

Django-npm-mjs

A Django solution for serving
ES2015+ JavaScript modules

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Django world before ECMAScript 2015

- * Web apps were largely running code on the backend
- * Workflow-critical frontend code could largely sit in template files
- * JavaScript did little and the source files could be served directly
- * JavaScript files, images, SVGs, etc. were independent files that could be served from static folders
- * Django could merge all the static files folders from different Django apps as if they were in the same folders.



Typical Django project structure before 2015

```
myproject/  
manage.py
```

```
myproject/  
  __init__.py  
  urls.py  
  settings.py
```

```
blog/  
  __init__.py  
  models.py  
  views.py  
  urls.py  
  templates/  
    blog/  
      base.html  
      list.html  
      detail.html  
  static/  
    js/  
      myscript.js  
      jquery.js  
    css/  
      style.css
```

```
users/  
  __init__.py  
  models.py  
  views.py  
  urls.py  
  templates/  
    users/  
      user.html  
  static/  
    js/  
      myscript_otherscript.js
```



Since 2015

- * Frontend takes over a lot more of the workflow by means of JavaScript
- * JavaScript needs to be transpiled and bundled before being served because browsers do not support all and it would be inefficient to serve hundreds of JavaScript files individually
- * JavaScript needs to import packages across Django apps
- * JavaScript needs to import external packages from npm.js defined in package.json files



Django-npm-mjs - management commands

- * `./manage.py npm_install`
 - ☆ Combines parts of package.json files from all installed django apps and runs npm install on the combined file
- * `./manage.py transpile`
 - ☆ Copies all JS files from all Django apps static folders into temp folder
 - ☆ Bundles/transpiles all files, using *.mjs files as entry files
 - ☆ Runs `./manage.py npm_install` if needed
 - ☆ Only runs if Django settings.py file, package.json files or JS files have changed



Django-npm-mjs - template tags

- * `{% load transpile %}` as dropin replacement for `{% load static %}`
- * `{% static "ogg/chat_notification.ogg" %}` => `"/static/ogg/chat_notification.ogg?v=8468592654"`
- * `{% static "js/my_entry.mjs" %}` => `"/static/js/my_entry.js?v=8468592654"`
- * Automatic version string of last transpile appended so that static files can be browser cached forever



Django-npm-mjs - JS string replacement

```
$StaticUrls.base$ => /static/
```

```
$StaticUrls.transpile.base$ => /static/transpile/js/
```

```
$StaticUrls.transpile.version$ => 17254789849
```

```
new Worker(  
  `${$StaticUrls.transpile.base$}worker.js?v=${$StaticUrls.transpile.version$}`  
)
```



Django-npm-mjs - JS plugin imports

Hook:

```
static/  
  /js  
    plugins/  
      myhook/  
        init.js # empty  
        entry_file.mjs:
```

```
import * as plugins from "/plugins/myhook"
```

```
class EntryClass {  
  ...  
  activatePlugins() {  
    this.plugins = {}  
    Object.keys(plugins).forEach(plugin => {  
      if (typeof plugins[plugin] === 'function') {  
        this.plugins[plugin] = new plugins[plugin](this)  
        this.plugins[plugin].init()  
      }  
    })  
  }  
}
```

Plugin:

```
static/  
  /js  
    plugins/  
      myhook/  
        myplugin.js:
```

```
export class MyPlugin {  
  
  constructor(entryClass) {  
    this.entryClass= entryClass  
  }  
  
  init() {  
    //initialize  
  }  
}
```




Django-npm-mjs - practical usage

Fidus Writer scientific text editor Django apps as plugins

- * `Fiduswriter-books` - allows users to compile documents to books
- * `Fiduswriter-import-api` - citation import from various databases
- * `Fiduswriter-languagetool` - to connect with languagetool.org spell/grammar checker
- * `Fiduswriter-ojs` - to connect with OJS peer review management system

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Fidus Writer

<https://www.fiduswriter.org>



Open source repositories (LGPL,
AGPL):

<https://github.com/fiduswriter>

