

Census III of Free and Open Source Software

Application Libraries

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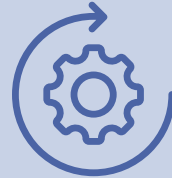


Census III of Free and Open Source Software

The use of **cloud service-specific packages** is increasing, with high-ranking components that did not rank in Census II.



There is an **ongoing transition** from Python 2 to Python 3, demonstrating the challenges of transitioning to new versions of software with incompatibilities.



Maven packages continue to be widely used and there is an increased prevalence of **NuGet and Python packages**.



Use of components from **Rust package repositories** have **increased** considerably since Census II, signaling an industry response to memory safety vulnerabilities.



There are promising efforts to implement a **standardized naming schema** for software components which would improve supply chain security and future census efforts.

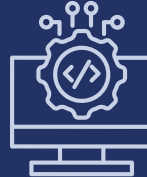


Among top 50 non-npm projects, **17% had only one developer & 40% had one or two developers** accounting for more than **80% of commits**.

Many of the top packages are hosted under **individual developer accounts**, which often have fewer protections and less granularity than organizational accounts.



Legacy software persists in the open source space, making their security as important as their replacement packages.



When considering **npm, direct only, version agnostic packages**, the top used package was **react-dom**.



When considering **non-npm, direct, version agnostic packages**, the top used package was the maven package **org.springframework.boot:spring-boot-starter-web**.



When considering non-npm, direct, version agnostic packages, **log4j-core** ranked very highly (#51).



When considering **non-npm, direct & indirect, version agnostic packages**, the top used package was the go package **github.com/googleapis/google-cloud-go**.



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Executive Summary

Free and Open Source Software (FOSS) has become a critical part of the modern economy. There are tens of millions of FOSS projects, many of which are built into software and products we use every day, including mobile devices, health care products, and cutting edge artificial intelligence (AI). However, it is difficult to fully understand the health, economic value, and security of FOSS because it is produced in a decentralized and distributed manner. This distributed development approach makes it unclear how much FOSS, and precisely what FOSS projects, are most widely used. This lack of understanding is a critical problem faced by those who want to help enhance the security of FOSS (e.g., companies, governments, and individuals), yet do not know what projects to start with. This problem has garnered widespread attention with the Heartbleed, Log4Shell, and XZ Utils vulnerabilities that resulted or nearly resulted in the susceptibility of hundreds of millions of devices to exploitation.

This report, Census III, is the third investigation into the widespread use of FOSS and aggregates data from over twelve million observations of FOSS libraries used in production applications at over ten thousand companies. It aims to shed additional light on the most commonly used FOSS packages at the application library level. This effort builds on the Census I report that focused on the lower level critical operating system libraries and utilities, and the Census II report that sought to improve our understanding of the language-level FOSS packages that software applications rely on. Such insights will help identify

critical FOSS packages for resource prioritization to address security issues in this widely used software.

The Census III effort utilizes data from the Software Composition Analysis (SCA) companies FOSSA, Snyk, Sonatype, and Black Duck, who partnered with Harvard to advance the state of open source research. Our goal is to not only provide an updated list of the most widely used FOSS, but to also provide an example of how the distributed nature of FOSS requires a multi-party effort to fully understand the value and security of the FOSS ecosystem. Only through data sharing, coordination, and investment will the value of this critical component of the digital economy be preserved for generations to come.

In addition to the detailed results on FOSS usage provided in the report, we also identified eight high-level findings: 1) the use of cloud service-specific packages is increasing, 2) there is an ongoing transition from Python 2 to Python 3, 3) Maven packages continue to be widely used and there is an increased prevalence of NuGet and Python packages, 4) use of components from Rust package repositories have increased considerably since Census II, 5) there continues to be a need for the use of standardized naming schema for software components, 6) much of the most widely used FOSS is developed by only a handful of contributors, 7) individual developer account security is increasingly important, and 8) legacy software persists in the open source space.

Introduction

Free and Open Source Software (FOSS) has become a critical part of the modern economy. It has been estimated that up to 96% of codebases include FOSS¹ and software is an increasingly vital resource in nearly all industries. This heavy reliance on FOSS is common in both the public and private sectors,² and among tech and non-tech companies alike.³ Therefore, ensuring the health and security of FOSS is vital to the future of nearly all industries in the modern economy. This has become more evident after recent vulnerabilities identified in widely used FOSS like OpenSSL (the open source command line tools and libraries widely used for secure communications over computer networks), and log4j (the Java-based logging utility from the Apache Software Foundation). Recent evidence of malicious supply chain attacks in critical FOSS packages like XZ Utils have only further shown the importance of better understanding the FOSS ecosystem.⁴

However, it is difficult to fully understand the health and security of FOSS because 1) FOSS is produced in a decentralized and distributed manner so there is no central authority to ensure quality and maintenance of all FOSS, and 2) because FOSS can be freely copied and modified, it is unclear how much FOSS, and precisely what FOSS projects, are most widely used. Therefore, to ensure the future health and security of the FOSS ecosystem, it is critical to understand what FOSS is being used, and how well it is supported and maintained.

In 2014, the Linux Foundation founded the Core Infrastructure Initiative (CII) where its members provided funding and support for FOSS projects critical to the global information infrastructure. To bring wider representation from the software community and a broader mission to fruition, in mid-2020, the Open Source Security Foundation (OpenSSF) was created,⁵ and many of the remaining CII efforts were folded into the OpenSSF.

In 2015, CII conducted the Census Project (“Census I”) to identify which software packages in the Debian Linux distribution were the most critical to the kernel’s operation and security.⁶ Due to limited data availability, the Census I project focused on examining Linux kernel distribution packages (the “operating system and libraries” level in Figure 1) including their popularity, instead of delving deeply into what software were components of production applications.⁷

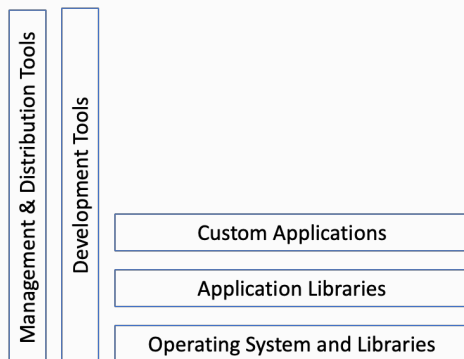
Therefore, the Linux Foundation partnered with the Laboratory for Innovation Science at Harvard University (LISH) with the goal of conducting a second census to identify and measure which open source software is most widely deployed within applications by private and public organizations (the “application libraries level” in Figure 1). This Census II provides a picture of FOSS usage within applications by analyzing usage data provides by partner Software Composition Analysis (SCA) companies based on their scans of software codebases at thousands of companies. Further, the data from Census II was used to estimate the value of widely used FOSS packages as being in the trillions of dollars.⁸

In early-2022, we launched the Census II report, which went into much greater depth than the previous report. In Census II, we provided eight rank-ordered Top 500 lists of FOSS usage, four of which are at the package level and four of which are at the package/version level. These results were based on the analysis of over half a million observations of FOSS used in applications examined by the SCA data partners in 2020. The current effort, Census III, follows a similar methodology to Census II, but utilizes a richer dataset coming from four different SCA partners and composed of over 12 million data points on FOSS usage in 2023.

These results complement other efforts to better understand the role of FOSS in the modern economy, like the Harvard/Linux Foundation [Report on the 2020 FOSS Contributor Survey](#), and the Linux Foundation [Software Bill of Materials \(SBOM\) and Cybersecurity Readiness Report](#).

In alignment with the ever-evolving nature of the FOSS ecosystem, we view the findings of this third census as a precursor to more exhaustive studies to come in our ongoing efforts to better understand these critical pillars in our information infrastructure. Operating under data constraints, the findings of this report cannot - and do not purport to - be a definitive claim of which FOSS packages are the most critical. They instead represent our best estimate of which FOSS application library packages are the most widely used by different applications, given the limits of time and the broad, but not exhaustive, data we have aggregated. This report does not attempt to identify, for example, which packages are used by the most widely used applications or which packages are most important for the continued operation of critical infrastructure. Nor does it reflect the contribution of the operating systems or system utilities the applications run on, or the tooling used to create the applications.

FIGURE 1: THE TECHNOLOGY STACK



Further, note that this report focuses on identifying the most widely used software within its scope; it does not try to measure the risk profiles of that software. There are many indicators that could be used to suggest risk and different organizations may weigh factors differently. For example, a potential user might be more concerned if a project has only a single maintainer (or at most a few), is very large (e.g., in terms of lines of code), is written in a memory-unsafe language, has had no merges or other activity within the last few years even though it has non-trivial size, does not use tools to identify potential vulnerabilities in its code, has no OpenSSF best practices badge, does not meet many OpenSSF Scorecards measures, has publicly known vulnerabilities, has required dependencies with publicly known vulnerabilities, and when run is usually directly accessible to the Internet by anyone. However, measuring risk profiles is a separable task, and it's easier to do it once the most widely-used software is identified. As a small aid, we do indicate which of these projects are working on an OpenSSF best practices badge and if they are, we indicate their score.

“Measuring risk profiles is a separable task, and it’s easier to do it once the most widely-used software is identified.”

Context

The increasing importance of FOSS throughout the economy became critically apparent in 2014 when the Heartbleed security bug in the OpenSSL cryptography library was discovered. By some estimates, the bug, which was introduced into the OpenSSL codebase nearly three years earlier, impacted almost 20% of secure web servers on the Internet (almost half a million servers at that time).⁹ Further, in December 2021, the Log4Shell vulnerability in the log4j logging package was identified and described as “the most serious vulnerability I’ve seen in my decades-long career” by Jen Easterly, the director of the United States Department of Homeland Security (DHS) Cybersecurity and Infrastructure Security Agency (CISA).¹⁰ It is estimated that the bug, which was introduced into the code as early as 2013, may have affected tens or hundreds of millions of devices. The vulnerability was so concerning that the U.S. Federal Trade Commission (FTC) stated that it would use its full authority against any companies that did not patch the vulnerability and lost customer data as a result.¹¹ In 2024, a supply chain attack was discovered that relied on social engineering to maliciously introduce a backdoor into the popular package XZ Utils. The attack included launching a pressure campaign on the solitary maintainer of the project to add a second maintainer, who later introduced the backdoor.¹² Given the number of critical FOSS projects that only have a single maintainer (who is often overburdened and has insufficient time to contribute to their projects once they become extremely popular), many fear that similar attacks could occur in the future.

Operating under the maxim that “with many eyeballs, all bugs are shallow”,¹³ many FOSS projects have been able to obtain greater levels of security. Unfortunately, while FOSS licenses allow many to review software for vulnerabilities and repair them, not all FOSS projects are regularly reviewed at this

level. In addition, many developers are not familiar with how to develop secure software, making their reviews much less effective.¹⁴ Vulnerabilities in other widely-used projects with smaller maintainer bases, like OpenSSL when Heartbleed was found, can slip by unnoticed. Due to Heartbleed, Log4Shell, XZ Utils, and other security issues in FOSS, governmental bodies around the globe have begun to take an expanded interest in the role of FOSS as a type of critical infrastructure that underpins the modern economy. For example, in 2014, the European Commission put into place a FOSS Strategy¹⁵ and a few years later it started sponsoring FOSS auditing by setting up bug bounty programs, hackathons, and conferences.¹⁶ However, most regions around the world have been slow to enact similar strategies¹⁷ leaving much of the responsibility to individuals and businesses,¹⁸ until when the White House National Security Council gathered companies and organizations to discuss the matter and what could be done.¹⁹

Compounding the problem is the fact that FOSS is often built into other software and hardware, but precisely what FOSS is being used is not always made clear. Such concerns have led to various organizations and even governments pushing for deeper insights into the software building blocks used to make various packages and devices via a software bill of materials (SBOM). For example, one U.S.-based working group is dedicated to examining the use of FOSS in medical devices.²⁰ Further, a May 2021 U.S. Executive Order directed the U.S. National Institute for Standards and Technology (NIST) to provide guidance for companies on providing an SBOM to their customers.²¹ The U.S. is not the only country or government entity taking action on this, others have begun developing reports and guidance for what an SBOM would look like in their country, including Japan,²² the European Union,²³ China,²⁴ and The Netherlands.²⁵

Goals of Census III

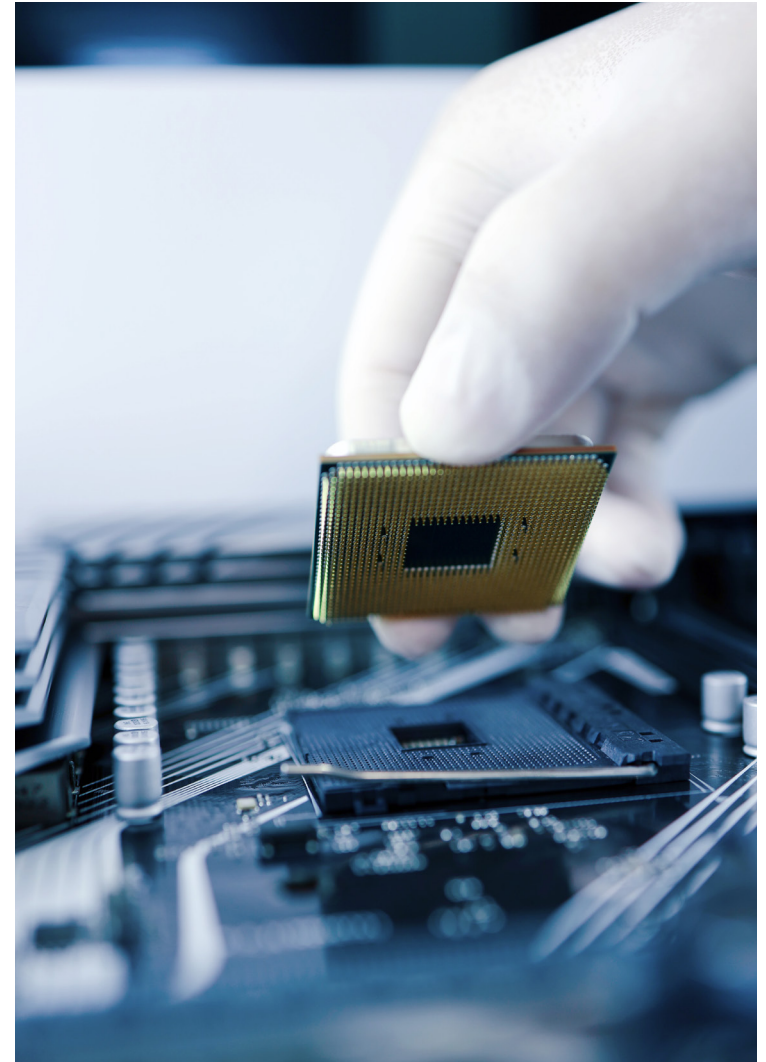
Similar to physical infrastructure, the critical components of the Internet and modern computing may not always be the most remarkable or the most visible. For example, in recent years, it has become more apparent how critical computer chips are to numerous industries. In particular, due to pandemic-induced supply and demand issues, chip shortages led to manufacturing disruptions in the automobile, cell phone, and refrigerator industries.²⁶ Similarly, there may be integral FOSS projects whose simplicity or size may belie their vital importance to the modern economy. As such, the overarching goal is to reinforce this infrastructure and guard against systemic vulnerabilities.

“The overarching goal is to reinforce this infrastructure and guard against systemic vulnerabilities.”

Analyzing usage data from partner Software Composition Analysis (SCA) companies, the Census III project aims to determine the most widely used FOSS deployed within applications by private and public organizations. In concert with other FOSS projects like the Community Health Analytics Open Source Software (CHAOSS) project²⁷ and the Facade contributor analysis project,²⁸ this allows for the further examination of potential vulnerabilities in these projects due to:

- a. Widespread use of outdated versions;
- b. Understaffed projects; and,
- c. Known security vulnerabilities, among others.

Finally, this information can be used to prioritize investments and resources to support the security and health of FOSS, such as the efforts of OpenSSF and the Open Source Technology Improvement Fund (OSTIF).²⁹



Spurring Action

As with the prior versions of the Census, the motivation behind publishing these findings is to not only inform, but also to inspire action by developers to improve their security practices and by end users to support the FOSS ecosystem and developers who need assistance. While there are many ways to actively support the critical software infrastructure that underpins the world's complex information systems; we offer a few recommendations for unifying action.

Data sharing

In order to tackle a problem, one must first know what may be affected and how. As mentioned above, there is far too little data on actual FOSS usage. Although public data on package downloads, code changes, and known security vulnerabilities abound, the view on where and how FOSS packages are being used remains opaque. For example, download counts are often misleading because a package may be downloaded millions of times by test processes (once for each test), while a single download may be used to generate an application deployed to billions of devices. Private usage data contributed by partner SCAs and other companies to the Census III project provide a clearer view of which FOSS projects developers build into proprietary software. Additionally, this data enables researchers to trace the dependencies and determine some of the most fundamental - though perhaps, not the best funded - projects upon which many packages still rely. The insights we can glean from our census efforts will only reach as far as the data sets that FOSS stakeholders - private companies and organizations - share with us. The most critical need for our efforts to support the health and security of the FOSS ecosystem is shared usage data. Further, as SBOMs gain popularity, it may be possible to collect data on OSS usage via the increasing transparency offered by SBOM data.

“The most critical need for our efforts to support the health and security of the FOSS ecosystem is shared usage data.”

Coordination

Beyond predication upon a solid foundation of data, calls to action must coordinate efforts across the whole FOSS ecosystem. Standardizing terminology and sharing best practices enable the community to build upon previous successes and accelerate progress. Perhaps the largest stumbling block to coordination in the open source sphere is the myriad identifiers used to reference the software itself.

FOSS packages live on many different repositories, like NuGet, Maven, GitHub, and npm to name a few. Project names alone may not differentiate between resulting forks of an original project or direct people to the canonical repository. Listing which repository holds the original version of that project (for example, left-pad/npm) can reduce some of the potential confusion. However, identifying a project by the URLs of the repository (location of source code) and the project website (with updated community information and documentation) may be the best solution to ensure clarity. Even if some FOSS projects do not have a public repository and -- of course -- projects can move, linking these two URLs as project identifiers will distinguish components more efficiently.

Accurate project identification impacts not only academia, but the private sector as well. As cyberattacks and security breaches increase, all companies -- not just Big Tech -- will need to become more cognizant of which components comprise their websites and applications, as well as the origins of those components.

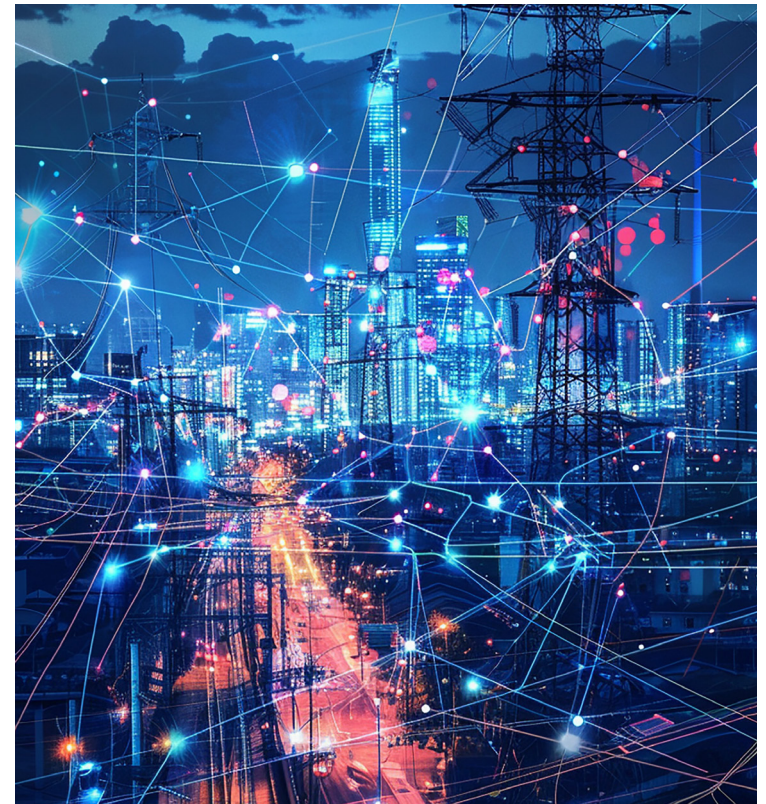
In the United States, the federal government is currently creating a Software Bill of Materials which will require all industries to delineate the composition of their software systems. Proactively adopting current standard formats, like the System Package Data Exchange (SPDX, ISO/IEC 5962:2021³⁰) developed by the Linux Foundation, will put forward-thinking business leaders at an advantage once regulations come into effect. Importantly, this concern carries over from prior versions of the Census as the FOSS ecosystem package naming challenge has only grown in complexity.

Investment

Like any critical infrastructure, we must invest in open source if it is to continue to support the demands made upon it. Nadia Eghbal, author of *Roads and Bridges: The Unseen Labor Behind our Digital Infrastructure*, outlined the many sources of financial support available to the FOSS community on her GitHub page "Lemonade Stand."³¹ Funding for projects comes in many different forms, including donations, grants, and crowdfunding. While these programs represent a step in the right direction, questions still remain. For example, without a fuller understanding of what the most critical FOSS projects might be, how do supporters know that sufficient funds will go to where the need is greatest? Are those who benefit most from FOSS projects doing enough to support the communities they vitally depend on?

"Are those who benefit most from FOSS projects doing enough to support the communities they vitally depend on?"

While money has long been a contentious topic in the FOSS community, investment encompasses more than just financial support. In the open source world, time and talent may indeed be the most important investments. Larger and more established packages tend to attract more contributors³² compared to smaller, less visible ones -- even if the latter are more heavily depended upon in practice. Companies reliant upon FOSS packages could benefit from supporting these smaller and less-visible yet critical packages, either directly (e.g., paying employees to maintain those projects on the clock) or indirectly (hiring contributors to those projects as employees, and letting them work on the project). Similar to financial resources, time and talent need to be carefully considered to ensure that they are directed toward the most critical projects.



Methods

The Census III effort benefited from the contribution of private usage data, composed of over 12 million data points from SCA and application security companies. We thank FOSSA,³³ Snyk,³⁴ Sonatype,³⁵ and Black Duck,³⁶ which partnered with Harvard to advance the state of open source research. These partners provided anonymized 2023 data from both (1) automated scans of production codebases used within their customers' environments and (2) thorough labor-intensive human audits of software codebases.

In keeping with the spirit of the open source community, we sought to make the methodology of this third census effort as transparent as possible. However, in order to ensure the privacy of our data partners and to protect any proprietary aspects of their SCA services, some details have been obscured. Ultimately, we strove to release all results publicly and transparently to the extent we could, but the commitment to safeguard the sensitive aspects of the data provided must take precedence in this report.

Data Selection

To better understand the prevalence and overall impact of FOSS in the economy, we chose data that would best reflect actual adoption and usage in businesses. While stars, ratings, and download statistics indicate a package's popularity or reputation, these do not necessarily translate into real-world, day-to-day use. Private usage data from SCA companies' automated scans and human audits from 2023 provides more insight into which FOSS packages are being used in production codebases. Instead of the higher-level software with which end users would have more contact and familiarity (like Mozilla Firefox or Visual Studio Code), SCA data focuses on application components that act as the building blocks for other software products. These

application components are typically not visible to users, indeed, they are often compiled into final products. Even developers are typically only aware of the components they directly use, and not the components they indirectly use. This "lower level" focus is important for research, because developers -- not end users -- tend to drive the widespread adoption and integration of FOSS projects.

“Peering under the hood of the higher level packages helps us to focus on the specific components that are often most critical.”

Peering under the hood of the higher level packages helps us to focus on the specific components that are often most critical. While this data approach does not provide significant insight into end-user facing products (like OpenSSH, for example), it does examine components within those products. One additional aspect to keep in mind is that this data only includes the portions of any software stack that the SCA vendors' customer chose to scan. There may be additional layers of a stack that were not chosen for scanning. For example, an application designed to run on Linux in user space likely would not have any of the system-level components of the Linux operating system included in the scope of the scan. Similarly, SCA vendor customers scanning a JavaScript application may not have included frameworks like Node.js or React.js in the scope of their scans. As in Census II, in this report we consider FOSS projects in both a versioned and unversioned manner. Doing so allows for greater insights into the most widely used FOSS packages from a number of different dimensions and also allows for a clearer understanding of how widespread the use of outdated software is.

Defining Relevant Terminology

Before delving into the methodology, there is a need to establish consistent terminology when discussing FOSS data. To start, this report relied upon the following definitions laid out in the original CII Census efforts:³⁷

- **package:** a unit of software that can be installed and managed by a package manager.
- **package manager:** software that automates the process of installing and otherwise managing packages.
- **(package) repository:** a location for storing and retrieving packages that can be installed by a package manager and managing the history of information related to the package.
- **source repository:** a location for storing and retrieving software source code. Most FOSS projects use a hosting service (a “forge”) to host their source repository, typically GitHub or GitLab. This software source code may be later used to build packages. This report focuses on packages, so when we say “repository” we mean “package repository” unless otherwise noted.

The various methods employed to scan and audit codebases that generated the private usage data led to analysis below the “**package**” level. Sometimes a given software project was dependent upon a distinct part of a package, even though it did not appear to depend on the other parts of that package. As a result, we defined a separate term:

- **component:** a unit of software that can be called by or serve as an input into another piece of software, and may be installable via a package manager.³⁸

The datasets used for this census contained FOSS information at a variety of levels, often treating a package and its components

as separate entities. In order to compare across all datasets, we standardized this **component-level** data first. Finally, we also factored in the version of the FOSS component or package. Most, but not all, FOSS packages in the datasets utilize semantic versioning,³⁹ and that version nomenclature is utilized when available.

Methods Part 1: Parsing

In collaboration with experts from the Linux Foundation, the research team iteratively refined the methodology for combining the private usage data from the SCAs - complex datasets with substantially different means, variance, and schema for identifying unique components. Parsing each dataset generally occurred in three stages.

Stage 1: Cleaning the dataset to remove organizational-specific substrings, whitespace, or other extraneous characters.

Stage 2: Extracting identifying information from each component in the dataset.

Stage 3: Mapping each component to a project on Ecosyste.ms⁴⁰ using that identifying information, if possible.

Not all FOSS packages have a unique identifier. Therefore, to aggregate usage data within and across different datasets, we had to map each component in each dataset to a unique identifier. Here, a unique identifier for unversioned analysis is defined as the combination of the package name (e.g., “lodash”) and the package manager which can install that package (e.g., “npm”) using the package manager’s default repositories. We further used the package version name (e.g., “4.17.20”) as the third part of this combination for our versioned analysis.

The process of mapping dataset components to a Ecosyste.ms project relied on several functions in tandem and the GitHub API, based on the identifying information found in the dataset:

1. Searching components for embedded unique identifiers (GitHub repository, name, version name, and package manager) that can map to Ecosyste.ms projects.
2. In some cases, the raw version names provided are Git commit cryptographic hashes.⁴¹ Whenever possible, we converted them to standard version names found in Ecosyste.ms by matching their commit dates with their version publication dates.
3. Analyzing component text for a naming system that can be translated to the naming system on Ecosyste.ms or the package managers from which it pulls data.
4. Searching components for specified text strings that directly map to a Ecosyste.ms project.
5. Manual matching to a Ecosyste.ms project if all other methods cannot effectively map the component.

Note that for some SCAs it was also necessary to infer which package manager installed a given software component. We inferred this information using a combination of the component name and the version number.

While the majority of components provided by SCA datasets matched to Ecosyste.ms in this automated manner, many components had to be manually mapped. Furthermore, some components in the SCA datasets did not exist on Ecosyste.ms. For both of our unversioned and versioned analyses, these components were still treated as real packages and observations, but could not be used to calculate indirect dependencies.

Methods Part 2: Dependencies

A direct dependency is said to exist when a piece of code that has been scanned by one of the SCAs includes a specific request for that package or component. However, each of these direct dependencies may in turn rely on other packages or components, known as indirect dependencies. Indirect dependencies are a useful tool for understanding which packages are the most essential to their software ecosystem. If Package A is considered important, then everything that Package A directly uses to function is also important, and all of the packages those packages are dependent upon are important, and so on. Therefore, including indirect values in our resulting dataset was a way to find the “hidden keystones” in the FOSS ecosystem that might be overlooked by only looking at direct dependencies.

In cases where data partners provided these indirect metrics, we added those calculations to the direct metrics to account for both types. In cases where that data was not provided, we estimated the indirect usage through Ecosyste.ms, which collects dependency information through the package managers from which it pulls data.

Using the SCA datasets, we identified indirect usage through the following process:

1. Divide the SCA datasets into 4 samples, by analysis type (versioned or unversioned) and package manager type (npm or other).
2. Using the dependency data provided by Ecosyste.ms, get a dataset of each component and their associated dependencies.
3. For each component, determine the list of packages that component relies on, directly or indirectly. Exclude dependencies that are marked as optional, non-runtime, or self-dependencies for each component.

- a. Note that there were many instances where the same dependency was listed as runtime and non-optional for one component, but non-runtime or optional for a different component; in the former case we would count the dependency, and in the latter case we would not count it. See the “Methods Part 3: Filtering” section for a full discussion of the filtering logic used.
4. In unversioned analysis, each member of the list, including the original component, receives a score equal to the number of times that component was observed being used in the SCA datasets. For example, if “jquery” had a score of 10, each package “jquery” depends on (as well as “jquery” itself) would have 10 added to its score.
5. In versioned analysis, components and dependencies are both version-specific. Here, we follow the same procedure in (2) above for those dependencies with one single version that is dependent upon each component. For those packages with a range of versions that satisfy a component’s dependency requirement, we split the original component’s usage count evenly across those dependency versions. For instance, if “accepts” version “1.3.7” had a score of 10, and it is dependent on “negotiator” version “0.6.2” and “mime-types” versions “2.1.24” or “2.1.25”, then “negotiator” version “0.6.2” would receive a score of 10, while “mime-types” versions “2.1.24” and “2.1.25” would receive a score of 5 respectively.
6. Extract the top-scoring packages from the network based on the counts from the prior steps.

There were a number of challenges and limitations associated with this process that are important to note.

First, as the dependency network was taken from the Ecosystems dataset, only projects appearing on Ecosystems can be indirectly evaluated this way. As such, packages not on an Ecosystems connected package manager did not show up in the top package list. This restriction extended further to the available versions in Ecosystems when dealing with the version-based network.

Second, the indirect metrics provided by the data partners were calculated based on their entire samples, but, due to computational constraints, our estimated ones were based on the top 1,000 components by their direct usage count in each sample described in (1) above. However, these top components represent the whole samples sufficiently and do not significantly distort our results.

Third, because we ran the dependency trace after the SCAs had scanned the codebases, we don’t have indirect metrics as of exactly when this data was pulled in 2023. We did limit the dependency trace to packages that were published before 2024-01-01 to partially mitigate this issue.

Fourth, due to computational constraints, we filtered the Ecosystems data used for the dependency trace to only include dependencies that were six dependency layers down from any of the components used in the trace. The overwhelming majority of components did not have this many layers of dependencies, so this pre-filtering would not have materially changed our results.

Limits to Dependency Network

When using dependency networks like the ones provided by Ecosyste.ms, researchers must select which types of dependencies are considered relevant to the calculation. Not all dependencies are created equal; some inputs to a software component are more essential than others. If researchers have access to this kind of granular information, they can assign weights to dependencies using that information, which would likely create a drastically different result. The section below highlights the reasoning behind the exclusion of certain types of dependencies in the results.

“Not all dependencies are created equal; some inputs to a software component are more essential than others.”

We excluded dependencies which were flagged as being “optional” dependencies. If Component B is not always an input for Component A, then we cannot assume that one instance of A indicates one instance of Component B as well. Therefore, we ignored these “optional” dependency links.

Second, we exclude non-runtime dependencies where possible in this dependency trace. See the “Methods Part 3: Filtering” section below for a comprehensive discussion of how we handle non-runtime dependencies throughout this report.

Methods Part 3: Filtering

At this stage, we applied a filtering process to exclude software packages we felt were unsuitable for the final lists. We used a conservative approach in this process, avoiding the exclusion of

packages or versions unless strictly necessary. The goal of this approach was to provide the most accurate representation of the FOSS ecosystem as possible.

We only filtered out full language sets because it is unlikely that SCAs would record whole languages as dependencies. For example, if Python itself is listed as a dependency for an SCA, we would filter it out of our final lists. Including these cases would have made our lists inconsistent.

We decided to include components that made the final lists even if they could be considered non-runtime packages (e.g., development, build, or test packages). We made this choice for two main reasons:

1. It was challenging to develop consistent rules around what constitutes a non-runtime (development, build, or test) package, as some packages meant for these circumstances can also appear in runtime. Filtering out these packages could lead to misleading statistics about runtime package usage.
2. To the extent that this report is being used as a tool to improve security practices, including build packages, which can be exploited by supply-chain attacks, can be helpful.

This filtering logic represents a slight change from Census II, where in addition to whole languages, we also filtered out two build packages at the SCA parsing stage: *freqSystemDependencies* and *meta-common-packages*. This time we did not explicitly filter these packages. However, neither package appears in any of the Census III lists, simply due to neither package being highly ranked in the 2023 data.

An important nuance is that, while we did not filter out whole components from the final lists due to being non-runtime packages, for the indirect dependency trace we *did* filter out the individual instances of dependencies that were explicitly marked as a non-runtime for a given component. We made this choice for two reasons:

1. Most packages in the Ecosyste.ms dataset weren't listed as exclusively runtime or exclusively non-runtime, but rather were listed as runtime dependencies for some components and non-runtime dependencies for other components. As mentioned above, this makes it hard to make decisions at the package-level about whether a whole package should be considered runtime or non-runtime. However, at the dependency level, we were able to filter for just the dependencies that are runtime for a given component.
2. This is the same logic we used for the indirect dependency trace for Census II. Keeping this logic the same allows us to make apples-to-apples comparisons between the two reports with a higher level of confidence.

Methods Part 4: Combine

Once the indirect usage was added into each SCA dataset provided, the top 500 packages were identified using the following process:

1. To avoid the long tail of minimally used products skewing the analysis, keep the top 1,000 components at most by usage count in each dataset.
2. Calculate the average Z-score⁴² of the remaining packages relative to the datasets in which that package appears. This approach allows us to proportionally compare the importance of that package across multiple differently-sized data sets.

3. Merge these datasets together from different data partners by analysis type (versioned or unversioned), package manager (npm or other), and metrics type (direct or indirect usage).
4. For those packages that appear in multiple datasets, calculate their combined Z-scores by averaging the separate ones. If a package only appears in one SCA dataset, use its Z-score obtained from (2.) above as its combined Z-score.
5. Calculate the rank for each package based on their respective combined Z-scores.
6. Reduce the lists to the top 500 in each category.

Known Limitation: Undercounting System Packages

The analysis approach used here necessarily undercounts system packages.

First, some context. Most programming language ecosystems provide a default package manager that is able to manage packages within its ecosystem. Thus, it is often easier to determine the packages used by an application written in such a language, as long as all of those packages being used are also written in the language used by the application.

SCA tools and services are typically used to analyze applications, not operating systems nor operating system packages (“system packages”). Applications are normally designed to be run on top of some operating system (e.g., a Linux distribution), but the operating system is *not* normally considered to be part of the application. Operating systems themselves have many programs installable as packages, and many operating systems have system package managers for installing such packages. Unfortunately, there is often no machine-processable

information about how language-level packages use system packages. In fact, this can sometimes vary depending on how the application is installed on a given operating system. In addition, many language-level systems cannot directly refer to packages written in a different programming language, and system packages are often written in a different programming language.

In short, system packages are undercounted in the approach used in this report (and in Census II). That's because system packages are typically considered "outside" (not part of) the application and there is often no machine-processable data to indicate which system packages are required by a given application or application library. Thus, while it's known that system packages like OpenSSL and XZ Utils are widely used, they would not be expected to be heavily represented in this analysis.

Other Considerations

The final integrated data for this census is unique in that it represents a snapshot of usage by private companies integrated with dependency data. However, like any sample dataset, it has limitations on how fully it can represent the ground truth of all the FOSS projects in use. Analysis of the aggregated data uncovered several considerations to keep in mind when reviewing these results.

The first consideration to take into account is the fact that FOSS projects exist in many different ecosystems, written in many different languages. The data sources provided snapshots of how companies use FOSS projects, but did not indicate that one FOSS ecosystem or language is any more important than another. The data received from partner SCAs contained a large amount of software from the JavaScript ecosystem. Additionally, small packages are extremely common in the JavaScript npm package system. For example, in npm, 47% of the packages have 0 or 1 functions, and the average npm package has 112 lines

of code.⁴³ In contrast, the average Python module in the PyPI repository has 2,232 lines of code.⁴⁴ The prevalence of small packages in the JavaScript npm package system caused the dependency calculations to crowd out non-JavaScript packages. To try to re-capture these crowded-out packages, we created two separate sets of results - one for npm-hosted packages only, and one for non-npm-hosted packages.

Second, FOSS projects exist across time in a multitude of forms. Several instances of deprecated projects or projects which have not been updated for a few years appeared in the usage data provided by SCAs. Codebases often contain "legacy software" like these, but deeper investigation would be needed to differentiate whether these components were still actively called upon or were cached as "gold masters" for use in characterization testing.⁴⁵ As a result, a census reliant upon scan and audit data will inherently reflect older projects, or versions, over newer ones. However, until the role of these legacy packages can be determined, they may warrant more proactive approaches, including efforts to help revitalize these projects or provide assistance for end users who would like to transition over to newer projects.

Third, FOSS projects are used by different groups for different purposes. Utilizing FOSS usage information, Census II and III avoided a previous roadblock: determining which projects are "real" and "relevant." However, the sample size was limited to the particular customer bases of the respective SCA firms who provided data. Furthermore, privacy concerns prevented the provision of data with the level of specificity necessary to undertake representative sampling.

Fourth, longstanding roadblocks identified prior to the launch of Census II continue to present challenges. The reliance upon identifying information provided by Ecosystems.ms or GitHub inherently excludes packages that do not appear on

either platform, pushing them out of the top ranks during the dependency calculations run for this report.

Under these constraints the findings of this report are indicative but cannot - and do not purport to - be a definitive claim of which FOSS packages are the most critical.

The calculations provide greater insight into which packages are the most important for the companies and organizations served

by our data partners. FOSS software that is essential in one sector may not be used in another. These results undoubtedly reflect distributions specific to each customer base, but they also provide a rare glimpse into data on private usage of FOSS unavailable to most researchers. We encourage more companies and organizations to join future census efforts by the OpenSSF as data partners, but until more private usage data becomes available, the study must work within this limited set.



Results

The results take the form of eight Top 500 lists - four that include version numbers in the analysis and four that are version agnostic. Further, as mentioned above, we present npm and non-npm packages in separate lists. Given that JavaScript hosted on npm is heavily represented in our data sources and encourages the proliferation of packages, npm packages will dominate any ranking we create. To account for this, the most used non-npm packages list aims to give a sense of what other kinds of packages are keystones of the FOSS ecosystem. Finally, to give additional insights into what packages are directly called versus counts that include both direct calls and those that are indirectly called as dependencies to those directly called packages, we present both sets of packages separately. In aggregate, that leads to the following eight Top 500 lists:

1. Top 500 npm, Direct, Version Agnostic Packages (**Appendix A, page 28**)
2. Top 500 Non-npm, Direct, Version Agnostic Packages (**Appendix B, page 46**)
3. Top 500 npm, Indirect & Direct, Version Agnostic Packages (**Appendix C, page 65**)
4. Top 500 Non-npm, Indirect & Direct, Version Agnostic Packages (**Appendix D, page 83**)
5. Top 500 npm, Direct, Versioned Packages (**Appendix E, page 105**)
6. Top 500 Non-npm, Direct, Versioned Packages (**Appendix F, page 123**)

7. Top 500 npm, Indirect & Direct, Versioned Packages (**Appendix G, page 144**)

8. Top 500 Non-npm, Indirect & Direct, Versioned Packages (**Appendix H, page 162**)

Although these lists provide valuable, important insights into the most widely used FOSS projects, it is important to also consider the level of security related to these projects. Therefore, in each list, we also include the “Tiered %” measure from the OpenSSF Best Practices Badging Program.⁴⁶ The measure is out of a possible 300%, which is classified as a Gold badge, while 200% or above is considered a Silver badge, 100% or above is considered passing, and 0-99% is the progress towards the passing badge. These badge levels are intended to reflect how well a given project adheres to a variety of best practices deemed important to security by the OpenSSF Best Practices badge project. For comparative purposes, we include the ranking on a given list where the package appeared in the prior version of the Census. This demonstrates the dynamic changes of the FOSS ecosystem over time. Additional insights into the health of these projects can be obtained via OpenSSF Scorecard and the CHAOSS⁴⁷ project, a Linux Foundation community. CHAOSS focuses on creating metrics and analysis tools to evaluate the health of FOSS communities including information on commits per week, lines of code added per week, etc. and analysis of the contributors to the project through the Augur⁴⁸ and Facade⁴⁹ projects.

Findings

As a result of the Census III effort, we identified several findings. Some findings involve what we learned in Census III, including findings resulting by comparing them with the previous Census. Other findings involve the general challenges we encountered while gathering this data, and are consistent with the prior Census. We believe these challenges are important to the broader conversation and merit exploration.

The Use of Cloud Service-Specific Packages is Increasing

Many high-ranking components in Census III deal with specific cloud services. For example, boto3, a python library for dealing with AWS services like EC2 and S3, was the fifth highest-ranked component for Appendix B (Non-npm, Direct, Version Agnostic Packages), but was not ranked in Appendix B for Census II. Similarly, github.com/googleapis/google-cloud-go, a Go library for Google Cloud, is the eighth highest-ranked component for Appendix B, and also did not previously rank in the top 500 for Census II.

“Many high-ranking component deal with specific cloud services, suggesting the rise of cloud service-specific packages.”

There is an Ongoing Transition from Python 2 to Python 3

The Python package six, which is a compatibility library between Python 2 and Python 3, is highly ranked across all four of our Non-npm Top 500 lists (six is eleventh overall in Appendix B; six version 1.16.0 is first overall in Appendix F - Non-npm, Direct, Versioned Packages; and it shows up in the top 500 of both Appendix D and Appendix H - the Non-npm combined Indirect & Direct lists). This shows that in 2023 there are still ongoing issues with the transition from Python 2 to Python 3, despite the latter being officially released in 2008. This is consistent with other reports; the “Python Developers Survey 2022 Results” by JetBrains found that 7% of all Python developers used Python 2, and the number of Python 2 users is dramatically higher in a number of segments such as 29% in data analysis, 24% in computer graphics, and 23% in DevOps.⁵⁰ This illustrates that transitioning to a new version of software, when significant incompatibilities are introduced, can take more than a decade if it occurs at all. It also suggests the potential security risks from backwards incompatibility; Python 2 is no longer supported by the Python developers, including for security vulnerabilities, yet in some market segments it still has 23-29% of the users.

“There are still ongoing issues with the transition from Python 2 to Python 3, despite the latter being officially released in 2008.”

Maven Packages Continue to be Widely Used and There is an Increased Prevalence of NuGet and Python Packages

As in Census II, the most common Non-npm Package Manager was Maven, which manages packages for the Java Virtual Machine (mainly Java code). In Census II, 245 out of the top 500 (49%) packages in Appendix B (Non-npm, Direct, Version Agnostic Packages) came from the Maven package manager; this time, 204 out of the top 500 (40.8%) packages in Appendix B came from Maven.

There has been an increase in the number of NuGet (.NET, mainly C# code) and PyPI (Python) packages that made the Top 500 list in Census III. In Census II, 53/500 (10.6%) of packages in Appendix B were NuGet packages; whereas in Census III, 81/500 (16.2%) of packages in Appendix B were NuGet packages. In Census II, 82/500 (16.4%) of packages in Appendix B used the PyPI package repository; whereas in Census III, 108/500 (21.6%) of packages in Appendix B used the PyPI package repository.

Use of Components From Rust Package Repositories Have Increased Considerably Since Census II

Memory safety vulnerabilities are one of the most prevalent types of disclosed software vulnerability. The root cause is that the C and C++ programming languages, unlike almost all other programming languages, do not prevent memory safety

errors by default. A large number of government agencies urge transitioning to memory safe programming languages, especially for new projects.⁵¹ If performance is not critical and system access is not needed then many alternative languages are available (including Go, Java, C#, JavaScript, Python, Ruby, and Visual Basic). However, when performance is critical and system-level access is needed, the list of programming languages available is much shorter. The most popular of these alternatives is Rust, which the TIOBE Index noted is slowly moving up towards the top ten.⁵² Rust has a package management system, making it easier to determine dependencies. We specifically investigated to see if there is evidence of increased Rust use in production in our data set.

Based on data from the SCA scans, the number of Rust components being used has increased since 2020. In Census II, the average percent of direct components coming from a Rust package repository was 0.02%.⁵³ In Census III, that percentage rose to 0.12%. This represents a 500% increase in direct Rust application components reported by SCAs.

Note that we are not capturing the full scope of Rust usage by looking at just application packages, as Rust code is often found in system-level packages. See the “Known Limitation: Undercounting System Packages” section above for a complete discussion of the limitations of our approach as it relates to code found in system-level packages. However, the drastic increase in direct Rust application components since Census II points to increased adoption of the Rust language. This is significant progress towards using more memory-safe languages in OSS.

There Continues to be a Need for Use of Standardized Naming Schema for Software Components

Members of the Census III team and the Steering Committee spent months in the time leading up to the project's acquisition of data attempting to anticipate and prepare for expected obstacles and challenges to the data's use and analysis. The challenges created by the lack of a standardized naming schema for software components that had vexed the Census I and II efforts persisted. The naming conventions for software components across all the data contributed to the Census III effort were unique, individualized, and inconsistent. The effort required to untangle and merge these datasets slowed progress on the current project significantly. Despite the considerable effort that went into creating the framework to produce these initial results for Census II, the challenge of applying it to other data sets with even more varied formats and naming standards still remains.

The struggles with this lack of standardized software component naming schema are not unique to the Census projects. In the United States, multiple government agencies have run into this challenge. The National Institute for Standards and Technology (NIST) has grappled with this issue for decades in the context of software vulnerability management. Stakeholders working with the National Telecommunications and Information Administration (NTIA) Software Component Transparency process have wrestled with the same problem. For some - including the Census III and NTIA software bill of materials (SBOM) projects - the largest consequence of the lack of use of a common naming schema has been lost time. However, as SBOM and other software supply chain transparency and security efforts continue to grow, mature, and become more complex, the lack of use of a standardized software component naming

schema threatens to stymie efforts by industry and government to better protect themselves from software-based incidents.

There *has* been work on this problem. In October 2023 the US Cybersecurity and Infrastructure Security Agency (CISA) released the paper "Software Identification Ecosystem Option Analysis" to raise the issue and discuss options.⁵⁴ This paper noted three approaches as promising starting points: Common Platform Enumeration (CPE), OmniBOR, and package URL (pURL, Purl, or purl). The OpenSSF developed a response to this paper, agreeing that software identification was an important issue and providing various feedback on these issues.⁵⁵ It noted in particular that:

1. It's important to leverage DNS as a global namespace for software. The only naming system that has scaled to cover the global technology space is DNS; it is essentially the namespace for modern life. Some ecosystems even use reverse-DNS names; this approach provides a valuable countermeasure against typosquatting and dependency confusion.
2. Cryptographic hashes like OmniBOR need to be part of the solution, but they can't be the total solution. The key advantage of cryptographic hashes is that they can, with great specificity, identify unique software. They also have many disadvantages, e.g., they are often overprecise, aren't human-readable, and don't carry semantic information.
3. Purl is currently in use as a de facto standard in many situations. They are human-readable and carry semantic information. Purls build on DNS in two ways: (1) purl automatically uses reverse DNS names when an ecosystem uses them, and (2) URLs embed DNS (most purl types have a default repository URL and allow specification of an alternative).

While many vulnerability management systems today use Common Platform Enumeration (CPE), CPE is not a long-term solution. CPEs require a central naming authority, and the amount of FOSS today has outstripped the ability of a centralized system to handle it. When the US National Vulnerability Database stopped “enriching” CVE information in 2024, they stopped assigning CPEs to them, leading to an inability to connect many vulnerability reports to the software that was vulnerable.⁵⁶

In the context of identifying FOSS packages, purls are especially promising and their use is spreading.⁵⁷ A purl is a URL composed of seven components:

`pkg:type/namespace/name@version?qualifiers#subpath`. In this format:

- **type:** the package “type” or package “protocol” such as maven, npm, nuget, gem, pypi, etc.
- **namespace:** some name prefix such as a Maven groupid, a Docker image owner, a GitHub user or organization.
- **name:** the name of the package.
- **version:** the version (optional)

Examples of purls include “`pkg:npm/%40angular/animation@12.3.1`”, “`pkg:nuget/EnterpriseLibrary.Common@6.0.1304`”, and “`pkg:pypi/django@1.11.1`”. Purls are now supported in some formats such as the OpenSSF Open Source Vulnerability (OSV) format schema,⁵⁸ SPDX⁵⁹ (ISO/IEC 5962), and CycloneDX.⁶⁰ The SBOM Forum wrote a petition in 2022 asking that the NVD use purl to identify software.⁶¹

However, simply having a format specification is not enough; data must be widely *available* in this format. Purl is being used today, but not universally even when it would make sense. While in some cases a purl can be easily derived, it is challenging to do so in other cases. For example, the CVE process at the

time of this writing still fails to require purls when reporting vulnerabilities in FOSS, while also failing to assign CPEs or any other machine-processable identifier. This means that many CVEs cannot be reliably mapped, in a machine-processable way, to the software containing the vulnerability reported by the CVE. Instead, CVE users must guess what component was meant, an absurd approach given the millions of software packages available today.

The bottom line — revealed by the Census III project, the NTIA process, NIST’s vulnerability management struggles, and other similar projects — is that there is a critical need for a standardized software component naming schema that is in widespread use. Until one is widely used, strategies for software security, transparency, and more will have limited effect. Organizations will remain categorically unable to communicate with each other on the large-scale-- particularly, the *global* scale-- necessary to share such information. Given the increasing frequency and sophistication of cybersecurity incidents in which the software supply chain plays a part, there is precious little time to waste.

“There is a critical need for a standardized software component naming schema that is in widespread use. Until one is widely used, strategies for software security, transparency, and more will have limited effect.”

Much of the Most Widely Used FOSS is Developed by Only a Handful of Contributors

As previously mentioned, the health and security of FOSS is dependent upon its contributing community members, participants who are actively writing new code, establishing security protocols, maintaining updates to that code, providing documentation, etc. Reviewing 47 of the top 50 non-npm projects from our version-agnostic direct list,⁶² for commits in the year 2023, it was found that 17% of projects had one developer accounting for more than 80% of commits authored.⁶³ Further, 40% of projects had only one or two developers accounting for more than 80% of commits authored, 64% of projects had four or less developers accounting for more than 80% of commits authored, and 81% of projects had ten or less developers accounting for more than 80% of commits authored. These findings are counter to the typically held belief that thousands or millions of developers are responsible for developing and maintaining FOSS projects. Many projects do receive contributions from many people, but often a few people do most of the work on any given project. Additionally, there are a few prolific developers who are responsible for a large percentage of the commits across multiple top components. For example, of the 212 unique developers who were responsible for contributing over 80% of commits across the top non-npm projects, 23 (10.85%) were top contributors to at least two top projects.⁶⁴ The insights on the concentration of developers maintaining these projects could change the policy decisions and considerations with how best to engage, support, and train the community and change the lens through which we view the security of these projects.

Individual Developer Account Security is Increasingly Important

The next challenge and lesson learned that arose after the data had been analyzed was the criticality of the security of individual developer accounts. Many of the Top 500 packages on our lists are hosted under individual developer accounts. The consequences of such heavy reliance upon individual developer accounts must not be discounted. For legal, bureaucratic, and security reasons, individual developer accounts have fewer protections associated with them than organizational accounts in a majority of cases. While these individual accounts can employ measures like multi-factor authentication (MFA), they may not always do so, leaving individual computing environments more vulnerable to attack. These accounts also do not have the same granularity of permissioning and other publishing controls that organizational accounts do. This means that changes to code under the control of these individual developer accounts are significantly easier to make. Further, a related issue could occur if the individual developer went on a long hiatus, or was hit by the proverbial bus, preventing updates to the code from occurring.

“The consequences of such heavy reliance upon individual developer accounts must not be discounted.”

These potential risks are not hypothetical; developer account takeovers have begun occurring with increasing frequency, both in forges such as GitHub and in repositories such as the npm repository and PyPI. “Backdooring” is one popular method used to infiltrate accounts: attackers insert malicious code into seemingly innocuous packages that create a “backdoor” for hackers to enter once the host package is installed.

For example, in July 2019, a Ruby developer was alerted to the fact that their account with the official Ruby repository had been taken over, and several of their packages backdoored. Later, in August 2019, a similar account takeover was executed once again at the Ruby repository, leading to the backdooring of eleven packages.⁶⁵

While developer account takeovers remain a significant risk to software security, there are other problematic issues that might be less obvious. One example being developers who decide to remove or “delete” their projects. This happened in 2016 with a package called “left-pad,” with consequences that stakeholders described as “breaking” the Internet for several hours. There, a developer who was upset with the outcome of a package naming dispute removed their code from the npm repository in protest. It was quickly discovered that hundreds of downstream packages depended upon that seemingly minor piece of code. Without that critical left-pad code, these downstream packages broke.⁶⁶ Similarly, in 2019, a developer who disagreed with a business decision undertaken by Chef Software removed their code from their repository with similar downstream impacts to that of left-pad.⁶⁷ npm now counters this problem by not allowing developers to automatically unpublish an open source module if the package is older than 24 hours,⁶⁸ however, other repositories might not have such protections.

An even more serious problem, though rare today, is a developer who intentionally subverts the software they maintain. In 2022, a developer (who appeared to be unhappy with large corporations using their OSS libraries for free) corrupted two of their own packages, colors.js and faker.js, to purposely create an infinite loop in the latest version of the packages.⁶⁹ In 2024 an authorized maintainer of xz-utils intentionally created a malicious package that did not accurately reflect its source repository.⁷⁰

Thus, in the contexts of both security and general risk management, it is critical that developer accounts be understood and strongly protected. The OpenSSF has already taken steps

to improve the security of developer accounts, in particular by encouraging the use of MFA tokens (which makes accounts much harder to attack compared to accounts protected by only a password). This includes the “Great MFA Distribution Project” which distributed free MFA tokens to OSS projects identified as being critical, as well as MFA token requirements in the OpenSSF badging program gold badge.⁷¹ One option would be to shift critical projects hosted under individual accounts to organizational accounts that encourage greater levels of security, and make it less likely that a single developer could create significant security problems, though it will be challenging to do that in projects with only one maintainer.

Legacy Software Persists in the Open Source Space

In Census II, we noted that the software package “minimist” was ranked above the package “yargs,” despite the fact that the two packages performed essentially the same functions. yargs was considered to be the newer (and better) replacement for minimist. Three years later in the current Census III, yargs has overtaken minimist. However, both packages remain highly-ranked on our version-agnostic lists. This shows the persistence of legacy software in the FOSS ecosystem. Similar examples abound. The npm package “request” shows up in our direct and indirect version-agnostic list, but was deprecated in 2019, with the maintainer claiming that the “patterns at the core of request are out of date” and arguing that the best thing would be for “request to slowly fade away.”⁷²

This suggests that a generally accepted reality exists within the FOSS development space: open source has not escaped the problem of legacy technology. In this specific case, the “legacy tech” is a single software package whose replacement has not yet overtaken its predecessor in terms of sheer usage. Software should arguably be easier to replace compared to hardware. In cases where the legacy-to-replacement packages perform

exactly the same function and have the same APIs, the new package could be slotted in with relatively minor disruption to the full product overall. However, in many cases this is not true: replacement packages often have different APIs and somewhat different functionality. Even when the APIs and functionality are supposedly the same, compatibility bugs abound. Many organizations will find it difficult to justify switching to different packages, since there are financial and time-related costs for switching to new software when there is no guarantee of an added benefit. For organizations who have not yet experienced a problem with `minimist` instead of `yargs` (for example), these transition costs may sway an organization against switching to the newer package.

That attitude neglects to take into consideration a separate, related reality of technology in general including FOSS: as technology ages — both software and hardware — it loses support. In the case of FOSS like `minimist`, the number of developers working to ensure updates — including feature improvements, as well as security and stability updates — decreases over time. Often those developers instead choose to

dedicate their time and talents to newer packages. In the case of `log4j`, the version 1.x series was no longer supported after 2015, so any new bugs discovered after that point went unfixed (and there are at least six moderate-critical severity bugs that have been found during that time). As a consequence, those legacy software packages become more likely to break with each passing day without the guarantee of support on-hand to provide fixes. Although this was not the path that led to the Heartbleed or Log4Shell situations discussed above, this path could lead to similar large-scale negative outcomes.

Thus, it is equally critical that legacy tech issues be considered in the FOSS space, just as they are in the general technology context. It is also important that new FOSS projects take strong measures to enable transition when a new package should replace an old one, e.g., by providing identical APIs and using tests to minimize incompatibilities. Without this awareness, and especially without processes and procedures in place to address the risks created by legacy FOSS, organizations open themselves up to the possibility of hard-to-detect issues within their software bases.



Conclusion

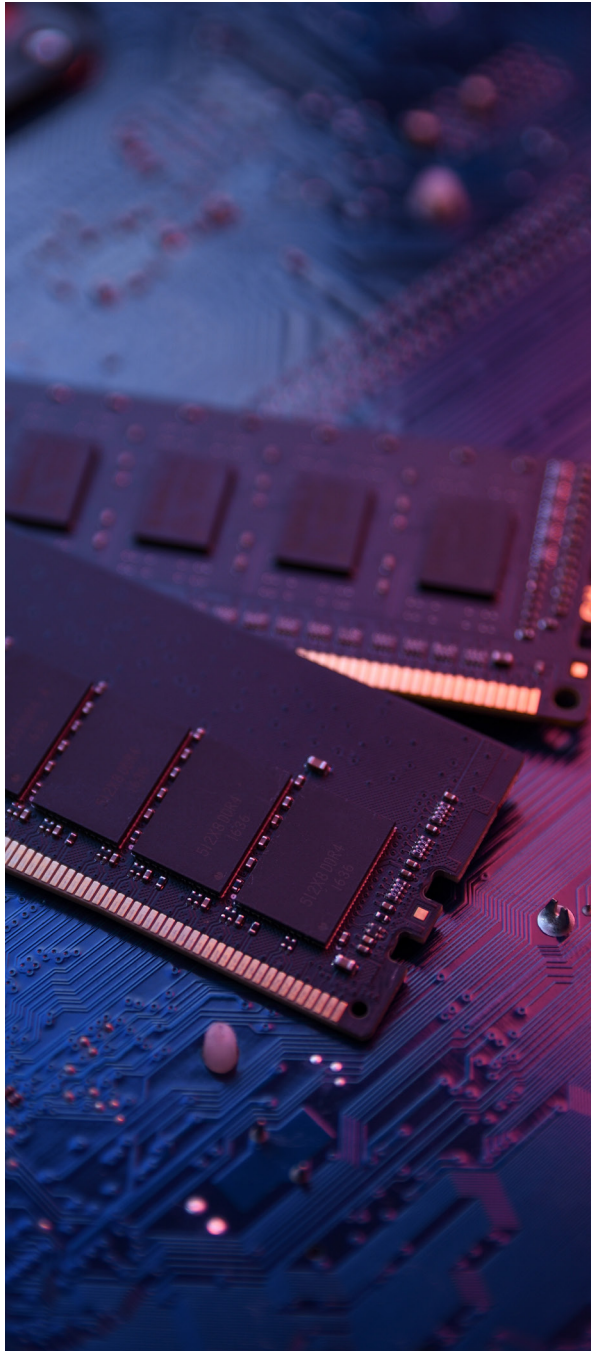
With the usage data provided in this report, we hope to shed more light on what FOSS packages are used -- or heavily depended upon -- within private companies. Far from being the final word on critical FOSS projects, this census effort represents the beginning of a larger dialogue on how to identify vital packages and ensure they receive adequate resources and support. Further, our efforts identified eight high-level findings important to the future health and security of FOSS:

- 1) the use of cloud service-specific packages is increasing
- 2) there is an ongoing transition from Python 2 to Python 3
- 3) Maven packages continue to be widely used and there is an increased prevalence of NuGet and Python packages
- 4) use of components from Rust package repositories have increased considerably since Census II
- 5) there continues to be a need for the use of standardized naming schema for software components
- 6) much of the most widely used FOSS is developed by only a handful of contributors
- 7) individual developer account security is increasingly important, and
- 8) legacy software persists in the open source space.

Given the distributed nature of FOSS, only through data sharing, coordination, and investment will the value of this critical component of the digital economy be preserved for generations to come.

Next Steps

This report from the Laboratory for Innovation Science at Harvard, Linux Foundation, and OpenSSF Census III effort represents an important step towards addressing the structural issues that threaten the FOSS ecosystem. We support efforts to standardize unique software identifiers (i.e., linking project URLs for the software repository with package repository URLs, cryptographic checksums, etc.) across the public and private sectors to facilitate better data sharing and aggregation for research. Additionally, we advocate for the inclusion of comprehensive version information in SCA data for both packages observed in scans and audits as well as dependency data. More standardized and comprehensive data would enable research efforts, like the Census III, to provide an even clearer picture of which components of the FOSS ecosystem need critical support. This model could expand to encompass packages in different layers of technology stacks, such as system packages and cloud computing layers, or to vertical industry segments, such as financial services or telecommunications. We welcome new partnerships with organizations and individuals willing to contribute more comprehensive data to improve future results.



Acknowledgments

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Appendix A: Top 500 npm, Direct, Version Agnostic Packages

Our dependency analysis identified the following 500 packages as the most used FOSS packages among those reported in the private usage data contributed by SCA partners available on the npm package manager. These packages were directly observed in use and are version agnostic. For further information on how this list was compiled, refer to the Methods section.

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
1.	npm	react-dom	7.656383993	81	9
2.	npm	react	6.452384679	81	2
3.	npm	lodash	5.819747956	Not Participating	1
4.	npm	axios	5.676419763	Not Participating	3
5.	npm	express	5.225477989	15	6
6.	npm	uuid	4.905049764	Not Participating	8
7.	npm	aws-sdk	4.80526075	Not Participating	307
8.	npm	react-router-dom	4.415424516	Not Participating	29
9.	npm	oboe	4.03997155	Not Participating	Not Ranked
10.	npm	moment	3.919280542	Not Participating	11
11.	npm	d3-flame-graph	3.83695108	Not Participating	Not Ranked
12.	npm	@types/node	3.738330073	Not Participating	24
13.	npm	typescript	3.663896774	Not Participating	199
14.	npm	jquery	3.497126981	Not Participating	10
15.	npm	@babel/core	3.468756318	27	5
16.	npm	kind-of	3.301332733	Not Participating	18
17.	npm	tslib	3.114581547	Not Participating	42
18.	npm	body-parser	2.98882449	Not Participating	19
19.	npm	rxjs	2.980106044	Not Participating	46
20.	npm	dotenv	2.951918746	Not Participating	30
21.	npm	semver	2.946185564	Not Participating	7
22.	npm	string-width	2.934872908	Not Participating	27
23.	npm	react-redux	2.618083443	Not Participating	167

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
24.	npm	safe-buffer	2.617274393	Not Participating	37
25.	npm	supports-color	2.597180795	Not Participating	13
26.	npm	inherits	2.421829153	Not Participating	26
27.	npm	core-js	2.402920698	Not Participating	16
28.	npm	chalk	2.23935479	Not Participating	12
29.	npm	bootstrap	2.197953574	78	62
30.	npm	date-fns	2.193096752	Not Participating	401
31.	npm	winston	2.137565558	Not Participating	93
32.	npm	is-fullwidth-code-point	2.134768957	Not Participating	49
33.	npm	eslint	2.076615293	Not Participating	305
34.	npm	color-name	2.067584656	Not Participating	44
35.	npm	debug	2.0653973	Not Participating	4
36.	npm	prettier	2.058056495	Not Participating	456
37.	npm	@angular/platform-browser	2.044664889	88	Not Ranked
38.	npm	@angular/core	2.042936889	88	Not Ranked
39.	npm	@angular/common	2.024688055	88	Not Ranked
40.	npm	@angular/platform-browser-dynamic	2.009868818	88	Not Ranked
41.	npm	@angular/router	2.007538894	88	Not Ranked
42.	npm	@angular/compiler	2.005298277	88	Not Ranked
43.	npm	@angular/forms	1.994148287	88	Not Ranked
44.	npm	@salesforce-ux/icons	1.991751069	Not Participating	Not Ranked
45.	npm	cliui	1.969862036	Not Participating	98
46.	npm	type-fest	1.947262372	Not Participating	152
47.	npm	readable-stream	1.934923301	Not Participating	14
48.	npm	@angular/animations	1.925936618	88	Not Ranked
49.	npm	fs-extra	1.921905225	Not Participating	52
50.	npm	glob	1.909459436	Not Participating	20
51.	npm	jsonwebtoken	1.826409196	Not Participating	55
52.	npm	source-map	1.817565882	Not Participating	22

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
53.	npm	@types/react	1.817326762	Not Participating	Not Ranked
54.	npm	wrap-ansi	1.817170442	Not Participating	124
55.	npm	ansi-regex	1.812366536	Not Participating	21
56.	npm	@types/react-dom	1.808885003	Not Participating	Not Ranked
57.	npm	config	1.794929471	Not Participating	Not Ranked
58.	npm	d3-selection	1.77782193	Not Participating	Not Ranked
59.	npm	yargs	1.771807572	Not Participating	73
60.	npm	moment-timezone	1.727890855	Not Participating	399
61.	npm	is-number	1.707232494	Not Participating	87
62.	npm	get-stream	1.682801839	Not Participating	102
63.	npm	react-scripts	1.649835229	Not Participating	291
64.	npm	ansi-styles	1.64957811	Not Participating	36
65.	npm	emoji-regex	1.621725202	Not Participating	179
66.	npm	styled-components	1.619197379	Not Participating	276
67.	npm	find-up	1.613851437	Not Participating	45
68.	npm	ws-non-native	1.597294547	Not Participating	Not Ranked
69.	npm	mime-db	1.591186883	Not Participating	90
70.	npm	zone.js	1.582604264	88	103
71.	npm	setprototypeof	1.560648564	Not Participating	148
72.	npm	jest	1.547593622	Not Participating	250
73.	npm	prop-types	1.527628439	81	33
74.	npm	rimraf	1.498958552	Not Participating	35
75.	npm	ts-node	1.484368477	Not Participating	312
76.	npm	graphql	1.47856524	Not Participating	275
77.	npm	pg	1.46145419	Not Participating	Not Ranked
78.	npm	define-property	1.414064634	Not Participating	59
79.	npm	commander	1.394161028	Not Participating	23
80.	npm	webidl-conversions	1.389633979	Not Participating	Not Ranked
81.	npm	braces	1.383526316	Not Participating	125

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
82.	npm	@jupyterlab/application	1.358089431	90	Not Ranked
83.	npm	@jupyterlab/coreutils	1.356717671	90	Not Ranked
84.	npm	@jupyterlab/theme-dark-extension	1.354157052	90	Not Ranked
85.	npm	@jupyterlab/theme-light-extension	1.354157052	90	Not Ranked
86.	npm	@jupyterlab/pdf-extension	1.354065601	90	Not Ranked
87.	npm	@jupyterlab/json-extension	1.354065601	90	Not Ranked
88.	npm	@jupyterlab/rendermime-extension	1.354065601	90	Not Ranked
89.	npm	@jupyterlab/vega5-extension	1.354065601	90	Not Ranked
90.	npm	@jupyterlab/ui-components-extension	1.354065601	90	Not Ranked
91.	npm	@jupyterlab/javascript-extension	1.354065601	90	Not Ranked
92.	npm	@jupyterlab/running-extension	1.353516897	90	Not Ranked
93.	npm	@jupyterlab/mathjax2-extension	1.353333996	90	Not Ranked
94.	npm	@jupyterlab/vdom-extension	1.353333996	90	Not Ranked
95.	npm	@emotion/react	1.339586577	Not Participating	Not Ranked
96.	npm	helmet	1.332236682	Not Participating	180
97.	npm	@testing-library/react	1.319116227	Not Participating	347
98.	npm	cors	1.317322799	Not Participating	48
99.	npm	fill-range	1.316342014	Not Participating	81
100.	npm	@jupyterlab/htmlviewer-extension	1.30824882	90	Not Ranked
101.	npm	@jupyterlab/csvviewer-extension	1.30824882	90	Not Ranked
102.	npm	@jupyterlab/help-extension	1.30824882	90	Not Ranked
103.	npm	@jupyterlab/hub-extension	1.30824882	90	Not Ranked
104.	npm	@jupyterlab/celltags-extension	1.303950639	90	Not Ranked
105.	npm	qs	1.281134374	173	39
106.	npm	@emotion/styled	1.279659658	Not Participating	Not Ranked
107.	npm	ajv	1.260590976	99	47
108.	npm	node-fetch	1.250013756	Not Participating	68
109.	npm	@jupyterlab/toc-extension	1.245422215	90	Not Ranked
110.	npm	punycode	1.235745831	Not Participating	41

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
111.	npm	@types/jest	1.225651574	Not Participating	Not Ranked
112.	npm	pkg-dir	1.224727058	Not Participating	104
113.	npm	request	1.221992331	Not Participating	25
114.	npm	locate-path	1.218648169	Not Participating	51
115.	npm	@testing-library/jest-dom	1.218379424	Not Participating	337
116.	npm	redux	1.215552367	Not Participating	56
117.	npm	p-locate	1.210825045	Not Participating	50
118.	npm	webpack	1.18597023	87	308
119.	npm	depd	1.181973412	Not Participating	284
120.	npm	strip-bom	1.157542757	Not Participating	218
121.	npm	y18n	1.139219766	Not Participating	183
122.	npm	strip-ansi	1.131128144	Not Participating	17
123.	npm	compression	1.130165763	15	191
124.	npm	normalize-path	1.127004438	Not Participating	158
125.	npm	anymatch	1.120896774	Not Participating	198
126.	npm	to-regexp-range	1.090358456	Not Participating	132
127.	npm	ignore	1.084250792	Not Participating	226
128.	npm	yargs-parser	1.083365543	Not Participating	75
129.	npm	@jupyterlab/docmanager-extension	1.070934351	90	Not Ranked
130.	npm	@jupyterlab/shortcuts-extension	1.070934351	90	Not Ranked
131.	npm	@jupyterlab/codemirror-extension	1.070934351	90	Not Ranked
132.	npm	@jupyterlab/apputils-extension	1.070934351	90	Not Ranked
133.	npm	@jupyterlab/notebook-extension	1.070934351	90	Not Ranked
134.	npm	@jupyterlab/fileeditor-extension	1.070934351	90	Not Ranked
135.	npm	@jupyterlab/settingeditor-extension	1.070842901	90	Not Ranked
136.	npm	@jupyterlab/logconsole-extension	1.070842901	90	Not Ranked
137.	npm	@jupyterlab/imageviewer-extension	1.070842901	90	Not Ranked
138.	npm	@jupyterlab/inspector-extension	1.070842901	90	Not Ranked
139.	npm	@jupyterlab/translation-extension	1.070842901	90	Not Ranked

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
140.	npm	@jupyterlab/markdownviewer-extension	1.070842901	90	Not Ranked
141.	npm	@jupyterlab/application-extension	1.070842901	90	Not Ranked
142.	npm	@jupyterlab/mainmenu-extension	1.070842901	90	Not Ranked
143.	npm	@jupyterlab/tooltip-extension	1.070842901	90	Not Ranked
144.	npm	@jupyterlab/statusbar-extension	1.070842901	90	Not Ranked
145.	npm	@jupyterlab/debugger-extension	1.070842901	90	Not Ranked
146.	npm	@jupyterlab/filebrowser-extension	1.070842901	90	Not Ranked
147.	npm	@jupyterlab/launcher-extension	1.070842901	90	Not Ranked
148.	npm	@jupyterlab/documentsearch-extension	1.070842901	90	Not Ranked
149.	npm	@jupyterlab/extensionmanager-extension	1.070842901	90	Not Ranked
150.	npm	@jupyterlab/completer-extension	1.070842901	90	Not Ranked
151.	npm	@jupyterlab/console-extension	1.070842901	90	Not Ranked
152.	npm	@jupyterlab/terminal-extension	1.070842901	90	Not Ranked
153.	npm	child-process-promise	1.068465183	Not Participating	Not Ranked
154.	npm	@angular/cdk	1.064335377	16	Not Ranked
155.	npm	string_decoder	1.057429997	Not Participating	40
156.	npm	balanced-match	1.053712473	Not Participating	164
157.	npm	cookie-parser	1.052848856	Not Participating	34
158.	npm	stats-lite	1.050540854	Not Participating	Not Ranked
159.	npm	file-exists	1.049534896	Not Participating	Not Ranked
160.	npm	cli-progress-bar	1.048803291	Not Participating	Not Ranked
161.	npm	tracium	1.048803291	Not Participating	Not Ranked
162.	npm	@testing-library/user-event	1.04779399	Not Participating	342
163.	npm	js-yaml	1.032461342	Not Participating	108
164.	npm	object-inspect	1.029281818	Not Participating	413
165.	npm	eslint-config-prettier	0.995532526	Not Participating	Not Ranked
166.	npm	please-upgrade-node	0.985519433	Not Participating	Not Ranked
167.	npm	@jupyterlab/docprovider-extension	0.983324617	90	Not Ranked
168.	npm	postcss	0.979512252	Not Participating	187

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
169.	npm	@salesforce-ux/design-system	0.973413844	Not Participating	Not Ranked
170.	npm	@typescript-eslint/parser	0.942897585	Not Participating	Not Ranked
171.	npm	has-flag	0.940390321	Not Participating	66
172.	npm	@jupyterlab/cell-toolbar-extension	0.93814799	90	Not Ranked
173.	npm	classnames	0.928027249	Not Participating	86
174.	npm	@salesforce/design-system-react	0.9257107	Not Participating	Not Ranked
175.	npm	is-stream	0.925451534	Not Participating	197
176.	npm	@mui/material	0.92272101	133	Not Ranked
177.	npm	minimist	0.90863804	Not Participating	28
178.	npm	has-symbols	0.901020879	Not Participating	245
179.	npm	schema-utils	0.89477142	Not Participating	166
180.	npm	@typescript-eslint/eslint-plugin	0.893950868	Not Participating	Not Ranked
181.	npm	babel-loader	0.892591183	27	382
182.	npm	camelcase	0.88451176	Not Participating	32
183.	npm	dont-sniff-mimetype	0.880991326	Not Participating	Not Ranked
184.	npm	web-vitals	0.876832871	Not Participating	Not Ranked
185.	npm	color-convert	0.871289674	Not Participating	74
186.	npm	p-try	0.846051906	Not Participating	80
187.	npm	@sentry/node	0.841442874	Not Participating	Not Ranked
188.	npm	isobject	0.839944242	Not Participating	109
189.	npm	array-flatten	0.833836578	Not Participating	217
190.	npm	react-router	0.833426383	Not Participating	193
191.	npm	eslint-plugin-import	0.828951693	Not Participating	498
192.	npm	get-intrinsic	0.821621251	Not Participating	Not Ranked
193.	npm	signal-exit	0.821621251	Not Participating	215
194.	npm	strip-json-comments	0.821621251	Not Participating	214
195.	npm	estraverse	0.819345996	Not Participating	348
196.	npm	webpack-cli	0.817290038	87	423
197.	npm	redux-thunk	0.81695089	Not Participating	135

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
198.	npm	path-exists	0.801220942	Not Participating	79
199.	npm	yallist	0.793322348	Not Participating	31
200.	npm	electron-to-chromium	0.791082932	Not Participating	497
201.	npm	tr46	0.778867604	Not Participating	Not Ranked
202.	npm	@angular/material	0.767349043	16	Not Ranked
203.	npm	isarray	0.767317682	113	53
204.	npm	is-arrayish	0.766652277	Not Participating	110
205.	npm	swig	0.759544847	Not Participating	Not Ranked
206.	npm	next	0.746541754	Not Participating	Not Ranked
207.	npm	react-select	0.746266667	Not Participating	Not Ranked
208.	npm	morgan	0.736738354	Not Participating	89
209.	npm	jest-worker	0.730006294	Not Participating	Not Ranked
210.	npm	jqueryui	0.717790967	Not Participating	Not Ranked
211.	npm	chai	0.713200564	Not Participating	116
212.	npm	globals	0.709109831	Not Participating	181
213.	npm	uri-js	0.699467976	Not Participating	277
214.	npm	resolve-from	0.698562511	Not Participating	145
215.	npm	ts-jest	0.697912031	Not Participating	Not Ranked
216.	npm	readdirp	0.693360312	Not Participating	249
217.	npm	convert-source-map	0.693360312	Not Participating	267
218.	npm	micromatch	0.690012593	Not Participating	171
219.	npm	resolve	0.689946949	Not Participating	65
220.	npm	@types/lodash	0.688455898	Not Participating	441
221.	npm	js-tokens	0.675037321	Not Participating	82
222.	npm	@babel/preset-env	0.671420127	27	317
223.	npm	pump	0.668929657	Not Participating	106
224.	npm	is-core-module	0.662821993	Not Participating	Not Ranked
225.	npm	form-data	0.656860525	Not Participating	112
226.	npm	binary-extensions	0.656714329	Not Participating	177

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
227.	npm	es-abstract	0.656714329	Not Participating	224
228.	npm	async	0.655319101	Not Participating	43
229.	npm	pify	0.647968318	Not Participating	61
230.	npm	lru-cache	0.636663763	Not Participating	64
231.	npm	ioredis	0.636048834	Not Participating	Not Ranked
232.	npm	react-hook-form	0.635025914	Not Participating	Not Ranked
233.	npm	d3	0.622715885	Not Participating	Not Ranked
234.	npm	dagre-d3	0.622368853	Not Participating	Not Ranked
235.	npm	sass	0.621253461	Not Participating	Not Ranked
236.	npm	eslint-plugin-react	0.620422238	Not Participating	Not Ranked
237.	npm	reactable	0.620265488	Not Participating	Not Ranked
238.	npm	bluebird	0.61936907	Not Participating	97
239.	npm	which	0.61202553	Not Participating	156
240.	npm	ipaddr.js	0.607853019	Not Participating	303
241.	npm	express-session	0.60063034	Not Participating	72
242.	npm	@oclif/plugin-help	0.588166306	Not Participating	Not Ranked
243.	npm	ms	0.587902374	Not Participating	15
244.	npm	extend-shallow	0.583422364	Not Participating	115
245.	npm	bytes	0.575347382	Not Participating	140
246.	npm	mocha	0.568889944	Not Participating	231
247.	npm	@material-ui/core	0.568562613	133	Not Ranked
248.	npm	http-errors	0.566193349	Not Participating	71
249.	npm	domelementtype	0.558991709	Not Participating	160
250.	npm	jsesc	0.558826078	Not Participating	151
251.	npm	escape-string-regexp	0.553680992	Not Participating	128
252.	npm	is-callable	0.552884046	Not Participating	251
253.	npm	underscore	0.550831803	Not Participating	188
254.	npm	is-glob	0.547812982	Not Participating	88
255.	npm	needle	0.546281902	Not Participating	Not Ranked

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
256.	npm	onetime	0.534561054	Not Participating	159
257.	npm	json-schema-traverse	0.532637494	Not Participating	119
258.	npm	request-promise	0.530620175	Not Participating	154
259.	npm	is-extendable	0.528453391	Not Participating	138
260.	npm	npm-run-path	0.528453391	Not Participating	237
261.	npm	node-releases	0.528453391	Not Participating	Not Ranked
262.	npm	process-nextick-args	0.528453391	Not Participating	69
263.	npm	mimic-fn	0.528453391	Not Participating	127
264.	npm	@oclif/plugin-plugins	0.527808869	Not Participating	Not Ranked
265.	npm	@oclif/plugin-update	0.525796954	Not Participating	Not Ranked
266.	npm	cross-spawn	0.521653171	Not Participating	70
267.	npm	redis	0.519447576	Not Participating	425
268.	npm	@oclif/plugin-not-found	0.516194634	Not Participating	Not Ranked
269.	npm	p-limit	0.51468409	Not Participating	100
270.	npm	@babel/runtime	0.51460978	27	133
271.	npm	history	0.513355212	Not Participating	323
272.	npm	once	0.510130399	Not Participating	142
273.	npm	acorn	0.504327797	Not Participating	54
274.	npm	find-cache-dir	0.504022736	Not Participating	233
275.	npm	regenerator-runtime	0.503792939	Not Participating	63
276.	npm	dependable	0.502477035	Not Participating	Not Ranked
277.	npm	eslint-plugin-prettier	0.495899993	Not Participating	Not Ranked
278.	npm	forever	0.492234561	Not Participating	Not Ranked
279.	npm	@babel/highlight	0.491807408	27	190
280.	npm	is-extglob	0.485699744	Not Participating	155
281.	npm	array-union	0.479592081	Not Participating	489
282.	npm	finalhandler	0.479592081	Not Participating	306
283.	npm	husky	0.473603302	Not Participating	Not Ranked
284.	npm	jwt-decode	0.471225055	Not Participating	144

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
285.	npm	@reduxjs/toolkit	0.468160946	Not Participating	Not Ranked
286.	npm	path-parse	0.467376753	Not Participating	350
287.	npm	callsites	0.467376753	Not Participating	143
288.	npm	marked	0.466790788	Not Participating	Not Ranked
289.	npm	chart.js	0.464635972	Not Participating	297
290.	npm	minimatch	0.463775673	Not Participating	99
291.	npm	iconv-lite	0.461891028	Not Participating	85
292.	npm	negotiator	0.461269089	Not Participating	430
293.	npm	@types/uuid	0.46122911	Not Participating	466
294.	npm	mkdirp	0.458208944	Not Participating	58
295.	npm	mongodb	0.457323958	Not Participating	Not Ranked
296.	npm	core-util-is	0.455161426	Not Participating	202
297.	npm	graceful-fs	0.449519181	Not Participating	84
298.	npm	@babel/preset-typescript	0.449232944	27	Not Ranked
299.	npm	cross-env	0.449131413	Not Participating	406
300.	npm	newrelic	0.448500243	Not Participating	Not Ranked
301.	npm	define-properties	0.442946098	Not Participating	302
302.	npm	@mui/icons-material	0.442115919	133	Not Ranked
303.	npm	css-loader	0.44186218	Not Participating	Not Ranked
304.	npm	@oclif/plugin-which	0.44102219	Not Participating	Not Ranked
305.	npm	@oclif/plugin-warn-if-update-available	0.437547065	Not Participating	Not Ranked
306.	npm	has	0.436838434	Not Participating	436
307.	npm	pretty-format	0.436838434	Not Participating	Not Ranked
308.	npm	@sentry/tracing	0.43490838	Not Participating	Not Ranked
309.	npm	@oclif/plugin-commands	0.431236969	Not Participating	Not Ranked
310.	npm	bcrypt-nodejs	0.428401999	Not Participating	Not Ranked
311.	npm	node-esapi	0.424835423	Not Participating	Not Ranked
312.	npm	@babel/template	0.424623107	27	Not Ranked
313.	npm	@susy-js/lodash.merge	0.424623107	Not Participating	Not Ranked

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
314.	npm	execa	0.422866964	Not Participating	122
315.	npm	dd-trace	0.414603106	Not Participating	Not Ranked
316.	npm	@aws-sdk/client-s3	0.413062466	Not Participating	Not Ranked
317.	npm	eslint-visitor-keys	0.407881104	Not Participating	Not Ranked
318.	npm	crypto-js	0.407741265	Not Participating	208
319.	npm	object.assign	0.406300116	Not Participating	Not Ranked
320.	npm	is-regex	0.400192452	Not Participating	235
321.	npm	query-string	0.399410221	Not Participating	294
322.	npm	picomatch	0.387977124	Not Participating	Not Ranked
323.	npm	file-saver	0.386797781	Not Participating	Not Ranked
324.	npm	react-intl	0.384538371	Not Participating	Not Ranked
325.	npm	buffer-from	0.381869461	Not Participating	243
326.	npm	prom-client	0.375957418	Not Participating	Not Ranked
327.	npm	slash	0.374978735	Not Participating	206
328.	npm	eslint-plugin-jsx-a11y	0.3746387	Not Participating	Not Ranked
329.	npm	doctrine	0.371211764	Not Participating	338
330.	npm	get-caller-file	0.369654133	Not Participating	247
331.	npm	psl	0.369654133	Not Participating	210
332.	npm	is-data-descriptor	0.369654133	Not Participating	94
333.	npm	vue	0.367660682	Not Participating	479
334.	npm	mime	0.367629452	Not Participating	78
335.	npm	parse-json	0.365368212	Not Participating	117
336.	npm	aws-cdk-lib	0.365038851	Not Participating	Not Ranked
337.	npm	html-to-text	0.363731274	Not Participating	Not Ranked
338.	npm	is-accessor-descriptor	0.363546469	Not Participating	95
339.	npm	is-descriptor	0.363546469	Not Participating	92
340.	npm	dayjs	0.35769936	Not Participating	Not Ranked
341.	npm	has-values	0.357438806	Not Participating	91
342.	npm	has-value	0.357438806	Not Participating	96

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
343.	npm	glob-parent	0.35617391	Not Participating	136
344.	npm	i18next	0.353612352	Not Participating	Not Ranked
345.	npm	mathjs	0.352620956	Not Participating	Not Ranked
346.	npm	yup	0.350041118	Not Participating	Not Ranked
347.	npm	function-bind	0.345223478	Not Participating	314
348.	npm	reflect-metadata	0.344088405	Not Participating	57
349.	npm	constructs	0.343993144	Not Participating	Not Ranked
350.	npm	wrappy	0.339115814	Not Participating	172
351.	npm	ieee754	0.339115814	Not Participating	256
352.	npm	object-keys	0.339115814	Not Participating	178
353.	npm	@sentry/integrations	0.337746676	Not Participating	Not Ranked
354.	npm	brace-expansion	0.334678824	Not Participating	162
355.	npm	concat-map	0.333008151	Not Participating	195
356.	npm	path-is-absolute	0.333008151	Not Participating	204
357.	npm	inflight	0.333008151	Not Participating	221
358.	npm	@babel/helper-function-name	0.333008151	27	Not Ranked
359.	npm	to-fast-properties	0.333008151	Not Participating	255
360.	npm	make-dir	0.33131061	Not Participating	134
361.	npm	statuses	0.329532819	Not Participating	222
362.	npm	path-type	0.327138208	Not Participating	111
363.	npm	fs.realpath	0.326900487	Not Participating	225
364.	npm	parse5	0.326900487	Not Participating	321
365.	npm	eslint-scope	0.32562075	Not Participating	258
366.	npm	@babel/helper-module-transforms	0.314685159	27	Not Ranked
367.	npm	universalify	0.311037622	Not Participating	477
368.	npm	js-cookie	0.310916461	Not Participating	123
369.	npm	ansi-escapes	0.308577496	Not Participating	223
370.	npm	send	0.296362168	Not Participating	330
371.	npm	picocolors	0.296362168	Not Participating	Not Ranked

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
372.	npm	safer-buffer	0.296362168	Not Participating	113
373.	npm	@nestjs/common	0.29039774	Not Participating	Not Ranked
374.	npm	lint-staged	0.288221713	Not Participating	Not Ranked
375.	npm	superagent	0.286621028	Not Participating	463
376.	npm	@babel/helper-module-imports	0.284146841	27	Not Ranked
377.	npm	combined-stream	0.284146841	Not Participating	230
378.	npm	util-deprecate	0.284146841	Not Participating	153
379.	npm	xtend	0.284146841	Not Participating	184
380.	npm	accepts	0.284146841	Not Participating	287
381.	npm	@types/express	0.280582512	Not Participating	325
382.	npm	ci-info	0.278039177	Not Participating	472
383.	npm	cssselect	0.278039177	Not Participating	Not Ranked
384.	npm	@jridgewell/gen-mapping	0.271931513	Not Participating	Not Ranked
385.	npm	@nestjs/core	0.271875599	Not Participating	Not Ranked
386.	npm	mime-types	0.271435321	Not Participating	76
387.	npm	json5	0.270553972	Not Participating	118
388.	npm	destroy	0.265823849	Not Participating	443
389.	npm	@babel/helpers	0.265823849	27	Not Ranked
390.	npm	write-file-atomic	0.265823849	Not Participating	391
391.	npm	buffer	0.263649877	Not Participating	196
392.	npm	url-loader	0.262053698	Not Participating	Not Ranked
393.	npm	chai-as-promised	0.258303767	Not Participating	Not Ranked
394.	npm	argparse	0.254861391	Not Participating	344
395.	npm	source-map-support	0.254673107	Not Participating	146
396.	npm	@cubejs-client/core	0.254402733	Not Participating	Not Ranked
397.	npm	tapable	0.253608522	Not Participating	Not Ranked
398.	npm	p-map	0.253608522	Not Participating	352
399.	npm	import-fresh	0.253608522	Not Participating	444
400.	npm	esprima	0.249806449	Not Participating	121

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
401.	npm	@apollo/client	0.249258094	Not Participating	Not Ranked
402.	npm	joi	0.243116259	Not Participating	Not Ranked
403.	npm	@sentry/react	0.238313201	Not Participating	Not Ranked
404.	npm	chownr	0.235285531	Not Participating	228
405.	npm	isexe	0.235285531	Not Participating	220
406.	npm	whatwg-url	0.231951466	Not Participating	Not Ranked
407.	npm	@babel/helper-plugin-utils	0.229177867	27	Not Ranked
408.	npm	autoprefixer	0.22888065	Not Participating	Not Ranked
409.	npm	react-i18next	0.228376398	Not Participating	Not Ranked
410.	npm	path-key	0.226525458	Not Participating	139
411.	npm	passport	0.2252796	Not Participating	60
412.	npm	@types/yargs	0.22155547	Not Participating	Not Ranked
413.	npm	toidentifier	0.216962539	Not Participating	427
414.	npm	@nestjs/platform-express	0.210408828	Not Participating	Not Ranked
415.	npm	style-loader	0.209369911	Not Participating	Not Ranked
416.	npm	knex	0.207651711	Not Participating	Not Ranked
417.	npm	is-wsl	0.204747212	Not Participating	362
418.	npm	postcss-selector-parser	0.204747212	Not Participating	205
419.	npm	end-of-stream	0.204747212	Not Participating	182
420.	npm	slice-ansi	0.192531884	Not Participating	Not Ranked
421.	npm	papaparse	0.191272057	Not Participating	Not Ranked
422.	npm	shebang-regex	0.189750594	Not Participating	141
423.	npm	@babel/helper-simple-access	0.186424221	27	Not Ranked
424.	npm	shebang-command	0.183630363	Not Participating	147
425.	npm	@babel/types	0.183160057	27	315
426.	npm	csurf	0.183139746	Not Participating	324
427.	npm	@babel/code-frame	0.182892543	27	290
428.	npm	nodemon	0.181305804	Not Participating	465
429.	npm	browserslist	0.180562398	Not Participating	270

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
430.	npm	jsonschema	0.177763864	Not Participating	Not Ranked
431.	npm	sax	0.174208893	Not Participating	209
432.	npm	json-stable-stringify	0.168101229	Not Participating	Not Ranked
433.	npm	@babel/helper-split-export-declaration	0.168101229	27	Not Ranked
434.	npm	luxon	0.166793022	Not Participating	Not Ranked
435.	npm	fs-extra-promise	0.166030049	Not Participating	Not Ranked
436.	npm	swagger-ui-express	0.161204374	Not Participating	319
437.	npm	@swc/core	0.159587405	Not Participating	Not Ranked
438.	npm	is-date-object	0.155885902	Not Participating	313
439.	npm	is-plain-obj	0.155885902	Not Participating	Not Ranked
440.	npm	cookie	0.155848024	Not Participating	169
441.	npm	ejs	0.153380951	Not Participating	126
442.	npm	eslint-plugin-react-hooks	0.14994487	81	Not Ranked
443.	npm	recharts	0.146416042	Not Participating	Not Ranked
444.	npm	call-bind	0.143670574	Not Participating	Not Ranked
445.	npm	esrecurse	0.143670574	Not Participating	Not Ranked
446.	npm	mini-css-extract-plugin	0.142437537	Not Participating	Not Ranked
447.	npm	raw-body	0.135044248	Not Participating	241
448.	npm	cypress	0.134786028	Not Participating	Not Ranked
449.	npm	optionator	0.134665891	Not Participating	Not Ranked
450.	npm	graphql-tag	0.134280061	Not Participating	Not Ranked
451.	npm	@cubejs-client/react	0.132630168	Not Participating	Not Ranked
452.	npm	zod	0.131165856	Not Participating	Not Ranked
453.	npm	postmonger	0.128992531	Not Participating	Not Ranked
454.	npm	formik	0.127261467	Not Participating	Not Ranked
455.	npm	whatwg-fetch	0.126004585	Not Participating	200
456.	npm	@babel/parser	0.125963043	27	437
457.	npm	babel-polyfill	0.123885193	27	120
458.	npm	http-status-codes	0.123749805	Not Participating	484

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
459.	npm	memoizee	0.120670521	Not Participating	Not Ranked
460.	npm	dompurify	0.119932663	Not Participating	Not Ranked
461.	npm	is-symbol	0.119239919	Not Participating	301
462.	npm	junit	0.119239919	Not Participating	473
463.	npm	ts-loader	0.119111048	Not Participating	Not Ranked
464.	npm	react-bootstrap	0.118046595	Not Participating	Not Ranked
465.	npm	@material-ui/icons	0.1141832	Not Participating	322
466.	npm	imurmurhash	0.113132256	Not Participating	485
467.	npm	agent-base	0.113132256	Not Participating	332
468.	npm	nopt	0.113132256	Not Participating	212
469.	npm	@babel/generator	0.111638872	27	Not Ranked
470.	npm	lwc	0.10823323	Not Participating	Not Ranked
471.	npm	proxy-addr	0.107024592	Not Participating	386
472.	npm	@jridgewell/trace-mapping	0.107024592	Not Participating	Not Ranked
473.	npm	ws	0.10601149	Not Participating	83
474.	npm	react-helmet	0.102145618	Not Participating	434
475.	npm	deep-is	0.100916928	Not Participating	Not Ranked
476.	npm	sha1	0.100459924	Not Participating	Not Ranked
477.	npm	netrc-parser	0.099636868	Not Participating	Not Ranked
478.	npm	@heroku-cli/plugin-ps	0.099636868	Not Participating	Not Ranked
479.	npm	@heroku-cli/plugin-ps-exec	0.099636868	Not Participating	Not Ranked
480.	npm	@heroku-cli/command	0.099636868	Not Participating	Not Ranked
481.	npm	@oclif/plugin-legacy	0.099636868	Not Participating	Not Ranked
482.	npm	http-call	0.099636868	Not Participating	Not Ranked
483.	npm	@heroku-cli/color	0.099636868	Not Participating	Not Ranked
484.	npm	error-ex	0.094809264	Not Participating	363
485.	npm	content-type	0.094809264	Not Participating	482
486.	npm	loader-utils	0.094760328	Not Participating	239
487.	npm	entities	0.09461098	Not Participating	248

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
488.	npm	immer	0.091981911	Not Participating	Not Ranked
489.	npm	react-query	0.091213126	Not Participating	Not Ranked
490.	npm	@heroku-cli/plugin-run	0.08473041	Not Participating	Not Ranked
491.	npm	puppeteer	0.084724695	Not Participating	Not Ranked
492.	npm	indent-string	0.082593937	Not Participating	304
493.	npm	font-awesome	0.082303769	Not Participating	105
494.	npm	xml2js	0.079689669	Not Participating	460
495.	npm	@oclif/command	0.078969019	Not Participating	Not Ranked
496.	npm	pino	0.078800562	Not Participating	Not Ranked
497.	npm	@oclif/config	0.078511765	Not Participating	Not Ranked
498.	npm	mysql	0.076792588	Not Participating	161
499.	npm	delayed-stream	0.076486273	Not Participating	268
500.	npm	enhanced-resolve	0.076486273	Not Participating	Not Ranked

Appendix B: Top 500 Non-npm, Direct, Version Agnostic Packages

Our dependency analysis identified the following 500 packages as the most used FOSS packages among those reported in the private usage data contributed by SCA partners hosted on package managers other than npm. These packages were directly observed in use and are version agnostic. For further information on how this list was compiled, refer to the Methods section.

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
1.	maven	org.springframework.boot:spring-boot-starter-web	7.101269921	Not Participating	84
2.	maven	com.fasterxml.jackson.core:jackson-databind	6.518160817	Not Participating	3
3.	pypi	requests	5.834702502	Not Participating	43
4.	maven	org.springframework.boot:spring-boot-starter-actuator	5.271136981	Not Participating	Not Ranked
5.	pypi	boto3	5.162669007	Not Participating	Not Ranked
6.	maven	org.apache.commons:commons-lang3	4.872123662	Not Participating	12
7.	pypi	urllib3	4.843241321	164	54
8.	go	github.com/googleapis/google-cloud-go	4.790998533	Not Participating	Not Ranked
9.	maven	com.google.guava:guava	4.467927123	99	4
10.	maven	org.slf4j:slf4j-api	4.450731462	Not Participating	1
11.	pypi	six	3.985005292	Not Participating	20
12.	go	github.com/googleapis/go-genproto	3.982933645	Not Participating	80
13.	maven	org.projectlombok:lombok	3.971654706	Not Participating	31
14.	maven	com.fasterxml.jackson.core:jackson-core	3.851239926	Not Participating	5
15.	go	golang.org/x/net	3.735790101	Not Participating	30
16.	maven	commons-io:commons-io	3.688478974	Not Participating	8
17.	go	github.com/grpc/grpc-go	3.645720208	109	10
18.	pypi	pytest	3.476592267	Not Participating	Not Ranked
19.	pypi	certifi	3.430592268	Not Participating	144
20.	pypi	pyyaml	3.336036452	Not Participating	40

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
21.	nuget	newtonsoft.json	3.326748481	Not Participating	72
22.	maven	org.apache.httpcomponents:httpClient	3.287821728	Not Participating	39
23.	pypi	packaging	3.238203589	Not Participating	160
24.	go	golang.org/x/text	3.196624825	Not Participating	93
25.	go	google.golang.org/protobuf	3.089826387	Not Participating	Not Ranked
26.	maven	com.google.code.gson:gson	3.022067848	Not Participating	27
27.	maven	com.fasterxml.jackson.core:jackson-annotations	2.984716718	Not Participating	7
28.	maven	org.springframework.boot:spring-boot-starter-data-jpa	2.910549318	Not Participating	Not Ranked
29.	go	github.com/stretchr/testify	2.850912749	Not Participating	19
30.	nuget	awssdk	2.777096297	Not Participating	Not Ranked
31.	go	github.com/aws/aws-sdk-go-v2	2.696056133	Not Participating	Not Ranked
32.	pypi	idna	2.689464768	Not Participating	108
33.	alpine	zlib	2.679741383	18	Not Ranked
34.	cargo	openssl	2.57190604	Not Participating	44
35.	pypi	numpy	2.567860027	Not Participating	137
36.	go	github.com/golang/protobuf	2.51114636	Not Participating	53
37.	pypi	cryptography	2.470598012	Not Participating	243
38.	maven	org.springframework.boot:spring-boot-starter-validation	2.435774239	Not Participating	Not Ranked
39.	pypi	pyarsing	2.413680755	Not Participating	168
40.	go	github.com/prometheus/client_golang	2.394886329	Not Participating	34
41.	pypi	botocore	2.377736951	Not Participating	Not Ranked
42.	pypi	python-dateutil	2.257889345	Not Participating	88
43.	maven	org.springframework:spring-context	2.24233047	Not Participating	81
44.	maven	org.springframework:spring-webmvc	2.225183281	Not Participating	317
45.	go	gopkg.in/yaml.v3	2.20669579	Not Participating	333
46.	pypi	pandas	2.176981208	Not Participating	140
47.	go	golang.org/x/oauth2	2.128550865	Not Participating	114
48.	maven	commons-codec:commons-codec	2.0691485	Not Participating	15

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
49.	maven	org.springframework:spring-core	2.059866154	Not Participating	63
50.	maven	ch.qos.logback:logback-classic	2.059353459	Not Participating	23
51.	maven	org.apache.logging.log4j:log4j-core	2.055293936	96	291
52.	pypi	click	2.034064255	Not Participating	107
53.	go	github.com/prometheus/common	2.009144433	Not Participating	51
54.	maven	org.springframework:spring-web	2.008758125	Not Participating	103
55.	go	golang.org/x/sys	1.963417784	Not Participating	73
56.	pypi	setuptools	1.961650671	Not Participating	327
57.	maven	com.fasterxml.jackson.datatype:jackson-datatype-jsr310	1.94723918	Not Participating	118
58.	maven	org.codehaus.plexus:plexus-utils	1.947137301	Not Participating	Not Ranked
59.	maven	org.springframework.boot:spring-boot-starter-security	1.919104412	Not Participating	Not Ranked
60.	nuget	bouncycastle	1.900374291	Not Participating	Not Ranked
61.	maven	org.springframework.boot:spring-boot-starter	1.867527068	Not Participating	294
62.	pypi	pytz	1.796715803	Not Participating	130
63.	pypi	protobuf	1.769398864	Not Participating	Not Ranked
64.	maven	org.springframework:spring-jdbc	1.767790163	Not Participating	Not Ranked
65.	maven	org.apache.struts:struts2-core	1.758664057	113	Not Ranked
66.	maven	org.apache.logging.log4j:log4j-api	1.75683594	96	127
67.	rubygems	aws-sdk	1.751145013	Not Participating	112
68.	go	github.com/cespare/xxhash	1.748105222	Not Participating	251
69.	go	github.com/davecgh/go-spew	1.736919267	Not Participating	90
70.	maven	org.springframework:spring-tx	1.652071816	Not Participating	Not Ranked
71.	go	gopkg.in/yaml.v2	1.646401488	Not Participating	49
72.	pypi	typing-extensions	1.644201373	Not Participating	Not Ranked
73.	go	github.com/Azure/go-autorest	1.595655994	Not Participating	214
74.	maven	commons-collections:commons-collections	1.595307051	Not Participating	55
75.	go	github.com/pelletier/go-toml	1.583988562	Not Participating	Not Ranked
76.	nuget	microsoft.extensions.logging.abstractions	1.578419519	Not Participating	236

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
77.	maven	junit:junit	1.562528883	Not Participating	9
78.	go	golang.org/x/sync	1.562456438	Not Participating	425
79.	go	github.com/prometheus/procfs	1.53567285	Not Participating	240
80.	maven	org.postgresql:postgresql	1.53175166	Not Participating	Not Ranked
81.	pypi	flake8	1.518484696	Not Participating	Not Ranked
82.	go	github.com/prometheus/client_model	1.516044242	Not Participating	185
83.	pypi	jinja2	1.512789063	Not Participating	83
84.	go	github.com/open-telemetry/opentelemetry-go	1.51231559	Not Participating	Not Ranked
85.	maven	org.springframework.boot:spring-boot-starter-jdbc	1.509368883	Not Participating	Not Ranked
86.	maven	io.micrometer:micrometer-registry-prometheus	1.503248607	Not Participating	Not Ranked
87.	go	github.com/sirupsen/logrus	1.495441482	Not Participating	94
88.	go	golang.org/x/crypto	1.494164316	Not Participating	52
89.	maven	org.json:json	1.490695919	Not Participating	122
90.	maven	org.springframework:spring-context-support	1.487300854	Not Participating	Not Ranked
91.	nuget	microsoft.net.test.sdk	1.485245305	Not Participating	Not Ranked
92.	maven	joda-time:joda-time	1.483833137	113	36
93.	go	github.com/pmezard/go-difflib	1.472532108	Not Participating	429
94.	nuget	microsoft.extensions.dependencyinjection.abstractions	1.459724107	Not Participating	189
95.	maven	org.springframework.boot:spring-boot-starter-webflux	1.458806643	Not Participating	Not Ranked
96.	maven	com.h2database:h2	1.454056103	Not Participating	374
97.	maven	org.springframework:spring-beans	1.431872381	Not Participating	106
98.	go	github.com/spf13/pflag	1.431427362	Not Participating	71
99.	maven	org.yaml:snakeyaml	1.426259145	3	67
100.	maven	org.springframework.security:spring-security-web	1.416103034	Not Participating	Not Ranked
101.	conda	distro	1.415379139	Not Participating	Not Ranked
102.	maven	io.micrometer:micrometer-core	1.411053274	Not Participating	Not Ranked
103.	go	github.com/fsnotify/fsnotify	1.40878672	Not Participating	309

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
104.	maven	org.springframework.boot:spring-boot-autoconfigure	1.390104046	Not Participating	472
105.	go	github.com/spf13/cobra	1.384533689	Not Participating	26
106.	pypi	attrs	1.354637483	Not Participating	139
107.	go	github.com/matttn/go-isatty	1.354178209	Not Participating	Not Ranked
108.	maven	org.springframework.security:spring-security-config	1.341852606	Not Participating	210
109.	go	golang.org/x/time	1.32853673	Not Participating	343
110.	nuget	microsoft.extensions.options	1.326952653	Not Participating	238
111.	nuget	system.security.cryptography.protecteddata	1.32211084	Not Participating	Not Ranked
112.	go	github.com/kubernetes/apimachinery	1.301674762	Not Participating	16
113.	go	github.com/uber-go/zap	1.290052118	Not Participating	161
114.	maven	org.springframework.boot:spring-boot-starter-cache	1.280516349	Not Participating	Not Ranked
115.	go	github.com/google/uuid	1.266782949	Not Participating	59
116.	nuget	microsoft.extensions.configuration	1.258842339	Not Participating	258
117.	go	github.com/kubernetes/client-go	1.257625165	Not Participating	14
118.	go	github.com/mitchellh/mapstructure	1.24545386	Not Participating	430
119.	maven	org.springframework.kafka:spring-kafka	1.242917374	Not Participating	Not Ranked
120.	go	github.com/uber-go/atomic	1.24222908	Not Participating	412
121.	go	golang.org/x/term	1.239317821	Not Participating	Not Ranked
122.	maven	org.apache.tomcat.embed:tomcat-embed-core	1.235621383	Not Participating	328
123.	maven	org.ow2.asm:asm	1.226976817	Not Participating	215
124.	pypi	importlib-metadata	1.213990926	Not Participating	278
125.	pypi	markupsafe	1.203592912	Not Participating	128
126.	go	golang.org/x/tools	1.195010689	Not Participating	Not Ranked
127.	go	github.com/klauspost/compress	1.178942776	Not Participating	Not Ranked
128.	maven	org.apache.logging.log4j:log4j-slf4j-impl	1.154069062	96	Not Ranked
129.	maven	org.springframework:spring-expression	1.14844815	Not Participating	162
130.	maven	org.springframework.boot:spring-boot-configuration-processor	1.142804353	Not Participating	Not Ranked

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
131.	go	github.com/pkg/errors	1.14267053	Not Participating	24
132.	pypi	jsonschema	1.138847465	Not Participating	423
133.	nuget	microsoft.extensions.fileproviders.abstractions	1.135574243	Not Participating	448
134.	go	golang.org/x/exp	1.134993953	Not Participating	Not Ranked
135.	go	github.com/matttproud/ golang_protobuf_extensions	1.124726165	Not Participating	434
136.	go	golang.org/x/mod	1.102320663	Not Participating	Not Ranked
137.	maven	org.apache.httpcomponents:httpcore	1.09605251	Not Participating	25
138.	nuget	microsoft.extensions.dependencyinjection	1.093090098	Not Participating	364
139.	pypi	colorama	1.080081502	Not Participating	290
140.	go	github.com/uber-go/multierr	1.073320039	Not Participating	Not Ranked
141.	maven	commons-lang:commons-lang	1.07305134	Not Participating	28
142.	maven	ch.qos.logback:logback-core	1.070615246	Not Participating	61
143.	maven	com.fasterxml.jackson. dataformat:jackson-dataformat-xml	1.058340777	Not Participating	Not Ranked
144.	pypi	pip	1.057359189	91	497
145.	maven	log4j:log4j	1.04431646	Not Participating	38
146.	maven	org.apache.poi:poi-ooxml	1.042826657	Not Participating	Not Ranked
147.	pypi	zip	1.039687689	Not Participating	209
148.	go	github.com/kubernetes/api	1.038216966	Not Participating	17
149.	pypi	pyjwt	1.034121267	Not Participating	Not Ranked
150.	pypi	grpcio	1.029440039	109	Not Ranked
151.	pypi	google-auth	1.018554433	Not Participating	Not Ranked
152.	pypi	psutil	1.017462105	Not Participating	Not Ranked
153.	pypi	cffi	1.012681793	Not Participating	223
154.	nuget	microsoft.extensions.configuration.binder	1.008941854	Not Participating	334
155.	go	github.com/gogo/protobuf	1.006137125	Not Participating	102
156.	maven	org.springframework. boot:spring-boot-starter-aop	0.992179655	Not Participating	Not Ranked
157.	go	github.com/golang/appengine	0.985937462	Not Participating	Not Ranked
158.	go	github.com/beorn7/perks	0.984515424	Not Participating	Not Ranked

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSF BADGE TIERED PERCENTAGE	CENSUS II RANK
159.	maven	javax.xml.bind:jaxb-api	0.98057121	Not Participating	66
160.	maven	org.springframework.boot:spring-boot-gradle-plugin	0.973536533	Not Participating	Not Ranked
161.	pypi	charset-normalizer	0.973235773	109	Not Ranked
162.	pypi	werkzeug	0.969234981	Not Participating	245
163.	maven	org.hibernate.validator:hibernate-validator	0.949821122	Not Participating	266
164.	maven	commons-beanutils:commons-beanutils	0.949528799	Not Participating	60
165.	nuget	microsoft.extensions.filesystemglobbing	0.949037646	Not Participating	Not Ranked
166.	pypi	resolvelib	0.949037646	Not Participating	Not Ranked
167.	pypi	rsa	0.937644734	Not Participating	Not Ranked
168.	pypi	chardet	0.93479728	Not Participating	123
169.	pypi	coverage	0.930117801	164	Not Ranked
170.	pypi	pillow	0.927865856	99	Not Ranked
171.	maven	org.springframework.boot:spring-boot-starter-test	0.923668996	Not Participating	261
172.	nuget	system.runtime.compilerservices.unsafe	0.91501415	Not Participating	415
173.	nuget	microsoft.netcore.platforms	0.911730327	Not Participating	Not Ranked
174.	go	github.com/imdario/mergo	0.909214575	25	120
175.	maven	io.netty:netty-all	0.907626026	Not Participating	Not Ranked
176.	go	github.com/json-iterator/go	0.906236132	Not Participating	56
177.	pypi	pycparser	0.901531117	Not Participating	229
178.	go	github.com/go-openapi/swag	0.901421357	Not Participating	227
179.	go	github.com/google/go-cmp	0.899397989	Not Participating	96
180.	nuget	microsoft.extensions.primitives	0.897072804	Not Participating	203
181.	nuget	microsoft.identitymodel.protocols	0.893076667	Not Participating	Not Ranked
182.	nuget	microsoft.win32.systemevents	0.893076667	Not Participating	Not Ranked
183.	maven	org.springframework.security:spring-security-core	0.888987284	Not Participating	Not Ranked
184.	maven	org.springframework.boot:spring-boot-devtools	0.885788205	Not Participating	Not Ranked
185.	maven	org.glassfish.jaxb:jaxb-runtime	0.880226504	Not Participating	256
186.	maven	com.google.protobuf:protobuf-java	0.872304257	Not Participating	182

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSF BADGE TIERED PERCENTAGE	CENSUS II RANK
187.	pypi	s3transfer	0.863021237	Not Participating	398
188.	nuget	system.memory	0.854998257	Not Participating	228
189.	maven	mysql:mysql-connector-java	0.852765347	Not Participating	421
190.	pypi	black	0.850508522	Not Participating	Not Ranked
191.	nuget	microsoft.extensions.logging	0.849704763	Not Participating	308
192.	go	github.com/spf13/viper	0.847451083	Not Participating	207
193.	maven	com.microsoft.sqlserver:mssql-jdbc	0.843866875	Not Participating	Not Ranked
194.	pypi	flask	0.837976469	Not Participating	152
195.	nuget	commandlineparser	0.832390913	Not Participating	Not Ranked
196.	go	github.com/googleapis/google-api-go-client	0.824664878	Not Participating	265
197.	maven	commons-logging:commons-logging	0.823782904	Not Participating	29
198.	maven	org.springframework.boot:spring-boot	0.822777399	Not Participating	115
199.	maven	org.slf4j:slf4j-over-slf4j	0.822427286	Not Participating	64
200.	nuget	microsoft.extensions.fileproviders.physical	0.818462029	Not Participating	Not Ranked
201.	maven	com.google.code.findbugs:jsr305	0.810866117	Not Participating	37
202.	maven	org.apache.commons:commons-collections4	0.807217635	Not Participating	163
203.	maven	org.apache.commons:commons-text	0.801412487	Not Participating	239
204.	maven	org.apache.poi:poi	0.798058261	Not Participating	Not Ranked
205.	go	github.com/mattn/go-colorable	0.793749541	Not Participating	213
206.	maven	net.logstash.logback:logstash-logback-encoder	0.791993155	Not Participating	Not Ranked
207.	maven	org.apache.struts:struts2-convention-plugin	0.789075345	113	Not Ranked
208.	maven	org.apache.struts:struts2-config-browser-plugin	0.785572917	113	Not Ranked
209.	maven	org.apache.struts:struts2-rest-plugin	0.782362358	113	Not Ranked
210.	maven	org.aspectj:aspectjweaver	0.780910484	Not Participating	170
211.	maven	org.codehaus.plexus:plexus-interpolation	0.777169124	Not Participating	Not Ranked
212.	maven	org.springframework:spring-test	0.776980939	Not Participating	461
213.	nuget	microsoft.extensions.http	0.775576563	Not Participating	Not Ranked
214.	go	github.com/aws/aws-sdk-go	0.773617061	Not Participating	50
215.	pypi	psycogp2-binary	0.763169827	Not Participating	Not Ranked
216.	pypi	pyopenssl	0.761014772	Not Participating	Not Ranked

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSF BADGE TIERED PERCENTAGE	CENSUS II RANK
217.	nuget	microsoft.identitymodel.tokens	0.759934832	Not Participating	320
218.	pypi	cachetools	0.7561954	Not Participating	Not Ranked
219.	maven	org.springframework:spring-orm	0.754400564	Not Participating	Not Ranked
220.	pypi	pydantic	0.751746163	Not Participating	Not Ranked
221.	maven	org.springframework.boot:spring-boot-starter-log4j2	0.743903005	Not Participating	Not Ranked
222.	nuget	system.text.encoding.codepages	0.74384739	Not Participating	Not Ranked
223.	pypi	sqlalchemy	0.737383366	Not Participating	Not Ranked
224.	maven	org.springframework:spring-aop	0.736006132	Not Participating	149
225.	nuget	microsoft.extensions.configuration.abstractions	0.723220564	Not Participating	233
226.	maven	io.springfox:springfox-swagger2	0.720023869	Not Participating	222
227.	nuget	microsoft.bcl.asyncinterfaces	0.717038887	Not Participating	Not Ranked
228.	go	github.com/Azure/azure-sdk-for-go	0.716242853	Not Participating	129
229.	go	github.com/golang/groupcache	0.715436658	Not Participating	Not Ranked
230.	pypi	pyasn1	0.715168691	Not Participating	Not Ranked
231.	maven	org.hibernate:hibernate-core	0.714976643	Not Participating	399
232.	maven	org.apache.maven:maven-core	0.711331122	Not Participating	296
233.	maven	org.springframework.cloud:spring-cloud-starter-netflix-eureka-client	0.707060164	Not Participating	Not Ranked
234.	nuget	system.windows.extensions	0.70654007	Not Participating	Not Ranked
235.	nuget	microsoft.extensions.dependencymodel	0.70654007	Not Participating	Not Ranked
236.	nuget	system.configuration.configurationmanager	0.695232831	Not Participating	Not Ranked
237.	pypi	lxml	0.693989076	Not Participating	Not Ranked
238.	maven	org.springframework.boot:spring-boot-actuator-autoconfigure	0.69232058	Not Participating	Not Ranked
239.	pypi	pytest-cov	0.689543888	Not Participating	Not Ranked
240.	nuget	microsoft.identitymodel.logging	0.68758844	Not Participating	355
241.	pypi	more-itertools	0.67469046	Not Participating	Not Ranked
242.	go	github.com/kubernetes/utils	0.67343614	Not Participating	47
243.	nuget	codeproject	0.669232751	Not Participating	Not Ranked
244.	nuget	xunit.runner.visualstudio	0.66625884	Not Participating	270

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
245.	nuget	system.text.json	0.663198972	Not Participating	Not Ranked
246.	pypi	decorator	0.663094131	Not Participating	435
247.	maven	org.springframework:spring-aspects	0.662588071	Not Participating	Not Ranked
248.	nuget	moq	0.658523864	Not Participating	300
249.	maven	org.scala-lang:scala-library	0.650863943	Not Participating	Not Ranked
250.	pypi	oscrypto	0.650579091	Not Participating	Not Ranked
251.	nuget	system.security.cryptography.cng	0.650579091	Not Participating	Not Ranked
252.	nuget	microsoft.extensions.configuration.fileextensions	0.650579091	Not Participating	Not Ranked
253.	maven	com.sun.xml.bind:jaxb-impl	0.648198727	Not Participating	194
254.	nuget	system.text.encodings.web	0.643775919	Not Participating	Not Ranked
255.	maven	com.squareup.okhttp3:okhttp	0.6427412	15	237
256.	maven	io.swagger:swagger-annotations	0.63004148	Not Participating	211
257.	maven	org.springframework.boot:spring-boot-starter-tomcat	0.623582031	Not Participating	Not Ranked
258.	nuget	system.diagnostics.diagnosticsource	0.622420191	Not Participating	323
259.	maven	io.springfox:springfox-swagger-ui	0.621181702	Not Participating	184
260.	maven	org.apache.commons:commons-compress	0.619712263	Not Participating	126
261.	pypi	wheel	0.615660656	Not Participating	Not Ranked
262.	maven	com.amazonaws:aws-java-sdk-s3	0.614422927	Not Participating	478
263.	pypi	backports.ssl_match_hostname	0.613271772	3	Not Ranked
264.	go	github.com/kubernetes-sigs/yaml	0.608246319	Not Participating	70
265.	go	github.com/go-logr/logr	0.597899009	Not Participating	224
266.	maven	org.springframework:spring-jms	0.596335434	Not Participating	Not Ranked
267.	nuget	apachethrift	0.594618112	Not Participating	Not Ranked
268.	nuget	microsoft.win32.registry	0.594618112	Not Participating	Not Ranked
269.	maven	io.netty:netty-codec	0.594409443	Not Participating	263
270.	maven	org.slf4j:slf4j-log4j12	0.594347775	Not Participating	125
271.	go	github.com/spf13/afero	0.593600444	Not Participating	Not Ranked
272.	pypi	jmespath	0.586933218	Not Participating	Not Ranked

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSF BADGE TIERED PERCENTAGE	CENSUS II RANK
273.	go	github.com/onsi/gomega	0.580701325	Not Participating	217
274.	pypi	pygments	0.576621922	Not Participating	Not Ranked
275.	maven	org.hibernate:hibernate-validator	0.572451208	Not Participating	98
276.	maven	org.apache.maven:maven-repository-metadata	0.571246999	Not Participating	Not Ranked
277.	maven	org.springframework.data:spring-data-commons	0.569290858	Not Participating	284
278.	pypi	msgpack	0.565654531	Not Participating	279
279.	maven	javax.servlet:javax.servlet-api	0.560215616	Not Participating	91
280.	pypi	parameterized	0.557310793	Not Participating	Not Ranked
281.	vcpkg	libdivide	0.557310793	Not Participating	Not Ranked
282.	maven	io.netty:netty-handler	0.555717267	Not Participating	246
283.	maven	javax.validation:validation-api	0.555199221	Not Participating	82
284.	nuget	microsoft.extensions.configuration.json	0.553208071	Not Participating	Not Ranked
285.	maven	commons-fileupload:commons-fileupload	0.544637817	Not Participating	393
286.	maven	org.springdoc:springdoc-openapi-ui	0.539681128	Not Participating	Not Ranked
287.	spack	llvm	0.538657133	155	Not Ranked
288.	nuget	system.reflection.metadata	0.538657133	Not Participating	Not Ranked
289.	go	gopkg.in/ini.v1	0.53200491	Not Participating	407
290.	go	github.com/go-openapi/jsonreference	0.531948924	Not Participating	318
291.	nuget	polly	0.526081616	105	Not Ranked
292.	nuget	system.buffer	0.511787099	Not Participating	264
293.	go	github.com/kubernetes/klog	0.51155891	Not Participating	21
294.	pypi	scipy	0.504876637	Not Participating	Not Ranked
295.	pypi	redis	0.503589153	94	Not Ranked
296.	nuget	xunit	0.499382453	Not Participating	248
297.	maven	org.eclipse.jetty:jetty-servlet	0.493491387	Not Participating	Not Ranked
298.	maven	org.mockito:mockito-core	0.49113335	Not Participating	121
299.	maven	org.springframework.boot:spring-boot-starter-thymeleaf	0.490243521	Not Participating	Not Ranked
300.	maven	org.checkerframework:checker-qual	0.490195535	Not Participating	136

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSF BADGE TIERED PERCENTAGE	CENSUS II RANK
301.	alpine	libpng	0.482696154	Not Participating	Not Ranked
302.	pypi	paramiko	0.480938327	Not Participating	Not Ranked
303.	nuget	microsoft.extensions.configuration.environmentvariables	0.480335412	Not Participating	Not Ranked
304.	maven	org.springframework.cloud:spring-cloud-starter-bootstrap	0.474309956	Not Participating	Not Ranked
305.	maven	org.apache.tomcat.embed:tomcat-embed-websocket	0.469194629	Not Participating	464
306.	pypi	pluggy	0.467507083	Not Participating	Not Ranked
307.	maven	org.bouncycastle:bcprov-jdk15on	0.466075038	Not Participating	463
308.	go	github.com/josharian/intern	0.464598053	Not Participating	Not Ranked
309.	maven	javax.ws.rs:javax.ws.rs-api	0.461395622	Not Participating	89
310.	maven	org.springframework.boot:spring-boot-actuator	0.460791285	Not Participating	Not Ranked
311.	maven	org.apache.maven:maven-model	0.455823476	Not Participating	167
312.	go	github.com/google/gofuzz	0.449011617	Not Participating	101
313.	pypi	pynacl	0.438228759	Not Participating	Not Ranked
314.	maven	com.google.errorprone:error_prone_annotations	0.437144613	Not Participating	97
315.	maven	org.mapstruct:mapstruct	0.436322751	Not Participating	Not Ranked
316.	rubygems	terminal-notifier	0.426735175	Not Participating	Not Ranked
317.	go	github.com/spf13/cast	0.42579992	Not Participating	Not Ranked
318.	nuget	system.drawing.common	0.425610605	Not Participating	Not Ranked
319.	maven	com.fasterxml.jackson.module:jackson-module-parameter-names	0.419204451	Not Participating	Not Ranked
320.	maven	org.springframework.cloud:spring-cloud-starter-sleuth	0.417367359	Not Participating	Not Ranked
321.	maven	org.apache.maven:maven-artifact	0.415261778	Not Participating	78
322.	maven	org.springframework.cloud:spring-cloud-starter-config	0.413173523	Not Participating	Not Ranked
323.	maven	org.apache.maven:maven-plugin-api	0.412309491	Not Participating	Not Ranked
324.	maven	org.springframework.data:spring-data-jpa	0.411259739	Not Participating	Not Ranked
325.	maven	org.apache.kafka:kafka-clients	0.41019668	Not Participating	Not Ranked

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
326.	maven	org.jacoco:org.jacoco.agent	0.409624734	Not Participating	257
327.	homebrew	scala	0.408081515	Not Participating	Not Ranked
328.	pypi	tomli	0.405192622	Not Participating	Not Ranked
329.	pypi	platformdirs	0.398759043	Not Participating	Not Ranked
330.	pypi	virtualenv	0.397369263	Not Participating	Not Ranked
331.	pypi	gunicorn	0.397223879	Not Participating	395
332.	maven	com.nimbusds:nimbus-jose-jwt	0.395240768	3	Not Ranked
333.	nuget	microsoft.entityframeworkcore	0.390372131	Not Participating	Not Ranked
334.	nuget	system.numerics.vectors	0.388890738	Not Participating	420
335.	maven	org.springframework.security:spring-security-crypto	0.387204013	Not Participating	Not Ranked
336.	go	github.com/docker/docker	0.384896723	Not Participating	Not Ranked
337.	pypi	tqdm	0.382028064	Not Participating	Not Ranked
338.	maven	org.jetbrains.kotlin:kotlin-stdlib-jdk8	0.381524932	Not Participating	Not Ranked
339.	go	github.com/magiconair/properties	0.378424769	Not Participating	Not Ranked
340.	maven	org.jsoup:jsoup	0.378155143	Not Participating	Not Ranked
341.	nuget	system.security.permissions	0.375402574	Not Participating	Not Ranked
342.	go	github.com/kubernetes/kube-openapi	0.375065623	Not Participating	190
343.	maven	org.springframework.retry:spring-retry	0.372981965	Not Participating	Not Ranked
344.	pypi	pyrsistent	0.369288903	Not Participating	Not Ranked
345.	maven	com.fasterxml.jackson.datatype:jackson-datatype-jdk8	0.369112755	Not Participating	198
346.	go	github.com/census-instrumentation/opencensus-go	0.367832263	Not Participating	195
347.	nuget	system.collections.immutable	0.367235021	Not Participating	Not Ranked
348.	go	github.com/golang/mock	0.362905516	Not Participating	359
349.	nuget	system.identitymodel.tokens.jwt	0.360979606	Not Participating	Not Ranked
350.	nuget	system.security.accesscontrol	0.359904123	Not Participating	Not Ranked
351.	go	github.com/jmespath/go-jmespath	0.358269895	Not Participating	Not Ranked
352.	maven	com.fasterxml.jackson.dataformat:jackson-dataformat-yaml	0.357056616	Not Participating	216

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
353.	pypi	pep517	0.352120536	Not Participating	Not Ranked
354.	nuget	jasmine	0.352120536	Not Participating	Not Ranked
355.	maven	io.netty.netty-handler-proxy	0.350907743	Not Participating	Not Ranked
356.	maven	org.slf4j:jul-to-slf4j	0.349430837	Not Participating	95
357.	maven	org.javassist:javassist	0.347546507	Not Participating	145
358.	nuget	microsoft.extensions.hosting	0.347432378	Not Participating	Not Ranked
359.	pypi	aiohttp	0.34311793	Not Participating	Not Ranked
360.	pypi	pytest-xdist	0.342736637	Not Participating	Not Ranked
361.	nuget	system.security.principal.windows	0.340588611	Not Participating	Not Ranked
362.	maven	org.apache.commons:commons-csv	0.3374655	Not Participating	Not Ranked
363.	maven	org.apache.tomcat.embed:tomcat-embed-el	0.33706794	Not Participating	404
364.	maven	net.bytebuddy:byte-buddy	0.334388506	180	164
365.	go	github.com/golang/text	0.333466876	Not Participating	Not Ranked
366.	maven	org.springframework:spring-jcl	0.331001231	Not Participating	285
367.	go	github.com/hashicorp/golang-lru	0.330579338	Not Participating	453
368.	maven	com.itextpdf:itextpdf	0.329803589	Not Participating	Not Ranked
369.	pypi	selenium	0.322904795	18	363
370.	maven	io.netty.netty-common	0.322267524	Not Participating	247
371.	maven	com.fasterxml.jackson.module:jackson-module-kotlin	0.322032698	Not Participating	Not Ranked
372.	nuget	microsoft.aspnetcore.authentication.jwtbearer	0.3216633	Not Participating	Not Ranked
373.	maven	jakarta.xml.bind:jakarta.xml.bind-api	0.318751384	Not Participating	176
374.	nuget	microsoft.entityframeworkcore.sqlserver	0.318486413	Not Participating	Not Ranked
375.	nuget	system.componentmodel.annotations	0.317186934	Not Participating	479
376.	maven	io.netty.netty-codec-socks	0.315748232	Not Participating	Not Ranked
377.	pypi	beautifulsoup4	0.315443414	Not Participating	Not Ranked
378.	maven	org.jboss.logging:jboss-logging	0.310041813	Not Participating	77
379.	go	github.com/hashicorp/go-multierror	0.307860316	Not Participating	Not Ranked
380.	pypi	filelock	0.306730401	Not Participating	Not Ranked
381.	maven	io.projectreactor:reactor-core	0.305338554	Not Participating	Not Ranked

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
382.	maven	javax:javaee-api	0.303405381	Not Participating	Not Ranked
383.	maven	io.swagger.core.v3:swagger-annotations	0.299945994	Not Participating	Not Ranked
384.	cran	curl	0.296159557	300	Not Ranked
385.	nuget	microsoft.entityframeworkcore.abstractions	0.296159557	Not Participating	Not Ranked
386.	rubygems	notifu	0.296159557	Not Participating	Not Ranked
387.	nuget	system.io.pipelines	0.296159557	Not Participating	Not Ranked
388.	maven	javax.activation:activation	0.293447561	Not Participating	117
389.	maven	org.jacoco:org.jacoco.ant	0.284948411	Not Participating	255
390.	maven	com.jayway.jsonpath:json-path	0.282970171	Not Participating	172
391.	pypi	appdirs	0.282590118	Not Participating	289
392.	maven	org.jetbrains.kotlin:kotlin-reflect	0.271701471	Not Participating	Not Ranked
393.	go	github.com/modern-go/reflect2	0.260811951	Not Participating	Not Ranked
394.	maven	com.fasterxml.jackson. module:jackson-module-jaxb-annotations	0.259997412	Not Participating	193
395.	nuget	microsoft.extensions.logging.configuration	0.258852238	Not Participating	Not Ranked
396.	nuget	system.diagnostics.eventlog	0.258852238	Not Participating	Not Ranked
397.	maven	com.jcraft:jsch	0.257240155	Not Participating	Not Ranked
398.	nuget	system.threading.tasks.extensions	0.254672689	Not Participating	336
399.	maven	org.springframework. boot:spring-boot-starter-web-services	0.2544062	Not Participating	131
400.	pypi	django	0.254344455	Not Participating	Not Ranked
401.	nuget	nlog	0.25350191	31	389
402.	pypi	tenacity	0.250908089	Not Participating	Not Ranked
403.	maven	com.thoughtworks.xstream:xstream	0.250804424	Not Participating	Not Ranked
404.	maven	io.netty:netty-codec-http	0.249717977	Not Participating	Not Ranked
405.	maven	javax.inject:javax.inject	0.244488291	Not Participating	110
406.	maven	org.springframework. cloud:spring-cloud-starter-vault-config	0.244155981	Not Participating	Not Ranked
407.	maven	org.springframework. boot:spring-boot-starter-data-redis	0.243549056	Not Participating	133
408.	pypi	tensorflow	0.240198578	155	Not Ranked

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
409.	nuget	respond	0.240198578	Not Participating	Not Ranked
410.	pypi	scikit-learn	0.239035841	Not Participating	Not Ranked
411.	maven	org.springframework.boot:spring-boot-starter-mail	0.229928867	Not Participating	Not Ranked
412.	maven	org.apache.avro:avro	0.22763978	Not Participating	Not Ranked
413.	nuget	microsoft.extensions.hosting.abstractions	0.227329362	Not Participating	Not Ranked
414.	pypi	matplotlib	0.226544995	Not Participating	Not Ranked
415.	maven	com.fasterxml.woodstox:woodstox-core	0.226311546	Not Participating	Not Ranked
416.	pypi	pybind11	0.221544918	Not Participating	Not Ranked
417.	pypi	flatbuffers	0.221544918	Not Participating	Not Ranked
418.	pypi	jaraco.functools	0.221544918	Not Participating	Not Ranked
419.	go	gopkg.in/inf.v0	0.218753378	Not Participating	305
420.	maven	io.netty:netty-transport	0.218189557	Not Participating	253
421.	pypi	pylint	0.217540213	173	Not Ranked
422.	go	github.com/lib/pq	0.214330503	Not Participating	382
423.	pypi	wrapt	0.212234912	Not Participating	Not Ranked
424.	go	github.com/fatih/color	0.209470939	Not Participating	116
425.	pypi	google-api-core	0.208254942	Not Participating	Not Ranked
426.	go	github.com/modern-go/concurrent	0.208176128	Not Participating	Not Ranked
427.	maven	io.netty:netty-buffer	0.208045888	Not Participating	234
428.	nuget	microsoft.entityframeworkcore.relational	0.202891259	Not Participating	Not Ranked
429.	go	github.com/cespare/xxhash/v2	0.202891259	Not Participating	Not Ranked
430.	pypi	idsave	0.202891259	Not Participating	Not Ranked
431.	pypi	wcwidth	0.202877799	Not Participating	473
432.	maven	org.aspectj:aspectjrt	0.19488975	Not Participating	260
433.	nuget	mstest.testframework	0.194860724	Not Participating	Not Ranked
434.	go	github.com/mailru/easyjson	0.192270573	Not Participating	241
435.	maven	log4j:apache-log4j-extras	0.189868353	Not Participating	Not Ranked
436.	pypi	smhasher	0.184237599	Not Participating	Not Ranked
437.	nuget	system.security.cryptography.pkcs	0.184237599	Not Participating	Not Ranked

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
438.	pypi	itsdangerous	0.181407343	Not Participating	383
439.	maven	io.micrometer:micrometer-tracing-bridge-brave	0.17936107	Not Participating	Not Ranked
440.	maven	com.amazonaws:aws-java-sdk-sts	0.173477205	Not Participating	Not Ranked
441.	nuget	mstest.testadapter	0.170487708	Not Participating	Not Ranked
442.	maven	org.jetbrains.kotlin:kotlin-stdlib	0.166704274	Not Participating	165
443.	nuget	microsoft.dotnet.platformabstractions	0.165583939	Not Participating	Not Ranked
444.	rubygems	rspec	0.165583939	Not Participating	286
445.	nuget	microsoft.extensions.caching.memory	0.164897623	Not Participating	180
446.	go	github.com/Microsoft/go-winio	0.162498885	Not Participating	Not Ranked
447.	go	github.com/hashicorp/errwrap	0.161603113	Not Participating	Not Ranked
448.	pypi	requests-oauthlib	0.160858789	Not Participating	Not Ranked
449.	go	github.com/kubernetes-sigs/structured-merge-diff	0.159240514	Not Participating	Not Ranked
450.	maven	com.fasterxml.jackson.jaxrs:jackson-jaxrs-json-provider	0.159008249	Not Participating	Not Ranked
451.	pypi	pyarrow	0.156745019	Not Participating	188
452.	nuget	nunit	0.156519606	Not Participating	Not Ranked
453.	maven	com.google.protobuf:protobuf-java-util	0.150889191	Not Participating	Not Ranked
454.	pypi	iniconfig	0.150386657	Not Participating	Not Ranked
455.	conda	pyrsistent	0.146930279	Not Participating	Not Ranked
456.	pypi	ipython	0.146016096	76	Not Ranked
457.	pypi	future	0.143315656	Not Participating	Not Ranked
458.	maven	org.flywaydb:flyway-core	0.143201076	Not Participating	Not Ranked
459.	maven	org.xerial.snappy:snappy-java	0.142798877	Not Participating	Not Ranked
460.	nuget	coverlet.collector	0.140063412	Not Participating	Not Ranked
461.	maven	org.apache.httpcomponents:httpmime	0.137732638	Not Participating	400
462.	go	github.com/inconshreveable/mousetrap	0.135986495	Not Participating	Not Ranked
463.	go	github.com/googleapis/gax-go	0.132468123	Not Participating	Not Ranked
464.	maven	io.netty:netty-resolver	0.132272449	Not Participating	372
465.	maven	org.springframework.cloud:spring-cloud-starter	0.131889054	Not Participating	Not Ranked

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSF BADGE TIERED PERCENTAGE	CENSUS II RANK
466.	nuget	microsoft.data.sqlclient	0.131210539	Not Participating	Not Ranked
467.	pypi	async-timeout	0.131055598	Not Participating	Not Ranked
468.	maven	com.fasterxml.jackson.datatype:jackson-datatype-joda	0.130775699	Not Participating	Not Ranked
469.	maven	io.netty.netty-resolver-dns	0.129988815	Not Participating	Not Ranked
470.	maven	io.quarkus:quarkus-smallrye-health	0.129159607	Not Participating	Not Ranked
471.	nuget	microsoft.identitymodel.protocols.openidconnect	0.128942002	Not Participating	Not Ranked
472.	pypi	tensorboard	0.12827662	Not Participating	Not Ranked
473.	nuget	azure.identity	0.12740701	Not Participating	Not Ranked
474.	pypi	splunk-sdk	0.126914335	Not Participating	Not Ranked
475.	go	github.com/hashicorp/go-cleanhttp	0.123454415	Not Participating	Not Ranked
476.	maven	org.apache.logging.log4j:log4j-to-slf4j	0.121579572	96	431
477.	maven	io.dropwizard.metrics:metrics-core	0.11690154	Not Participating	Not Ranked
478.	maven	org.apache.logging.log4j:log4j-1.2-api	0.115978598	96	Not Ranked
479.	maven	io.netty.netty-transport-classes-epoll	0.111627737	Not Participating	Not Ranked
480.	maven	javax.mail:mail	0.11117764	Not Participating	Not Ranked
481.	maven	com.alibaba:fastjson	0.107853172	Not Participating	Not Ranked
482.	maven	org.apache.cxf:cxf-rt-ws-security	0.107853172	104	Not Ranked
483.	pypi	distlib	0.107609112	Not Participating	Not Ranked
484.	pypi	bcrypt	0.106492745	Not Participating	Not Ranked
485.	maven	org.apache.cxf:cxf-rt-ws-policy	0.099097103	104	Not Ranked
486.	maven	io.netty.netty-codec-dns	0.098931246	Not Participating	Not Ranked
487.	maven	org.bouncycastle:bcpkix-jdk15on	0.097025579	Not Participating	Not Ranked
488.	pypi	docutils	0.096918945	Not Participating	Not Ranked
489.	maven	org.hamcrest:hamcrest-all	0.09242573	Not Participating	Not Ranked
490.	nuget	microsoft.aspnet.webapi.client	0.092247952	Not Participating	199
491.	maven	com.zaxxer:hikaricp	0.090047595	Not Participating	462
492.	maven	javax.servlet:servlet-api	0.089660071	Not Participating	Not Ranked
493.	pypi	oauthlib	0.086725354	Not Participating	Not Ranked

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
494.	maven	org.springframework:spring-messaging	0.086717945	Not Participating	379
495.	pypi	awscli	0.075619171	Not Participating	Not Ranked
496.	maven	commons-cli:commons-cli	0.075604942	Not Participating	111
497.	maven	net.minidev:json-smart	0.073223835	Not Participating	252
498.	go	github.com/golang/net	0.072315641	Not Participating	Not Ranked
499.	cocoapods	reactiveextensions	0.072315641	Not Participating	Not Ranked
500.	nuget	newtonsoft.json.bson	0.072315641	Not Participating	Not Ranked

Appendix C: Top 500 npm, Indirect & Direct, Version Agnostic Packages

Our dependency analysis identified the following 500 packages as the most used FOSS packages among those reported in the private usage data contributed by SCA partners hosted on the npm package manager. These packages were identified as either direct or indirect dependencies called by observed packages in use and are version agnostic. For further information on how this list was compiled, refer to the Methods section.

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
1.	npm	semver	5.313175327	Not Participating	7
2.	npm	debug	4.73028681	Not Participating	1
3.	npm	supports-color	4.663398377	Not Participating	8
4.	npm	hasown	4.488501816	Not Participating	Not Ranked
5.	npm	@types/node	4.405134209	Not Participating	29
6.	npm	readable-stream	4.320594744	Not Participating	2
7.	npm	glob	4.125067026	Not Participating	24
8.	npm	ansi-regex	4.028105058	Not Participating	11
9.	npm	ansi-styles	4.02037965	Not Participating	28
10.	npm	chalk	3.878191401	Not Participating	26
11.	npm	strip-ansi	3.789046966	Not Participating	14
12.	npm	ms	3.652272399	Not Participating	16
13.	npm	lru-cache	3.502296726	Not Participating	37
14.	npm	define-data-property	3.425349616	Not Participating	Not Ranked
15.	npm	set-function-length	3.425349616	Not Participating	Not Ranked
16.	npm	commander	3.130801531	Not Participating	32
17.	npm	@types/color-name	3.095743622	Not Participating	43
18.	npm	tslib	3.004173928	Not Participating	137
19.	npm	qs	2.95607505	173	15
20.	npm	type-fest	2.9375216	Not Participating	237
21.	npm	has-flag	2.823408434	Not Participating	47
22.	npm	minimatch	2.812229632	Not Participating	75

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
23.	npm	color-convert	2.786296049	Not Participating	41
24.	npm	safe-buffer	2.698599925	Not Participating	10
25.	npm	source-map	2.689115573	Not Participating	25
26.	npm	find-up	2.611779694	Not Participating	68
27.	npm	yargs	2.600356664	Not Participating	42
28.	npm	yallist	2.600049949	Not Participating	31
29.	npm	lodash	2.507445314	Not Participating	18
30.	npm	arr-flatten	2.505679746	Not Participating	134
31.	npm	kind-of	2.46864606	Not Participating	3
32.	npm	isarray	2.426163479	113	13
33.	npm	ajv	2.397925291	99	77
34.	npm	yargs-parser	2.3232285	Not Participating	86
35.	npm	@babel/types	2.316915982	27	136
36.	npm	string-width	2.314557632	Not Participating	35
37.	npm	punycode	2.313845004	Not Participating	30
38.	npm	to-object-path	2.279219684	Not Participating	143
39.	npm	lodash.isfunction	2.253289142	Not Participating	39
40.	npm	uuid	2.244374277	Not Participating	74
41.	npm	locate-path	2.234043869	Not Participating	171
42.	npm	p-locate	2.232623455	Not Participating	172
43.	npm	color-name	2.217650284	Not Participating	49
44.	npm	set-getter	2.184141032	Not Participating	5
45.	npm	ansi-yellow	2.184141032	Not Participating	6
46.	npm	ansi-wrap	2.184141032	Not Participating	4
47.	npm	lazy-cache	2.184141032	Not Participating	142
48.	npm	escape-string-regexp	2.106850307	Not Participating	131
49.	npm	has-color	2.097129659	Not Participating	181
50.	npm	minimist	2.090370606	Not Participating	9
51.	npm	@types/events	2.086757443	Not Participating	46

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
52.	npm	undici-types	2.086757443	164	Not Ranked
53.	npm	lodash_objecttypes	2.060826901	Not Participating	55
54.	npm	lodash.isnative	2.060826901	Not Participating	54
55.	npm	lodash.isobject	2.060826901	Not Participating	60
56.	npm	lodash._renative	2.060826901	Not Participating	53
57.	npm	lodash._isnative	2.060826901	Not Participating	57
58.	npm	rimraf	2.032616793	Not Participating	83
59.	npm	resolve	2.027334322	Not Participating	76
60.	npm	fs-extra	2.019843587	Not Participating	182
61.	npm	@babel/runtime	1.967872325	27	73
62.	npm	lodash.isarray	1.956528501	Not Participating	52
63.	npm	lodash._shimkeys	1.956528501	Not Participating	51
64.	npm	lodash.support	1.956528501	Not Participating	56
65.	npm	lodash._slice	1.956528501	Not Participating	61
66.	npm	lodash._arraycopy	1.956528501	Not Participating	59
67.	npm	lodash.isarguments	1.956528501	Not Participating	50
68.	npm	lodash.keys	1.956528501	Not Participating	212
69.	npm	form-data	1.932046637	Not Participating	79
70.	npm	has-symbols	1.898315362	Not Participating	365
71.	npm	acorn	1.84041391	Not Participating	65
72.	npm	string_decoder	1.791473499	Not Participating	33
73.	npm	@babel/helper-validator-identifier	1.790580071	27	Not Ranked
74.	npm	mkdirp	1.733751151	Not Participating	23
75.	npm	lodash._mapcache	1.727763502	Not Participating	117
76.	npm	lodash._basetostring	1.726611033	Not Participating	81
77.	npm	lodash.tostring	1.726611033	Not Participating	82
78.	npm	@babel/traverse	1.708794919	27	144
79.	npm	array-slice	1.699528023	Not Participating	17
80.	npm	function-bind	1.686509434	Not Participating	288

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
81.	npm	get-intrinsic	1.684079915	Not Participating	495
82.	npm	ws	1.681553471	Not Participating	48
83.	npm	regenerator-runtime	1.667364666	Not Participating	135
84.	npm	cliui	1.64534127	Not Participating	197
85.	npm	lodash._maxpoolsize	1.630956147	Not Participating	116
86.	npm	lodash._getarray	1.630956147	Not Participating	101
87.	npm	lodash._setbinddata	1.630956147	Not Participating	114
88.	npm	lodash._stack	1.630956147	Not Participating	115
89.	npm	lodash._stringtopath	1.630956147	Not Participating	124
90.	npm	lodash._topath	1.630956147	Not Participating	92
91.	npm	lodash.forin	1.630956147	Not Participating	128
92.	npm	lodash.createcallback	1.630956147	Not Participating	107
93.	npm	lodash._createbound	1.630956147	Not Participating	95
94.	npm	lodash.istypedarray	1.630956147	Not Participating	123
95.	npm	lodash.keysin	1.630956147	Not Participating	122
96.	npm	lodash.noop	1.630956147	Not Participating	121
97.	npm	lodash._createobject	1.630956147	Not Participating	93
98.	npm	lodash._noop	1.630956147	Not Participating	108
99.	npm	lodash.property	1.630956147	Not Participating	111
100.	npm	lodash._objectpool	1.630956147	Not Participating	112
101.	npm	lodash._releasearray	1.630956147	Not Participating	97
102.	npm	lodash.bind	1.630956147	Not Participating	100
103.	npm	lodash._releaseobject	1.630956147	Not Participating	98
104.	npm	lodash.rest	1.630956147	Not Participating	109
105.	npm	lodash._placeholders	1.630956147	Not Participating	113
106.	npm	lodash._basefor	1.630956147	Not Participating	103
107.	npm	lodash._baseproperty	1.630956147	Not Participating	99
108.	npm	lodash._basecreatecallback	1.630956147	Not Participating	90
109.	npm	lodash._getobject	1.630956147	Not Participating	104

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
110.	npm	lodash.identity	1.630956147	Not Participating	125
111.	npm	lodash_baseget	1.630956147	Not Participating	106
112.	npm	lodash_baseisequal	1.630956147	Not Participating	119
113.	npm	lodash_basecreatewrapper	1.630956147	Not Participating	118
114.	npm	lodash_baseslice	1.630956147	Not Participating	94
115.	npm	lodash_basecreate	1.630956147	Not Participating	102
116.	npm	lodash_basebind	1.630956147	Not Participating	105
117.	npm	lodash_arraypool	1.630956147	Not Participating	127
118.	npm	lodash_baseiteratee	1.630956147	Not Participating	110
119.	npm	lodash_isiterateecall	1.630956147	Not Participating	126
120.	npm	lodash_createwrapper	1.630956147	Not Participating	91
121.	npm	mime-db	1.62503787	Not Participating	45
122.	npm	core-js	1.622399217	Not Participating	165
123.	npm	has	1.616827008	Not Participating	296
124.	npm	@babel/core	1.615625448	27	Not Ranked
125.	npm	is-fullwidth-code-point	1.601378722	Not Participating	64
126.	npm	electron-to-chromium	1.54220606	Not Participating	80
127.	npm	@babel/parser	1.526077139	27	191
128.	npm	graceful-fs	1.508632455	Not Participating	34
129.	npm	p-limit	1.50344609	Not Participating	216
130.	npm	async	1.502487304	Not Participating	38
131.	npm	camelcase	1.501334586	Not Participating	84
132.	npm	postcss	1.456539794	Not Participating	27
133.	npm	lodash_arraymap	1.450018591	Not Participating	67
134.	npm	iconv-lite	1.446129641	Not Participating	132
135.	npm	lodash_basecopy	1.426969221	Not Participating	155
136.	npm	lodash_forown	1.426969221	Not Participating	146
137.	npm	lodash_assign	1.426969221	Not Participating	312
138.	npm	lodash_createassigner	1.426969221	Not Participating	158

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
139.	npm	lodash_baseassign	1.426969221	Not Participating	149
140.	npm	brace-expansion	1.424688626	Not Participating	89
141.	npm	schema-utils	1.399300505	Not Participating	286
142.	npm	axios	1.395973419	Not Participating	Not Ranked
143.	npm	mime-types	1.390668542	Not Participating	70
144.	npm	js-yaml	1.345996751	Not Participating	139
145.	npm	@babel/code-frame	1.334327049	27	256
146.	npm	lodash_baseflatten	1.328433163	Not Participating	120
147.	npm	browserslist	1.325456534	Not Participating	176
148.	npm	emoji-regex	1.322829232	Not Participating	179
149.	npm	bytes	1.318893419	Not Participating	175
150.	npm	lodash_baseclone	1.312298604	Not Participating	157
151.	npm	lodash_arrayeach	1.312298604	Not Participating	148
152.	npm	lodash_baseeach	1.312298604	Not Participating	152
153.	npm	lodash.foreach	1.312298604	Not Participating	145
154.	npm	wrap-ansi	1.305536388	Not Participating	220
155.	npm	caniuse-lite	1.267539516	Not Participating	66
156.	npm	webidl-conversions	1.263184726	Not Participating	298
157.	npm	cross-spawn	1.248509461	Not Participating	173
158.	npm	@babel/helper-plugin-utils	1.214521034	27	Not Ranked
159.	npm	lodash.pairs	1.212610078	Not Participating	154
160.	npm	lodash_baseismatch	1.212610078	Not Participating	147
161.	npm	lodash_basematches	1.212610078	Not Participating	156
162.	npm	lodash_basecallback	1.212610078	Not Participating	151
163.	npm	json5	1.210381449	Not Participating	225
164.	npm	stable	1.204542799	Not Participating	303
165.	npm	node-fetch	1.203423218	Not Participating	214
166.	npm	@babel/generator	1.188394725	27	231
167.	npm	http-errors	1.166551157	Not Participating	140

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
168.	npm	inherits	1.163272062	Not Participating	12
169.	npm	execa	1.139659572	Not Participating	205
170.	npm	which	1.127005571	Not Participating	192
171.	npm	lodash.topairs	1.124446237	Not Participating	153
172.	npm	lodash._compareascending	1.124446237	Not Participating	167
173.	npm	lodash._basesortby	1.124446237	Not Participating	169
174.	npm	lodash.hasin	1.124446237	Not Participating	150
175.	npm	lodash._basecompareascending	1.124446237	Not Participating	166
176.	npm	guid	1.124446237	Not Participating	168
177.	npm	lodash.sortby	1.124446237	Not Participating	295
178.	npm	lodash.map	1.124446237	Not Participating	170
179.	npm	get-stream	1.114385447	Not Participating	203
180.	npm	react-is	1.104797452	81	208
181.	npm	path-to-regexp	1.097917821	Not Participating	195
182.	npm	mime	1.08440383	Not Participating	69
183.	npm	is-core-module	1.067999692	Not Participating	Not Ranked
184.	npm	globals	1.052594038	Not Participating	223
185.	npm	whatwg-url	1.051472638	Not Participating	333
186.	npm	@babel/highlight	1.042017765	27	302
187.	npm	object-inspect	1.016670751	Not Participating	453
188.	npm	resolve-from	1.010917881	Not Participating	229
189.	npm	is-buffer	1.009989294	Not Participating	20
190.	npm	call-bind	1.002881156	Not Participating	466
191.	npm	estraverse	0.99209598	Not Participating	265
192.	npm	balanced-match	0.987780148	Not Participating	78
193.	npm	pinkie	0.982692611	Not Participating	340
194.	npm	globby	0.980034591	Not Participating	307
195.	npm	esutils	0.972714153	Not Participating	272
196.	npm	pseudomap	0.955184596	Not Participating	188

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
197.	npm	depd	0.940694063	Not Participating	194
198.	npm	path-exists	0.938135078	Not Participating	209
199.	npm	es-abstract	0.934574507	Not Participating	138
200.	npm	isobject	0.923718273	Not Participating	36
201.	npm	argparse	0.919130477	Not Participating	235
202.	npm	pify	0.91538297	Not Participating	177
203.	npm	raw-body	0.910070398	Not Participating	202
204.	npm	tr46	0.905841308	Not Participating	419
205.	npm	pinkie-promise	0.893952536	Not Participating	359
206.	npm	glob-parent	0.888212714	Not Participating	241
207.	npm	json-schema-traverse	0.883979445	Not Participating	227
208.	npm	@babel/helper-module-transforms	0.879255121	27	Not Ranked
209.	npm	@babel/helpers	0.869546731	27	Not Ranked
210.	npm	is-number	0.869367735	Not Participating	85
211.	npm	cookie	0.861827123	Not Participating	268
212.	npm	micromatch	0.849712594	Not Participating	187
213.	npm	has-proto	0.847066954	Not Participating	Not Ranked
214.	npm	tough-cookie	0.842585729	Not Participating	130
215.	npm	to-fast-properties	0.827095739	Not Participating	435
216.	npm	get-stdin	0.815947388	Not Participating	362
217.	npm	ignore	0.813302369	Not Participating	395
218.	npm	has-ansi	0.812785357	Not Participating	308
219.	npm	body-parser	0.809856155	Not Participating	341
220.	npm	setprototypeof	0.794600222	Not Participating	186
221.	npm	amdefine	0.793111541	Not Participating	475
222.	npm	requirejs	0.793111541	Not Participating	185
223.	npm	@babel/helper-function-name	0.792872986	27	Not Ranked
224.	npm	statuses	0.782780896	Not Participating	215
225.	npm	minipass	0.778497664	Not Participating	242

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
226.	npm	cosmiconfig	0.763924461	Not Participating	353
227.	npm	react	0.756378445	81	245
228.	npm	wrappy	0.754093036	Not Participating	71
229.	npm	signal-exit	0.747105587	Not Participating	263
230.	npm	get-east-asian-width	0.729725773	Not Participating	Not Ranked
231.	npm	braces	0.727117872	Not Participating	129
232.	npm	gopd	0.726444457	Not Participating	Not Ranked
233.	npm	jest-worker	0.724856566	Not Participating	Not Ranked
234.	npm	is-stream	0.723819065	Not Participating	281
235.	npm	loader-utils	0.717037216	Not Participating	233
236.	npm	is-glob	0.708911143	Not Participating	184
237.	npm	y18n	0.707022403	Not Participating	325
238.	npm	has-tostringtag	0.693965666	Not Participating	Not Ranked
239.	npm	js-tokens	0.692725124	Not Participating	217
240.	npm	universalify	0.692478876	Not Participating	500
241.	npm	buffer	0.682149768	Not Participating	264
242.	npm	once	0.680080241	Not Participating	63
243.	npm	@babel/compat-data	0.670611489	27	Not Ranked
244.	npm	entities	0.660182205	Not Participating	276
245.	npm	jsesc	0.657797218	Not Participating	248
246.	npm	path-key	0.655070504	Not Participating	326
247.	npm	lodash._root	0.653447753	Not Participating	40
248.	npm	follow-redirects	0.64751119	Not Participating	361
249.	npm	lodash._getnative	0.628857702	Not Participating	58
250.	npm	convert-source-map	0.620280681	Not Participating	313
251.	npm	npm-bundled	0.617458821	Not Participating	Not Ranked
252.	npm	pkg-dir	0.614897831	Not Participating	206
253.	npm	is-arrayish	0.611038792	Not Participating	250
254.	npm	@babel/template	0.608786008	27	221

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
255.	npm	react-dom	0.608529871	81	267
256.	npm	eslint-visitor-keys	0.607296486	Not Participating	Not Ranked
257.	npm	object-assign	0.607032868	Not Participating	164
258.	npm	strip-bom	0.582889394	Not Participating	318
259.	npm	node-gyp	0.561407616	164	Not Ranked
260.	npm	rxjs	0.559340244	Not Participating	Not Ranked
261.	npm	source-map-support	0.547525984	Not Participating	234
262.	npm	parse-json	0.547384356	Not Participating	278
263.	npm	fast-deep-equal	0.545222774	Not Participating	189
264.	npm	npm-normalize-package-bin	0.539945131	Not Participating	Not Ranked
265.	npm	@babel/helper-compilation-targets	0.538473059	27	Not Ranked
266.	npm	agentkeepalive	0.537718209	Not Participating	Not Ranked
267.	npm	sliced	0.532077424	Not Participating	413
268.	npm	lodash.restparam	0.530246473	Not Participating	72
269.	npm	ini	0.525666208	Not Participating	269
270.	npm	@babel/helper-string-parser	0.519032789	27	Not Ranked
271.	npm	@babel/helper-module-imports	0.518650969	27	Not Ranked
272.	npm	has-property-descriptors	0.517417091	Not Participating	Not Ranked
273.	npm	define-properties	0.514207141	Not Participating	292
274.	npm	natives	0.510180522	Not Participating	21
275.	npm	fast-list	0.510180522	Not Participating	22
276.	npm	path-type	0.510035478	Not Participating	244
277.	npm	concat-map	0.500092079	Not Participating	133
278.	npm	anymatch	0.496877678	Not Participating	260
279.	npm	agent-base	0.48954646	Not Participating	472
280.	npm	make-dir	0.486589369	Not Participating	232
281.	npm	aws-sdk	0.485821999	Not Participating	Not Ranked
282.	npm	core-util-is	0.485584343	Not Participating	211
283.	npm	slash	0.480536711	Not Participating	448

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
284.	npm	shebang-regex	0.468144443	Not Participating	343
285.	npm	bluebird	0.464409861	Not Participating	201
286.	npm	cacache	0.451744475	Not Participating	417
287.	npm	@types/yargs	0.450336698	Not Participating	Not Ranked
288.	npm	fill-range	0.446076389	Not Participating	243
289.	npm	node-releases	0.443795103	Not Participating	279
290.	npm	sourcemap-codec	0.438727474	Not Participating	Not Ranked
291.	npm	vlq	0.438727474	Not Participating	Not Ranked
292.	npm	csstype	0.432719797	Not Participating	339
293.	npm	define-property	0.423130232	Not Participating	88
294.	npm	postcss-selector-parser	0.416996812	Not Participating	254
295.	npm	safer-buffer	0.415937913	Not Participating	183
296.	npm	hosted-git-info	0.414685391	Not Participating	348
297.	npm	smart-buffer	0.406800408	Not Participating	Not Ranked
298.	npm	shebang-command	0.405167128	Not Participating	372
299.	npm	https-proxy-agent	0.404776935	Not Participating	496
300.	npm	@jridgewell/trace-mapping	0.39727204	Not Participating	Not Ranked
301.	npm	pretty-format	0.394135592	Not Participating	Not Ranked
302.	npm	lodash._bindcallback	0.3906741	Not Participating	96
303.	npm	is-callable	0.383399328	Not Participating	342
304.	npm	to-regex-range	0.378622346	Not Participating	285
305.	npm	eslint-scope	0.376671107	Not Participating	Not Ranked
306.	npm	express	0.36746636	15	319
307.	npm	@types/react	0.364931816	Not Participating	19
308.	npm	coffee-script	0.362664553	Not Participating	271
309.	npm	ci-info	0.361668418	Not Participating	Not Ranked
310.	npm	arr-diff	0.355678222	Not Participating	190
311.	npm	tar	0.355334331	Not Participating	388
312.	npm	ssri	0.350339955	Not Participating	Not Ranked

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSF BADGE TIERED PERCENTAGE	CENSUS II RANK
313.	npm	write-file-atomic	0.347162207	Not Participating	467
314.	npm	chokidar	0.346736277	Not Participating	180
315.	npm	p-try	0.346655509	Not Participating	277
316.	npm	pacote	0.343837342	Not Participating	Not Ranked
317.	npm	npm-package-arg	0.341022176	Not Participating	Not Ranked
318.	npm	fsevents	0.340295128	Not Participating	198
319.	npm	terser	0.337638357	Not Participating	497
320.	npm	jsonparse	0.337538934	Not Participating	Not Ranked
321.	npm	on-finished	0.333629227	Not Participating	444
322.	npm	path-parse	0.328753707	Not Participating	294
323.	npm	mimic-fn	0.324896439	Not Participating	262
324.	npm	npm-pick-manifest	0.32211855	Not Participating	Not Ranked
325.	npm	normalize-path	0.321566602	Not Participating	259
326.	npm	normalize-package-data	0.320079319	Not Participating	456
327.	npm	npm-packlist	0.315706695	Not Participating	Not Ranked
328.	npm	nopt	0.313049283	Not Participating	363
329.	npm	@babel/helper-split-export-declaration	0.307158033	27	469
330.	npm	read-package-json	0.303563668	Not Participating	Not Ranked
331.	npm	p-map	0.302838671	Not Participating	423
332.	npm	@jest/types	0.300441074	Not Participating	Not Ranked
333.	npm	is-plain-object	0.298901177	Not Participating	200
334.	npm	fast-glob	0.291060033	Not Participating	Not Ranked
335.	npm	jsonfile	0.278777307	Not Participating	408
336.	npm	request	0.276563848	Not Participating	87
337.	npm	esprima	0.275875449	Not Participating	178
338.	npm	wcwidth	0.274424605	Not Participating	Not Ranked
339.	npm	base64-js	0.273143022	Not Participating	230
340.	npm	ipaddr.js	0.272211597	Not Participating	338
341.	npm	is-arguments	0.271291281	Not Participating	62

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
342.	npm	strip-json-comments	0.270864942	Not Participating	305
343.	npm	ieee754	0.26870322	Not Participating	283
344.	npm	npm-install-checks	0.267899303	Not Participating	Not Ranked
345.	npm	ignore-walk	0.26552532	Not Participating	Not Ranked
346.	npm	typescript	0.264200577	Not Participating	458
347.	npm	util-deprecate	0.263365279	Not Participating	246
348.	npm	npm-registry-fetch	0.261600895	Not Participating	Not Ranked
349.	npm	spdx-license-ids	0.261076738	Not Participating	Not Ranked
350.	npm	negotiator	0.253238968	Not Participating	300
351.	npm	buffer-from	0.250886888	Not Participating	327
352.	npm	validate-npm-package-name	0.248155329	Not Participating	Not Ranked
353.	npm	builtins	0.24598303	Not Participating	Not Ranked
354.	npm	domelementtype	0.241473675	Not Participating	253
355.	npm	assign-symbols	0.239926657	Not Participating	399
356.	npm	path-is-absolute	0.239618643	Not Participating	141
357.	npm	isexe	0.23947536	Not Participating	311
358.	npm	number-is-nan	0.23931131	Not Participating	224
359.	npm	ip-regex	0.234659342	Not Participating	Not Ranked
360.	npm	@babel/helper-hoist-variables	0.23455242	27	Not Ranked
361.	npm	read-cmd-shim	0.229213887	Not Participating	Not Ranked
362.	npm	humanize-ms	0.228428162	Not Participating	Not Ranked
363.	npm	npm	0.2265878	24	Not Ranked
364.	npm	uri-js	0.22504614	Not Participating	310
365.	npm	pump	0.223566865	Not Participating	222
366.	npm	optionator	0.220766109	Not Participating	Not Ranked
367.	npm	domutils	0.214463432	Not Participating	335
368.	npm	retry	0.213774867	Not Participating	Not Ranked
369.	npm	@jridgewell/sourcemap-codec	0.208497947	Not Participating	Not Ranked
370.	npm	dom-serializer	0.203361467	Not Participating	446

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
371.	npm	inflight	0.202019183	Not Participating	163
372.	npm	eastasianwidth	0.201895196	Not Participating	Not Ranked
373.	npm	chownr	0.199290757	Not Participating	287
374.	npm	remove-trailing-separator	0.196709087	Not Participating	481
375.	npm	dotenv	0.195970292	Not Participating	Not Ranked
376.	npm	archy	0.195520138	Not Participating	Not Ranked
377.	npm	@jridgewell/gen-mapping	0.188174882	Not Participating	Not Ranked
378.	npm	cmd-shim	0.18586454	Not Participating	Not Ranked
379.	npm	cli-table3	0.183490558	Not Participating	Not Ranked
380.	npm	fs.realpath	0.182697233	Not Participating	174
381.	npm	is-extglob	0.180413792	Not Participating	274
382.	npm	err-code	0.178973688	Not Participating	Not Ranked
383.	npm	is-extendable	0.17872074	Not Participating	159
384.	npm	toidentifier	0.176976721	Not Participating	471
385.	npm	npm-run-path	0.175337618	Not Participating	499
386.	npm	init-package-json	0.173549242	Not Participating	Not Ranked
387.	npm	promise-retry	0.172074431	Not Participating	Not Ranked
388.	npm	array-flatten	0.17120051	Not Participating	330
389.	npm	are-we-there-yet	0.168344779	Not Participating	Not Ranked
390.	npm	object-keys	0.164189711	Not Participating	213
391.	npm	@babel/helper-simple-access	0.162727762	27	Not Ranked
392.	npm	@babel/helper-replace-supers	0.160625407	27	Not Ranked
393.	npm	binary-extensions	0.159277768	Not Participating	422
394.	npm	read	0.159078451	Not Participating	Not Ranked
395.	npm	bin-links	0.156233873	Not Participating	Not Ranked
396.	npm	jest-util	0.154444922	Not Participating	Not Ranked
397.	npm	psl	0.153680146	Not Participating	371
398.	npm	combined-stream	0.151569714	Not Participating	249
399.	npm	lodash.get	0.149139898	Not Participating	273

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
400.	npm	fast-json-stable-stringify	0.146781776	Not Participating	247
401.	npm	nanoid	0.136480009	Not Participating	Not Ranked
402.	npm	doctrine	0.136096171	Not Participating	490
403.	npm	eslint	0.133282692	Not Participating	Not Ranked
404.	npm	send	0.133071271	Not Participating	239
405.	npm	object.assign	0.132740777	Not Participating	420
406.	npm	npm-profile	0.131325961	Not Participating	Not Ranked
407.	npm	moment	0.13037276	Not Participating	364
408.	npm	domhandler	0.123293016	Not Participating	491
409.	npm	onetime	0.122510252	Not Participating	374
410.	npm	npm-user-validate	0.120044291	Not Participating	Not Ranked
411.	npm	process-nextick-args	0.120037619	Not Participating	196
412.	npm	libnpmublish	0.119548486	Not Participating	Not Ranked
413.	npm	indent-string	0.119388512	Not Participating	Not Ranked
414.	npm	picomatch	0.118320159	Not Participating	Not Ranked
415.	npm	is-regex	0.11746487	Not Participating	455
416.	npm	xtend	0.115872291	Not Participating	207
417.	npm	is-array	0.113155121	Not Participating	Not Ranked
418.	npm	readdirp	0.1121099	Not Participating	257
419.	npm	libnpmaccess	0.107451677	Not Participating	Not Ranked
420.	npm	libnpmhook	0.105691149	Not Participating	Not Ranked
421.	npm	npmlog	0.101868925	Not Participating	488
422.	npm	libnpmorg	0.101531426	Not Participating	Not Ranked
423.	npm	libnpmteam	0.098367517	Not Participating	Not Ranked
424.	npm	libnpmsearch	0.097317082	Not Participating	Not Ranked
425.	npm	callsites	0.093289182	Not Participating	344
426.	npm	gauge	0.090760834	Not Participating	Not Ranked
427.	npm	env-paths	0.090249756	Not Participating	Not Ranked
428.	npm	promzard	0.087274924	Not Participating	Not Ranked

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
429.	npm	columnify	0.085653053	Not Participating	Not Ranked
430.	npm	prop-types	0.081065958	81	261
431.	npm	clone	0.079630771	Not Participating	Not Ranked
432.	npm	@babel/preset-env	0.074198546	27	460
433.	npm	is-plain-obj	0.074156272	Not Participating	Not Ranked
434.	npm	http-proxy-agent	0.073986283	Not Participating	Not Ranked
435.	npm	corepack	0.072031013	Not Participating	Not Ranked
436.	npm	npm-audit-report	0.065446887	Not Participating	Not Ranked
437.	npm	destroy	0.059550472	Not Participating	429
438.	npm	util	0.059373502	Not Participating	328
439.	npm	get-caller-file	0.05574452	Not Participating	401
440.	npm	prelude-ls	0.053394054	Not Participating	Not Ranked
441.	npm	finalhandler	0.050998483	Not Participating	240
442.	npm	@typescript-eslint/typescript-estree	0.046610911	Not Participating	Not Ranked
443.	npm	@babel/helper-create-class-features-plugin	0.045812487	27	Not Ranked
444.	npm	sprintf-js	0.044762462	Not Participating	316
445.	npm	css-select	0.039999641	Not Participating	Not Ranked
446.	npm	is-cidr	0.039816276	Not Participating	Not Ranked
447.	npm	cidr-regex	0.038106168	Not Participating	Not Ranked
448.	npm	serve-static	0.037907228	Not Participating	282
449.	npm	noncharacters	0.033634793	Not Participating	255
450.	npm	get-value	0.033634793	Not Participating	480
451.	npm	@jridgewell/resolve-uri	0.031887576	Not Participating	Not Ranked
452.	npm	content-disposition	0.03188613	Not Participating	357
453.	npm	socks-proxy-agent	0.030700543	Not Participating	Not Ranked
454.	npm	string.prototype.trimstart	0.029428105	Not Participating	Not Ranked
455.	npm	string.prototype.trimend	0.027463969	Not Participating	Not Ranked
456.	npm	imurmurhash	0.026363512	Not Participating	Not Ranked
457.	npm	make-fetch-happen	0.025273423	Not Participating	Not Ranked

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
458.	npm	qrcode-terminal	0.023929499	Not Participating	Not Ranked
459.	npm	regexp.prototype.flags	0.022327018	Not Participating	Not Ranked
460.	npm	side-channel	0.022319363	Not Participating	Not Ranked
461.	npm	is-date-object	0.02153263	Not Participating	Not Ranked
462.	npm	har-validator	0.018662537	Not Participating	193
463.	npm	ip	0.018582202	Not Participating	Not Ranked
464.	npm	end-of-stream	0.017826312	Not Participating	204
465.	npm	delayed-stream	0.016964707	Not Participating	324
466.	npm	cli-columns	0.010862089	Not Participating	Not Ranked
467.	npm	find-cache-dir	0.005677685	Not Participating	252
468.	npm	serialize-javascript	0.005639235	Not Participating	Not Ranked
469.	npm	read-pkg	0.004987425	Not Participating	289
470.	npm	ansi-escapes	0.004983261	Not Participating	351
471.	npm	is-data-descriptor	-0.002340368	Not Participating	160
472.	npm	is-accessor-descriptor	-0.002372731	Not Participating	162
473.	npm	core-js-compat	-0.003033136	Not Participating	Not Ranked
474.	npm	accepts	-0.005573141	Not Participating	251
475.	npm	type-check	-0.005639629	Not Participating	Not Ranked
476.	npm	tiny-relative-date	-0.006272605	Not Participating	Not Ranked
477.	npm	@babel/plugin-transform-modules-commonjs	-0.006751796	27	Not Ranked
478.	npm	range-parser	-0.009961177	Not Participating	337
479.	npm	parse5	-0.010479478	Not Participating	Not Ranked
480.	npm	picocolors	-0.01381954	Not Participating	Not Ranked
481.	npm	extend-shallow	-0.016872129	Not Participating	199
482.	npm	is-symbol	-0.017913156	Not Participating	487
483.	npm	@babel/helper-member-expression-to-functions	-0.018420309	27	Not Ranked
484.	npm	events	-0.025358283	Not Participating	Not Ranked
485.	npm	import-fresh	-0.025774937	Not Participating	Not Ranked
486.	npm	is-descriptor	-0.039187744	Not Participating	161

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
487.	npm	diff	-0.039662037	Not Participating	485
488.	npm	keypress	-0.045885534	Not Participating	218
489.	npm	graceful-readlink	-0.045885534	Not Participating	376
490.	npm	@babel/plugin-transform-parameters	-0.050151422	27	Not Ranked
491.	npm	@types/estree	-0.053380661	Not Participating	Not Ranked
492.	npm	react-router	-0.053426928	Not Participating	Not Ranked
493.	npm	date-fns	-0.055221767	Not Participating	Not Ranked
494.	npm	levn	-0.056590547	Not Participating	Not Ranked
495.	npm	@babel/helper-annotate-as-pure	-0.057427754	27	Not Ranked
496.	npm	ee-first	-0.059711444	Not Participating	397
497.	npm	jest-message-util	-0.061516358	Not Participating	Not Ranked
498.	npm	@babel/helper-validator-option	-0.069845688	27	Not Ranked
499.	npm	@colors/colors	-0.072450002	Not Participating	Not Ranked
500.	npm	sax	-0.075531962	Not Participating	258

Appendix D: Top 500 Non-npm, Indirect & Direct, Version Agnostic Packages

Our dependency analysis identified the following 500 packages as the most used FOSS packages among those reported in the private usage data contributed by SCA partners hosted on package managers other than npm. These packages were identified as either direct or indirect dependencies called by observed packages in use and are version agnostic. For further information on how this list was compiled, refer to the Methods section.

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
1.	go	github.com/googleapis/google-cloud-go	10.59029666	Not Participating	Not Ranked
2.	maven	com.fasterxml.jackson.core:jackson-databind	4.095216643	Not Participating	183
3.	maven	com.fasterxml.jackson.core:jackson-core	3.914533725	Not Participating	106
4.	maven	com.fasterxml.jackson.core:jackson-annotations	3.787190982	Not Participating	115
5.	maven	org.slf4j:slf4j-api	3.592824222	Not Participating	111
6.	maven	com.google.guava:guava	3.488085925	99	206
7.	go	github.com/googleapis/go-genproto	3.347870054	Not Participating	426
8.	maven	org.springframework:spring-core	3.134721792	Not Participating	339
9.	maven	org.springframework:spring-beans	2.985034101	Not Participating	210
10.	maven	org.springframework:spring-context	2.971299978	Not Participating	295
11.	go	github.com/grpc/grpc-go	2.869401135	109	5
12.	maven	org.springframework:spring-aop	2.823047915	Not Participating	216
13.	maven	org.springframework:spring-expression	2.810789681	Not Participating	247
14.	nuget	microsoft.netcore.targets.dnxcore	2.789820412	Not Participating	45
15.	nuget	microsoft.netcore.targets.netframework	2.789820412	Not Participating	47
16.	nuget	microsoft.netcore.targets.universalwindowsplatform	2.789820412	Not Participating	46
17.	maven	org.apache.commons:commons-lang3	2.738132473	Not Participating	31
18.	nuget	system.threading.tasks.unofficial	2.650308358	Not Participating	51
19.	maven	org.springframework:spring-web	2.627794705	Not Participating	383
20.	nuget	system.runtime.interopservices.pinvoke	2.57964247	Not Participating	53
21.	maven	commons-codec:commons-codec	2.540825471	Not Participating	14

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSF BADGE TIERED PERCENTAGE	CENSUS II RANK
22.	nuget	system.diagnostics.contracts	2.52687052	Not Participating	406
23.	pypi	requests	2.504013815	Not Participating	Not Ranked
24.	nuget	microsoft.bcl.build	2.491992506	Not Participating	90
25.	nuget	microsoft.bcl.compression	2.491992506	Not Participating	85
26.	nuget	microsoft.net.http	2.491992506	Not Participating	92
27.	nuget	microsoft.bcl	2.491992506	Not Participating	87
28.	nuget	system.threading.overlapped	2.467122966	Not Participating	443
29.	nuget	system.runtime.windowsruntime	2.467122966	Not Participating	58
30.	nuget	system.security.claims	2.465303244	Not Participating	252
31.	nuget	system.security.principal	2.465303244	Not Participating	251
32.	maven	com.google.errorprone:error_prone_annotations	2.457027294	Not Participating	116
33.	maven	org.apache.httpcomponents:httpcore	2.441885046	Not Participating	28
34.	nuget	system.security.cryptography.encryption	2.441040278	Not Participating	61
35.	nuget	system.security.securestring	2.441040278	Not Participating	340
36.	maven	org.springframework.boot:spring-boot-autoconfigure	2.440908442	Not Participating	401
37.	nuget	system.componentmodel.eventbasedasync	2.438613981	Not Participating	329
38.	maven	org.apache.httpcomponents:httpclient	2.438271414	Not Participating	55
39.	nuget	runtime.fedora.24-x64.runtime.native.system.security.cryptography	2.43254824	Not Participating	80
40.	nuget	runtime.fedora.23-x64.runtime.native.system.security.cryptography	2.43254824	Not Participating	62
41.	nuget	runtime.debian.9-x64.runtime.native.system.security.cryptography.openssl	2.43254824	Not Participating	73
42.	nuget	microsoft.netcore.windows.apisets	2.43254824	Not Participating	95
43.	nuget	runtime.debian.9-x64.runtime.native.system.security.cryptography	2.43254824	Not Participating	71

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
44.	nuget	runtime.debian.8-x64.runtime.native.system.security.cryptography	2.43254824	Not Participating	76
45.	nuget	system.security.cryptography.rsa	2.43254824	Not Participating	83
46.	nuget	runtime.fedora.27-x64.runtime.native.system.security.cryptography.openssl	2.43254824	Not Participating	78
47.	nuget	runtime.opensuse.42.3-x64.runtime.native.system.security.cryptography	2.43254824	Not Participating	75
48.	nuget	runtime.opensuse.42.1-x64.runtime.native.system.security.cryptography	2.43254824	Not Participating	72
49.	nuget	runtime.fedora.28-x64.runtime.native.system.security.cryptography	2.43254824	Not Participating	67
50.	nuget	runtime.ubuntu.18.04-x64.runtime.native.system.security.cryptography.openssl	2.43254824	Not Participating	63
51.	nuget	system.security.cryptography.hashing	2.43254824	Not Participating	88
52.	nuget	system.security.cryptography.hashing.algorithms	2.43254824	Not Participating	89
53.	nuget	runtime.opensuse.42.3-x64.runtime.native.system.security.cryptography.openssl	2.43254824	Not Participating	66
54.	nuget	system.security.cryptography.randomnumbergenerator	2.43254824	Not Participating	84
55.	nuget	microsoft.packaging.tools	2.43254824	Not Participating	96
56.	nuget	system.diagnostics.stacktrace	2.43254824	Not Participating	310
57.	nuget	runtime.opensuse.13.2-x64.runtime.native.system.security.cryptography	2.43254824	Not Participating	74
58.	nuget	runtime.osx.10.10-x64.runtime.native.system.security.cryptography	2.43254824	Not Participating	60
59.	nuget	runtime.fedora.27-x64.runtime.native.system.security.cryptography	2.43254824	Not Participating	79
60.	nuget	system.io.filesystem.watcher	2.43254824	Not Participating	82
61.	nuget	runtime.ubuntu.14.04-x64.runtime.native.system.security.cryptography	2.43254824	Not Participating	64
62.	nuget	system.private.networking	2.43254824	Not Participating	86

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSF BADGE TIERED PERCENTAGE	CENSUS II RANK
63.	nuget	runtime.ubuntu.18.04-x64.runtime.native.system.security.cryptography	2.43254824	Not Participating	69
64.	nuget	runtime.rhel.7-x64.runtime.native.system.security.cryptography	2.43254824	Not Participating	65
65.	nuget	runtime.ubuntu.16.10-x64.runtime.native.system.security.cryptography	2.43254824	Not Participating	68
66.	nuget	microsoft.netcore.runtime.native	2.43254824	Not Participating	94
67.	nuget	runtime.ubuntu.16.04-x64.runtime.native.system.security.cryptography	2.43254824	Not Participating	70
68.	nuget	microsoft.netcore.jit	2.43254824	Not Participating	93
69.	nuget	microsoft.netcore.runtime.coreclr	2.43254824	Not Participating	91
70.	nuget	runtime.native.system.security.cryptography	2.43254824	Not Participating	348
71.	nuget	system.threading.threadpool	2.43254824	Not Participating	217
72.	nuget	microsoft.netcore.runtime	2.43254824	Not Participating	97
73.	nuget	runtime.fedora.28-x64.runtime.native.system.security.cryptography.openssl	2.43254824	Not Participating	77
74.	maven	org.springframework.boot:spring-boot	2.390366435	Not Participating	Not Ranked
75.	maven	io.netty:netty-common	2.318007287	Not Participating	Not Ranked
76.	pypi	boto3	2.31267116	Not Participating	Not Ranked
77.	maven	io.netty:netty-resolver	2.263086884	Not Participating	Not Ranked
78.	nuget	microsoft.netcore.platforms	2.215474299	Not Participating	294
79.	maven	org.yaml:snakeyaml	2.210758881	3	57
80.	maven	com.google.code.gson:gson	2.199460484	Not Participating	308
81.	maven	commons-io:commons-io	2.15846325	Not Participating	108
82.	maven	org.checkerframework:checker-qual	2.158000144	Not Participating	25
83.	maven	com.fasterxml.jackson.datatype:jackson-datatype-jsr310	2.116178785	Not Participating	134
84.	maven	org.slf4j:jul-to-slf4j	2.105032445	Not Participating	12

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
85.	maven	org.ow2.asm:asm	2.078069203	Not Participating	127
86.	maven	com.google.code.findbugs:jsr305	2.071242072	Not Participating	105
87.	maven	io.netty:netty-buffer	2.04217416	Not Participating	Not Ranked
88.	maven	io.netty:netty-codec	2.039087854	Not Participating	358
89.	nuget	system.diagnostics.diagnosticsource	2.019073012	Not Participating	303
90.	maven	io.netty:netty-transport	2.013141106	Not Participating	Not Ranked
91.	maven	io.netty:netty-handler	1.986272098	Not Participating	362
92.	go	github.com/Azure/go-autorest	1.978716659	Not Participating	100
93.	maven	org.springframework:spring-webmvc	1.956131466	Not Participating	494
94.	nuget	system.buffer	1.924655596	Not Participating	304
95.	go	github.com/cespare/xxhash	1.837174258	Not Participating	Not Ranked
96.	pypi	botocore	1.832017772	Not Participating	Not Ranked
97.	nuget	system.threading.tasks.extensions	1.80773993	Not Participating	288
98.	nuget	system.memory	1.769615494	Not Participating	373
99.	maven	commons-logging:commons-logging	1.756064421	Not Participating	37
100.	nuget	system.runtime.compilerservices.unsafe	1.75017472	Not Participating	343
101.	go	golang.org/x/oauth2	1.737707334	Not Participating	364
102.	maven	org.springframework:spring-jcl	1.727571235	Not Participating	112
103.	maven	io.micrometer:micrometer-core	1.694663769	Not Participating	Not Ranked
104.	maven	ch.qos.logback:logback-classic	1.674592939	Not Participating	49
105.	maven	org.apache.logging.log4j:log4j-api	1.672508547	96	18
106.	nuget	system.security.principal.windows	1.665707606	Not Participating	369
107.	maven	ch.qos.logback:logback-core	1.660239959	Not Participating	9
108.	pypi	urllib3	1.648518487	164	Not Ranked
109.	nuget	system.runtime	1.646243863	Not Participating	230

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
110.	maven	org.springframework.boot:spring-boot-starter	1.604815455	Not Participating	483
111.	go	gopkg.in/yaml.v3	1.592673124	Not Participating	Not Ranked
112.	nuget	system.net.http	1.558973327	Not Participating	165
113.	nuget	newtonsoft.json	1.555436985	Not Participating	Not Ranked
114.	maven	io.netty:netty-codec-http	1.552301523	Not Participating	Not Ranked
115.	maven	org.springframework.boot:spring-boot-actuator	1.533958129	Not Participating	Not Ranked
116.	nuget	system.runtime.extensions	1.531839942	Not Participating	287
117.	maven	org.javassist:javassist	1.527067299	Not Participating	196
118.	pypi	pytest	1.517878791	Not Participating	122
119.	maven	jakarta.annotation:jakarta.annotation-api	1.515603593	Not Participating	27
120.	nuget	system.security.cryptography.cng	1.508652381	Not Participating	328
121.	pypi	pyyaml	1.506493066	Not Participating	Not Ranked
122.	nuget	microsoft.netcore.targets	1.498528031	Not Participating	132
123.	nuget	netstandard.library	1.497341235	Not Participating	158
124.	maven	joda-time:joda-time	1.476850528	113	190
125.	nuget	system.collections.immutable	1.469113017	Not Participating	370
126.	maven	io.netty:netty-transport-native-unix-common	1.466661839	Not Participating	Not Ranked
127.	maven	org.springframework.boot:spring-boot-actuator-autoconfigure	1.464310796	Not Participating	Not Ranked
128.	maven	com.fasterxml.jackson.datatype:jackson-datatype-jdk8	1.446247843	Not Participating	109
129.	go	golang.org/x/sys	1.439155869	Not Participating	4
130.	nuget	system.reflection.typeextensions	1.428701726	Not Participating	301
131.	nuget	system.text.regularexpressions	1.425378517	Not Participating	150
132.	nuget	system.diagnostics.debug	1.423520323	Not Participating	249
133.	nuget	system.collections	1.421148462	Not Participating	250

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSF BADGE TIERED PERCENTAGE	CENSUS II RANK
134.	maven	com.google.j2objc:j2objc-annotations	1.405573077	Not Participating	11
135.	maven	org.springframework:spring-tx	1.402411083	Not Participating	Not Ranked
136.	maven	com.madgag.spongeycastle:bcpkix-jdk15on	1.401016899	Not Participating	Not Ranked
137.	nuget	system.reflection.emit.lightweight	1.39921519	Not Participating	136
138.	nuget	system.linq	1.394525918	Not Participating	297
139.	nuget	system.reflection.emit	1.366696843	Not Participating	314
140.	nuget	microsoft.net.test.sdk	1.366673615	Not Participating	Not Ranked
141.	nuget	system.reflection	1.365944256	Not Participating	244
142.	nuget	system.resources.resourcemanager	1.357500201	Not Participating	293
143.	nuget	system.globalization	1.354103547	Not Participating	248
144.	nuget	system.threading	1.353205771	Not Participating	246
145.	nuget	system.text.encoding.extensions	1.352080449	Not Participating	299
146.	maven	com.github.zafarkhaja:java-semver	1.345903218	Not Participating	Not Ranked
147.	nuget	system.runtime.interopservices	1.322345157	Not Participating	289
148.	nuget	system.text.encoding	1.320761731	Not Participating	241
149.	nuget	system.threading.tasks	1.31079518	Not Participating	243
150.	nuget	system.io	1.308647965	Not Participating	242
151.	nuget	runtime.native.system.security.cryptography.openssl	1.307045892	Not Participating	176
152.	nuget	runtime.ubuntu.14.04-x64.runtime.native.system.security.cryptography.openssl	1.302850756	Not Participating	170
153.	nuget	runtime.ubuntu.16.10-x64.runtime.native.system.security.cryptography.openssl	1.302850756	Not Participating	174
154.	nuget	runtime.osx.10.10-x64.runtime.native.system.security.cryptography.openssl	1.302846619	Not Participating	171
155.	nuget	runtime.debian.8-x64.runtime.native.system.security.cryptography.openssl	1.302842482	Not Participating	175

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSF BADGE TIERED PERCENTAGE	CENSUS II RANK
156.	nuget	runtime.fedora.23-x64.runtime.native.system.security.cryptography.openssl	1.302842482	Not Participating	168
157.	nuget	runtime.opensuse.13.2-x64.runtime.native.system.security.cryptography.openssl	1.302838344	Not Participating	177
158.	nuget	runtime.rhel.7-x64.runtime.native.system.security.cryptography.openssl	1.302838344	Not Participating	172
159.	nuget	runtime.opensuse.42.1-x64.runtime.native.system.security.cryptography.openssl	1.302838344	Not Participating	167
160.	nuget	runtime.fedora.24-x64.runtime.native.system.security.cryptography.openssl	1.302838344	Not Participating	169
161.	nuget	runtime.ubuntu.16.04-x64.runtime.native.system.security.cryptography.openssl	1.302834207	Not Participating	173
162.	nuget	system.linq.expressions	1.295056243	Not Participating	318
163.	go	golang.org/x/text	1.290304176	Not Participating	351
164.	maven	com.fasterxml:classmate	1.288301985	Not Participating	15
165.	maven	org.hibernate.validator:hibernate-validator	1.280859231	Not Participating	335
166.	nuget	system.io.filesystem.primitives	1.279582726	Not Participating	305
167.	nuget	system.runtime.handles	1.261341921	Not Participating	298
168.	maven	org.hdrhistogram:hdrhistogram	1.260109531	Not Participating	35
169.	nuget	system.reflection.primitives	1.250565604	Not Participating	292
170.	nuget	system.runtime.interopservices.runtimeinformation	1.2438282	Not Participating	322
171.	nuget	system.reflection.metadata	1.236833216	Not Participating	379
172.	go	golang.org/x/net	1.234618738	Not Participating	10
173.	nuget	system.objectmodel	1.226388827	Not Participating	313
174.	nuget	system.reflection.extensions	1.221956232	Not Participating	302
175.	nuget	system.security.cryptography.algorithms	1.208964935	Not Participating	145
176.	nuget	system.reflection.emit.ilgeneration	1.207254533	Not Participating	317
177.	nuget	system.security.cryptography.x509certificates	1.206954249	Not Participating	149

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSF BADGE TIERED PERCENTAGE	CENSUS II RANK
178.	maven	io.dropwizard.metrics:metrics-core	1.199731771	Not Participating	Not Ranked
179.	maven	io.netty:netty-codec-http2	1.178437467	Not Participating	Not Ranked
180.	go	github.com/pelletier/go-toml	1.174309665	Not Participating	240
181.	go	github.com/prometheus/client_model	1.172174862	Not Participating	Not Ranked
182.	pypi	typing-extensions	1.166206826	Not Participating	Not Ranked
183.	maven	org.springframework.boot:spring-boot-starter-web	1.156202019	Not Participating	Not Ranked
184.	nuget	system.xml.readerwriter	1.156099602	Not Participating	137
185.	nuget	system.numerics.vectors	1.153584175	Not Participating	237
186.	go	google.golang.org/api	1.148585787	Not Participating	Not Ranked
187.	maven	org.projectlombok:lombok	1.145910368	Not Participating	Not Ranked
188.	nuget	microsoft.extensions.configuration.json	1.144016976	Not Participating	Not Ranked
189.	nuget	system.collections.concurrent	1.138491614	Not Participating	321
190.	nuget	system.io.filesystem	1.131539035	Not Participating	307
191.	maven	org.springframework.boot:spring-boot-starter-logging	1.130597965	Not Participating	442
192.	nuget	system.appcontext	1.124448242	Not Participating	324
193.	maven	org.jboss.logging:jboss-logging	1.124003797	Not Participating	121
194.	maven	com.google.guava:failureaccess	1.123431357	99	22
195.	maven	io.netty:netty-transport-native-epoll	1.122541683	Not Participating	Not Ranked
196.	nuget	system.security.cryptography.primitives	1.120520789	Not Participating	139
197.	nuget	system.security.cryptography.encoding	1.115745206	Not Participating	144
198.	nuget	system.runtime.numerics	1.1044051	Not Participating	147
199.	nuget	system.diagnostics.tracing	1.103588037	Not Participating	315
200.	nuget	system.io.compression	1.102682517	Not Participating	160
201.	go	github.com/golang/protobuf	1.094216827	Not Participating	32

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSF BADGE TIERED PERCENTAGE	CENSUS II RANK
202.	nuget	system.diagnostics.tools	1.091098675	Not Participating	143
203.	nuget	system.xml.xdocument	1.07677264	Not Participating	148
204.	go	golang.org/x/time	1.072865152	Not Participating	Not Ranked
205.	maven	io.dropwizard.metrics:metrics-annotation	1.06969539	Not Participating	Not Ranked
206.	maven	jakarta.xml.bind:jakarta.xml.bind-api	1.066957079	Not Participating	114
207.	nuget	system.net.primitives	1.06537875	Not Participating	152
208.	nuget	system.globalization.calendars	1.05896193	Not Participating	154
209.	maven	org.mpierce.metrics.reservoir:hdrhistogram-metrics-reservoir	1.055351799	3	Not Ranked
210.	go	google.golang.org/protobuf	1.054997396	Not Participating	354
211.	nuget	runtime.native.system	1.054098413	Not Participating	316
212.	nuget	system.valuetuple	1.050166211	Not Participating	Not Ranked
213.	nuget	system.configuration.configurationmanager	1.044690718	Not Participating	Not Ranked
214.	go	github.com/open-telemetry/opentelemetry-go	1.043962568	Not Participating	Not Ranked
215.	nuget	system.console	1.042549598	Not Participating	161
216.	pypi	cryptography	1.037408904	Not Participating	Not Ranked
217.	nuget	microsoft.win32.primitives	1.035560109	Not Participating	151
218.	nuget	system.threading.timer	1.033344294	Not Participating	159
219.	go	github.com/aws/aws-sdk-go-v2	1.030444789	Not Participating	309
220.	maven	org.apache.tomcat.embed:tomcat-embed-el	1.023436228	Not Participating	Not Ranked
221.	maven	org.apache.logging.log4j:log4j-to-slf4j	1.02213885	96	54
222.	nuget	microsoft.extensions.configuration.environmentvariables	1.019842604	Not Participating	Not Ranked
223.	maven	javax.xml.bind:jaxb-api	1.018662286	Not Participating	372
224.	maven	com.github.gfx.util:weak-identity-hash-map	1.014327496	Not Participating	Not Ranked
225.	maven	org.apache.tomcat.embed:tomcat-embed-core	1.011562804	Not Participating	331

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSF BADGE TIERED PERCENTAGE	CENSUS II RANK
226.	nuget	system.net.sockets	1.01133431	Not Participating	162
227.	nuget	runtime.native.system.security.cryptography.apple	1.006158654	Not Participating	180
228.	nuget	runtime.osx.10.10-x64.runtime.native.system.security.cryptography.apple	1.005964205	Not Participating	179
229.	maven	org.eclipse.jetty:jetty-util	1.00429353	Not Participating	207
230.	nuget	system.private.uri	1.001252039	Not Participating	50
231.	maven	com.google.guava:listenablefuture	0.997037424	99	23
232.	go	github.com/pmezard/go-difflib	0.986331162	Not Participating	Not Ranked
233.	pypi	packaging	0.985841793	Not Participating	Not Ranked
234.	nuget	system.io.compression.zipfile	0.984843722	Not Participating	184
235.	go	github.com/go-logr/logr	0.977742304	Not Participating	Not Ranked
236.	maven	org.ow2.asm:asm-tree	0.972108002	Not Participating	367
237.	pypi	certifi	0.972014628	Not Participating	Not Ranked
238.	nuget	system.globalization.extensions	0.969035424	Not Participating	141
239.	maven	org.eclipse.jetty:jetty-io	0.966779184	Not Participating	222
240.	nuget	system.security.cryptography.openssl	0.965982159	Not Participating	156
241.	nuget	system.security.cryptography.csp	0.964476213	Not Participating	155
242.	nuget	runtime.native.system.net.http	0.962750994	Not Participating	157
243.	maven	com.fasterxml.jackson.module:jackson-module-parameter-names	0.96199455	Not Participating	209
244.	maven	org.eclipse.jetty:jetty-http	0.958116993	Not Participating	224
245.	go	github.com/uber-go/atomic	0.954491155	Not Participating	Not Ranked
246.	maven	org.jetbrains.kotlin:kotlin-stdlib	0.947926694	Not Participating	Not Ranked
247.	go	github.com/fsnotify/fsnotify	0.942799386	Not Participating	Not Ranked
248.	go	github.com/matttproud/golang_protobuf_extensions	0.938240175	Not Participating	Not Ranked

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
249.	maven	org.reactivestreams:reactive-streams	0.938007458	Not Participating	349
250.	nuget	runtime.native.system.io.compression	0.936461628	Not Participating	164
251.	go	cloud.google.com/go	0.934260714	Not Participating	Not Ranked
252.	maven	org.ow2.asm:asm-commons	0.930662919	Not Participating	391
253.	maven	commons-collections:commons-collections	0.926233964	Not Participating	123
254.	go	golang.org/x/crypto	0.915424323	Not Participating	33
255.	maven	com.amazonaws:aws-java-sdk-core	0.908716489	Not Participating	Not Ranked
256.	maven	org.bouncycastle:bc-fips	0.903896504	Not Participating	Not Ranked
257.	pypi	pytz	0.897024932	Not Participating	Not Ranked
258.	maven	org.jetbrains.kotlin:kotlin-stdlib-common	0.887018858	Not Participating	489
259.	maven	net.bytebuddy:byte-buddy	0.88585698	180	419
260.	nuget	system.identitymodel.tokens.jwt	0.88400956	Not Participating	Not Ranked
261.	maven	com.google.protobuf:protobuf-java	0.878178917	Not Participating	Not Ranked
262.	pypi	six	0.877107584	Not Participating	461
263.	maven	org.eclipse.jetty:jetty-server	0.874645802	Not Participating	220
264.	maven	org.apache.tomcat.embed:tomcat-embed-websocket	0.871277711	Not Participating	338
265.	go	google.golang.org/grpc	0.866527164	109	Not Ranked
266.	maven	com.fasterxml.jackson.dataformat:jackson-dataformat-yaml	0.852507506	Not Participating	Not Ranked
267.	maven	org.bouncycastle:bctls-fips	0.851262699	Not Participating	Not Ranked
268.	nuget	system.formats.asn1	0.834542837	Not Participating	Not Ranked
269.	maven	org.apache.commons:commons-compress	0.832268895	Not Participating	438
270.	maven	org.springframework.boot:spring-boot-starter-json	0.831505123	Not Participating	Not Ranked
271.	maven	org.ow2.asm:asm-analysis	0.829124589	Not Participating	371
272.	go	github.com/uber-go/multierr	0.827296616	Not Participating	Not Ranked

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
273.	pypi	click	0.815412229	Not Participating	Not Ranked
274.	maven	javax.annotation:javax.annotation-api	0.81352636	Not Participating	319
275.	maven	org.eclipse.jetty:jetty-servlet	0.809637037	Not Participating	219
276.	maven	org.eclipse.jetty:jetty-rewrite	0.807519871	Not Participating	Not Ranked
277.	go	github.com/stretchr/testify	0.802038485	Not Participating	126
278.	nuget	microsoft.bcl.asyncinterfaces	0.8019573	Not Participating	Not Ranked
279.	maven	commons-beanutils:commons-beanutils	0.801923511	Not Participating	232
280.	maven	org.apache.commons:commons-configuration2	0.801159353	Not Participating	Not Ranked
281.	nuget	system.collections.nongeneric	0.797336862	Not Participating	186
282.	maven	io.netty:netty-handler-proxy	0.793943198	Not Participating	Not Ranked
283.	go	github.com/uber-go/zap	0.792585382	Not Participating	377
284.	maven	io.netty:netty-codec-socks	0.790364643	Not Participating	Not Ranked
285.	nuget	microsoft.extensions.logging.abstractions	0.789865661	Not Participating	Not Ranked
286.	maven	com.squareup.okhttp3:okhttp	0.786370668	15	Not Ranked
287.	maven	org.eclipse.jetty:jetty-security	0.785211152	Not Participating	218
288.	pypi	protobuf	0.780904041	Not Participating	Not Ranked
289.	go	github.com/beorn7/perks	0.777559017	Not Participating	Not Ranked
290.	go	github.com/mitchellh/mapstructure	0.760058597	Not Participating	Not Ranked
291.	nuget	system.threading.thread	0.754504275	Not Participating	200
292.	maven	org.jetbrains:annotations	0.748713537	Not Participating	Not Ranked
293.	maven	org.springframework:spring-jdbc	0.748365679	Not Participating	Not Ranked
294.	maven	org.aspectj:aspectjweaver	0.739504803	Not Participating	120
295.	maven	io.dropwizard.metrics:metrics-jvm	0.732018458	Not Participating	Not Ranked
296.	nuget	microsoft.identitymodel.tokens	0.712406155	Not Participating	Not Ranked
297.	maven	io.netty:netty-transport-classes-epoll	0.706951681	Not Participating	Not Ranked

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
298.	nuget	system.text.json	0.697050367	Not Participating	Not Ranked
299.	maven	javax.servlet:javax.servlet-api	0.689795534	Not Participating	198
300.	maven	org.springframework.boot:spring-boot-starter-actuator	0.689432884	Not Participating	Not Ranked
301.	nuget	moq	0.681459786	Not Participating	Not Ranked
302.	maven	com.amazonaws:jmespath-java	0.677248085	Not Participating	Not Ranked
303.	maven	org.apache.httpcomponents:httpcore-nio	0.677126115	Not Participating	Not Ranked
304.	maven	org.springframework.boot:spring-boot-starter-tomcat	0.672995011	Not Participating	Not Ranked
305.	maven	org.eclipse.jetty:jetty-jndi	0.672606592	Not Participating	Not Ranked
306.	go	github.com/modern-go/reflect2	0.661816289	Not Participating	Not Ranked
307.	go	golang.org/x/exp	0.65940843	Not Participating	Not Ranked
308.	nuget	microsoft.extensions.configuration	0.658244234	Not Participating	Not Ranked
309.	maven	jakarta.activation:jakarta.activation-api	0.653520025	Not Participating	118
310.	pypi	pyparsing	0.651393516	Not Participating	Not Ranked
311.	pypi	idna	0.650806361	Not Participating	Not Ranked
312.	go	github.com/imdario/mergo	0.650620985	25	395
313.	maven	io.projectreactor:reactor-core	0.64865224	Not Participating	Not Ranked
314.	go	github.com/google/go-cmp	0.64752812	Not Participating	337
315.	nuget	microsoft.identitymodel.logging	0.64721192	Not Participating	Not Ranked
316.	maven	org.apache.commons:commons-text	0.646699386	Not Participating	Not Ranked
317.	maven	org.latencyutils:latencyutils	0.636445956	Not Participating	117
318.	maven	org.springframework.data:spring-data-commons	0.625259009	Not Participating	Not Ranked
319.	maven	org.springframework.security:spring-security-core	0.619733718	Not Participating	Not Ranked
320.	maven	javax.inject:javax.inject	0.614501113	Not Participating	311
321.	maven	net.minidev:json-smart	0.612215724	Not Participating	454

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSF BADGE TIERED PERCENTAGE	CENSUS II RANK
322.	go	github.com/go-openapi/swag	0.611540852	Not Participating	Not Ranked
323.	pypi	setuptools	0.611043713	Not Participating	422
324.	maven	org.springframework.security:spring-security-crypto	0.602571951	Not Participating	Not Ranked
325.	maven	org.apache.httpcomponents:httpasyncclient	0.599705786	Not Participating	Not Ranked
326.	nuget	microsoft.extensions.dependencyinjection.abstractions	0.595982205	Not Participating	Not Ranked
327.	nuget	microsoft.csharp	0.593803849	Not Participating	398
328.	maven	com.xenoamess:nashorn	0.592822558	Not Participating	Not Ranked
329.	nuget	microsoft.extensions.primitives	0.591778379	Not Participating	Not Ranked
330.	maven	junit:junit	0.590702872	Not Participating	21
331.	go	github.com/golang/appengine	0.589001304	Not Participating	Not Ranked
332.	go	github.com/mailru/easyjson	0.585741179	Not Participating	Not Ranked
333.	maven	commons-lang:commons-lang	0.585631817	Not Participating	104
334.	go	github.com/golang/grouper	0.58021386	Not Participating	Not Ranked
335.	nuget	microsoft.identitymodel.jsonwebtokens	0.579800138	Not Participating	Not Ranked
336.	nuget	system.text.encoding.web	0.566286505	Not Participating	Not Ranked
337.	maven	org.codehaus.mojo:animal-sniffer-annotations	0.563744031	Not Participating	131
338.	nuget	microsoft.extensions.configuration.fileextensions	0.562821008	Not Participating	Not Ranked
339.	go	github.com/modern-go/concurrent	0.553106827	Not Participating	Not Ranked
340.	go	github.com/Azure/azure-sdk-for-go	0.548158718	Not Participating	124
341.	maven	com.squareup.okio:okio	0.547945879	Not Participating	376
342.	maven	javax.ws.rs:javax.ws.rs-api	0.543641244	Not Participating	Not Ranked
343.	maven	com.fasterxml.jackson.module:jackson-module-jaxb-annotations	0.541653701	Not Participating	Not Ranked
344.	maven	org.jetbrains.kotlin:kotlin-stdlib-jdk8	0.541056064	Not Participating	Not Ranked

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
345.	nuget	microsoft.extensions.options	0.540938379	Not Participating	Not Ranked
346.	maven	org.xerial.snappy:snappy-java	0.538592954	Not Participating	482
347.	maven	com.amazonaws:aws-java-sdk-s3	0.534607686	Not Participating	Not Ranked
348.	maven	javax.websocket:javax.websocket-api	0.532732264	Not Participating	Not Ranked
349.	maven	org.bouncycastle:bcprov-jdk15on	0.523714998	Not Participating	327
350.	maven	io.grpc:grpc-context	0.522015226	109	Not Ranked
351.	nuget	microsoft.extensions.configuration.abstractions	0.509658112	Not Participating	Not Ranked
352.	maven	javax.validation:validation-api	0.509142215	Not Participating	163
353.	pypi	pyjwt	0.500954747	Not Participating	Not Ranked
354.	go	github.com/prometheus/common	0.500938021	Not Participating	312
355.	go	github.com/prometheus/client_golang	0.500271246	Not Participating	29
356.	maven	com.perfma.wrapped:com.sun.sajdi	0.492840247	Not Participating	Not Ranked
357.	maven	org.glassfish:javax.el	0.482637997	Not Participating	Not Ranked
358.	maven	org.eclipse.jetty.websocket:websocket-client	0.482269487	Not Participating	Not Ranked
359.	maven	org.eclipse.jetty.websocket:websocket-common	0.481441268	Not Participating	Not Ranked
360.	maven	javax.websocket:javax.websocket-client-api	0.479689902	Not Participating	Not Ranked
361.	pypi	python-dateutil	0.47763974	Not Participating	Not Ranked
362.	maven	jakarta.validation:jakarta.validation-api	0.471576538	Not Participating	133
363.	nuget	microsoft.extensions.configuration.binder	0.467601753	Not Participating	Not Ranked
364.	go	github.com/googleapis/google-api-go-client	0.466961735	Not Participating	Not Ranked
365.	nuget	microsoft.extensions.options.configurationextensions	0.463519572	Not Participating	Not Ranked
366.	maven	org.springframework.boot:spring-boot-jarmode-layertools	0.461853613	Not Participating	Not Ranked
367.	maven	org.jetbrains.kotlin:kotlin-stdlib-jdk7	0.460800867	Not Participating	Not Ranked
368.	maven	org.springframework.boot:spring-boot-starter-aop	0.4595269	Not Participating	Not Ranked

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSF BADGE TIERED PERCENTAGE	CENSUS II RANK
369.	go	gopkg.in/yaml.v2	0.457164757	Not Participating	459
370.	pypi	numpy	0.456465797	Not Participating	Not Ranked
371.	maven	org.springframework:spring-aspects	0.453377101	Not Participating	Not Ranked
372.	pypi	charset-normalizer	0.453222885	109	Not Ranked
373.	maven	org.slf4j:slf4j-over-slf4j	0.444461129	Not Participating	195
374.	maven	com.fasterxml.jackson. dataformat:jackson-dataformat-cbor	0.441981109	Not Participating	Not Ranked
375.	maven	net.minidev:accessors-smart	0.440336111	Not Participating	424
376.	pypi	google-auth	0.433868117	Not Participating	Not Ranked
377.	maven	com.amazonaws:aws-java-sdk-kms	0.431319551	Not Participating	Not Ranked
378.	go	github.com/google/uuid	0.429060009	Not Participating	Not Ranked
379.	maven	org.eclipse.jetty.websocket:websocket-servlet	0.427331119	Not Participating	Not Ranked
380.	nuget	microsoft.extensions.http	0.422321185	Not Participating	Not Ranked
381.	go	github.com/jmespath/go-jmespath	0.420492536	Not Participating	Not Ranked
382.	maven	org.apache.commons:commons-collections4	0.413604144	Not Participating	Not Ranked
383.	nuget	microsoft.extensions.filesystemglobbing	0.411481682	Not Participating	Not Ranked
384.	pypi	jsonschema	0.409468002	Not Participating	Not Ranked
385.	pypi	pycparser	0.402955402	Not Participating	Not Ranked
386.	maven	org.eclipse.jetty:jetty-plus	0.397542426	Not Participating	Not Ranked
387.	pypi	flake8	0.39686925	Not Participating	Not Ranked
388.	pypi	cff	0.393951894	Not Participating	Not Ranked
389.	go	github.com/go-openapi/jsonreference	0.392136064	Not Participating	Not Ranked
390.	go	github.com/davecgh/go-spew	0.389593544	Not Participating	Not Ranked
391.	maven	org.bouncycastle:bctls-jdk15on	0.387782752	Not Participating	Not Ranked
392.	maven	com.zaxxer:hikaricp	0.382099553	Not Participating	495
393.	nuget	system.security.accesscontrol	0.377744193	Not Participating	Not Ranked

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
394.	maven	org.eclipse.jetty:jetty-webapp	0.369303579	Not Participating	221
395.	maven	org.eclipse.jetty:jetty-annotations	0.366077045	Not Participating	Not Ranked
396.	maven	org.eclipse.jetty.websocket:websocket-server	0.364212287	Not Participating	Not Ranked
397.	maven	org.eclipse.jetty:jetty-client	0.358487695	Not Participating	Not Ranked
398.	nuget	microsoft.extensions.fileproviders.abstractions	0.358168625	Not Participating	Not Ranked
399.	pypi	rsa	0.357399484	Not Participating	Not Ranked
400.	nuget	system.componentmodel.primitives	0.345023317	Not Participating	430
401.	go	github.com/prometheus/procfs	0.342134752	Not Participating	181
402.	nuget	system.componentmodel.typeconverter	0.337137853	Not Participating	437
403.	maven	org.objenesis:objenesis	0.336893309	Not Participating	187
404.	maven	org.springframework.security:spring-security-web	0.333981505	Not Participating	Not Ranked
405.	pypi	attrs	0.331475513	Not Participating	Not Ranked
406.	nuget	microsoft.extensions.fileproviders.physical	0.330400541	Not Participating	Not Ranked
407.	nuget	microsoft.extensions.dependencyinjection	0.325080816	Not Participating	Not Ranked
408.	maven	org.glassfish.jaxb:jaxb-runtime	0.322867705	Not Participating	346
409.	maven	org.eclipse.jetty:jetty-xml	0.318571728	Not Participating	215
410.	go	github.com/go-openapi/jsonpointer	0.318526734	Not Participating	Not Ranked
411.	maven	org.scala-lang:scala-library	0.314442981	Not Participating	Not Ranked
412.	go	github.com/google/gofuzz	0.312080953	Not Participating	Not Ranked
413.	nuget	microsoft.extensions.hosting.abstractions	0.310388288	Not Participating	Not Ranked
414.	maven	org.slf4j:log4j-over-slf4j	0.304231642	Not Participating	425
415.	maven	org.eclipse.jetty:jetty-util-ajax	0.304215836	Not Participating	Not Ranked
416.	maven	org.glassfish.jersey.core:jersey-common	0.303682351	Not Participating	Not Ranked
417.	pypi	psutil	0.303345026	Not Participating	Not Ranked
418.	maven	org.eclipse.jetty:jetty-servlets	0.30115729	Not Participating	Not Ranked

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
419.	go	golang.org/x/sync	0.298499366	Not Participating	439
420.	pypi	jinja2	0.295250709	Not Participating	Not Ranked
421.	go	github.com/pkg/errors	0.293488522	Not Participating	474
422.	pypi	pydantic	0.291966571	Not Participating	Not Ranked
423.	nuget	microsoft.extensions.hosting	0.278097869	Not Participating	Not Ranked
424.	maven	org.eclipse.jetty:jetty-continuation	0.277538706	Not Participating	214
425.	pypi	cachetools	0.269208437	Not Participating	Not Ranked
426.	maven	org.springframework:spring-context-support	0.268455747	Not Participating	Not Ranked
427.	maven	io.grpc:grpc-protobuf	0.266245872	109	Not Ranked
428.	pypi	s3transfer	0.263148124	Not Participating	Not Ranked
429.	maven	org.eclipse.jetty.websocket:javax-websocket-client-impl	0.260363463	Not Participating	Not Ranked
430.	maven	org.antlr:antlr4-runtime	0.260163946	Not Participating	Not Ranked
431.	nuget	microsoft.extensions.dependencymodel	0.260026514	Not Participating	Not Ranked
432.	maven	org.eclipse.jetty.websocket:javax-websocket-server-impl	0.259710718	Not Participating	Not Ranked
433.	go	github.com/sirupsen/logrus	0.25925809	Not Participating	119
434.	pypi	pandas	0.258853254	Not Participating	Not Ranked
435.	maven	cn.pivoto.jdk:tools	0.257689148	Not Participating	Not Ranked
436.	pypi	importlib-metadata	0.257468905	Not Participating	Not Ranked
437.	maven	javax.activation:javax.activation-api	0.252299215	Not Participating	188
438.	maven	org.springframework.boot:spring-boot-starter-validation	0.25195209	Not Participating	Not Ranked
439.	pypi	pillow	0.250777899	99	Not Ranked
440.	maven	io.grpc:grpc-protobuf-lite	0.244765042	109	Not Ranked
441.	maven	com.github.luben:zstd-jni	0.24399025	Not Participating	Not Ranked
442.	go	github.com/kubernetes/client-go	0.242203391	Not Participating	7

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
443.	pypi	markupsafe	0.241970794	Not Participating	Not Ranked
444.	maven	io.grpc:grpc-core	0.239945645	109	Not Ranked
445.	go	github.com/kubernetes/apimachinery	0.239555574	Not Participating	34
446.	maven	io.swagger:swagger-annotations	0.236565947	Not Participating	325
447.	pypi	pyasn1	0.235837611	Not Participating	Not Ranked
448.	maven	org.aspectj:aspectjrt	0.231070452	Not Participating	Not Ranked
449.	maven	org.bouncycastle:bcpkix-jdk15on	0.229109945	Not Participating	378
450.	go	github.com/matttn/go-isatty	0.226720794	Not Participating	Not Ranked
451.	maven	com.google.api.grpc:proto-google-common-protos	0.226565623	Not Participating	Not Ranked
452.	maven	org.springframework.security:spring-security-config	0.224405509	Not Participating	Not Ranked
453.	pypi	grpcio	0.224039383	109	Not Ranked
454.	maven	com.sun.istack:istack-commons-runtime	0.221574365	Not Participating	497
455.	maven	org.springframework:spring-orm	0.217941704	Not Participating	Not Ranked
456.	maven	org.springframework:spring-messaging	0.20625728	Not Participating	Not Ranked
457.	pypi	pyopenssl	0.204033445	Not Participating	Not Ranked
458.	maven	org.glassfish.jaxb:txw2	0.202628844	Not Participating	233
459.	maven	org.hamcrest:hamcrest-core	0.199957585	Not Participating	13
460.	maven	org.glassfish.jersey.core:jersey-client	0.198923372	Not Participating	Not Ranked
461.	go	golang.org/x/tools	0.191596047	Not Participating	102
462.	maven	io.swagger.core.v3:swagger-annotations	0.191083724	Not Participating	Not Ranked
463.	nuget	system.componentmodel.annotations	0.190485321	Not Participating	Not Ranked
464.	maven	org.postgresql:postgresql	0.187257859	Not Participating	Not Ranked
465.	maven	org.apache.kafka:kafka-clients	0.186158467	Not Participating	Not Ranked
466.	pypi	coverage	0.18585427	164	382

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSF BADGE TIERED PERCENTAGE	CENSUS II RANK
467.	nuget	microsoft.extensions.logging.configuration	0.180633357	Not Participating	Not Ranked
468.	go	github.com/josharian/intern	0.178167577	Not Participating	Not Ranked
469.	go	golang.org/x/term	0.174213289	Not Participating	Not Ranked
470.	maven	org.springframework.retry:spring-retry	0.172766489	Not Participating	415
471.	nuget	system.io.pipelines	0.171673392	Not Participating	Not Ranked
472.	maven	org.json:json	0.170405498	Not Participating	Not Ranked
473.	go	github.com/census-instrumentation/opencensus-go	0.170199301	Not Participating	205
474.	pypi	pytest-cov	0.168655866	Not Participating	Not Ranked
475.	pypi	pluggy	0.168523339	Not Participating	Not Ranked
476.	maven	com.google.protobuf:protobuf-java-util	0.164058998	Not Participating	Not Ranked
477.	nuget	xunit.runner.visualstudio	0.160402376	Not Participating	Not Ranked
478.	pypi	sqlalchemy	0.158775938	Not Participating	Not Ranked
479.	maven	org.openjmsse:openjmsse	0.15398443	Not Participating	Not Ranked
480.	maven	com.nimbusds:nimbus-jose-jwt	0.152061326	3	Not Ranked
481.	maven	org.codehaus.janino:janino	0.144167977	Not Participating	Not Ranked
482.	maven	io.grpc:grpc-api	0.141265011	109	Not Ranked
483.	go	gopkg.in/ini.v1	0.141238795	Not Participating	Not Ranked
484.	nuget	system.security.permissions	0.140741174	Not Participating	Not Ranked
485.	go	github.com/spf13/afero	0.137746986	Not Participating	Not Ranked
486.	nuget	microsoft.extensions.logging	0.137440669	Not Participating	Not Ranked
487.	maven	org.codehaus.janino:commons-compiler	0.137343278	Not Participating	Not Ranked
488.	pypi	lxml	0.136470684	Not Participating	Not Ranked
489.	nuget	system.security.cryptography.protecteddata	0.133312903	Not Participating	Not Ranked
490.	go	github.com/kubernetes/api	0.129067109	Not Participating	103
491.	maven	org.hibernate:hibernate-core	0.12716632	Not Participating	Not Ranked

	PLATFORM	NAME	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
492.	nuget	microsoft.identitymodel.protocols	0.119601161	Not Participating	Not Ranked
493.	maven	mysql:mysql-connector-java	0.110268224	Not Participating	Not Ranked
494.	maven	org.apache.logging.log4j:log4j-core	0.107986866	96	Not Ranked
495.	maven	io.prometheus:simpleclient	0.106530637	Not Participating	Not Ranked
496.	go	github.com/inconshreveable/mousetrap	0.104814754	Not Participating	Not Ranked
497.	go	github.com/kubernetes/utils	0.104392758	Not Participating	344
498.	maven	net.sourceforge.findbugs:annotations	0.102506257	Not Participating	Not Ranked
499.	maven	io.netty:netty-tcnative-boringssl-static	0.101482714	Not Participating	Not Ranked
500.	maven	io.netty:netty-transport-native-kqueue	0.101269553	Not Participating	Not Ranked

Appendix E: Top 500 npm, Direct, Versioned Packages

Our dependency analysis identified the following 500 packages as the most used FOSS packages among those reported in the private usage data contributed by SCA partners hosted on the npm package manager. These packages were directly observed in use and account for the package version. For further information on how this list was compiled, refer to the Methods section.

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
1.	npm	lodash	4.17.21	11.57241325	Not Participating	2
2.	npm	oboe	2.1.4	7.932963551	Not Participating	Not Ranked
3.	npm	d3-flame-graph	4.1.3	7.557216971	Not Participating	Not Ranked
4.	npm	moment	2.29.4	5.758231636	Not Participating	Not Ranked
5.	npm	react	18.2.0	5.261222867	81	Not Ranked
6.	npm	react-dom	18.2.0	5.164799305	81	Not Ranked
7.	npm	react-dom	17.0.2	4.967766867	81	158
8.	npm	express	4.18.2	4.743263042	15	Not Ranked
9.	npm	uuid	8.3.2	3.987164763	Not Participating	33
10.	npm	cors	2.8.5	3.866586361	Not Participating	14
11.	npm	react	17.0.2	3.675106572	81	141
12.	npm	d3-selection	3.0.0	3.645582908	Not Participating	Not Ranked
13.	npm	uuid	9.0.0	3.436964341	Not Participating	Not Ranked
14.	npm	react	16.14.0	3.229290454	81	5
15.	npm	react-dom	16.14.0	3.118370294	81	6
16.	npm	compression	1.7.4	3.048862832	15	249
17.	npm	wrappy	1.0.2	2.900189728	Not Participating	10
18.	npm	concat-map	0.0.1	2.900189728	Not Participating	46
19.	npm	fs.realpath	1.0.0	2.882161458	Not Participating	15
20.	npm	inflight	1.0.6	2.882161458	Not Participating	61
21.	npm	path-is-absolute	1.0.1	2.864133189	Not Participating	58
22.	npm	escape-string-regexp	1.0.5	2.828076649	Not Participating	53
23.	npm	safe-buffer	5.1.2	2.810048379	Not Participating	41

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSF BADGE TIERED PERCENTAGE	CENSUS II RANK
24.	npm	has	1.0.3	2.79202011	Not Participating	94
25.	npm	inherits	2.0.4	2.77399184	Not Participating	87
26.	npm	safer-buffer	2.1.2	2.77399184	Not Participating	27
27.	npm	color-name	1.1.3	2.75596357	Not Participating	11
28.	npm	util-deprecate	1.0.2	2.75596357	Not Participating	50
29.	npm	color-convert	1.9.3	2.719907031	Not Participating	35
30.	npm	ms	2.0.0	2.719907031	Not Participating	49
31.	npm	brace-expansion	1.1.11	2.701878761	Not Participating	19
32.	npm	has-flag	3.0.0	2.701878761	Not Participating	26
33.	npm	prop-types	15.8.1	2.700707012	81	Not Ranked
34.	npm	axios	0.27.2	2.647794514	Not Participating	Not Ranked
35.	npm	supports-color	5.5.0	2.647793951	Not Participating	37
36.	npm	ts-node	10.9.1	2.580095214	Not Participating	Not Ranked
37.	npm	isarray	1.0.0	2.521596063	113	16
38.	npm	isexe	2.0.0	2.521596063	Not Participating	39
39.	npm	is-extglob	2.1.1	2.449482984	Not Participating	266
40.	npm	request	2.88.2	2.354049964	Not Participating	17
41.	npm	request-promise	3.0.0	2.329020733	Not Participating	Not Ranked
42.	npm	stats-lite	2.2.0	2.328334438	Not Participating	Not Ranked
43.	npm	tracium	0.2.1	2.327476569	Not Participating	Not Ranked
44.	npm	cli-progress-bar	1.0.1	2.327476569	Not Participating	Not Ranked
45.	npm	json-schema-traverse	0.4.1	2.323285096	Not Participating	45
46.	npm	string_decoder	1.1.1	2.323285096	Not Participating	31
47.	npm	color-convert	2.0.1	2.305256826	Not Participating	Not Ranked
48.	npm	object-keys	1.1.1	2.251172017	Not Participating	123
49.	npm	color-name	1.1.4	2.251172017	Not Participating	395
50.	npm	safe-buffer	5.2.1	2.215115477	Not Participating	Not Ranked
51.	npm	express	4.17.1	2.209175414	15	3
52.	npm	please-upgrade-node	3.2.0	2.208747513	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
53.	npm	iconv-lite	0.4.24	2.197087207	Not Participating	95
54.	npm	call-bind	1.0.2	2.197087207	Not Participating	Not Ranked
55.	npm	axios	0.21.4	2.150808863	Not Participating	Not Ranked
56.	npm	is-fullwidth-code-point	3.0.0	2.143002398	Not Participating	Not Ranked
57.	npm	has-flag	4.0.0	2.124974128	Not Participating	Not Ranked
58.	npm	emoji-regex	8.0.0	2.106945859	Not Participating	Not Ranked
59.	npm	to-regex-range	5.0.1	2.106945859	Not Participating	Not Ranked
60.	npm	require-directory	2.1.1	2.088917589	Not Participating	441
61.	npm	fill-range	7.0.1	2.088917589	Not Participating	Not Ranked
62.	npm	is-number	7.0.0	2.070889319	Not Participating	Not Ranked
63.	npm	braces	3.0.2	2.070889319	Not Participating	Not Ranked
64.	npm	delayed-stream	1.0.0	2.070889319	Not Participating	56
65.	npm	asynckit	0.4.0	2.070889319	Not Participating	151
66.	npm	@salesforce-ux/icons	9.40.4	2.063939243	Not Participating	Not Ranked
67.	npm	is-arrayish	0.2.1	2.052861049	Not Participating	236
68.	npm	estraverse	4.3.0	2.052861049	Not Participating	Not Ranked
69.	npm	process-nextick-args	2.0.1	2.052861049	Not Participating	64
70.	npm	config	3.3.9	2.033471573	Not Participating	Not Ranked
71.	npm	classnames	2.3.2	2.032009092	Not Participating	Not Ranked
72.	npm	typescript	4.9.5	1.986694735	Not Participating	Not Ranked
73.	npm	ansi-styles	3.2.1	1.98074797	Not Participating	29
74.	npm	error-ex	1.3.2	1.944691431	Not Participating	138
75.	npm	unpipe	1.0.0	1.944691431	Not Participating	256
76.	npm	json-stable-stringify	1.0.1	1.944691431	Not Participating	Not Ranked
77.	npm	supports-color	7.2.0	1.926663161	Not Participating	Not Ranked
78.	npm	ee-first	1.1.1	1.908634891	Not Participating	75
79.	npm	yallist	4.0.0	1.908634891	Not Participating	Not Ranked
80.	npm	combined-stream	1.0.8	1.908634891	Not Participating	196
81.	npm	p-try	2.2.0	1.908634891	Not Participating	108

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
82.	npm	argparse	1.0.10	1.854550082	Not Participating	255
83.	npm	body-parser	1.20.2	1.846400492	Not Participating	Not Ranked
84.	npm	morgan	1.10.0	1.838379886	Not Participating	38
85.	npm	fresh	0.5.2	1.836521812	Not Participating	100
86.	npm	cookie-parser	1.4.6	1.826251532	Not Participating	Not Ranked
87.	npm	encodeurl	1.0.2	1.818493542	Not Participating	248
88.	npm	path-exists	4.0.0	1.818493542	Not Participating	Not Ranked
89.	npm	side-channel	1.0.4	1.818493542	Not Participating	Not Ranked
90.	npm	get-caller-file	2.0.5	1.818493542	Not Participating	Not Ranked
91.	npm	balanced-match	1.0.2	1.800465273	Not Participating	Not Ranked
92.	npm	child-process-promise	2.2.1	1.785989718	Not Participating	Not Ranked
93.	npm	mime	1.6.0	1.782437003	Not Participating	273
94.	npm	vary	1.1.2	1.764408733	Not Participating	106
95.	npm	file-exists	5.0.1	1.750473946	Not Participating	Not Ranked
96.	npm	rimraf	3.0.2	1.747765868	Not Participating	442
97.	npm	which	2.0.2	1.728352194	Not Participating	483
98.	npm	range-parser	1.2.1	1.728352194	Not Participating	179
99.	npm	utils-merge	1.0.1	1.728352194	Not Participating	103
100.	npm	escalade	3.1.1	1.728352194	Not Participating	Not Ranked
101.	npm	reflect-metadata	0.1.13	1.725663698	Not Participating	23
102.	npm	is-typedarray	1.0.0	1.710323924	Not Participating	177
103.	npm	p-limit	2.3.0	1.674267384	Not Participating	Not Ranked
104.	npm	react-scripts	5.0.1	1.660937693	Not Participating	Not Ranked
105.	npm	fast-levenshtein	2.0.6	1.656239115	Not Participating	350
106.	npm	to-fast-properties	2.0.0	1.656239115	Not Participating	360
107.	npm	globals	11.12.0	1.638210845	Not Participating	Not Ranked
108.	npm	prop-types	15.7.2	1.620550872	81	9
109.	npm	locate-path	5.0.0	1.620182575	Not Participating	Not Ranked
110.	npm	p-locate	4.1.0	1.602154305	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
111.	npm	chalk	4.1.2	1.587790148	Not Participating	Not Ranked
112.	npm	type-is	1.6.18	1.584126036	Not Participating	343
113.	npm	depd	1.1.2	1.584126036	Not Participating	459
114.	npm	text-table	0.2.0	1.566097766	Not Participating	Not Ranked
115.	npm	find-up	4.1.0	1.566097766	Not Participating	Not Ranked
116.	npm	react	16.4.1	1.542183376	81	Not Ranked
117.	npm	react-dom	16.4.1	1.539952917	81	Not Ranked
118.	npm	uri-js	4.4.1	1.530041226	Not Participating	Not Ranked
119.	npm	end-of-stream	1.4.4	1.530041226	Not Participating	187
120.	npm	set-blocking	2.0.0	1.530041226	Not Participating	54
121.	npm	jwt-decode	3.1.2	1.528792046	Not Participating	Not Ranked
122.	npm	d3	5.7.0	1.52691331	Not Participating	Not Ranked
123.	npm	dagre-d3	0.6.1	1.52331026	Not Participating	Not Ranked
124.	npm	reactable	1.0.2	1.522452392	Not Participating	Not Ranked
125.	npm	punycode	2.1.1	1.512012957	Not Participating	153
126.	npm	source-map	0.5.7	1.512012957	Not Participating	142
127.	npm	cookie-signature	1.0.6	1.493984687	Not Participating	283
128.	npm	esrecurse	4.3.0	1.493984687	Not Participating	Not Ranked
129.	npm	eslint-plugin-react-hooks	4.6.0	1.478953252	81	Not Ranked
130.	npm	path-to-regexp	0.1.7	1.457928147	Not Participating	124
131.	npm	array-flatten	1.1.1	1.457928147	Not Participating	424
132.	npm	xtend	4.0.2	1.439899878	Not Participating	348
133.	npm	jsonschema	1.4.0	1.438552813	Not Participating	Not Ranked
134.	npm	inherits	2.0.3	1.421871608	Not Participating	25
135.	npm	media-typer	0.3.0	1.421871608	Not Participating	111
136.	npm	jsesc	2.5.2	1.421871608	Not Participating	490
137.	npm	ansi-styles	4.3.0	1.421871608	Not Participating	Not Ranked
138.	npm	dotenv	16.0.3	1.421743405	Not Participating	Not Ranked
139.	npm	file-saver	2.0.5	1.416436843	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
140.	npm	jsonwebtoken	9.0.0	1.408367816	Not Participating	Not Ranked
141.	npm	path-key	3.1.1	1.403843338	Not Participating	Not Ranked
142.	npm	shebang-command	2.0.0	1.403843338	Not Participating	Not Ranked
143.	npm	shebang-regex	3.0.0	1.403843338	Not Participating	Not Ranked
144.	npm	which	1.3.1	1.367786798	Not Participating	170
145.	npm	extend	3.0.2	1.367786798	Not Participating	116
146.	npm	mimic-fn	2.1.0	1.349758529	Not Participating	367
147.	npm	express	4.16.4	1.348215488	15	51
148.	npm	jsonwebtoken	8.5.1	1.335078894	Not Participating	20
149.	npm	es-to-primitive	1.2.1	1.313701989	Not Participating	417
150.	npm	pump	3.0.0	1.295673719	Not Participating	161
151.	npm	requires-port	1.0.0	1.295673719	Not Participating	Not Ranked
152.	npm	cross-env	7.0.3	1.282734022	Not Participating	Not Ranked
153.	npm	string-width	4.2.3	1.27764545	Not Participating	Not Ranked
154.	npm	readable-stream	3.6.0	1.27764545	Not Participating	Not Ranked
155.	npm	has-symbols	1.0.3	1.25961718	Not Participating	Not Ranked
156.	npm	slash	3.0.0	1.25961718	Not Participating	Not Ranked
157.	npm	callsites	3.1.0	1.25961718	Not Participating	Not Ranked
158.	npm	fs-extra	10.0.0	1.250336376	Not Participating	Not Ranked
159.	npm	binary-extensions	2.2.0	1.24158891	Not Participating	Not Ranked
160.	npm	natural-compare	1.4.0	1.24158891	Not Participating	Not Ranked
161.	npm	make-dir	3.1.0	1.24158891	Not Participating	Not Ranked
162.	npm	camelcase	6.2.0	1.237983064	Not Participating	Not Ranked
163.	npm	html-to-text	8.0.0	1.23283585	Not Participating	Not Ranked
164.	npm	mathjs	9.5.1	1.23283585	Not Participating	Not Ranked
165.	npm	resolve-from	4.0.0	1.22356064	Not Participating	Not Ranked
166.	npm	ipaddr.js	1.9.1	1.22356064	Not Participating	Not Ranked
167.	npm	supports-preserve-symlinks-flag	1.0.0	1.22356064	Not Participating	Not Ranked
168.	npm	path-exists	3.0.0	1.22356064	Not Participating	79

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
169.	npm	has-tostringtag	1.0.0	1.205532371	Not Participating	Not Ranked
170.	npm	statuses	1.5.0	1.205532371	Not Participating	307
171.	npm	once	1.4.0	1.200763572	Not Participating	42
172.	npm	express	4.18.1	1.198523345	15	Not Ranked
173.	npm	path-type	4.0.0	1.187504101	Not Participating	Not Ranked
174.	npm	csurf	1.9.0	1.173471322	Not Participating	Not Ranked
175.	npm	yup	0.32.11	1.167773417	Not Participating	Not Ranked
176.	npm	function-bind	1.1.1	1.165195132	Not Participating	70
177.	npm	bcrypt-nodejs	0.0.3	1.163176895	Not Participating	Not Ranked
178.	npm	mongodb	2.2.36	1.15974542	Not Participating	Not Ranked
179.	npm	node-esapi	0.0.1	1.156828665	Not Participating	Not Ranked
180.	npm	helmet	2.3.0	1.152196173	Not Participating	Not Ranked
181.	npm	mime-db	1.52.0	1.151447561	Not Participating	Not Ranked
182.	npm	randombytes	2.1.0	1.151447561	Not Participating	Not Ranked
183.	npm	pify	2.3.0	1.151447561	Not Participating	185
184.	npm	dont-sniff-mimetype	1.0.0	1.149622567	Not Participating	Not Ranked
185.	npm	forever	2.0.0	1.148936272	Not Participating	Not Ranked
186.	npm	reusify	1.0.4	1.133419292	Not Participating	Not Ranked
187.	npm	@testing-library/jest-dom	5.16.5	1.127316604	Not Participating	Not Ranked
188.	npm	parent-module	1.0.1	1.115391022	Not Participating	Not Ranked
189.	npm	pkg-dir	4.2.0	1.115391022	Not Participating	Not Ranked
190.	npm	husky	8.0.3	1.100298088	Not Participating	Not Ranked
191.	npm	signal-exit	3.0.7	1.097362752	Not Participating	Not Ranked
192.	npm	estraverse	5.3.0	1.097362752	Not Participating	Not Ranked
193.	npm	express	4.17.3	1.08224242	15	Not Ranked
194.	npm	through	2.3.8	1.079334482	Not Participating	232
195.	npm	prettier	2.8.8	1.078363383	Not Participating	Not Ranked
196.	npm	dotenv	16.3.1	1.072634844	Not Participating	Not Ranked
197.	npm	isobject	3.0.1	1.061306213	Not Participating	135

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSF BADGE TIERED PERCENTAGE	CENSUS II RANK
198.	npm	date-fns	2.29.3	1.0572083	Not Participating	Not Ranked
199.	npm	picocolors	1.0.0	1.043277943	Not Participating	Not Ranked
200.	npm	json-parse-even-better-errors	2.3.1	1.043277943	Not Participating	Not Ranked
201.	npm	needle	2.2.4	1.043075249	Not Participating	Not Ranked
202.	npm	axios	1.4.0	1.026197927	Not Participating	Not Ranked
203.	npm	is-plain-object	2.0.4	1.025249673	Not Participating	143
204.	npm	comondir	1.0.1	1.025249673	Not Participating	425
205.	npm	eslint-plugin-import	2.27.5	1.019294448	Not Participating	Not Ranked
206.	npm	core-util-is	1.0.2	1.007221403	Not Participating	55
207.	npm	merge2	1.4.1	1.007221403	Not Participating	Not Ranked
208.	npm	run-parallel	1.2.0	1.007221403	Not Participating	Not Ranked
209.	npm	uuid	3.3.2	1.003750563	Not Participating	370
210.	npm	bluebird	3.7.2	1.000329318	Not Participating	72
211.	npm	body-parser	1.19.0	0.99520769	Not Participating	7
212.	npm	decamelize	1.2.0	0.989193133	Not Participating	139
213.	npm	onetime	5.1.2	0.989193133	Not Participating	Not Ranked
214.	npm	picomatch	2.3.1	0.989193133	Not Participating	Not Ranked
215.	npm	copy-webpack-plugin	11.0.0	0.989182436	Not Participating	Not Ranked
216.	npm	source-map	0.6.1	0.987538251	Not Participating	156
217.	npm	babel-loader	9.1.2	0.984384163	27	Not Ranked
218.	npm	chalk	2.4.2	0.977088182	Not Participating	84
219.	npm	date-fns	2.30.0	0.972617783	Not Participating	Not Ranked
220.	npm	swig	1.4.2	0.971700556	Not Participating	Not Ranked
221.	npm	express-session	1.15.6	0.959861965	Not Participating	Not Ranked
222.	npm	identity-obj-proxy	3.0.0	0.956409268	Not Participating	Not Ranked
223.	npm	queue-microtask	1.2.3	0.953136594	Not Participating	Not Ranked
224.	npm	import-fresh	3.3.0	0.953136594	Not Participating	Not Ranked
225.	npm	strip-bom	3.0.0	0.953136594	Not Participating	477
226.	npm	buffer-from	1.1.2	0.953136594	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
227.	npm	moment	2.29.1	0.941280248	Not Participating	12
228.	npm	sax	1.2.4	0.935108324	Not Participating	83
229.	npm	which-boxed-primitive	1.0.2	0.917080054	Not Participating	Not Ranked
230.	npm	moment-timezone	0.5.43	0.916979302	Not Participating	Not Ranked
231.	npm	react-router-dom	5.3.4	0.912329851	Not Participating	Not Ranked
232.	npm	sprintf-js	1.0.3	0.909443854	Not Participating	73
233.	npm	debug	2.6.9	0.908566105	Not Participating	30
234.	npm	moment	2.24.0	0.901297009	Not Participating	36
235.	npm	eslint-scope	5.1.1	0.899051785	Not Participating	Not Ranked
236.	npm	validate-npm-package-license	3.0.4	0.899051785	Not Participating	246
237.	npm	loose-envify	1.4.0	0.899051785	Not Participating	278
238.	npm	fast-json-stable-stringify	2.1.0	0.894890205	Not Participating	408
239.	npm	redux	4.2.1	0.894343971	Not Participating	Not Ranked
240.	npm	setprototypeof	1.2.0	0.881023515	Not Participating	Not Ranked
241.	npm	readable-stream	2.3.7	0.881023515	Not Participating	378
242.	npm	is-regex	1.1.4	0.881023515	Not Participating	Not Ranked
243.	npm	js-yaml	4.1.0	0.869574183	Not Participating	Not Ranked
244.	npm	strip-json-comments	3.1.1	0.862995245	Not Participating	Not Ranked
245.	npm	imurmurhash	0.1.4	0.862111393	Not Participating	229
246.	npm	@types/express	4.17.17	0.853001962	Not Participating	Not Ranked
247.	npm	toidentifier	1.0.1	0.844966975	Not Participating	Not Ranked
248.	npm	jsesc	0.5.0	0.844966975	Not Participating	401
249.	npm	tslib	1.14.1	0.835562398	Not Participating	Not Ranked
250.	npm	react-router-dom	5.2.0	0.83080259	Not Participating	32
251.	npm	@testing-library/user-event	14.4.3	0.827719182	Not Participating	Not Ranked
252.	npm	minimalistic-assert	1.0.1	0.826938706	Not Participating	411
253.	npm	on-headers	1.0.2	0.826938706	Not Participating	Not Ranked
254.	npm	web-vitals	2.1.4	0.819576695	Not Participating	Not Ranked
255.	npm	rxjs	6.6.7	0.809956702	Not Participating	333

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
256.	npm	dir-glob	3.0.1	0.808910436	Not Participating	Not Ranked
257.	npm	type-check	0.3.2	0.808910436	Not Participating	Not Ranked
258.	npm	normalize-path	3.0.0	0.799730538	Not Participating	292
259.	npm	clsx	1.2.1	0.795633051	Not Participating	Not Ranked
260.	npm	levn	0.3.0	0.790882166	Not Participating	329
261.	npm	dotenv	10.0.0	0.787232218	Not Participating	Not Ranked
262.	npm	strip-ansi	3.0.1	0.772853896	Not Participating	105
263.	npm	gensync	1.0.0-beta.2	0.772853896	Not Participating	Not Ranked
264.	npm	negotiator	0.6.3	0.772853896	Not Participating	Not Ranked
265.	npm	prelude-ls	1.1.2	0.772853896	Not Participating	Not Ranked
266.	npm	ieee754	1.2.1	0.772853896	Not Participating	Not Ranked
267.	npm	eslint-config-airbnb	19.0.4	0.762786704	Not Participating	Not Ranked
268.	npm	esprima	4.0.1	0.760027309	Not Participating	181
269.	npm	body-parser	1.20.0	0.753200897	Not Participating	Not Ranked
270.	npm	ansi-regex	2.1.1	0.736797357	Not Participating	40
271.	npm	fast-deep-equal	3.1.3	0.731153404	Not Participating	Not Ranked
272.	npm	body-parser	1.18.3	0.72450025	Not Participating	90
273.	npm	js-tokens	4.0.0	0.723505836	Not Participating	62
274.	npm	bytes	3.0.0	0.718769087	Not Participating	Not Ranked
275.	npm	is-buffer	1.1.6	0.718769087	Not Participating	272
276.	npm	os-tmpdir	1.0.2	0.718769087	Not Participating	59
277.	npm	boolbase	1.0.0	0.718769087	Not Participating	Not Ranked
278.	npm	@emotion/styled	11.11.0	0.712940547	Not Participating	Not Ranked
279.	npm	co	4.6.0	0.700740817	Not Participating	394
280.	npm	proxy-addr	2.0.7	0.700740817	Not Participating	Not Ranked
281.	npm	supports-color	8.1.1	0.700740817	Not Participating	Not Ranked
282.	npm	neo-async	2.6.2	0.700740817	Not Participating	Not Ranked
283.	npm	parse-json	5.2.0	0.700740817	Not Participating	Not Ranked
284.	npm	lru-cache	6.0.0	0.699353967	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSF BADGE TIERED PERCENTAGE	CENSUS II RANK
285.	npm	axios	0.19.2	0.697353838	Not Participating	44
286.	npm	graphql	16.6.0	0.6942679	Not Participating	Not Ranked
287.	npm	object-hash	3.0.0	0.692765017	Not Participating	Not Ranked
288.	npm	font-awesome	4.7.0	0.689865348	Not Participating	472
289.	npm	parseurl	1.3.3	0.688523664	Not Participating	304
290.	npm	agent-base	6.0.2	0.682712548	Not Participating	Not Ranked
291.	npm	readdirp	3.6.0	0.682712548	Not Participating	Not Ranked
292.	npm	array-union	2.1.0	0.682712548	Not Participating	Not Ranked
293.	npm	eslint-config-prettier	8.6.0	0.667913275	Not Participating	Not Ranked
294.	npm	lodash	4.17.15	0.66652004	Not Participating	34
295.	npm	react-redux	7.2.9	0.664713413	Not Participating	Not Ranked
296.	npm	resolve-from	5.0.0	0.664684278	Not Participating	Not Ranked
297.	npm	forwarded	0.2.0	0.664684278	Not Participating	Not Ranked
298.	npm	eslint	7.32.0	0.660576483	Not Participating	Not Ranked
299.	npm	object-assign	4.1.1	0.658948445	Not Participating	69
300.	npm	source-map-support	0.5.21	0.654461563	Not Participating	Not Ranked
301.	npm	path-parse	1.0.7	0.651927177	Not Participating	Not Ranked
302.	npm	lodash-es	4.17.21	0.651798205	Not Participating	Not Ranked
303.	npm	content-type	1.0.4	0.646656008	Not Participating	296
304.	npm	@babel/core	7.20.12	0.643607543	27	Not Ranked
305.	npm	commander	2.20.3	0.638570182	Not Participating	397
306.	npm	uuid	3.4.0	0.636293272	Not Participating	78
307.	npm	react-helmet	6.1.0	0.631941042	Not Participating	Not Ranked
308.	npm	dependable	1.1.0	0.628896143	Not Participating	Not Ranked
309.	npm	is-symbol	1.0.4	0.628627738	Not Participating	Not Ranked
310.	npm	big.js	5.2.2	0.628627738	Not Participating	Not Ranked
311.	npm	file-loader	6.2.0	0.624936551	Not Participating	Not Ranked
312.	npm	crypto-js	4.1.1	0.622350141	Not Participating	Not Ranked
313.	npm	axios	0.21.1	0.620492273	Not Participating	4

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
314.	npm	winston	3.8.2	0.617079791	Not Participating	Not Ranked
315.	npm	react-router-dom	4.3.1	0.616992877	Not Participating	303
316.	npm	eslint-plugin-prettier	4.2.1	0.614591122	Not Participating	Not Ranked
317.	npm	optionator	0.8.3	0.610599469	Not Participating	Not Ranked
318.	npm	depd	2.0.0	0.610599469	Not Participating	Not Ranked
319.	npm	strip-ansi	6.0.1	0.608544166	Not Participating	Not Ranked
320.	npm	redux-thunk	2.3.0	0.608357603	Not Participating	89
321.	npm	etag	1.8.1	0.604902455	Not Participating	242
322.	npm	redux-thunk	2.4.2	0.60361414	Not Participating	Not Ranked
323.	npm	postmonger	0.0.16	0.601787486	Not Participating	Not Ranked
324.	npm	caseless	0.12.0	0.592571199	Not Participating	234
325.	npm	is-string	1.0.7	0.592571199	Not Participating	Not Ranked
326.	npm	indent-string	4.0.0	0.592571199	Not Participating	Not Ranked
327.	npm	setprototypeof	1.1.0	0.592571199	Not Participating	Not Ranked
328.	npm	@testing-library/user-event	13.5.0	0.590711508	Not Participating	Not Ranked
329.	npm	@material-ui/core	4.12.4	0.590659395	133	Not Ranked
330.	npm	react-dom	16.13.1	0.587584367	81	28
331.	npm	classnames	2.3.1	0.585833283	Not Participating	137
332.	npm	@babel/preset-env	7.20.2	0.582872927	27	Not Ranked
333.	npm	semver	5.6.0	0.577767156	Not Participating	Not Ranked
334.	npm	glob-parent	5.1.2	0.575391418	Not Participating	Not Ranked
335.	npm	y18n	5.0.8	0.574542929	Not Participating	Not Ranked
336.	npm	@babel/plugin-syntax-class-properties	7.12.13	0.574542929	27	Not Ranked
337.	npm	content-disposition	0.5.4	0.574542929	Not Participating	Not Ranked
338.	npm	isstream	0.1.2	0.574542929	Not Participating	247
339.	npm	@emotion/react	11.11.1	0.572560982	Not Participating	Not Ranked
340.	npm	buffer	6.0.3	0.572466772	Not Participating	Not Ranked
341.	npm	debug	3.2.7	0.57128475	Not Participating	Not Ranked
342.	npm	rxjs	7.8.1	0.570472467	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSF BADGE TIERED PERCENTAGE	CENSUS II RANK
343.	npm	semver	5.7.1	0.569777443	Not Participating	93
344.	npm	is-glob	4.0.3	0.569104008	Not Participating	Not Ranked
345.	npm	methods	1.1.2	0.565136071	Not Participating	268
346.	npm	eslint-plugin-react	7.32.2	0.564724563	Not Participating	Not Ranked
347.	npm	webpack-cli	5.1.4	0.563492938	87	Not Ranked
348.	npm	@types/uuid	8.3.4	0.561700075	Not Participating	Not Ranked
349.	npm	doctrine	3.0.0	0.556514659	Not Participating	Not Ranked
350.	npm	body-parser	1.20.1	0.552477082	Not Participating	Not Ranked
351.	npm	zone.js	0.11.8	0.552191933	88	Not Ranked
352.	npm	sha1	1.1.1	0.548256466	Not Participating	Not Ranked
353.	npm	@babel/preset-react	7.18.6	0.546985457	27	Not Ranked
354.	npm	netrc-parser	3.1.6	0.546712302	Not Participating	Not Ranked
355.	npm	debug	4.3.4	0.54634655	Not Participating	Not Ranked
356.	npm	process	0.11.10	0.545759253	Not Participating	493
357.	npm	redux-logger	3.0.6	0.544599012	Not Participating	407
358.	npm	ajv-keywords	3.5.2	0.538486389	Not Participating	Not Ranked
359.	npm	normalize-package-data	2.5.0	0.538486389	Not Participating	325
360.	npm	has-property-descriptors	1.0.0	0.538486389	Not Participating	Not Ranked
361.	npm	universalify	0.1.2	0.538486389	Not Participating	406
362.	npm	cssesc	3.0.0	0.538486389	Not Participating	Not Ranked
363.	npm	@heroku-cli/color	1.1.14	0.536932597	Not Participating	Not Ranked
364.	npm	http-call	5.3.0	0.536932597	Not Participating	Not Ranked
365.	npm	node-sass	4.14.1	0.53641541	Not Participating	125
366.	npm	express-session	1.17.3	0.531918716	Not Participating	Not Ranked
367.	npm	ansi-regex	5.0.1	0.531440896	Not Participating	Not Ranked
368.	npm	lodash	4.17.20	0.527692819	Not Participating	13
369.	npm	zxcvbn	4.4.2	0.525884409	Not Participating	Not Ranked
370.	npm	styled-components	4.4.1	0.521854138	Not Participating	133
371.	npm	cross-spawn	7.0.3	0.521190765	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSF BADGE TIERED PERCENTAGE	CENSUS II RANK
372.	npm	accepts	1.3.8	0.52045812	Not Participating	Not Ranked
373.	npm	strip-final-newline	2.0.0	0.52045812	Not Participating	Not Ranked
374.	npm	assert-plus	1.0.0	0.52045812	Not Participating	169
375.	npm	eslint-plugin-node	11.1.0	0.514997294	Not Participating	Not Ranked
376.	npm	prettier	2.8.4	0.514931111	Not Participating	Not Ranked
377.	npm	npm-run-path	4.0.1	0.50242985	Not Participating	Not Ranked
378.	npm	yocto-queue	0.1.0	0.50242985	Not Participating	Not Ranked
379.	npm	emojis-list	3.0.0	0.50242985	Not Participating	Not Ranked
380.	npm	is-date-object	1.0.5	0.50242985	Not Participating	Not Ranked
381.	npm	escape-string-regexp	4.0.0	0.50242985	Not Participating	Not Ranked
382.	npm	path	0.12.7	0.498646831	164	144
383.	npm	semver	7.3.5	0.497297252	Not Participating	Not Ranked
384.	npm	node-fetch	2.6.7	0.495331022	Not Participating	Not Ranked
385.	npm	@types/react-router-dom	5.3.3	0.493241565	Not Participating	Not Ranked
386.	npm	history	4.10.1	0.491029417	Not Participating	475
387.	npm	dashdash	1.14.1	0.48440158	Not Participating	214
388.	npm	yallist	3.1.1	0.48440158	Not Participating	Not Ranked
389.	npm	is-bigint	1.0.4	0.48440158	Not Participating	Not Ranked
390.	npm	@xtuc/ieee754	1.2.0	0.48440158	Not Participating	Not Ranked
391.	npm	is-boolean-object	1.1.2	0.48440158	Not Participating	Not Ranked
392.	npm	performance-now	2.1.0	0.481401517	Not Participating	145
393.	npm	react-router-dom	6.3.0	0.480250504	Not Participating	Not Ranked
394.	npm	tslib	2.5.0	0.480222269	Not Participating	Not Ranked
395.	npm	fs-extra-promise	0.3.1	0.476195478	Not Participating	Not Ranked
396.	npm	@emotion/react	11.10.5	0.47577352	Not Participating	Not Ranked
397.	npm	doctrine	2.1.0	0.46637331	Not Participating	Not Ranked
398.	npm	tweetnacl	0.14.5	0.46637331	Not Participating	107
399.	npm	forever-agent	0.6.1	0.46637331	Not Participating	225
400.	npm	getpass	0.1.7	0.46637331	Not Participating	265

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSF BADGE TIERED PERCENTAGE	CENSUS II RANK
401.	npm	deep-is	0.1.4	0.46637331	Not Participating	Not Ranked
402.	npm	form-data	4.0.0	0.459077904	Not Participating	Not Ranked
403.	npm	jquery	3.4.1	0.45602756	Not Participating	Not Ranked
404.	npm	dayjs	1.11.7	0.452985463	Not Participating	Not Ranked
405.	npm	redux	4.0.5	0.450896408	Not Participating	110
406.	npm	ms	2.1.3	0.44923655	Not Participating	Not Ranked
407.	npm	get-symbol-description	1.0.0	0.448345041	Not Participating	Not Ranked
408.	npm	extsprintf	1.3.0	0.448345041	Not Participating	82
409.	npm	@xtuc/long	4.2.2	0.448345041	Not Participating	Not Ranked
410.	npm	graphql-tag	2.12.6	0.448321186	Not Participating	Not Ranked
411.	npm	eslint-plugin-jsx-a11y	6.7.1	0.446315478	Not Participating	Not Ranked
412.	npm	history	5.3.0	0.443105198	Not Participating	Not Ranked
413.	npm	yargs	16.2.0	0.442972388	Not Participating	Not Ranked
414.	npm	fuse.js	6.6.2	0.437288416	Not Participating	Not Ranked
415.	npm	react-scripts	4.0.3	0.433729278	Not Participating	443
416.	npm	md5	2.3.0	0.433609673	Not Participating	Not Ranked
417.	npm	formik	2.2.9	0.430480627	Not Participating	Not Ranked
418.	npm	is-stream	2.0.1	0.430316771	Not Participating	Not Ranked
419.	npm	jsbn	0.1.1	0.430316771	Not Participating	77
420.	npm	spdx-exceptions	2.3.0	0.430316771	Not Participating	Not Ranked
421.	npm	verror	1.10.0	0.430316771	Not Participating	337
422.	npm	camelcase	5.3.1	0.429409757	Not Participating	Not Ranked
423.	npm	@testing-library/user-event	7.2.1	0.427205872	Not Participating	491
424.	npm	ajv	6.12.6	0.426603872	99	445
425.	npm	mime-types	2.1.35	0.425523242	Not Participating	Not Ranked
426.	npm	node-cache	5.1.2	0.419609575	Not Participating	Not Ranked
427.	npm	lodash.debounce	4.0.8	0.419181902	Not Participating	Not Ranked
428.	npm	date-fns	2.28.0	0.419005623	Not Participating	Not Ranked
429.	npm	dotenv	8.6.0	0.418577915	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSF BADGE TIERED PERCENTAGE	CENSUS II RANK
430.	npm	escape-html	1.0.3	0.416993801	Not Participating	175
431.	npm	@testing-library/jest-dom	4.2.4	0.414724782	Not Participating	487
432.	npm	serve-favicon	2.5.0	0.414072345	Not Participating	339
433.	npm	ms	2.1.2	0.412288501	Not Participating	102
434.	npm	typedarray	0.0.6	0.412288501	Not Participating	80
435.	npm	ansi-escapes	4.3.2	0.412288501	Not Participating	Not Ranked
436.	npm	type-fest	0.21.3	0.412288501	Not Participating	Not Ranked
437.	npm	is-wsl	2.2.0	0.412288501	Not Participating	Not Ranked
438.	npm	component-emitter	1.3.0	0.412288501	Not Participating	357
439.	npm	expressify	2.0.0	0.410654294	Not Participating	Not Ranked
440.	npm	kind-of	6.0.3	0.410443338	Not Participating	Not Ranked
441.	npm	config	3.3.7	0.409926522	Not Participating	Not Ranked
442.	npm	dotenv	8.2.0	0.408958794	Not Participating	8
443.	npm	eslint-config-prettier	8.8.0	0.404343501	Not Participating	Not Ranked
444.	npm	bootstrap	4.3.1	0.402986356	78	466
445.	npm	request	2.88.0	0.401542987	Not Participating	295
446.	npm	merge-descriptors	1.0.1	0.394260231	Not Participating	131
447.	npm	bcrypt-pbkdf	1.0.2	0.394260231	Not Participating	97
448.	npm	json-schema-traverse	1.0.0	0.394260231	Not Participating	Not Ranked
449.	npm	isarray	0.0.1	0.394260231	113	Not Ranked
450.	npm	compressible	2.0.18	0.394260231	Not Participating	Not Ranked
451.	npm	chai	4.3.4	0.387834981	Not Participating	Not Ranked
452.	npm	memoizee	0.4.15	0.387148686	Not Participating	Not Ranked
453.	npm	consolidate	0.14.5	0.386977025	Not Participating	Not Ranked
454.	npm	url-loader	1.1.2	0.381820415	Not Participating	Not Ranked
455.	npm	ioredis	4.28.5	0.379326531	Not Participating	Not Ranked
456.	npm	@cloudnative/health-connect	2.1.0	0.376511112	Not Participating	Not Ranked
457.	npm	kind-of	3.2.2	0.376231962	Not Participating	243
458.	npm	ecc-jsbn	0.1.2	0.376231962	Not Participating	113

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSF BADGE TIERED PERCENTAGE	CENSUS II RANK
459.	npm	cliui	7.0.4	0.376231962	Not Participating	Not Ranked
460.	npm	@oclif/plugin-commands	1.3.0	0.376167964	Not Participating	Not Ranked
461.	npm	eslint-plugin-import	2.26.0	0.374810852	Not Participating	Not Ranked
462.	npm	react	16.13.1	0.369827436	81	21
463.	npm	@types/lodash	4.14.191	0.368211454	Not Participating	Not Ranked
464.	npm	merge-stream	2.0.0	0.365298212	Not Participating	Not Ranked
465.	npm	is-weakref	1.0.2	0.358203692	Not Participating	Not Ranked
466.	npm	select-hose	2.0.0	0.358203692	Not Participating	Not Ranked
467.	npm	is-negative-zero	2.0.2	0.358203692	Not Participating	Not Ranked
468.	npm	obuf	1.1.2	0.358203692	Not Participating	Not Ranked
469.	npm	d3-scale	4.0.2	0.356505391	Not Participating	Not Ranked
470.	npm	react	16.8.6	0.354182788	81	65
471.	npm	rimraf	2.6.3	0.35146134	Not Participating	Not Ranked
472.	npm	superagent	7.1.1	0.350775045	Not Participating	Not Ranked
473.	npm	js-yaml	3.14.1	0.347387088	Not Participating	384
474.	npm	glob	7.2.3	0.346628385	Not Participating	Not Ranked
475.	npm	react-dom	16.8.6	0.340843829	81	68
476.	npm	ini	1.3.8	0.340175422	Not Participating	Not Ranked
477.	npm	hpack.js	2.1.6	0.340175422	Not Participating	Not Ranked
478.	npm	wbuf	1.7.3	0.340175422	Not Participating	Not Ranked
479.	npm	is-extendable	0.1.1	0.340175422	Not Participating	134
480.	npm	http-deceiver	1.2.7	0.340175422	Not Participating	Not Ranked
481.	npm	is-windows	1.0.2	0.340175422	Not Participating	322
482.	npm	find-up	3.0.0	0.340175422	Not Participating	235
483.	npm	http-status-codes	2.2.0	0.339700076	Not Participating	Not Ranked
484.	npm	node-fetch	2.6.1	0.335677878	Not Participating	211
485.	npm	tslib	2.4.0	0.331010998	Not Participating	Not Ranked
486.	npm	classnames	2.2.6	0.324364327	Not Participating	22
487.	npm	execa	5.1.1	0.32344711	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
488.	npm	styled-components	5.3.3	0.323388699	Not Participating	Not Ranked
489.	npm	type-fest	0.20.2	0.322147152	Not Participating	Not Ranked
490.	npm	p-locate	3.0.0	0.322147152	Not Participating	239
491.	npm	locate-path	3.0.0	0.322147152	Not Participating	238
492.	npm	repeat-string	1.6.1	0.322147152	Not Participating	306
493.	npm	mockdate	3.0.5	0.312659108	Not Participating	Not Ranked
494.	npm	axios	0.18.1	0.307595425	Not Participating	136
495.	npm	micromatch	4.0.5	0.306793985	Not Participating	Not Ranked
496.	npm	html-escaper	2.0.2	0.304118883	Not Participating	Not Ranked
497.	npm	spdx-expression-parse	3.0.1	0.304118883	Not Participating	Not Ranked
498.	npm	exit	0.1.2	0.304118883	Not Participating	Not Ranked
499.	npm	send	0.18.0	0.304118883	Not Participating	Not Ranked
500.	npm	@jridgewell/set-array	1.1.2	0.304118883	Not Participating	Not Ranked

Appendix F: Top 500 Non-npm, Direct, Versioned Packages

Our dependency analysis identified the following 500 packages as the most used FOSS packages among those reported in the private usage data contributed by SCA partners hosted on package managers other than npm. These packages were directly observed in use and account for the package version. For further information on how this list was compiled, refer to the Methods section.

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
1.	pypi	six	1.16.0	7.100352776	Not Participating	Not Ranked
2.	maven	org.apache.struts:struts2-core	2.5.10	6.877991892	113	Not Ranked
3.	maven	org.apache.commons:commons-lang3	3.12.0	6.556274342	Not Participating	Not Ranked
4.	go	gopkg.in/yaml.v3	v3.0.1	6.478095917	Not Participating	Not Ranked
5.	go	github.com/cespare/xxhash	v1.1.0	6.259289481	Not Participating	Not Ranked
6.	go	github.com/davecgh/go-spew	v1.1.1	6.046748946	Not Participating	9
7.	pypi	python-dateutil	2.8.2	5.886835342	Not Participating	Not Ranked
8.	go	gopkg.in/yaml.v2	v2.4.0	5.591985745	Not Participating	Not Ranked
9.	go	github.com/pmezard/go-difflib	v1.0.0	5.535269046	Not Participating	338
10.	go	github.com/spf13/pflag	v1.0.5	5.206323958	Not Participating	21
11.	maven	com.fasterxml.jackson.core:jackson-databind	2.10.4	4.944727689	Not Participating	Not Ranked
12.	pypi	appdirs	1.4.3	4.816074338	Not Participating	206
13.	maven	com.itextpdf:itextpdf	5.5.6	4.313097915	Not Participating	Not Ranked
14.	maven	org.springframework.boot:spring-boot-gradle-plugin	2.2.4.RELEASE	4.256054175	Not Participating	Not Ranked
15.	go	github.com/gogo/protobuf	v1.3.2	4.233962042	Not Participating	Not Ranked
16.	go	github.com/beorn7/perks	v1.0.1	4.233403112	Not Participating	84
17.	alpine	zlib	1.2.8	4.203886191	18	Not Ranked
18.	alpine	zlib	1.2.11	4.127362672	18	Not Ranked
19.	pypi	requests	2.31.0	4.065056094	Not Participating	Not Ranked
20.	go	github.com/pkg/errors	v0.9.1	3.949523566	Not Participating	1

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSF BADGE TIERED PERCENTAGE	CENSUS II RANK
21.	maven	commons-lang:commons-lang	2.6	3.940262373	Not Participating	20
22.	pypi	more-itertools	8.8.0	3.821268599	Not Participating	Not Ranked
23.	go	github.com/modern-go/concurrent	v1.0.3	3.789230166	Not Participating	Not Ranked
24.	go	github.com/json-iterator/go	v1.1.12	3.745133521	Not Participating	Not Ranked
25.	go	github.com/golang/appengine	v1.6.7	3.675620264	Not Participating	Not Ranked
26.	go	github.com/golang/protobuf	v1.5.3	3.64640881	Not Participating	Not Ranked
27.	maven	org.apache.httpcomponents:httpClient	4.5.13	3.604673229	Not Participating	14
28.	maven	org.apache.struts:struts2-convention-plugin	2.5.10	3.601606905	113	Not Ranked
29.	maven	org.apache.struts:struts2-config-browser-plugin	2.5.10	3.601606905	113	Not Ranked
30.	maven	org.apache.struts:struts2-rest-plugin	2.5.10	3.601606905	113	Not Ranked
31.	maven	org.apache.logging.log4j:log4j-core	2.7	3.544563165	96	Not Ranked
32.	maven	org.apache.logging.log4j:log4j-api	2.7	3.537303053	96	Not Ranked
33.	go	github.com/golang/groupcache	v0.0.0-20210331224755-41bb18bfe9da	3.532034056	Not Participating	Not Ranked
34.	go	github.com/matttproud/golang_protobuf_extensions	v1.0.2	3.493791468	Not Participating	Not Ranked
35.	maven	org.apache.logging.log4j:log4j-core	2.17.1	3.3764596	96	Not Ranked
36.	pypi	backports.ssl_match_hostname	3.5.0.1	3.362127489	3	Not Ranked
37.	maven	commons-logging:commons-logging	1.2	3.244670417	Not Participating	19
38.	pypi	six	1.10.0	3.209080452	Not Participating	126
39.	pypi	idna	3.4	3.141710155	Not Participating	Not Ranked
40.	maven	commons-collections:commons-collections	3.2.2	3.086276376	Not Participating	29
41.	pypi	pyyaml	6	3.056033415	Not Participating	Not Ranked
42.	maven	commons-io:commons-io	2.7	2.99985216	Not Participating	412
43.	go	github.com/mitchellh/mapstructure	v1.5.0	2.971780148	Not Participating	Not Ranked
44.	pypi	jinjja2	3.1.2	2.962302965	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
45.	maven	javax.inject:javax.inject	1	2.938688638	Not Participating	18
46.	go	github.com/josharian/intern	v1.0.0	2.887234612	Not Participating	Not Ranked
47.	go	github.com/pelletier/go-toml	v1.9.5	2.873790872	Not Participating	Not Ranked
48.	pypi	packaging	21.3	2.855266176	Not Participating	Not Ranked
49.	maven	com.google.code.findbugs:jsr305	3.0.2	2.823776354	Not Participating	22
50.	maven	org.apache.commons:commons-collections4	4.4	2.808366634	Not Participating	369
51.	nuget	newtonsoft.json	13.0.1	2.721810099	Not Participating	Not Ranked
52.	pypi	pyyaml	6	2.716036957	Not Participating	Not Ranked
53.	maven	org.apache.logging.log4j:log4j-api	2.17.1	2.674060058	96	Not Ranked
54.	maven	javax.validation:validation-api	2.0.1.Final	2.600495259	Not Participating	48
55.	maven	commons-beanutils:commons-beanutils	1.9.4	2.557972906	Not Participating	52
56.	go	github.com/google/uuid	v1.3.0	2.520947569	Not Participating	Not Ranked
57.	maven	commons-io:commons-io	2.11.0	2.505852862	Not Participating	Not Ranked
58.	maven	javax.xml.bind:jaxb-api	2.3.1	2.489715932	Not Participating	58
59.	maven	org.apache.commons:commons-text	1.10.0	2.458277764	Not Participating	Not Ranked
60.	go	github.com/golang/protobuf	v1.5.2	2.44973941	Not Participating	Not Ranked
61.	pypi	pandas	1.3.5	2.440572903	Not Participating	Not Ranked
62.	go	github.com/jmespath/go-jmespath	v0.4.0	2.410143623	Not Participating	Not Ranked
63.	maven	com.h2database:h2	2.1.214	2.341635291	Not Participating	Not Ranked
64.	maven	com.google.code.gson:gson	2.8.9	2.326175073	Not Participating	Not Ranked
65.	go	github.com/fsnotify/fsnotify	v1.6.0	2.312242599	Not Participating	Not Ranked
66.	go	github.com/kubernetes-sigs/yaml	v1.3.0	2.308094749	Not Participating	Not Ranked
67.	maven	commons-codec:commons-codec	1.15	2.290890602	Not Participating	Not Ranked
68.	pypi	pyarsing	2.2.1	2.290798231	Not Participating	Not Ranked
69.	maven	org.slf4j:slf4j-api	1.7.36	2.25989311	Not Participating	Not Ranked
70.	pypi	numpy	1.21.3	2.235623267	Not Participating	Not Ranked
71.	nuget	newtonsoft.json	12.0.3	2.214274713	Not Participating	147
72.	maven	ch.qos.logback:logback-core	1.2.10	2.206628175	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
73.	go	github.com/golang/mock	v1.6.0	2.197308915	Not Participating	Not Ranked
74.	pypi	pycparser	2.21	2.196525796	Not Participating	Not Ranked
75.	maven	org.projectlombok:lombok	1.18.22	2.168831765	Not Participating	Not Ranked
76.	pypi	webencodings	0.5.1	2.108934846	Not Participating	133
77.	maven	org.projectlombok:lombok	1.18.24	2.070406175	Not Participating	Not Ranked
78.	maven	junit:junit	4.12	2.069126246	Not Participating	5
79.	conda	distro	1.8.0	2.061227676	Not Participating	Not Ranked
80.	go	golang.org/x/time	v0.3.0	2.05884133	Not Participating	Not Ranked
81.	maven	org.apache.httpcomponents:httpcore	4.4.3	2.05001718	Not Participating	Not Ranked
82.	pypi	pyasn1	0.4.8	2.047060835	Not Participating	Not Ranked
83.	pypi	cff	1.15.1	2.040588839	Not Participating	Not Ranked
84.	maven	org.apache.commons:commons-lang3	3.7	2.025213466	Not Participating	Not Ranked
85.	pypi	pparsing	3.0.9	2.010908711	Not Participating	Not Ranked
86.	go	github.com/hashicorp/go-multierror	v1.1.1	1.987415943	Not Participating	Not Ranked
87.	pypi	chardet	5.1.0	1.984704158	Not Participating	Not Ranked
88.	maven	org.projectlombok:lombok	1.18.26	1.963787591	Not Participating	Not Ranked
89.	go	github.com/go-openapi/swag	v0.21.1	1.922050536	Not Participating	Not Ranked
90.	maven	org.slf4j:slf4j-api	1.7.30	1.911515813	Not Participating	2
91.	pypi	resolvelib	0.8.1	1.90818064	Not Participating	Not Ranked
92.	nuget	system.numerics.vectors	4.4.0	1.90818064	Not Participating	Not Ranked
93.	go	github.com/census-instrumentation/opencensus-go	v0.24.0	1.878601073	Not Participating	Not Ranked
94.	maven	ch.qos.logback:logback-classic	1.2.3	1.8129896	Not Participating	4
95.	pypi	pytest	7.4.2	1.810059054	Not Participating	Not Ranked
96.	nuget	system.net.http	4.3.4	1.793967285	Not Participating	192
97.	maven	org.yaml:snakeyaml	2	1.784134499	3	Not Ranked
98.	maven	org.springframework.boot:spring-boot-starter-web	3.1.0	1.780355865	Not Participating	Not Ranked
99.	maven	log4j:log4j	1.2.17	1.774061351	Not Participating	24

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSF BADGE TIERED PERCENTAGE	CENSUS II RANK
100.	maven	org.apache.logging.log4j:log4j-slf4j-impl	2.17.1	1.769419675	96	Not Ranked
101.	nuget	system.memory	4.5.4	1.755133603	Not Participating	Not Ranked
102.	go	github.com/mitchellh/go-homedir	v1.1.0	1.738956794	Not Participating	96
103.	maven	commons-io:commons-io	2.6	1.721659152	Not Participating	43
104.	go	github.com/stretchr/testify	v1.8.4	1.691506568	Not Participating	Not Ranked
105.	pypi	certifi	2022.12.7	1.690771374	Not Participating	Not Ranked
106.	go	github.com/matttn/go-colorable	v0.1.13	1.689594438	Not Participating	Not Ranked
107.	pypi	pygments	2.13.0	1.678610084	Not Participating	Not Ranked
108.	go	github.com/google/go-cmp	v0.5.9	1.673264912	Not Participating	Not Ranked
109.	go	github.com/googleapis/go-genproto	v0.0.0-20181107211654-5fc9ac540362	1.661177254	Not Participating	Not Ranked
110.	pypi	click	8.1.3	1.654963759	Not Participating	Not Ranked
111.	go	github.com/go-logr/stdr	v1.2.2	1.647351088	Not Participating	Not Ranked
112.	maven	org.springframework.boot:spring-boot-starter-actuator	3.1.0	1.634116459	Not Participating	Not Ranked
113.	go	github.com/modern-go/reflect2	v1.0.2	1.608051055	Not Participating	Not Ranked
114.	go	github.com/kubernetes/utils	v0.0.0-20201103153147-b9da82cf6d08	1.607843553	Not Participating	Not Ranked
115.	go	gopkg.in/ini.v1	v1.67.0	1.594340978	Not Participating	Not Ranked
116.	go	github.com/go-logr/logr	v1.2.3	1.588545755	Not Participating	Not Ranked
117.	pypi	boto3	1.28.52	1.576390361	Not Participating	Not Ranked
118.	go	golang.org/x/sync	v0.1.0	1.575866866	Not Participating	Not Ranked
119.	maven	org.projectlombok:lombok	1.18.28	1.572849543	Not Participating	Not Ranked
120.	go	gopkg.in/inf.v0	v0.9.1	1.556451399	Not Participating	25
121.	maven	javax.annotation:javax.annotation-api	1.3.2	1.54669518	Not Participating	56
122.	maven	org.slf4j:slf4j-api	1.7.32	1.536129194	Not Participating	Not Ranked
123.	maven	org.slf4j:slf4j-api	1.7.25	1.535840158	Not Participating	13
124.	pypi	pyyaml	5.4.1	1.529581812	Not Participating	162

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
125.	pypi	colorama	0.4.6	1.520382227	Not Participating	Not Ranked
126.	go	github.com/prometheus/ client_model	v0.3.0	1.516532021	Not Participating	Not Ranked
127.	pypi	boto3	1.28.53	1.509814364	Not Participating	Not Ranked
128.	nuget	system.valuetuple	4.5.0	1.495154964	Not Participating	Not Ranked
129.	pypi	boto3	1.28.49	1.490233189	Not Participating	Not Ranked
130.	go	github.com/kubernetes-sigs/ structured-merge-diff	v1.0.2	1.47664206	Not Participating	Not Ranked
131.	go	github.com/ghodss/yaml	v1.0.0	1.463110068	Not Participating	44
132.	pypi	jsonschema	3.2.0	1.451263203	Not Participating	118
133.	go	google.golang.org/protobuf	v1.28.1	1.443547513	Not Participating	Not Ranked
134.	go	github.com/sirupsen/logrus	v1.9.0	1.433928032	Not Participating	Not Ranked
135.	go	github.com/google/gofuzz	v1.2.0	1.41904284	Not Participating	Not Ranked
136.	pypi	toml	0.10.2	1.410912835	Not Participating	Not Ranked
137.	maven	com.google.code.gson:gson	2.8.6	1.403781426	Not Participating	47
138.	maven	commons-io:commons-io	2.4	1.395619728	Not Participating	41
139.	maven	io.springfox:springfox-swagger2	2.9.2	1.39178658	Not Participating	115
140.	pypi	async-timeout	4.0.2	1.379514281	Not Participating	Not Ranked
141.	alpine	zlib	1.2.13	1.372516011	18	Not Ranked
142.	pypi	packaging	23	1.372516011	Not Participating	Not Ranked
143.	maven	org.codehaus.plexus:plexus-utils	1.5.5	1.372516011	Not Participating	Not Ranked
144.	maven	org.apache. commons:commons-compress	1.21	1.367725613	Not Participating	Not Ranked
145.	maven	com.google.guava:guava	31.1-jre	1.358920022	99	Not Ranked
146.	go	github.com/hashicorp/go-cleanhttp	v0.5.2	1.358737221	Not Participating	Not Ranked
147.	pypi	pathspec	0.9.0	1.344587464	Not Participating	Not Ranked
148.	maven	javax.servlet:javax.servlet-api	3.1.0	1.33688422	Not Participating	33
149.	maven	junit:junit	3.8.1	1.327117422	Not Participating	Not Ranked
150.	maven	ch.qos.logback:logback-classic	1.2.11	1.317776961	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSF BADGE TIERED PERCENTAGE	CENSUS II RANK
151.	nuget	newtonsoft.json	9.0.1	1.295992493	Not Participating	Not Ranked
152.	pypi	boto3	1.28.54	1.291810611	Not Participating	Not Ranked
153.	maven	log4j:apache-log4j-extras	1.2.17	1.290816861	Not Participating	Not Ranked
154.	maven	org.apache.commons:commons-lang3	3.9	1.288307113	Not Participating	97
155.	go	github.com/prometheus/client_golang	v1.14.0	1.285870383	Not Participating	Not Ranked
156.	go	google.golang.org/protobuf	v1.31.0	1.282810976	Not Participating	Not Ranked
157.	maven	commons-collections:commons-collections	3.2.1	1.279244222	Not Participating	125
158.	maven	com.fasterxml.jackson.core:jackson-databind	2.9.9.3	1.266962206	Not Participating	Not Ranked
159.	maven	io.micrometer:micrometer-registry-prometheus	1.11.0	1.227550167	Not Participating	Not Ranked
160.	nuget	system.memory	4.5.3	1.219468974	Not Participating	Not Ranked
161.	rubygems	notifu	1.7.0	1.219468974	Not Participating	Not Ranked
162.	nuget	codeproject	1	1.219468974	Not Participating	Not Ranked
163.	maven	ch.qos.logback:logback-classic	1.2.10	1.21709768	Not Participating	Not Ranked
164.	pypi	requests	2.28.1	1.215653886	Not Participating	Not Ranked
165.	maven	org.json:json	20230227	1.211763635	Not Participating	Not Ranked
166.	pypi	boto3	1.28.51	1.200431792	Not Participating	Not Ranked
167.	go	github.com/go-logr/logr	v1.2.4	1.191675948	Not Participating	Not Ranked
168.	pypi	boto3	1.28.47	1.189988499	Not Participating	Not Ranked
169.	maven	commons-io:commons-io	2.5	1.18679552	Not Participating	150
170.	pypi	boto3	1.28.50	1.182156029	Not Participating	Not Ranked
171.	pypi	pyjwt	2.4.0	1.180753435	Not Participating	Not Ranked
172.	pypi	msgpack	1.0.4	1.172096494	Not Participating	Not Ranked
173.	maven	junit:junit	4.13.2	1.171568321	Not Participating	390
174.	maven	com.google.guava:failureaccess	1.0.1	1.170967682	99	39
175.	pypi	jmespath	0.10.0	1.167379541	Not Participating	442
176.	nuget	system.numerics.vectors	4.5.0	1.16299892	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSF BADGE TIERED PERCENTAGE	CENSUS II RANK
177.	maven	org.springframework.boot:spring-boot-starter-web	3.0.1	1.160134838	Not Participating	Not Ranked
178.	pypi	boto3	1.28.46	1.153436971	Not Participating	Not Ranked
179.	go	github.com/opentracing/opentracing-go	v1.2.0	1.153345108	Not Participating	Not Ranked
180.	pypi	boto3	1.28.56	1.144299089	Not Participating	Not Ranked
181.	nuget	system.security.cryptography.protecteddata	4.7.0	1.142945456	Not Participating	Not Ranked
182.	pypi	requests	2.27.1	1.142718171	Not Participating	Not Ranked
183.	maven	com.fasterxml.jackson.core:jackson-databind	2.7.5	1.136280184	Not Participating	Not Ranked
184.	go	github.com/hashicorp/errwrap	v1.1.0	1.134694492	Not Participating	Not Ranked
185.	maven	org.springframework.boot:spring-boot-devtools	3.1.0	1.134205866	Not Participating	Not Ranked
186.	pypi	boto3	1.28.55	1.119496267	Not Participating	Not Ranked
187.	go	github.com/opencontainers/go-digest	v1.0.0	1.115955625	Not Participating	Not Ranked
188.	maven	org.apache.logging.log4j:log4j-core	2.10.0	1.113462688	96	Not Ranked
189.	pypi	pyparsing	2.4.7	1.10898478	Not Participating	Not Ranked
190.	pypi	boto3	1.28.48	1.103831327	Not Participating	Not Ranked
191.	go	github.com/kubernetes/klog	v1.0.0	1.099011217	Not Participating	42
192.	maven	org.yaml:snakeyaml	1.33	1.092127365	3	Not Ranked
193.	pypi	boto3	1.28.57	1.09077721	Not Participating	Not Ranked
194.	maven	com.google.guava:listenablefuture	9999.0-empty-to-avoid-conflict-with-guava	1.074890913	99	40
195.	pypi	chardet	3.0.4	1.072551702	Not Participating	36
196.	vcpkg	libdivide	3	1.066421937	Not Participating	Not Ranked
197.	nuget	system.drawing.common	4.7.0	1.066421937	Not Participating	Not Ranked
198.	nuget	system.collections.immutable	1.5.0	1.066421937	Not Participating	Not Ranked
199.	pypi	idna	2.1	1.066421937	Not Participating	379

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSF BADGE TIERED PERCENTAGE	CENSUS II RANK
200.	pypi	tomli	2.0.1	1.064062465	Not Participating	Not Ranked
201.	go	github.com/gorilla/mux	v1.8.0	1.060232274	85	489
202.	maven	org.projectlombok:lombok	1.18.20	1.043508935	Not Participating	Not Ranked
203.	pypi	gunicorn	20.1.0	1.038874573	Not Participating	Not Ranked
204.	maven	com.fasterxml:classmate	1.5.1	1.035949919	Not Participating	377
205.	nuget	system.buffer	4.5.1	1.033185826	Not Participating	Not Ranked
206.	go	github.com/spf13/jwalterweatherman	v1.1.0	1.029880385	Not Participating	Not Ranked
207.	maven	org.apache.httpcomponents:httpClient	4.5.14	1.02940731	Not Participating	Not Ranked
208.	maven	io.springfox:springfox-swagger-ui	2.9.2	1.028357462	Not Participating	136
209.	go	github.com/uber-go/zap	v1.24.0	0.995550308	Not Participating	Not Ranked
210.	nuget	system.reflection.metadata	1.6.0	0.989898419	Not Participating	Not Ranked
211.	pypi	msgpack	1.0.5	0.989898419	Not Participating	Not Ranked
212.	maven	javax.activation:activation	1.1	0.981195538	Not Participating	88
213.	maven	javax.servlet:javax.servlet-api	4.0.1	0.963706513	Not Participating	431
214.	maven	org.springframework.boot:spring-boot-starter-security	3.1.0	0.959963169	Not Participating	Not Ranked
215.	pypi	idna	2.1	0.958826176	Not Participating	379
216.	pypi	requests	2.28.2	0.951111127	Not Participating	Not Ranked
217.	maven	org.apache.logging.log4j:log4j-api	2.17.2	0.949904385	96	Not Ranked
218.	maven	org.openapitools:jackson-databind-nullable	0.2.6	0.932997038	Not Participating	Not Ranked
219.	go	google.golang.org/protobuf	v1.30.0	0.93053791	Not Participating	Not Ranked
220.	go	github.com/grpc-ecosystem/grpc-gateway	v1.16.0	0.925536956	Not Participating	Not Ranked
221.	pypi	pyyaml	6.0.1	0.918767155	Not Participating	Not Ranked
222.	go	github.com/mailru/easyjson	v0.7.7	0.916782404	Not Participating	Not Ranked
223.	nuget	respond	1.4.2	0.913374901	Not Participating	Not Ranked
224.	go	github.com/golang/snappy	v0.0.4	0.909445652	Not Participating	Not Ranked
225.	pypi	chardet	4.0.0	0.907496686	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSF BADGE TIERED PERCENTAGE	CENSUS II RANK
226.	go	github.com/inconshreveable/mousetrap	v1.1.0	0.903356255	Not Participating	Not Ranked
227.	maven	javax.ws.rs:javax.ws.rs-api	2.1.1	0.891107416	Not Participating	199
228.	maven	com.googlecode.json-simple:json-simple	1.1.1	0.889056043	Not Participating	353
229.	go	github.com/uber-go/atomic	v1.10.0	0.887970968	Not Participating	Not Ranked
230.	pypi	psutil	5.8.0	0.873997715	Not Participating	Not Ranked
231.	maven	javax.activation:activation	1.1.1	0.870504821	Not Participating	372
232.	maven	org.cryptacular:cryptacular	1.2.4	0.867656027	Not Participating	Not Ranked
233.	maven	org.apache.commons:commons-lang3	3.8.1	0.867239812	Not Participating	314
234.	pypi	certifi	2023.7.22	0.866136459	Not Participating	Not Ranked
235.	maven	com.fasterxml.jackson.core:jackson-databind	2.15.2	0.859475519	Not Participating	Not Ranked
236.	pypi	wheel	0.38.4	0.85533001	Not Participating	Not Ranked
237.	pypi	charset-normalizer	3.0.1	0.852022935	109	Not Ranked
238.	pypi	requests-oauthlib	1.3.1	0.844114433	Not Participating	Not Ranked
239.	nuget	system.security.cryptography.protecteddata	4.5.0	0.836851382	Not Participating	Not Ranked
240.	nuget	system.configuration.configurationmanager	4.7.0	0.836851382	Not Participating	Not Ranked
241.	nuget	system.security.permissions	4.7.0	0.836851382	Not Participating	Not Ranked
242.	maven	org.apache.httpcomponents:httpclient	3.1	0.836851382	Not Participating	Not Ranked
243.	pypi	pexpect	4.8.0	0.825325892	Not Participating	Not Ranked
244.	maven	commons-io:commons-io	2.8.0	0.824687946	Not Participating	454
245.	go	github.com/googleapis/google-cloud-go	v0.108.0	0.823811673	Not Participating	Not Ranked
246.	maven	org.hamcrest:hamcrest-all	1.3	0.822983435	Not Participating	Not Ranked
247.	nuget	system.text.regularexpressions	4.3.1	0.821105274	Not Participating	494
248.	maven	org.projectlombok:lombok	1.18.12	0.82038117	Not Participating	121

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSF BADGE TIERED PERCENTAGE	CENSUS II RANK
249.	pypi	sortedcontainers	2.4.0	0.814339278	Not Participating	Not Ranked
250.	maven	jakarta.xml.bind:jakarta.xml.bind-api	2.3.2	0.81098775	Not Participating	169
251.	maven	commons-httpclient:commons-httpclient	3.1	0.792466232	Not Participating	183
252.	maven	javax.xml.ws:jaxws-api	2.3.1	0.780911216	Not Participating	Not Ranked
253.	go	golang.org/x/sync	v0.2.0	0.777479307	Not Participating	Not Ranked
254.	maven	org.springframework.cloud:spring-cloud-starter-vault-config	4.0.1	0.777423202	Not Participating	Not Ranked
255.	maven	org.springframework.boot:spring-boot-starter-web	2.7.4	0.776386043	Not Participating	Not Ranked
256.	maven	com.google.code.gson:gson	2.8.5	0.773973877	Not Participating	321
257.	pypi	click	8.0.4	0.772179977	Not Participating	Not Ranked
258.	maven	org.springframework.cloud:spring-cloud-starter-bootstrap	4.0.3	0.766014454	Not Participating	Not Ranked
259.	nuget	microsoft.win32.systemevents	4.7.0	0.760327864	Not Participating	Not Ranked
260.	nuget	newtonsoft.json	11.0.2	0.760327864	Not Participating	Not Ranked
261.	nuget	system.componentmodel.annotations	4.5.0	0.760327864	Not Participating	Not Ranked
262.	maven	com.google.protobuf:protobuf-java	2.5.0	0.760327864	Not Participating	461
263.	nuget	system.windows.extensions	4.7.0	0.760327864	Not Participating	Not Ranked
264.	maven	org.checkerframework:checker-qual	2.5.2	0.760327864	Not Participating	438
265.	nuget	system.security.accesscontrol	5.0.0	0.760327864	Not Participating	Not Ranked
266.	nuget	newtonsoft.json.bson	1.0.2	0.760327864	Not Participating	Not Ranked
267.	nuget	system.threading.tasks.extensions	4.5.4	0.759560929	Not Participating	Not Ranked
268.	maven	org.springframework.boot:spring-boot-configuration-processor	3.1.0	0.748382752	Not Participating	Not Ranked
269.	maven	jakarta.xml.bind:jakarta.xml.bind-api	2.3.3	0.744202565	Not Participating	Not Ranked
270.	pypi	requests	2.25.1	0.741646173	Not Participating	51
271.	maven	org.springframework.boot:spring-boot-starter-test	3.1.0	0.740085481	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
272.	maven	commons-fileupload:commons-fileupload	1.4	0.738168417	Not Participating	384
273.	maven	com.h2database:h2	1.4.200	0.735504454	Not Participating	Not Ranked
274.	pypi	decorator	5.1.1	0.731969528	Not Participating	Not Ranked
275.	maven	org.bouncycastle:bcprov-jdk15on	1.7	0.72880184	Not Participating	Not Ranked
276.	maven	antlr:antlr	2.7.7	0.719793248	Not Participating	76
277.	maven	javax.servlet:servlet-api	2.5	0.717778952	Not Participating	Not Ranked
278.	go	github.com/hashicorp/hcl	v1.0.0	0.713564537	Not Participating	102
279.	maven	io.zipkin.reporter2:zipkin-reporter-brave	2.16.3	0.708970714	Not Participating	Not Ranked
280.	pypi	cryptography	41.0.3	0.706986171	Not Participating	Not Ranked
281.	pypi	urllib3	1.26.15	0.703764514	164	Not Ranked
282.	maven	org.junit.jupiter:junit-jupiter	5.9.3	0.701710602	Not Participating	Not Ranked
283.	go	github.com/magiconair/properties	v1.8.7	0.701141219	Not Participating	Not Ranked
284.	pypi	packaging	23.1	0.700159087	Not Participating	Not Ranked
285.	maven	io.cucumber:cucumber-java	7.2.3	0.695487648	Not Participating	Not Ranked
286.	maven	io.micrometer:micrometer-tracing-bridge-brave	1.1.1	0.69341333	Not Participating	Not Ranked
287.	go	github.com/kelseyhightower/envconfig	v1.4.0	0.686962044	Not Participating	Not Ranked
288.	nuget	system.buffer	4.4.0	0.683804346	Not Participating	Not Ranked
289.	pypi	neo4j	3.5.20	0.683804346	Not Participating	Not Ranked
290.	conda	distro	1.7.0	0.683804346	Not Participating	Not Ranked
291.	nuget	system.memory.data	1.0.2	0.683804346	Not Participating	Not Ranked
292.	pypi	more-itertools	8.12.0	0.683804346	Not Participating	Not Ranked
293.	pypi	six	1.12.0	0.682720992	Not Participating	273
294.	maven	javax.xml.bind:jaxb-api	2.3.0	0.678516046	Not Participating	458
295.	maven	org.testcontainers:junit-jupiter	1.17.6	0.676818788	Not Participating	Not Ranked
296.	maven	org.junit.platform:junit-platform-suite	1.9.3	0.675781629	Not Participating	Not Ranked
297.	maven	com.google.guava:guava	30.0-jre	0.674350879	99	392

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSF BADGE TIERED PERCENTAGE	CENSUS II RANK
298.	maven	org.springframework.security:spring-security-test	6.1.0	0.671632993	Not Participating	Not Ranked
299.	maven	org.springframework.cloud:spring-cloud-starter	4.0.3	0.666447199	Not Participating	Not Ranked
300.	maven	org.springframework.boot:spring-boot-starter-web	2.7.12	0.666411099	Not Participating	Not Ranked
301.	maven	io.cucumber:cucumber-junit-platform-engine	7.2.3	0.662298563	Not Participating	Not Ranked
302.	maven	org.springframework.cloud:spring-cloud-starter-circuitbreaker-resilience4j	3.0.2	0.660224245	Not Participating	Not Ranked
303.	maven	com.intellij:annotations	12	0.660224245	104	Not Ranked
304.	maven	org.testcontainers:vault	1.17.6	0.658149928	Not Participating	Not Ranked
305.	maven	org.testcontainers:rabbitmq	1.17.6	0.658149928	Not Participating	Not Ranked
306.	maven	org.testcontainers:mongodb	1.17.6	0.657112769	Not Participating	Not Ranked
307.	maven	org.springframework.amqp:spring-rabbit-test	3.0.4	0.65607561	Not Participating	Not Ranked
308.	maven	org.testcontainers:oracle-xe	1.17.6	0.65607561	Not Participating	Not Ranked
309.	maven	com.fasterxml.jackson.core:jackson-databind	2.13.4.2	0.646837296	Not Participating	Not Ranked
310.	pypi	cfgv	3.3.1	0.646748492	Not Participating	Not Ranked
311.	nuget	xunit.runner.visualstudio	2.4.5	0.645895388	Not Participating	Not Ranked
312.	maven	com.fasterxml.jackson.core:jackson-core	2.13.5	0.645631822	Not Participating	Not Ranked
313.	maven	cglib:cglib	3.1	0.644666862	Not Participating	Not Ranked
314.	pypi	defusedxml	0.7.1	0.637727096	Not Participating	Not Ranked
315.	go	github.com/patrickmn/go-cache	v2.1.0	0.632481065	Not Participating	Not Ranked
316.	pypi	execnet	1.9.0	0.630010006	Not Participating	Not Ranked
317.	nuget	system.security.principal.windows	5.0.0	0.628456614	Not Participating	Not Ranked
318.	maven	com.redpill-linpro:mule-jwt-connector	1.0.0	0.62703516	Not Participating	Not Ranked
319.	pypi	idna	3.3	0.62636058	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
320.	go	github.com/munnerz/goautoneg	v0.0.0-20191010083416-a7dc8b61c822	0.62603866	Not Participating	Not Ranked
321.	maven	commons-codec:commons-codec	1.14	0.618344947	Not Participating	312
322.	maven	jakarta.inject:jakarta.inject-api	2.0.1	0.616663571	Not Participating	Not Ranked
323.	maven	javax.servlet:javax.servlet-api	3.0.1	0.61383547	Not Participating	Not Ranked
324.	go	github.com/spf13/cobra	v1.6.1	0.613065598	Not Participating	Not Ranked
325.	go	github.com/spf13/cobra	v1.7.0	0.611888903	Not Participating	Not Ranked
326.	pypi	tenacity	8.1.0	0.607280827	Not Participating	Not Ranked
327.	nuget	microsoft.win32.registry	5.0.0	0.607280827	Not Participating	Not Ranked
328.	maven	org.codehaus.plexus:plexus-interpolation	1.14	0.607280827	Not Participating	Not Ranked
329.	maven	commons-codec:commons-codec	1.1	0.607280827	Not Participating	15
330.	nuget	microsoft.bcl.asyncinterfaces	1.1.1	0.607280827	Not Participating	Not Ranked
331.	nuget	system.security.accesscontrol	4.5.0	0.607280827	Not Participating	Not Ranked
332.	maven	stax:stax-api	1.0-2	0.607280827	Not Participating	Not Ranked
333.	pypi	colorama	0.4.5	0.607280827	Not Participating	Not Ranked
334.	nuget	microsoft.bcl.asyncinterfaces	1.0.0	0.607280827	Not Participating	Not Ranked
335.	pypi	more-itertools	9.0.0	0.607280827	Not Participating	Not Ranked
336.	pypi	pygments	2.15.1	0.607280827	Not Participating	Not Ranked
337.	maven	org.apache.commons:commons-collections4	4.1	0.604827878	Not Participating	165
338.	maven	org.springframework:spring-context	5.3.27	0.598904862	Not Participating	Not Ranked
339.	pypi	ptyprocess	0.7.0	0.597136569	Not Participating	Not Ranked
340.	maven	org.projectlombok:lombok	1.18.30	0.596957552	Not Participating	Not Ranked
341.	maven	io.springfox:springfox-boot-starter	3.0.0	0.595590749	Not Participating	Not Ranked
342.	maven	jakarta.annotation:jakarta.annotation-api	1.3.5	0.592182197	Not Participating	140
343.	maven	org.apache.httpcomponents:httpcore	4.4.15	0.588193707	Not Participating	Not Ranked
344.	maven	org.apache.commons:commons-text	1.9	0.583617648	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSF BADGE TIERED PERCENTAGE	CENSUS II RANK
345.	maven	org.springframework.cloud:spring-cloud-starter-consul-config	4.0.2	0.583474486	Not Participating	Not Ranked
346.	maven	org.springframework.boot:spring-boot-starter-actuator	2.7.4	0.577251533	Not Participating	Not Ranked
347.	go	github.com/docker/go-connections	v0.4.0	0.577058731	Not Participating	Not Ranked
348.	maven	org.apache.commons:commons-lang3	3.1	0.573227494	Not Participating	201
349.	go	github.com/hashicorp/golang-lru	v0.5.4	0.572499038	Not Participating	131
350.	maven	org.jolokia:jolokia-core	1.7.1	0.568954262	Not Participating	Not Ranked
351.	maven	com.google.code.gson:gson	2.10.1	0.56775042	Not Participating	Not Ranked
352.	maven	org.springframework.boot:spring-boot-starter-data-jpa	3.1.0	0.565842785	Not Participating	Not Ranked
353.	pypi	flake8	4.0.1	0.559967236	Not Participating	Not Ranked
354.	maven	org.checkerframework:checker-qual	3.5.0	0.557963224	Not Participating	Not Ranked
355.	pypi	rsa	4.9	0.552572796	Not Participating	Not Ranked
356.	pypi	python-dateutil	2.8.1	0.549593617	Not Participating	45
357.	maven	com.fasterxml.jackson.core:jackson-databind	2.14.2	0.54520019	Not Participating	Not Ranked
358.	maven	ch.qos.logback:logback-core	1.2.3	0.543981853	Not Participating	30
359.	maven	org.apache.logging.log4j:log4j-core	2.17.2	0.541049637	96	Not Ranked
360.	pypi	marshmallow-enum	1.5.1	0.535197806	Not Participating	91
361.	pypi	six	1.15.0	0.534160913	Not Participating	156
362.	maven	com.fasterxml.jackson.core:jackson-databind	2.13.5	0.532372386	Not Participating	Not Ranked
363.	maven	jakarta.jws:jakarta.jws-api	1.1.1	0.531616541	Not Participating	Not Ranked
364.	nuget	system.buffer	4.5.0	0.530757309	Not Participating	Not Ranked
365.	pypi	packaging	16.8	0.530757309	Not Participating	61
366.	go	golang.org/x/net	v0.5.0	0.525137064	Not Participating	Not Ranked
367.	nuget	newtonsoft.json	13.0.3	0.523951703	Not Participating	Not Ranked
368.	maven	org.apache.logging.log4j:log4j-to-slf4j	2.17.2	0.522923122	96	Not Ranked
369.	maven	junit:junit	4.11	0.51974308	Not Participating	Not Ranked

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370.	maven	com.fasterxml.jackson.core:jackson-databind	2.13.3	0.515872457	Not Participating	Not Ranked
371.	maven	javax.jms:javax.jms-api	2.0.1	0.512405176	Not Participating	Not Ranked
372.	maven	org.springframework.boot:spring-boot-starter-validation	2.7.4	0.498427456	Not Participating	Not Ranked
373.	maven	org.bouncycastle:bcprov-jdk15on	1.69	0.49028783	Not Participating	Not Ranked
374.	maven	org.dom4j:dom4j	2.1.3	0.48513013	Not Participating	151
375.	pypi	wcwidth	0.2.6	0.484110834	Not Participating	Not Ranked
376.	go	github.com/stretchr/testify	v1.8.1	0.483923321	Not Participating	Not Ranked
377.	maven	ch.qos.logback:logback-core	1.2.11	0.483240186	Not Participating	Not Ranked
378.	maven	com.lmax:disruptor	3.4.4	0.482870072	Not Participating	Not Ranked
379.	pypi	requests	2.26.0	0.477674262	Not Participating	Not Ranked
380.	pypi	pyasn1-modules	0.2.8	0.474552652	Not Participating	Not Ranked
381.	maven	org.hibernate.validator:hibernate-validator	6.2.5.Final	0.474321588	Not Participating	Not Ranked
382.	maven	com.fasterxml.jackson.datatype:jackson-datatype-jsr310	2.13.4	0.472255275	Not Participating	Not Ranked
383.	maven	jakarta.activation:jakarta.activation-api	1.2.2	0.468435527	Not Participating	Not Ranked
384.	maven	org.springframework.boot:spring-boot-starter	2.7.9	0.467312689	Not Participating	Not Ranked
385.	pypi	pluggy	1.0.0	0.465940133	Not Participating	Not Ranked
386.	nuget	xunit	2.4.1	0.461310505	Not Participating	374
387.	maven	org.springframework.retry:spring-retry	1.3.4	0.458811257	Not Participating	Not Ranked
388.	maven	org.apache.commons:commons-lang3	3.5	0.456250572	Not Participating	Not Ranked
389.	nuget	system.runtime.compilerservices.unsafe	4.5.2	0.45423379	Not Participating	Not Ranked
390.	pypi	resolvelib	1.0.1	0.45423379	Not Participating	Not Ranked
391.	maven	log4j:log4j	2.17.1	0.45423379	Not Participating	Not Ranked
392.	nuget	microsoft.bcl.asyncinterfaces	1.1.0	0.45423379	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
393.	maven	net.minidev:json-smart	1.2	0.45423379	Not Participating	124
394.	nuget	netstandard.library	2.0.1	0.45423379	Not Participating	Not Ranked
395.	nuget	system.runtime.compilerservices.unsafe	4.5.3	0.45423379	Not Participating	Not Ranked
396.	nuget	system.runtime.compilerservices.unsafe	5.0.0	0.45423379	Not Participating	Not Ranked
397.	maven	org.hibernate:hibernate-core	5.6.5.Final	0.453829623	Not Participating	Not Ranked
398.	maven	org.apache.commons:commons-lang3	3.11	0.453014549	Not Participating	Not Ranked
399.	pypi	termcolor	1.1.0	0.452319221	Not Participating	Not Ranked
400.	maven	javax.validation:validation-api	1.1.0.Final	0.451895911	Not Participating	34
401.	maven	org.springframework.boot:spring-boot-starter-data-jpa	2.7.4	0.450718146	Not Participating	Not Ranked
402.	maven	javax.activation:javax.activation-api	1.2.0	0.450181543	Not Participating	111
403.	maven	com.sun.xml.messaging.saaj:saaj-impl	1.5.3	0.448643828	Not Participating	Not Ranked
404.	pypi	iniconfig	1.1.1	0.443097086	Not Participating	Not Ranked
405.	pypi	typing-extensions	4.5.0	0.442966923	Not Participating	Not Ranked
406.	pypi	pytest-cov	4.1.0	0.430414087	Not Participating	Not Ranked
407.	maven	software.amazon.ion:ion-java	1.0.2	0.428975352	Not Participating	240
408.	pypi	pickleshare	0.7.5	0.427646096	Not Participating	Not Ranked
409.	maven	javax.servlet:jstl	1.2	0.426792818	Not Participating	307
410.	maven	com.sun.activation:jakarta.activation	1.2.2	0.425485489	Not Participating	Not Ranked
411.	maven	org.slf4j:jul-to-slf4j	1.7.36	0.41498233	Not Participating	Not Ranked
412.	maven	com.github.stephenc.jcip:jcip-annotations	1.0-1	0.414573952	Not Participating	Not Ranked
413.	maven	javax.cache:cache-api	1.1.1	0.414428234	Not Participating	Not Ranked
414.	maven	com.zaxxer:hikaricp	4.0.3	0.410702763	Not Participating	Not Ranked
415.	maven	org.springframework.boot:spring-boot-starter-actuator	2.7.12	0.403810791	Not Participating	Not Ranked
416.	maven	io.springfox:springfox-swagger2	3.0.0	0.402820684	Not Participating	Not Ranked
417.	maven	com.jcraft:jsch	0.1.55	0.402512589	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
418.	pypi	urllib3	1.26.16	0.385137064	164	Not Ranked
419.	maven	commons-logging:commons-logging	1.1.1	0.384816573	Not Participating	113
420.	maven	org.hdrhistogram:hdrhistogram	2.1.12	0.383640586	Not Participating	180
421.	maven	org.apache.commons:commons-csv	1.10.0	0.382265658	Not Participating	Not Ranked
422.	maven	org.codehaus. jackson:jackson-core-asl	1.9.13	0.379797898	Not Participating	Not Ranked
423.	maven	org.apache. commons:commons-lang3	3.4	0.37938816	Not Participating	55
424.	pypi	pytz	2018.9	0.377785432	Not Participating	Not Ranked
425.	nuget	jasmine	2.8.0	0.377710272	Not Participating	Not Ranked
426.	pypi	progress	1.5	0.377710272	Not Participating	Not Ranked
427.	maven	org.antlr:antlr	3.5.2	0.377710272	Not Participating	Not Ranked
428.	pypi	chardet	5.0.0	0.377710272	Not Participating	Not Ranked
429.	nuget	microsoft.extensions. dependencyinjection.abstractions	5.0.0	0.377710272	Not Participating	Not Ranked
430.	pypi	more-itertools	9.1.0	0.377710272	Not Participating	Not Ranked
431.	pypi	nodeenv	1.6.0	0.369548567	Not Participating	Not Ranked
432.	maven	commons-codec:commons-codec	1.1	0.365376046	Not Participating	15
433.	maven	org.slf4j:slf4j-api	2.0.7	0.362911941	Not Participating	Not Ranked
434.	maven	jakarta.ws.rs:jakarta.ws.rs-api	3.1.0	0.362559639	Not Participating	Not Ranked
435.	maven	org.codehaus. jackson:jackson-mapper-asl	1.9.13	0.358582013	Not Participating	378
436.	maven	org.json:json	20200518	0.357260289	Not Participating	Not Ranked
437.	maven	com.fasterxml.jackson. module:jackson-module-kotlin	2.13.4	0.355299527	Not Participating	Not Ranked
438.	maven	org.apache. httpcomponents:httpcore	4.4.9	0.354262368	Not Participating	382
439.	maven	org.quartz-scheduler:quartz	2.3.2	0.34693703	Not Participating	Not Ranked
440.	pypi	itsdangerous	2.1.2	0.346862138	Not Participating	Not Ranked
441.	maven	com.fasterxml.jackson. datatype:jackson-datatype-jsr310	2.13.5	0.346297441	Not Participating	Not Ranked
442.	nuget	system.linq	4.3.0	0.344455546	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSF BADGE TIERED PERCENTAGE	CENSUS II RANK
443.	maven	javax.servlet.jsp:jsp-api	2.1	0.343934085	Not Participating	Not Ranked
444.	maven	org.springframework.boot:spring-boot-starter-jdbc	2.7.9	0.34285362	Not Participating	Not Ranked
445.	maven	javax.ws.rs:javax.ws.rs-api	2.0.1	0.33735419	Not Participating	109
446.	maven	org.springframework.boot:spring-boot-starter-web	2.7.10	0.33339763	Not Participating	Not Ranked
447.	maven	com.fasterxml.jackson.datatype:jackson-datatype-jsr310	2.13.2	0.332333015	Not Participating	Not Ranked
448.	maven	org.reactivestreams:reactive-streams	1.0.3	0.329070344	Not Participating	215
449.	pypi	pynacl	1.5.0	0.328393659	Not Participating	Not Ranked
450.	maven	jakarta.validation:jakarta.validation-api	2.0.2	0.3265626	Not Participating	154
451.	pypi	iniconfig	2.0.0	0.321236316	Not Participating	Not Ranked
452.	go	github.com/gobwas/glob	v0.2.3	0.320627472	Not Participating	Not Ranked
453.	maven	com.fasterxml.jackson.core:jackson-annotations	2.13.4	0.320582304	Not Participating	Not Ranked
454.	pypi	pytz	2023.3.post1	0.319278898	Not Participating	Not Ranked
455.	go	github.com/russross/blackfriday	v1.6.0	0.312890703	Not Participating	Not Ranked
456.	maven	com.ibm.db2:jcc	11.5.7.0	0.311738853	Not Participating	Not Ranked
457.	pypi	pycparser	2.2	0.310743685	Not Participating	415
458.	maven	jakarta.validation:jakarta.validation-api	3.0.2	0.309075617	Not Participating	Not Ranked
459.	go	github.com/grpc-ecosystem/go-grpc-middleware	v1.3.0	0.308919357	18	Not Ranked
460.	pypi	distlib	0.3.6	0.305507705	Not Participating	Not Ranked
461.	maven	com.google.code.gson:gson	2.9.1	0.302839994	Not Participating	Not Ranked
462.	maven	com.fasterxml.jackson.core:jackson-core	2.13.4	0.30269645	Not Participating	Not Ranked
463.	maven	org.sonatype.sisu:sisu-inject	1.4.2	0.301186754	Not Participating	Not Ranked
464.	nuget	newtonsoft.json.bson	1.0.1	0.301186754	Not Participating	Not Ranked
465.	maven	jline:jline	2.14.6	0.301186754	Not Participating	Not Ranked
466.	pypi	kiwisolver	1.4.4	0.301186754	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
467.	maven	org.sonatype.sisu:sisu-guice	2.1.7	0.301186754	Not Participating	Not Ranked
468.	nuget	system.security.permissions	5.0.0	0.301186754	Not Participating	Not Ranked
469.	maven	org.apache.tiles:tiles-core	2.2.2	0.301186754	Not Participating	Not Ranked
470.	nuget	system.security.cryptography.protecteddata	5.0.0	0.301186754	Not Participating	Not Ranked
471.	nuget	system.threading.tasks.extensions	4.5.2	0.301186754	Not Participating	Not Ranked
472.	nuget	system.configuration.configurationmanager	5.0.0	0.301186754	Not Participating	Not Ranked
473.	maven	xml-apis:xml-apis	1.4.01	0.300437414	Not Participating	250
474.	go	github.com/spf13/cast	v1.5.0	0.299888223	Not Participating	Not Ranked
475.	maven	com.oracle.database.jdbc:ojdbc11	23.2.0.0	0.296181469	Not Participating	Not Ranked
476.	maven	io.jsonwebtoken:jjwt	0.9.1	0.296172578	Not Participating	Not Ranked
477.	maven	com.fasterxml.jackson.core:jackson-annotations	2.13.2	0.295030419	Not Participating	Not Ranked
478.	maven	org.apache.logging.log4j:log4j-api	2.15.0	0.294107151	96	Not Ranked
479.	maven	org.aspectj:aspectjweaver	1.8.5	0.293069992	Not Participating	Not Ranked
480.	maven	org.hibernate.common:hibernate-commons-annotations	5.1.2.Final	0.291865252	Not Participating	Not Ranked
481.	maven	commons-validator:commons-validator	1.7	0.291478986	Not Participating	194
482.	maven	com.google.code.gson:gson	2.9.0	0.290079232	Not Participating	Not Ranked
483.	maven	org.mapstruct:mapstruct	1.4.2.Final	0.28916888	Not Participating	Not Ranked
484.	go	github.com/googleapis/gax-go	v1.0.3	0.287915351	Not Participating	Not Ranked
485.	go	github.com/stretchr/testify	v1.8.2	0.285679631	Not Participating	Not Ranked
486.	maven	commons-codec:commons-codec	1.11	0.282431886	Not Participating	195
487.	nuget	automapper.extensions.microsoft.dependencyinjection	11.0.0	0.282178963	Not Participating	Not Ranked
488.	pypi	jmespath	1.0.1	0.281003667	Not Participating	Not Ranked
489.	go	github.com/gorilla/websocket	v1.5.0	0.27985499	85	Not Ranked
490.	packagist	ralouphie/getallheaders	3.0.3	0.2788548	Not Participating	Not Ranked
491.	pypi	s3transfer	0.6.0	0.276124015	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
492.	maven	com.fasterxml.jackson.core:jackson-databind	2.14.1	0.272759686	Not Participating	Not Ranked
493.	maven	com.fasterxml.jackson.core:jackson-core	2.15.2	0.272595226	Not Participating	Not Ranked
494.	maven	stax:stax-api	1.0.1	0.263469914	Not Participating	Not Ranked
495.	maven	org.aspectj:aspectjweaver	1.9.7	0.26122448	Not Participating	Not Ranked
496.	nuget	commandlineparser	2.9.1	0.260292436	Not Participating	Not Ranked
497.	go	github.com/kubernetes/api	v0.22.12-rc.0	0.259203993	Not Participating	Not Ranked
498.	pypi	coverage	7.2.7	0.255313725	164	Not Ranked
499.	pypi	pluggy	0.13.1	0.254795879	Not Participating	Not Ranked
500.	maven	jakarta.annotation:jakarta.annotation-api	2.1.1	0.251448959	Not Participating	Not Ranked

Appendix G: Top 500 npm, Indirect & Direct, Versioned Packages

Our dependency analysis identified the following 500 packages as the most used FOSS packages among those reported in the private usage data contributed by SCA partners hosted on the npm package manager. These packages were identified as either direct or indirect dependencies called by observed packages in use and account for the package version. For further information on how this list was compiled, refer to the Methods section.

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
1.	npm	hasown	2.0.0	11.98127835	Not Participating	Not Ranked
2.	npm	function-bind	1.1.2	6.308434567	Not Participating	Not Ranked
3.	npm	has	1.0.4	5.283834353	Not Participating	Not Ranked
4.	npm	define-data-property	1.1.1	5.22048121	Not Participating	Not Ranked
5.	npm	function-bind	1.1.1	4.07247006	Not Participating	65
6.	npm	has	1.0.3	4.001979512	Not Participating	165
7.	npm	inherits	2.0.4	3.753368246	Not Participating	9
8.	npm	concat-map	0.0.1	3.414353587	Not Participating	7
9.	npm	color-name	1.1.4	3.132519858	Not Participating	189
10.	npm	escape-string-regexp	1.0.5	3.087090999	Not Participating	19
11.	npm	util-deprecate	1.0.2	2.958533322	Not Participating	11
12.	npm	safer-buffer	2.1.2	2.935496978	Not Participating	14
13.	npm	fs.realpath	1.0.0	2.889402133	Not Participating	8
14.	npm	wrappy	1.0.2	2.835898192	Not Participating	12
15.	npm	has-property-descriptors	1.0.1	2.790379787	Not Participating	Not Ranked
16.	npm	set-function-length	1.1.0	2.702780379	Not Participating	Not Ranked
17.	npm	set-function-length	1.1.1	2.702780379	Not Participating	Not Ranked
18.	npm	has-symbols	1.0.3	2.702639923	Not Participating	Not Ranked
19.	npm	path-is-absolute	1.0.1	2.698409613	Not Participating	18
20.	npm	once	1.4.0	2.619307057	Not Participating	17
21.	npm	safe-buffer	5.1.2	2.550215245	Not Participating	4

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
22.	npm	array-slice	0.2.3	2.548699278	Not Participating	5
23.	npm	ms	2.0.0	2.541022169	Not Participating	13
24.	npm	safe-buffer	5.2.1	2.535410316	Not Participating	142
25.	npm	brace-expansion	1.1.11	2.513731766	Not Participating	98
26.	npm	has-flag	3.0.0	2.507066861	Not Participating	36
27.	npm	js-tokens	4.0.0	2.472971594	Not Participating	111
28.	npm	has-proto	1.0.1	2.468347685	Not Participating	Not Ranked
29.	npm	lodash	4.17.21	2.447179664	Not Participating	83
30.	npm	color-name	1.1.3	2.417986258	Not Participating	35
31.	npm	ms	2.1.2	2.409902047	Not Participating	146
32.	npm	inflight	1.0.6	2.400566553	Not Participating	24
33.	npm	color-convert	2.0.1	2.398678451	Not Participating	195
34.	npm	isexe	2.0.0	2.393240022	Not Participating	63
35.	npm	isarray	1.0.0	2.382851536	113	2
36.	npm	ansi-styles	3.2.1	2.266204688	Not Participating	40
37.	npm	has-flag	4.0.0	2.241702545	Not Participating	301
38.	npm	debug	2.6.9	2.216282951	Not Participating	26
39.	npm	gopd	1.0.1	2.208431326	Not Participating	Not Ranked
40.	npm	yallist	4.0.0	2.207004252	Not Participating	Not Ranked
41.	npm	is-fullwidth-code-point	3.0.0	2.188853425	Not Participating	468
42.	npm	color-convert	1.9.3	2.168399805	Not Participating	120
43.	npm	object-assign	4.1.1	2.148755513	Not Participating	21
44.	npm	has-tostringtag	1.0.0	2.106668083	Not Participating	Not Ranked
45.	npm	emoji-regex	8.0.0	2.087275244	Not Participating	467
46.	npm	to-fast-properties	2.0.0	2.040621995	Not Participating	270
47.	npm	balanced-match	1.0.2	1.966752461	Not Participating	450
48.	npm	delayed-stream	1.0.0	1.929015844	Not Participating	54
49.	npm	lru-cache	6.0.0	1.91287877	Not Participating	448
50.	npm	ansi-styles	4.3.0	1.905496451	Not Participating	431

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
51.	npm	ms	2.1.3	1.905416634	Not Participating	Not Ranked
52.	npm	fast-deep-equal	3.1.3	1.883368009	Not Participating	130
53.	npm	is-extglob	2.1.1	1.875129163	Not Participating	169
54.	npm	has-symbols	1.0.1	1.87501812	Not Participating	Not Ranked
55.	npm	call-bind	1.0.2	1.870169747	Not Participating	451
56.	npm	supports-color	5.5.0	1.859657584	Not Participating	85
57.	npm	asynckit	0.4.0	1.846825716	Not Participating	46
58.	npm	ansi-regex	5.0.1	1.844959395	Not Participating	Not Ranked
59.	npm	chalk	2.4.2	1.808609396	Not Participating	116
60.	npm	iconv-lite	0.4.24	1.766291398	Not Participating	38
61.	npm	json-schema-traverse	0.4.1	1.765104224	Not Participating	101
62.	npm	is-number	7.0.0	1.756866902	Not Participating	Not Ranked
63.	npm	source-map	0.6.1	1.738081707	Not Participating	109
64.	npm	string_decoder	1.1.1	1.715142806	Not Participating	27
65.	npm	side-channel	1.0.4	1.709525445	Not Participating	Not Ranked
66.	npm	to-regexp-range	5.0.1	1.680433181	Not Participating	Not Ranked
67.	npm	supports-color	7.2.0	1.663533596	Not Participating	418
68.	npm	strip-ansi	6.0.1	1.643306851	Not Participating	Not Ranked
69.	npm	minimatch	3.1.2	1.630970278	Not Participating	Not Ranked
70.	npm	debug	4.3.4	1.622226563	Not Participating	Not Ranked
71.	npm	require-directory	2.1.1	1.619116136	Not Participating	233
72.	npm	imurmurhash	0.1.4	1.588727147	Not Participating	177
73.	npm	path-parse	1.0.7	1.584451159	Not Participating	Not Ranked
74.	npm	fill-range	7.0.1	1.536496426	Not Participating	Not Ranked
75.	npm	is-arrayish	0.2.1	1.534513287	Not Participating	72
76.	npm	fast-json-stable-stringify	2.1.0	1.528588475	Not Participating	175
77.	npm	archy	1.0.0	1.487694821	Not Participating	Not Ranked
78.	npm	combined-stream	1.0.8	1.486360365	Not Participating	264
79.	npm	unpipe	1.0.0	1.483857806	Not Participating	78

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
80.	npm	ee-first	1.1.1	1.480538329	Not Participating	69
81.	npm	rimraf	3.0.2	1.45924568	Not Participating	Not Ranked
82.	npm	braces	3.0.2	1.418528507	Not Participating	493
83.	npm	prop-types	15.8.1	1.412464565	81	Not Ranked
84.	npm	escape-html	1.0.3	1.39075553	Not Participating	86
85.	npm	p-try	2.2.0	1.370443486	Not Participating	324
86.	npm	escalade	3.1.1	1.357196538	Not Participating	Not Ranked
87.	npm	string-width	4.2.3	1.334020762	Not Participating	Not Ranked
88.	npm	supports-preserve-symlinks-flag	1.0.0	1.30481311	Not Participating	Not Ranked
89.	npm	mime-db	1.52.0	1.295327089	Not Participating	Not Ranked
90.	npm	chalk	4.1.2	1.291497453	Not Participating	Not Ranked
91.	npm	util-deprecate	1.0.1	1.289457794	Not Participating	20
92.	npm	buffer-shims	1.0.0	1.278507868	Not Participating	22
93.	npm	uri-js	4.4.1	1.273592527	Not Participating	Not Ranked
94.	npm	ajv	6.12.6	1.272065555	99	261
95.	npm	expected	0.1.0	1.267557942	Not Participating	28
96.	npm	path-exists	4.0.0	1.264307457	Not Participating	Not Ranked
97.	npm	object-keys	1.1.1	1.253367239	Not Participating	385
98.	npm	esutils	2.0.3	1.248425894	Not Participating	337
99.	npm	string_decoder	1.3.0	1.247679382	Not Participating	357
100.	npm	esprima	4.0.1	1.242568269	Not Participating	79
101.	npm	isobject	3.0.1	1.231311844	Not Participating	33
102.	npm	which	2.0.2	1.230804588	Not Participating	Not Ranked
103.	npm	encodeurl	1.0.2	1.229579859	Not Participating	118
104.	npm	mime-types	2.1.35	1.216528516	Not Participating	Not Ranked
105.	npm	set-blocking	2.0.0	1.214297405	Not Participating	74
106.	npm	get-caller-file	2.0.5	1.20984132	Not Participating	Not Ranked
107.	npm	has-property-descriptors	1.0.0	1.157417654	Not Participating	Not Ranked
108.	npm	sprintf-js	1.0.3	1.157261286	Not Participating	125

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
109.	npm	parseurl	1.3.3	1.149080094	Not Participating	178
110.	npm	error-ex	1.3.2	1.144546381	Not Participating	335
111.	npm	core-util-is	1.0.2	1.129112402	Not Participating	6
112.	npm	mime	1.6.0	1.127101609	Not Participating	167
113.	npm	media-typer	0.3.0	1.125509054	Not Participating	115
114.	npm	fresh	0.5.2	1.096930821	Not Participating	126
115.	npm	asap	2.0.6	1.094444351	Not Participating	348
116.	npm	etag	1.8.1	1.088799539	Not Participating	133
117.	npm	wrappy	1.0.1	1.079323501	Not Participating	30
118.	npm	wrappy	1.0.0	1.079323501	Not Participating	31
119.	npm	negotiator	0.6.3	1.074123545	Not Participating	Not Ranked
120.	npm	process-nextick-args	2.0.1	1.067820033	Not Participating	137
121.	npm	methods	1.1.2	1.063505366	Not Participating	153
122.	npm	qrcode-terminal	0.12.0	1.063250664	Not Participating	Not Ranked
123.	npm	normalize-path	3.0.0	1.06255683	Not Participating	496
124.	npm	tiny-relative-date	1.3.0	1.061480182	Not Participating	Not Ranked
125.	npm	vary	1.1.2	1.058559661	Not Participating	150
126.	npm	set-getter	0.1.1	1.054816524	Not Participating	Not Ranked
127.	npm	set-getter	0.1.0	1.054816524	Not Participating	25
128.	npm	source-map	0.5.7	1.054562031	Not Participating	68
129.	npm	is-typedarray	1.0.0	1.053308751	Not Participating	51
130.	npm	loose-envify	1.4.0	1.049666001	Not Participating	217
131.	npm	shebang-regex	3.0.0	1.049037996	Not Participating	Not Ranked
132.	npm	inherits	2.0.3	1.03785293	Not Participating	1
133.	npm	p-limit	2.3.0	1.026699463	Not Participating	297
134.	npm	inline-process-browser	2.0.1	1.021966746	Not Participating	3
135.	npm	range-parser	1.2.1	1.016405629	Not Participating	196
136.	npm	extend	3.0.2	1.001289153	Not Participating	76
137.	npm	argparse	1.0.10	0.985563721	Not Participating	183

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
138.	npm	picomatch	2.3.1	0.984364056	Not Participating	Not Ranked
139.	npm	resolve-from	4.0.0	0.982113605	Not Participating	Not Ranked
140.	npm	has-symbols	1.0.2	0.973323872	Not Participating	Not Ranked
141.	npm	assign-symbols	1.0.0	0.967996121	Not Participating	32
142.	npm	hoist-non-react-statics	3.3.2	0.966497271	Not Participating	Not Ranked
143.	npm	depd	2.0.0	0.966280413	Not Participating	Not Ranked
144.	npm	base64-js	1.5.1	0.961444228	Not Participating	312
145.	npm	type-is	1.6.18	0.955825963	Not Participating	251
146.	npm	shebang-command	2.0.0	0.955638813	Not Participating	Not Ranked
147.	npm	jsesc	2.5.2	0.952060217	Not Participating	474
148.	npm	is-glob	4.0.3	0.94759726	Not Participating	Not Ranked
149.	npm	setprototypeof	1.2.0	0.942376349	Not Participating	Not Ranked
150.	npm	p-locate	4.1.0	0.938480007	Not Participating	Not Ranked
151.	npm	glob-parent	5.1.2	0.9372522	Not Participating	Not Ranked
152.	npm	wrap-ansi	7.0.0	0.933433633	Not Participating	Not Ranked
153.	npm	utils-merge	1.0.1	0.932124011	Not Participating	180
154.	npm	safe-buffer	5.1.1	0.930821648	Not Participating	88
155.	npm	toidentifier	1.0.1	0.917503329	Not Participating	Not Ranked
156.	npm	glob	7.2.3	0.909362869	Not Participating	Not Ranked
157.	npm	uuid	8.3.2	0.893647032	Not Participating	Not Ranked
158.	npm	path-exists	3.0.0	0.8889277	Not Participating	123
159.	npm	path-key	3.1.1	0.878389271	Not Participating	Not Ranked
160.	npm	react-is	16.13.1	0.876101756	81	Not Ranked
161.	npm	json-parse-even-better-errors	2.3.1	0.87085906	Not Participating	Not Ranked
162.	npm	cookie-signature	1.0.6	0.86669218	Not Participating	188
163.	npm	path-to-regexp	0.1.7	0.862247699	Not Participating	197
164.	npm	picocolors	1.0.0	0.857801312	Not Participating	Not Ranked
165.	npm	defaults	1.0.3	0.857643427	Not Participating	Not Ranked
166.	npm	commander	2.20.3	0.854318228	Not Participating	243

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
167.	npm	depd	1.1.2	0.844329792	Not Participating	62
168.	npm	xtend	4.0.2	0.841187667	Not Participating	223
169.	npm	locate-path	5.0.0	0.83828273	Not Participating	Not Ranked
170.	npm	array-flatten	1.1.1	0.83675126	Not Participating	213
171.	npm	path-type	4.0.0	0.826890642	Not Participating	Not Ranked
172.	npm	merge-descriptors	1.0.1	0.824484877	Not Participating	201
173.	npm	isarray	0.0.1	0.824223163	113	29
174.	npm	escape-string-regexp	4.0.0	0.82328359	Not Participating	Not Ranked
175.	npm	tslib	1.14.1	0.819636163	Not Participating	435
176.	npm	ipaddr.js	1.9.1	0.807610072	Not Participating	Not Ranked
177.	npm	cross-spawn	7.0.3	0.799612245	Not Participating	Not Ranked
178.	npm	signal-exit	3.0.7	0.795772301	Not Participating	Not Ranked
179.	npm	callsites	3.1.0	0.793947698	Not Participating	Not Ranked
180.	npm	globals	11.12.0	0.789828503	Not Participating	Not Ranked
181.	npm	performance-now	2.1.0	0.788318074	Not Participating	103
182.	npm	is-plain-object	2.0.4	0.777244528	Not Participating	90
183.	npm	p-try	2.0.0	0.766859542	Not Participating	Not Ranked
184.	npm	p-try	2.1.0	0.766859542	Not Participating	Not Ranked
185.	npm	statuses	2.0.1	0.764677488	Not Participating	Not Ranked
186.	npm	brace-expansion	2.0.1	0.756463273	Not Participating	Not Ranked
187.	npm	agent-base	6.0.2	0.756344576	Not Participating	Not Ranked
188.	npm	text-table	0.2.0	0.74169563	Not Participating	Not Ranked
189.	npm	through2	0.6.5	0.731903482	Not Participating	15
190.	npm	readable-stream	3.6.0	0.728796443	Not Participating	290
191.	npm	punycode	2.1.1	0.720291701	Not Participating	94
192.	npm	pump	3.0.0	0.718074143	Not Participating	162
193.	npm	read	1.0.7	0.705506527	Not Participating	Not Ranked
194.	npm	get-intrinsic	1.1.3	0.701837839	Not Participating	Not Ranked
195.	npm	mimic-fn	2.1.0	0.697176608	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
196.	npm	mkdirp	1.0.4	0.688719512	Not Participating	Not Ranked
197.	npm	copy-descriptor	0.1.0	0.670786978	Not Participating	99
198.	npm	camelcase	5.3.1	0.670154591	Not Participating	241
199.	npm	find-up	4.1.0	0.668350375	Not Participating	Not Ranked
200.	npm	fast-levenshtein	2.0.6	0.65895646	Not Participating	453
201.	npm	parent-module	1.0.1	0.654156191	Not Participating	Not Ranked
202.	npm	https-proxy-agent	5.0.1	0.653756972	Not Participating	Not Ranked
203.	npm	is-number	3.0.0	0.641668081	Not Participating	41
204.	npm	ieee754	1.2.1	0.640079104	Not Participating	Not Ranked
205.	npm	path-is-absolute	1.0.0	0.631680099	Not Participating	64
206.	npm	arr-diff	1.1.0	0.624380149	Not Participating	147
207.	npm	arr-diff	2.0.0	0.624380149	Not Participating	81
208.	npm	requires-port	1.0.0	0.623238482	Not Participating	Not Ranked
209.	npm	tr46	0.0.3	0.622837513	Not Participating	Not Ranked
210.	npm	binary-extensions	2.2.0	0.62258858	Not Participating	Not Ranked
211.	npm	http-errors	2.0.0	0.616556258	Not Participating	Not Ranked
212.	npm	debuglog	1.0.1	0.615122974	Not Participating	Not Ranked
213.	npm	esutils	2.0.2	0.60586956	Not Participating	313
214.	npm	indent-string	4.0.0	0.59979505	Not Participating	Not Ranked
215.	npm	forwarded	0.2.0	0.598554513	Not Participating	Not Ranked
216.	npm	yocto-queue	0.1.0	0.586418511	Not Participating	Not Ranked
217.	npm	semver	5.7.1	0.583351624	Not Participating	105
218.	npm	to-object-path	0.3.0	0.58322402	Not Participating	67
219.	npm	kind-of	6.0.3	0.576588141	Not Participating	Not Ranked
220.	npm	end-of-stream	1.4.4	0.575214672	Not Participating	494
221.	npm	lru-cache	5.1.1	0.57271103	Not Participating	266
222.	npm	semver	6.3.0	0.570638821	Not Participating	163
223.	npm	on-finished	2.4.1	0.567014741	Not Participating	Not Ranked
224.	npm	iconv-lite	0.6.3	0.564181595	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSF BADGE TIERED PERCENTAGE	CENSUS II RANK
225.	npm	promzard	0.3.0	0.562915996	Not Participating	Not Ranked
226.	npm	bluebird	3.7.2	0.562434021	Not Participating	366
227.	npm	bytes	3.1.2	0.553543617	Not Participating	Not Ranked
228.	npm	has-unicode	2.0.1	0.553112189	Not Participating	343
229.	npm	webidl-conversions	3.0.1	0.538994012	Not Participating	Not Ranked
230.	npm	which	1.3.1	0.538624433	Not Participating	323
231.	npm	get-intrinsic	1.2.2	0.53758895	Not Participating	Not Ranked
232.	npm	es-to-primitive	1.2.1	0.536927158	Not Participating	Not Ranked
233.	npm	estraverse	4.3.0	0.526196246	Not Participating	386
234.	npm	proxy-addr	2.0.7	0.523258701	Not Participating	Not Ranked
235.	npm	whatwg-url	5.0.0	0.519851331	Not Participating	Not Ranked
236.	npm	merge-stream	2.0.0	0.517941931	Not Participating	Not Ranked
237.	npm	json-stringify-safe	5.0.1	0.516704886	Not Participating	113
238.	npm	is-regex	1.1.4	0.510600127	Not Participating	Not Ranked
239.	npm	assert-plus	1.0.0	0.509031646	Not Participating	66
240.	npm	isobject	3.0.0	0.507599561	Not Participating	316
241.	npm	buffer-from	1.1.2	0.504135679	Not Participating	Not Ranked
242.	npm	through	2.3.8	0.502640068	Not Participating	204
243.	npm	safe-buffer	5.1.0	0.498299573	Not Participating	193
244.	npm	validate-npm-package-license	3.0.4	0.492367434	Not Participating	Not Ranked
245.	npm	npm-normalize-package-bin	1.0.1	0.488760378	Not Participating	Not Ranked
246.	npm	@nicolo-ribaudo/semver-v6	6.3.3	0.486984649	Not Participating	Not Ranked
247.	npm	accepts	1.3.8	0.481303694	Not Participating	Not Ranked
248.	npm	uuid	3.4.0	0.480390154	Not Participating	151
249.	npm	slash	3.0.0	0.479597	Not Participating	Not Ranked
250.	npm	call-bind	1.0.4	0.475122229	Not Participating	Not Ranked
251.	npm	call-bind	1.0.3	0.475122229	Not Participating	Not Ranked
252.	npm	call-bind	1.0.5	0.475122229	Not Participating	Not Ranked
253.	npm	which-boxed-primitive	1.0.2	0.469128761	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
254.	npm	clone	1.0.4	0.468058927	Not Participating	Not Ranked
255.	npm	destroy	1.2.0	0.465739392	Not Participating	Not Ranked
256.	npm	readdir-scoped-modules	1.1.0	0.465735214	Not Participating	Not Ranked
257.	npm	map-cache	0.2.2	0.459673974	Not Participating	107
258.	npm	has-flag	2.0.0	0.447617058	Not Participating	Not Ranked
259.	npm	reusify	1.0.4	0.434553612	Not Participating	Not Ranked
260.	npm	import-fresh	3.3.0	0.433808763	Not Participating	Not Ranked
261.	npm	har-schema	2.0.0	0.43274502	Not Participating	159
262.	npm	core-util-is	1.0.3	0.428008324	Not Participating	Not Ranked
263.	npm	moment	2.29.4	0.421172473	Not Participating	Not Ranked
264.	npm	pascalcase	0.1.1	0.416023551	Not Participating	97
265.	npm	is-stream	2.0.1	0.41474223	Not Participating	Not Ranked
266.	npm	static-extend	0.1.1	0.41268158	Not Participating	171
267.	npm	js-yaml	3.14.1	0.410891958	Not Participating	Not Ranked
268.	npm	merge2	1.4.1	0.403844145	Not Participating	Not Ranked
269.	npm	form-data	4.0.0	0.402811584	Not Participating	Not Ranked
270.	npm	resolve-url	0.2.1	0.400290652	Not Participating	84
271.	npm	decamelize	1.2.0	0.398045796	Not Participating	138
272.	npm	urix	0.1.0	0.397366464	Not Participating	82
273.	npm	content-disposition	0.5.4	0.396648446	Not Participating	Not Ranked
274.	npm	opener	1.5.2	0.396348333	Not Participating	Not Ranked
275.	npm	js-yaml	4.1.0	0.396136305	Not Participating	Not Ranked
276.	npm	parse-json	5.2.0	0.395563209	Not Participating	Not Ranked
277.	npm	require-from-string	2.0.2	0.39366095	Not Participating	Not Ranked
278.	npm	statuses	1.5.0	0.388709954	Not Participating	73
279.	npm	is-extendable	0.1.0	0.386088903	Not Participating	199
280.	npm	yallist	3.1.1	0.381817783	Not Participating	Not Ranked
281.	npm	emojis-list	3.0.0	0.379982074	Not Participating	Not Ranked
282.	npm	p-locate	3.0.0	0.378762816	Not Participating	288

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
283.	npm	is-buffer	1.1.5	0.372988099	Not Participating	224
284.	npm	lodash.debounce	4.0.8	0.370989181	Not Participating	Not Ranked
285.	npm	micromatch	4.0.5	0.370300161	Not Participating	Not Ranked
286.	npm	is-extendable	1.0.1	0.364129444	Not Participating	117
287.	npm	safe-regex	1.1.0	0.363155548	Not Participating	112
288.	npm	is-binary-path	2.1.0	0.362221034	Not Participating	Not Ranked
289.	npm	jsonparse	1.3.1	0.360973951	Not Participating	Not Ranked
290.	npm	humanize-ms	1.2.1	0.359544901	Not Participating	Not Ranked
291.	npm	tunnel-agent	0.6.0	0.359324383	Not Participating	124
292.	npm	ansi-regex	2.1.1	0.351434424	Not Participating	44
293.	npm	gensync	1.0.0-beta.2	0.350091693	Not Participating	Not Ranked
294.	npm	object-copy	0.1.0	0.347945281	Not Participating	96
295.	npm	on-headers	1.0.2	0.345952332	Not Participating	Not Ranked
296.	npm	y18n	5.0.8	0.343487203	Not Participating	Not Ranked
297.	npm	cssesc	3.0.0	0.340062634	Not Participating	Not Ranked
298.	npm	source-map-support	0.5.21	0.340052693	Not Participating	Not Ranked
299.	npm	abbrev	1.1.1	0.338865481	Not Participating	465
300.	npm	onetime	5.1.2	0.337582495	Not Participating	Not Ranked
301.	npm	queue-microtask	1.2.3	0.337493866	Not Participating	Not Ranked
302.	npm	delegates	1.0.0	0.319982297	Not Participating	250
303.	npm	strip-ansi	3.0.1	0.306998452	Not Participating	50
304.	npm	locate-path	3.0.0	0.306873107	Not Participating	330
305.	npm	verror	1.10.0	0.302804996	Not Participating	92
306.	npm	http-signature	1.2.0	0.297686652	Not Participating	228
307.	npm	os-tmpdir	1.0.2	0.288119405	Not Participating	114
308.	npm	@jridgewell/set-array	1.1.2	0.284878987	Not Participating	Not Ranked
309.	npm	yaml	1.10.2	0.283065752	Not Participating	Not Ranked
310.	npm	esrecurse	4.3.0	0.282621461	Not Participating	Not Ranked
311.	npm	regenerator-runtime	0.13.11	0.279793706	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
312.	npm	@babel/ plugin-syntax-object-rest-spread	7.8.3	0.277775994	27	Not Ranked
313.	npm	@nodelib/fs.stat	2.0.5	0.277606258	Not Participating	Not Ranked
314.	npm	p-limit	3.1.0	0.277256662	Not Participating	Not Ranked
315.	npm	randombytes	2.1.0	0.276035727	Not Participating	Not Ranked
316.	npm	arr-union	3.1.0	0.273493485	Not Participating	134
317.	npm	raw-body	2.5.1	0.271322396	Not Participating	Not Ranked
318.	npm	source-map-url	0.4.0	0.269550405	Not Participating	129
319.	npm	aproba	2.0.0	0.268848883	Not Participating	Not Ranked
320.	npm	lodash.merge	4.6.2	0.266938959	Not Participating	Not Ranked
321.	npm	is-string	1.0.7	0.265367829	Not Participating	Not Ranked
322.	npm	is-symbol	1.0.4	0.26524935	Not Participating	Not Ranked
323.	npm	npm-user-validate	1.0.1	0.265234795	Not Participating	Not Ranked
324.	npm	prelude-ls	1.1.2	0.264144556	Not Participating	283
325.	npm	isstream	0.1.2	0.261318096	Not Participating	93
326.	npm	oauth-sign	0.9.0	0.261253969	Not Participating	325
327.	npm	console-control-strings	1.1.0	0.254759615	Not Participating	310
328.	npm	estraverse	5.3.0	0.254672392	Not Participating	Not Ranked
329.	npm	debug	3.2.7	0.254570349	Not Participating	Not Ranked
330.	npm	is-date-object	1.0.5	0.253971773	Not Participating	Not Ranked
331.	npm	get-symbol-description	1.0.0	0.252082814	Not Participating	Not Ranked
332.	npm	follow-redirects	1.15.2	0.251242368	Not Participating	Not Ranked
333.	npm	run-parallel	1.2.0	0.245149205	Not Participating	Not Ranked
334.	npm	sax	1.2.4	0.244226221	Not Participating	77
335.	npm	is-buffer	1.1.6	0.244051142	Not Participating	55
336.	npm	jsbn	0.1.1	0.232995993	Not Participating	119
337.	npm	color-name	1.1.2	0.232398871	Not Participating	Not Ranked
338.	npm	color-name	1.1.1	0.232398871	Not Participating	Not Ranked
339.	npm	minimatch	3.0.4	0.23123608	Not Participating	23

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
340.	npm	find-up	3.0.0	0.230644721	Not Participating	369
341.	npm	clean-stack	2.2.0	0.230403981	Not Participating	Not Ranked
342.	npm	bytes	3.0.0	0.229570866	Not Participating	Not Ranked
343.	npm	send	0.18.0	0.227731221	Not Participating	Not Ranked
344.	npm	repeat-string	1.6.1	0.220599307	Not Participating	139
345.	npm	cookie	0.5.0	0.21707299	Not Participating	Not Ranked
346.	npm	jsesc	0.5.0	0.21707254	Not Participating	Not Ranked
347.	npm	argparse	2.0.1	0.211470128	Not Participating	Not Ranked
348.	npm	eventemitter3	4.0.7	0.209081578	Not Participating	Not Ranked
349.	npm	make-dir	3.1.0	0.208876744	Not Participating	Not Ranked
350.	npm	tweetnacl	0.14.5	0.207056594	Not Participating	43
351.	npm	react-is	17.0.2	0.205724445	81	Not Ranked
352.	npm	@nodelib/fs.scandir	2.1.5	0.203233609	Not Participating	Not Ranked
353.	npm	json-schema-traverse	1.0.0	0.202846754	Not Participating	Not Ranked
354.	npm	@types/color-name	1.1.3	0.199158024	Not Participating	Not Ranked
355.	npm	@types/color-name	1.1.2	0.199158024	Not Participating	Not Ranked
356.	npm	@types/color-name	1.1.1	0.199158024	Not Participating	Not Ranked
357.	npm	events	3.3.0	0.195367579	Not Participating	Not Ranked
358.	npm	for-each	0.3.3	0.192567033	Not Participating	Not Ranked
359.	npm	object-inspect	1.12.3	0.192083347	Not Participating	Not Ranked
360.	npm	@babel/ plugin-syntax-dynamic-import	7.8.3	0.190672011	27	Not Ranked
361.	npm	caseless	0.12.0	0.189655143	Not Participating	149
362.	npm	dir-glob	3.0.1	0.189204389	Not Participating	Not Ranked
363.	npm	readdirp	3.6.0	0.184713123	Not Participating	Not Ranked
364.	npm	graceful-fs	4.2.10	0.183473008	Not Participating	Not Ranked
365.	npm	bcrypt-pbkdf	1.0.2	0.182888204	Not Participating	327
366.	npm	type-check	0.3.2	0.182678717	Not Participating	305
367.	npm	ansi-styles	3.2.0	0.179993463	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
368.	npm	resolve-from	5.0.0	0.179544576	Not Participating	Not Ranked
369.	npm	available-typed-arrays	1.0.5	0.175361907	Not Participating	Not Ranked
370.	npm	@types/parse-json	4.0.0	0.17309248	Not Participating	Not Ranked
371.	npm	compression	1.7.4	0.172923547	15	Not Ranked
372.	npm	forever-agent	0.6.1	0.167973735	Not Participating	135
373.	npm	to-object-path	0.2.0	0.158486871	Not Participating	278
374.	npm	arr-union	3.0.0	0.158486871	Not Participating	277
375.	npm	base	0.11.1	0.158486871	Not Participating	421
376.	npm	foreach	2.0.6	0.156661883	Not Participating	Not Ranked
377.	npm	foreach	2.0.5	0.156661883	Not Participating	10
378.	npm	is-stream	1.1.0	0.154505957	Not Participating	70
379.	npm	serve-static	1.15.0	0.154211863	Not Participating	Not Ranked
380.	npm	extsprintf	1.3.0	0.151637516	Not Participating	143
381.	npm	spdx-exceptions	2.3.0	0.150444416	Not Participating	Not Ranked
382.	npm	functions-have-names	1.2.3	0.149800273	Not Participating	Not Ranked
383.	npm	fs-minipass	2.1.0	0.149526174	Not Participating	Not Ranked
384.	npm	is-bigint	1.0.4	0.149474083	Not Participating	Not Ranked
385.	npm	dashdash	1.14.1	0.148853445	Not Participating	158
386.	npm	getpass	0.1.7	0.147796348	Not Participating	161
387.	npm	is-boolean-object	1.1.2	0.144063757	Not Participating	Not Ranked
388.	npm	spdx-expression-parse	3.0.1	0.141512435	Not Participating	Not Ranked
389.	npm	invariant	2.2.4	0.141205418	Not Participating	309
390.	npm	ini	1.3.8	0.138810193	Not Participating	Not Ranked
391.	npm	process	0.11.10	0.137380453	Not Participating	Not Ranked
392.	npm	ecc-jsbn	0.1.2	0.13423853	Not Participating	430
393.	npm	minipass-json-stream	1.0.1	0.128427245	Not Participating	Not Ranked
394.	npm	source-map	0.5.6	0.125034913	Not Participating	192
395.	npm	pkg-dir	4.2.0	0.122478383	Not Participating	Not Ranked
396.	npm	p-map	4.0.0	0.121351759	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
397.	npm	promise-inflight	1.0.1	0.120037394	Not Participating	Not Ranked
398.	npm	split-string	3.0.1	0.119379992	Not Participating	318
399.	npm	split-string	3.0.2	0.119379992	Not Participating	319
400.	npm	deep-is	0.1.4	0.11849437	Not Participating	Not Ranked
401.	npm	strip-bom	3.0.0	0.116870098	Not Participating	488
402.	npm	inherits	2.0.1	0.115919222	Not Participating	104
403.	npm	ip-regex	4.3.0	0.115802551	Not Participating	Not Ranked
404.	npm	ajv-keywords	3.5.2	0.111611414	Not Participating	Not Ranked
405.	npm	@nodelib/fs.walk	1.2.8	0.109878968	Not Participating	Not Ranked
406.	npm	json5	2.2.3	0.107463217	Not Participating	Not Ranked
407.	npm	color-support	1.1.3	0.105467076	Not Participating	Not Ranked
408.	npm	array-union	2.1.0	0.105457131	Not Participating	Not Ranked
409.	npm	qs	6.11.0	0.104764222	173	Not Ranked
410.	npm	inflight	1.0.5	0.104258666	Not Participating	226
411.	npm	inflight	1.0.4	0.104258666	Not Participating	225
412.	npm	@tootallnate/once	2.0.0	0.100709996	Not Participating	Not Ranked
413.	npm	har-validator	5.1.5	0.100520568	Not Participating	381
414.	npm	aws-sign2	0.7.0	0.098285511	Not Participating	184
415.	npm	levn	0.3.0	0.098240942	Not Participating	345
416.	npm	http-proxy-agent	5.0.0	0.097892659	Not Participating	Not Ranked
417.	npm	has-bigints	1.0.2	0.095849008	Not Participating	Not Ranked
418.	npm	universalify	2.0.0	0.094738947	Not Participating	Not Ranked
419.	npm	typedarray	0.0.6	0.093341907	Not Participating	203
420.	npm	finalhandler	1.2.0	0.090270902	Not Participating	Not Ranked
421.	npm	shebang-regex	1.0.0	0.090204678	Not Participating	141
422.	npm	is-extendable	0.1.1	0.089956861	Not Participating	122
423.	npm	neo-async	2.6.2	0.088890238	Not Participating	Not Ranked
424.	npm	define-property	0.2.5	0.087527329	Not Participating	174
425.	npm	wcwidth	1.0.1	0.083714041	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSF BADGE TIERED PERCENTAGE	CENSUS II RANK
426.	npm	strip-json-comments	3.1.1	0.079082286	Not Participating	Not Ranked
427.	npm	jsonfile	6.1.0	0.078504284	Not Participating	Not Ranked
428.	npm	commondir	1.0.1	0.078272765	Not Participating	Not Ranked
429.	npm	aggregate-error	3.1.0	0.073775695	Not Participating	Not Ranked
430.	npm	common-ancestor-path	1.0.1	0.071344768	Not Participating	Not Ranked
431.	npm	pify	2.3.0	0.071281553	Not Participating	360
432.	npm	infer-owner	1.0.4	0.070385012	Not Participating	Not Ranked
433.	npm	promise-all-reject-late	1.0.1	0.070312728	Not Participating	Not Ranked
434.	npm	readable-stream	2.3.7	0.069720236	Not Participating	244
435.	npm	copy-descriptor	0.1.1	0.067389923	Not Participating	206
436.	npm	has-flag	1.0.0	0.066716063	Not Participating	42
437.	npm	source-map-js	1.0.2	0.062076561	Not Participating	Not Ranked
438.	npm	wide-align	1.1.5	0.060973663	Not Participating	Not Ranked
439.	npm	retry	0.12.0	0.055111831	Not Participating	Not Ranked
440.	npm	array-unique	0.3.2	0.053949667	Not Participating	148
441.	npm	json-stringify-nice	1.1.4	0.052510042	Not Participating	Not Ranked
442.	npm	cidr-regex	3.1.1	0.051478002	Not Participating	Not Ranked
443.	npm	is-cidr	4.0.2	0.051406827	Not Participating	Not Ranked
444.	npm	natural-compare	1.4.0	0.049987065	Not Participating	Not Ranked
445.	npm	color-convert	2.0.0	0.049461634	Not Participating	Not Ranked
446.	npm	@isaacs/string-locale-compare	1.1.0	0.047741306	Not Participating	Not Ranked
447.	npm	minimalistic-assert	1.0.1	0.045616631	Not Participating	354
448.	npm	is-weakref	1.0.2	0.041090365	Not Participating	Not Ranked
449.	npm	chownr	2.0.0	0.039978365	Not Participating	Not Ranked
450.	npm	doctrine	3.0.0	0.03958451	Not Participating	Not Ranked
451.	npm	setimmediate	1.0.5	0.039129721	Not Participating	198
452.	npm	rimraf	2.7.1	0.036887321	Not Participating	232
453.	npm	esmangle-evaluator	1.0.1	0.035691273	Not Participating	58
454.	npm	unreachable-branch-transform	0.5.0	0.035691273	Not Participating	59

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
455.	npm	unreachable-branch-transform	0.5.1	0.035691273	Not Participating	61
456.	npm	esmangle-evaluator	1.0.0	0.035691273	Not Participating	60
457.	npm	snapdragon	0.8.1	0.034909135	Not Participating	Not Ranked
458.	npm	to-regexp	3.0.1	0.034909135	Not Participating	344
459.	npm	minizlib	2.1.2	0.032348681	Not Participating	Not Ranked
460.	npm	once	1.3.2	0.02986621	Not Participating	275
461.	npm	once	1.3.3	0.02986621	Not Participating	273
462.	npm	once	1.3.1	0.02986621	Not Participating	272
463.	npm	once	1.3.0	0.02986621	Not Participating	274
464.	npm	lines-and-columns	1.2.4	0.02811795	Not Participating	Not Ranked
465.	npm	is-shared-array-buffer	1.0.2	0.027064104	Not Participating	Not Ranked
466.	npm	p-finally	1.0.0	0.026671743	Not Participating	240
467.	npm	extend-shallow	3.0.2	0.02665414	Not Participating	218
468.	npm	is-data-descriptor	1.0.1	0.021752464	Not Participating	Not Ranked
469.	npm	is-fullwidth-code-point	2.0.0	0.015928363	Not Participating	37
470.	npm	shebang-command	1.2.0	0.012439737	Not Participating	170
471.	npm	cli-columns	4.0.0	0.011833439	Not Participating	Not Ranked
472.	npm	type-fest	0.20.2	0.010886409	Not Participating	Not Ranked
473.	npm	has-values	0.1.4	0.009442638	Not Participating	229
474.	npm	get-intrinsic	1.2.1	0.006883502	Not Participating	Not Ranked
475.	npm	deep-is	0.1.3	0.00544862	Not Participating	300
476.	npm	lodash.uniq	4.5.0	0.004168459	Not Participating	Not Ranked
477.	npm	is-absolute	0.1.7	0.003623632	Not Participating	495
478.	npm	istanbul	0.4.5	0.003623632	Not Participating	Not Ranked
479.	npm	is-negative-zero	2.0.2	0.003382101	Not Participating	Not Ranked
480.	npm	punycode	1.4.1	0.002375668	Not Participating	128
481.	npm	smart-buffer	4.2.0	0.002139099	Not Participating	Not Ranked
482.	npm	@jridgewell/source-map-codec	1.4.14	0.001681188	Not Participating	Not Ranked
483.	npm	npm-run-path	4.0.1	0.000455016	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSF BADGE TIERED PERCENTAGE	CENSUS II RANK
484.	npm	is-callable	1.2.7	-0.004552972	Not Participating	Not Ranked
485.	npm	strip-final-newline	2.0.0	-0.006374959	Not Participating	Not Ranked
486.	npm	json-stable-stringify-without-jsonify	1.0.1	-0.006838207	Not Participating	Not Ranked
487.	npm	async	3.2.4	-0.007137416	Not Participating	Not Ranked
488.	npm	big.js	5.2.2	-0.008902212	Not Participating	Not Ranked
489.	npm	@babel/plugin-syntax-logical-assignment-operators	7.10.4	-0.010813337	27	Not Ranked
490.	npm	is-arguments	1.1.1	-0.01122913	Not Participating	Not Ranked
491.	npm	core-util-is	1.0.1	-0.012801257	Not Participating	52
492.	npm	core-util-is	1.0.0	-0.012801257	Not Participating	53
493.	npm	columnify	1.6.0	-0.015497821	Not Participating	Not Ranked
494.	npm	static-extend	0.1.2	-0.0175306	Not Participating	231
495.	npm	querystring	0.2.0	-0.017933198	Not Participating	306
496.	npm	@babel/plugin-syntax-optional-catch-binding	7.8.3	-0.018356339	27	Not Ranked
497.	npm	ansi-escapes	4.3.2	-0.019027784	Not Participating	Not Ranked
498.	npm	extend-shallow	2.0.1	-0.019750533	Not Participating	247
499.	npm	get-intrinsic	1.1.2	-0.023203686	Not Participating	Not Ranked
500.	npm	@babel/plugin-syntax-nullish-coalescing-operator	7.8.3	-0.024626598	27	Not Ranked

Appendix H: Top 500 Non-npm, Indirect & Direct, Versioned Packages

Our dependency analysis identified the following 500 packages as the most used FOSS packages among those reported in the private usage data contributed by SCA partners hosted on package managers other than npm. These packages were identified as either direct or indirect dependencies called by observed packages in use and account for the package version. For further information on how this list was compiled, refer to the Methods section.

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
1.	maven	logkit:logkit	1.0.1	13.38480005	Not Participating	1
2.	maven	org.apache.geronimo.specs:geronimo-jms_1.1_spec	1.0.1	8.147996555	Not Participating	19
3.	maven	javax.mail:mail	1.4.3	7.659819958	Not Participating	3
4.	maven	avalon-framework:avalon-framework	4.1.5	6.505948001	Not Participating	43
5.	go	github.com/cespare/xxhash	v1.1.0	5.840315344	Not Participating	Not Ranked
6.	maven	com.google.code.findbugs:jsr305	3.0.2	5.596011553	Not Participating	30
7.	maven	com.google.guava:failureaccess	1.0.1	5.378436517	99	18
8.	maven	commons-logging:commons-logging	1.2	4.997353121	Not Participating	14
9.	maven	com.google.guava:listenablefuture	9999.0-empty-to-avoid-conflict-with-guava	4.986241894	99	6
10.	maven	avalon-framework:avalon-framework	4.1.3	4.597621304	Not Participating	7
11.	maven	commons-collections:commons-collections	3.2.2	4.518320814	Not Participating	25
12.	conda	_libgcc_mutex	0.1	4.508861923	Not Participating	Not Ranked
13.	maven	jakarta.annotation:jakarta.annotation-api	1.3.5	4.50238374	Not Participating	28
14.	maven	javax.inject:javax.inject	1	4.434477287	Not Participating	40
15.	go	gopkg.in/yaml.v3	v3.0.1	4.395522086	Not Participating	Not Ranked
16.	maven	org.apache.commons:commons-lang3	3.12.0	4.113163118	Not Participating	Not Ranked
17.	maven	com.google.j2objc:j2objc-annotations	1.3	4.101208977	Not Participating	56

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
18.	maven	com.madgag.spongycastle:bcpkix-jdk15on	1.58.0.0	3.940443588	Not Participating	Not Ranked
19.	pypi	six	1.16.0	3.902087402	Not Participating	193
20.	maven	commons-codec:commons-codec	1.15	3.84882955	Not Participating	Not Ranked
21.	go	gopkg.in/yaml.v2	v2.4.0	3.823679687	Not Participating	Not Ranked
22.	maven	com.github.zafarkhaja:java-semver	0.9.0	3.82318884	Not Participating	Not Ranked
23.	maven	com.fasterxml:classmate	1.5.1	3.802274333	Not Participating	54
24.	go	github.com/beorn7/perks	v1.0.1	3.542780431	Not Participating	Not Ranked
25.	maven	org.apache.httpcomponents:httpClient	4.5.13	3.470123708	Not Participating	60
26.	maven	org.latencyutils:latencyutils	2.0.3	3.45881729	Not Participating	37
27.	maven	log4j:log4j	1.2.12	3.443749347	Not Participating	33
28.	go	github.com/spf13/pflag	v1.0.5	3.333090429	Not Participating	Not Ranked
29.	go	github.com/pmezard/go-difflib	v1.0.0	3.261638007	Not Participating	Not Ranked
30.	conda	readline	7	3.221850894	Not Participating	Not Ranked
31.	conda	ncurses	6	3.221850894	Not Participating	Not Ranked
32.	go	github.com/golang/groupcache	v0.0.0-20210331224755-41bb18bfe9da	3.187115795	Not Participating	Not Ranked
33.	maven	commons-lang:commons-lang	2.6	3.180717397	Not Participating	38
34.	go	github.com/modern-go/concurrent	v1.0.3	3.135265744	Not Participating	Not Ranked
35.	maven	javax.annotation:javax.annotation-api	1.3.2	3.127802751	Not Participating	74
36.	go	github.com/gogo/protobuf	v1.3.2	3.121752466	Not Participating	Not Ranked
37.	maven	com.github.gfx.util:weak-identity-hash-map	2.0.1	3.118052196	Not Participating	Not Ranked
38.	go	github.com/json-iterator/go	v1.1.12	3.02166053	Not Participating	Not Ranked
39.	maven	jakarta.validation:jakarta.validation-api	2.0.2	2.9641072	Not Participating	48
40.	go	github.com/davecgh/go-spew	v1.1.1	2.962247144	Not Participating	Not Ranked
41.	pypi	python-dateutil	2.8.2	2.912424083	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
42.	maven	log4j:log4j	1.2.17	2.875190789	Not Participating	5
43.	maven	asm:asm	3.2	2.778053988	Not Participating	Not Ranked
44.	go	github.com/matttproud/golang_protobuf_extensions	v1.0.2	2.74591332	Not Participating	Not Ranked
45.	go	github.com/jmespath/go-jmespath	v0.4.0	2.7226684	Not Participating	Not Ranked
46.	pypi	typing-extensions	4.7.1	2.699509252	Not Participating	Not Ranked
47.	maven	commons-beanutils:commons-beanutils	1.9.4	2.694547594	Not Participating	325
48.	maven	javax.validation:validation-api	2.0.1.Final	2.644733341	Not Participating	34
49.	pypi	appdirs	1.4.3	2.600535225	Not Participating	203
50.	maven	org.brotli:dec	0.1.2	2.467396153	57	Not Ranked
51.	go	github.com/golang/appengine	v1.6.7	2.466263045	Not Participating	Not Ranked
52.	go	github.com/pkg/errors	v0.9.1	2.42671704	Not Participating	Not Ranked
53.	maven	org.slf4j:slf4j-api	1.7.36	2.42256706	Not Participating	Not Ranked
54.	pypi	charset-normalizer	3.2.0	2.41867254	109	Not Ranked
55.	maven	javax.xml.bind:jaxb-api	2.3.1	2.392745209	Not Participating	58
56.	maven	org.apache.commons:commons-text	1.10.0	2.341835097	Not Participating	Not Ranked
57.	pypi	idna	3.4	2.295269973	Not Participating	Not Ranked
58.	alpine	zlib	1.2.8	2.2454977	18	Not Ranked
59.	maven	com.xenoamess:nashorn	jdk8u265-b01-x1	2.221498032	Not Participating	Not Ranked
60.	maven	javax.json:javax.json-api	1.1.4	2.221404245	Not Participating	Not Ranked
61.	pypi	six	1.10.0	2.216527624	Not Participating	108
62.	maven	org.jetbrains:annotations	13	2.208278687	Not Participating	73
63.	alpine	zlib	1.2.11	2.20111801	18	Not Ranked
64.	maven	jakarta.xml.bind:jakarta.xml.bind-api	2.3.3	2.1154834	Not Participating	188
65.	maven	org.slf4j:jul-to-slf4j	1.7.36	2.11354672	Not Participating	Not Ranked
66.	maven	org.hdrhistogram:hdrhistogram	2.1.12	2.082663736	Not Participating	220
67.	pypi	more-itertools	8.8.0	2.068987567	Not Participating	Not Ranked
68.	maven	org.mpierce.metrics.reservoir:hdrhistogram-metrics-reservoir	1.1.0	2.063393901	3	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
69.	pypi	cffi	1.15.1	2.056174846	Not Participating	Not Ranked
70.	maven	javax.activation:javax.activation-api	1.2.0	2.041935946	Not Participating	50
71.	maven	com.perfma.wrapped:com.sun.sajdi	1.8.0_jdk8u275-b01_linux_x64	2.008978628	Not Participating	Not Ranked
72.	maven	org.apache.commons:commons-collections4	4.4	1.981227782	Not Participating	Not Ranked
73.	go	github.com/stretchr/objx	v0.1.0	1.979219557	Not Participating	Not Ranked
74.	maven	javax.websocket:javax.websocket-client-api	1	1.957832079	Not Participating	Not Ranked
75.	go	github.com/pelletier/go-toml	v1.9.5	1.946010493	Not Participating	Not Ranked
76.	pypi	jinja2	3.1.2	1.912417908	Not Participating	Not Ranked
77.	maven	org.apache.commons:commons-configuration2	2.8.0	1.896076661	Not Participating	Not Ranked
78.	pypi	pycparser	2.21	1.849515024	Not Participating	Not Ranked
79.	maven	javax.websocket:javax.websocket-api	1	1.84070146	Not Participating	Not Ranked
80.	maven	software.amazon.ion:ion-java	1.0.2	1.832932934	Not Participating	168
81.	pypi	importlib-metadata	6.7.0	1.823959502	Not Participating	Not Ranked
82.	pypi	backports.ssl_match_hostname	3.5.0.1	1.757321103	3	337
83.	conda	_openmp_mutex	4.5	1.757321103	Not Participating	Not Ranked
84.	conda	_openmp_mutex	5.1	1.757321103	Not Participating	Not Ranked
85.	maven	org.apache.httpcomponents:httpcore-nio	4.4.13	1.751422567	Not Participating	Not Ranked
86.	go	github.com/golang/protobuf	v1.5.3	1.748012339	Not Participating	Not Ranked
87.	maven	org.apache.httpcomponents:httpcore	4.4.16	1.732764754	Not Participating	Not Ranked
88.	nuget	system.text.encoding	4.3.0	1.700620455	Not Participating	130
89.	go	github.com/golang/protobuf	v1.5.2	1.679786761	Not Participating	Not Ranked
90.	nuget	system.diagnostics.debug	4.3.0	1.675224512	Not Participating	146
91.	nuget	system.collections	4.3.0	1.671095937	Not Participating	148
92.	nuget	system.threading.tasks	4.3.0	1.662561234	Not Participating	381

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
93.	nuget	system.runtime.interopservices	4.3.0	1.657461229	Not Participating	137
94.	nuget	system.reflection	4.3.0	1.657461229	Not Participating	122
95.	nuget	system.linq	4.3.0	1.64993265	Not Participating	159
96.	nuget	system.resources.resourcemanager	4.3.0	1.633071409	Not Participating	132
97.	maven	com.android	26.0.1	1.632412225	Not Participating	Not Ranked
98.	go	github.com/mitchellh/mapstructure	v1.5.0	1.63209998	Not Participating	Not Ranked
99.	nuget	system.globalization	4.3.0	1.619748947	Not Participating	141
100.	maven	org.glassfish:javax.el	3.0.1-b08	1.617678008	Not Participating	Not Ranked
101.	nuget	system.io	4.3.0	1.606894853	Not Participating	92
102.	nuget	system.threading	4.3.0	1.594526474	Not Participating	142
103.	nuget	system.security.cryptography.primitives	4.3.0	1.593329534	Not Participating	147
104.	nuget	system.security.cryptography.encoding	4.3.0	1.59112647	Not Participating	155
105.	nuget	system.io.filesystem	4.3.0	1.588975448	Not Participating	160
106.	maven	org.hamcrest:hamcrest-all	1.3	1.579802341	Not Participating	Not Ranked
107.	maven	org.slf4j:slf4j-api	1.7.30	1.560550899	Not Participating	49
108.	maven	jakarta.activation:jakarta.activation-api	1.2.2	1.548632604	Not Participating	242
109.	nuget	system.runtime.numerics	4.3.0	1.541427442	Not Participating	176
110.	maven	io.dropwizard.metrics:metrics-core	4.1.2	1.536161298	Not Participating	Not Ranked
111.	go	github.com/stretchr/testify	v1.3.0	1.53542265	Not Participating	Not Ranked
112.	maven	org.bouncycastle:bctls-fips	1.0.10	1.53321531	Not Participating	Not Ranked
113.	maven	commons-io:commons-io	2.11.0	1.5309197	Not Participating	Not Ranked
114.	pypi	requests	2.31.0	1.529284795	Not Participating	Not Ranked
115.	maven	aopalliance:aopalliance	1	1.521769141	Not Participating	39
116.	maven	io.dropwizard.metrics:metrics-jvm	4.1.2	1.515015281	Not Participating	Not Ranked
117.	pypi	chardet	3.0.4	1.512289514	Not Participating	198
118.	maven	cn.pivoto.jdk:tools	1.8	1.50886953	Not Participating	Not Ranked
119.	maven	io.dropwizard.metrics:metrics-annotation	4.1.2	1.506458674	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSF BADGE TIERED PERCENTAGE	CENSUS II RANK
120.	maven	org.apache.logging.log4j:log4j-api	2.17.1	1.499061049	96	Not Ranked
121.	maven	commons-collections:commons-collections	3.2.1	1.493463445	Not Participating	124
122.	maven	ch.qos.logback:logback-classic	1.2.9	1.492244557	Not Participating	Not Ranked
123.	nuget	system.text.encoding.extensions	4.3.0	1.486940653	Not Participating	167
124.	nuget	system.collections.concurrent	4.3.0	1.485084529	Not Participating	174
125.	maven	ch.qos.logback:logback-core	1.2.9	1.480678518	Not Participating	Not Ranked
126.	maven	ch.qos.logback:logback-classic	1.2.3	1.473971314	Not Participating	31
127.	nuget	system.io.filesystem.primitives	4.3.0	1.471796761	Not Participating	156
128.	pypi	urllib3	2.0.5	1.463747134	164	Not Ranked
129.	nuget	system.runtime.handles	4.3.0	1.448204901	Not Participating	154
130.	maven	log4j:log4j	1.2.6	1.446663269	Not Participating	44
131.	nuget	system.runtime.interopservices.runtimeinformation	4.3.0	1.440676322	Not Participating	175
132.	go	github.com/google/uuid	v1.3.0	1.436385633	Not Participating	Not Ranked
133.	nuget	system.reflection.primitives	4.3.0	1.432054885	Not Participating	123
134.	nuget	system.linq.expressions	4.3.0	1.427596718	Not Participating	177
135.	go	github.com/fsnotify/fsnotify	v1.6.0	1.411533436	Not Participating	Not Ranked
136.	pypi	msgpack	1.0.4	1.402283578	Not Participating	Not Ranked
137.	maven	io.dropwizard.metrics:metrics-healthchecks	3.1.2	1.395349677	Not Participating	Not Ranked
138.	maven	antlr:antlr	2.7.7	1.37685376	Not Participating	45
139.	nuget	system.diagnostics.tracing	4.3.0	1.35977012	Not Participating	172
140.	nuget	system.diagnostics.tools	4.3.0	1.356647668	Not Participating	178
141.	nuget	system.globalization.calendars	4.3.0	1.336438465	Not Participating	187
142.	pypi	pytz	2023.3.post1	1.331588681	Not Participating	Not Ranked
143.	nuget	system.runtime.extensions	4.3.0	1.324573147	Not Participating	389
144.	maven	org.hibernate.validator:hibernate-validator	6.1.7.Final	1.314177769	Not Participating	Not Ranked
145.	pypi	setuptools	39.0.1	1.311442575	Not Participating	202

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
146.	maven	ch.qos.logback:logback-core	1.2.3	1.303151133	Not Participating	35
147.	pypi	pyparsing	2.2.1	1.285313451	Not Participating	Not Ranked
148.	nuget	system.xml.xdocument	4.3.0	1.277875142	Not Participating	184
149.	go	github.com/modern-go/reflect2	v1.0.2	1.274178647	Not Participating	Not Ranked
150.	maven	com.github.stephenc.jcip:jcip-annotations	1.0-1	1.273174915	Not Participating	298
151.	pypi	tomli	2.0.1	1.272248579	Not Participating	Not Ranked
152.	nuget	newtonsoft.json	13.0.1	1.265147874	Not Participating	Not Ranked
153.	go	github.com/mitchellh/go-homedir	v1.1.0	1.263095535	Not Participating	Not Ranked
154.	pypi	certifi	2023.7.22	1.256937032	Not Participating	Not Ranked
155.	go	golang.org/x/time	v0.3.0	1.255983283	Not Participating	Not Ranked
156.	maven	com.google.android:annotations	4.1.1.4	1.24056259	300	Not Ranked
157.	maven	org.ccil.cowan.tagsoup:tagsoup	1.2.1	1.235244539	Not Participating	Not Ranked
158.	nuget	system.security.cryptography.x509certificates	4.3.0	1.2333802	Not Participating	170
159.	pypi	packaging	21.3	1.222001151	Not Participating	Not Ranked
160.	pypi	click	8.1.7	1.217561723	Not Participating	Not Ranked
161.	nuget	system.appcontext	4.3.0	1.210499565	Not Participating	247
162.	nuget	system.objectmodel	4.3.0	1.205590377	Not Participating	223
163.	maven	org.slf4j:slf4j-api	1.7.25	1.17943149	Not Participating	62
164.	go	gopkg.in/inf.v0	v0.9.1	1.176586267	Not Participating	Not Ranked
165.	maven	org.apache.httpcomponents:httpcore	4.4.13	1.175234207	Not Participating	232
166.	maven	javax.servlet:javax.servlet-api	4.0.1	1.173337352	Not Participating	498
167.	maven	org.apache.logging.log4j:log4j-api	2.17.2	1.170769688	96	Not Ranked
168.	go	github.com/go-logr/stdr	v1.2.2	1.169699525	Not Participating	Not Ranked
169.	nuget	system.buffer	4.5.1	1.169112162	Not Participating	Not Ranked
170.	go	github.com/kubernetes-sigs/structured-merge-diff	v1.0.2	1.168519932	Not Participating	Not Ranked
171.	nuget	system.numerics.vectors	4.5.0	1.158371901	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
172.	pypi	six	1.12.0	1.151415049	Not Participating	420
173.	go	github.com/go-openapi/swag	v0.21.1	1.141371946	Not Participating	Not Ranked
174.	nuget	microsoft.win32.primitives	4.3.0	1.141042354	Not Participating	182
175.	nuget	system.net.sockets	4.3.0	1.137156636	Not Participating	238
176.	maven	com.jcraft:jzlib	1.0.7	1.136005434	Not Participating	Not Ranked
177.	maven	org.apache.httpcomponents:httpclient	4.5.14	1.131281611	Not Participating	Not Ranked
178.	maven	com.sun.activation:jakarta.activation	1.2.2	1.129716581	Not Participating	433
179.	maven	org.aspectj:aspectjweaver	1.9.7	1.10657323	Not Participating	Not Ranked
180.	pypi	colorama	0.4.6	1.096143272	Not Participating	Not Ranked
181.	nuget	newtonsoft.json	12.0.3	1.091625744	Not Participating	Not Ranked
182.	maven	org.apache.commons:commons-compress	1.21	1.090916742	Not Participating	Not Ranked
183.	pypi	zipp	3.15.0	1.088366139	Not Participating	Not Ranked
184.	nuget	system.security.cryptography.algorithms	4.3.0	1.085428014	Not Participating	171
185.	maven	org.bouncycastle:bc-fips	1.0.2	1.072794301	Not Participating	Not Ranked
186.	maven	junit:junit	4.13.2	1.072615022	Not Participating	Not Ranked
187.	nuget	runtime.native.system	4.3.0	1.056805536	Not Participating	428
188.	maven	com.google.code.gson:gson	2.8.9	1.04172667	Not Participating	Not Ranked
189.	go	github.com/hashicorp/go-multierror	v1.1.1	1.04082899	Not Participating	Not Ranked
190.	maven	jakarta.ws.rs:jakarta.ws.rs-api	2.1.6	1.040263282	Not Participating	Not Ranked
191.	maven	javax.servlet:javax.servlet-api	3.1.0	1.036807452	Not Participating	80
192.	nuget	system.io.compression.zipfile	4.3.0	1.022805503	Not Participating	267
193.	nuget	system.threading.tasks.extensions	4.5.4	1.015152469	Not Participating	Not Ranked
194.	nuget	system.net.primitives	4.3.0	1.010714675	Not Participating	446
195.	go	github.com/kubernetes-sigs/yaml	v1.3.0	1.009968756	Not Participating	Not Ranked
196.	pypi	urllib3	1.26.16	1.009456785	164	Not Ranked
197.	maven	net.sourceforge.findbugs:annotations	1.2.0	1.006501289	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSF BADGE TIERED PERCENTAGE	CENSUS II RANK
198.	conda	distro	1.8.0	1.002866363	Not Participating	Not Ranked
199.	go	github.com/davecgh/go-spew	v1.1.0	1.002866363	Not Participating	Not Ranked
200.	pypi	idna	2.6	0.996987002	Not Participating	265
201.	nuget	system.globalization.extensions	4.3.0	0.991268737	Not Participating	432
202.	nuget	system.valuetuple	4.5.0	0.991028906	Not Participating	Not Ranked
203.	go	github.com/google/gofuzz	v1.2.0	0.987643224	Not Participating	Not Ranked
204.	maven	commons-logging:commons-logging	1.1.1	0.982480595	Not Participating	59
205.	go	github.com/census-instrumentation/opencensus-go	v0.24.0	0.97262076	Not Participating	Not Ranked
206.	nuget	system.security.cryptography.csp	4.3.0	0.972152392	Not Participating	482
207.	nuget	system.security.cryptography.openssl	4.3.0	0.96561259	Not Participating	476
208.	nuget	runtime.native.system.net.http	4.3.0	0.964884017	Not Participating	477
209.	pypi	chardet	5.1.0	0.958486672	Not Participating	Not Ranked
210.	maven	org.sonatype.sisu:sisu-guice	2.1.7	0.958486672	Not Participating	Not Ranked
211.	maven	org.slf4j:slf4j-api	1.6.1	0.958486672	Not Participating	Not Ranked
212.	go	github.com/josharian/intern	v1.0.0	0.949787484	Not Participating	Not Ranked
213.	nuget	system.xml.readerwriter	4.3.0	0.94765849	Not Participating	169
214.	go	golang.org/x/sync	v0.1.0	0.946340122	Not Participating	Not Ranked
215.	maven	javax.activation:activation	1.1	0.946088196	Not Participating	72
216.	pypi	packaging	23.1	0.943126389	Not Participating	Not Ranked
217.	go	github.com/google/go-cmp	v0.5.9	0.938026248	Not Participating	Not Ranked
218.	nuget	system.threading.timer	4.3.0	0.930675821	Not Participating	245
219.	nuget	system.console	4.3.0	0.929773779	Not Participating	243
220.	maven	org.reactivestreams:reactive-streams	1.0.4	0.922817634	Not Participating	Not Ranked
221.	pypi	resolvelib	0.8.1	0.914106981	Not Participating	Not Ranked
222.	nuget	system.numerics.vectors	4.4.0	0.914106981	Not Participating	Not Ranked
223.	maven	software.amazon.eventstream:eventstream	1.0.1	0.913664624	Not Participating	Not Ranked
224.	pypi	cryptography	41.0.3	0.90408832	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSF BADGE TIERED PERCENTAGE	CENSUS II RANK
225.	maven	org.opentest4j:opentest4j	1.2.0	0.901164959	Not Participating	75
226.	pypi	pyparsing	3.0.9	0.896025091	Not Participating	Not Ranked
227.	rubygems	ruby2_keywords	0.0.5	0.894212519	16	Not Ranked
228.	go	google.golang.org/protobuf	v1.28.1	0.888331901	Not Participating	Not Ranked
229.	go	github.com/grpc-ecosystem/ grpc-gateway	v1.16.0	0.887638023	Not Participating	Not Ranked
230.	pypi	pyjwt	2.4.0	0.886007409	Not Participating	Not Ranked
231.	pypi	certifi	2022.12.7	0.885464552	Not Participating	Not Ranked
232.	nuget	system.reflection.emit.ilgeneration	4.3.0	0.881948222	Not Participating	462
233.	maven	org.jboss.logging:jboss-logging	3.4.1.Final	0.881914498	Not Participating	47
234.	go	github.com/prometheus/ client_model	v0.3.0	0.877871687	Not Participating	Not Ranked
235.	maven	commons-logging:commons-logging	1.1.3	0.877002304	Not Participating	205
236.	pypi	numpy	1.21.3	0.868631174	Not Participating	Not Ranked
237.	pypi	webencodings	0.5.1	0.862835708	Not Participating	219
238.	maven	org.slf4j:slf4j-api	1.7.32	0.860069431	Not Participating	Not Ranked
239.	maven	org.reactivestreams:reactive-streams	1.0.3	0.856256518	Not Participating	51
240.	rubygems	rake	13.0.6	0.855476767	Not Participating	Not Ranked
241.	maven	org.checkerframework:checker-qual	3.12.0	0.854994044	Not Participating	Not Ranked
242.	go	github.com/matttn/go-colorable	v0.1.13	0.854782889	Not Participating	Not Ranked
243.	go	github.com/ghodss/yaml	v1.0.0	0.848642066	Not Participating	Not Ranked
244.	pypi	pyasn1	0.4.8	0.845360573	Not Participating	Not Ranked
245.	nuget	runtime.native.system.security. cryptography.apple	4.3.0	0.836811443	Not Participating	479
246.	nuget	runtime.osx.10.10-x64.runtime. native.system.security.cryptography. apple	4.3.0	0.836395116	Not Participating	485
247.	go	gopkg.in/ini.v1	v1.67.0	0.826819596	Not Participating	Not Ranked
248.	maven	org.tukaani:xz	1.9	0.8253476	Not Participating	Not Ranked
249.	maven	com.github.luben:zstd-jni	1.5.0-2	0.8253476	Not Participating	Not Ranked
250.	nuget	system.net.http	4.3.4	0.821528774	Not Participating	Not Ranked

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251.	maven	org.apache.httpcomponents:httpasyncclient	4.1.4	0.79698223	Not Participating	Not Ranked
252.	maven	com.google.guava:guava	31.1-jre	0.795037554	99	Not Ranked
253.	nuget	system.security.principal.windows	5.0.0	0.791009956	Not Participating	Not Ranked
254.	rubygems	rexml	3.2.5	0.787632823	Not Participating	Not Ranked
255.	maven	commons-beanutils:commons-beanutils	1.8.0	0.780967909	Not Participating	Not Ranked
256.	pypi	pygments	2.13.0	0.780967909	Not Participating	Not Ranked
257.	maven	org.jboss.logging:jboss-logging	3.4.3.Final	0.777973128	Not Participating	Not Ranked
258.	maven	org.slf4j:jul-to-slf4j	1.7.30	0.773599324	Not Participating	36
259.	maven	org.hibernate.validator:hibernate-validator	6.2.5.Final	0.770295668	Not Participating	Not Ranked
260.	maven	org.springframework.boot:spring-boot-autoconfigure	2.4.13	0.76672046	Not Participating	Not Ranked
261.	maven	org.springframework.boot:spring-boot-actuator-autoconfigure	2.4.13	0.758285224	Not Participating	Not Ranked
262.	maven	com.thoughtworks.paranamer:paranamer	2.8	0.755280284	Not Participating	449
263.	pypi	chardet	3.0.2	0.755079757	Not Participating	Not Ranked
264.	pypi	chardet	3.0.3	0.755079757	Not Participating	Not Ranked
265.	maven	org.springframework.boot:spring-boot	2.4.13	0.754125533	Not Participating	Not Ranked
266.	maven	org.springframework.boot:spring-boot-actuator	2.4.13	0.75404278	Not Participating	Not Ranked
267.	maven	org.apache.commons:commons-math3	3.6.1	0.750764831	Not Participating	492
268.	maven	ch.qos.logback:logback-classic	1.2.11	0.746329356	Not Participating	Not Ranked
269.	nuget	runtime.native.system.io.compression	4.3.0	0.731324604	Not Participating	Not Ranked
270.	maven	com.google.errorprone:error_prone_annotations	2.3.4	0.727407191	Not Participating	78
271.	maven	org.glassfish.hk2:osgi-resource-locator	1.0.3	0.725124679	Not Participating	438

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
272.	maven	commons-io:commons-io	2.6	0.723097507	Not Participating	86
273.	go	github.com/sirupsen/logrus	v1.9.0	0.719650103	Not Participating	Not Ranked
274.	maven	com.google.code.gson:gson	2.8.6	0.717033359	Not Participating	83
275.	conda	ld_impl_linux-aarch64	2.36.1	0.707001758	Not Participating	Not Ranked
276.	conda	ld_impl_linux-aarch64	2.38	0.707001758	Not Participating	Not Ranked
277.	conda	ld_impl_linux-aarch64	2.39	0.707001758	Not Participating	Not Ranked
278.	maven	ch.qos.logback:logback-core	1.2.11	0.703008761	Not Participating	Not Ranked
279.	maven	org.hdrhistogram:hdrhistogram	2.1.11	0.698201899	Not Participating	244
280.	conda	libffi	3.4.2	0.695906836	Not Participating	Not Ranked
281.	conda	libffi	3.4.4	0.695906836	Not Participating	Not Ranked
282.	go	github.com/go-logr/logr	v1.2.3	0.694826609	Not Participating	Not Ranked
283.	conda	sqlite	3.20.1	0.692208528	96	Not Ranked
284.	go	github.com/hashicorp/errwrap	v1.1.0	0.673784752	Not Participating	Not Ranked
285.	go	github.com/golang/mock	v1.6.0	0.670436789	Not Participating	Not Ranked
286.	pypi	urllib3	2.0.4	0.667010546	164	Not Ranked
287.	maven	org.codehaus. jackson:jackson-core-asl	1.9.13	0.663223447	Not Participating	239
288.	go	github.com/hashicorp/go-cleanhttp	v0.5.2	0.662856169	Not Participating	Not Ranked
289.	pypi	toml	0.10.2	0.661507901	Not Participating	Not Ranked
290.	maven	org.apache.logging.log4j:log4j-to-slf4j	2.17.2	0.659414598	96	Not Ranked
291.	pypi	click	8.1.3	0.656052886	Not Participating	Not Ranked
292.	maven	org.slf4j:log4j-over-slf4j	1.7.32	0.650891814	Not Participating	Not Ranked
293.	go	github.com/mailru/easyjson	v0.7.7	0.649277495	Not Participating	Not Ranked
294.	maven	org.codehaus. plexus:plexus-interactivity-api	1.0-alpha-4	0.647828837	Not Participating	Not Ranked
295.	nuget	system.runtime.compilerservices. unsafe	6.0.0	0.646751017	Not Participating	Not Ranked
296.	maven	jakarta.xml.bind:jakarta.xml.bind-api	2.3.2	0.638595523	Not Participating	173
297.	maven	jakarta.activation:jakarta. activation-api	1.2.1	0.637049038	Not Participating	153

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298.	pypi	six	1.11.0	0.618858762	Not Participating	197
299.	nuget	microsoft.csharp	4.7.0	0.61868851	Not Participating	Not Ranked
300.	maven	org.codehaus.janino:commons-compiler	2.7.8	0.616486279	Not Participating	Not Ranked
301.	maven	org.codehaus.plexus:plexus-utils	1.5.5	0.603449147	Not Participating	Not Ranked
302.	pypi	packaging	23	0.603449147	Not Participating	Not Ranked
303.	alpine	zlib	1.2.13	0.603449147	18	Not Ranked
304.	pypi	pyyaml	6	0.603293594	Not Participating	Not Ranked
305.	maven	javax.activation:activation	1.1.1	0.602210761	Not Participating	382
306.	go	github.com/kubernetes/utils	v0.0.0-20201103153147-b9da82cf6d08	0.59988672	Not Participating	Not Ranked
307.	maven	org.hamcrest:hamcrest	2.2	0.594315721	Not Participating	Not Ranked
308.	nuget	system.memory	4.5.4	0.593304798	Not Participating	Not Ranked
309.	maven	org.springframework:spring-expression	5.3.27	0.591252933	Not Participating	Not Ranked
310.	nuget	microsoft.extensions.logging	6.0.0	0.590970384	Not Participating	Not Ranked
311.	maven	io.netty:netty-tcnative-boringssl-static	2.0.50.Final	0.590228729	Not Participating	Not Ranked
312.	go	github.com/spf13/jwalterweatherman	v1.1.0	0.588836709	Not Participating	Not Ranked
313.	nuget	system.diagnostics.eventlog	6.0.0	0.580007108	Not Participating	Not Ranked
314.	go	github.com/opencontainers/go-digest	v1.0.0	0.576641799	Not Participating	Not Ranked
315.	pypi	attrs	23.1.0	0.567546287	Not Participating	Not Ranked
316.	pypi	markupsafe	2.1.2	0.563887652	Not Participating	Not Ranked
317.	maven	org.springframework:spring-context	5.3.27	0.561381222	Not Participating	Not Ranked
318.	maven	org.glassfish.hk2:hk2-runlevel	2.6.1	0.560137168	Not Participating	Not Ranked
319.	maven	org.glassfish.hk2:hk2-core	2.6.1	0.56013441	Not Participating	Not Ranked
320.	maven	org.glassfish.hk2:hk2	2.6.1	0.56013441	Not Participating	Not Ranked
321.	maven	org.glassfish.hk2:class-model	2.6.1	0.56013441	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
322.	maven	org.glassfish.hk2:spring-bridge	2.6.1	0.559105521	Not Participating	Not Ranked
323.	nuget	newtonsoft.json	9.0.1	0.559069456	Not Participating	Not Ranked
324.	maven	com.google.code.gson:gson	2.10.1	0.556366246	Not Participating	Not Ranked
325.	maven	org.glassfish.hk2:hk2-utils	2.6.1	0.555989985	Not Participating	Not Ranked
326.	go	github.com/uber-go/atomic	v1.10.0	0.554628512	Not Participating	Not Ranked
327.	maven	org.glassfish.hk2:hk2-locator	2.6.1	0.551864736	Not Participating	Not Ranked
328.	maven	org.glassfish.hk2:hk2-api	2.6.1	0.55179708	Not Participating	Not Ranked
329.	maven	org.bouncycastle:bcmail-jdk18on	1.71.1	0.55125231	Not Participating	Not Ranked
330.	maven	org.codehaus.woodstox:stax2-api	4.2.1	0.550108143	Not Participating	Not Ranked
331.	maven	com.zaxxer:hikaricp	4.0.3	0.548160385	Not Participating	Not Ranked
332.	pypi	cryptography	41.0.4	0.542264263	Not Participating	Not Ranked
333.	maven	com.fasterxml.jackson.core:jackson-core	2.13.3	0.540240375	Not Participating	Not Ranked
334.	go	github.com/munnerz/goautoneg	v0.0.0-20191010083416-a7dc8b61c822	0.538079516	Not Participating	Not Ranked
335.	maven	org.bouncycastle:bctls-jdk15on	1.68	0.533659133	Not Participating	Not Ranked
336.	maven	commons-cli:commons-cli	1.4	0.533494457	Not Participating	Not Ranked
337.	maven	org.yaml:snakeyaml	1.33	0.530845456	3	Not Ranked
338.	maven	org.springframework:spring-beans	5.3.27	0.529567022	Not Participating	Not Ranked
339.	maven	org.springframework:spring-core	5.3.27	0.526562456	Not Participating	Not Ranked
340.	maven	commons-logging:commons-logging	1.0.3	0.523565704	Not Participating	218
341.	nuget	system.runtime	4.3.0	0.516482556	Not Participating	395
342.	nuget	codeproject	1	0.514689766	Not Participating	Not Ranked
343.	rubygems	notifu	1.7.0	0.514689766	Not Participating	Not Ranked
344.	nuget	netstandard.library	1.6.1	0.513412145	Not Participating	263
345.	pypi	markupsafe	2.1.3	0.511778887	Not Participating	Not Ranked
346.	maven	commons-io:commons-io	2.8.0	0.509216583	Not Participating	Not Ranked
347.	maven	org.ow2.asm:asm	9.1	0.508407522	Not Participating	Not Ranked
348.	maven	org.codehaus.janino:janino	2.7.8	0.508089457	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
349.	maven	org.hamcrest:hamcrest-core	1.3	0.502036575	Not Participating	29
350.	nuget	system.io.compression	4.3.0	0.499501382	Not Participating	200
351.	maven	net.jcip:jcip-annotations	1	0.499151597	Not Participating	296
352.	maven	org.springframework:spring-aop	5.3.27	0.495778931	Not Participating	Not Ranked
353.	maven	org.checkerframework:checker-qual	3.5.0	0.494265914	Not Participating	370
354.	maven	com.fasterxml.jackson.core:jackson-core	2.13.4	0.491569928	Not Participating	Not Ranked
355.	maven	org.springframework.boot:spring-boot-jarmode-layertools	2.4.13	0.488150786	Not Participating	Not Ranked
356.	nuget	microsoft.extensions.dependencyinjection.abstractions	6.0.0	0.486212118	Not Participating	Not Ranked
357.	pypi	async-timeout	4.0.2	0.481499294	Not Participating	Not Ranked
358.	maven	org.codehaus.jackson:jackson-mapper-asl	1.9.13	0.480412373	Not Participating	210
359.	pypi	exceptiongroup	1.1.3	0.479408414	Not Participating	Not Ranked
360.	conda	python_abi	3.1	0.47770669	Not Participating	Not Ranked
361.	nuget	microsoft.extensions.options	6.0.0	0.477052925	Not Participating	Not Ranked
362.	pypi	urllib3	1.26.12	0.477004431	164	Not Ranked
363.	maven	joda-time:joda-time	2.8.1	0.472244483	113	463
364.	go	github.com/kubernetes/klog	v1.0.0	0.467321283	Not Participating	Not Ranked
365.	maven	org.apache.httpcomponents:httpcore	4.4.15	0.461301306	Not Participating	Not Ranked
366.	pypi	idna	2.1	0.460447921	Not Participating	364
367.	maven	org.springframework:spring-web	5.3.27	0.459478461	Not Participating	Not Ranked
368.	go	github.com/googleapis/go-genproto	v0.0.0-20181107211654-5fc9ac540362	0.451067186	Not Participating	Not Ranked
369.	pypi	iniconfig	2.0.0	0.445347613	Not Participating	Not Ranked
370.	rubygems	ffi	1.15.5	0.442740647	Not Participating	Not Ranked
371.	pypi	markupsafe	2.0.1	0.441861555	Not Participating	Not Ranked
372.	maven	org.apache.logging.log4j:log4j-core	2.17.1	0.439432125	96	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
373.	rubygems	ast	2.4.2	0.438941663	Not Participating	Not Ranked
374.	pypi	jmespath	1.0.1	0.438595551	Not Participating	Not Ranked
375.	maven	com.sun.istack:istack-commons-runtime	3.0.12	0.437539481	Not Participating	Not Ranked
376.	pypi	idna	2.8	0.436224592	Not Participating	Not Ranked
377.	nuget	system.runtime	4.3.1	0.427683489	Not Participating	Not Ranked
378.	nuget	system.collections.immutable	1.5.0	0.425930384	Not Participating	Not Ranked
379.	vcpkg	libdivide	3	0.425930384	Not Participating	Not Ranked
380.	nuget	system.drawing.common	4.7.0	0.425930384	Not Participating	Not Ranked
381.	nuget	newtonsoft.json	12.0.2	0.425930384	Not Participating	Not Ranked
382.	maven	jakarta.transaction:jakarta.transaction-api	1.3.3	0.425144818	Not Participating	342
383.	go	github.com/hashicorp/hcl	v1.0.0	0.421278967	Not Participating	Not Ranked
384.	pypi	idna	2.5	0.420051024	Not Participating	329
385.	go	github.com/google/martian	v2.1.0+incompatible	0.416303886	Not Participating	Not Ranked
386.	nuget	system.text.regularexpressions	4.3.1	0.414673272	Not Participating	Not Ranked
387.	maven	com.fasterxml.jackson.core:jackson-core	2.15.0	0.414123175	Not Participating	Not Ranked
388.	pypi	requests-oauthlib	1.3.1	0.412971791	Not Participating	Not Ranked
389.	maven	org.hamcrest:hamcrest-core	2.2	0.412841899	Not Participating	Not Ranked
390.	nuget	system.diagnostics.diagnosticsource	6.0.0	0.412019188	Not Participating	Not Ranked
391.	nuget	system.security.accesscontrol	6.0.0	0.410371227	Not Participating	Not Ranked
392.	maven	com.google.code.findbugs:jsr305	1.3.9	0.410331005	Not Participating	206
393.	nuget	system.reflection.typeextensions	4.3.0	0.409868165	Not Participating	Not Ranked
394.	maven	com.google.guava:guava	18	0.407688278	99	311
395.	pypi	jmespath	0.10.0	0.404265454	Not Participating	Not Ranked
396.	maven	commons-codec:commons-codec	1.11	0.399658226	Not Participating	143
397.	maven	jakarta.persistence:jakarta.persistence-api	2.2.3	0.397311777	Not Participating	474
398.	maven	jakarta.xml.bind:jakarta.xml.bind-api	1.0-2	0.394391848	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSF BADGE TIERED PERCENTAGE	CENSUS II RANK
399.	maven	com.google.guava:guava	20	0.388750939	99	425
400.	maven	org.slf4j:jul-to-slf4j	1.7.32	0.388092351	Not Participating	Not Ranked
401.	maven	org.ow2.asm:asm	9.2	0.387980574	Not Participating	Not Ranked
402.	nuget	microsoft.extensions.configuration.json	6.0.0	0.387750797	Not Participating	Not Ranked
403.	maven	commons-cli:commons-cli	1.2	0.387493073	Not Participating	268
404.	pypi	chardet	4.0.0	0.382290211	Not Participating	436
405.	nuget	system.reflection.extensions	4.3.0	0.38213996	Not Participating	180
406.	pypi	msgpack	1.0.5	0.381550694	Not Participating	Not Ranked
407.	pypi	rsa	4.9	0.380336654	Not Participating	Not Ranked
408.	go	github.com/golang/glog	v1.0.0	0.3703518	Not Participating	Not Ranked
409.	pypi	decorator	5.1.1	0.370113563	Not Participating	Not Ranked
410.	rubygems	builder	3.2.4	0.368374247	Not Participating	Not Ranked
411.	go	github.com/opentracing/opentracing-go	v1.2.0	0.366448735	Not Participating	Not Ranked
412.	rubygems	concurrent-ruby	1.2.2	0.364089549	Not Participating	Not Ranked
413.	maven	com.google.protobuf:protobuf-java-util	3.21.7	0.363180748	Not Participating	Not Ranked
414.	go	github.com/googleapis/gax-go	v1.0.3	0.360602811	Not Participating	Not Ranked
415.	maven	org.yaml:snakeyaml	2	0.359161269	3	Not Ranked
416.	go	github.com/gorilla/mux	v1.8.0	0.358500926	85	Not Ranked
417.	maven	org.hibernate.common:hibernate-commons-annotations	5.1.2.Final	0.355994298	Not Participating	Not Ranked
418.	maven	org.slf4j:log4j-over-slf4j	1.7.30	0.351496098	Not Participating	Not Ranked
419.	go	github.com/russross/blackfriday	v1.6.0	0.349847698	Not Participating	Not Ranked
420.	pypi	urllib3	1.22	0.348527092	164	345
421.	pypi	pyyaml	6.0.1	0.347553708	Not Participating	Not Ranked
422.	maven	org.codehaus.plexus:plexus-classworlds	2.6.0	0.347507428	Not Participating	Not Ranked
423.	pypi	importlib-resources	5.12.0	0.346847039	Not Participating	Not Ranked
424.	maven	commons-io:commons-io	2.5	0.34487823	Not Participating	301

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
425.	maven	com.fasterxml.jackson.core:jackson-annotations	2.13.2	0.338128358	Not Participating	Not Ranked
426.	nuget	respond	1.4.2	0.337171003	Not Participating	Not Ranked
427.	maven	com.fasterxml.jackson.core:jackson-annotations	2.15.0	0.337157852	Not Participating	Not Ranked
428.	maven	org.apache.yetus:audience-annotations	0.5.0	0.333596092	Not Participating	Not Ranked
429.	maven	javax.ws.rs:javax.ws.rs-api	2.0.1	0.332996723	Not Participating	Not Ranked
430.	go	github.com/uber-go/zap	v1.24.0	0.330870129	Not Participating	Not Ranked
431.	maven	javax.validation:validation-api	1.1.0.Final	0.328314219	Not Participating	162
432.	go	github.com/golang/snappy	v0.0.4	0.327522166	Not Participating	Not Ranked
433.	maven	com.googlecode.json-simple:json-simple	1.1.1	0.32669481	Not Participating	Not Ranked
434.	rubygems	rainbow	3.1.1	0.325926246	Not Participating	Not Ranked
435.	go	github.com/go-gl/glfw	v0.0.0-20220320163800-277f93cfa958	0.321728283	Not Participating	Not Ranked
436.	nuget	microsoft.extensions.dependencyinjection	6.0.0	0.320479302	Not Participating	Not Ranked
437.	go	github.com/prometheus/client_golang	v1.14.0	0.309481332	Not Participating	Not Ranked
438.	maven	io.micrometer:micrometer-core	1.8.3	0.309008216	Not Participating	Not Ranked
439.	pypi	six	1.7.3	0.308200927	Not Participating	Not Ranked
440.	maven	org.glassfish.hk2.external:jakarta.inject	2.6.1	0.303884959	Not Participating	Not Ranked
441.	pypi	pyrsistent	0.19.3	0.300510996	Not Participating	Not Ranked
442.	rubygems	tzinfo	2.0.6	0.299905812	Not Participating	Not Ranked
443.	pypi	urllib3	1.26.14	0.299485669	164	Not Ranked
444.	pypi	s3transfer	0.6.2	0.298496385	Not Participating	Not Ranked
445.	maven	com.google.j2objc:j2objc-annotations	2.8	0.298027987	Not Participating	Not Ranked
446.	maven	com.fasterxml.jackson.core:jackson-annotations	2.13.4	0.297880358	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSF BADGE TIERED PERCENTAGE	CENSUS II RANK
447.	nuget	system.security.cryptography.protecteddata	4.5.0	0.292791312	Not Participating	Not Ranked
448.	maven	org.apache.httpcomponents:httpClient	3.1	0.292791312	Not Participating	Not Ranked
449.	nuget	system.security.permissions	4.7.0	0.292791312	Not Participating	Not Ranked
450.	nuget	system.configuration.configurationmanager	4.7.0	0.292791312	Not Participating	Not Ranked
451.	pypi	wcwidth	0.2.5	0.292791312	Not Participating	Not Ranked
452.	maven	org.lz4:lz4-java	1.8.0	0.291215411	Not Participating	Not Ranked
453.	go	github.com/moby/spdystream	v0.2.0	0.289723149	Not Participating	Not Ranked
454.	maven	com.google.errorprone:error_prone_annotations	2.7.1	0.284595982	Not Participating	Not Ranked
455.	maven	com.fasterxml.jackson.core:jackson-annotations	2.13.3	0.282698393	Not Participating	Not Ranked
456.	maven	org.javassist:javassist	3.25.0-GA	0.28108765	Not Participating	Not Ranked
457.	maven	org.codehaus.woodstox:stax2-api	3.1.4	0.271903526	Not Participating	Not Ranked
458.	maven	org.lz4:lz4-java	1.7.1	0.265324546	Not Participating	Not Ranked
459.	maven	dom4j:dom4j	1.6.1	0.262636317	Not Participating	98
460.	maven	commons-codec:commons-codec	1.1	0.26187008	Not Participating	57
461.	nuget	microsoft.extensions.configuration.abstractions	6.0.0	0.259227201	Not Participating	Not Ranked
462.	maven	com.google.guava:guava	30.1.1-jre	0.25739833	99	Not Ranked
463.	maven	org.bouncycastle:bcprov-jdk15on	1.7	0.256708119	Not Participating	Not Ranked
464.	nuget	system.reflection.metadata	1.6.0	0.253837351	Not Participating	Not Ranked
465.	maven	org.eclipse.jetty:jetty-http	9.4.47.v20220610	0.253621981	Not Participating	Not Ranked
466.	maven	org.eclipse.jetty:jetty-io	9.4.47.v20220610	0.253081331	Not Participating	Not Ranked
467.	conda	libffi	3.2.1	0.252109929	Not Participating	Not Ranked
468.	maven	org.yaml:snakeyaml	1.26	0.251483391	3	251
469.	maven	org.eclipse.jetty:jetty-util-ajax	9.4.47.v20220610	0.251280086	Not Participating	Not Ranked
470.	maven	org.eclipse.jetty:jetty-security	9.4.47.v20220610	0.250990452	Not Participating	Not Ranked
471.	pypi	markupsafe	2.1.1	0.25043493	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSF BADGE TIERED PERCENTAGE	CENSUS II RANK
472.	maven	org.eclipse.jetty:jetty-servlet	9.4.47.v20220610	0.250212579	Not Participating	Not Ranked
473.	maven	org.eclipse.jetty:jetty-util	9.4.47.v20220610	0.249680205	Not Participating	Not Ranked
474.	pypi	more-itertools	8.12.0	0.249420251	Not Participating	Not Ranked
475.	nuget	microsoft.win32.systemevents	4.7.0	0.248411622	Not Participating	Not Ranked
476.	nuget	system.windows.extensions	4.7.0	0.248411622	Not Participating	Not Ranked
477.	nuget	newtonsoft.json	11.0.2	0.248411622	Not Participating	Not Ranked
478.	nuget	system.componentmodel.annotations	4.5.0	0.248411622	Not Participating	Not Ranked
479.	maven	org.apache.maven:maven-repository-metadata	2.0.6	0.248411622	Not Participating	Not Ranked
480.	nuget	microsoft.extensions.primitives	6.0.0	0.246303719	Not Participating	Not Ranked
481.	maven	com.fasterxml.jackson.datatype:jackson-datatype-jsr310	2.15.0	0.246193567	Not Participating	Not Ranked
482.	maven	org.antlr:antlr-runtime	3.5.2	0.239268464	Not Participating	Not Ranked
483.	maven	javax.ws.rs:javax.ws.rs-api	2.1.1	0.239054042	Not Participating	Not Ranked
484.	maven	xml-apis:xml-apis	1.4.01	0.2367469	Not Participating	246
485.	maven	com.fasterxml.jackson.datatype:jackson-datatype-jdk8	2.13.4	0.231693721	Not Participating	Not Ranked
486.	maven	org.openjsse.legacy8ujsse:legacy8ujsse	1.1.4	0.231413974	Not Participating	Not Ranked
487.	maven	org.eclipse.jetty:jetty-server	9.4.47.v20220610	0.228782445	Not Participating	Not Ranked
488.	maven	io.opentracing:opentracing-api	0.33.0	0.228609868	Not Participating	Not Ranked
489.	nuget	runtime.native.system.security.cryptography.openssl	4.3.2	0.225643494	Not Participating	Not Ranked
490.	nuget	runtime.ubuntu.16.10-x64.runtime.native.system.security.cryptography.openssl	4.3.2	0.222902675	Not Participating	Not Ranked
491.	nuget	runtime.ubuntu.14.04-x64.runtime.native.system.security.cryptography.openssl	4.3.2	0.222902675	Not Participating	Not Ranked
492.	nuget	runtime.osx.10.10-x64.runtime.native.system.security.cryptography.openssl	4.3.2	0.222885328	Not Participating	Not Ranked

	PLATFORM	NAME	VERSION	Z-SCORE COMBINED	OPENSSEF BADGE TIERED PERCENTAGE	CENSUS II RANK
493.	nuget	runtime.fedora.23-x64.runtime.native.system.security.cryptography.openssl	4.3.2	0.222885328	Not Participating	Not Ranked
494.	nuget	runtime.fedora.24-x64.runtime.native.system.security.cryptography.openssl	4.3.2	0.222885328	Not Participating	Not Ranked
495.	nuget	runtime.opensuse.13.2-x64.runtime.native.system.security.cryptography.openssl	4.3.2	0.222867981	Not Participating	Not Ranked
496.	nuget	runtime.ubuntu.16.04-x64.runtime.native.system.security.cryptography.openssl	4.3.2	0.222867981	Not Participating	Not Ranked
497.	nuget	runtime.opensuse.42.1-x64.runtime.native.system.security.cryptography.openssl	4.3.2	0.222867981	Not Participating	Not Ranked
498.	nuget	runtime.debian.8-x64.runtime.native.system.security.cryptography.openssl	4.3.2	0.222867981	Not Participating	Not Ranked
499.	nuget	runtime.rhel.7-x64.runtime.native.system.security.cryptography.openssl	4.3.2	0.222850635	Not Participating	Not Ranked
500.	pypi	idna	2.7	0.220342416	Not Participating	416

Endnotes

- 1 <https://www.blackduck.com/resources/analyst-reports/open-source-security-risk-analysis.html>
- 2 <https://www.wired.com/2016/08/open-source-won-now?GuidesLearnMore>
- 3 <https://thenewstack.io/survey-open-source-programs-are-a-best-practice-among-large-companies/>
- 4 <https://www.darkreading.com/application-security/attacker-social-engineered-backdoor-code-into-xz-utils>
- 5 <https://openssf.org/>
- 6 <https://www.linuxfoundation.org/press/press-release/linux-foundations-core-infrastructure-initiative-launches-new-census-project>
- 7 The project did use data on how popular a package was, but this was limited to installations tracked by the Debian Linux distribution and did not cast a wider net due to limited scope.
- 8 https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4693148
- 9 <https://news.netcraft.com/archives/2014/04/08/half-a-million-widely-trusted-websites-vulnerable-to-heartbleed-bug.html>
- 10 <https://www.washingtonpost.com/technology/2021/12/20/log4j-hack-vulnerability-java/>
- 11 <https://www.zdnet.com/article/ftc-to-pursue-companies-that-expose-customer-data-due-to-not-patching-log4j/>
- 12 <https://www.darkreading.com/application-security/attacker-social-engineered-backdoor-code-into-xz-utils>
- 13 Often referred to as Linus's Law, named after the creator of Linux, the maxim was formalized by Eric Raymond in his book *The Cathedral and the Bazaar* (1999).
- 14 <https://www.linuxfoundation.org/research/software-security-education-study>
- 15 https://ec.europa.eu/info/departments/informatics/open-source-software-strategy_en
- 16 https://ec.europa.eu/info/departments/informatics/eu-fossa-2_en
- 17 <https://www.brookings.edu/research/digital-infrastructure-is-more-than-just-broadband-what-the-u-s-can-learn-from-europes-open-source-technology-policy-study/>
- 18 <https://hbr.org/2021/09/the-digital-economy-runs-on-open-source-heres-how-to-protect-it>
- 19 <https://www.cnn.com/2021/12/23/politics/white-house-log4j-tech-firms-meeting/index.html>
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- 22 https://www.meti.go.jp/english/press/2021/0421_003.html
- 23 <https://www.enisa.europa.eu/publications/threat-landscape-for-supply-chain-attacks>
- 24 <https://www.openchainproject.org/featured/2021/10/28/caict-certifier> and <https://www.openchainproject.org/news/2022/01/10/iscas-certifier>
- 25 <https://english.ncsc.nl/binaries/ncsc-en/documents/publications/2021/february/4/using-the-software-bill-of-materials-for-enhancing-cybersecurity/Final+Report+SBOM+for+Cybersecurity+v1.0.pdf>
- 26 <https://www.reuters.com/world/china/fridges-microwaves-fall-prey-global-chip-shortage-2021-03-29/>
- 27 <https://chaoss.community/>
- 28 <https://facade-oss.org/>
- 29 <https://ostif.org/>
- 30 <https://www.linuxfoundation.org/press/spdx-3-revolutionizes-software-management-in-systems-with-enhanced-functionality-and-streamlined-use-cases>
- 31 <https://github.com/nayafia/lemonade-stand>
- 32 <https://www.sciencedirect.com/science/article/pii/S0963868712000340>
- 33 <https://fossa.com/>
- 34 <https://snyk.io/>
- 35 <https://www.sonatype.com/>
- 36 <https://www.blackduck.com/resources/cybersecurity-research-center.html>

- 37 <https://idalink.org/d-8777>
- 38 https://www.w3schools.com/react/react_components.asp
- 39 <https://semver.org/>
- 40 Ecosyste.ms, an Open Source Collective project licensed under CC-BY-SA 4.0 was used because it's an aggregate of many different package managers. Note the change from Census II, where Libraries.io was used as a source of truth. We decided to switch as it appears Libraries.io is now less actively maintained.
- 41 The vast majority of FOSS projects use git as their version control system (VCS), in most cases via GitHub or GitLab. The git system uses cryptographic hashes to identify commits. The original design of git did not support cryptographic agility (changing its cryptographic algorithm) and instead only supported SHA-1. Vulnerabilities discovered in the SHA-1 algorithm led the git project to switch from SHA-1 to the SHA-1DC algorithm as a countermeasure. SHA-1DC provides the same result as SHA-1 unless it detects certain kinds of attacks, in which case SHA-1DC produces a different value (in an effort to counter some attacks). More recent versions of git also support the SHA-256 algorithm, which provides stronger defenses. Unfortunately, interoperability problems between repositories that use different hash algorithms, along with limited support of SHA-256 by common hosting systems, has meant that relatively few projects use the more secure SHA-256 algorithm in git. In 2024 git 2.45 was released, which provided some very initial patches for supporting SHA-1DC and SHA-256 hash interoperability within the same repository (a necessary capability for adoption by most projects). For more information see <https://lwn.net/Articles/898522/>, <https://devclass.com/2023/08/22/git-2.42-released-sha-256-repositories-no-longer-an-experimental-curiosity/>, <https://about.gitlab.com/blog/2023/08/28/sha256-support-in-gitaly/>, and <https://www.phoronix.com/news/Git-2.45-rc0-Released>.
- 42 The Z-score of a package is equal to the package's value minus the mean of the values of the list it comes from, then divided by the standard deviation of that list. This metric captures the *relative importance* of a package compared to other packages in its dataset. Each dataset is a sample of the greater FOSS ecosystem – larger samples are not inherently “more important” than smaller samples. Z-scores allow us to treat each distinct dataset as equally relevant to the overall result. In cases where a given package was not observed in all datasets, the average Z-score from the datasets it was observed in was used.
- 43 <https://arxiv.org/pdf/1709.04638.pdf>
- 44 <https://web.archive.org/web/20201125184652/https://tomforb.es/how-much-code-is-there-in-the-python-package-index/>
- 45 <https://blog.thecodewhisperer.com/permalink/surviving-legacy-code-with-golden-master-and-sampling>
- 46 <https://bestpractices.coreinfrastructure.org/en>
- 47 For more details on the CHAOSS Project and how to contribute, see <https://chaoss.community/about/>.
- 48 <https://github.com/chaoss/augur>
- 49 <https://facade-oss.org/>
- 50 <https://lp.jetbrains.com/python-developers-survey-2022/#PythonVersions>
- 51 “The Case for Memory Safe Roadmaps” <https://media.defense.gov/2023/Dec/06/2003352724/-1/-1/0/THE-CASE-FOR-MEMORY-SAFE-ROADMAPS-TLP-CLEAR.PDF>
- 52 <https://web.archive.org/web/20241009151934/https://www.tiobe.com/tiobe-index/>
- 53 These results are only for the SCAs that participated in both Census II and Census III, and that provided package manager data.
- 54 <https://www.cisa.gov/sites/default/files/2023-10/Software-Identification-Ecosystem-Option-Analysis-508c.pdf>
- 55 <https://openssf.org/blog/2023/12/11/openssf-responds-to-the-cisa-rfc-on-software-identification-ecosystem-analysis/>
- 56 <https://energycentral.com/c/iu/nvds-been-down-so-long-its-beginning-look>
- 57 <https://github.com/package-url/purl-spec>
- 58 <https://ossf.github.io/osv-schema/>
- 59 <https://spdx.github.io/spdx-spec/v3.0.1/model/Software/Properties/packageUrl/>
- 60 https://cyclonedx.org/docs/1.6/json/#components_items_purl
- 61 <https://owasp.org/assets/files/posts/A%20Proposal%20to%20Operationalize%20Component%20Identification%20for%20Vulnerability%20Management.pdf>
- 62 Three projects in the top 50 don't have public commit histories for 2023.
- 63 Note that a limitation of this analysis is that it considers the entire GitHub repository for each component, and, while most components have a one-to-one relationship with their GitHub repository, not all do. In those cases we are likely including code outside the scope of the specific component. Additionally, there are two repositories that host code for more than one component that appears in the top list, and thus are counted multiple times in this analysis -

“spring-projects/spring-boot” (appears four times) and “spring-projects/spring-framework” (appears three times). We counted these repositories multiple times, instead of just once, so that we could get the most accurate picture of the weighted average number of contributors for these top components.

- 64 This is for just the 42 unique repositories with public commit histories for 2023, and does not include multiple instances of the same repository, even if it appeared multiple times, so that we are not double-counting an author’s contributions. While most of these prolific developers appear to be human, there are at least five bots that were included as well: “dependabot[bot],” “aws-sdk-python-automation,” “Yoshi Automation Bot,” “Gopher Robot,” and “github-actions[bot].”
- 65 The year-long rash of supply chain attacks against open source is getting worse, Dan Goodin, Ars Technica (August 21, 2019) <https://arstechnica.com/information-technology/2019/08/the-year-long-rash-of-supply-chain-attacks-against-open-source-is-getting-worse/>.
- 66 Rage-quit: Coder unpublished 17 lines of JavaScript and “broke the Internet”, Sean Gallagher, ArsTechnica (March 24, 2016), <https://arstechnica.com/information-technology/2016/03/rage-quit-coder-unpublished-17-lines-of-javascript-and-broke-the-internet/>.
- 67 Catalin Cimpanu, Developer takes down Ruby library after he finds out ICE was using it, ArsTechnica (Sep. 20, 2019) <https://www.zdnet.com/article/developer-takes-down-ruby-library-after-he-finds-out-ice-was-using-it/>.
- 68 https://www.theregister.com/2016/03/29/npmgate_followup/
- 69 Dev corrupts NPM libs ‘colors’ and ‘faker’ breaking thousands of apps, Ax Sharma, Bleeping Computer, (January 9, 2022) <https://www.bleepingcomputer.com/news/security/dev-corrupts-npm-libs-colors-and-faker-breaking-thousands-of-apps/>
- 70 <https://www.puppet.com/blog/xz-backdoor>
- 71 <https://github.com/coreinfrastructure/best-practices-badge>.
- 72 <https://github.com/request/request/issues/3142>



Starting in 2010, the Laboratory for Innovation Science at Harvard (NASA Tournament Lab at the time) pioneered the use of field experiments to solve computational problems for the human space program and simultaneously conduct research on the economics and management of innovation. Since that time, the laboratory has expanded its footprint to conduct leading-edge research, influence managerial practice, and develop policy insights regarding the discipline of innovation. Today, the Laboratory for Innovation Science at Harvard (LISH), is the largest laboratory within the Digital Data Design Institute at Harvard and leads the study of Open Innovation; the Science of Science; Data Science, and AI.



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Founded in 2021, [Linux Foundation Research](#) explores the growing scale of open source collaboration, providing insight into emerging technology trends, best practices, and the global impact of open source projects. Through leveraging project databases and networks, and a commitment to best practices in quantitative and qualitative methodologies, Linux Foundation Research is creating the go-to library for open source insights for the benefit of organizations the world over.

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