**Node JS for Beginners -** [Kamindu Gayantha](https://medium.com/@kamidugayantha123?source=post_page-----39fc34e6468--------------------------------) May 15, 2022

**What is NODEJS**

Node.js is an open source and cross-platform runtime environment for executing JavaScript code outside of a browser. Many people are confused and understand that it is a framework or programming language. We often use Node.js to build later services such as APIs such as Web Apps or Mobile Apps.

Node.js is an completely free, used by thousands of developers around the world. Node.js is an open source technology supported by the OpenJS Foundation. Massive active open source community and contributors continue to work to improve and optimize technology. A high-level community committee has the authority over community service efforts. It brings a lot of benefits to the programmer, making it a better choice than other server side platforms like Java or PHP.

**Why NODEJS**

Node.js is a JavaScript runtime that allows your JavaScript applications and code to run exclusively on a server and usually outside a browser. Node.js is a single-thread unbroken runtime based on the Event-Run I / O paradigm.

Node.js server responds in a non-blocking way, making it highly scalable in contrast with traditional servers, which create limited threads to handle requests. It dramatically reduces the processing time while uploading audio and video files. Node.js applications never buffer data and simply output the data in chunks.

All APIs in the Node.js library are asynchronous ,so the Node.js based server cannot wait for the API data to be returned. When the server calls the API and the data is not returned the server moves on to the next API The Events module in Node.js helps the server to respond to the previous API call. This will also help speed up Node.js. Built on Google Chrome’s V8 JavaScript engine, its library is extremely fast for code execution.

**What is the node used for?**

Here’s a sample of ways that today’s organizations use Node.js:

*· Backend for social media networking*

*· Chat application*

*· Data streaming*

*· IoT application*

*· Single-page application*

**Advantages of NodeJS**

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*1. Easy Scalability*

*2. Node.js is really fast*

*3. Node.js uses asynchronous programming*

*4. Real-time web apps*

*5. Easy to learn and code:*

*6. Data Streaming*

*7. Hosting*

*8. Corporate Support*

*9. No buffering*

**Node Architecture**

Now that we have confirmed what a node is, let us dig into its architecture. Node.js works on a single thread, allowing it to handle thousands of event loops at once. Here is a better illustration of Node.js architecture.

The Node.js event loop handles the orchestra and uses work-stopping event-based architecture. Event Loop enables Node.js to handle concurrent operations. The following diagram illustrates how an event loop operates at a high level

Diagram

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Node Architecture

The main phases of an event loop are:

*·****Timers****processes callbacks scheduled by setTimeout() and setInterval().*

*·****Callbacks****runs pending callbacks.*

*·****Poll****retrieves incoming I/O events and runs I/O-related callbacks.*

*·****Check****allows callbacks to be run immediately after the poll phase is completed.*

*·****Close callbacks****closes events (for example, socket.destroy()) and callbacks (for example, socket.on(‘close’, …)).*

Uses the Node.js database to handle blocking functions. This includes blocking I / O operations and CPU-intensive tasks.

The Event loop enables JavaScript calls to register events, and is responsible for fulfilling asynchronous requests without interruption, such as network I / O.

**Application of NodeJS:**

*· Real-Time Chats,*

*· Complex Single-Page applications,*

*· Real-time collaboration tools,*

*· Streaming apps*

*· JSON APIs based application*

**Node.js Applications**

Node.js is a technology widely used by many companies, start-ups and government agencies. These include major enterprises such as Uber, eBay, and NASA.

*Netflix*

*Uber*

*Nasa*

*Paypal*

*Walmart*

*eBay*

*Trello*

*The purpose of this blog is to discuss the NodeJS. I hope you learned something from this.*