第十期

杭州 NodeParty × Rokid

技术分享

NodeParty × Rokid

基于 Docker 容器的多平台统一打包服务

万宁邦

丁香园前端技术专家

自我介绍

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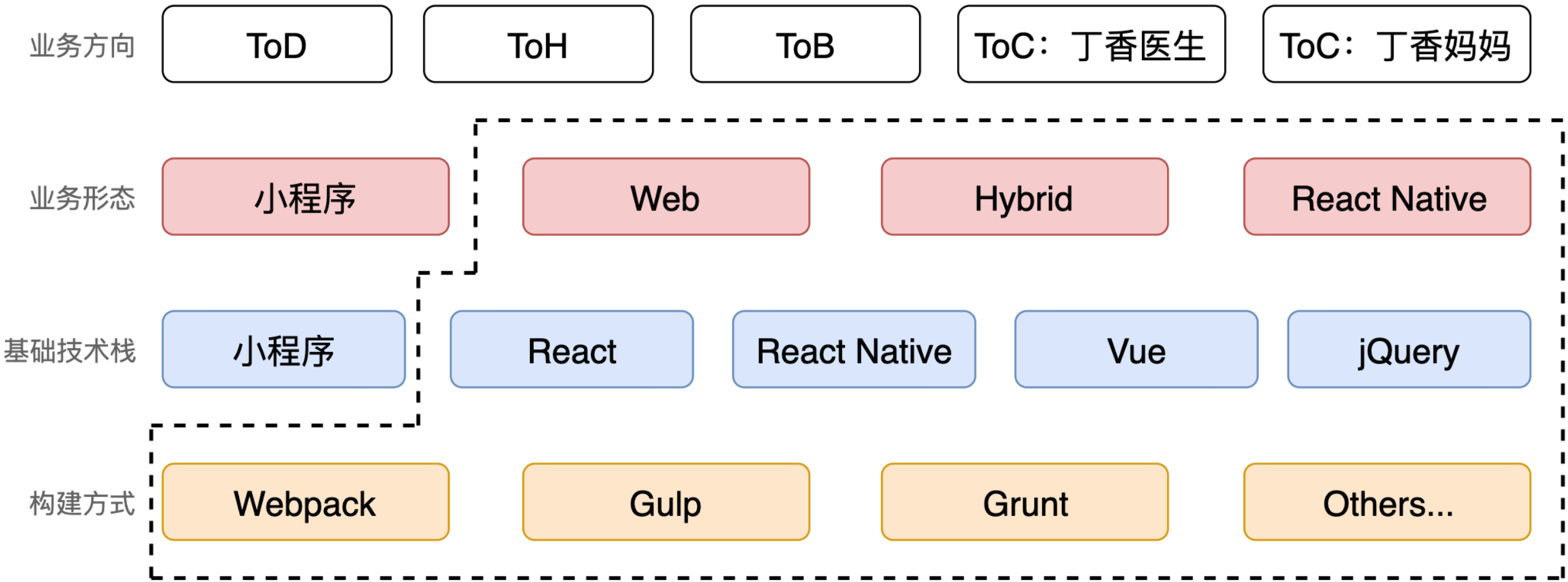
2018 年加入丁香园 - 技术产品事业部 - 前端平台架构组

全栈开发，目前致力于丁香园跨端方案的演进，和 Node 基础设施的建设

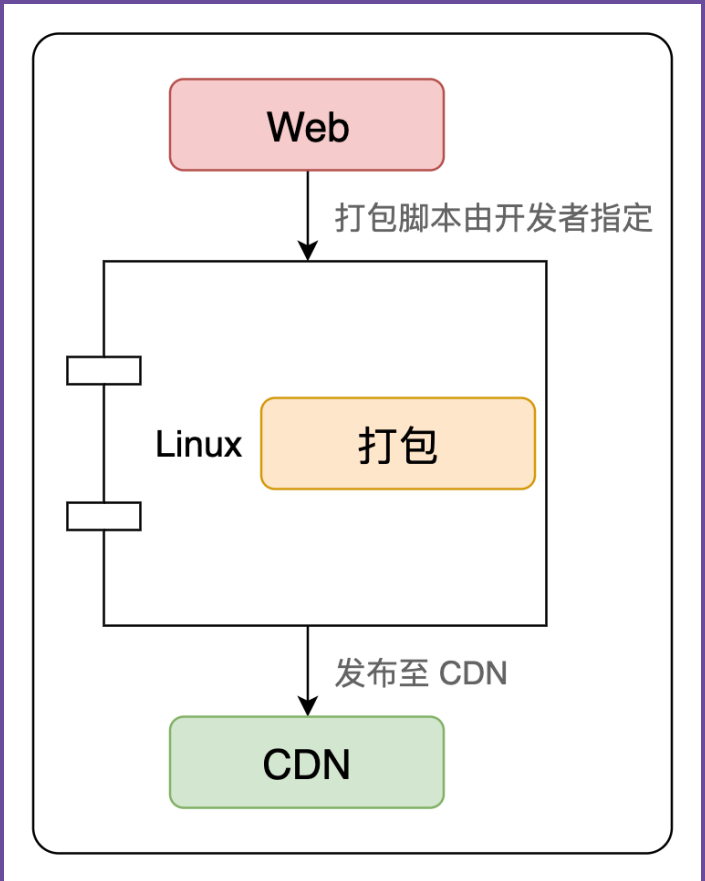
目录

1 发现问题

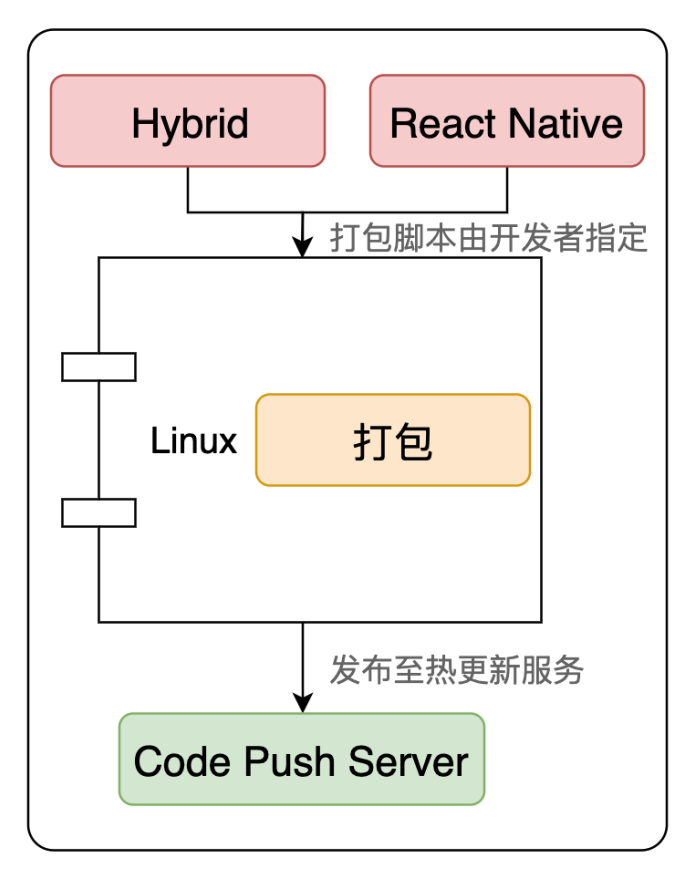
丁香园的前端业务形态



多发布系统并存



Assets 发布系统



Code Push 发布系统

应用打包存在和潜在的问题

开发者的心声

打包又失败了，就不能稳定一点吗？

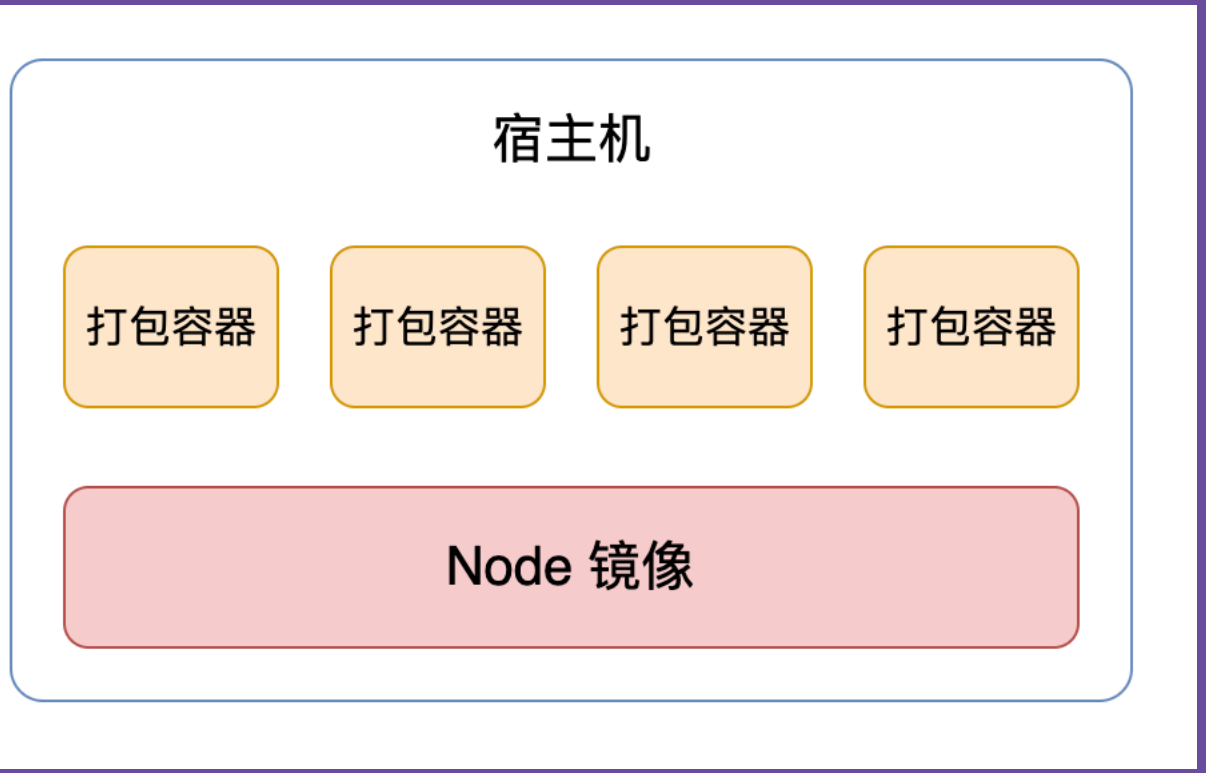
2 解决问题

开发者的需求

$$打包产物 = \mathcal{F}(项目, 构建脚本)$$

将打包过程放在 Docker 容器中

- 良好的隔离性
- 快速的启动效率
- 用完即停即删



打包过程的高可用性？

- 打包任务低频但连续
- 公司体量越来越大，同一时刻的打包任务数增多
- 打包任务不需要排队
- 容器快启快停，用完即删，能否做到高可用？

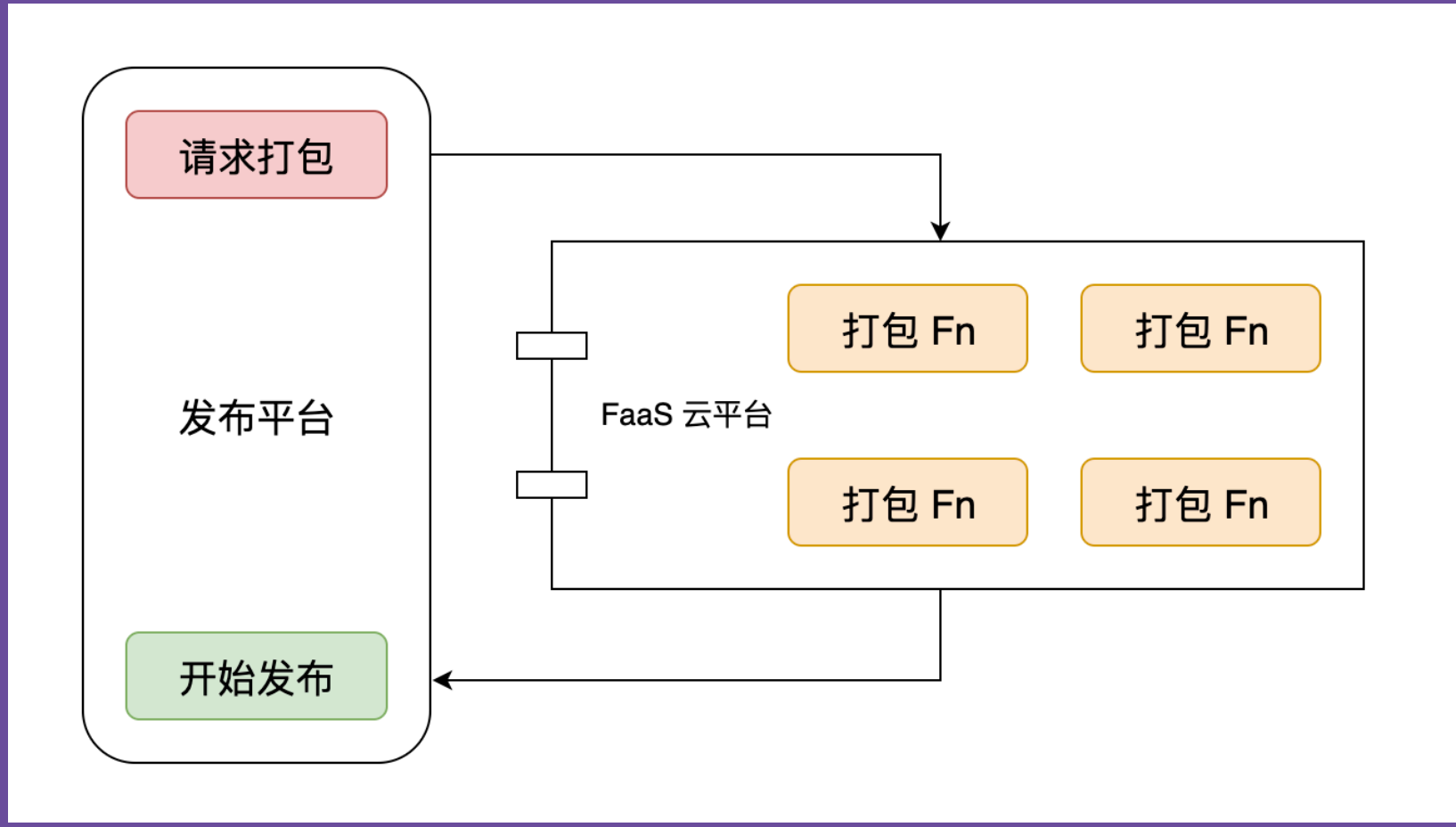
Serverless 或许是最好的解决方案

What is serverless computing?

Serverless computing refers to the concept of building and running applications that do not require server management. It describes a finer-grained deployment model where applications, bundled as one or more functions, are uploaded to a platform and then executed, scaled, and billed in response to the exact demand needed at the moment.

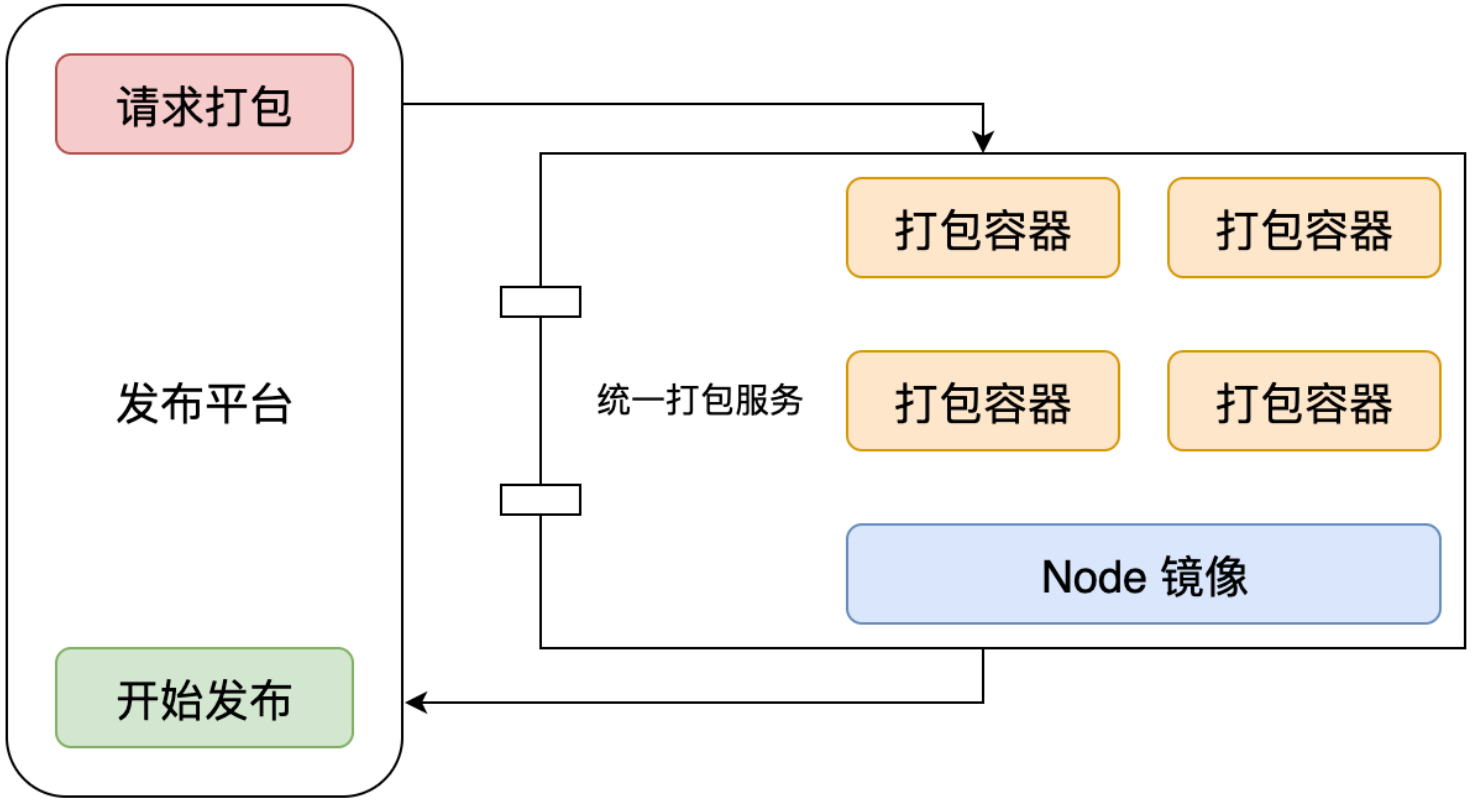
Serverless 或许是最好的解决方案

- Node 是首选语言
- 可以用阿里云函数计算等云平台
- 被运维大佬否决
- 自建 Serverless ?



回到 Docker 方案

- 服务仍然部署在 Linux 机器
- 需要限制容器资源

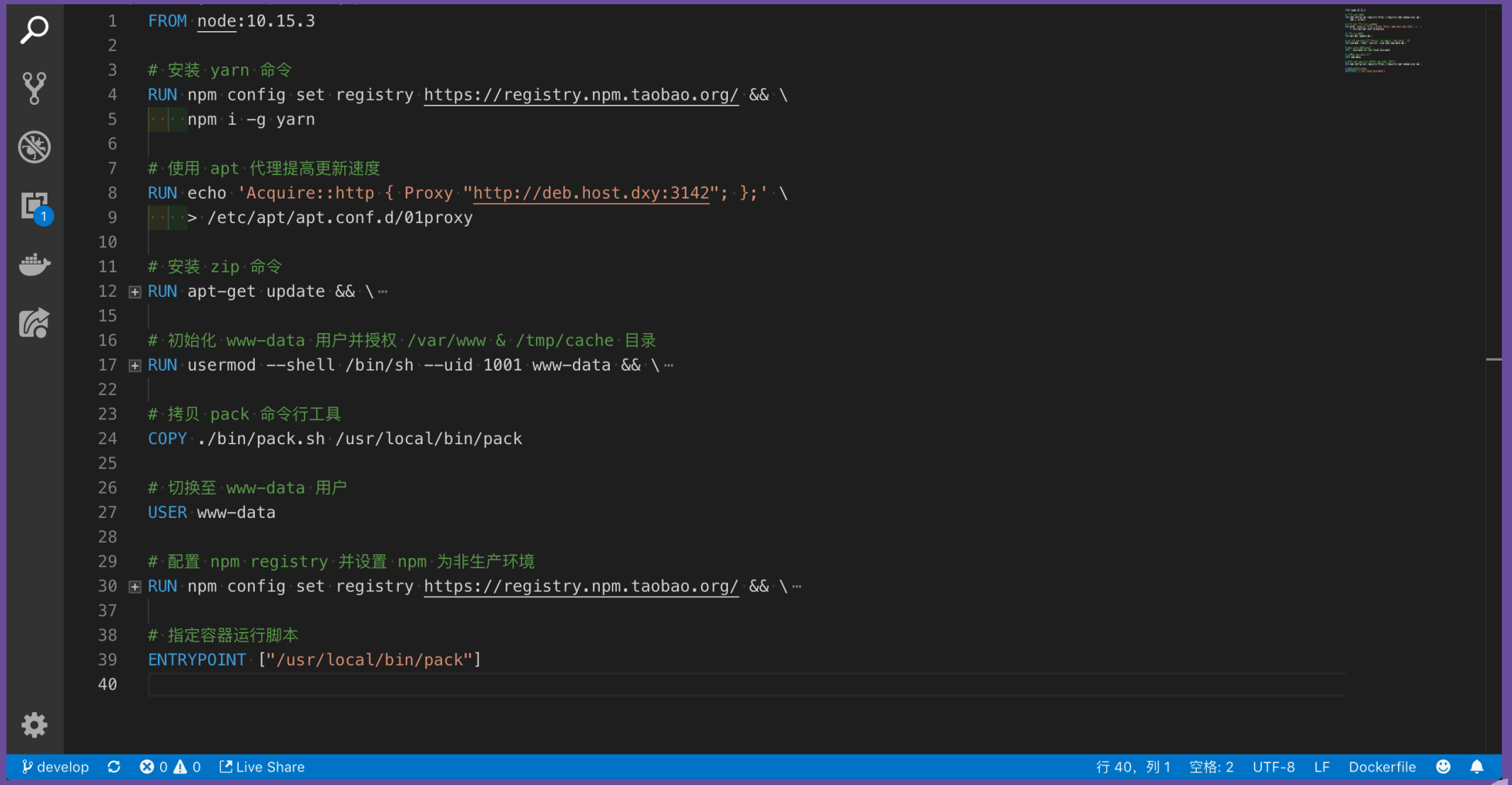


Docker 容器资源限制

Node or Docker Bug ?

- OS：os.cpus().length 实际上是宿主机的 CPU 数
- Node modules：大部分皆使用该 API 来决定进程的 fork 数
- 因此决定不做 CPU 限制
- 详情见 Node Issue #28762 & #28855

Dockerfile



容器启动命令

```
child = spawn('docker', [
  'container',
  'run',
  '--rm',
  `--memory=${memory}`,
  '--name',
  name, // 指定容器名
  '-v',
  `${name}:/tmp/cache`, // 指定 node_modules tar 包缓存目录
  '-v',
  `${packageDir}:/tmp/pack`,
  '-v',
  `${join(sshKeyDir, 'known_hosts')}:/var/www/.ssh/known_hosts`,
  '-v',
  `${privateSshKeyPath}:/var/www/.ssh/id_rsa`,
  '-i',
  'dxy-pack-service',
  id,
  gitUrl,
  gitRef,
  npmScript,
  distDir,
  npmClient,
]);
```

develop* 0 0 Live Share 行 50，列 30 空格: 2 UTF-8 LF TypeScript 3.5.2 TSLint

打包脚本

- 拉取代码
- 安装依赖
- 运行构建
- 压缩打包产物

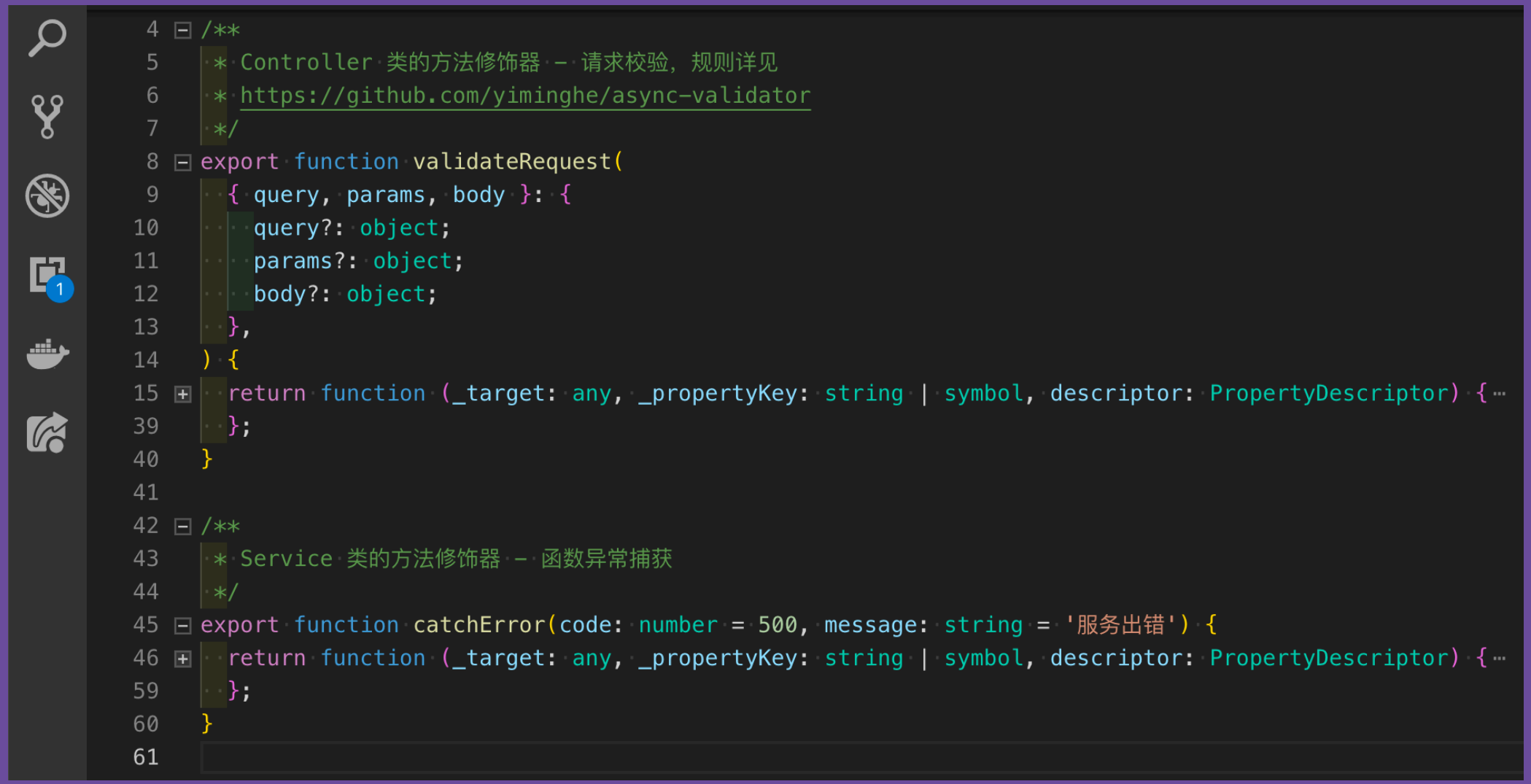
打包服务工程搭建

- Egg
- TypeScript

```
"scripts": {
  "start": "egg-scripts start --daemon --stic
  "stop": "egg-scripts stop --title=egg-serve
  "dev": "egg-bin dev --sticky --port 7000",
  "debug": "egg-bin debug --sticky --port 70(
  "ci": "npm run lint && npm run cov",
  "lint": "npm run lint:ts && npm run lint:es
  "lint:ts": "tslint --project . -c tslint.js
  "lint:es": "eslint . --ext .js",
  "lint:md": "eslint . --ext .md",
  "lint-fix": "npm run lint-fix:ts && npm rur
  "lint-fix:ts": "tslint --project . -c tslir
  "lint-fix:es": "eslint . --ext .js --fix",
  "lint-fix:md": "eslint . --ext .md --fix",
  "test": "egg-bin test",
  "cov": "egg-bin cov",
  "tsc": "ets && tsc -p tsconfig.json",
  "clean": "ets clean",
  "autod": "autod"
},
```

```
"husky": {
  "hooks": {
    "pre-commit": "lint-staged",
    "commit-msg": "commitlint -E HUSKY_GIT_PA
  }
},
"lint-staged": {
  "*.ts": [
    "npm run lint-fix:ts",
    "git add"
  ],
  "*.js": [
    "npm run lint-fix:es",
    "git add"
  ],
  "*.md": [
    "npm run lint-fix:md",
    "git add"
  ]
}
}
```

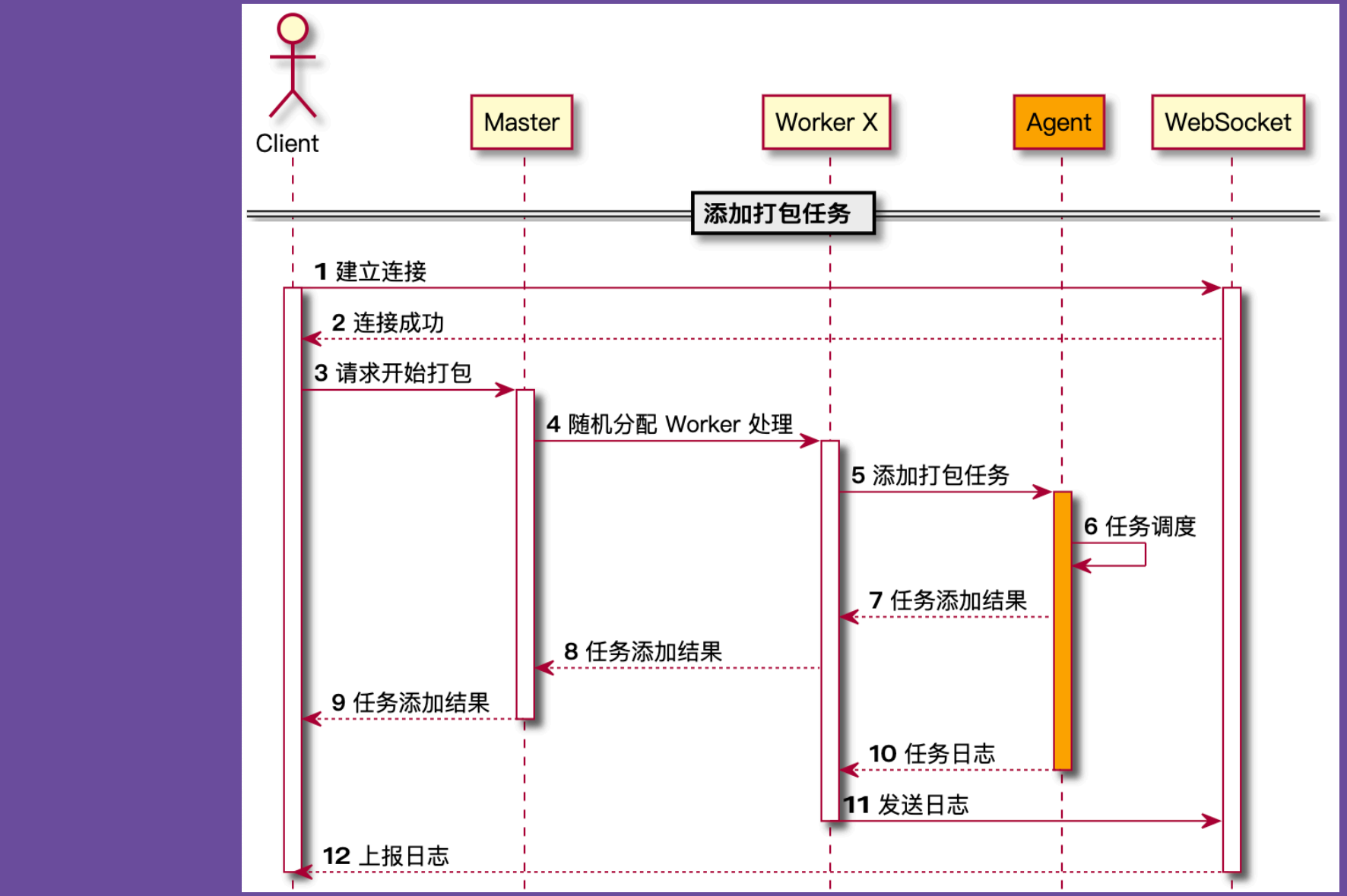
装饰器的运用



装饰器的运用

```
26  /**
27   * 添加打包任务
28   */
29  @validateRequest({
30    body: {
31      platform: [
32        { type: 'string', required: true, whitespace: true },
33        { type: 'enum', enum: PLATFORMS },
34      ],
35      app: { type: 'string', required: true, whitespace: true },
36      env: { type: 'string', required: true, whitespace: true },
37      gitUrl: { type: 'string', required: true, whitespace: true },
38      gitRef: { type: 'string', required: true, whitespace: true },
39      npmScript: { type: 'string', required: true, whitespace: true },
40      distDir: { type: 'string', required: true, whitespace: true },
41      npmClient: [
42        { type: 'string', whitespace: true },
43        { type: 'enum', enum: NPM_CLIENTS },
44      ],
45    },
46  })
47  public async create() {…
65  }
```

请求打包时序图

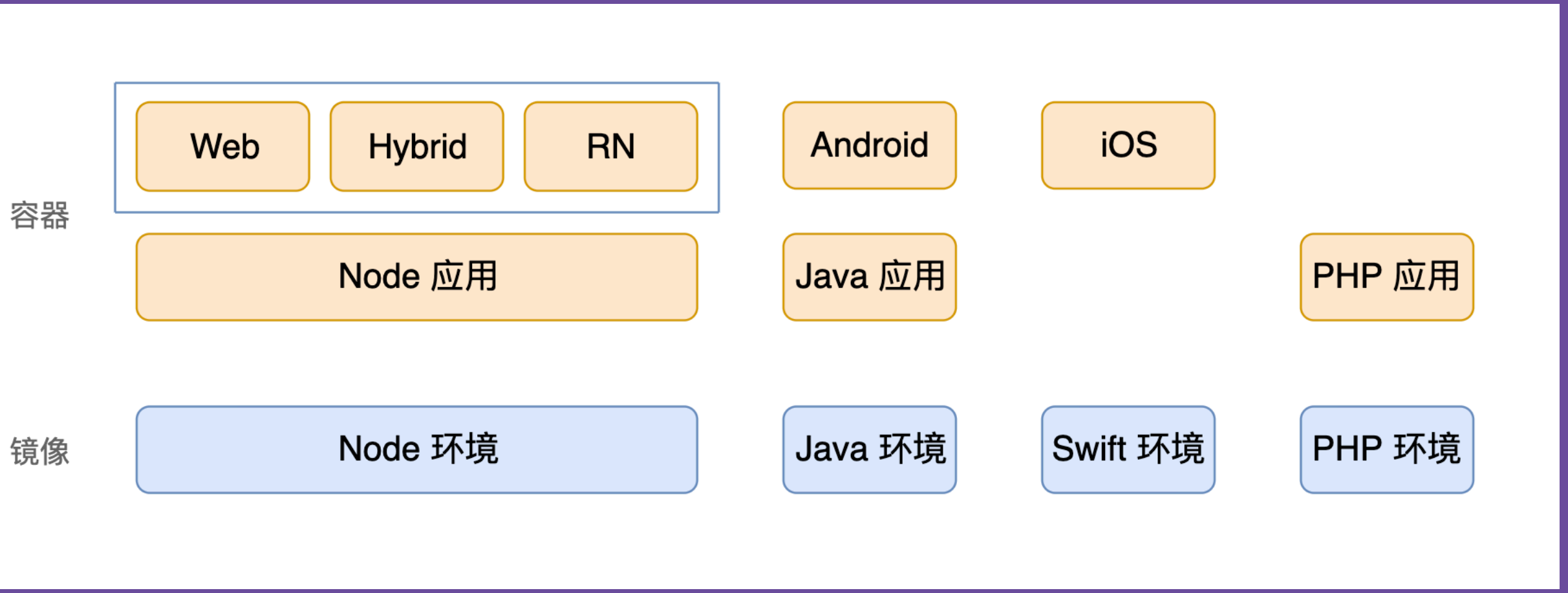


性能优化

- 安装依赖
  - Lock 文件使用国内镜像源
  - 打包容器数据卷缓存 node_modules，速度提升 60% 左右
- 打包配置
  - 设置 parallel 模式
  - 限制并行任务数

3 未来展望

丁香园统一打包服务

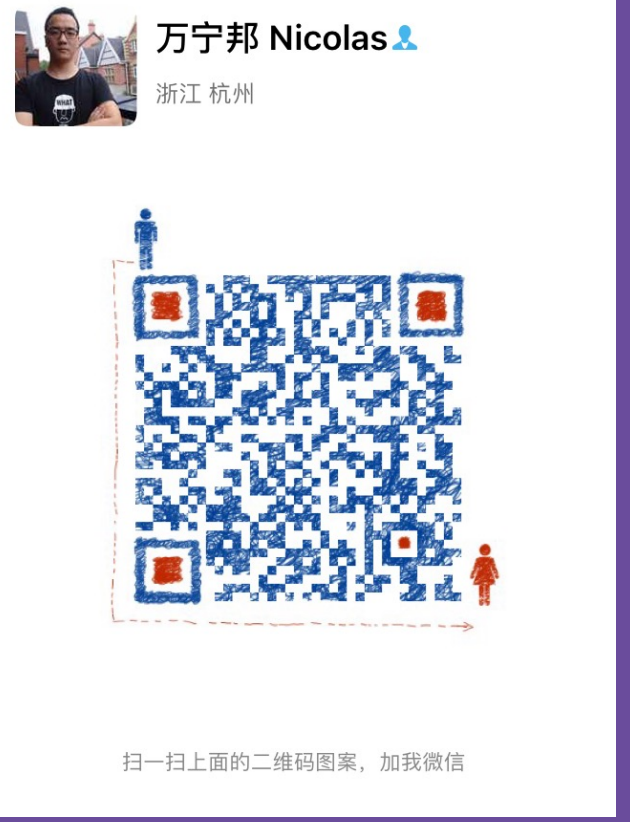


丁香园的技术挑战

- 跨端方案
  - 工程体系
  - 逻辑分离
  - Bridge 跨平台兼容
- Node 建设
  - BFF
  - Microservices
  - Serverless

欢迎发送简历至 wanningbang@dxy.cn

招资深前端、前端专家



Q & A

Thanks