A selection of key findings from the 2023 State of Open Source Report, a collaboration between OpenLogic and the Open Source Initiative (OSI).

Download the complete report today to see the full results – including the most popular open source projects by technology niche, industry, and organization size.

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About the Survey

The 2023 State of Open Source Report is based on an anonymous survey conducted between September 27 and November 15, 2022. It targeted professionals around the world working with open source software in their organizations. The survey received a total of 872 qualified responses.

To help segment and analyze the survey results, we first asked respondents some basic demographic and firmographic questions about their industry, organization size, region, and job title.

INDUSTRY

Unsurprisingly, the largest block of this year’s survey respondents — about a quarter — work for technology companies. Consulting or professional services was the next most common sector, followed by manufacturing (including hardware and microprocessors), banking, and telecommunications.
ORGANIZATION SIZE

Organizations of all sizes are working with open source, and the following graph shows the distribution of respondents by organization size.

- 100 to 499 employees: 31.77%
- 500 to 5000 employees: 30.73%
- More than 5000 employees: 20.53%
- Under 100 employees: 16.97%

REGION

Open source software usage is truly global, and this year, we received responses from every major region in the world.

- North America: 41.74%
- United Kingdom: 16.06%
- Europe: 15.94%
- Latin America: 8.83%
- Asia: 8.72%
- Africa: 3.44%
- Middle East: 3.21%
- Oceania: 2.06%

This year’s survey respondents held a variety of job titles including:

- Firmware or Embedded Systems Developer
- Tech Lead
- Full Stack Developer
- Product Manager
- Backend Developer
- Engineering Manager
- Support Engineer
- Devops Engineer
- Evangelist
- Architect
- CIO and CTO
Survey Results

Has Your Organization Increased the Use of Open Source Software Over the Last Year?

- Yes, significantly: 41.28%
- Yes: 38.76%
- Remain the same: 18.46%
- Reduced the use of open source: 1.49%

Looking at the responses to this question by industry, we see that the Telecommunications and Energy, Oil & Gas sectors are among those that have significantly increased their use and adoption of open source software in the past year.

<table>
<thead>
<tr>
<th>Industry</th>
<th>Yes Significantly</th>
<th>Yes</th>
<th>No, it remained the same</th>
<th>No, we reduced the use of OSS</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology</td>
<td>41.82%</td>
<td>39.55%</td>
<td>17.27%</td>
<td>1.36%</td>
<td>25.52%</td>
</tr>
<tr>
<td>Consulting or Professional Services</td>
<td>41.96%</td>
<td>36.36%</td>
<td>20.98%</td>
<td>0.70%</td>
<td>16.59%</td>
</tr>
<tr>
<td><strong>Telecommunications</strong></td>
<td><strong>46.77%</strong></td>
<td>43.55%</td>
<td>8.06%</td>
<td>1.61%</td>
<td>7.19%</td>
</tr>
<tr>
<td>Banking, Insurance, or Financial Services</td>
<td>39.19%</td>
<td>43.24%</td>
<td>14.86%</td>
<td>2.70%</td>
<td>8.58%</td>
</tr>
<tr>
<td>Education or Research</td>
<td>40.48%</td>
<td>30.95%</td>
<td>26.19%</td>
<td>2.38%</td>
<td>4.87%</td>
</tr>
<tr>
<td>Vehicle, Transportation, or Logistics</td>
<td>27.78%</td>
<td>38.89%</td>
<td>27.78%</td>
<td>5.56%</td>
<td>4.18%</td>
</tr>
<tr>
<td>Government or Public Services</td>
<td>43.40%</td>
<td>41.51%</td>
<td>13.21%</td>
<td>1.89%</td>
<td>6.15%</td>
</tr>
<tr>
<td>Healthcare or Pharmaceuticals</td>
<td>37.70%</td>
<td>39.34%</td>
<td>22.95%</td>
<td>0.00%</td>
<td>7.08%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>39.53%</td>
<td>44.19%</td>
<td>16.28%</td>
<td>0.00%</td>
<td>9.98%</td>
</tr>
<tr>
<td>Retail</td>
<td>40.63%</td>
<td>28.13%</td>
<td>31.25%</td>
<td>0.00%</td>
<td>3.71%</td>
</tr>
<tr>
<td>Media or Gaming</td>
<td>45.71%</td>
<td>34.29%</td>
<td>17.14%</td>
<td>2.86%</td>
<td>4.06%</td>
</tr>
<tr>
<td><strong>Energy, Oil, or Gas</strong></td>
<td><strong>66.67%</strong></td>
<td>27.78%</td>
<td>5.56%</td>
<td>0.00%</td>
<td>2.09%</td>
</tr>
</tbody>
</table>
What Are the Top Reasons Your Organization Uses Open Source Software?

- Access to innovations and the latest technologies: 37.96%
- Functionality available to improve development velocity: 37.61%
- Stable technology with community long-term support: 36.70%
- Fast moving / constant enhancements, releases, and patches: 32.00%
- Ability to contribute to, and influence direction of, open source projects: 32.00%
- To modernize technology stack: 31.08%
- To reduce vendor lock-in: 28.33%
- Community-oriented and transparent: 26.15%
- No license cost, overall cost reduction: 25.69%
- Open standards and interoperability: 23.85%
- Large selection of options for similar functionality: 20.76%
- Makes it easier to hire or retain employees: 11.47%
- Other: 1.15%

The #1 reason organizations use open source software is to have access to innovations and the latest technologies.
Looking at responses by geography, it turns out that **access to innovations and latest technologies** — while consistently in the top four — is not the first choice in other parts of the world.

**Top Reasons In North America**

- Functionality: 42.80%
- Access to Innovations: 40.11%
- Stable Technology: 39.84%
- To Modernize Technology: 34.89%
- Ability to Contribute: 33.79%

**Top Reasons In Europe**

- No License Cost: 41.01%
- To Reduce Vendor Lock-In: 37.41%
- Functionality: 35.25%
- Access to Innovations: 34.53%
- To Modernize Technology: 31.65%

**Top Reasons In United Kingdom**

- Ability to Contribute: 36.43%
- Stable Technology: 35.00%
- Functionality Available: 30.71%
- Access to Innovations: 30.71%
- Fast Moving / Constant: 30.00%

**Top Reasons In Asia**

- Access to Innovations: 48.68%
- No License Cost: 43.42%
- Functionality Available: 36.84%
- Large Selection: 31.58%
- Community Oriented: 31.58%

Organizations also choose open source because of the functionality to improve development velocity and the ability to contribute to open source projects and influence their direction.
Which Categories of Open Source Software Has Your Organization Invested In the Most In Terms of Projects, Budget, and Resources?

1. Software Development Life Cycle (SDLC) Tools: 34.06%
2. Containers and Container Orchestration Technology: 32.24%
3. Databases and Data Technologies: 28.33%
4. Operating Systems: 24.89%
5. DevOps Tooling: 24.31%
6. Content Management Systems: 20.64%
7. Cloud-Native Tools: 18.00%
8. Programming Languages and Frameworks: 17.09%
9. Analytics: 15.60%
10. Networking: 14.56%
12. Middleware: 13.88%
13. Security Tools: 13.76%
14. Observability Tools: 13.19%
15. Blockchain: 10.78%
16. Desktop and Personal Productivity: 10.21%
17. Open Source Hardware: 8.60%
18. Other: 1.03%

SDLC tools, containers, and databases are the top three most invested in and most commonly used open source technologies.
What Are Your Organization’s Top Support Challenges While Using Open Source Software?

- Maintaining security policies or compliance: 41.97%
- Lack of skills, experience, and proficiency: 37.50%
- Keeping up with updates and patches: 36.70%
- Lack of low level technical support: 36.47%
- Maintaining end-of-life versions: 36.01%
- No real-time technical support: 35.89%
- Installations, upgrades, and configuration issues: 31.31%
- Not enough personnel: 21.90%
- Infrastructure scalability and performance issues: 17.43%

While it’s evident that open source software adoption is increasing, there are certainly areas where organizations have challenges, especially when it comes to technical support.

How Do You Describe the Level of Open Source Maturity In Your Organization?

- Performs security scans to identify vulnerabilities in open source packages: 46.37%
- Contributes to open source projects and open source organizations: 36.79%
- Has open source security policies or compliance: 35.18%
- Has a legal team familiar with open source licensing: 28.60%
- Has experts for different open source technologies: 26.18%
- Generates software bill of materials (SBOMs): 25.84%
- Open source previously closed source software: 17.07%
- Develops some new open source software in public git repos: 15.80%
- Has Innersource projects: 13.61%
- Has an Open Source Program Office: 9.57%

Security is top of mind for organizations using OSS — 46% perform scans to identify vulnerabilities and 35% have security and/or compliance policies.
In Order of Importance, From Not Important to Most Important, Rank the Following Technologies in Relation to Your Organization’s Desire To Implement Them in the Next 18 Months

<table>
<thead>
<tr>
<th>Technology</th>
<th>Not Important</th>
<th>Mildly Important</th>
<th>Important</th>
<th>Very Important</th>
<th>Most Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kubernetes or Kubernetes Operators</td>
<td>16.34%</td>
<td>20.30%</td>
<td>31.97%</td>
<td>21.00%</td>
<td>10.39%</td>
</tr>
<tr>
<td>Data Science</td>
<td>11.88%</td>
<td>23.52%</td>
<td>29.22%</td>
<td>27.20%</td>
<td>8.19%</td>
</tr>
<tr>
<td>Artificial Intelligence / Machine Learning / Deep Learning</td>
<td>11.29%</td>
<td>20.82%</td>
<td>30.12%</td>
<td>26.24%</td>
<td>11.53%</td>
</tr>
<tr>
<td>Virtual Reality or Augmented Reality</td>
<td>19.74%</td>
<td>20.21%</td>
<td>24.82%</td>
<td>24.94%</td>
<td>10.28%</td>
</tr>
<tr>
<td>Blockchain/Crypto</td>
<td>20.98%</td>
<td>20.38%</td>
<td>27.46%</td>
<td>21.22%</td>
<td>9.95%</td>
</tr>
<tr>
<td>Nonfungible Tokens</td>
<td>25.30%</td>
<td>17.87%</td>
<td>28.66%</td>
<td>20.02%</td>
<td>8.15%</td>
</tr>
<tr>
<td>Serverless/Functions</td>
<td>11.88%</td>
<td>21.26%</td>
<td>33.25%</td>
<td>25.06%</td>
<td>8.55%</td>
</tr>
<tr>
<td>Quantum Computing</td>
<td>20.72%</td>
<td>22.16%</td>
<td>26.35%</td>
<td>22.28%</td>
<td>8.50%</td>
</tr>
</tbody>
</table>

This year, Artificial Intelligence (AI)/Machine Learning (ML)/Deep Learning (DL) edged Kubernetes by 1% as the most desirable and important technology to implement in the next 18 months.

For more data and insights, download the full report.