

Review Paper on Mean Stack for Web Development

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Abstract— MEAN is actually combination of different JavaScript frameworks and a NoSQL or document based Database technology which is used for web development. In MEAN stack M stands for MongoDB, E stands for Express JS, A stands for AngularJS, N stands for Node JS. This paper provides the introduction to concept and describes the MEAN stack open source and explain the meaning of them along with their future scope. This paper also describe the use of MEAN stack for communicate with IOT (internet of things) devices. JavaScript is used as scripting language for client-side programming that runs in any supportive browser. The most crucial part in a web development project is choice of the right combinations of front-end framework, back-end server, and database environment. This paper focuses on the benefits of the using the MEAN stack.

Key words: Node, JavaScript, Server

I. INTRODUCTION

MEAN.JS is a current full-stack JavaScript solution which assists you to design very fast, debug, and maintainable production web applications using MongoDB, Express, AngularJS, and Node.js. MEAN.JS will help out to getting started and give away from useless mumble work and common weakness, while keeping your application assembled. The main goal is to create and maintain a simple and readable open-source solution so that you can use and pay attention in your projects[1]. It represents a group of technologies which are known to concur well together. The major benefit of the MEAN stack is that it is highly quick to prototype with. Node.js allows you to use Javascript on the backend as well as the frontend which can save you from having to learn a separate language. Apart from this, the nosql behaviour of MongoDB allows you to quickly modify and alter the data layer without having to bother about migrations, which is a very valuable attribute when anyone is trying to make a product without giving its clear specifications and requirement [1,2]. Finally, these technologies have a lot of collectively support beyond them such finding answers to questions or hiring and make it possible for going to be much easier using these technologies.

A. Components

The components of the MEAN stack are as follows:

- MONGODB
- Express JS
- Angular JS
- NODE Js

1) MongoDB

The MongoDB is simple and is used for storing database. MongoDB is a cross-way document-oriented database with Nosql attributes. MongoDB defines as a database that stores data for the web based application. MongoDB have some exciting features for your application and its architecture that makes it very popular among other databases. The goal is to

generate a new breed between traditional database features and very high performance of NoSQL stores. MongoDB provides the supports for rich query to retrieve data from the database. It supports the Server-side JavaScript execution which allows any developer to use a single programming language for both client/server side code. MongoDB is very easy to install.

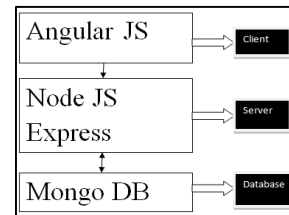


Fig. 1: MEAN Stack

2) Express

Express is one the most latest and widely used web frameworks in Node.js environment. Express is a minimal web server built on Node.js which provides the entire main feature required for delivering web applications to the browser and mobile phone. Express JS allows you to handle various networking devices like Routes, Server, and I/O stuff very easily. Simple command to install Express in Linux is `$ npm install express`

3) AngularJS

Angular JS is the next mean stack JavaScript framework used for web development. It is maintained by Google as open source web application framework. We can embed Angular JS into a HTML page with a `<script>` tag. Furthermore it extends HTML attributes with its own Directives, and then binds data to HTML with Expressions.

4) Node.js

Node.js is a next cross-platform, open-source runtime environment used for development of networking and server side applications. Applications in node.js are written using JavaScript language and can be run within the Node.js runtime environment. It also provides a collection of library with various JavaScript files Whether you're looking for consolidation of technologies or to leverage in-house JavaScript expertise, the MEAN stack can offer a lot to a flexibility for designing web applications[3]. The back end team provides support for designing mean stack application. Due to technology's development in mean stack, various companies are moving from lamp to mean. Operating System.

The first choice in any technology stack is the operating system. As in mean stack operating system does not get locks While the LAMP stack locked the operating system to a variant of Linux, Linux is still a good choice for an app built on MEAN, but it is by no means the only option; any operating system that can run Node.js is a viable alternative.

II. THE WEB SERVER

In the MEAN stack, the web server is used by node.js helps to improve the performance of the application, as Node.js is entirely non-blocking and event-based, along with its concurrency feature among requests. Node.js is very light in weight and relatively new on market, however, which ultimately means that your organization will be largely on its own when it comes to non-standard extensions[4]. Although there is active plug-in development for Node.js, as the technology is not as developed in feature as Apache. Developer need to write your own plug-in where Node.js is missing functionality. Moreover while work with Node.js locks all code on your web server into JavaScript. For new development this isn't a major concern, but converting a back-end of significant complexity can be time-consuming.

III. THE DATA STORE

The MEAN stack replaces LAMP's use of MySQL and MEAN stack with no SQL features. This change will change the various app on web server. Translating the data in an existing SQL database requires a lot of forethought to eliminate redundant/unnecessary object attributes, and will likely require a custom software suite to accomplish. However, once this is done the database will be much faster for data retrieval.

IV. THE CODE

MEAN uses the Express.js and Angular JS to design the web page presentation and control flow, tasks which covered by programming language PHP or Python in the LAMP architecture stack. In Express.js there is controller layer, directing the application flow and marshaling data for Angular JS, which handles data presentation[5]. The main benefits offered by these scripts are simplified back-end architecture – for example, Express.js writes only 1,143 lines of code – and a purely client-side presentation layer in Angular JS that can be easily embed into any existing web based application[6]. Moreover, the main use of Express.js and Angular js on top of Node.js gives your technology stack with the added benefit of being entirely in one language, which mean to your front-end developers now have the ability to trace all the way down the stack without having to learn another programming language.

V. ADDITIONAL CONSIDERATIONS

Almost when converting from LAMP to MEAN is the biggest choice to be faced of data store. But the MEAN stack is designed for work with a non-relational database environment, there are various plug-in available for Node.js which allow the stack to run off of a relational database. The front end handles everything in JSON, so there is the only analysis of how to store data before it is retrieved, or the difference between Relational and No relational databases. . Non-relational databases like excel are managing operational data, like list of objects in a system. With the removal of weak data the requirement for costly and complex queries the system can often operate more efficiently than a similar architecture build over a relational database.

VI. CONCLUSION

The MEAN stack is the latest & emerging development technology However, the switch from LAMP to MEAN depend on the requirement of company. The paper has discussed about the use of mean stack for development along with its definition

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