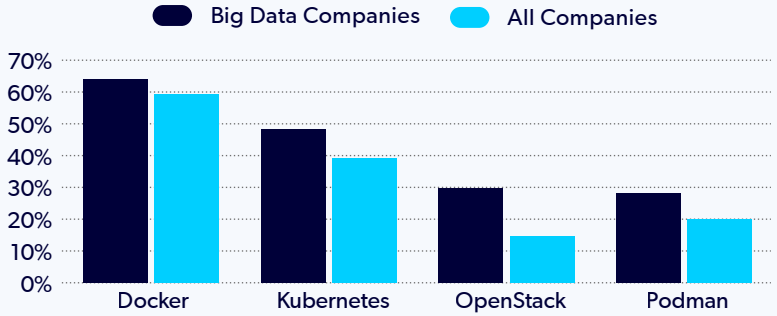
KUBERNETES USAGE



Kubernetes usage has more than doubled since 2021.

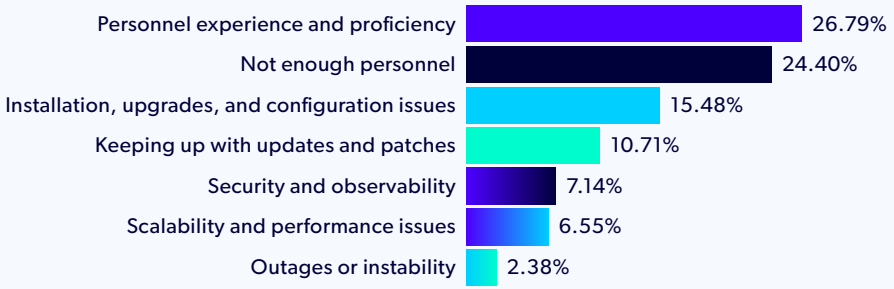
Filtering responses to this question to those who indicated they use OSS to manage or process big datasets (Big Data) was revealing: Only 4.69% of these organizations aren't using any cloud-native tools and OpenStack usage is twice as high:

CLOUD-NATIVE AND CONTAINER USAGE FOR COMPANIES HANDLING BIG DATA



We also asked a follow-up question about what is most challenging about working with cloud-native technologies. In this category, it's clear that skill gaps and personnel shortages are the biggest pain points:

WHAT IS THE MAIN SUPPORT CHALLENGE WITH YOUR ORGANIZATION'S CLOUD-NATIVE TECHNOLOGIES?



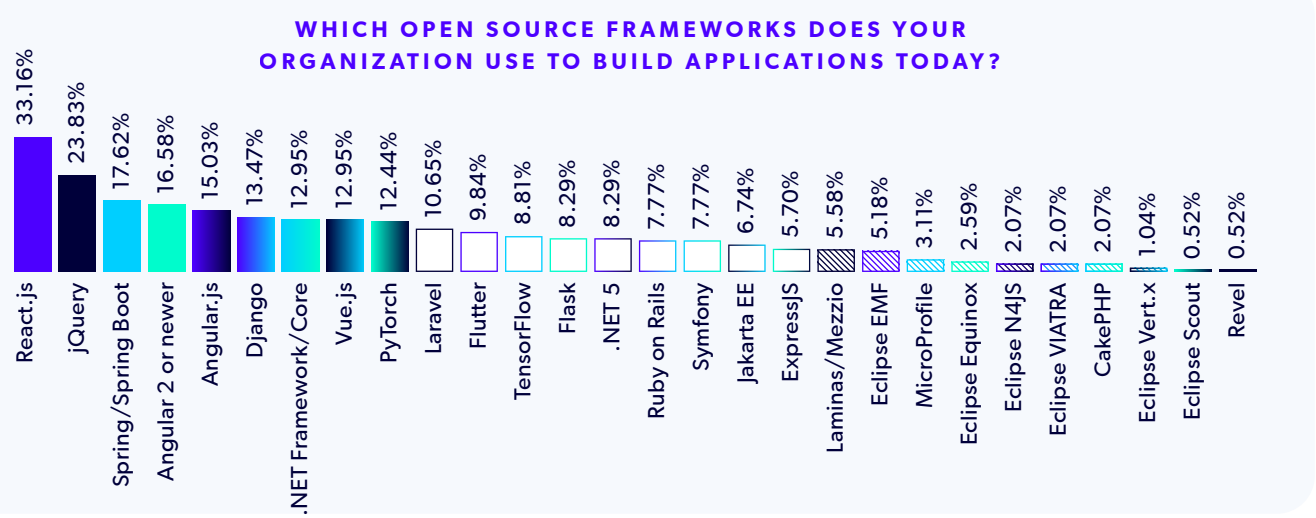
More Cloud-Native Software Insights:

- Docker and Containerd are popular choices for organizations of all sizes, but most widely used by the smallest companies; OpenStack is much more commonly used in large enterprise settings.
- OKD and Rancher, which are both used to manage Kubernetes clusters, have been neck and neck in previous years, but with this population, Rancher pulled ahead — possibly because it's more popular in Europe, the region where we had the most survey responses this year.
- Prometheus is especially prevalent in the banking and technology industries and among teams working for mid-size companies.

For cloud-native and container technologies, 51% claim not enough personnel or personnel experience and proficiency is the biggest challenge.

Open Source Frameworks

Here's what the open source framework landscape looks like in 2024:



Usage for EOL Angular.js and Angular is virtually identical.

A third (33.16%) of our respondents use React.js, which is more than last year (25%). jQuery and Spring/Spring Boot round out the top three most used frameworks overall.

Notably, Angular.js usage is roughly the same as Angular 2 (and newer), despite the fact that only the latter is still receiving updates and has community support. Even more remarkable — nearly a third (32%) of companies with between 500 and 5,000 employees are still on Angular.js, three years past EOL.

AI Trend:

Usage for AI frameworks PyTorch and TensorFlow is much higher for the largest enterprises — 30.56% and 22.22% respectively. The top 3 frameworks for this size bracket are React.js, PyTorch, and Vue.js; TensorFlow is tied for 4th with Angular, Angular.js, and Django.

Looking at company size and grouping the frameworks by their associated languages, we see the following:

Number of Employees	JavaScript Framework[1] Usage	PHP Framework[2] Usage	Python Framework[3] Usage	Java Framework[4] Usage
More than 5,000	37.60%	4.00%	12.00%	7.20%
500-4,999	45.91%	8.16%	5.10%	13.26%
100-499	43.61%	10.63%	8.52%	12.76%
21-99	42.10%	9.21%	5.26%	14.47%
1-20	36.87%	12.05%	7.80%	9.21%

[1] Angular.js, Angular, ExpressJS, jQuery, React.js, Vue.js, Eclipse Vert.x, Eclipse N4JS, Eclipse VIATRA

[2] Laravel, Laminas/Mezzio, Symfony, CakePHP

[3] Django, Flask

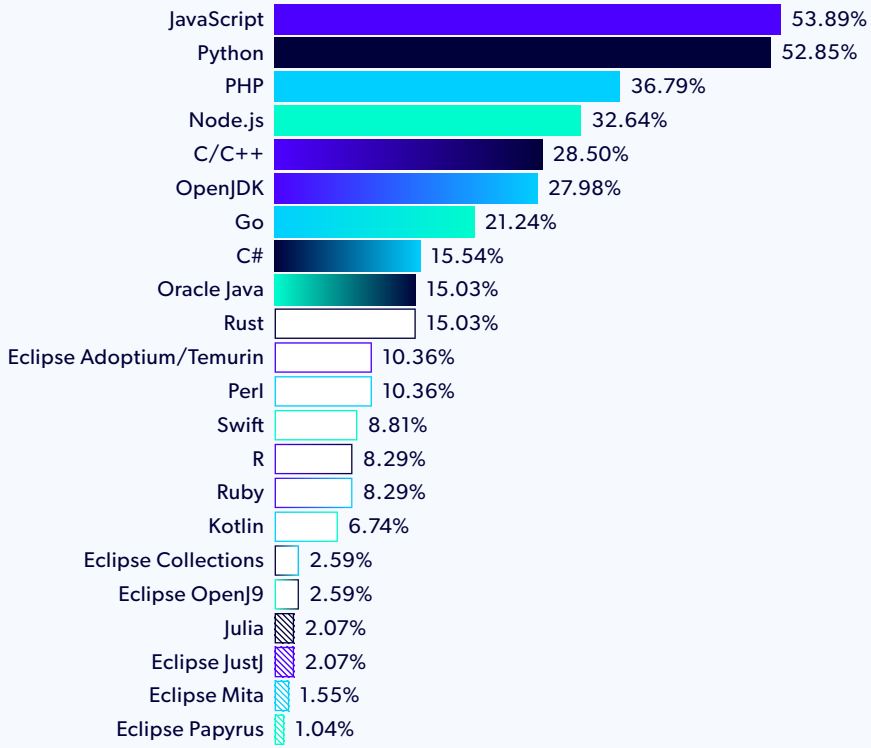
[4] Jakarta EE, Eclipse EMF, Eclipse Scout, Spring/Spring Boot

JavaScript frameworks are the most widely used across companies of all sizes, with Java frameworks coming in second — excepting the very largest and very smallest organizations, where Python and PHP frameworks are outpacing Java, respectively. PHP framework usage is almost inversely proportionate to company size, with smaller teams preferring it for reasons we'll address in the next section on programming languages and runtimes.

Open Source Programming Languages and Runtimes

All application development starts with the choice of programming language, so this is a critical category. Last year, Python surpassed JavaScript for the first time as the most used programming language; JavaScript retook the #1 spot in 2024, though only 1% separates them, so usage is basically even.

WHICH TECHNOLOGIES DOES YOUR ORGANIZATION USE TO BUILD APPLICATIONS TODAY?

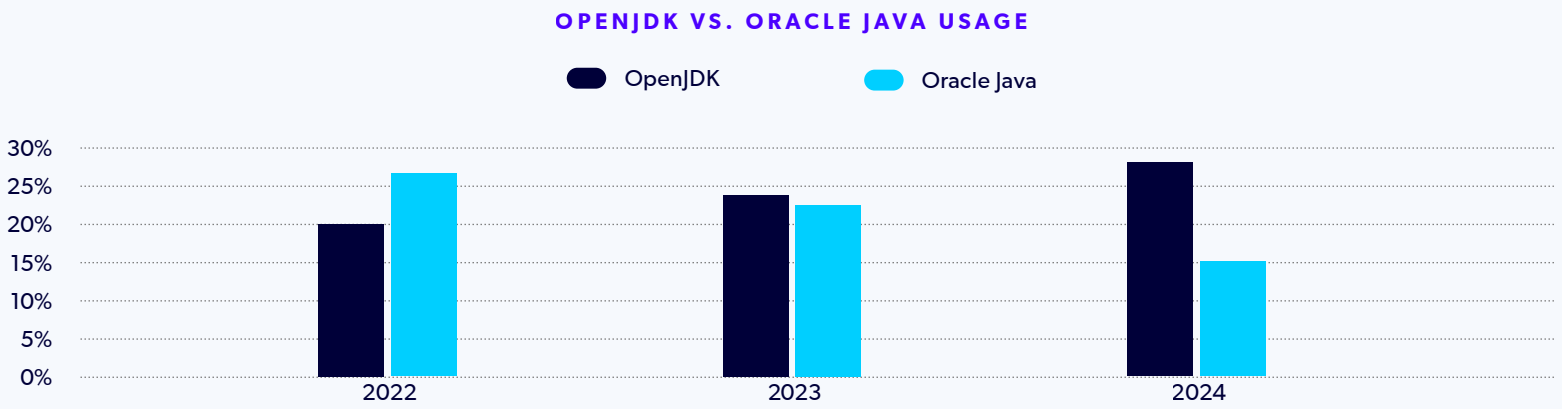


In our survey population, PHP is the third most used language or runtime, pulling ahead of C/C++ and Node.js this year.

Org Size Matters:

The largest organizations favor Python over JavaScript (53% to 44%), and PHP usage is highest (45%) among companies with 20 or fewer employees. This tracks with deployment models, as PHP is traditionally considered the easiest and least expensive to deploy.

Another trend we have been tracking year over year is OpenJDK vs. Oracle Java usage. As you can see, OpenJDK has been steadily gaining adopters while Oracle Java has been declining, with a particularly steep drop-off from last year to this year.

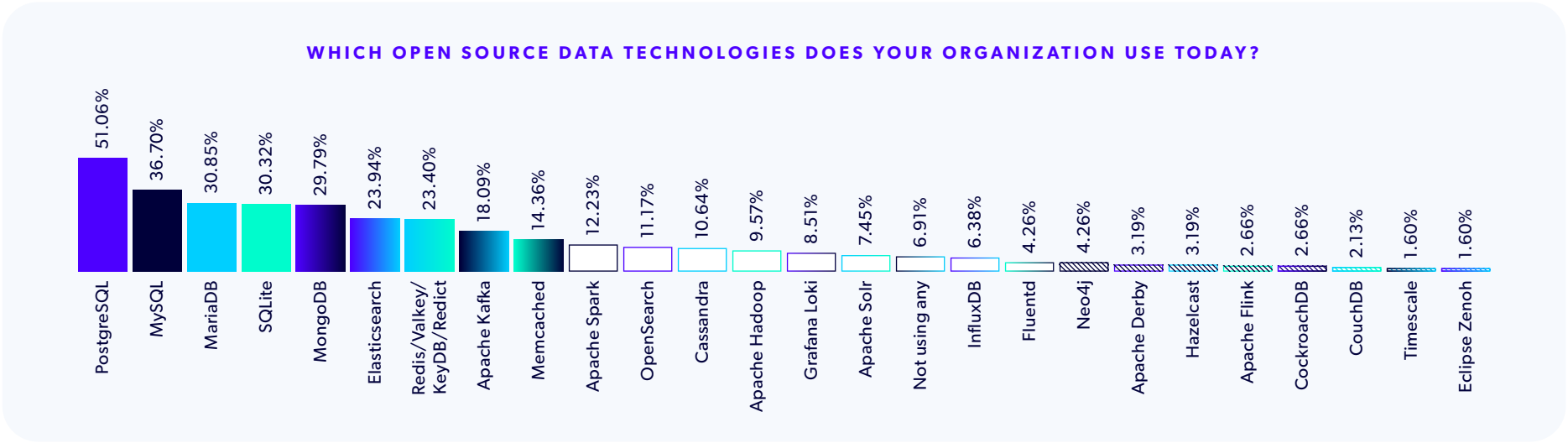


Price is likely what is driving teams to make the switch. In 2023, Oracle made changes to its licensing model that resulted in subscription costs skyrocketing — and they made headlines last year for auditing some of their biggest enterprise customers for the first time. Gartner predicts that by 2026, more than 80% of Java applications will be deployed on third-party runtimes[1].

1. Gartner, "Choosing a Java Runtime," Gartner, July 18, 2023, https://www.gartner.com/en/documents/4540799.

Open Source Data Technologies

90% of respondents indicated that they use multiple open source databases and data technologies. As in previous years, the two most used open source databases are PostgreSQL and MySQL — but there is more than a 10-point gap between the two this year. Last year, MySQL was ahead of Postgres by a much slimmer margin (3%).



Due to license changes, MongoDB, Elasticsearch, and CockroachDB no longer meet the Open Source Initiative's criteria for OSS, but we kept them as options for this question because they began as open source projects. Usage of OpenSearch, the fork of Elasticsearch, is now roughly half that of Elastic, which shows it is getting heavily adopted as an alternative.

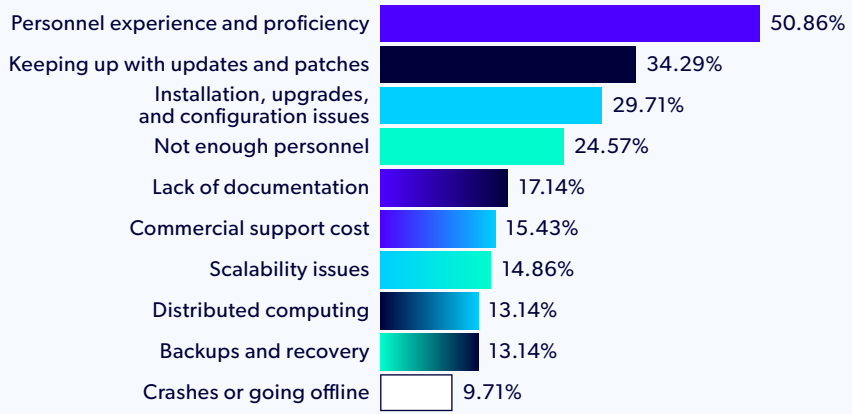
In the Big Data space, which we will explore in more depth in the next section, 25% of organizations are using Hadoop (vs. 10% of the total survey population), and MariaDB, MongoDB, and SQLite are all being deployed more than MySQL.

AI Trend:

Cassandra, Kafka, and Spark, which have AI/ML/DL use cases, all saw double-digit growth this year — Cassandra usage increased by about 18%, Kafka by 11%, and Spark by 21%.

Because open source data technologies are some of the most complex to manage, we asked a follow-up question:

WHAT ARE THE MAIN CHALLENGES WITH THE OPEN SOURCE DATA TECHNOLOGIES YOUR ORGANIZATION IS USING?

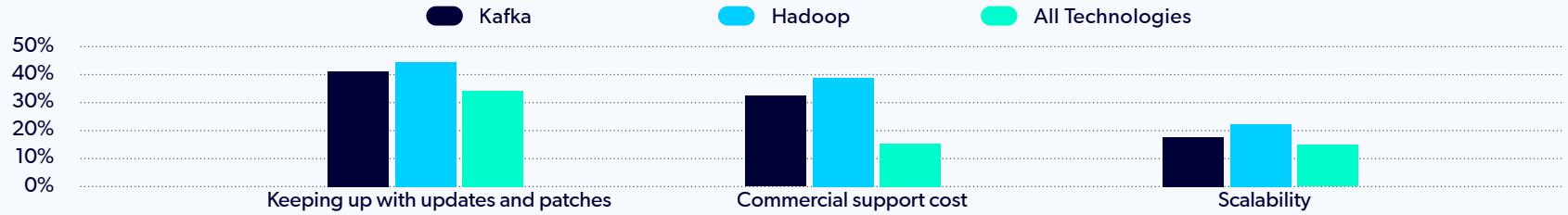


When it comes to data technologies, more than 75% of organizations say that lack of personnel and/or personnel experience and proficiency is their main challenge.

With data technologies, more the 75% of organizations struggle with personnel-related issues: not enough people and/or not enough qualified people. These technologies are notoriously complex and require highly specialized knowledge and skills, so true experts are in short supply. Data management also becomes more difficult as companies scale.

We also took a look specifically at respondents using Kafka and Hadoop and found that keeping up with patches and updates, commercial support cost, and scalability are also significant challenges compared to those using other data technologies:

KAFKA AND HADOOP CHALLENGES VS. OTHER DATA TECHNOLOGIES



Kafka's release cadence and support lifecycle makes keeping up with updates and patches particularly challenging, and it becomes increasing complicated as companies scale. Hadoop administration is also demanding, and organizations running older versions of Hadoop may struggle to scale and modernize their infrastructure.

As for commercial support cost, we suspect some of these respondents are likely Cloudera and Confluent customers, and are paying a high premium for technical support and other managed services.

Big Data: A Closer Look

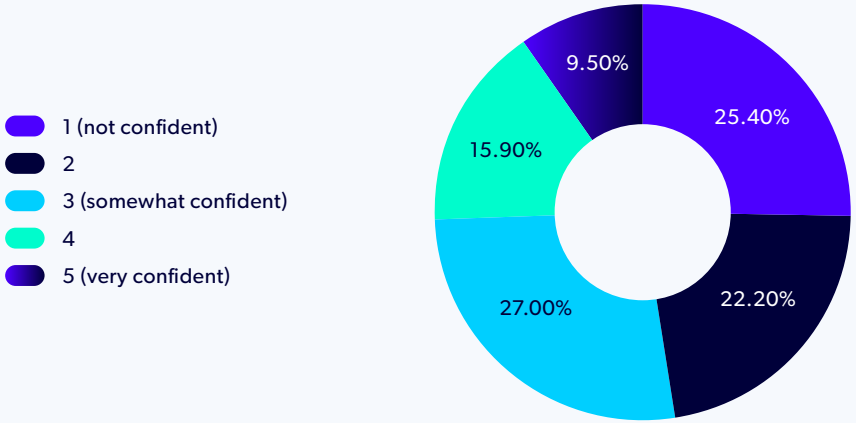
36.57% of the survey population said they use open source software to manage, process, or analyze large datasets and were subsequently asked a series of questions related to their Big Data infrastructure. We started by asking them to assess how well their Big Data stack is being managed on a scale of 1 to 5 (1 = not confident and 5 = very confident).

Strikingly, 47% entered a score below 3, indicating low confidence. Less than 10% gave themselves a 5 (and only 5% of the largest enterprises), while 25% went with the lowest rating of 1.

Why might this be? We speculate that many organizations consuming Big Data know what data they are looking for and how they want to process it, but often lack the internal expertise to manage the platform itself. For this reason, some turn to commercial, managed solutions (i.e. Cloudera), but the trade-off is cost. If the organization cannot afford the commercially managed platform, they are stuck with the operational and personnel costs of these complex stacks, often needing to fall back on less-experienced DevOps engineers or turn to outside consultants when they cannot solve problems.

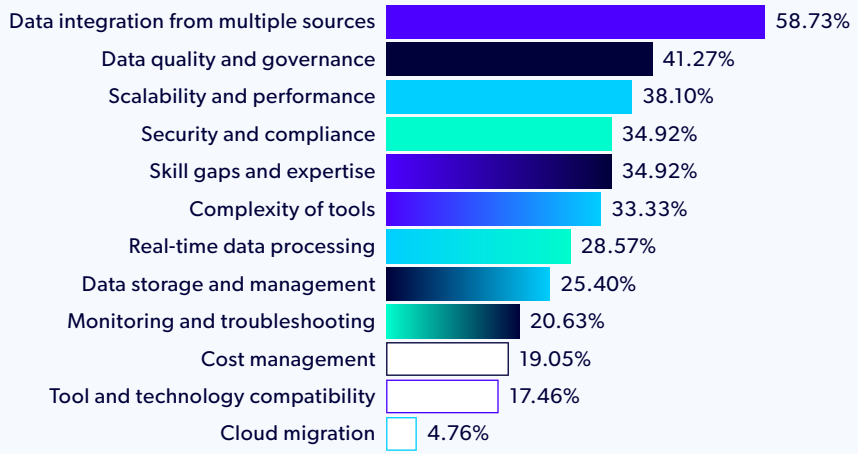
47% are not very confident about their Big Data management.

HOW CONFIDENT ARE YOU IN THE MANAGEMENT AND ADMINISTRATION OF YOUR BIG DATA TECHNOLOGIES?



We also asked about challenges related to Big Data stack management:

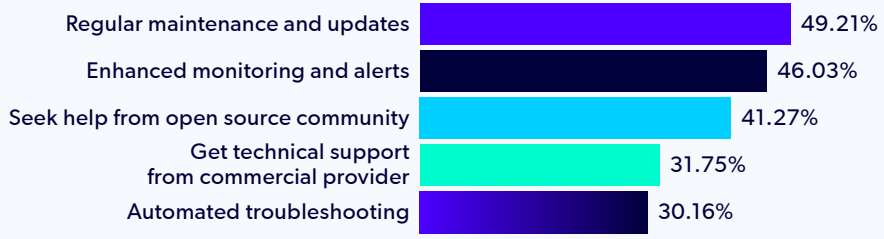
WHAT'S CHALLENGING ABOUT MANAGING YOUR BIG DATA STACK?



Integrating data from multiple sources is a major pain point and understandably so, considering that data can come from literally anywhere: manufacturing machinery and/or processes, sensors, social media feeds, APM metrics, and more. Organizations often combine these in order to get a holistic view of their data, or to segment data based on region, facility, or user base. Because of the disparate sources of data, some may be governed under different laws and regulations than others, and being able to navigate these facets requires specialized skills.

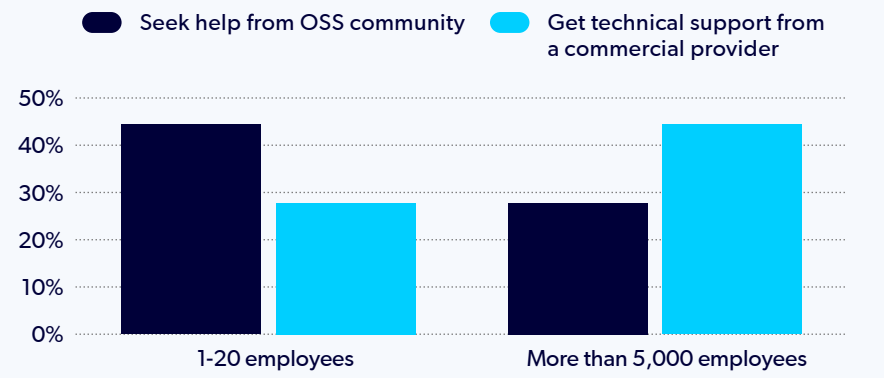
Next we asked:

HOW DO YOU RESOLVE ISSUES WITH YOUR BIG DATA STACK?



Organization size has a considerable impact on how companies resolve issues — looking at the smallest and largest companies, they have opposite preferences around support. The smallest companies are much more likely to seek help from an open source community, whereas the biggest ones tend to get their support from commercial vendors:

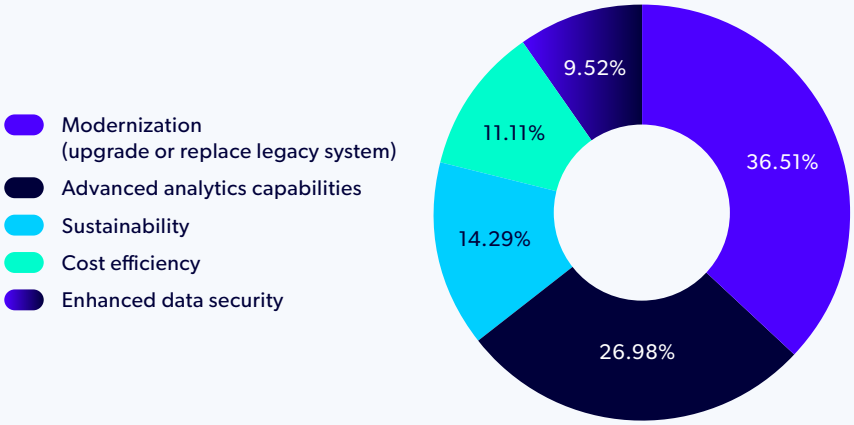
COMMUNITY VS. COMMERCIAL SUPPORT FOR BIG DATA TECHNOLOGIES



It seems that larger organizations often want an expedient solution, and are willing to pay for it, particularly if waiting to resolve it would potentially cost more than commercial support.

Finally, we asked:

WHAT IS YOUR TOP PRIORITY WITH YOUR BIG DATA STACK IN 2025?



Modernization and advanced analytics capabilities are the top priorities for Big Data companies in 2025.

Priorities shift somewhat based on size and region:

- European organizations are more interested in Big Data analytics than modernization.
- None of the largest enterprises selected sustainability, though that is a top priority (tied with modernization and analytics) among smaller companies in North America.
- 22% of large enterprises are prioritizing enhanced data security, compared to just over 5% of the smallest companies and startups (perhaps because they have less data to protect).

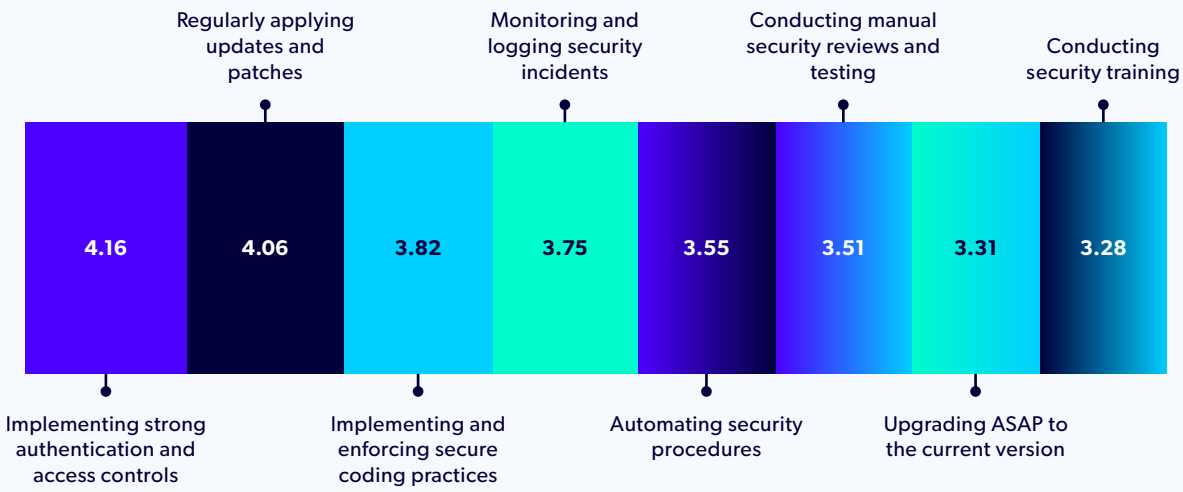
Open Source Security Tools and Priorities

Last year was the first year we asked about open source security tools and 27% indicated they didn't know what, if any, their organization was using. We asked again this year, but added an option of "Our security tools are not open source." Almost 32% selected that option, making it the most popular response.

We included a list of 24 open source security technologies, but only four were selected by more than 10% of our population: Nmap (21.39%), Dependabot (14.45%), OWASP Dependency-Track (12.72%), and Metasploit (10.40%). So it seems many organizations are opting for non-OSS tools to scan for vulnerabilities, track dependencies, and other security functions.

Which specific actions organizations are prioritizing to bolster security is showcased by this next question:

FOR THE FOLLOWING PROACTIVE SECURITY MEASURES, ASSIGN A VALUE OF 1 TO 5 TO INDICATE ITS IMPORTANCE:

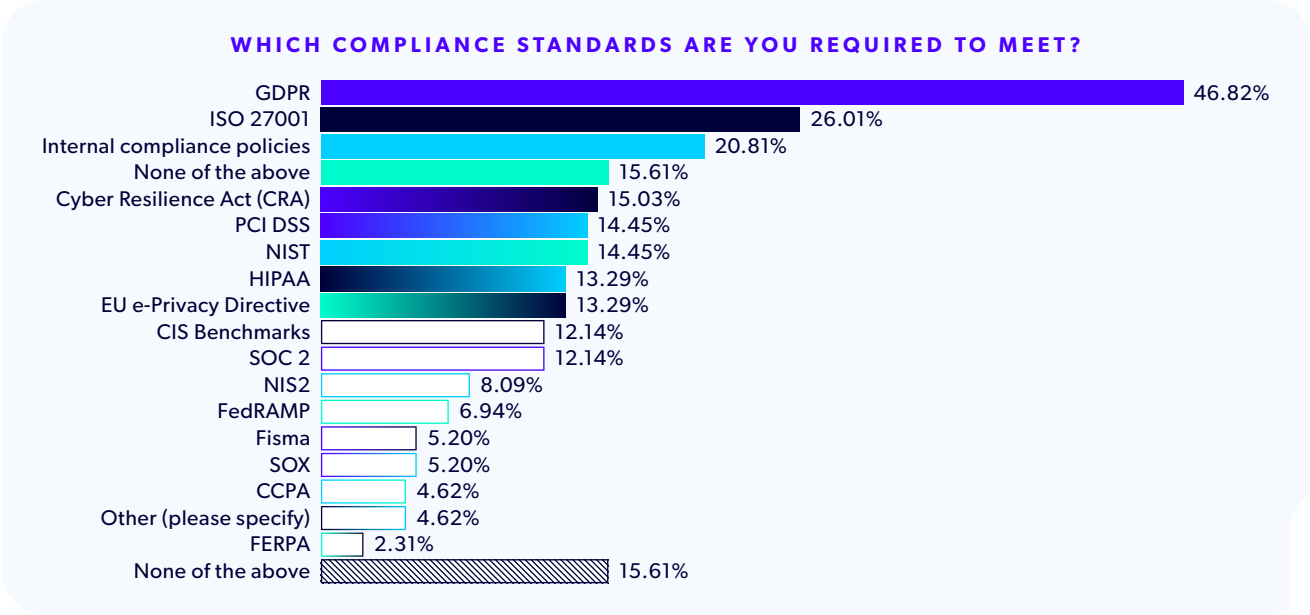


Org Size Matters:

Monitoring and logging security incidents is higher priority for companies with fewer than 500 employees, as is implementing and enforcing secure coding practices.

Open Source Compliance

We know organizations are increasingly subject to external regulations in addition to their own internal IT policies. However, this is the first year we have explicitly asked which requirements impact them and their OSS usage:



84% of organizations are required to meet internal and/or external compliance policies.

41% of organizations using EOL software failed a compliance audit last year.

Some of these are region-specific (GDPR, CRA, and EU e-Privacy Directive for Europe, for example) or apply only to certain sectors (U.S. federal agencies are subject to FedRAMP). A number of respondents also selected "other" and wrote in the Digital Operational Resilience Act (DORA), which went into effect January 17, 2025 and impacts financial entities.

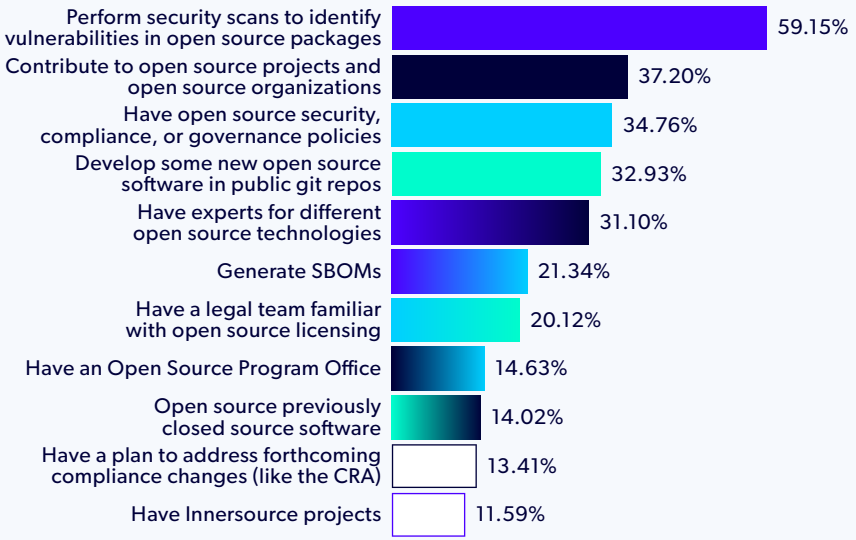
Many of these standards relate to keeping application development secure, protecting consumer data and privacy, and having systems and procedures in place to identify and address vulnerabilities in software. For some organizations, meeting these standards is mandatory and they are audited to ensure compliance — but others may find it useful to maintain compliance for other reasons (i.e. reassure potential or existing customers, investors, or other stakeholders).

Speaking of audits, we asked our survey-takers, **"Have you failed a compliance audit in the last year?"** and overall, just 14% answered yes. However, when we segmented responses by size, 28% work for the largest enterprises. We also cross-referenced with CentOS and AngularJS users and found that 41% failed an audit last year.

Open Source Maturity

Everyone who participates in this survey consumes open source software, but organizations vary in their efforts to reach maturity. To assess open source maturity, we asked respondents to tell us about activities they are either currently implementing or have on their roadmap:

WHICH OF THE FOLLOWING ACTIVITIES DOES YOUR ORGANIZATION DO TODAY OR IS ON YOUR ROADMAP?



Performing security scans was the #1 activity last year as well, and increased slightly from 55% in 2023. The second most common activity this year is contributing to OSS projects and organizations, which could refer to financial or code contributions (or both). That is definitely a positive trend to see, and bodes well for the future of OSS (assuming there is meaningful follow-through beyond these contributions).

59% of organizations scan their OSS for vulnerabilities.

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If there was a direct relationship between open source maturity and organization size, we would see larger organizations outpacing smaller ones for most of these activities. Instead, we see size factoring into which activities the organization is doing (or planning) to become more sophisticated with their OSS consumption.

Here is how the biggest and smallest companies stack up on a few markers:

Number of Employees	Have OSS Security, Compliance or Governance Policies	Generate SBOMs	Has Open Source Program Office	Contribute to OSS Projects or Foundations
More than 5,000	32.14%	35.71%	32.14%	25.00%
1 to 20	40.74%	14.81%	12.96%	57.41%

The largest enterprises are much more likely to generate SBOMs and have OSPOs — but small orgs and startups are contributing more to open source projects and foundations. They are also adopting security, compliance, and governance policies at a higher rate.

Industry and Region Insights:

- Technology and telecommunications are the top SBOM industries, and Asia is the #1 region, with 46% generating SBOMs.
- 78% of the banking and finance sector scans for vulnerabilities and Latin America and North America are where performing security scans is most common.
- Europe is leading when it comes to Innersource projects (18%) and having experts for different kinds of OSS (40%).

Final Thoughts

In 2025, there is no doubt that open source drives software innovation, regardless of the industry, location, or size of the company. The top programming languages, operating systems, databases, and more are all open source, and deliver outsize value to those who use them.

Open source does not necessarily mean free of cost, however. While cost savings often drive the decision to adopt OSS, the ability to provide value by building on top of existing solutions is a powerful driver. Additionally, while the software may be free, organizations often struggle to hire experienced or expert practitioners, leading them to partner with consultants or platform providers to support their efforts.

The solutions businesses build on OSS drive critical infrastructure and value. Investing in OSS is a multiplier.

About Perforce OpenLogic

Perforce OpenLogic is your trusted OSS advisor, providing SLA-backed technical support for top open source technologies, long-term support for EOL software, and expert professional services. From large-scale Linux migrations and Big Data management to complex modernization projects, OpenLogic helps enterprises unlock the benefits of open source — without adding risk. Find out more and explore solutions at openlogic.com.

About the Open Source Initiative

The Open Source Initiative (OSI) is the steward of the Open Source Definition, setting the foundation for the global open source ecosystem. Founded in 1998, OSI protects and promotes open source software, development and communities, championing software freedom in society through education, collaboration and infrastructure. The OSI is a 501(c)3 non-profit, and anyone interested in supporting the defense of Open Source Definitions can join today at join.opensource.org.

About the Eclipse Foundation

The Eclipse Foundation provides our global community of individuals and organizations with a business-friendly environment for open source software collaboration and innovation. We host the Eclipse IDE, Adoptium, Software Defined Vehicle, Jakarta EE, and over 410+ open source projects, including runtimes, tools, specifications, and frameworks for cloud and edge applications, IoT, AI, automotive, systems engineering, open processor designs, and many others. Headquartered in Brussels, Belgium, the Eclipse Foundation is an international non-profit association supported by over 360 members. To learn more, follow us on social media @EclipseFdn, LinkedIn, or visit eclipse.org.