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# **docxtemplater Documentation**

*Release 0.5.4*

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### Goals

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Docxtemplater was born out of the idea that you should be able to generate Docx as easily as you generate Html with something like Mustache.

There are a lot of solutions like docx.js, docx4j, ... that generate docx, but you will have to write specific code to create a title, an image, ...

I think this is a waste when you can just write your template with plain old Microsoft Word.

Docxtemplater is just there for that

### 1.1 Why you should use a library for this

Docx is a zipped format that contains some xml. If you want to build a simple replace {tag} by value system, it can already become complicated, because the {tag} is internally separated into `<w:t>{</w:t><w:t>tag</w:t><w:t>}</w:t>`. If you want to embed loops to iterate over an array, it becomes a real hassle.





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## Platform Support

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docxtemplater works with

- Node.js with 0.10 and 0.11
- Chrome **tested** on version 26
- Firefox 3+ (**tested** on version 21, but should work with 3+)
- Safari **not tested**

Internet explorer is not supported -even IE10- (basically because xhr Requests can't be made on binary files)

You can test if everything works fine on your browser by using the test runner: <http://javascript-ninja.fr/docxgenjs/test/SpecRunner.html>

Firefox has an other implementation of the xml parser, that's why all tests don't pass now. However, all of the functionality works on Firefox too. The output files are not exactly the same byte wise but the generated XML is correct.



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## Dependencies

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1. **docxgen.js** uses [jszip.js](<http://stuk.github.io/jszip/>) to zip and unzip the docx files
2. Optionally, if you want to be able to name the output files, you can use **Downloadify.js**, which is required to use method download. Be informed that it uses flash, this is why the method is not recommended. This method is however useful because a lot of browsers are limited for the download size with the Data-URI method. **Update:** I will probably implement in the future a way to use the FileSaver API, with [FileSaverJS](<http://eligrey.com/demos/FileSaver.js/>)
3. Optionnaly, if you want to replace images by images situated at a particular URL, you can use QR codes. For example If you store an image at <http://website.com/image.png> , you should encode the URL in QR-Code format. [! \[Qr Code Sample\]\(http://qrfree.kaywa.com/?l=1&s=8&d=http%3A%2F%2Fwebsite.com%2Fimage.png](http://qrfree.kaywa.com/?l=1&s=8&d=http%3A%2F%2Fwebsite.com%2Fimage.png) “Qrcode Sample to <http://website.com/image.png>”). You can even use bracket tags in images. <http://website.com/image.png?color={color}> will take the *Tags[color]* variable to make a dynamic URL. For this too work, you will need [jsqrcode](<http://github.com/edi9999/jsqrcode> “jsqrcode repositoty forked”) and include the following files, in this order (only for browser support, node support already comes out of the box):

```
<script type="text/javascript" src="grid.js"></script>
<script type="text/javascript" src="version.js"></script>
<script type="text/javascript" src="detector.js"></script>
<script type="text/javascript" src="formatinf.js"></script>
<script type="text/javascript" src="errorlevel.js"></script>
<script type="text/javascript" src="bitmat.js"></script>
<script type="text/javascript" src="datablock.js"></script>
<script type="text/javascript" src="bmparser.js"></script>
<script type="text/javascript" src="datamask.js"></script>
<script type="text/javascript" src="rsdecoder.js"></script>
<script type="text/javascript" src="gf256poly.js"></script>
<script type="text/javascript" src="gf256.js"></script>
<script type="text/javascript" src="decoder.js"></script>
<script type="text/javascript" src="qrcode.js"></script>
<script type="text/javascript" src="findpat.js"></script>
<script type="text/javascript" src="alignpat.js"></script>
<script type="text/javascript" src="databr.js"></script>
```



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## Installation

---

### 4.1 Node

To install docxtemplater, we recommend you to use npm.

```
npm install docxtemplater
```

If you want to use the command line interface, you should use the global flag, eg:

```
npm install docxtemplater -g
```

### 4.2 Browser

I recommend you to use browserify.

```
git clone git@github.com:edi9999/docxtemplater.git && cd docxtemplater
npm install -g gulp jasmine-node uglify-js
npm install
gulp allCoffee
browserify -r './js/docxgen.js' > build/docxgen.js
uglifyjs build/docxgen.js > build/docxgen.min.js
```

Your version of docxtemplater will be in /build (minified and non minified options).



The syntax is highly inspired by [Mustache](#). The template is created in Microsoft Word or any equivalent that saves to docx.

## 5.1 Synopsis

A typical docxtemplater template:

```
Hello {name} !
```

Given the following hash:

```
{  
  name: 'Edgar'  
}
```

Will produce:

```
Hello Edgar !
```

## 5.2 Tag types

Like Mustache, it has the loopopening `{#}` and loopclosing `{/}` brackets

## 5.3 Loop syntax

The following template:

```
{#products}  
  {name}, {price} €  
{/products}
```

Given the following hash:

```
{  
  "products":  
    [  
      {name: "Windows", price: 100},
```

```
    {name:"Mac OSX",price:200},
    {name:"Ubuntu",price:0}
  ]
}
```

will result in :

```
Windows, 100 €
Mac OSX, 200 €
Ubuntu, 0€
```

The loop behaves in the following way:

- If the value is an array, it will loop over all the elements of that array.
- If the value is a boolean, it will loop once if the value is true, keeping the same scope, and not loop at all if the value is false

---

**Note:** Because the loops work also with boolean values, you can also use them for conditions.

---

## 5.4 Dash syntax

It is quite difficult to know on which element you are going to loop. By default, when using the for loop, docxgen will find that by himself:

If between the two tags `{#tag}_____{/tag}`

- they is the Xml Tag `<w:tc> ->` you are in a table, and it will loop over `<w:tr>`
- else -> it will loop over `<w:t>`, which is the default Text Tag

With the Dash syntax you pass as a first argument the tag you want to loop on:

```
{-w:p loop} {inner} {/loop}
```

In this case this will loop over the first parent `<w:p>` tag

## 5.5 Inverted Selections

An inverted section begins with a caret (hat) and ends with a slash. That is `{^person}` begins a “person” inverted section while `{/person}` ends it.

While sections can be used to render text one or more times based on the value of the key, inverted sections may render text once based on the inverse value of the key. That is, they will be rendered if the key doesn’t exist, is false, or is an empty list.

Template:

```
{#repo}
  <b>{name}</b>
{/repo}
{^repo}
  No repos :(
{/repo}
```

Hash:



```
{  
  "repo": []  
}
```

**Output:**

```
No repos :(
```



---

## Generate a document

---

Here's a sample code to generate a document:

```
DocxGen=require('docxtemplater'); //Only for Node Usage
new DocxGen().loadFromFile("tagExample.docx",{async:true}).success(function(doc){
  doc.setTags({
    "first_name":"Hipp",
    "last_name":"Edgar",
    "phone":"0652455478",
    "description":"New Website"
  }) //set the templateVariables
  doc.applyTags() //apply them (replace all occurrences of {first_name} by Hipp, ...)
  doc.output() //Output the document using Data-URI
});
```

The different steps are the following:

### 6.1 Loading a document:

A docx can be loaded by its base64 representation, like this:

```
doc=new DocxGen(base64Data,options);
```

However, loading the base64Data is not that easy, so I created a wrapper function to load a docx from a file via Ajax.

---

**Note:** The options parameter are explained in *Configuration*

---

```
doc=new DocxGen().loadFromFile(documentPath,options);
```

The documentPath is the path to the document you want to load. The options are the same as in the constructor function, and I've added the async parameter.

- If async is true, the document is loaded asynchronously and returns a promise (eg you can write .success(callback) to get when the document is loaded)
- If async is false, the document is loaded synchronously and returns the document.

### 6.2 Setting the tags:

The tags are the variables that are going to be replaced by their values. To set them, just use:

```
doc.setTags(tags);
```

## 6.3 Applying the tags:

Applying the tags means opening all files that contain text (eg: footer, header, main document), and replace the variables by their values.

```
doc.applyTags(tags)
```

---

**Note:** If you specify an argument for the applyTags method, the function setTags(tags) will be called before applying the tags.

---

## 6.4 Outputting the document:

There are several ways to output the document. The most basic usage is to download the document.

```
doc.output(options)
```

Depending on your environment, if you don't set any options, this will:

- In the browser: Download the document using DataURI
- In Node: Save the document with the given fileName (output.docx by default)

Here's the different options parameters:

name:

```
Type:string["output.docx"]
```

The name of the file that will be outputed (doesn't work **in** the browser because of dataUri download)

callback:

```
Type:function
```

Function that is called without arguments when the output is done. Is used only **in** Node (because :

download:

```
Type:boolean[true]
```

If download is **true**, file will be downloaded automatically **with** data URI.

returns the output file.

type:

```
Type:string["base64"]
```

The type of zip to **return**. The possible values are : (same as **in** [http://stuk.github.io/jszip/ @g](http://stuk.github.io/jszip/@g)  
base64 (**default**) : the result will be a string, the binary **in** a base64 form.

string : the result will be a string **in** "binary" form, 1 byte per char.

uint8array : the result will be a Uint8Array containing the zip. This requires a compatible browser.

arraybuffer : the result will be a ArrayBuffer containing the zip. This requires a compatible browser.

blob : the result will be a Blob containing the zip. This requires a compatible browser.

nodebuffer : the result will be a nodejs Buffer containing the zip. This requires nodejs.

This function creates the docx file and downloads it on the user's computer. The name of the file is download.docx for Chrome, and some awkward file names for Firefox: VEeTHCfS.docx.part.docx, and can't be changed because it is handled by the browser. For more informations about how to solve this problem, see the **Filename Problems** section on [<http://stuk.github.io/jszip/>](<http://stuk.github.io/jszip/>)

---

**Note:** Note: All browsers don't support the download of big files with Data URI, so you **should** use the *download* method for files bigger than 100kB  


---

In Node, to send the document to the client, you can write the following code snippet:

```
out=doc.output({download:false,type:"string"})
res.send(new Buffer(out,"binary"));
```



---

## Configuration

---

Here are documented the special options that you can set when creating a new DocxGen to get some more superpower :

It documents the options parameter when you do:

```
new DocxGen(data, options);
```

### 7.1 Image Replacing

The name of this option is *qrCode* (function) (This was a boolean in 0.6.3 and before).

To stay a templating engine, I wanted that DocxTemplater doesn't add an image from scratch, but rather uses an existing image that can be detected, and DocxTemplater will just change the contents of that image, without changing it's style (border, shades, ...). The size of the replaced images will stay the same, ...

So I decided to use the *qrCode* format, which is a format that lets you identify images by their content.

The option for this is *qrCode* (false for off, a function for on, default off)

The function takes two parameter: The first one is the string, the second the callback.

For example your configuration could be:

```
new DocxGen(data, {qrCode: function(result, callback) {
  urloptions=(result.parse(path))
  options =
    hostname:urloptions.hostname
    path:urloptions.path
    method: 'GET'
    rejectUnauthorized:false
  errorCallback= (e) ->
    throw new Error("Error on HTTPS Call")
  reqCallback= (res)->
    res.setEncoding('binary')
    data = ""
    res.on('data', (chunk)->
      data += chunk
    )
    res.on('end', ()->
      callback(null, data))
  req = http.request(options, reqCallback).on('error', errorCallback)
}})
```

**Note:** If you don't use that functionality, you should disable it, because it is quite slow (the image decoding)

**Warning:** The qrCode functionality only works for PNG ! They is no support for other file formats yet. The main problem being that their is no decoder for other file formats in Node.js The library <https://github.com/zhangyuanwei/node-images> does support decoding for more file formats (gif, png, jpeg), but depends on 3 other none node dependencies.

**Warning:** They is a security warning if you use true as the value for qrCode, because this will use the older qrcode loading function. This function can load any file on the filesystem, with a possible leak in api-keys or whatever you store on docxtemplater's server.

To generate qrCodes with nodejs, you can use for example this script brought by @ssured in issue #69 <https://github.com/edi9999/docxtemplater/issues/69>

*npm install qr-image canvas*

To install the dependencies of canvas, look here (platform specific) <https://github.com/Automattic/node-canvas/wiki>

```
var Canvas, Image, canvas, column, ctx, fs, matrix, qr, qrString, size, textSize, value, x, y, _i, _len, _len1;
qr = require('qr-image');
fs = require('fs');
Canvas = require('canvas');
Image = Canvas.Image;
qrString = 'gen:{image}';
size = 10;
matrix = qr.matrix(qrString);
canvas = new Canvas((2 + 5 + matrix.length) * size, (2 + 5 + matrix.length) * size);
ctx = canvas.getContext('2d');
ctx.fillStyle = '#000';
ctx.fillRect(0, 0, canvas.width, canvas.height);
ctx.fillStyle = '#fff';
ctx.fillRect(1, 1, canvas.width - 2, canvas.height - 2);
ctx.fillStyle = '#000';
for (y = _i = 0, _len = matrix.length; _i < _len; y = ++_i) {
  column = matrix[y];
  for (x = _j = 0, _len1 = column.length; _j < _len1; x = ++_j) {
    value = column[x];
    if (value === 1) {
      ctx.fillRect((x + 1 + 2.5) * size, (y + 1) * size, size, size);
    }
  }
}
ctx.font = 4 * size + 'px Helvetica';
ctx.fillStyle = '#000';
textSize = ctx.measureText(qrString);
ctx.fillText(qrString, (canvas.width - textSize.width) / 2, canvas.height - size - textSize.actualBoundingBoxAscent);
canvas.pngStream().pipe(fs.createWriteStream('qr.png'));
```

## 7.2 Angular Parser

The name of this option *parser* (function).

You can set the angular parser with the following code:



With a custom parser you can parse the tags to for example add operators like '+', '-', or whatever the way you want to parse expressions. See for a complete reference of all possibilities <http://teropa.info/blog/2014/03/23/angularjs-expressions-cheatsheet.html>

To enable this, you need to specify a custom parser. You need to create a parser function:

docxtemplater comes shipped with this parser:

```
parser=function(expression)
{
  return {
    get:function(scope) {
      return scope[expression]
    }
  };
}
```

To use the angular-parser, do the following:

```
expressions= require('angular-expressions');
// define your filter functions here, eg:
// expressions.filters.split = function(input, str) { return input.split(str); }
angularParser= function(tag) {
  return {
    get: tag == '.' ? function(s){ return s;} : expressions.compile(tag)
  };
}
new DocxGen(data, {parser:angularParser})
```

---

**Note:** The require() works in the browser if you include vendor/angular-parser-browser.js

---

## 7.3 Intelligent LoopTagging

The name of this option *intelligentTagging* (boolean).

When looping over an element, docxtemplater needs to know over which element you want to loop. By default, it tries to do that intelligently (by looking what XML Tags are between the {tags}). However, if you want to always use the <w:t> tag by default, set this option to false.

You can always specify over which element you want to loop with the dash loop syntax



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## Command Line Interface (CLI)

---

This section is about the commandline interface of docxtemplater.

The syntax is the following:

```
docxtemplater config.json
```

The full config.json should be something like that:

```
{
  "config.docxFile": "input.docx",
  "config.outputFile": "output.docx",
  "config.qrcode": true,
  "config.debug": true,
  "first_name": "John",
  "last_name": "Smith",
  "age": 62
}
```

### 8.1 Config.json Syntax

#### 8.1.1 Config properties:

These are the properties to configure docxtemplater:

```
{
  "config.docxFile": "input.docx", //The input file path
  "config.outputFile": "output.docx", //The output file path
  "config.qrcode": true, //whether the images should be scanned to replace them by qrcodes (slows d
  "config.debug": true //whether to show debug output or not
}
```

#### 8.1.2 Data properties:

To add data to your template, just use keys that don't start with "config."

```
{
  "first_name": "John",
  "last_name": "Smith",
  "age": 62
}
```



---

## Full Documentation per method

---

### 9.1 Creating a new Docxgen Object

`new DocxGen()`

This function returns a new DocxGen Object

`new DocxGen(content[,Tags,options])`

**content:**

Type: string

The docx template you want to load as plain text

**Tags:**

Type: Object {tag\_name:tag\_replacement} [{}]

Object containing for each tag\_name, the replacement for this tag. For example, if you want t

**options: object**

**parser:**

Type: function

A custom parser to use. See angular.js like parsing

**intelligentTagging:**

Type: boolean [false]

If intelligent Tagging is not set to true, when using recursive tags (`{#tag}` and `{/tag}`),

If intelligent Tagging is set to true, and when using recursive tags inside tables, the w

**qrCode:**

Type: boolean [false]

If qrCode is set to true, DocxGen will look at all the images to find a Qr-Code. If the Q

**\*\*Important\*\*:** the qrCode functionality only works for PNG, I don't think I will enable t

**localImageCreator**

Type: function(arg,callback) [function that returns an arrow]

The function has to be customized only if you want to use the qrCode options (**\*\*qrCode=true\*\***)

The default localImageCreator returns a red arrow, no matter what the arguments are:

```
@localImageCreator= (arg,callback) ->
```

```
result=JSZipBase64.decode("iVBORw0KGgoAAAANSUhEUgAAABcAAAAXCAIAAABvSEP3AAAAAXNSR0IArs4c6QAAAB")
```

```
[Default Image] (
```

```
qrFinishedCallBack:
```

```
Type: function () [function that console.log(ready)]
```

```
This function is called if you specify qrCode argument to true in this constructor, and w
```

## 9.2 Docxgen methods

```
load(content)
```

```
content:
```

```
Type: string
```

```
The docx template you want to load as plain text
```

```
loadFromFile(path)
```

```
path
```

```
Type: string
```

```
Loads a docx from a file path
```

```
setTags(Tags)
```

```
Tags:
```

```
Type: Object {tag_name:tag_replacement}
```

```
Object containing for each tag_name, the replacement for this tag. For example, if you want t
```

```
applyTags([Tags])
```

```
Tags:
```

```
Type: Object {tag_name:tag_replacement}
```

```
same as setTags
```

```
Default:this.Tags
```

```
This function replaces all template variables by their values
```

```
output([options])
```

```
options: object[{}]
```

```
name:
```

```
Type:string["output.docx"]
```

```
The name of the file that will be outputed (doesnt work in the browser because of dataUri
```

```
callback:
```

```
Type:function
```

```
Function that is called without arguments when the output is done. Is used only in Node (l
```

```
download:
```

```
Type:boolean[true]
```

```
If download is true, file will be downloaded automatically with data URI.
```

```
returns the output file.
```

```
type:
```

```
Type:string["base64"]
```

```
The type of zip to return. The possible values are : (same as in http://stuk.github.io/js)
```

```
base64 (default) : the result will be a string, the binary in a base64 form.
```

```
string : the result will be a string in "binary" form, 1 byte per char.
```

```
uint8array : the result will be a Uint8Array containing the zip. This requires a compatil
```

arraybuffer : the result will be a ArrayBuffer containing the zip. This requires a compatible browser.  
blob : the result will be a Blob containing the zip. This requires a compatible browser.  
nodebuffer : the result will be a nodejs Buffer containing the zip. This requires nodejs

This function creates the docx file and downloads it on the user's computer. The name of the file is determined by the `fileName` parameter.  
For more informations about how to solve this problem, see the **Filename Problems** section on the [wiki](#).

Note: All browsers don't support the download of big files with Data URI, so you **should** use the `download()` method.

```
download(swfilePath, imagePath[, fileName])
```

swfilePath

Type:string

Path to the swfobject.js in downloadify

imagePath

Type:string

Path to the image of the download button

[fileName]

Type:string

Default:"default.docx"

Name of the file you would like the user to download.

This requires to include Downloadify.js, that needs flash version 10. Have a look at the `*output*` section on the [wiki](#).

```
getImageList()
```

this gets all images that have one of the following extension: 'gif', 'jpeg', 'jpg', 'emf', 'png'

Return format: Array of Object:

```
[[{path:string,files:ZipFile Object}]]
```

You should't call this method before calling `**applyTags()**, because applyTags can modify the document.`

```
setImage(path, imgData)
```

path

Type:"String"

Path of the image, given by getImageList()

imgData

Type:"String"

imgData in txt/plain

This sets the image given by a path and an imgData in txt/plain.

You should't call this method before calling `**applyTags()**, because applyTags can modify the document.`

```
getFullText:([path])
```

path

Type:"String"

Default:"word/document.xml"

This argument determines from which document you want to get the text. The main document is `word/document.xml`.

@returns

Type:"String"

The string containing all the text from the document

This method gets only the text of a given document (not the formatting)

`getTags()`

This function returns the template variables contained in the opened document. For example if the

```
{name}
{first_name}
{phone}
```

The function will return:

```
[[
  filename:"document.xml",
  vars:
  {
    name:true,
    first_name:true,
    phone:true
  }
]]
```

If the content contains tagLoops:

```
{title}
{#customer}
{name}
{phone}
{/customer}
```

The function will return:

```
[[
  filename:"document.xml",
  vars:
  {
    title:true,
    customer:
    {
      name:true,
      phone:true
    }
  }
]]
```



---

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### Demos

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Including:

- Replace Variables
- Formatting
- Angular Parsing
- Loops
- Loops and tables
- Lists
- Replacing images
- Naming the output
- Using QrCodes
- Replacing many images with QrCode
- Raw Xml Insertion



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