Technical Environment Setup Instructions – MEAN

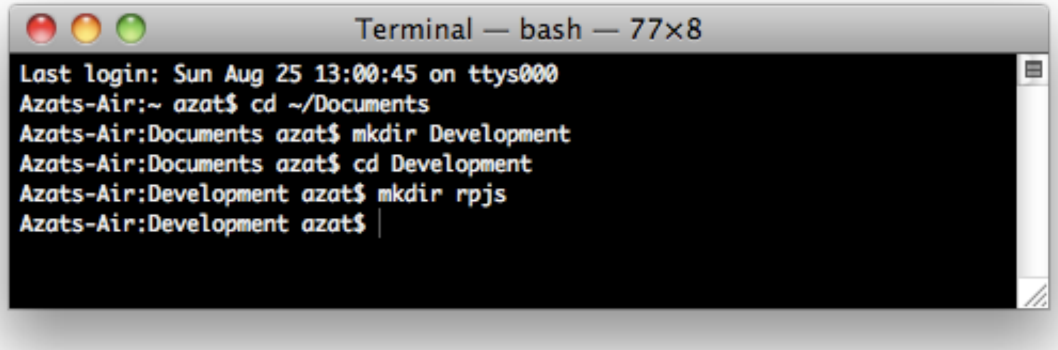
This document consists of the following sections that will help you to set up the development environment:

- Development folder
- Browsers
- IDEs and Text Editors
- Version Control Systems
- Local HTTP Servers
- Database: MongoDB
- Node.js Installation
- JS Libraries
- LESS App
- SSH Keys
- GitHub
- Misc

Development Folder

If you don't have a specific development folder for your web development projects, you could create a *Development* folder in the *Documents* folder (path will be *Documents/Development*). To work on the code example, create a *rpjs* folder inside your web development projects folder, e.g., if you create a *rpjs* folder inside of the *Development* folder, the path will be *Documents/Development/rpjs*. You could use the Finder on Mac OS X or the following terminal commands on OS X/Linux systems:

```
$ cd ~/Documents
$ mkdir Development
$ cd Development
$ mkdir rpjs
```



```
Last login: Sun Aug 25 13:00:45 on ttys000
Azats-Air:~ azat$ cd ~/Documents
Azats-Air:Documents azat$ mkdir Development
Azats-Air:Documents azat$ cd Development
Azats-Air:Development azat$ mkdir rpjs
Azats-Air:Development azat$
```

Initial development environment setup.

Tip: To open Mac OS Finder app in the current directory from Terminal, just type and run the `$ open .` command.

To get the list of files and folders, use this UNIX/Linix command:

```
$ ls
```

or to display hidden files and folders, like *.git*:

```
$ ls -lah
```

Another alternative to `$ ls` is `$ ls -alt`. The difference between the `-lah` and the `-alt` options is that the latter sorts items chronologically and the former alphabetically.

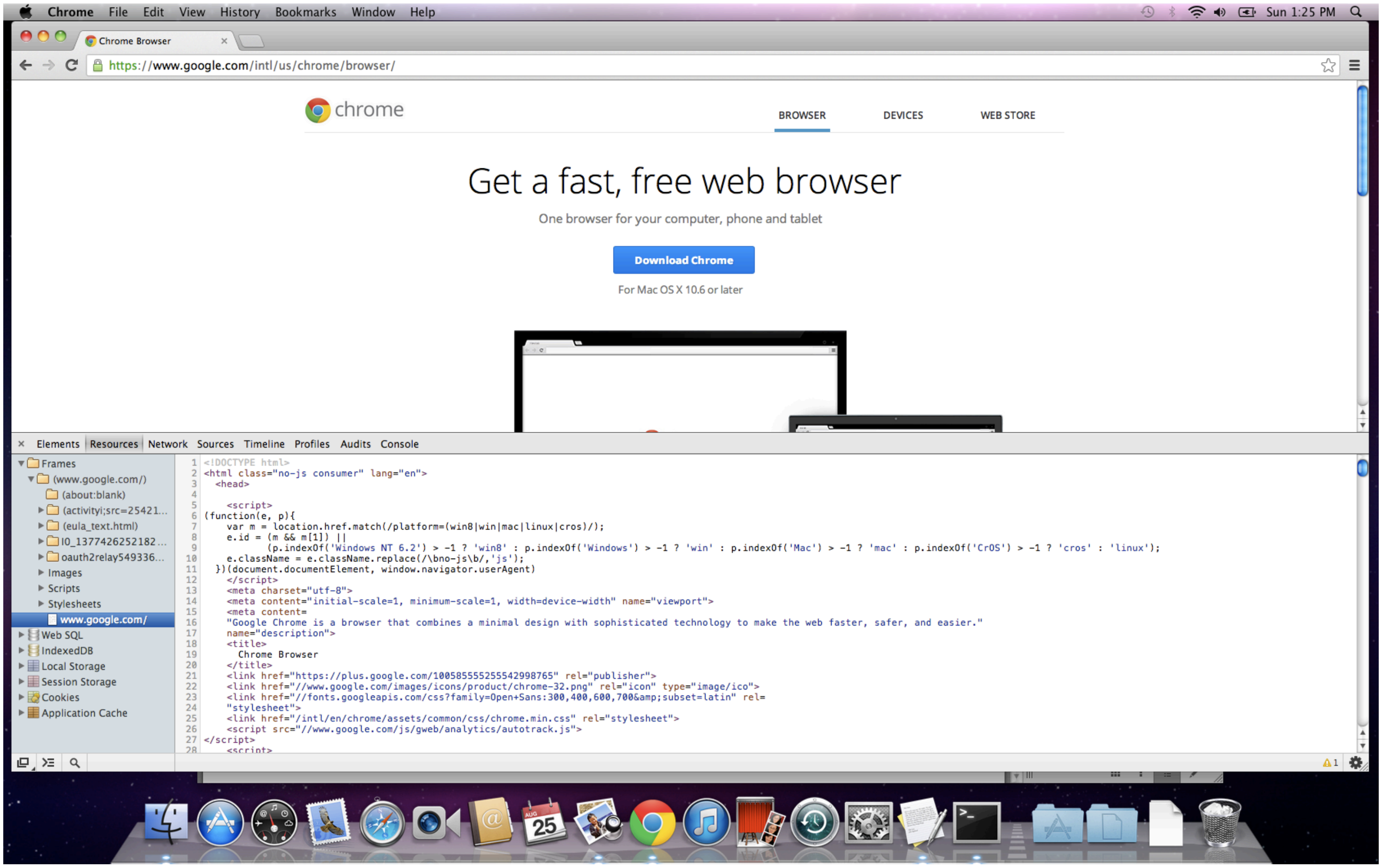
Note: You can use the Tab key to autocomplete names of the files and folders.

Later, you could copy examples into the *rpjs* folder as well as create apps in that folder.

Another useful thing is to have the “New Terminal at Folder” option in Finder on Mac OS X. To enable it, open your “System Preferences” (you could use Command + Space, a.k.a. Spotlight, for it). Find “Keyboard” and click on it. Open “Keyboard Shortcuts” and click on “Services.” Check the “New Terminal at Folder” and “New Terminal Tab at Folder” boxes. Close the window (optional).

Browsers

We recommend downloading the latest version of the WebKit or Gecko browser of your choice: Chrome, Safari or Firefox.
While Chrome and Safari already come with built-in Developer Tools, you’ll need the Firebug plug-in for Firefox.

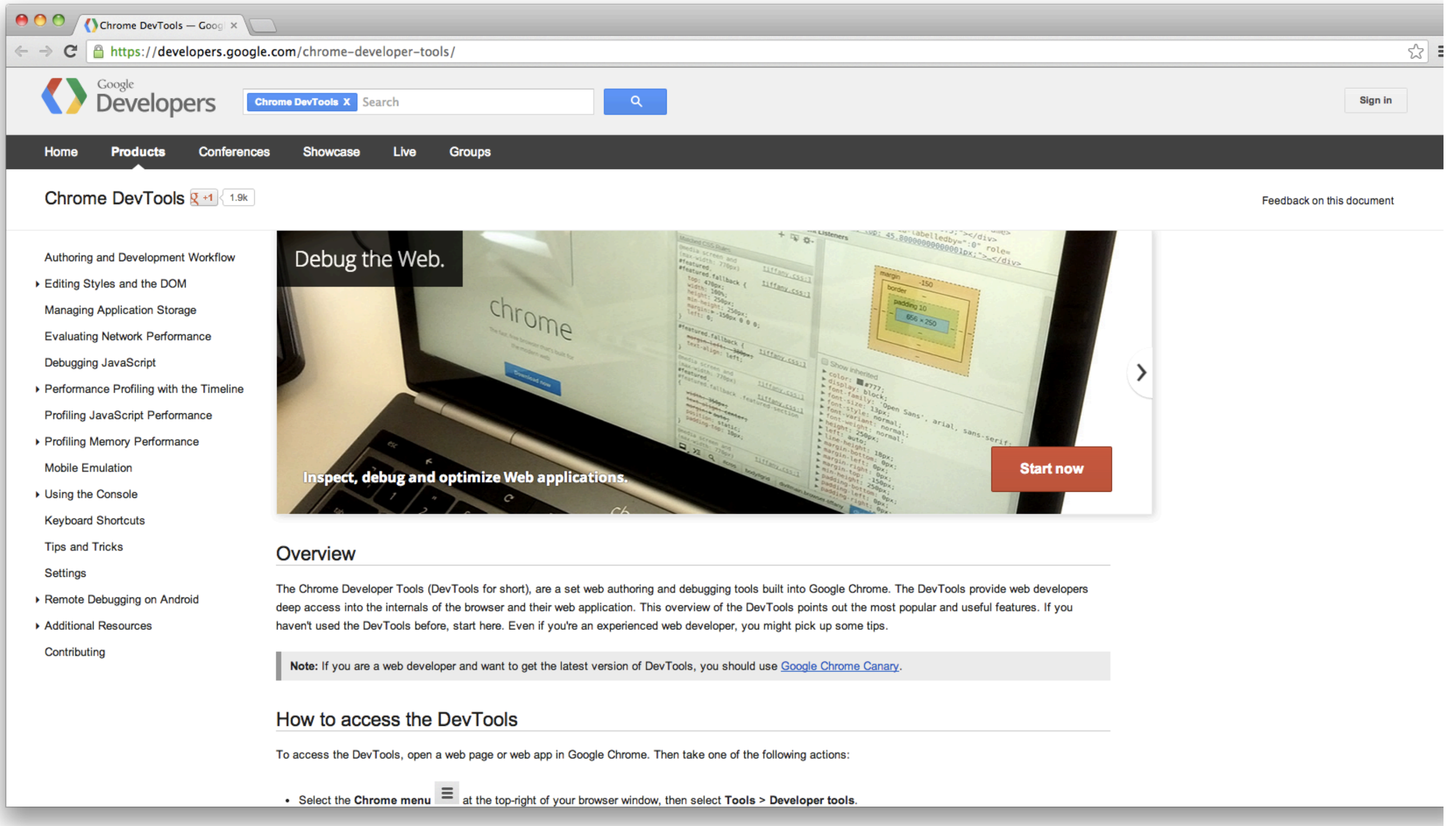


```
<!DOCTYPE html>
<html class="no-js consumer" lang="en">
  <head>

    <script>
(function(e, p){
    var m = location.href.match(/platform=(win8|win|mac|linux|cros)/);
    e.id = (m && m[1]) ||
           (p.indexOf('Windows NT 6.2') > -1 ? 'win8' : p.indexOf('Windows') > -1 ? 'win' : p.indexOf('Mac') > -1 ? 'mac' : p.indexOf('CrOS') > -1 ? 'cros' : 'linux');
    e.className = e.className.replace(/\bno-js\b/,'js');
  })(document.documentElement, window.navigator.userAgent)
    </script>
    <meta charset="utf-8">
    <meta content="initial-scale=1, minimum-scale=1, width=device-width" name="viewport">
    <meta content=
    "Google Chrome is a browser that combines a minimal design with sophisticated technology to make the web faster, safer, and easier."
    name="description">
    <title>
      Chrome Browser
    </title>
    <link href="https://plus.google.com/100585555255542998765" rel="publisher">
    <link href="//www.google.com/images/icons/product/chrome-32.png" rel="icon" type="image/ico">
    <link href="//fonts.googleapis.com/css?family=Open+Sans:300,400,600,700&amp;subset=latin" rel=
    "stylesheet">
    <link href="/intl/en/chrome/assets/common/css/chrome.min.css" rel="stylesheet">
    <script src="//www.google.com/js/gweb/analytics/autotrack.js">
</script>
    <script>
```

Chrome dev tools.

Firebug and Developer Tools allow developers to do many things like:

- Debug JavaScript
- Manipulate HTML and DOM elements
- Modify CSS on the fly
- Monitor HTTP requests and responses
- Run profiles and inspect heap dumps
- See loaded assets such as images, CSS and JS files


Chrome DevTools — Goog
https://developers.google.com/chrome-developer-tools/
Google Developers
Chrome DevTools X
Search
Sign in
Home
Products
Conferences
Showcase
Live
Groups
Chrome DevTools
+1
1.9k
Feedback on this document
Authoring and Development Workflow
Editing Styles and the DOM
Managing Application Storage
Evaluating Network Performance
Debugging JavaScript
Performance Profiling with the Timeline
Profiling JavaScript Performance
Profiling Memory Performance
Mobile Emulation
Using the Console
Keyboard Shortcuts
Tips and Tricks
Settings
Remote Debugging on Android
Additional Resources
Contributing
Debug the Web.
Inspect, debug and optimize Web applications.
Start now

Overview

The Chrome Developer Tools (DevTools for short), are a set web authoring and debugging tools built into Google Chrome. The DevTools provide web developers deep access into the internals of the browser and their web application. This overview of the DevTools points out the most popular and useful features. If you haven't used the DevTools before, start here. Even if you're an experienced web developer, you might pick up some tips.

> **Note:** If you are a web developer and want to get the latest version of DevTools, you should use Google Chrome Canary.

How to access the DevTools

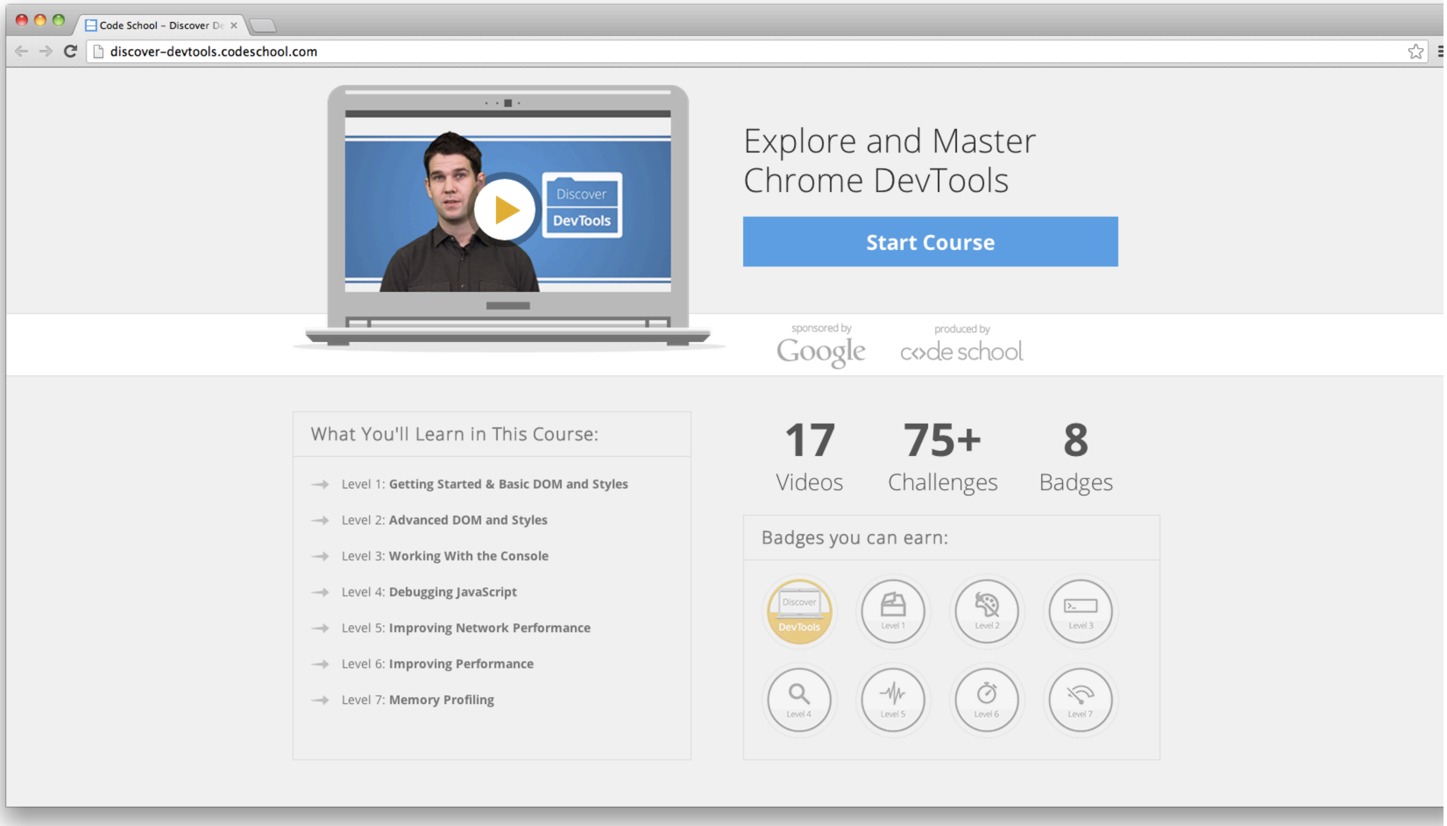
To access the DevTools, open a web page or web app in Google Chrome. Then take one of the following actions:

- Select the **Chrome menu** ☰ at the top-right of your browser window, then select **Tools** > **Developer tools**.

Google tutorials for mastering web deb tools.

Great Chrome DevTools tutorials:

- Explore and Master Chrome DevTools with Code School
- Chrome DevTools home
- Chrome DevTools overview



Explore and Master Chrome DevTools

Start Course

What You'll Learn in This Course:

- Level 1: **Getting Started & Basic DOM and Styles**
- Level 2: **Advanced DOM and Styles**
- Level 3: **Working With the Console**
- Level 4: **Debugging JavaScript**
- Level 5: **Improving Network Performance**
- Level 6: **Improving Performance**
- Level 7: **Memory Profiling**

17 Videos

75+ Challenges

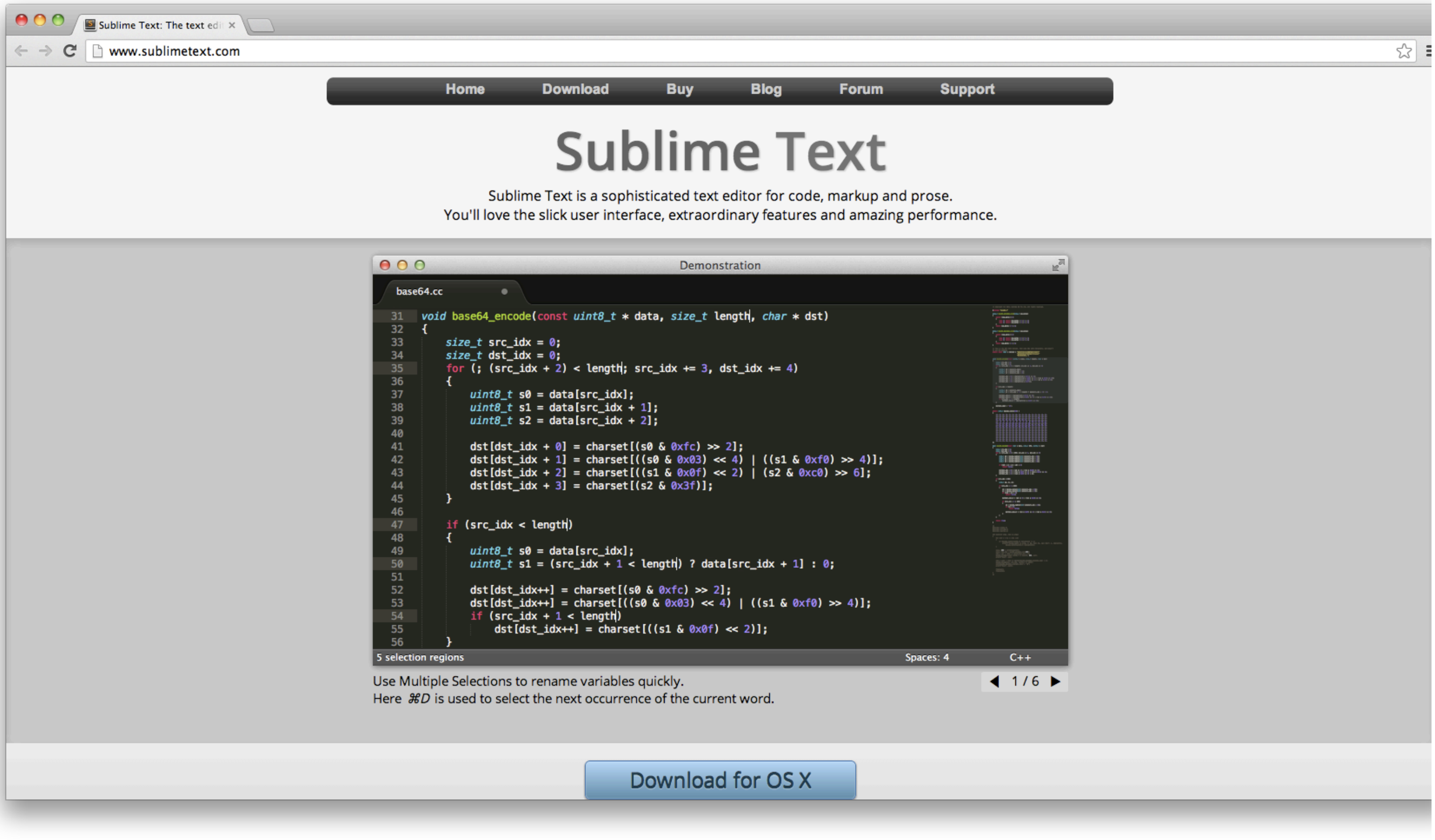
8 Badges

Badges you can earn:

Mastering chrome DevTools.

IDEs and Text Editors

One of the best things about JavaScript is that you don't need to compile the code. Because JS lives in and is run in a browser, you can do debugging right there, in a browser! Therefore, we highly recommend a lightweight text editor vs. a full-blown integrated development environment, or IDE, but if you are already familiar and comfortable with the IDE of your choice like Eclipse, NetBeans or Aptana, feel free to stick with it.



Sublime Text

Sublime Text is a sophisticated text editor for code, markup and prose.
You'll love the slick user interface, extraordinary features and amazing performance.

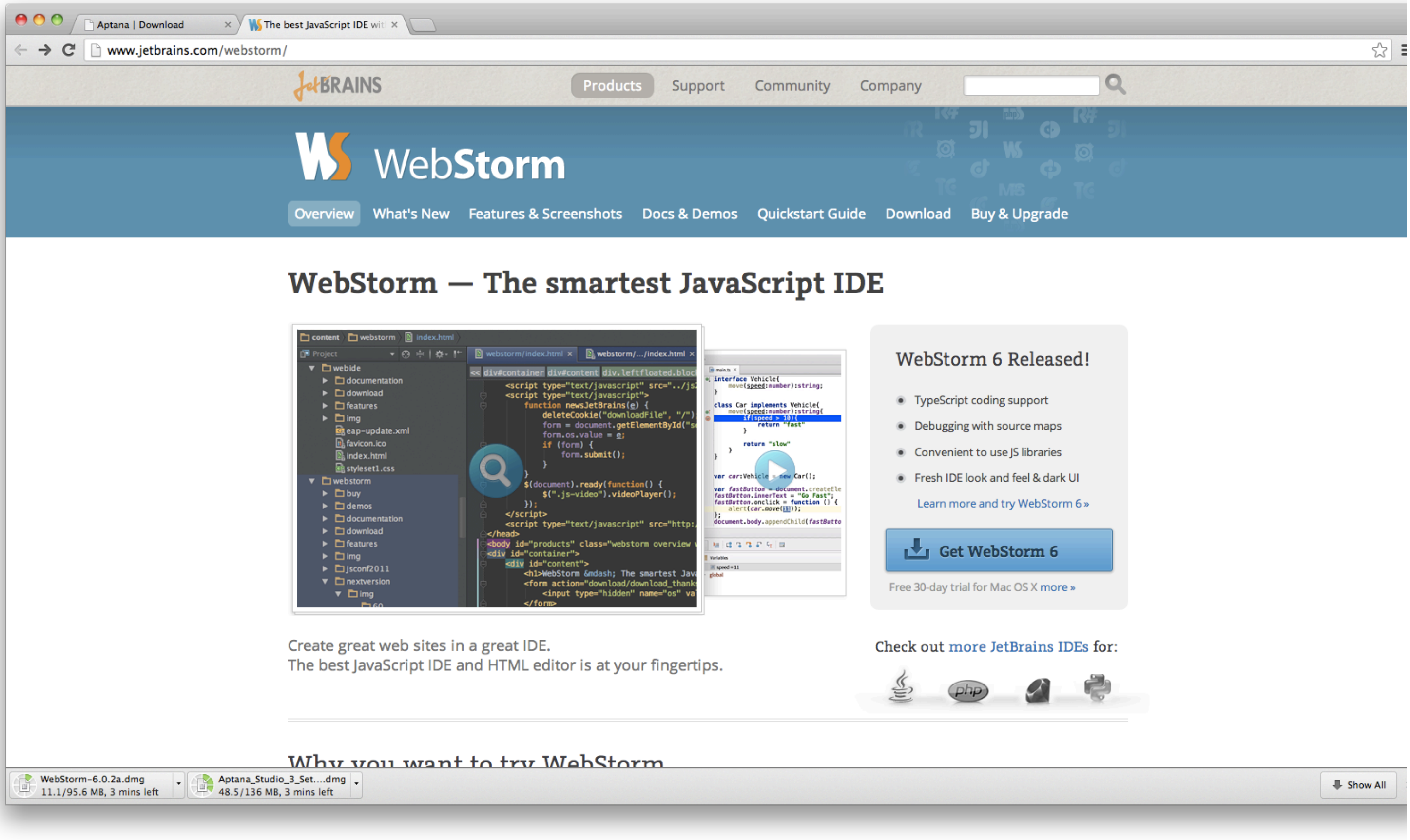
```
void base64_encode(const uint8_t * data, size_t length, char * dst)
{
    size_t src_idx = 0;
    size_t dst_idx = 0;
    for (; (src_idx + 2) < length; src_idx += 3, dst_idx += 4)
    {
        uint8_t s0 = data[src_idx];
        uint8_t s1 = data[src_idx + 1];
        uint8_t s2 = data[src_idx + 2];

        dst[dst_idx + 0] = charset[(s0 & 0xfc) >> 2];
        dst[dst_idx + 1] = charset[((s0 & 0x03) << 4) | ((s1 & 0xf0) >> 4)];
        dst[dst_idx + 2] = charset[((s1 & 0x0f) << 2) | (s2 & 0xc0) >> 6];
        dst[dst_idx + 3] = charset[(s2 & 0x3f)];
    }

    if (src_idx < length)
    {
        uint8_t s0 = data[src_idx];
        uint8_t s1 = (src_idx + 1 < length) ? data[src_idx + 1] : 0;

        dst[dst_idx++] = charset[(s0 & 0xfc) >> 2];
        dst[dst_idx++] = charset[((s0 & 0x03) << 4) | ((s1 & 0xf0) >> 4)];
        if (src_idx + 1 < length)
            dst[dst_idx++] = charset[((s1 & 0x0f) << 2)];
    }
```

Use Multiple Selections to rename variables quickly.
Here ⌘D is used to select the next occurrence of the current word.

Sublime Text code editor home page.

Here is the list of the most popular text editors and IDEs used in web development:

- TextMate: Mac OS X version only, free 30-day trial for v1.5, dubbed *The Missing Editor for Mac OS X*.
- Sublime Text: Mac OS X and Windows versions are available, even better alternative to TextMate, unlimited evaluation period.
- Coda: all-in-one editor with FTP browser and preview, has support for development with/on an iPad.
- Aptana Studio: full-sized IDE with a built-in terminal and many other tools.
- Notepad ++: free Windows-only lightweight text editor with the support of many languages.
- WebStorm IDE: feature-rich IDE which allows for Node.js debugging; it’s developed by JetBrains and marketed as *the smartest JavaScript IDE*.



WebStorm — The smartest JavaScript IDE

```
<< div#container div#content div.leftfloated.bloc
    <script type="text/javascript" src="../js
    <script type="text/javascript">
        function newsJetBrains(e) {
            deleteCookie("downloadFile", "/")
            form = document.getElementById("s
            form.os.value = e;
            if (form) {
                form.submit();
            }
        }
        $(document).ready(function() {
            $(".js-video").videoPlayer();
        });
    </script>
    <script type="text/javascript" src="http:
</head>
<body id="products" class="webstorm overview 
<div id="container">
    <div id="content">
        <h1>WebStorm &mdash; The smartest Java
        <form action="download/download_thank
            <input type="hidden" name="os" va
        </form>
```

```
interface Vehicle{
    move(speed:number):string;
}

class Car implements Vehicle{
    move(speed:number):string{
        if(speed > 10){
            return "fast"
        }

        return "slow"
    }
}

var car:Vehicle = new Car();

var fastButton = document.createEle
fastButton.innerText = "Go Fast";
fastButton.onclick = function () {
    alert(car.move(11));
};
document.body.appendChild(fastButto
```

WebStorm 6 Released!

- TypeScript coding support
- Debugging with source maps
- Convenient to use JS libraries
- Fresh IDE look and feel & dark UI

Learn more and try WebStorm 6 »

Free 30-day trial for Mac OS X more »

Create great web sites in a great IDE.
The best JavaScript IDE and HTML editor is at your fingertips.

Check out more JetBrains IDEs for:

Why you want to try WebStorm

WebStorm-6.0.2a.dmg
11.1/95.6 MB, 3 mins left

Aptana_Studio_3_Set....dmg
48.5/136 MB, 3 mins left

WebStorm IDE home page.

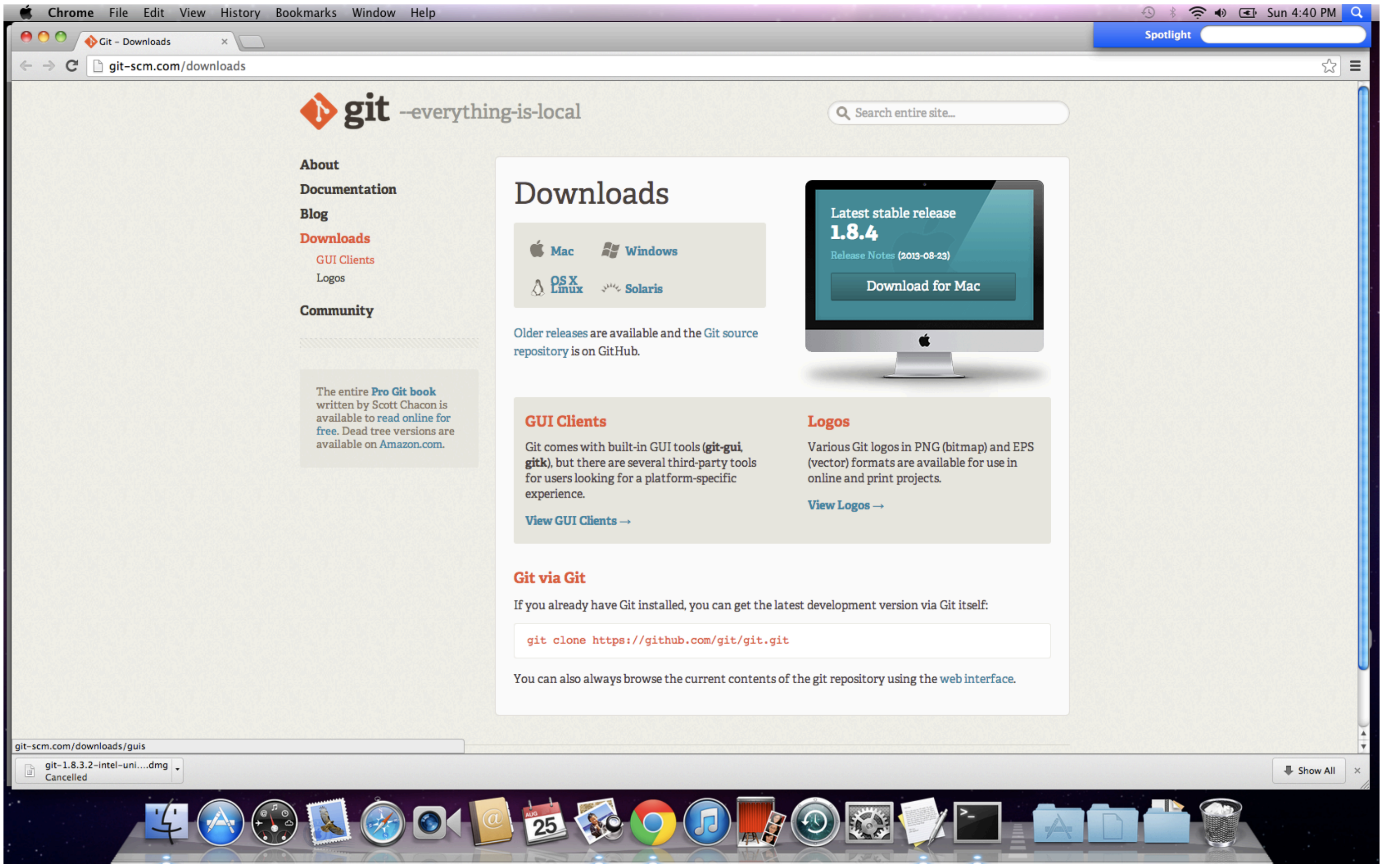
Version Control Systems

Version control system is a must-have even in an only-one-developer situation. Also many cloud services, e.g., Heroku, require Git for deployment. We also highly recommend getting used to Git and Git terminal commands instead of using Git visual clients/apps with a graphical user interface: GitX, Gitbox or GitHub for Mac.

Subversion is a non-distributed version control system. This article compares Git vs. Subversion.

Here are the steps to install and set up Git on your machine:

1. Download the latest version for your OS at http://git-scm.com/downloads.



Downloads

Older releases are available and the Git source repository is on GitHub.

The entire Pro Git book written by Scott Chacon is available to read online for free. Dead tree versions are available on Amazon.com.

GUI Clients

Git comes with built-in GUI tools (**git-gui**, **gitk**), but there are several third-party tools for users looking for a platform-specific experience.

Logos

Various Git logos in PNG (bitmap) and EPS (vector) formats are available for use in online and print projects.

Git via Git

If you already have Git installed, you can get the latest development version via Git itself:

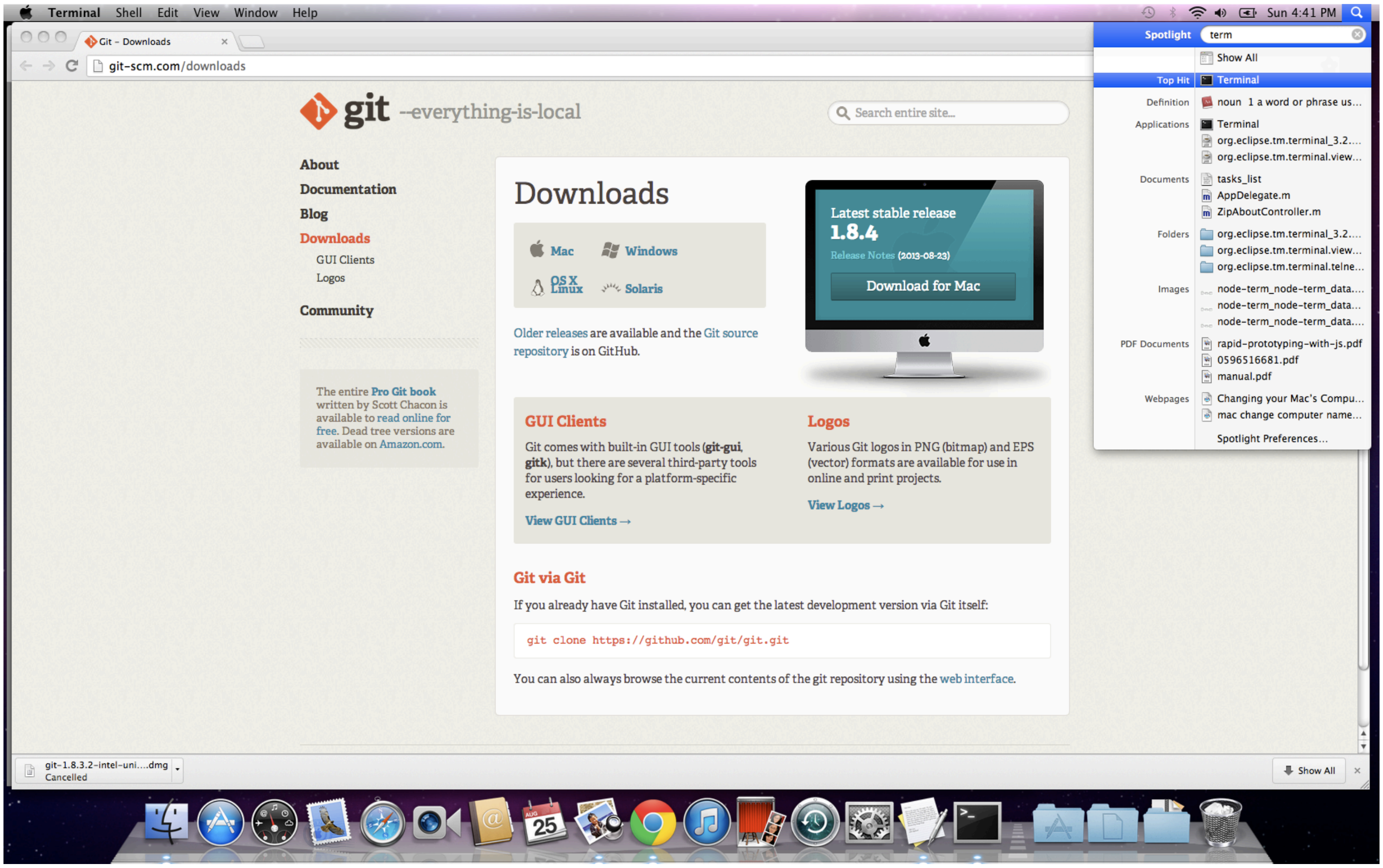
```
git clone https://github.com/git/git.git
```

You can also always browse the current contents of the git repository using the web interface.

Downloading latest release of Git.

2. Install Git from the downloaded `*.dmg` package, i.e., run `*.pkg` file and follow the wizard.

3. Find the terminal app by using Command + Space, a.k.a. Spotlight (please see the screenshot below), on OS X. For Windows you could use PuTTY or Cygwin.


Terminal Shell Edit View Window Help
Sun 4:41 PM
Git – Downloads
git-scm.com/downloads
git --everything-is-local
Search entire site...
About
Documentation
Blog
Downloads
GUI Clients
Logos
Community
Mac
Windows
OS X
Linux
Solaris
Spotlight
term
Show All
Top Hit
Terminal
Definition
noun 1 a word or phrase us...
Applications
Terminal
org.eclipse.tm.terminal_3.2....
org.eclipse.tm.terminal.view...
Documents
tasks_list
AppDelegate.m
ZipAboutController.m
Folders
org.eclipse.tm.terminal_3.2....
org.eclipse.tm.terminal.view...
org.eclipse.tm.terminal.telne...
Images
node-term_node-term_data....
node-term_node-term_data....
node-term_node-term_data....
PDF Documents
rapid-prototyping-with-js.pdf
0596516681.pdf
manual.pdf
Webpages
Changing your Mac's Compu...
mac change computer name...
Spotlight Preferences...
git-1.8.3.2-intel-uni....dmg
Cancelled
Show All

Downloads

Latest stable release
1.8.4
Release Notes (2013-08-23)
Download for Mac

Older releases are available and the Git source repository is on GitHub.

The entire Pro Git book written by Scott Chacon is available to read online for free. Dead tree versions are available on Amazon.com.

GUI Clients

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View GUI Clients →

Logos

Various Git logos in PNG (bitmap) and EPS (vector) formats are available for use in online and print projects.

View Logos →

Git via Git

If you already have Git installed, you can get the latest development version via Git itself:

```
git clone https://github.com/git/git.git
```

You can also always browse the current contents of the git repository using the web interface.

Using Spotlight to find and run an application.

4. In your terminal, type these commands, **substituting** "John Doe" and johndoe@example.com with your name and email:

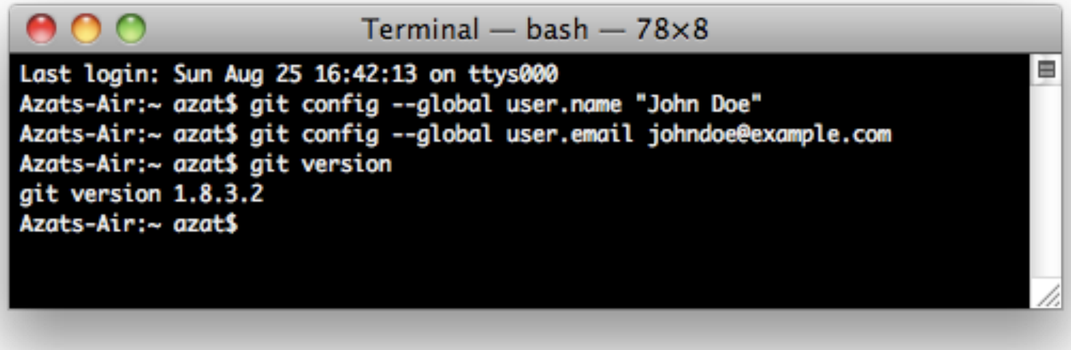
```
$ git config --global user.name "John Doe"
$ git config --global user.email johndoe@example.com
```

5. To check the installation, run command:

```
$ git version
```

6. You should see something like this in your terminal window (your version might vary; in our case it's 1.8.3.2):

```
git version 1.8.3.2
```



```
Last login: Sun Aug 25 16:42:13 on ttys000
Azats-Air:~ azat$ git config --global user.name "John Doe"
Azats-Air:~ azat$ git config --global user.email johndoe@example.com
Azats-Air:~ azat$ git version
git version 1.8.3.2
Azats-Air:~ azat$
```

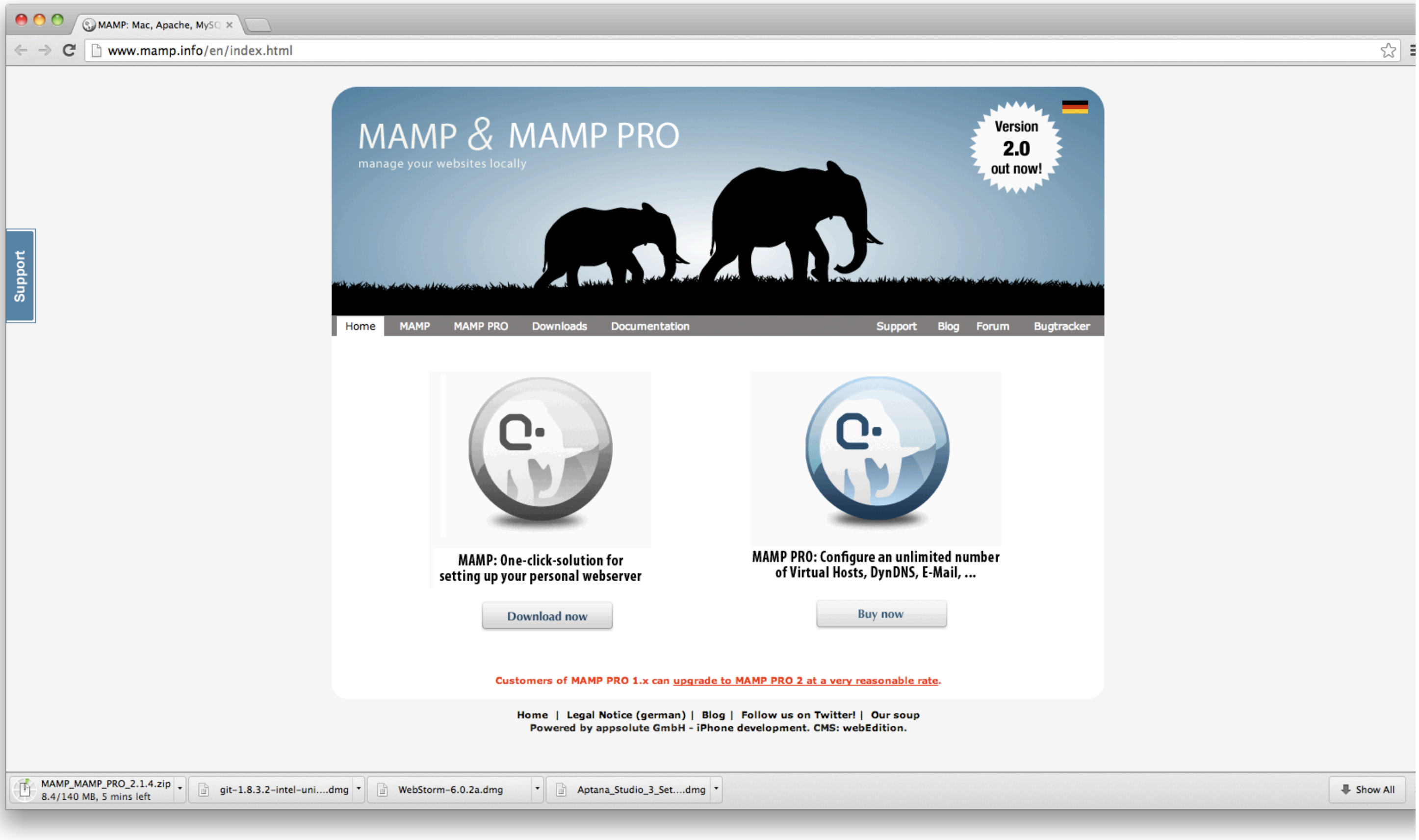
Configuring & Testing Git installation.

Generation of SSH keys and uploading them to SaaS/PaaS websites will be covered later.

Local HTTP Servers

While you can do most of the front-end development without a local HTTP server, it is needed for loading files with HTTP Requests/AJAX calls. Also, it’s just a good practice in general to use a local HTTP server. This way, your development environment is as close to the production environment as possible. You might want to consider the following modifications of the Apache web server:

- node-static: Node.js-based CLI web server
- http-server: simple Node.js-based CLI web server
- MAMP: Mac, Apache, MySQL, PHP personal web server for Mac OS X
- MAMP Stack: Mac app with PHP, Apache, MySQL and phpMyAdmin stack build by BitNami (Apple app store)
- XAMPP: Apache distribution containing MySQL, PHP and Perl for Windows, Mac, Linux and Solaris.



MAMP: One-click-solution for setting up your personal webserver

MAMP PRO: Configure an unlimited number of Virtual Hosts, DynDNS, E-Mail, ...

Customers of MAMP PRO 1.x can upgrade to MAMP PRO 2 at a very reasonable rate.

Home | Legal Notice (german) | Blog | Follow us on Twitter! | Our soup
Powered by appsolute GmbH - iPhone development. CMS: webEdition.

MAMP for Mac home page.

MAMP, MAMP Stack and XAMPP have intuitive Graphical User Interfaces (GUIs) which allow you to change configurations and host file settings.

Note: Node.js as many other back-end technologies have their own servers for development.

Database: MongoDB

The following steps are better suited for Mac OS X/Linux based systems but with some modification can be used for Windows systems as well, i.e., $PATH variable - step #3. Below, we describe the MongoDB installation from the official package, because we found that this approach is more robust and leads to less conflicts. However, there are many other ways to install it on Mac, for example using Brew, as well as on other systems.

1. MongoDB can be downloaded at http://www.mongodb.org/downloads. For the latest Apple laptops, like MacBook Air, select OS X 64-bit version. The owners of older Macs should browse the link http://dl.mongodb.org/dl/osx/i386.

Tip: To figure out the architecture type of your processor, type the `$ uname -p` in the command line.

1. Unpack the package into your web development folder (~/*Documents/Development* or any other). If you want, you could install MongoDB into */usr/local/mongodb* folder.

2. **Optional**: If you would like to access MongoDB commands from anywhere on your system, you need to add your **mongodb** path to the $PATH variable. For Mac OS X the open system *paths* file with:

   ```
   sudo vi /etc/paths
   ```

   or, if you prefer TextMate:

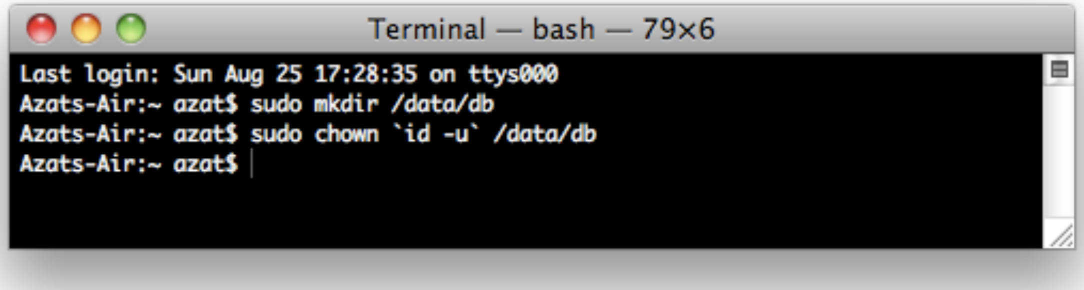
   ```
   mate /etc/paths
   ```

   And add this line to the */etc/paths* file:

   ```
   /usr/local/mongodb/bin
   ```

3. Create a data folder; by default, MongoDB uses */data/db*. Please note that this might be different in a new versions of MongoDB. To create it, type and execute the following commands in the terminal:

   ```
   $ sudo mkdir -p /data/db
   $ sudo chown `id -u` /data/db
   ```

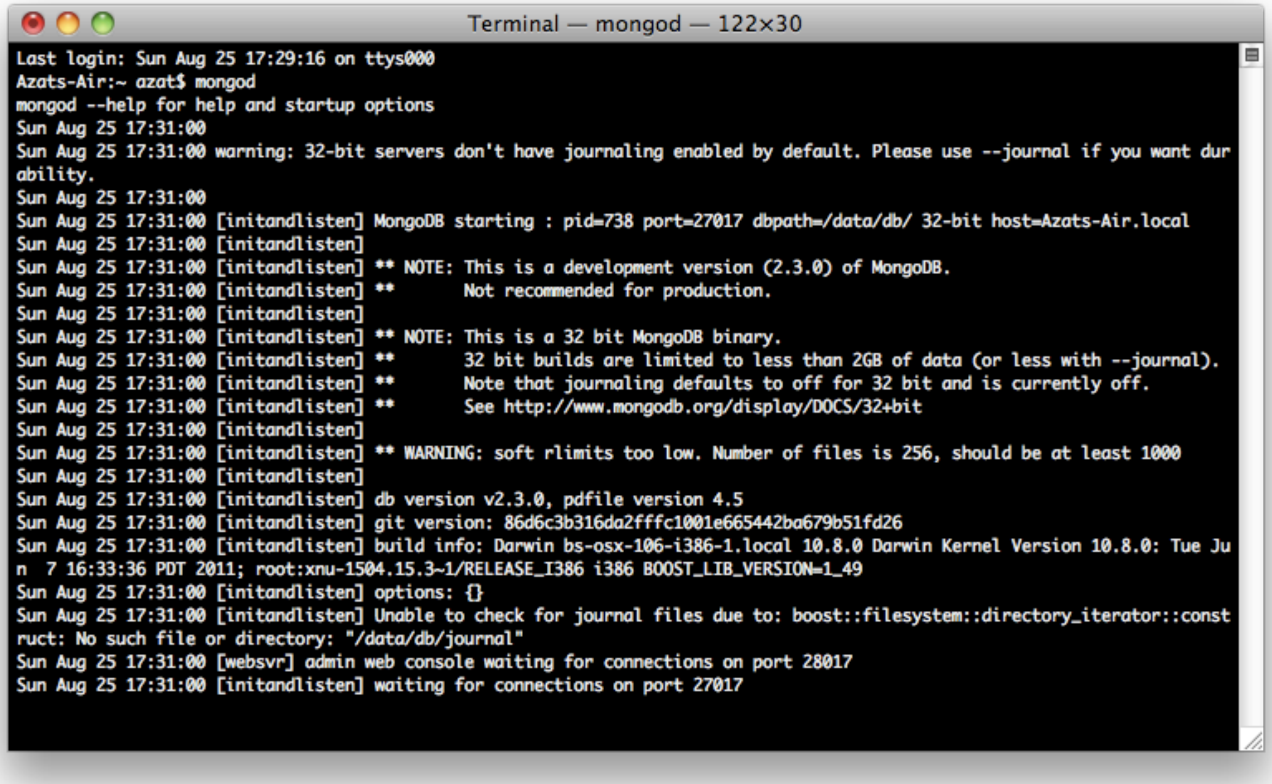
   ```
   Last login: Sun Aug 25 17:28:35 on ttys000
   Azats-Air:~ azat$ sudo mkdir /data/db
   Azats-Air:~ azat$ sudo chown `id -u` /data/db
   Azats-Air:~ azat$
   ```

   Initial setup for MongoDB: create the data directory.

   If you prefer to use path other than */data/db* you could specify it using the –dbpath option to **mongod** (main MongoDB service).

4. Go to the folder where you unpacked MongoDB. That location should have a *bin* folder in it. From there, type the following command in your terminal:

   ```
   $ ./bin/mongod
   ```



```
Last login: Sun Aug 25 17:29:16 on ttys000
Azats-Air:~ azat$ mongod
mongod --help for help and startup options
Sun Aug 25 17:31:00
Sun Aug 25 17:31:00 warning: 32-bit servers don't have journaling enabled by default. Please use --journal if you want dur
ability.
Sun Aug 25 17:31:00
Sun Aug 25 17:31:00 [initandlisten] MongoDB starting : pid=738 port=27017 dbpath=/data/db/ 32-bit host=Azats-Air.local
Sun Aug 25 17:31:00 [initandlisten]
Sun Aug 25 17:31:00 [initandlisten] ** NOTE: This is a development version (2.3.0) of MongoDB.
Sun Aug 25 17:31:00 [initandlisten] **       Not recommended for production.
Sun Aug 25 17:31:00 [initandlisten]
Sun Aug 25 17:31:00 [initandlisten] ** NOTE: This is a 32 bit MongoDB binary.
Sun Aug 25 17:31:00 [initandlisten] **       32 bit builds are limited to less than 2GB of data (or less with --journal).
Sun Aug 25 17:31:00 [initandlisten] **       Note that journaling defaults to off for 32 bit and is currently off.
Sun Aug 25 17:31:00 [initandlisten] **       See http://www.mongodb.org/display/DOCS/32+bit
Sun Aug 25 17:31:00 [initandlisten]
Sun Aug 25 17:31:00 [initandlisten] ** WARNING: soft rlimits too low. Number of files is 256, should be at least 1000
Sun Aug 25 17:31:00 [initandlisten]
Sun Aug 25 17:31:00 [initandlisten] db version v2.3.0, pdfile version 4.5
Sun Aug 25 17:31:00 [initandlisten] git version: 86d6c3b316da2fffc1001e665442ba679b51fd26
Sun Aug 25 17:31:00 [initandlisten] build info: Darwin bs-osx-106-i386-1.local 10.8.0 Darwin Kernel Version 10.8.0: Tue Ju
n  7 16:33:36 PDT 2011; root:xnu-1504.15.3~1/RELEASE_I386 i386 BOOST_LIB_VERSION=1_49
Sun Aug 25 17:31:00 [initandlisten] options: {}
Sun Aug 25 17:31:00 [initandlisten] Unable to check for journal files due to: boost::filesystem::directory_iterator::const
ruct: No such file or directory: "/data/db/journal"
Sun Aug 25 17:31:00 [websvr] admin web console waiting for connections on port 28017
Sun Aug 25 17:31:00 [initandlisten] waiting for connections on port 27017
```

Starting-up the MongoDB server.

5. If you see something like

```
MongoDB starting: pid =7218 port=27017...
```

it means that the MongoDB database server is running. By default, it's listening at http://localhost:27017. If you go to your browser and type http://localhost:28017 you should be able to see the version number, logs and other useful information. In this case MondoDB server is using **two** different ports (27017 and 28017): one is primary (native) for the communications with apps and the other is web based GUI for monitoring/statistics. In our Node.js code we'll be using only 27017.

Note: Don't forget to restart the Terminal window after adding a new path to the $PATH variable.

Now, to take it even further, we can test to determine if we have access to the MongoDB console/shell, which will act as a client to this server. This means that we'll have to keep the terminal window with the server open and running.

1. Open another terminal window at the same folder and execute:

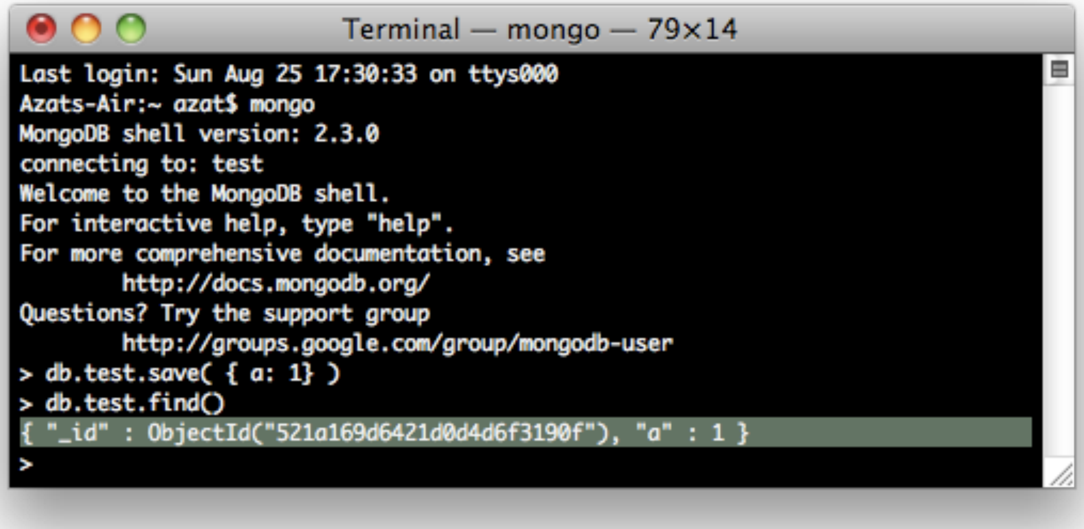
```
$ ./bin/mongo
```

You should be able to see something like "MongoDB shell version 2.0.6 …"

2. Then type and execute:

```
> db.test.save( { a: 1 } )
> db.test.find()
```

If you see that your record is being saved, then everything went well:



```
Last login: Sun Aug 25 17:30:33 on ttys000
Azats-Air:~ azat$ mongo
MongoDB shell version: 2.3.0
connecting to: test
Welcome to the MongoDB shell.
For interactive help, type "help".
For more comprehensive documentation, see
        http://docs.mongodb.org/
Questions? Try the support group
        http://groups.google.com/group/mongodb-user
> db.test.save( { a: 1} )
> db.test.find()
{ "_id" : ObjectId("521a169d6421d0d4d6f3190f"), "a" : 1 }
>
```

Running MongoDB client and storing sample data.

Commands *find* and *save* do exactly what you might think they do. ;-)

Detailed instructions are also available at MongoDB.org: Install MongoDB on OS X. For Windows, users there is a good walk-through article.

Note: MAMP and XAMPP applications come with MySQL — open-source traditional SQL database, and phpMyAdmin — web interface for MySQL database.

On Mac OS X (and most Unix systems), to close the process use `control + c`. If you use `control + z` it will put the process to sleep (or detach the terminal window); in this case, you might end up with the lock on data files and will have to use the kill command or Activity Monitor, and manually delete the locked file in the data folder. In vanilla Mac Terminal `command + .` is an alternative to `control + c`.

Other Components

Node.js Installation

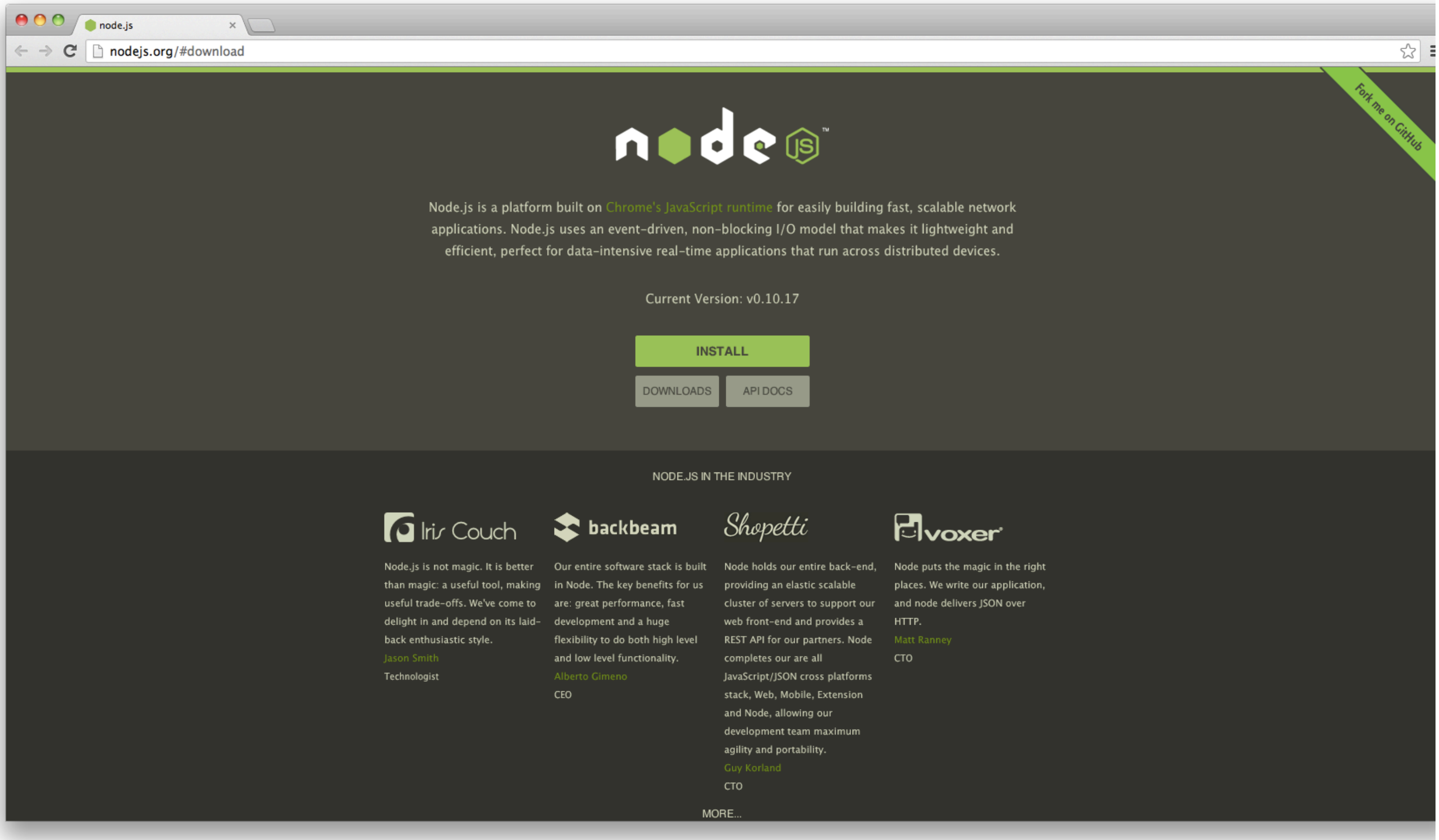
Node.js is available at http://nodejs.org/#download (please see the screenshot below). The installation is trivial, i.e., download the archive, run the `*.pkg` package installer. To check the installation of Node.js you could type and execute:

```
$ node -v
```

It should show something similar to this (we use v.0.8.1, but your version might vary):

```
v0.8.1
```

Node.js package already includes Node Package Manager (NPM). We'll use NPM extensively to install Node.js modules.



Node.js is a platform built on Chrome's JavaScript runtime for easily building fast, scalable network applications. Node.js uses an event-driven, non-blocking I/O model that makes it lightweight and efficient, perfect for data-intensive real-time applications that run across distributed devices.

Current Version: v0.10.17

NODE.JS IN THE INDUSTRY

Node.js is not magic. It is better than magic: a useful tool, making useful trade-offs. We've come to delight in and depend on its laid-back enthusiastic style.
Jason Smith
Technologist

Our entire software stack is built in Node. The key benefits for us are: great performance, fast development and a huge flexibility to do both high level and low level functionality.
Alberto Gimeno
CEO

Node holds our entire back-end, providing an elastic scalable cluster of servers to support our web front-end and provides a REST API for our partners. Node completes our are all JavaScript/JSON cross platforms stack, Web, Mobile, Extension and Node, allowing our development team maximum agility and portability.
Guy Korland
CTO

Node puts the magic in the right places. We write our application, and node delivers JSON over HTTP.
Matt Ranney
CTO

Node.js home page.

JS Libraries

Front-end JavaScript libraries are downloaded and unpacked from their respective websites. Those files are usually put in Development folder (e.g., `~/Documents/Development`) for future use. Oftentimes, there is a choice between minified production version (more on that in AMD and Require.js section of the *Intro to Backbone.js* chapter) and extensively rich in comments development one.

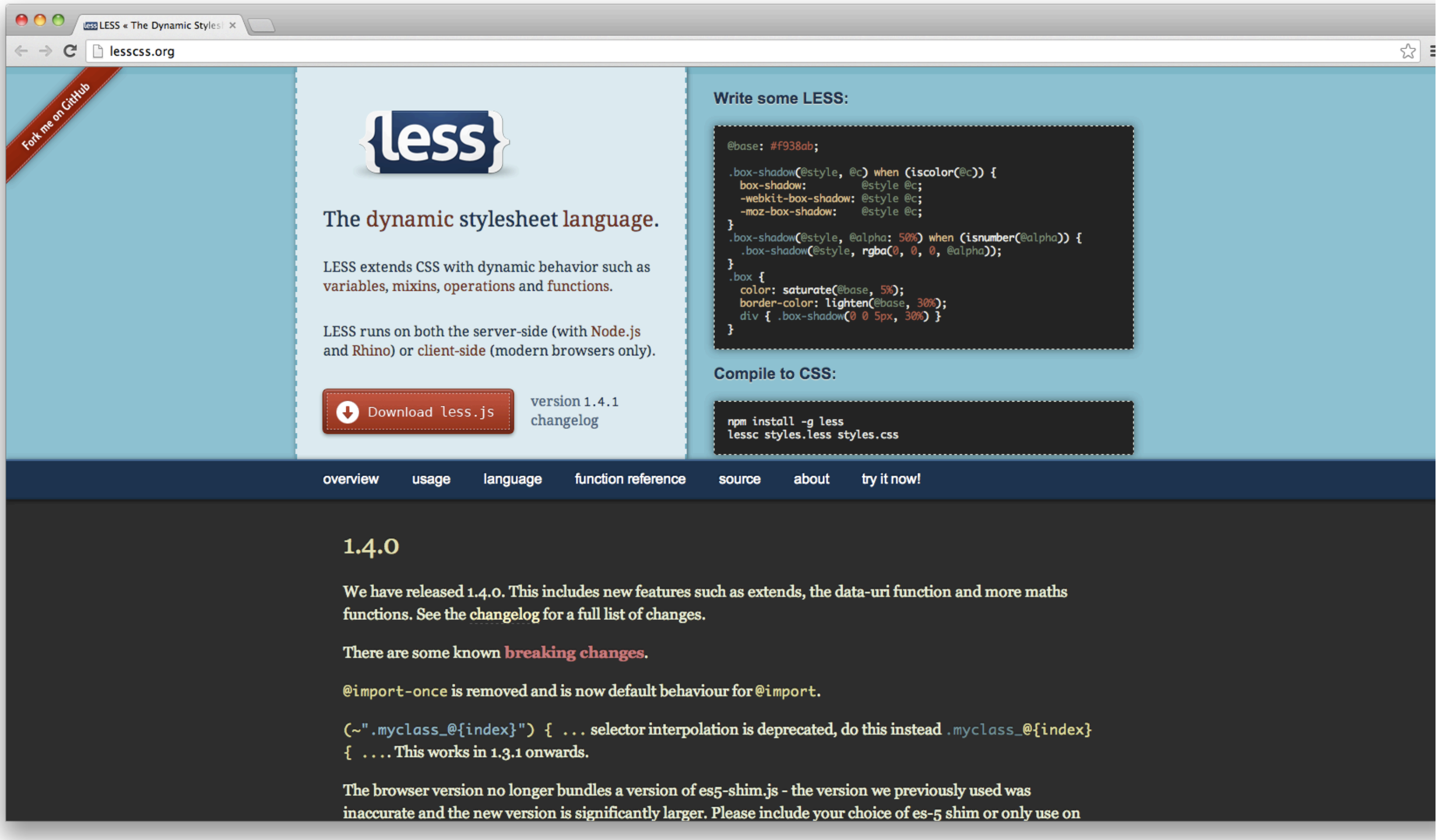
Another approach is to hot-link these scripts from CDNs such as Google Hosted Libraries, CDNJS, Microsoft Ajax Content Delivery Network and others. By doing so the apps will be faster for some users, but won't work locally at all without the Internet.

- LESS as a front-end interpreter is available at lesscss.org — you could unpack it into your development folder (*~/Documents/Development*) or any other.

- Twitter Bootstrap is a CSS/LESS framework. It’s available at twitter.github.com/bootstrap.
- jQuery is available at jquery.com.
- Backbone.js is available at backbonejs.org.
- Underscore.js is available at underscorejs.org.
- Require.js is available at requirejs.org.

LESS App

The LESS App is a Mac OS X application for “on-the-fly” compilation of LESS to CSS. It’s available at incident57.com/less.



The dynamic stylesheet language.

LESS extends CSS with dynamic behavior such as variables, mixins, operations and functions.

LESS runs on both the server-side (with Node.js and Rhino) or client-side (modern browsers only).

version 1.4.1
changelog

Write some LESS:

```
@base: #f938ab;

.box-shadow(@style, @c) when (iscolor(@c)) {
  box-shadow:         @style @c;
  -webkit-box-shadow: @style @c;
  -moz-box-shadow:    @style @c;
}
.box-shadow(@style, @alpha: 50%) when (isnumber(@alpha)) {
  .box-shadow(@style, rgba(0, 0, 0, @alpha));
}
.box {
  color: saturate(@base, 5%);
  border-color: lighten(@base, 30%);
  div { .box-shadow(0 0 5px, 30%) }
}
```

Compile to CSS:

```
npm install -g less
lessc styles.less styles.css
```

1.4.0

We have released 1.4.0. This includes new features such as extends, the data-uri function and more maths functions. See the changelog for a full list of changes.

There are some known breaking changes.

`@import-once` is removed and is now default behaviour for `@import`.

`(~".myclass_@{index}") { ...` selector interpolation is deprecated, do this instead `.myclass_@{index} { ....` This works in 1.3.1 onwards.

The browser version no longer bundles a version of es5-shim.js - the version we previously used was inaccurate and the new version is significantly larger. Please include your choice of es-5 shim or only use on

LESS App for Mac home page.

Cloud Setup

SSH Keys

SSH keys provide a secure connection without the need to enter username and password every time. For GitHub repositories, the latter approach is used with HTTPS URLs, e.g., `https://github.com/azat-co/rpjs.git`, and the former with SSH URLs, e.g., `git@github.com:azat-co/rpjs.git`.

To generate SSH keys for GitHub on Mac OS X/Unix machines do the following:

1. Check for existing SSH keys

```
$ cd ~/.ssh
$ ls -lah
```

2. If you see some files like **id_rsa** (please refer to the screenshot below for an example), you could delete them or backup into a separate folder by using following commands:

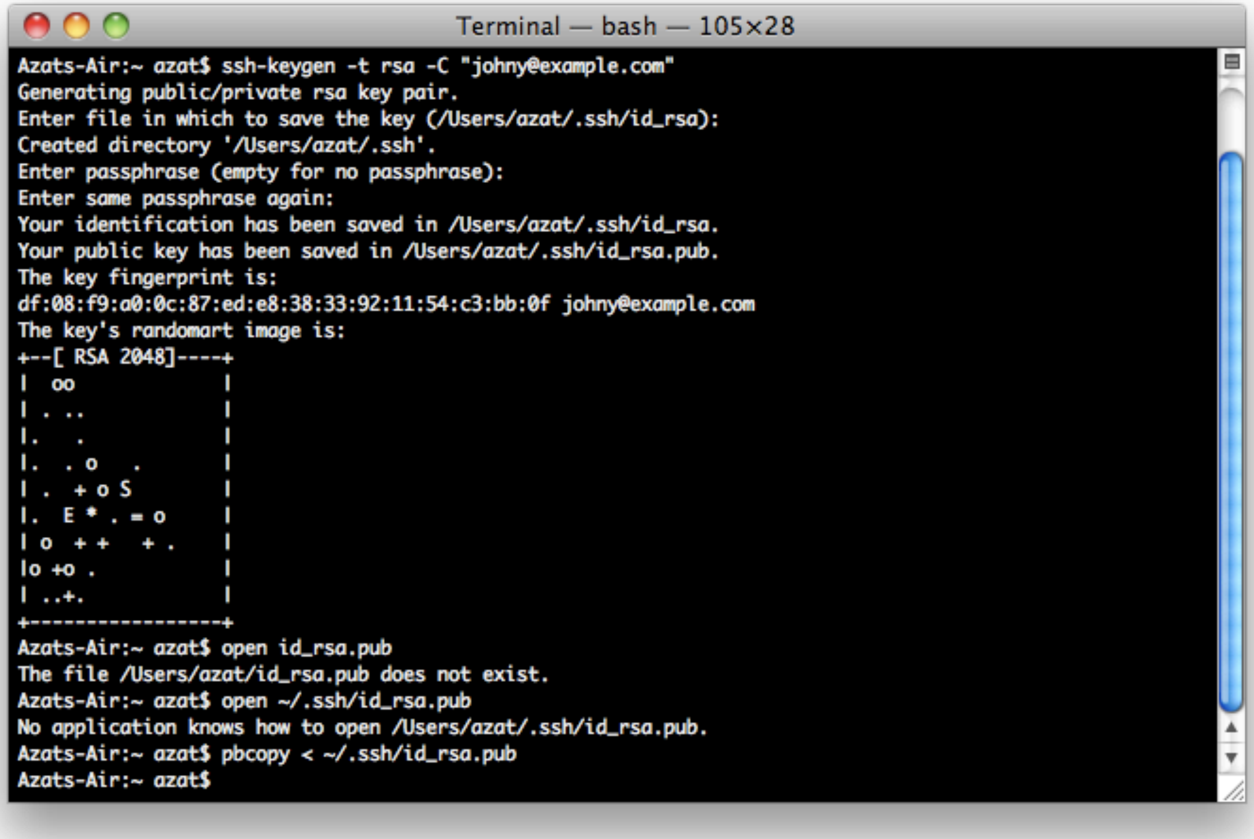
```
$ mkdir key_backup
$ cp id_rsa* key_backup
$ rm id_rsa*
```

3. Now we can generate a new SSH key pair using the **ssh-keygen** command, assuming we are in `~/.ssh` folder:

```
$ ssh-keygen -t rsa -C "your_email@youremail.com"
```

4. Answer the questions; it is better to keep the default name: **id_rsa**. Then copy the content of the **id_rsa.pub** file to your clipboard:

```
$ pbcopy < ~/.ssh/id_rsa.pub
```



```
Azats-Air:~ azat$ ssh-keygen -t rsa -C "johny@example.com"
Generating public/private rsa key pair.
Enter file in which to save the key (/Users/azat/.ssh/id_rsa):
Created directory '/Users/azat/.ssh'.
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /Users/azat/.ssh/id_rsa.
Your public key has been saved in /Users/azat/.ssh/id_rsa.pub.
The key fingerprint is:
df:08:f9:a0:0c:87:ed:e8:38:33:92:11:54:c3:bb:0f johny@example.com
The key's randomart image is:
+--[ RSA 2048]----+
|  oo             |
| . ..            |
|.    .           |
|.   . o    .     |
| .   + o S       |
|.   E * . = o    |
| o   + +    + .  |
|o +o .           |
| ..+.            |
+-----------------+
Azats-Air:~ azat$ open id_rsa.pub
The file /Users/azat/id_rsa.pub does not exist.
Azats-Air:~ azat$ open ~/.ssh/id_rsa.pub
No application knows how to open /Users/azat/.ssh/id_rsa.pub.
Azats-Air:~ azat$ pbcopy < ~/.ssh/id_rsa.pub
Azats-Air:~ azat$
```

Generating RSA key for SSH and copying public key to clipboard.

5. Or alternatively, open **id_rsa.pub** file in the default editor:

```
$ open id_rsa.pub
```

6. Or in TextMate:

```
$ mate id_rsa.pub
```

GitHub

1. After you have copied the public key, go to github.com, log in, go to your account settings, select “SSH key” and add the new SSH key. Assign a name, e.g., the name of your computer, and paste the value of your **public** key.

2. To check if you have an SSH connection to GitHub, type and execute the following command in your terminal:

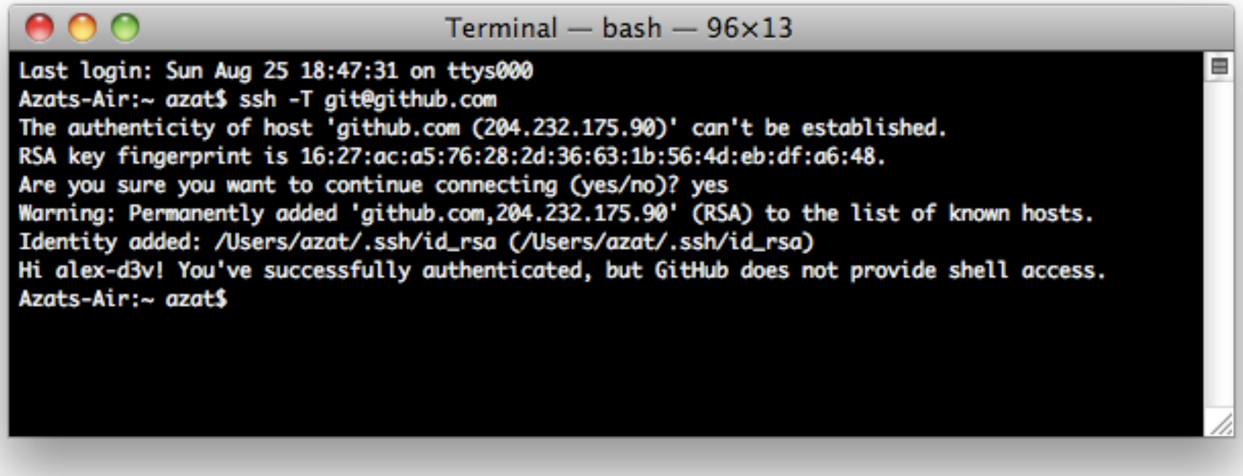
```
$ ssh -T git@github.com
```

If you see something like:

```
Hi your-GitHub-username! You've successfully authenticated,
but GitHub does not provide shell access.
```

then everything is set up.

3. While the first time connecting to GitHub, you can receive “authenticity of host … can’t be established” warning. Please don’t be confused with such a message — just proceed by answering ‘yes’ as shown on the screenshot below.



```
Last login: Sun Aug 25 18:47:31 on ttys000
Azats-Air:~ azat$ ssh -T git@github.com
The authenticity of host 'github.com (204.232.175.90)' can't be established.
RSA key fingerprint is 16:27:ac:a5:76:28:2d:36:63:1b:56:4d:eb:df:a6:48.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'github.com,204.232.175.90' (RSA) to the list of known hosts.
Identity added: /Users/azat/.ssh/id_rsa (/Users/azat/.ssh/id_rsa)
Hi alex-d3v! You've successfully authenticated, but GitHub does not provide shell access.
Azats-Air:~ azat$
```

Testing SSH connection to GitHub for the very first time.

If for some reason you have a different message, please repeat steps 3–4 from the previous section on *SSH Keys* and/or re-upload the content of your `*.pub` file to GitHub.

Warning: Keep your **id_rsa** file private and don’t share it with anybody!

More instructions are available at GitHub: Generating SSH Keys.

Windows users might find useful the SSH key generator feature in [PuTTY].

Misc

You might need some of the following tools and libraries too:

- Postman
- Bower
- Gulp