The MEAN Stack

MEAN VS. LAMP

Mongo
Express
Angular
Node.js

Linux
Apache
MySql
PHP

.NET, IIS and SQL Server
Java, Apache and Oracle

Mongo vs MySql

Mongo

- Built for the cloud
- **Document structure that is far more flexible**
- Lack of normalization requires more disk storage
- automatic sharding and full cluster support
- offer failover support and automatic replication

MySql

- Build for single servers
- **Forces you to push your data into tables**
  (like all relational databases)
- Normalization of data saves disk storage
- Faster for relational data

Node.js vs. Apache

Node.js

- Offers speed and a nonblocking I/O API that optimizes an application's throughput and scalability
- Use JavaScript for everything
  - Allows for developers to write JavaScript on both the client side and the server side
- Having everything in one layer means less confusion and less chance of strange bugs created by weird interactions between multiple layers

Apache

- Is the most used web server world wide (busiest sites)
  - 36% (July, 2018)
  - http://news.netcraft.com/
- Has different config files for everything

Express and JavaScript vs. PHP

JavaScript

- The Node.js package manager, Npm, makes it easy to share code, and the public repositories targeting Node.js are growing quickly

PHP

- Many great libraries

Angular vs. ?

Angular

- The templating system and the logic layers are clean
  - leverage the local power of JavaScript to guess what you are doing

PHP

- If you want to do anything on the client side, you're on your own

It's not exactly fair to compare the "A" in "MEAN" with anything in the LAMP stack because LAMP doesn't include a client side framework.

The short Answer

- MongoDB offers a more flexible, accommodating layer for storing data
- Express.js helps standardize how you build your websites
- Angular provides a clean way of adding interactive functions and AJAX-driven rich components - on the client
- Node.js is fast and uses JavaScript

Put them all together and they make a clean, coherent mechanism for moving data from user to disk farm and back again

Mix and match

- You are free to mix and match
  - Plenty of developers use MongoDB with Apache and PHP
  - and others prefer to use MySQL with Node.js
  - Angular works quite well with any server

Popular Web Servers

- Apache HTTP Server
  - Is the most used web server
- Microsoft IIS
  - commercial
- Nginx
  - Lightweight and fast
  - Popular alternative to Apache
- Node.js
  - Lightweight and fast
  - Uses JavaScript
- Lighttpd
  - Lightweight in its CPU and RAM usage
  - heavyweight in its ability to withstand onslaughts of traffic
- LiteSpeed
  - First to implement HTTP/2

Server	Usage July 2018	Usage July 2019
Apache	36%	28%
Nginx	25%	35%
Microsoft	10%	15%
Google	1%	2%
Other	28%	20%

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Server		Usage July 2019
Apache		32%
Nginx		25%
Microsoft		8%
LiteSpeed		2%
Other		33%

Market share of the busiest sites

MVC Frameworks for Node.js

- Express.js
  - the most pervasive Node.js MVC framework
  - minimal framework with many features available as plugins
  - Adapters are available for many databases
- Meteor
  - integrates with MongoDB and uses the Distributed Data Protocol and a publish–subscribe pattern to automatically propagate data changes to clients without requiring the developer to write any synchronization code
  - On the client, Meteor depends on jQuery
- Sail.js
  - data-driven APIs with a scalable, service-oriented architecture. It's especially good for building chat, realtime dashboards, or multiplayer games
  - bundles a powerful ORM, Waterline, which provides a simple data access layer that just works, no matter what database you're using
- …