

- `[Basic]`
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CommonJS

Node.js

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```
// 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!  
});
```

image not found or type unknown



“

<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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