

FRONT END DEV TOOLS Document

With the separation of ATG and CQ containers, we should be able to improve the front-end development toolset to automate and improve our own workflow for developing web applications. There is a movement in the open source community to improve workflow for modern web application development this using three related JS libraries that run on [Node.js](#). They are [Yeoman](#), [Grunt](#), and [Bower](#).

So my idea is to use these for our CQ development. We should be able to use Yeoman to scaffold CQ components with all the correct structure that we determine in the WBFC Phase 2 design that support the transition to AngularJS. Grunt can be [used](#) to REST PUT file changes directly to the JCR without having to manually run a minute or two long maven task and do the live reload of the browser window. Bower will help us maintain the JS dependencies and automatically place them in the correct locations in our CQ file structure. UPDATE: Grunt Sync is working for local CQ development! Instructions [here](#).

So I have written some installation directions for these items, since working behind the corporate proxy causes some challenges:

STEP 1: Install GIT and NODE JS

- **Install Git SCM** (Git is a popular version control system, especially for open source projects)

1. Go to <http://git-scm.com/downloads>
2. Follow instructions and use default options for windows install
3. Open Git Bash window. Enter the following commands to enable git to work with corporate proxy:

```
$git config --global http.proxy one.proxy.att.com:8080
$git config --global url."https://".insteadOf git://
```

4. Verify git configuration:
Type into GIT:

```
$git config --global -l (NOTE: its "-L" after -- global)
```

The response will be:

```
http.proxy=one.proxy.att.com:8080
url.https://.insteadof=git://
```



Fig.1. Github screenshot (steps 3 & 4)

- **Install Nodejs** (Yes, node allows for server-side JS, but in this context we are using it to enable a local JS scripting environment on your machine, kind of like Ruby or Python)

1. Go to <http://nodejs.org/download/>
2. Install with default options (Click the windows icon that says Windows installer)
3. If the Node console window opens, you can close that for now.
4. Update environment variables

(Control Panel\System and Security\System then Advanced Settings → Environmental variables → System Variables → click New)

- a. Add CHROME_BIN=\path\to\your\chrome.exe (screen shot below Fig. 2)
- b. Add HTTP_PROXY=<http://one.proxy.att.com:8080>
- c. Add HTTPS_PROXY=<http://one.proxy.att.com:8080>

- d. Open “path” variable in the system variable, update path to have *node.js*, *git* (attached screen shot - Fig.3)
- Add, `c:\Program Files\Git\cmd;` to variable value.

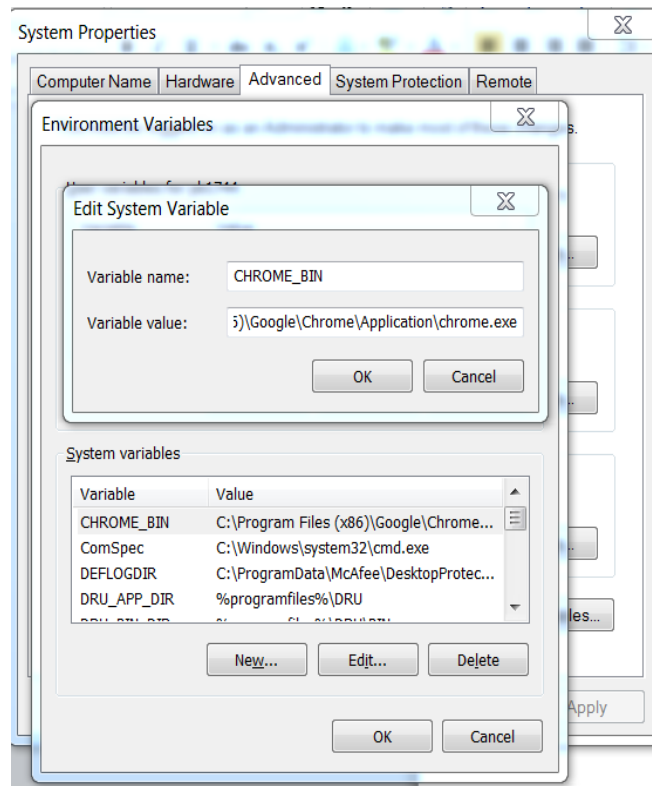


Fig.2. Add chrome.exe path to CHROME_BIN

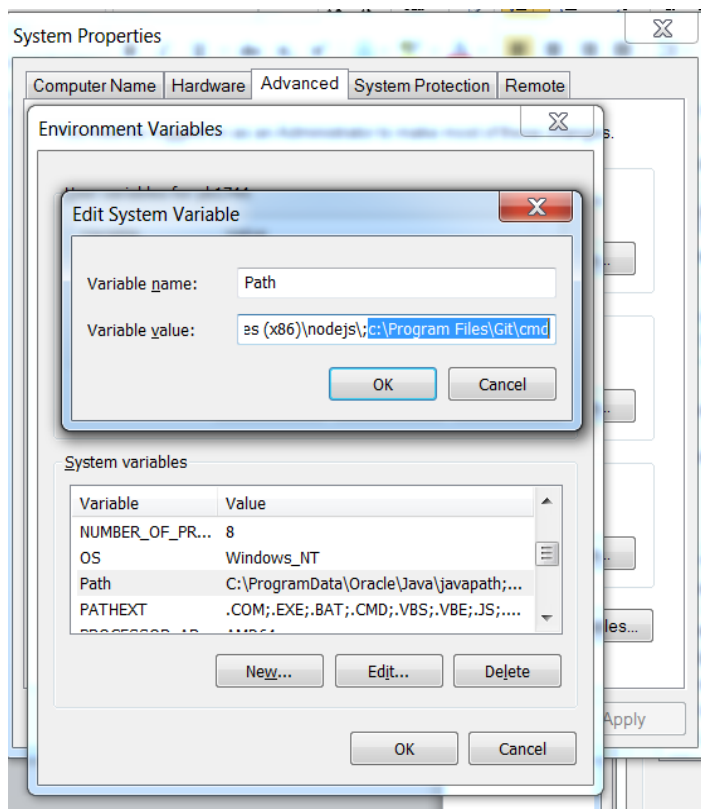


Fig.3. Update “path” variable with “Git” (Added url is selected in blue)

NOTE: By default, if your nodejs is installed properly, its path will be included in the **path** variable. In case if nodejs is not present in path (double check whether nodejs is installed properly or not), include nodejs path along with Git (

```
c:\Program Files(x86)\nodejs;c:\Program Files\Git\cmd;
```

STEP 2: Set your Windows internet manual proxy to <http://one.proxy.att.com:8080>

1. Control Panel\Network and Internet
2. Open Internet Options
3. Go to Connections
4. Open LAN settings
5. Under Proxy-Server, check "Use a proxy server for your LAN"
Enter Address = <http://one.proxy.att.com>
Port = 8080

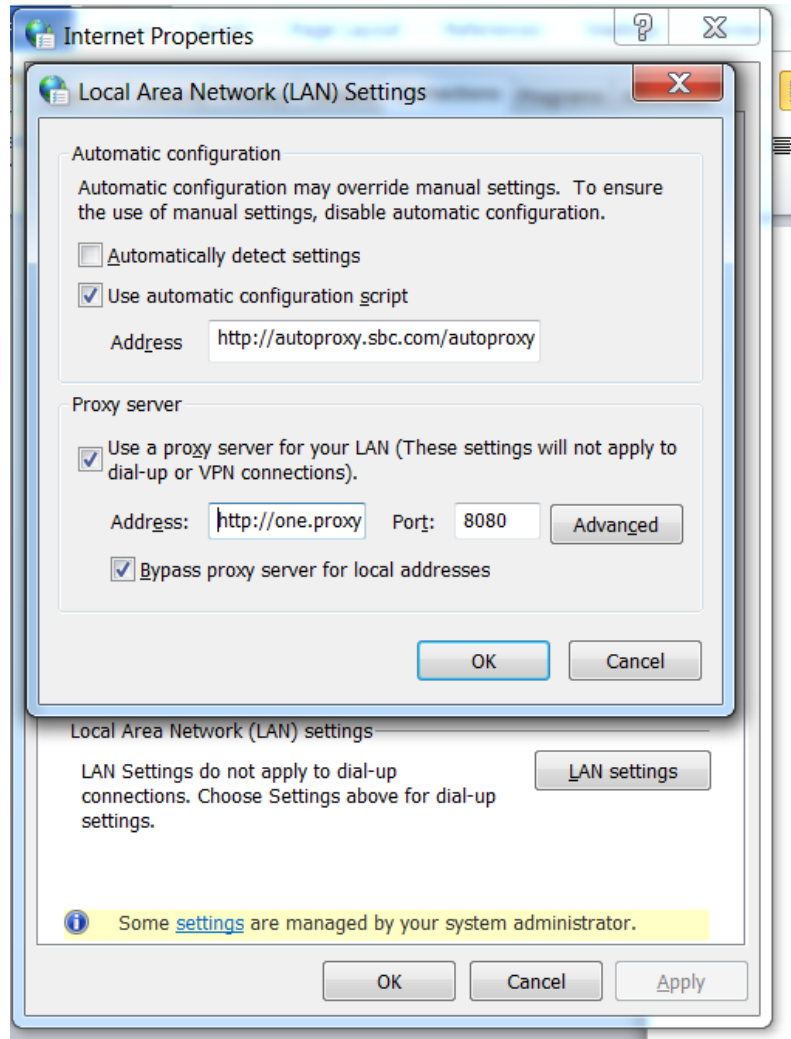


Fig.4. Window internet manual proxy

STEP 3: Open a Windows CMD prompt. Then use npm to install: Yeoman, Grunt, Bower (npm is node's package manager and is installed with nodejs, like gem for ruby or cpan for perl).

NOTE: Replace pb1744 with your user ID

1. Create an new folder with name “**npm**” in *roaming* directory
[C:\Users\pb1744\AppData\Roaming]
2. Open command prompt, set the path to **C:\Users\pb1744\AppData\Roaming\npm**

Do the following commands step by step.

- npm config set proxy http://one.proxy.att.com:8080
- npm config set https-proxy http://one.proxy.att.com:8080
- npm install -g yeoman
- npm install -g grunt-cli
- npm install -g bower

[illegible]

Fig.5. Point 2 (Following commands from a. to e.)

STEP 4: TEST IT OUT

- After Installing above,
 1. Take this path in Command Prompt
C:\Users\pb1744 >
 2. Install the angular yeoman generator(enter the commands below):
 1. `npm install -g generator-angular`
 2. `md angulartest`
 3. `cd angulartest`
 4. `yo angular`

[illegible]

Fig.6. Point 2 (Installing yeoman generator)

3. Select Defaults (Keep hitting Enter for (y/n) questions)
- Until you reach this page and click Enter again.

```
node-gyp
├─ maxmin@0.1.0 (pretty-bytes@0.1.2, gzip-size@0.1.1)
├─ uglify-js@2.4.16 (uglify-to-browserify@1.0.2, async@0.2.10, optimist@0.3.7, source-map@0.1.34)
├─ grunt-contrib-htmlmin@0.3.0 node_modules\grunt-contrib-htmlmin
├─ pretty-bytes@0.1.2
├─ chalk@0.4.0 (ansi-styles@1.0.0, has-color@0.1.7, strip-ansi@0.1.1)
├─ html-minifier@0.6.9 (relateurl@0.2.6, clean-css@2.2.23, change-case@2.1.6, cli@0.6.5, uglify-js@2.4.16)
├─ grunt-svgo@0.4.0 node_modules\grunt-svgo
├─ pretty-bytes@0.1.2
├─ chalk@0.4.0 (has-color@0.1.7, ansi-styles@1.0.0, strip-ansi@0.1.1)
├─ svgo@0.4.5 (colors@0.6.2, whet.extend@0.9.9, coa@0.4.1, sax@0.6.1, js-yaml@0.1.3)
├─ grunt-contrib-jshint@0.10.0 node_modules\grunt-contrib-jshint
├─ hooker@0.2.3
├─ jshint@2.5.11 (strip-json-comments@1.0.2, underscore@1.6.0, exit@0.1.2, console-browserify@1.1.0, shelljs@0.3.0, minimatch@1.0.0, cli@0.6.5, htmlparser2@3.8.2)
├─ grunt-ng-annotate@0.4.0 node_modules\grunt-ng-annotate
├─ ng-annotate@0.10.3 (tryor@0.1.2, simple-fmt@0.1.0, simple-is@0.2.0, alter@0.2.0, stringset@0.2.1, stringmap@0.2.2, stable@0.1.5, convert-source-map@0.4.1, ordered-ast-traverse@0.1.1, optimist@0.6.1, source-map@0.1.43, esprima@1.2.2)
├─ grunt-contrib-watch@0.6.1 node_modules\grunt-contrib-watch
├─ async@0.2.10
├─ tiny-lr-fork@0.0.5 (debug@0.7.4, faye-websocket@0.4.4, notify@0.0.3, qs@0.5.6)
├─ gaze@0.5.1 (globule@0.1.0)
├─ lodash@2.4.1
├─ grunt-autoprefixer@0.7.6 node_modules\grunt-autoprefixer
├─ diff@1.0.8
├─ chalk@0.4.0 (ansi-styles@1.0.0, has-color@0.1.7, strip-ansi@0.1.1)
├─ autoprefixer@1.3.1 (fs-extra@0.9.1, postcss@0.3.5, caniuse-db@1.0.30000043)
├─ grunt-contrib-connect@0.7.1 node_modules\grunt-contrib-connect
├─ connect-livereload@0.3.2
├─ open@0.0.4
├─ portscanner@0.2.2 (async@0.1.15)
├─ async@0.2.10
├─ connect@2.13.1 (uid@0.0.3, methods@0.1.0, pause@0.0.1, debug@0.0.1, qs@0.6.6, bytes@0.2.1, fresh@0.2.0, cookie-signature@1.0.1, raw-body@1.1.3, hatch@0.5.0, buffer-crc32@0.2.1, cookie@0.1.0, compressible@1.0.0, negotiator@0.3.0, s)
├─ grunt-wiredep@1.9.0 node_modules\grunt-wiredep
├─ wiredep@1.8.6 (propprop@0.3.0, minimist@1.0.0, chalk@0.5.1, through2@0.6.3, glob@4.3.2, hower-config@0.5.2, lodash@2.4.1)
├─ grunt@0.4.5 node_modules\grunt
├─ dateformat@1.0.2-1.2.3
├─ which@1.0.8
├─ eventemitter2@0.4.14
├─ getobject@0.1.0
├─ colors@0.6.2
├─ async@0.1.22
├─ rimraf@2.2.0
├─ grunt-legacy-util@0.2.0
├─ hooker@0.2.3
├─ exit@0.1.2
├─ nopt@1.0.10 (abbrev@1.0.5)
├─ minimatch@0.2.14 (sigmund@1.0.0, lru-cache@2.5.0)
├─ lodash@0.9.2
├─ glob@3.1.21 (inherits@1.0.0, graceful-fs@1.2.3)
├─ coffee-script@1.3.3
├─ underscore.string@2.2.1
├─ iconv-lite@0.2.11
├─ js-yaml@0.5 (argparse@0.1.16, esprima@1.0.4)
├─ grunt-legacy-log@0.1.1 (underscore.string@2.3.3, lodash@2.4.1)
├─ findup-sync@0.1.3 (glob@3.2.11, lodash@2.4.1)
├─ load-grunt-tasks@0.4.0 node_modules\load-grunt-tasks
├─ findup-sync@0.1.3 (glob@3.2.11, lodash@2.4.1)
├─ multimatch@0.1.0 (minimatch@0.2.14, lodash@2.4.1)
├─ grunt-google-cdn@0.4.3 node_modules\grunt-google-cdn
├─ chalk@0.5.1 (escape-string-regexp@1.0.2, ansi-styles@1.0.0, supports-color@0.2.0, has-ansi@0.1.0, strip-ansi@0.3.0)
├─ google-cdn@0.7.0 (regexp-quote@0.0.0, google-cdn-data@0.1.15, debug@1.0.4, async@0.7.0, semver@2.3.2, cdnjs-cdn-data@0.1.1)
├─ hower@1.3.12 (is-root@0.0, jun@0.0, stringify-object@1.0.0, abbrev@0.5, cmodr@0.1.0, which@1.0.8, osenv@0.1.0, archy@0.0.2, opn@1.0.1, hower-logger@0.2.2, lru-cache@2.5.0, hower-endpoint-parser@0.2.2, lockfile@1.0.0, retry@0)
├─ hower@2.2.8, chalk@0.4.2, semver@2.3.2, chalk@0.5.0, fstream@1.0.3, y-hotteller@0.1.0, hower-json@0.4.0, promptly@0.2.0, graceful-fs@2.0.5, mkdirp@0.5.0, hower-config@0.5.2, decompress-zip@0.0.8, glob@4.0.6, tar-fs@0.5.2, fstream)
├─ hower@4.0, nout@0.7.1, update-notifier@0.2.0, handlebars@2.0.0, inquirer@0.7.1, insight@0.4.3)
├─ grunt-contrib-imagemin@0.8.1 node_modules\grunt-contrib-imagemin
├─ async@0.7.0
├─ pretty-bytes@1.0.2 (get-stdin@0.0)
├─ chalk@0.5.1 (escape-string-regexp@1.0.2, ansi-styles@1.0.0, supports-color@0.2.0, has-ansi@0.1.0, strip-ansi@0.3.0)
├─ imagemin@1.0.5 (get-stdin@0.2, stat-mode@0.2.0, ware@0.3.0, nopt@3.0.1, tempfile@1.0.0, fs-extra@0.11.1, imagemin-svgo@1.0.2, imagemin-optipng@1.0.0, imagemin-jpegtran@1.0.0, imagemin-pngquant@1.0.2, imagemin-gifsicle@1.0.0)
```

Fig 7. Hit Enter until CMD displays the above statements

4. Edit package.json and add the following to dependencies (to resolve the grunt-contrib-imagemin compile issues):

"jpegtran-bin": "^0.2.0"

(C:\Users\pb1744\angulartest open package.json in an editor)

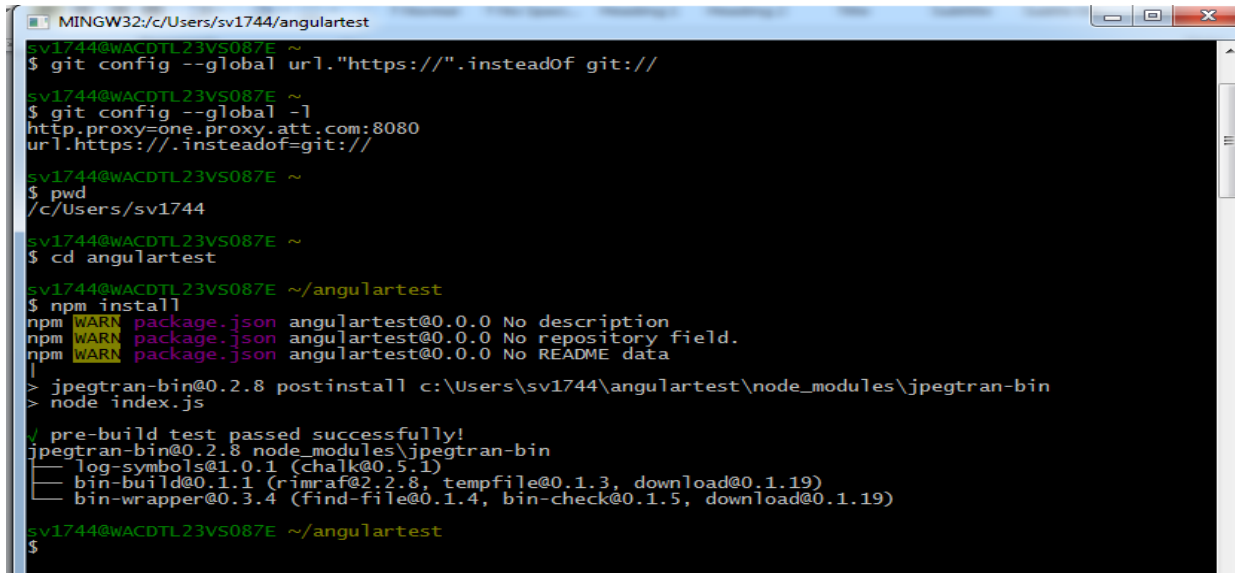


```
1 {
2   "name": "angulartest",
3   "version": "0.0.0",
4   "dependencies": {},
5   "devDependencies": {
6     "grunt": "^0.4.1",
7     "grunt-autoprefixer": "^0.7.3",
8     "grunt-concurrent": "^0.5.0",
9     "grunt-contrib-clean": "^0.5.0",
10    "grunt-contrib-compass": "^0.7.2",
11    "grunt-contrib-concat": "^0.4.0",
12    "grunt-contrib-connect": "^0.7.1",
13    "grunt-contrib-copy": "^0.5.0",
14    "grunt-contrib-cssmin": "^0.9.0",
15    "grunt-contrib-htmlmin": "^0.3.0",
16    "grunt-contrib-imagemin": "^0.8.1",
17    "grunt-contrib-jshint": "^0.10.0",
18    "grunt-contrib-uglify": "^0.4.0",
19    "grunt-contrib-watch": "^0.6.1",
20    "grunt-filerev": "^0.2.1",
21    "grunt-google-cdn": "^0.4.0",
22    "grunt-karma": "^0.9.0",
23    "grunt-newer": "^0.7.0",
24    "grunt-ng-annotate": "^0.4.0",
25    "grunt-svgmin": "^0.4.0",
26    "grunt-usemin": "^2.1.1",
27    "grunt-wiredep": "^1.7.0",
28    "jasmine-core": "^2.1.3",
29    "jshint-stylish": "^0.2.0",
30    "karma": "^0.12.31",
31    "karma-jasmine": "^0.3.4",
32    "karma-phantomjs-launcher": "^0.1.4",
33    "load-grunt-tasks": "^0.4.0",
34    "time-grunt": "^0.3.1",
35    "jpegtran-bin": "^0.2.0"
36  },
37  "engines": {
38    "node": ">=0.10.0"
39  },
40  "scripts": {
41    "test": "grunt test"
42  }
43 }
```

Fig.8. Selected Blue in the above image is the added dependency in the package.json file

STEP 5:

- Open GIT BASH, take this path and type these commands
C:\Users\pb1744\angulartest >
 1. npm install



```
sv1744@WACDTL23VS087E ~
$ git config --global url."https://".insteadOf git://

sv1744@WACDTL23VS087E ~
$ git config --global -l
http.proxy=one.proxy.att.com:8080
url.https://.insteadOf=git://

sv1744@WACDTL23VS087E ~
$ pwd
/c/Users/sv1744

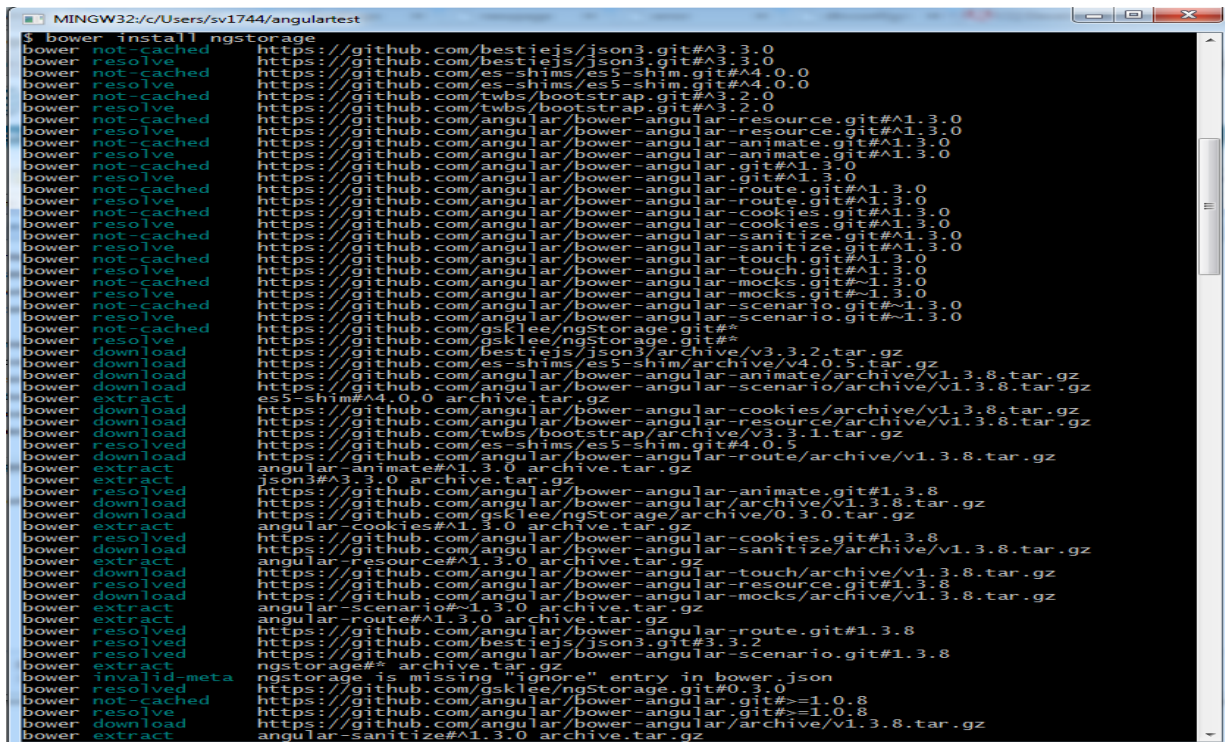
sv1744@WACDTL23VS087E ~
$ cd angulartest

sv1744@WACDTL23VS087E ~/angulartest
$ npm install
npm WARN package.json angulartest@0.0.0 No description
npm WARN package.json angulartest@0.0.0 No repository field.
npm WARN package.json angulartest@0.0.0 No README data
|
> jpegtran-bin@0.2.8 postinstall c:\Users\sv1744\angulartest\node_modules\jpegtran-bin
> node index.js

/ pre-build test passed successfully!
jpegtran-bin@0.2.8 node_modules\jpegtran-bin
├─ log-symbols@1.0.1 (chalk@0.5.1)
├─ bin-build@0.1.1 (rimraf@2.2.8, tempFile@0.1.3, download@0.1.19)
├─ bin-wrapper@0.3.4 (find-file@0.1.4, bin-check@0.1.5, download@0.1.19)

sv1744@WACDTL23VS087E ~/angulartest
$
```

2. bower install ngstorage
// (read about ngStorage here:
<https://github.com/gsklee/ngStorage>).



```
$ bower install ngstorage
bower not-cached https://github.com/bestiejs/json3.git#A3.3.0
bower resolve https://github.com/bestiejs/json3.git#A3.3.0
bower not-cached https://github.com/es-shims/es5-shim.git#A4.0.0
bower resolve https://github.com/es-shims/es5-shim.git#A4.0.0
bower not-cached https://github.com/twbs/bootstrap.git#A3.2.0
bower resolve https://github.com/twbs/bootstrap.git#A3.2.0
bower not-cached https://github.com/angular/bower-angular-resource.git#A1.3.0
bower resolve https://github.com/angular/bower-angular-resource.git#A1.3.0
bower not-cached https://github.com/angular/bower-angular-animate.git#A1.3.0
bower resolve https://github.com/angular/bower-angular-animate.git#A1.3.0
bower not-cached https://github.com/angular/bower-angular-route.git#A1.3.0
bower resolve https://github.com/angular/bower-angular-route.git#A1.3.0
bower not-cached https://github.com/angular/bower-angular-cookies.git#A1.3.0
bower resolve https://github.com/angular/bower-angular-cookies.git#A1.3.0
bower not-cached https://github.com/angular/bower-angular-sanitize.git#A1.3.0
bower resolve https://github.com/angular/bower-angular-sanitize.git#A1.3.0
bower not-cached https://github.com/angular/bower-angular-touch.git#A1.3.0
bower resolve https://github.com/angular/bower-angular-touch.git#A1.3.0
bower not-cached https://github.com/angular/bower-angular-mocks.git#A1.3.0
bower resolve https://github.com/angular/bower-angular-mocks.git#A1.3.0
bower not-cached https://github.com/angular/bower-angular-scenario.git#A1.3.0
bower resolve https://github.com/angular/bower-angular-scenario.git#A1.3.0
bower not-cached https://github.com/gsklee/ngStorage.git#*
bower resolve https://github.com/gsklee/ngStorage.git#*
bower download https://github.com/bestiejs/json3/archive/v3.3.2.tar.gz
bower download https://github.com/es-shims/es5-shim/archive/v4.0.5.tar.gz
bower download https://github.com/angular/bower-angular-animate/archive/v1.3.8.tar.gz
bower download https://github.com/angular/bower-angular-scenario/archive/v1.3.8.tar.gz
bower download https://github.com/angular/bower-angular-cookies/archive/v1.3.8.tar.gz
bower download https://github.com/angular/bower-angular-resource/archive/v1.3.8.tar.gz
bower download https://github.com/twbs/bootstrap/archive/v3.3.1.tar.gz
bower download https://github.com/angular/bower-angular-route/archive/v1.3.8.tar.gz
bower extract angular-animate#A1.3.0 archive.tar.gz
bower extract json3#A3.3.0 archive.tar.gz
bower resolved https://github.com/angular/bower-angular-animate.git#1.3.8
bower download https://github.com/angular/bower-angular/archive/v1.3.8.tar.gz
bower extract https://github.com/gsklee/ngStorage/archive/0.3.0.tar.gz
bower resolved angular-cookies#A1.3.0 archive.tar.gz
bower resolved https://github.com/angular/bower-angular-cookies.git#1.3.8
bower download https://github.com/angular/bower-angular-sanitize/archive/v1.3.8.tar.gz
bower extract angular-resource#A1.3.0 archive.tar.gz
bower resolved https://github.com/angular/bower-angular-touch/archive/v1.3.8.tar.gz
bower resolved https://github.com/angular/bower-angular-resource.git#1.3.8
bower download https://github.com/angular/bower-angular-mocks/archive/v1.3.8.tar.gz
bower extract angular-scenario#A1.3.0 archive.tar.gz
bower resolved angular-route#A1.3.0 archive.tar.gz
bower resolved https://github.com/angular/bower-angular-route.git#1.3.8
bower resolved https://github.com/bestiejs/json3.git#3.3.2
bower resolved https://github.com/angular/bower-angular-scenario.git#1.3.8
bower extract ngstorage#* archive.tar.gz
bower invalid-meta ngstorage is missing "ignore" entry in bower.json
bower resolved https://github.com/gsklee/ngStorage.git#0.3.0
bower not-cached https://github.com/angular/bower-angular.git#>=1.0.8
bower resolve https://github.com/angular/bower-angular.git#>=1.0.8
bower download https://github.com/angular/bower-angular/archive/v1.3.8.tar.gz
bower extract angular-sanitize#A1.3.0 archive.tar.gz
```

3. `grunt server` (Server starts watching from now)

```
sv1744@WACDTL23V5087E ~/angulartest
$ grunt server
Running "server" task
>> The `server` task has been deprecated. Use `grunt serve` to start a server.

Running "serve:undefined" (serve) task
Running "clean:server" (clean) task
Running "wiredep:app" (wiredep) task
app/index.html modified.

Running "concurrent:server" (concurrent) task
Running "copy:styles" (copy) task
Copied 1 files

Done, without errors.

Running "autoprefixer:dist" (autoprefixer) task
File .tmp/styles/main.css created.

Running "connect:livereload" (connect) task
Started connect web server on http://localhost:9000

Running "watch" task
Waiting...
```

4. `grunt server --force`
(If `grunt server` doesn't run, it may require `--force` then it will show the above screen as running)

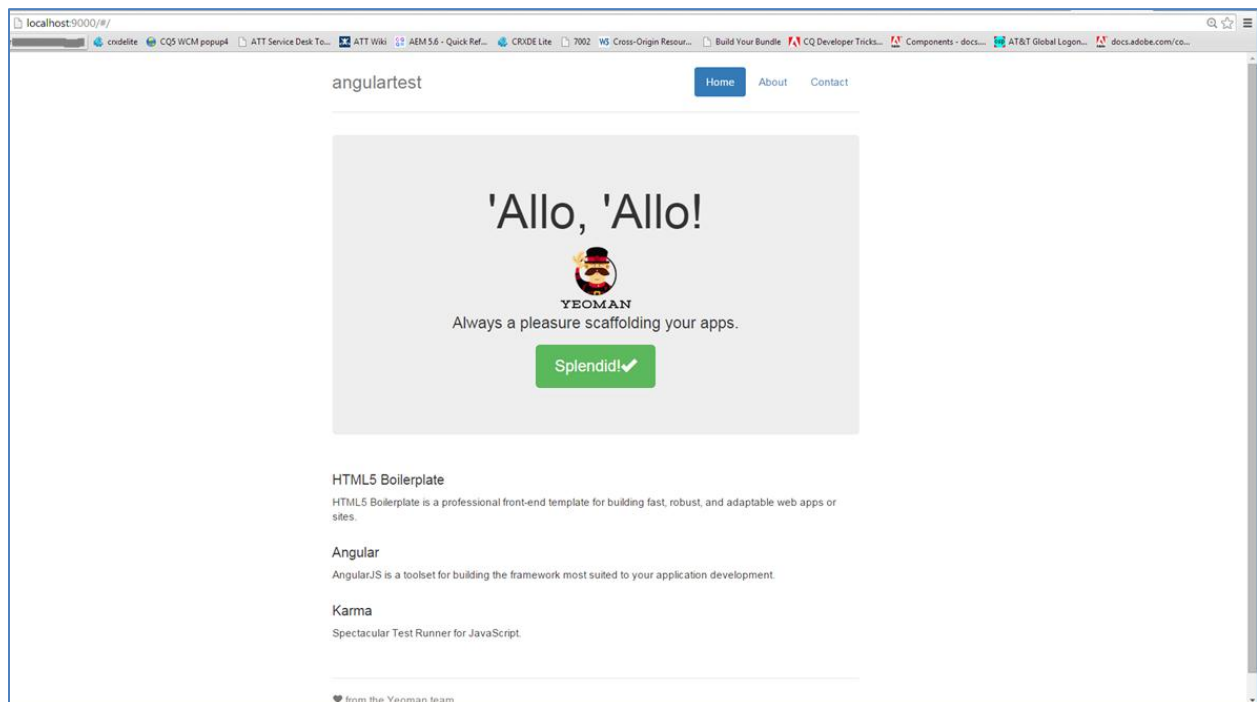
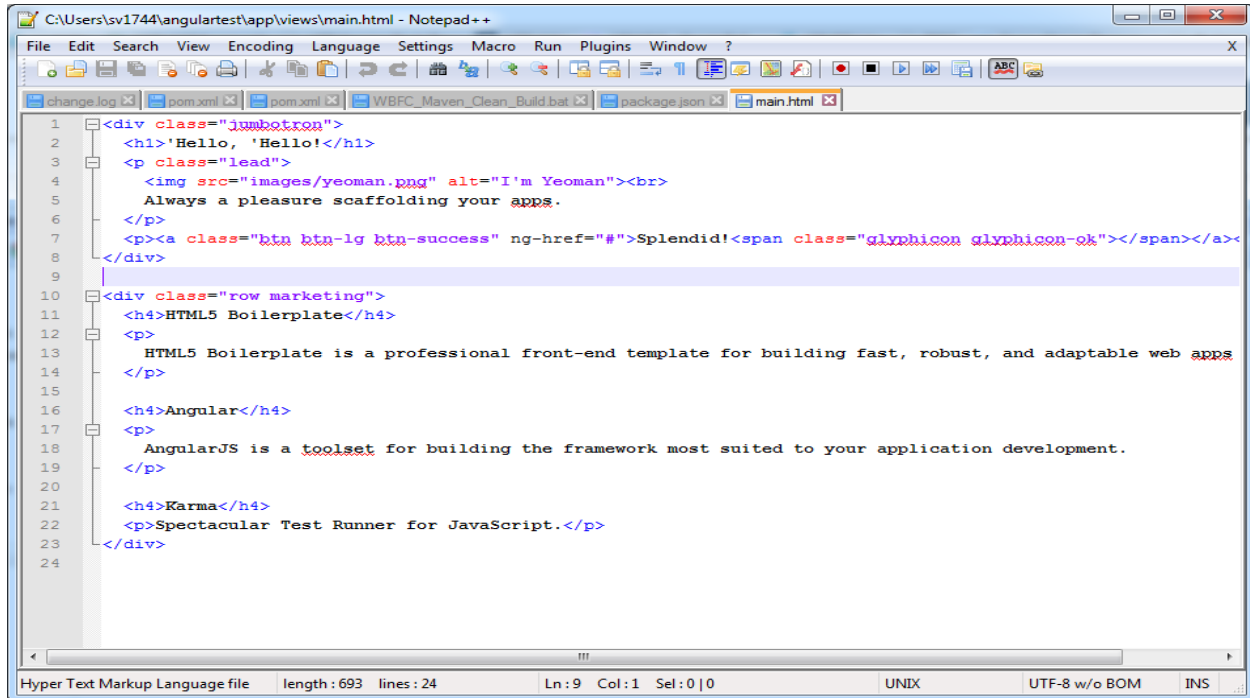


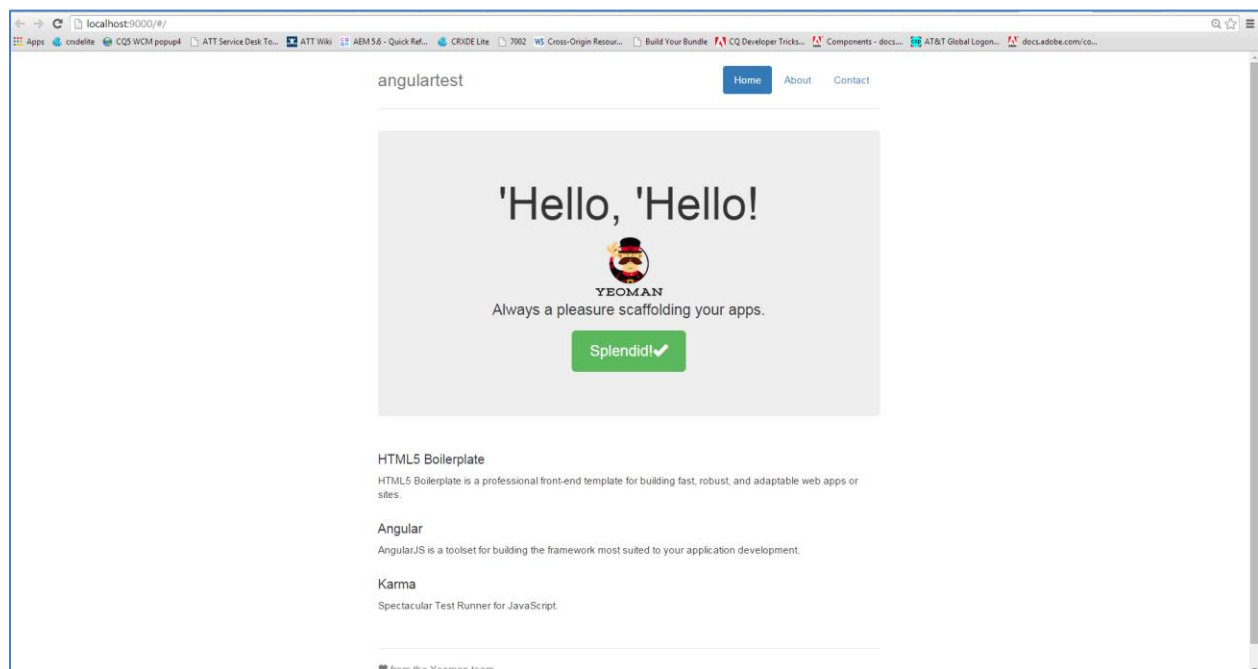
Fig. Displays this "Allo, Allo" page automatically once the server starts running.

You can try it by adding small changes to the code as I did in the below. Path of the file is **C:\Users\bh4634\angulartest\app\views\main.html**



```
1 <div class="jumbotron">
2   <h1>'Hello, 'Hello!</h1>
3   <p class="lead">
4     <br>
5     Always a pleasure scaffolding your apps.
6   </p>
7   <p><a class="btn btn-lg btn-success" ng-href="#">Splendid!<span class="glyphicon glyphicon-ok"></span></a></p>
8 </div>
9
10 <div class="row marketing">
11   <h4>HTML5 Boilerplate</h4>
12   <p>
13     HTML5 Boilerplate is a professional front-end template for building fast, robust, and adaptable web apps
14   </p>
15
16   <h4>Angular</h4>
17   <p>
18     AngularJS is a toolset for building the framework most suited to your application development.
19   </p>
20
21   <h4>Karma</h4>
22   <p>Spectacular Test Runner for JavaScript.</p>
23 </div>
24
```

My code displays the change automatically without refreshing the page with **“Hello, Hello “**



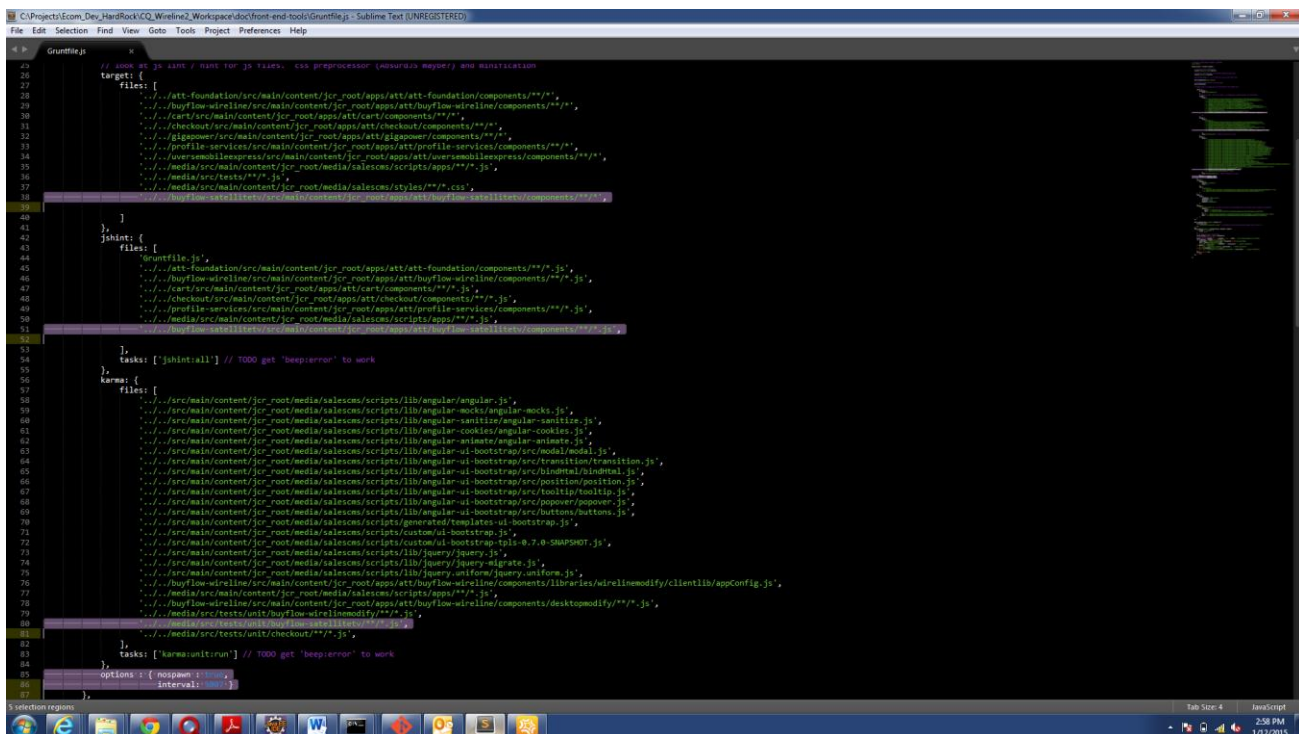
STEP 6: Updating Grunt to work with your system (STAR project and CQ)

Till the previous step grunt server is installed on your system and it works for the angular test directory created in your c:\users\USERID

To synch this grunt tool with your application, go through the following steps:

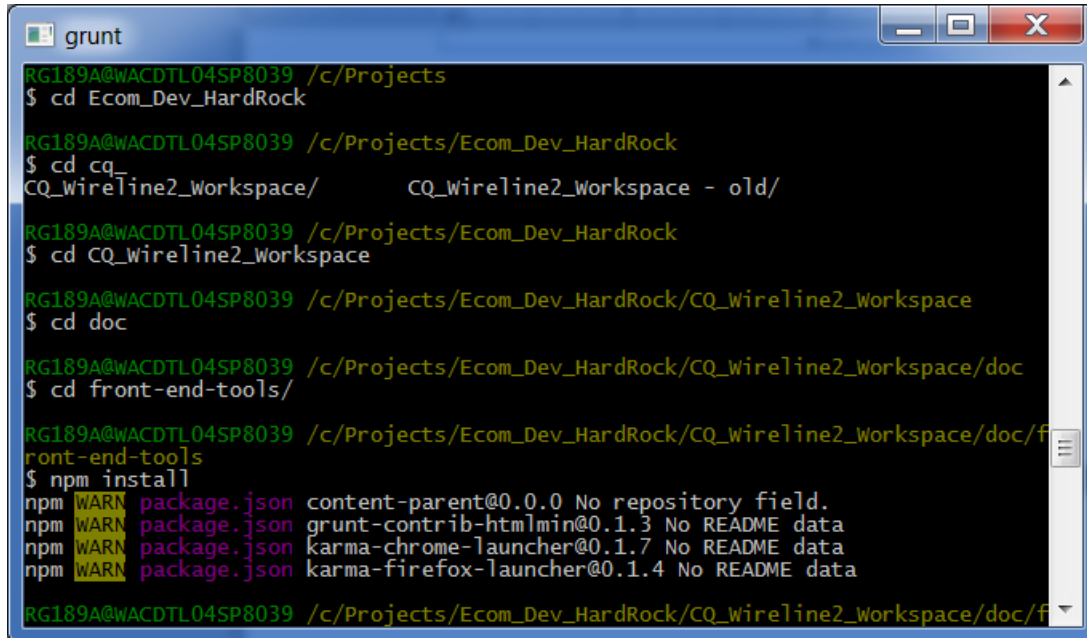
1. Go to "C:\Projects\Ecom_Dev_HardRock\CQ_Wireline2_Workspace\doc\front-end-tools" directory on your local file system.
2. Open "**Gruntfile.js**"
 - Add = '.././../buyflow-satellitettv/src/main/content/jcr_root/apps/att/buyflow-satellitettv/components/**/*.js' to Target/files
 - Add = '.././../buyflow-satellitettv/src/main/content/jcr_root/apps/att/buyflow-satellitettv/components/**/*.js' to JShint/files
 - Add = '.././../media/src/tests/unit/buyflow-satellitettv/**/*.js' to Karma/files
 - Add = 'interval : 5007' to options (Note: Computer Usage will be high, this line of code will help reduced usage)

These lines of codes are highlighted below:



```
// Look at js hint / hint for js files, css preprocessor (less/sass) and minification
target: {
  files: [
    '.././../att-foundation/src/main/content/jcr_root/apps/att/att-foundation/components/**/*.js',
    '.././../buyflow-wireline/src/main/content/jcr_root/apps/att/buyflow-wireline/components/**/*.js',
    '.././../buyflow-wireline/src/main/content/jcr_root/apps/att/buyflow-wireline/components/**/*.css',
    '.././../checkout/src/main/content/jcr_root/apps/att/checkout/components/**/*.js',
    '.././../gigapower/src/main/content/jcr_root/apps/att/gigapower/components/**/*.js',
    '.././../profile-services/src/main/content/jcr_root/apps/att/profile-services/components/**/*.js',
    '.././../overseasexpress/src/main/content/jcr_root/apps/att/overseasexpress/components/**/*.js',
    '.././../media/src/main/content/jcr_root/media/salescom/scripts/apps/**/*.js',
    '.././../media/src/main/content/jcr_root/media/salescom/scripts/apps/**/*.css',
    '.././../buyflow-satellitettv/src/main/content/jcr_root/apps/att/buyflow-satellitettv/components/**/*.js'
  ]
},
jshint: {
  files: [
    '.././../att-foundation/src/main/content/jcr_root/apps/att/att-foundation/components/**/*.js',
    '.././../buyflow-wireline/src/main/content/jcr_root/apps/att/buyflow-wireline/components/**/*.js',
    '.././../buyflow-wireline/src/main/content/jcr_root/apps/att/buyflow-wireline/components/**/*.css',
    '.././../checkout/src/main/content/jcr_root/apps/att/checkout/components/**/*.js',
    '.././../gigapower/src/main/content/jcr_root/apps/att/gigapower/components/**/*.js',
    '.././../profile-services/src/main/content/jcr_root/apps/att/profile-services/components/**/*.js',
    '.././../overseasexpress/src/main/content/jcr_root/apps/att/overseasexpress/components/**/*.js',
    '.././../media/src/main/content/jcr_root/media/salescom/scripts/apps/**/*.js',
    '.././../buyflow-satellitettv/src/main/content/jcr_root/apps/att/buyflow-satellitettv/components/**/*.js'
  ]
},
tasks: ["jshint:all"] // TODO get "beeperror" to work
},
karma: {
  files: [
    '.././../src/main/content/jcr_root/media/salescom/scripts/lib/angular/angular.js',
    '.././../src/main/content/jcr_root/media/salescom/scripts/lib/angular-mocks/angular-mocks.js',
    '.././../src/main/content/jcr_root/media/salescom/scripts/lib/angular-sanitize/angular-sanitize.js',
    '.././../src/main/content/jcr_root/media/salescom/scripts/lib/angular-cookies/angular-cookies.js',
    '.././../src/main/content/jcr_root/media/salescom/scripts/lib/angular-animate/angular-animate.js',
    '.././../src/main/content/jcr_root/media/salescom/scripts/lib/angular-ui-bootstrap/src/model/model.js',
    '.././../src/main/content/jcr_root/media/salescom/scripts/lib/angular-ui-bootstrap/src/transition/transition.js',
    '.././../src/main/content/jcr_root/media/salescom/scripts/lib/angular-ui-bootstrap/src/datepicker/datepicker.js',
    '.././../src/main/content/jcr_root/media/salescom/scripts/lib/angular-ui-bootstrap/src/position/position.js',
    '.././../src/main/content/jcr_root/media/salescom/scripts/lib/angular-ui-bootstrap/src/tooltip/tooltip.js',
    '.././../src/main/content/jcr_root/media/salescom/scripts/lib/angular-ui-bootstrap/src/popper/popper.js',
    '.././../src/main/content/jcr_root/media/salescom/scripts/lib/angular-ui-bootstrap/src/buttons/buttons.js',
    '.././../src/main/content/jcr_root/media/salescom/scripts/generated/templates-ui-bootstrap.js',
    '.././../src/main/content/jcr_root/media/salescom/scripts/custom/ui-bootstrap-tpis-9.7.0-SNAPSHOT.js',
    '.././../src/main/content/jcr_root/media/salescom/scripts/lib/jquery/jquery.js',
    '.././../src/main/content/jcr_root/media/salescom/scripts/lib/jquery/jquery-migrate.js',
    '.././../src/main/content/jcr_root/media/salescom/scripts/lib/jquery.uniform/jquery.uniform.js',
    '.././../buyflow-wireline/src/main/content/jcr_root/apps/att/buyflow-wireline/components/libraries/wirelinemodify/clientlib/appConfig.js',
    '.././../buyflow-wireline/src/main/content/jcr_root/apps/att/buyflow-wireline/components/desktopmodify/**/*.js',
    '.././../media/src/tests/unit/buyflow-wireline/desktopmodify/**/*.js',
    '.././../media/src/tests/unit/checkout/**/*.js'
  ],
  options: {
    noopam: true,
    interval: 5007
  }
},
tasks: ["karma:unitrun"] // TODO get "beeperror" to work
},
options: {
  noopam: true,
  interval: 5007
}
```

3. Now, Run Git Bash.
4. Point to the docs/front-end-tools directory onto Git Bash. (Path to front-end-tools directory : C:\Projects\Ecom_Dev_HardRock\CQ_Wireline2_Workspace\doc\front-end-tools)



```
RG189A@WACDTL04SP8039 /c/Projects
$ cd Ecom_Dev_HardRock

RG189A@WACDTL04SP8039 /c/Projects/Ecom_Dev_HardRock
$ cd cq_
CQ_Wireline2_Workspace/      CQ_Wireline2_Workspace - old/

RG189A@WACDTL04SP8039 /c/Projects/Ecom_Dev_HardRock
$ cd CQ_Wireline2_Workspace

RG189A@WACDTL04SP8039 /c/Projects/Ecom_Dev_HardRock/CQ_Wireline2_Workspace
$ cd doc

RG189A@WACDTL04SP8039 /c/Projects/Ecom_Dev_HardRock/CQ_Wireline2_Workspace/doc
$ cd front-end-tools/

RG189A@WACDTL04SP8039 /c/Projects/Ecom_Dev_HardRock/CQ_Wireline2_Workspace/doc/f
ront-end-tools
$ npm install
npm WARN package.json content-parent@0.0.0 No repository field.
npm WARN package.json grunt-contrib-htmlmin@0.1.3 No README data
npm WARN package.json karma-chrome-launcher@0.1.7 No README data
npm WARN package.json karma-firefox-launcher@0.1.4 No README data

RG189A@WACDTL04SP8039 /c/Projects/Ecom_Dev_HardRock/CQ_Wireline2_Workspace/doc/f
```

5. Now run following commands :
 - \$npm install
 - \$bower install ngstorage
 - \$grunt server (if at times this command gives error then use \$ grunt server –force)
 - \$grunt develop

Once all the above commands are executed, the status on the Git server will be **Running"watch" task**

Refer to below screen shot.

```
grunt
RG189A@WACDTL04SP8039 /c/Projects/Ecom_Dev_HardRock/CQ_Wireline2_Workspace/doc/f
ront-end-tools
$ npm install
npm WARN package.json content-parent@0.0.0 No repository field.
npm WARN package.json grunt-contrib-htmlmin@0.1.3 No README data
npm WARN package.json karma-chrome-launcher@0.1.7 No README data
npm WARN package.json karma-firefox-launcher@0.1.4 No README data

RG189A@WACDTL04SP8039 /c/Projects/Ecom_Dev_HardRock/CQ_Wireline2_Workspace/doc/f
ront-end-tools
$ bower install

RG189A@WACDTL04SP8039 /c/Projects/Ecom_Dev_HardRock/CQ_Wireline2_Workspace/doc/f
ront-end-tools
$ bower install ngstorage
bower cached      https://github.com/gsklee/ngStorage.git#0.3.0
bower validate    0.3.0 against https://github.com/gsklee/ngStorage.git#*

RG189A@WACDTL04SP8039 /c/Projects/Ecom_Dev_HardRock/CQ_Wireline2_Workspace/doc/f
ront-end-tools
$ grunt server
Warning: Task "server" not found. Use --force to continue.

Aborted due to warnings.

Execution Time (2015-01-09 23:41:16 UTC)
loading tasks 5ms ████████████████████████████████████████████████████████████ 100%
Total 5ms

RG189A@WACDTL04SP8039 /c/Projects/Ecom_Dev_HardRock/CQ_Wireline2_Workspace/doc/f
ront-end-tools
$ grunt server --force
Warning: Task "server" not found. Used --force, continuing.

Done, but with warnings.

Execution Time (2015-01-09 23:41:26 UTC)
loading tasks 5ms ████████████████████████████████████████████████████████████ 83%
Total 6ms

RG189A@WACDTL04SP8039 /c/Projects/Ecom_Dev_HardRock/CQ_Wireline2_Workspace/doc/f
ront-end-tools
$ grunt develop
Running "develop" task
```

7. Do editing to any of the JS files mentioned under the list of files in “**Gruntfile.js**” and the Git bash will be updated, with the name of file you edited and this file if its error free will be pushed to CQ server.


```
$ grunt server --force
Warning: Task "server" not found. Used --force, continuing.

Done, but with warnings.

Execution Time (2015-01-09 23:41:26 UTC)
loading tasks 5ms ████████████████████████████████████████ 83%
Total 6ms

RG189A@WACDTL04SP8039 /c:/Projects/Ecom_Dev_HardRock/CQ_Wireline2_Workspace/doc/f
ront-end-tools
$ grunt develop
Running "develop" task

Running "jshint:all" (jshint) task
>> 1 file lint free.

Running "karma:unit" (karma) task

Running "watch" task
Waiting...target: ..\..\channel-lineup\src\main\content\jcr_root\apps\att\channe
l-lineup\components\desktop\contentfooter\ATT.contentfooter.js is changed and is
being updated to the JCR
curl -u admin:admin -T ../../channel-lineup/src/main/content/jcr_root/apps/att/c
hannel-lineup/components/desktop/contentfooter/ATT.contentfooter.js http://local
host:8001/apps/att/channel-lineup/components/desktop/contentfooter/ATT.contentfo
ter.js --noproxy localhost
OK
>> File "..\..\channel-lineup\src\main\content\jcr_root\apps\att\channel-lineup\
components\desktop\contentfooter\ATT.contentfooter.js" changed.

Running "watch" task
Completed in 0.054s at Fri Jan 09 2015 15:41:41 GMT-0800 (Pacific Standard Time)
- Waiting...
target: ..\..\channel-lineup\src\main\content\jcr_root\apps\att\channel-lineup\c
omponents\desktop\contentfooter\ATT.contentfooter.js is changed and is being upd
ated to the JCR
curl -u admin:admin -T ../../channel-lineup/src/main/content/jcr_root/apps/att/c
hannel-lineup/components/desktop/contentfooter/ATT.contentfooter.js http://local
host:8001/apps/att/channel-lineup/components/desktop/contentfooter/ATT.contentfo
ter.js --noproxy localhost
OK
>> File "..\..\channel-lineup\src\main\content\jcr_root\apps\att\channel-lineup\
components\desktop\contentfooter\ATT.contentfooter.js" changed.

Running "watch" task
Completed in 0.068s at Fri Jan 09 2015 16:17:24 GMT-0800 (Pacific Standard Time)
- Waiting...
```