Node.js is a cross-platform, open-source JavaScript runtime environment that can run on Windows, Linux, Unix, macOS, and more. Node.js runs on the V8 JavaScript engine, and executes JavaScript code outside a web browser.

Node.js lets developers use JavaScript to write command line tools and for server-side scripting. The ability to run JavaScript code on the server is often used to generate dynamic web page content before the page is sent to the user's web browser. Consequently, Node.js represents a "JavaScript everywhere" paradigm,[6] unifying web-application development around a single programming language, as opposed to using different languages for the server- versus client-side programming. Node.js has an event-driven architecture capable of asynchronous I/O. These design choices aim to optimize throughput and scalability in web applications with many input/output operations, as well as for real-time Web applications (e.g., real-time communication programs and browser games).[7]

The Node.js distributed development project was previously governed by the Node.js Foundation,[8] and has now merged with the JS Foundation to form the OpenJS Foundation. OpenJS Foundation is facilitated by the Linux Foundation's Collaborative Projects program.

Node.js was initially written by Ryan Dahl in 2009,[10] about 13 years after the introduction of the first server-side JavaScript environment, Netscape's LiveWire Pro Web.[11] The initial release supported only Linux and Mac OS X. Its development and maintenance was led by Dahl and later sponsored by Joyent.[12]

Dahl criticized the limited capability of Apache HTTP Server to handle many (10,000+) concurrent connections, as well as the dominant programming paradigm of sequential programming, in which applications could block entire processes or cause the creation of multiple execution stacks for simultaneous connections.[13]

Dahl demonstrated the project at the inaugural European JSConf on November 8, 2009.[14][15][16] Node.js combined Google's V8 JavaScript engine, an event loop, and a low-level I/O API.[17]

In January 2010, a package manager was introduced for the Node.js environment called npm.[18] The package manager allows programmers to publish and share Node.js packages, along with the accompanying source code, and is designed to simplify the installation, update and uninstallation of packages.[17]

In June 2011, Microsoft and Joyent implemented a native Windows version of Node.js.[19] The first Node.js build supporting Windows was released in July 2011.

In January 2012, Dahl yielded management of the project to npm creator Isaac Schlueter.[20] In January 2014, Schlueter announced that Timothy J. Fontaine would lead the project.[21]

In December 2014, Fedor Indutny created io.js, a fork of Node.js created because of dissatisfaction with Joyent's governance as an open-governance alternative with a separate technical committee. The goal was to enable a structure that would be more receptive to community input, including the updating of io.js with the latest Google V8 JavaScript engine releases, diverging from Node.js's approach at that time.[22]

The Node.js Foundation, formed to reconcile Node.js and io.js under a unified banner, was announced in February 2015.[23] The merger was realized in September 2015 with Node.js v0.12 and io.js v3.3 combining into Node v4.0.[24] This merge brought V8 ES6 features into Node.js and started a long-term support release cycle.[25] By 2016, the io.js website recommended returning to Node.js and announced no further io.js releases, effectively ending the fork and solidifying the merger's success.[26]