intro to node.js

Max Brosnahan @ CHC.js

in tonight's show...

- Node and I (my experience)
- What is node?
- Dev tools (Max's cheat sheet)
- Demo's (Getting started)
- Sharing server and client code
- Streams
- Summary

Node and I

First heard about node in 2011

Started playing with it in my spare time

Since developed a couple of commercial applications using node at Media Suite

Node and I

Hypermedia based applications (server and client)

- Event driven (based on mediator pattern)
- Hot swappable components (server and client)
  - *Never restart the server
  - *Never refresh the browser

Node and I

Node style modules in the browser

- Like require.js but with commonjs modules
- Intended to be only used for development
- Browserify for production

Node and I

Crowd sourced traffic flow information

- Gathers information from a contributor
  - Location
  - Speed
  - Direction
  - Time
- Stores data in a Mongo Database
- Displays Data on a Google Map
- Build time ~ 4hrs

Node and I

RoadSafe Christchurch (CCC)

- ○ Display some info pages
- ○ Registration / Login
- ○ Display various heat-maps and statistical data

Node and I

Forward Works (LINZ)

- Coordinate rebuild activities in Christchurch

- Enhance Collaboration between government agencies and the private sector

- Find Clashes and Opportunities

Node and I

Forward works
- Api restification
- Angular app server (with browserify)

Why node?

What problem is it trying to solve

Bit of history...

Why node? - History

How do you create a file upload progress bar?

- Start file upload
- ajax poll the server for progress

Why node? - History

Alternatives to short polling

● Long polling
● iframe with script tags
  ○ Keep the connection open and send script tags
  ○ Another form of long polling

Why node? - History

Implementing progress bars on the server

Most technologies required:

1 process per connection or

locked the process until the request was complete

Why node? - History

Tools like php treat servers as directories with files

Node was influenced by Mongrel which treated the basics of a server as a library to be built upon by the developer

Why node? - History

Javascript?

Ryan Dahl tried with
● Ruby
● Lua
● Haskell
● C (too low level)

Why node? - History

Javascript was chosen because

- v8 had just been released
- No one else was using javascript on the server
  - "No one had done it wrong"
- Programming model was compatible with goals

Who is behind node?

Joyent sponsor node. Sell hosting not node

Microsoft

Open source community

Elevator Pitch

High performance interpreter

Non-blocking I/O. Blocking user land.

Javascript all the things

NPM awesomeness. Modularity for the win

Dev tool tips - Debugging

node inspector

winston

Dev tool tips - Testing

mocha

chai

replay

rewire

Dev tool tips - Version mgmt

nave (isaacs)

nodenv

nvm

n (visionmedia)

```
bash                                    sh

   0.8.6
   0.8.25
   0.10.12
 o 0.11.7
```

Dev tool tips - Misc

supervisor

Basic Server demo

Express server demo

Shared server/client code

YES

Streams

Data flows and transformations

Provide a common interface to:
- Files,
- Databases
- WebSockets
- Requests

Streams

Readable

This is anything that emits data. ie cat

fs.createReadStream('package.json')

Streams

Writeable - takes data in

readable.pipe(writable)

fs.createReadStream('package.json')
  .pipe(process.stdout)

Streams

Read + Writeable

WebSockets

Summary

Non-blocking I/O as default

Javascript all the things

NPM awesomeness

Questions?