

Node.js & Express

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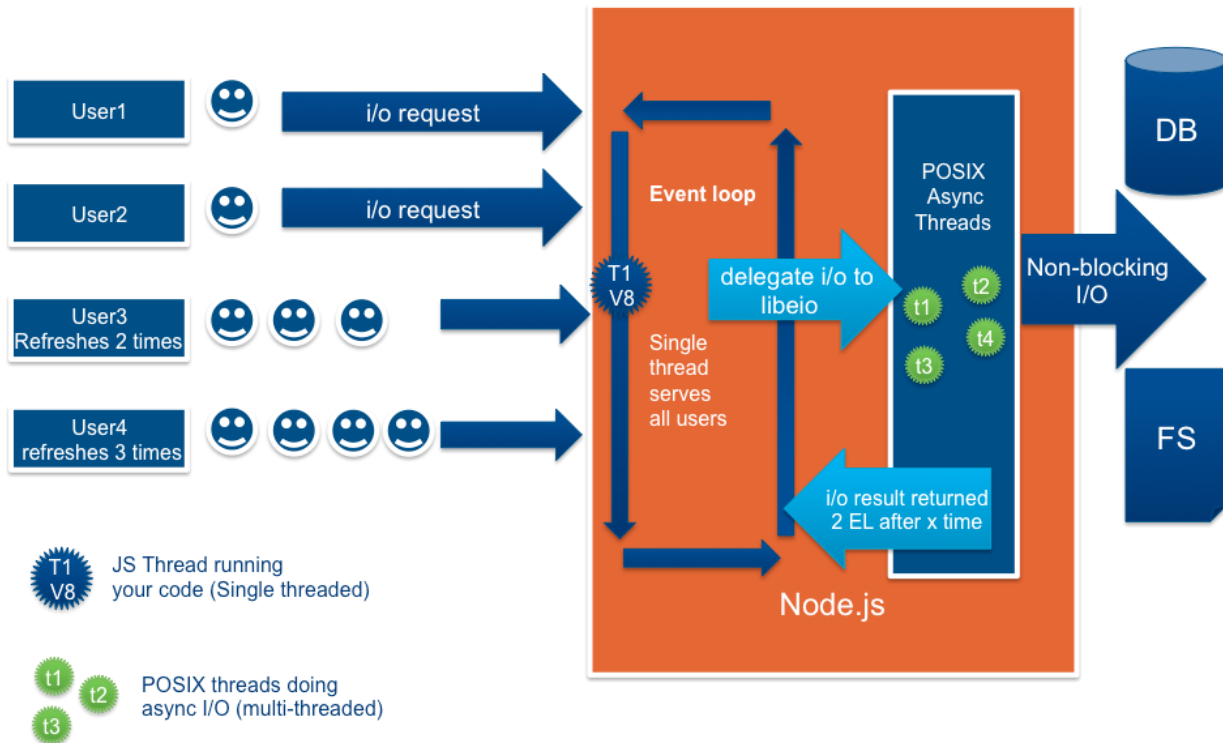
Agenda

- ❖ Introduction to Node
- ❖ Connect middleware
- ❖ Express
 - Configuration
 - Routing
 - Rendering views using EJS
 - Session support
 - Authentication

What is Node?

- ❖ A platform for building fast and scalable network applications (but not only..)
- ❖ runs on **V8**. It is a set of bindings to the **V8** JavaScript VM.
- ❖ **V8** is an open source JavaScript engine developed by Google. Its written in C++ and is used in Google Chrome Browser.
- ❖ Uses (and embraces) an event-driven, non-clocking IO.

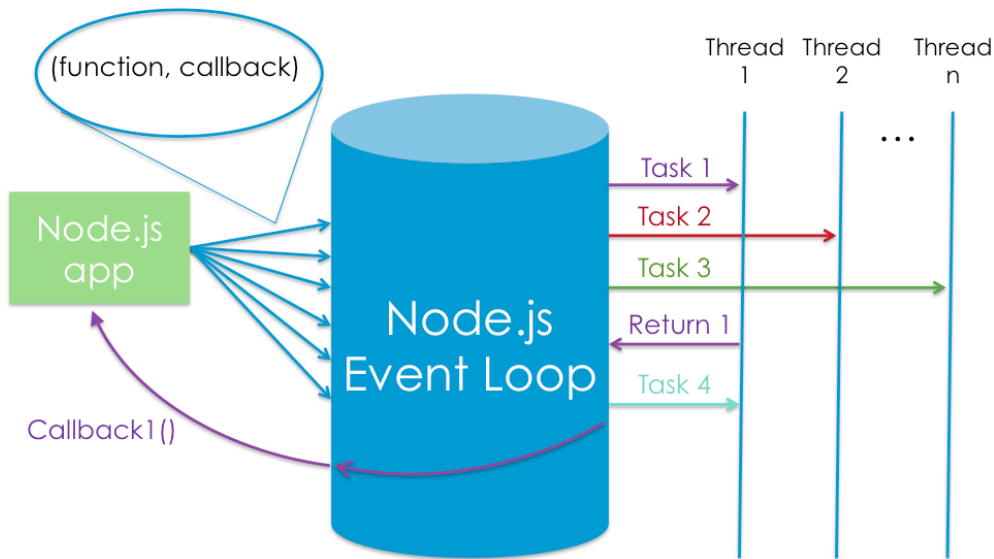
Architecture



Architecture

- 1 Node apps pass async tasks to the event loop, along with a callback

- 2 The event loop efficiently manages a thread pool and executes tasks efficiently...



- 3 ...and executes each callback as tasks complete

Why Node?

- ❖ High performance I/O operations.
- ❖ Using a single language for both client and server.
- ❖ Big (and growing) community
 - over 60K of packages in NPM as of now..

Installation

node.js official site:

<http://nodejs.org/download/>

Windows -

just use the installer..

Ubuntu -

```
sudo add-apt-repository ppa:chris-lea/node.js
```

```
sudo apt-get update
```

```
sudo apt-get install nodejs
```

Demo

Hello World

Demo

Static Web Server

Are we done?

- ❖ What about:
 - Client side caching?
 - MIME types?
 - Security?
 - ..
- ❖ Why write our own when we can use an existing, well tested library?

Connect.js: Middleware for NodeJS

Connect is an extensible HTTP server framework for node, providing high performance "plugins" known as middleware.

<http://www.senchalabs.org/connect/>

Demo

Connect.js

Express.js

- ❖ Sinatra inspired web development framework for Node.js
 - ❖ It is insanely fast, flexible, and simple.
 - ❖ It gives you everything in connect.js plus:
 - View rendering (Jade, EJS, plain HTML...)
 - Routing - Easy route URLs to callbacks
 - Environment based configuration
 - Additional methods on the **Request** and **Response** objects
 - ❖ Install as:
 - `npm install express`
- Or
- `sudo npm install -g express`

Demo

Hello Express

Demo

Express with templating and routing

Sessions

- ❖ Implemented using cookies.
 - `cookieParser()` middleware
- ❖ The `cookieSession()` middleware stores the entire session data in the cookie (client side)
- ❖ the `session()` middleware stores only the session id in the cookie, data is on the server
 - Default `MemoryStore`
 - Many others (redis etc..)

Demo

Express with sessions

Authentication

- ❖ Built in `basicAuth()` middleware
 - Uses the request's Authorization header
 - Sets the `req.user` object on success
 - Returns 401 with a challenge upon failure
 - Can be used on selected routes or on all
- ❖ Or even better use [Passport.js](#)
 - Over 140 strategies (facebook, twitter etc..)

Demo

Express basic authentication

mean.io

“MEAN is an opinionated fullstack javascript framework - which simplifies and accelerates web application development.”

<http://mean.io>

Thank You!