**01 Getting Started**

**1) What is Node**:

Node.js is an open-source, cross-platform JavaScript run-time environment that executes JavaScript code outside of a browser.

We often use Node to build back-end services. This is also called API (Application Programming Interfaces). Node is ideal for building high-scalable, data-intensive and real-time application. Node is better for development for the following reasons.

1. Great for prototyping and agile development.
2. Superfast and highly scalable services.
3. Use in production in large company’s like PayPal, Uber, Netflix, Walmart, etc.
4. Node application using JavaScript. (Back-end, front-end everywhere JavaScript)
5. Cleaner and more consistent codebase
6. Large ecosystem of open-source libs

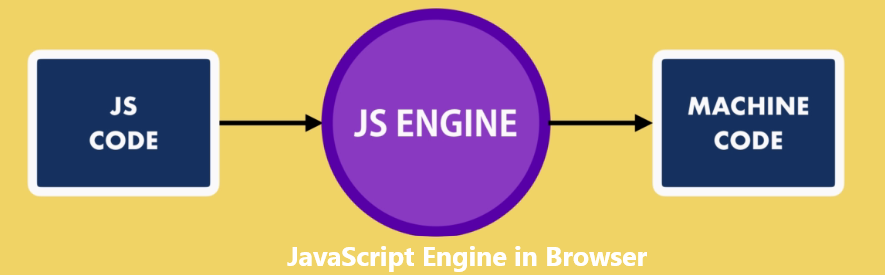
For example, in PayPal they rebuilt one of there Java and Spring application by using Node.js and they found that Node application was.

1. Built twice as fast with fewer people
2. 33% fewer lines of code
3. 40% fewer files
4. 2x request per second
5. 35% faster response time

So, Node is an excellent choice for building highly scalable services.

**2) Node Architecture**:

Before Node we use JavaScript only to build applications that runs inside a browser. Every browser have a JavaScript engine that takes our JavaScript code and convert them into machine code.

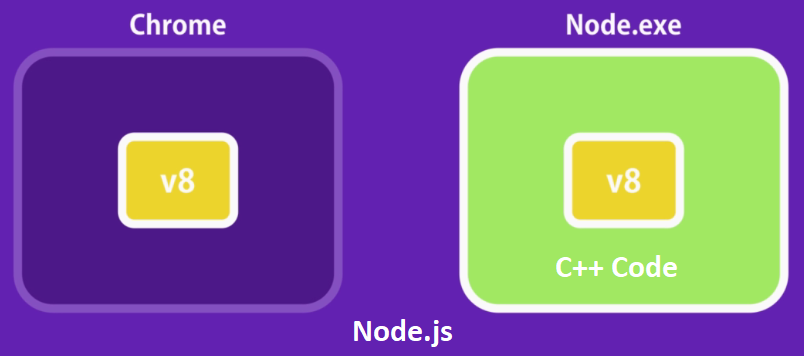


**Example of JavaScript Engine**:

1. Microsoft Edge -> Chakra
2. Mozilla Firefox -> SpiderMonkey
3. Google Chrome -> V8

After 2009 the only way to execute JavaScript code was inside a browser. In 2009 "Ryan Dahl" the creator of Node, came out with a brilliant idea. He wants to run JavaScript code outside the browser. He took Google V8 engine which is the faster JavaScript engine and embedded it with a C++ program and call that program Node.

Similar to a browser Node is a runtime environment for JavaScript code. It contains a JavaScript engine that can execute JavaScript code outside a browser.



Node is a program that includes a V8 JavaScript engine with some additional modules that gives us capabilities not available inside browser. We can work with file system, networks and so on.

Both Node and Chrome share the same JavaScript engine but they provide different runtime environment for JavaScript.

Remember Node is not a programming language or a framework, it’s a runtime environment for run JavaScript code outside browser.

**3) How Node works**:

Node

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