


COMEDY

акторы для гибкого
масштабирования 

ВИКТОР ИСАЕВ

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14-летний опыт разработки приложений на Java, C++ и JavaScript.

NodeJS занимается последние 3,5 года в рамках разработки бэкэнда платформы SAYMON.



NodeJS однопоточный



Варианты масштабирования

> CLUSTER

> PM2

> COMEDY

CLUSTER

```
var cluster = require('cluster');
var http = require('http');
var numCPUs = 4;

if (cluster.isMaster) {
    for (var i = 0; i < numCPUs; i++) {
        cluster.fork();
    }
} else {
    http.createServer(function(req, res) {
        res.writeHead(200);
        res.end('process ' + process.pid);
    }).listen(8000);
}
```



PM2

```
[joni] ~/keymetrics/PM2 $ pm2 start app.js -i 4
[PM2] Process app.js launched
```

App name	id	mode	pid	status	restart	uptime	memory	watching
app	0	cluster	16660	online	0	0s	18.121 MB	disabled
app	1	cluster	16669	online	0	0s	20.359 MB	disabled
app	2	cluster	16692	online	0	0s	17.973 MB	disabled
app	3	cluster	16715	online	0	0s	18.125 MB	disabled

Use `pm2 show <id|name>` to get more details about an app

```
[joni] ~/keymetrics/PM2 $ pm2 scale app +3
[PM2] Scaling up application
[PM2] Scaling up application
[PM2] Scaling up application
```

App name	id	mode	pid	status	restart	uptime	memory	watching
app	0	cluster	16660	online	0	12s	18.379 MB	disabled
app	1	cluster	16669	online	0	12s	20.359 MB	disabled
app	2	cluster	16692	online	0	12s	18.488 MB	disabled
app	3	cluster	16715	online	0	12s	18.383 MB	disabled
app	4	cluster	16779	online	0	0s	20.125 MB	disabled
app	5	cluster	16786	online	0	0s	18.082 MB	disabled
app	6	cluster	16809	online	0	0s	20.289 MB	disabled

Use `pm2 show <id|name>` to get more details about an app

```
[joni] ~/keymetrics/PM2 $ pm2 scale app 2
[PM2] deleteProcessId process id 0
[PM2] deleteProcessId process id 1
[PM2] deleteProcessId process id 2
[PM2] deleteProcessId process id 3
[PM2] deleteProcessId process id 4
```

App name	id	mode	pid	status	restart	uptime	memory	watching
app	5	cluster	16786	online	0	7s	18.598 MB	disabled
app	6	cluster	16809	online	0	7s	20.543 MB	disabled

Use `pm2 show <id|name>` to get more details about an app



COMEDY

Код на JS

```
var actors = require('comedy');

/**
 * Actor definition class.
 */
class MyActor {
  sayHello(to) {
    console.log>Hello, ${to}!);
  }
}

actors()
  // Get a root actor reference.
  .rootActor()
  // Create a class-defined child actor.
  .then(rootActor => rootActor.createChild(MyActor))
  .then(myActor => {
    // Our actor is ready, we can send messages to it.
    myActor.send('sayHello', 'world');
  });
```

Конфиг файл

```
{
  "MyActor": {
    "mode": "forked",
    "clusterSize": 3
  }
}
```

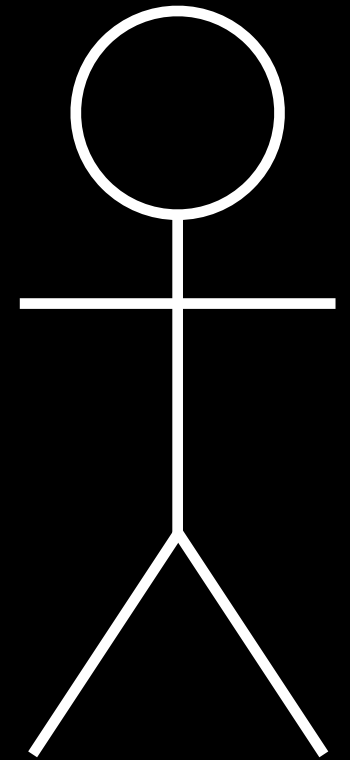
Список процессов

```
$ ps ax | grep node
11031 ?        S1          0:00 node /tmp/simple-class.js
11041 ?        S1          0:00 node /tmp/node_modules/comedy/lib/forked-actor-worker.js MyActor
11046 ?        S1          0:00 node /tmp/node_modules/comedy/lib/forked-actor-worker.js MyActor
11048 ?        S1          0:00 node /tmp/node_modules/comedy/lib/forked-actor-worker.js MyActor
```



ЧТО ТАКОЕ АКТОР?

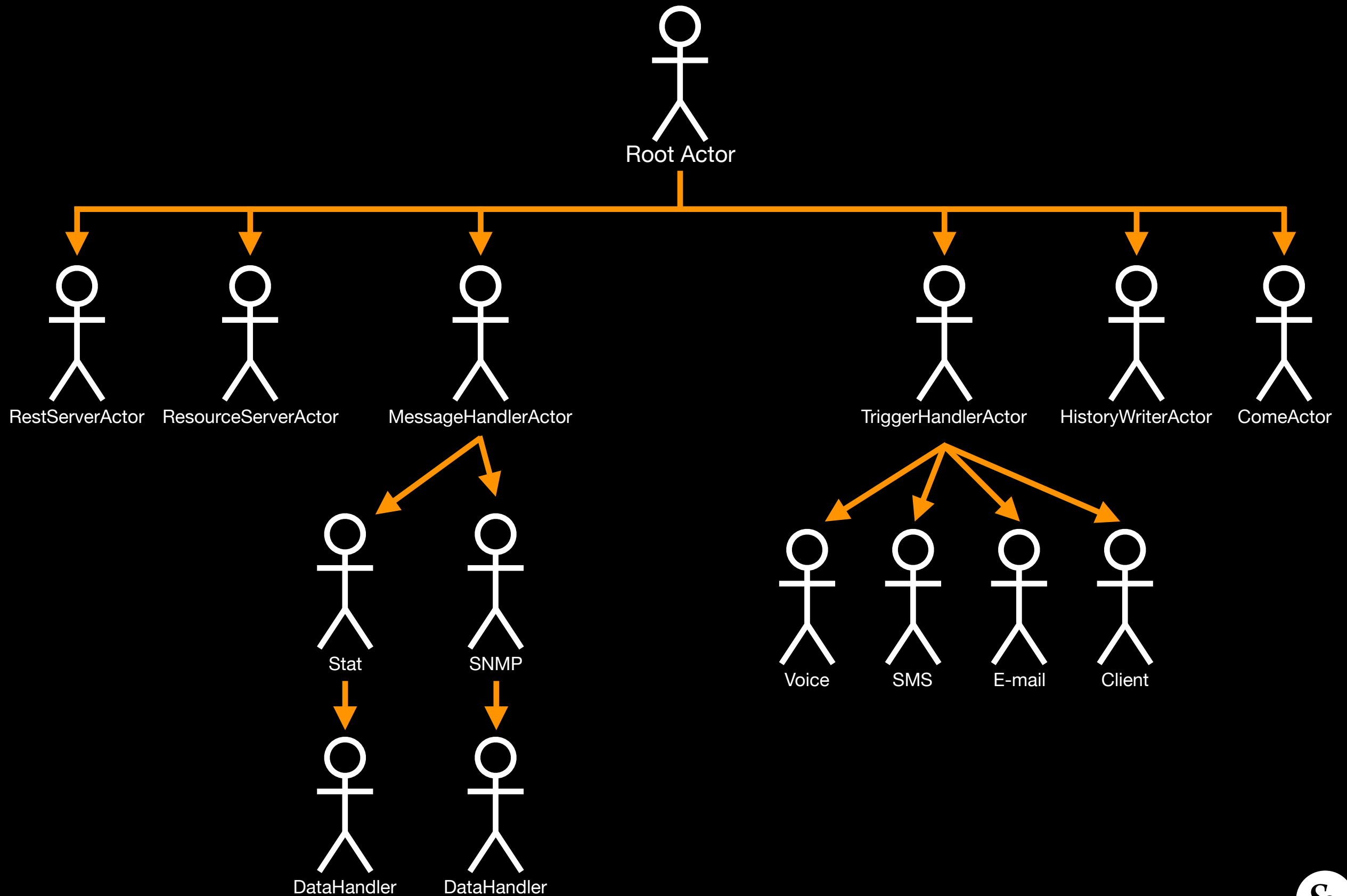
- > принимает сообщения
- > отправляет сообщения
- > порождает дочерние акторы



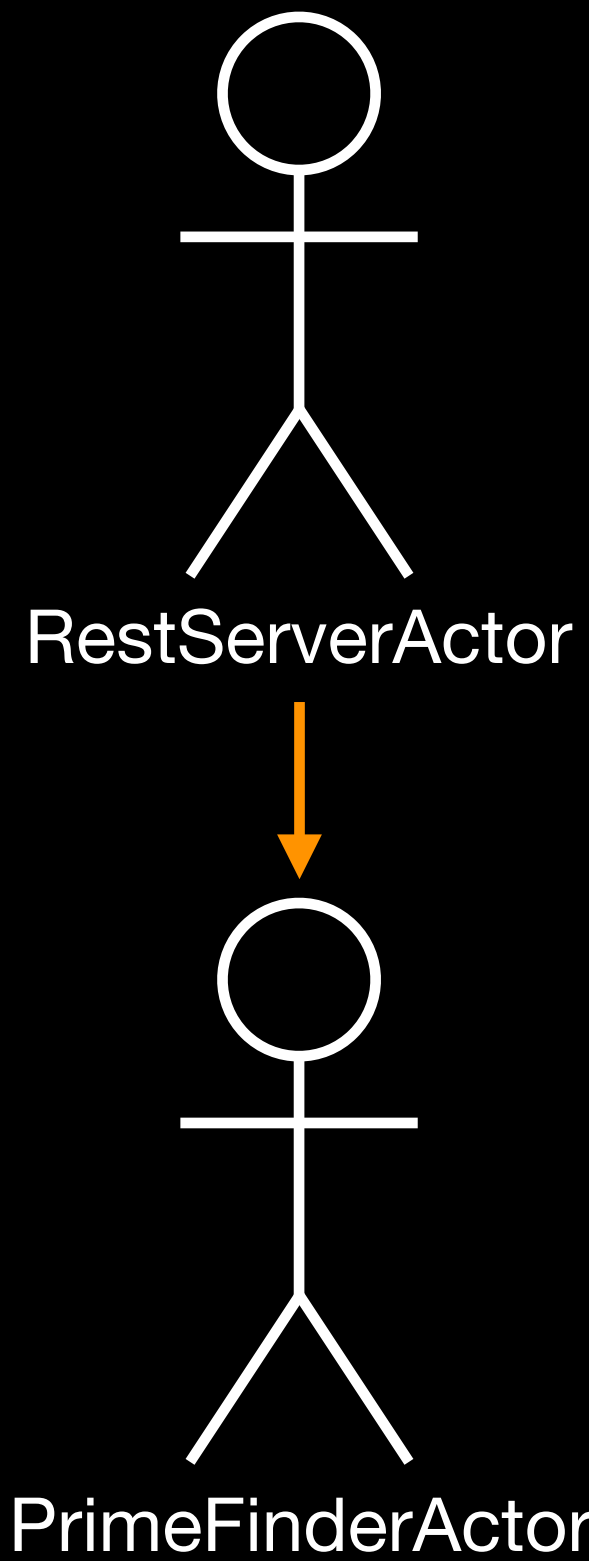
МАСШТАБИРОВАНИЕ ЧЕРЕЗ АКТОРЫ

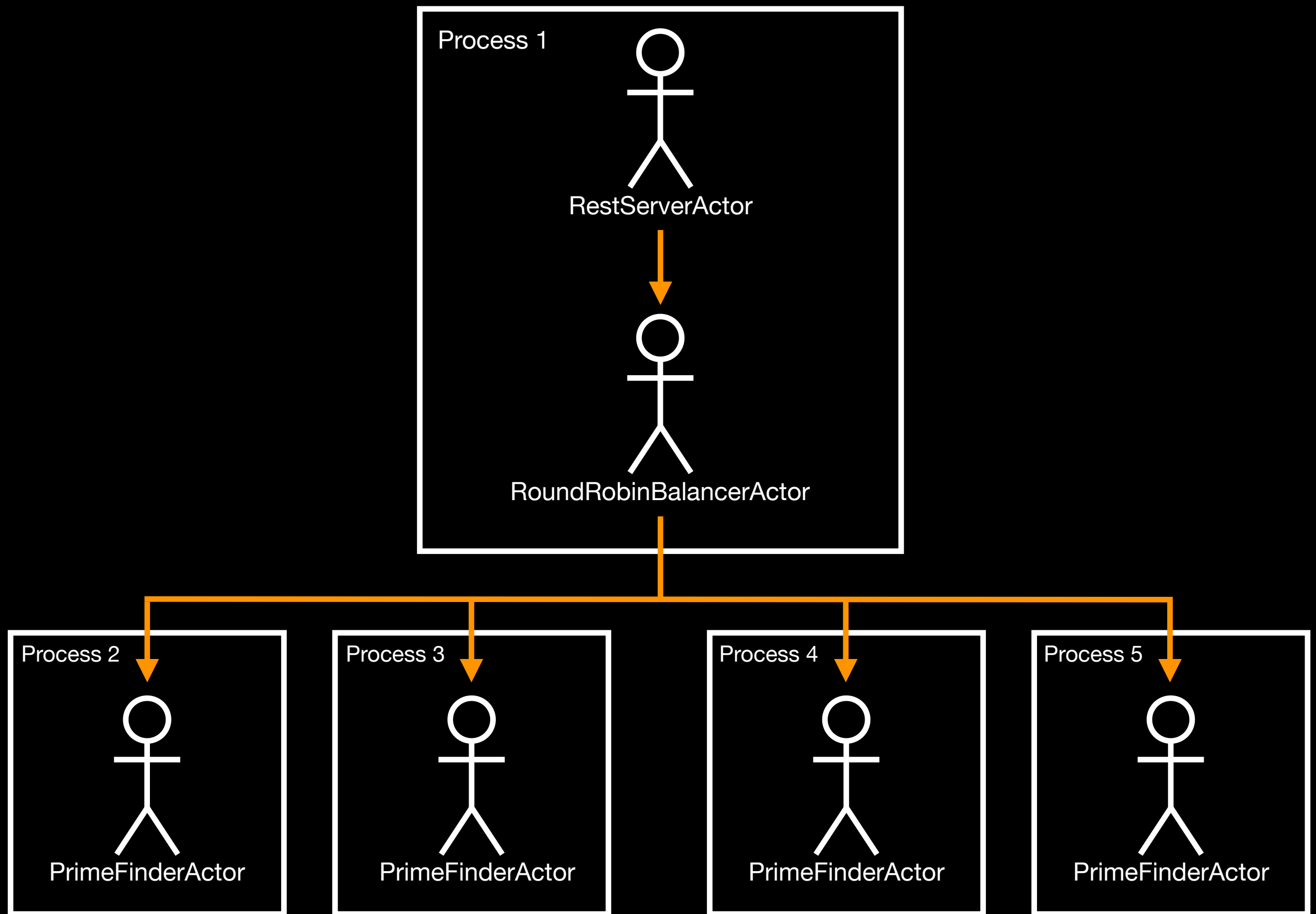
- > Описать приложение в терминах акторов (иерархия)
- > Настроить акторы через конфиг-файл

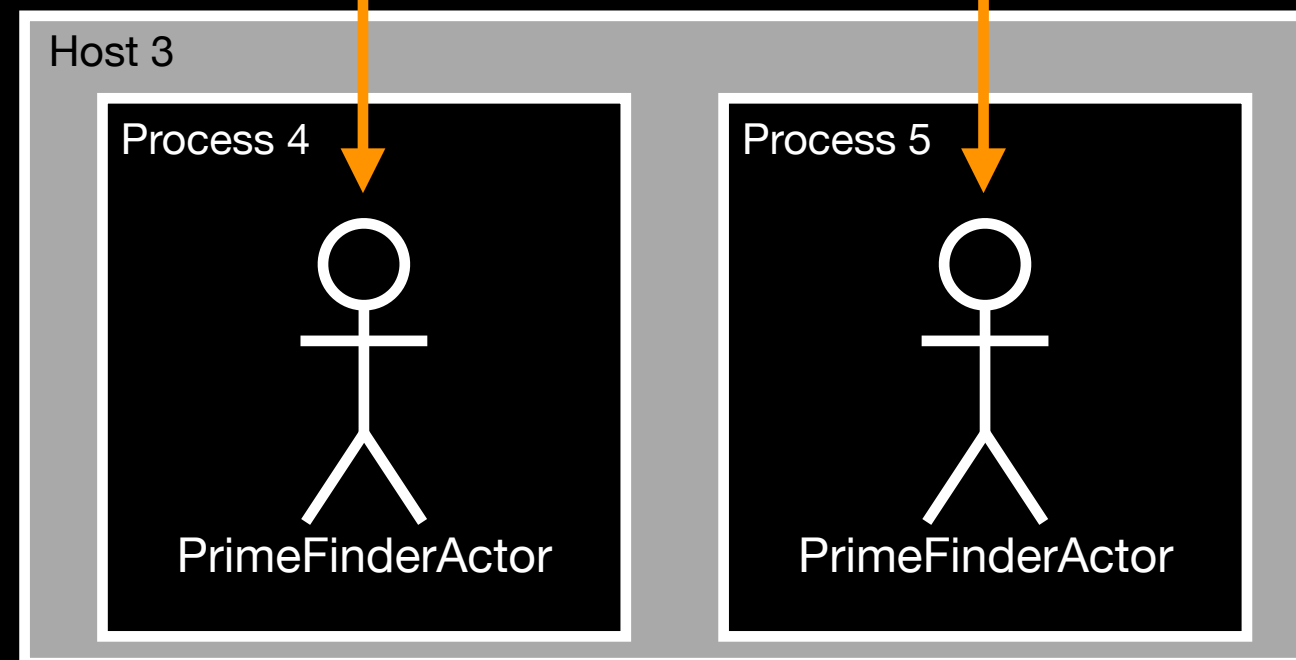
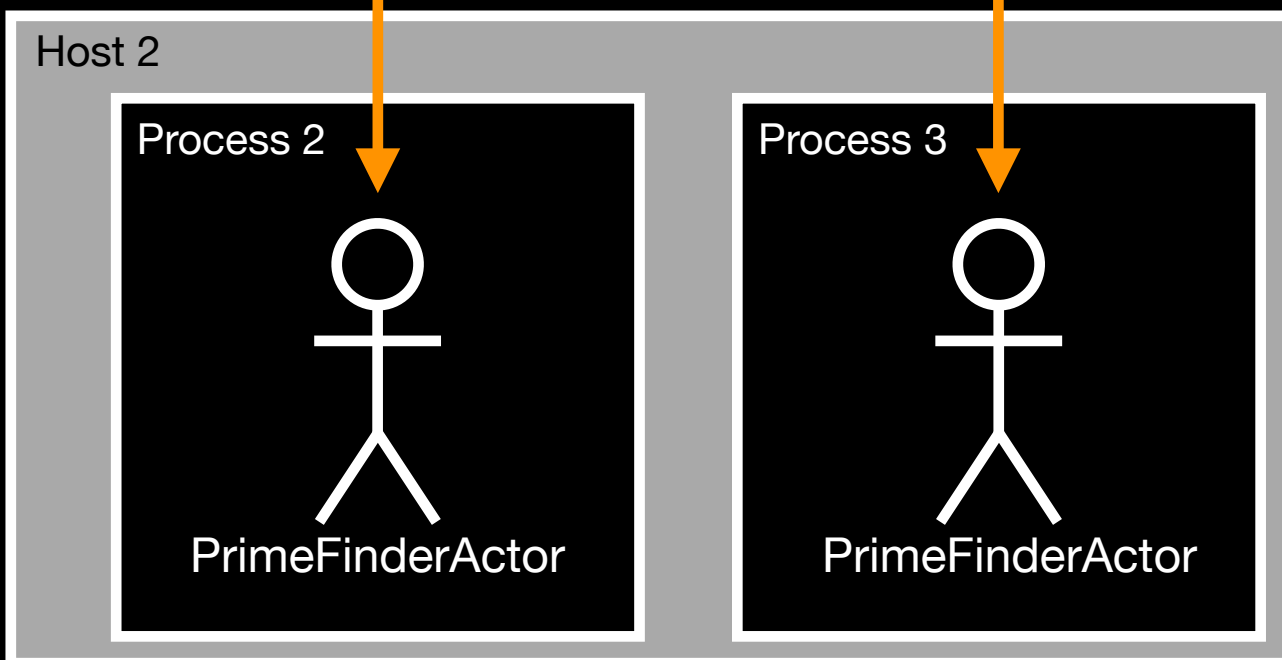
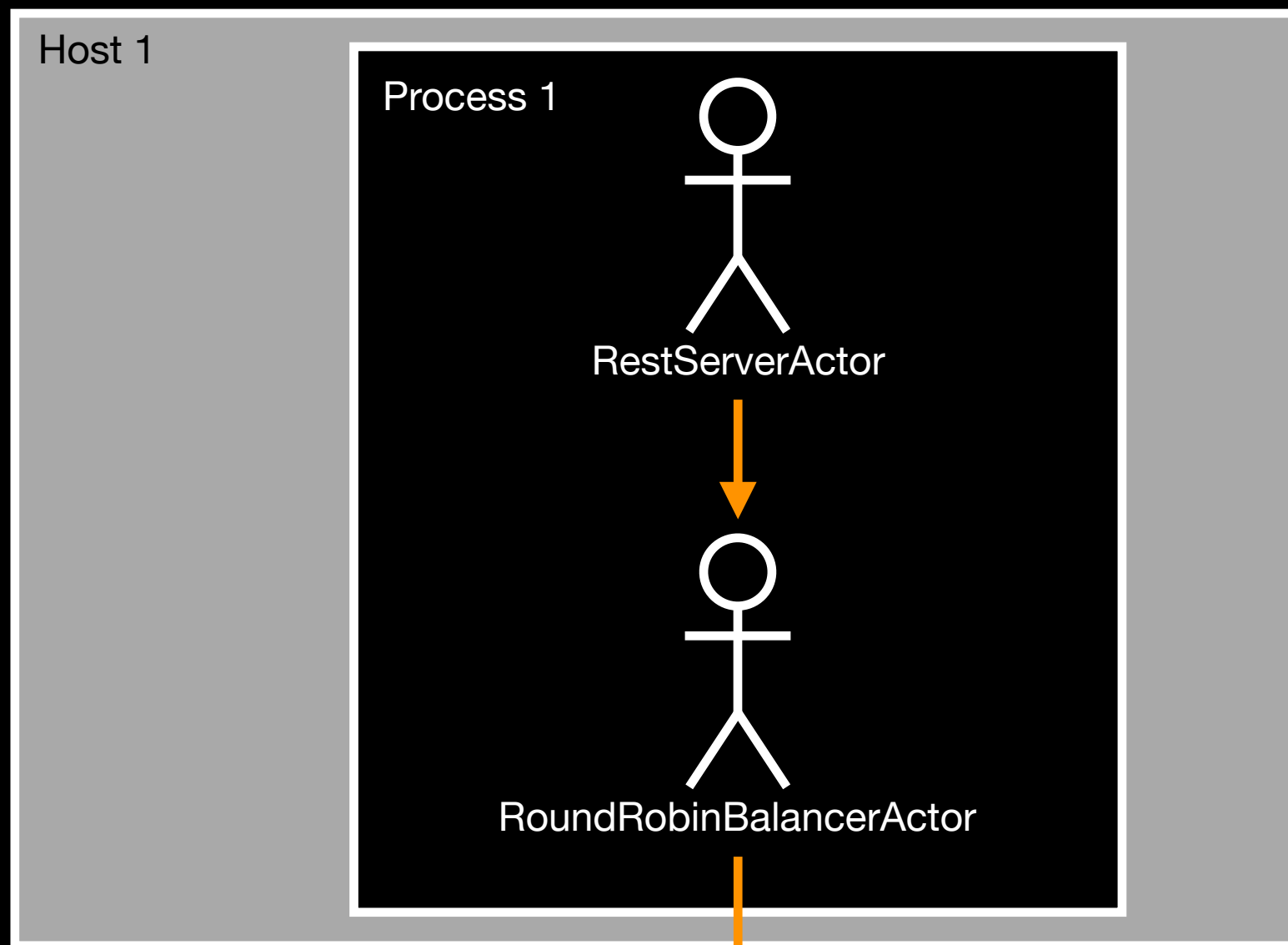
ПРИМЕР ИЕРАРХИИ АКТОРОВ



DEMO







ВИКТОР ИСАЕВ

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