



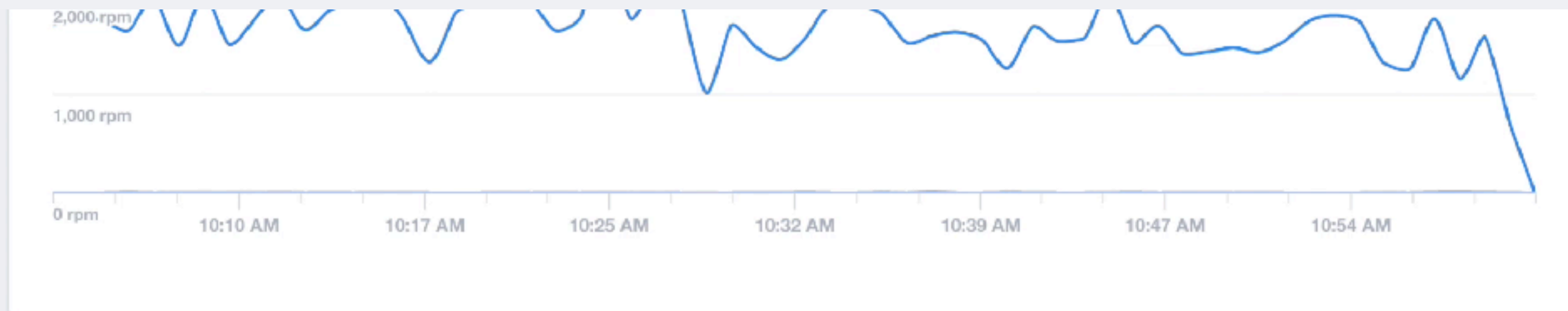
Thomas Watson

@wa7son

github.com/watson



opbeat



Endpoints		Avg. resp. time	95th percentile	RPM	Impact ▲
GET /coffee		107 ms	238 ms	670.13 rpm	
GET /roast/{id}([a-f0-9]{24})		118 ms	148 ms	534.37 rpm	
<u>GET /coffee-level</u>		652 ms	215 ms	16.87 rpm	
GET /roast/favorites/count		1,021 ms	125 ms	9.1 rpm	
HEAD /ping		487 ms	95 ms	18.73 rpm	
GET /pour-rate		2,055 ms	145 ms	3.47 rpm	
GET /brands/{id}([a-f0-9]{24})		4,859 ms	96 ms	0.9 rpm	
GET /roast		20 ms	38 ms	211.2 rpm	
GET /roast/{id}([a-f0-9]{24})		20 ms	38 ms	211.2 rpm	



Debugging Node.js in Production

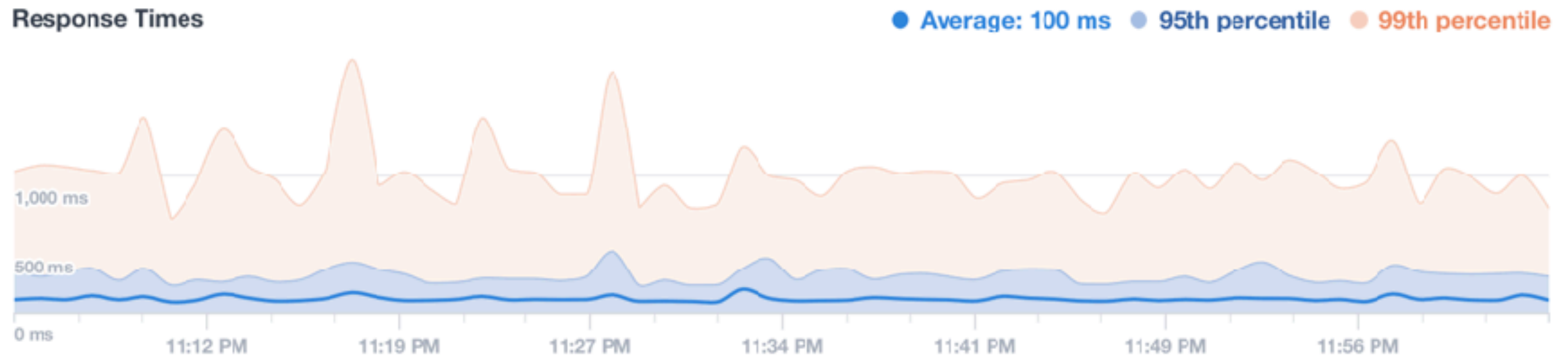
Why is it important?

Why is it harder?

Premature Optimization

Baseline performance

Response Times



Requests Per Minute



Measuring

```
JSON.parse(req.body)
```

```
console.time('json-parse')
```

```
JSON.parse(req.body)
```



```
console.time('json-parse')
```

```
JSON.parse(req.body)
```

```
console.timeEnd('json-parse')
```

```
console.time('json-parse')
```

```
JSON.parse(req.body)
```

```
console.timeEnd('json-parse')
```

```
// json-parse: 154.121ms
```

Causes of Slowness

- (Single-threaded)
- CPU intensive code
- Slow I/O
- Event Loop saturation
- Running out of memory
- Garbage Collection

CPU Intensive Code

- Synchronous I/O
- JSON.parse
- Regular Expressions
- Crypto
- Templates
- ...

Demo Time



Postmortem Debugging

mdb

- mdb (only runs on Solaris and friends)
- Solaris variant
- mdb v8 - https://github.com/joyent/mdb_v8
- core dump (--abort_on_uncaught_exception)
- node binary

Autopsy

```
JS Commands > ::dmods -l ! grep js  
V8 Commands > ::dmods -l ! grep v8  
Useful: ::status, ::dump, ::help <cmd>
```

<https://github.com/nearform/autopsy>

Demo Time

Memory Leaks

Demo Time

ありがとう

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