Node.js Crash Course

var trustMe = {
  consumes: ["Bacon", "Caffeine"],
  hasBeard: true,
  knowsHowToComputer: true
}

David Neal | reverentgeek.com | @reverentgeek
JavaScript...

...has won the Web.

Scott Hanselman
Atwood’s Law:

Any application that can be written in JavaScript...

...will eventually be written in JavaScript

(search for “jslinux”)

JavaScript...

...is tragically important.

Douglas Crockford
Innovation debt...

...is the cost that companies incur when they don’t invest in their developers.

Peter Bell
Up Ahead

• Why Node.js?
• Crash course
• Tools and frameworks
• Integration strategies
NODE.JS

JS

v8
What’s our story?

- ASP.NET MVC, C#
- SQL Server + NHibernate
- JavaScript + Jquery
SWEET
SWEET MOTHER
SWEET MOTHER OF
Do you even scale bro?
What’s our story?

- JavaScript
- Recruiting
- Productive, less friction
  - Testing
  - Microservices
  - RabbitMQ, riak, redis
  - Cross-platform
Why Node.js?

- Rapid innovation & delivery
- Developer happiness
- Attract & retain talent
- Performance

“Why Node.js is Becoming the Go-To Technology in the Enterprise” – nearform.com
“What is Node.js used for: The 2015 Node.js Overview Report” – blog.risingstack.com
Node.js exemplifies…

Start with the simplest solution that works.  

Do one thing, and do it well.
Node.js is...

- blazing fast
- highly concurrent
- low-friction
- cross-platform
- modern web server
Fandango

• dramatically shorter development cycles
• micro-services architecture
• flexibility in deployment
• easily scalable infrastructure

“Fandango Goes Live with Node.js” – nearform.com
PayPal

- 2x faster development with fewer developers
- 33% fewer lines of code
- 40% fewer files
- 2x improvement requests/sec
- 35% decrease in avg response time
Walmart

- Black Friday, 2013
- Mobile platform
- 200,000,000+ users
- 10 CPU cores, 28 GB RAM
- < 1% CPU utilization
- Deployed updates
Who else is using Node.js?

- Dow Jones (WSJ)
- eBay
- Groupon
- LinkedIn
- Rdio

- Shutterstock
- The New York Times
- Uber
- Yammer
- Zendesk

nodjs.org/industry
Node.js Use Cases

• Single-page apps
• API server (REST, Hypermedia, etc.)
• Real-time, streaming
• WebSockets, push notifications
• Chat, IM, social media
• Dashboards
• Proxy service
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Also known as... the INTERNET
DevOps

- Small footprint
- Cross-platform
- Event-driven
- OSS tools

So HOT Right Now
Installing Node.js

1. http://nodejs.org
2. Click big, green INSTALL
3. Run installer
   – OR –
Install using Chocolatey (http://chocolatey.org)

C:\> choco install nodejs.install
Installing Node.js

C:\> node -v
v0.12.7

C:\> npm -v
2.11.3
Dependencies

C:\> choco install python2

– OR –

Python 2.x (https://python.org/downloads/)
Dependencies

C:\> choco install VCExpress2010

– OR –

Visual C++ 2010 Express
Node.js Tools for Visual Studio

http://nodejstools.codeplex.com
https://github.com/Microsoft/nodejstools

Minimum requirements:
• VS 2012 Pro
  or
  VS Community 2013
• Latest VS updates
• VS + Node.js Tools Azure VM
Visual Studio Code

https://code.visualstudio.com/

- Linux, Mac OS X, and Windows
- code assistance
- debugging
Deploying

• Don’t include `node_modules` folder
• ...unless you create builds for specific targets
• Azure is super-easy
• Windows
  – `iisnode` for web apps
  – `winser` for services
• Linux – `forever`
Hosting Node.js on Azure

- Login to Azure portal
- Click +New
- Choose Compute > Website > From Gallery
- Choose Templates > Node JS Empty Site
- Connect to repository such as GitHub for automatic deployments
- reverentgeek.com/hosting-node-js-on-microsoft-azure/
# Recommended toolbox

<table>
<thead>
<tr>
<th>Package</th>
<th>What it do, yo</th>
</tr>
</thead>
<tbody>
<tr>
<td>lodash</td>
<td>JavaScript utilities</td>
</tr>
<tr>
<td>when</td>
<td>JavaScript promise library</td>
</tr>
<tr>
<td>async</td>
<td>async/parallel execution</td>
</tr>
<tr>
<td>request (or rest)</td>
<td>http client</td>
</tr>
<tr>
<td>gulp</td>
<td>build engine, test runner</td>
</tr>
<tr>
<td>socket.io</td>
<td>sockets, real-time</td>
</tr>
<tr>
<td>node-inspector</td>
<td>Debugging</td>
</tr>
<tr>
<td>mocha</td>
<td>test framework</td>
</tr>
<tr>
<td>chai</td>
<td>TDD/BDD assertion library</td>
</tr>
<tr>
<td>sinon</td>
<td>spies, stubs, mocks</td>
</tr>
</tbody>
</table>
Node frameworks

**MVC**
- Express
- hapi
- Meteor
- Sails

**API**
- Restify
- LoopBack
- Autohost + Hyped

*nodeframework.com*
*nodewebmodules.com*
Edge.js

- Run .NET in-process
- ...including F#, ADO.NET, Python, and Powershell
- Execute inline code, files, or assemblies
- Alternative to writing native modules in C
- .NET 4.5 or Mono 3.1
What can Edge.js do?

- Leverage existing .NET investment
- SQL Server (or other DBs)
- TFS, SharePoint, Exchange, etc.
- Active Directory
- Hardware (e.g. camera, microphone, printer, win32)
- Video encoding, or other CPU-intensive work
- Powershell
Node.js Integration Strategies

- Node.js as proxy
- Edge.js for .NET
- `request` module to call APIs
- Messaging (e.g. RabbitMQ, Azure Service Bus)
ELECTRON

Atom

Slack

Visual Studio Code
You don't need permission to be awesome.
Thank you!

David Neal
@ReverentGeek
@david@reverentgeek.com
reverentgeek.com

Demos + LOTS of Resources
bit.ly/node-demos