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CommonJS

Node.js

Node.js CommonJS CommonJS CommonJS

```
// lib.js
var counter = 3;
function incCounter() {
  counter++;
}
module.exports = {
  counter: counter,
  incCounter: incCounter,
};
```

```
// main.js
var counter = require('./lib').counter;
var incCounter = require('./lib').incCounter;

console.log(counter);  // 3
incCounter();
console.log(counter); // 3
```

Node :

1. C/C++ Node
2. 3
    1. .js fs js
    2. .node C/C++ Addon dlopen
    3. .json JSON.parse

Node

`require` Commo`module.require` `Module._load`

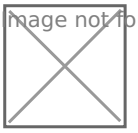
```
Module._load = function(request, parent, isMain) {
  // 1.    Module._cache
  // 2.               Module
  // 3.
  // 4.    module.load()
  //               module.compile()
  // 5.     /
  // 6.        module.exports
};
```

`module.compile()`

```
Module.prototype._compile = function(content, filename) {
  // 1.    require    module.require
  // 2.         require
  // 3.                   require
  // 4.
};
```

require

```
(function (exports, require, module, __filename, __dirname) {
  // YOUR CODE INJECTED HERE!
});
```



> “
> https://www.infoq.cn/article/nodejs-module-mechanism
> http://nodejs.cn/api/modules.html#modules_modules
> http://javascript.ruanyifeng.com/nodejs/module.html

node requ`require.cache`

```
// c.js
console.log(require.cache)
```

```
//

{ 'D:\\code\\c.js':
   Module {
     id: '.',
     exports: {},
     parent: null,
     filename: 'D:\\code\\c.js',
     loaded: false,
     children: [],
     paths: [ 'D:\\code\\node_modules', 'D:\\node_modules' ] } }
```

`require.cache`||`require`

```
// a.js
module.exports = function () {
  const a = 18;
  console.log("the number is ", a)
}
```

```
// b.js
var fs = require('fs');
var a = require('./a.js');

function cleanCache(module){
    var path = require.resolve(module);
    require.cache[path] = null;
}
b();
fs.watch(require.resolve('./a'),function(){
    console.log('change')
    cleanCache(require.resolve('./a'));
    try{
        a = require('./a');
        a();
    }catch(ex){
        console.log('module update failed');
    }
});
```

`A``B``B``C``B``require.cache``B``C``C`

Webpack HMR Webpack HMR

`global`

```
globalVal = 1

// ========

'use strict';
globalVar = 1 //
global.globalVar = 1 //
```

`use strict`

> “ https://www.zhihu.com/question/57375179/answer/152633354

`package.json`

```
"dependencies": {
    "vue": "2.2.0"
}
```

`~` `^`

- `~x.y.z`: `x.y.z` `z`
- `^x.y.z`: `x.y.z` `y.z`
- `*`:

```
~1.2.3      >=1.2.3 <1.(2+1).0 := >=1.2.3 <1.3.0
~1.2        >=1.2.0 <1.(2+1).0 := >=1.2.0 <1.3.0 (Same as 1.2.x)
~1          >=1.0.0 <(1+1).0.0 := >=1.0.0 <2.0.0 (Same as 1.x)
~0.2.3      >=0.2.3 <0.(2+1).0 := >=0.2.3 <0.3.0
~0.2        >=0.2.0 <0.(2+1).0 := >=0.2.0 <0.3.0 (Same as 0.2.x)
~0          >=0.0.0 <(0+1).0.0 := >=0.0.0 <1.0.0 (Same as 0.x)

^1.2.3      >=1.2.3 <2.0.0
^0.2.3      >=0.2.3 <0.3.0
^0.0.3      >=0.0.3 <0.0.4

*           >=0.0.0 (Any version satisfies)
1.x         >=1.0.0 <2.0.0 (Matching major version)
1.2.x       >=1.2.0 <1.3.0 (Matching major and minor versions)
```

> “ https://github.com/npm/node-semver#ranges

```
yarn add package-name@1.2.3
```

`yarn` `yarn`

`--save-exact/-E` npm package `~` `^`

> “ https://zhuanlan.zhihu.com/p/22934066

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