Node JS is an open-source JavaScript runtime environment tool that allows for the use of JavaScript code outside of a browser. Node JS is used to create backend services or APIs (Application Programming Interfaces). Node is used to make things like web apps running in web browsers or applications in our smartphones. It is useful because it allows for the making of highly scalable, real time apps that may be data intensive. What makes Node JS special compared to other event-driven I/Os like Ruby’s EventMachine and Python’s twisted is that it allows for many connections to be handled concurrently. Today’s event-driven IO like Ruby’s EventMachine or Python’s Twisted utilize concurrency libraries that use thread-based networking that is inefficient, difficult to use, and blocks and unblocks methods as the program runs synchronously. In 2020 Node JS has updated to version 13 adding:

* **ECMAScript modules** which allows for the use of import/ export syntax in the browser
* **WebAssembly** support allows for portable compiled binary format that can be parsed faster than JavaScript and executed at native speeds.
* **Diagnostic reports** which are human-readable JSON-formatted summaries of process information, including call stacks, operating system information, loaded modules, and other useful data designed to assist in supporting applications.
* **Full internationalization support** for date, time, number, and currency formats support for formatting numbers, dates, times and currencies, performing time calculations and string comparisons, and converting text between Unicode and other character sets
* **QUIC protocol support** is a modern transport for connected applications with increased performance and reliability
* **V8 JavaScript engine performance updates** increase performance and Wasm support

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