NODE.JS

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BRIEF

- Server Side Javascript
- Built on google's V8 javascript engine
- Event Driven and Non blocking IO
- Build on C/C++

MOTIVATION

I/O needs to be done differently

```
var query = db.select("select * from T")
```

IN MOST CASES WE DO NOTHING

IO LATENCY

L1- 3 cycles

L2 -14 cycles

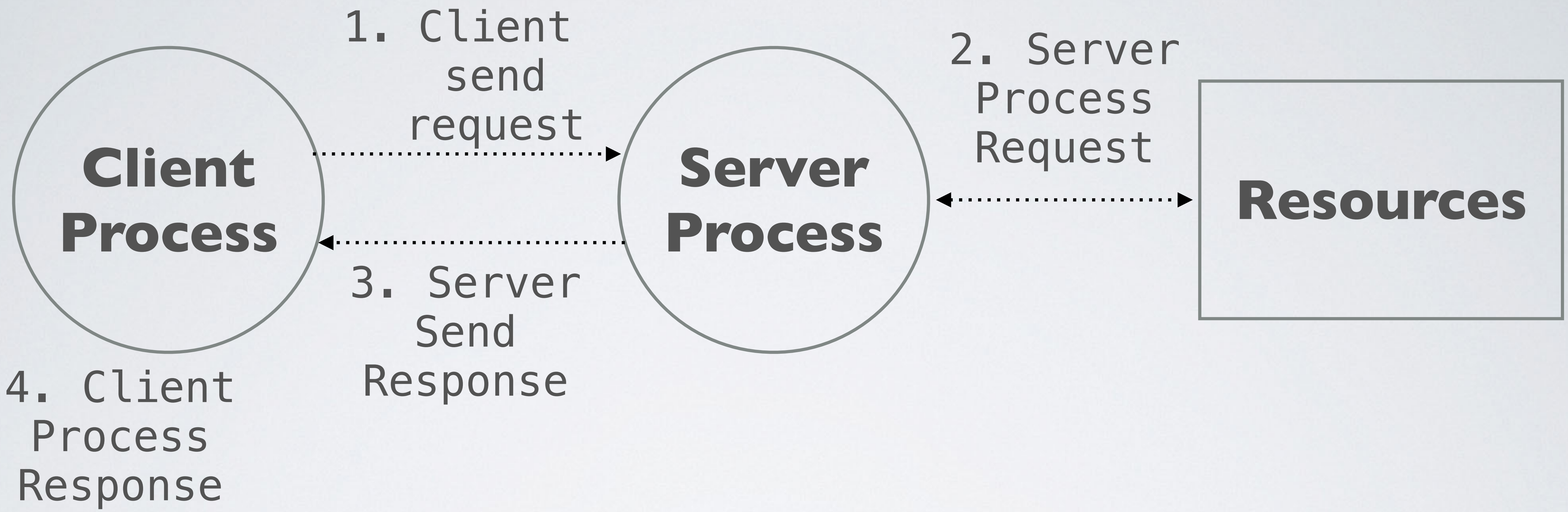
RAM - 250 cycles

DISK - 41,000,000 cycles

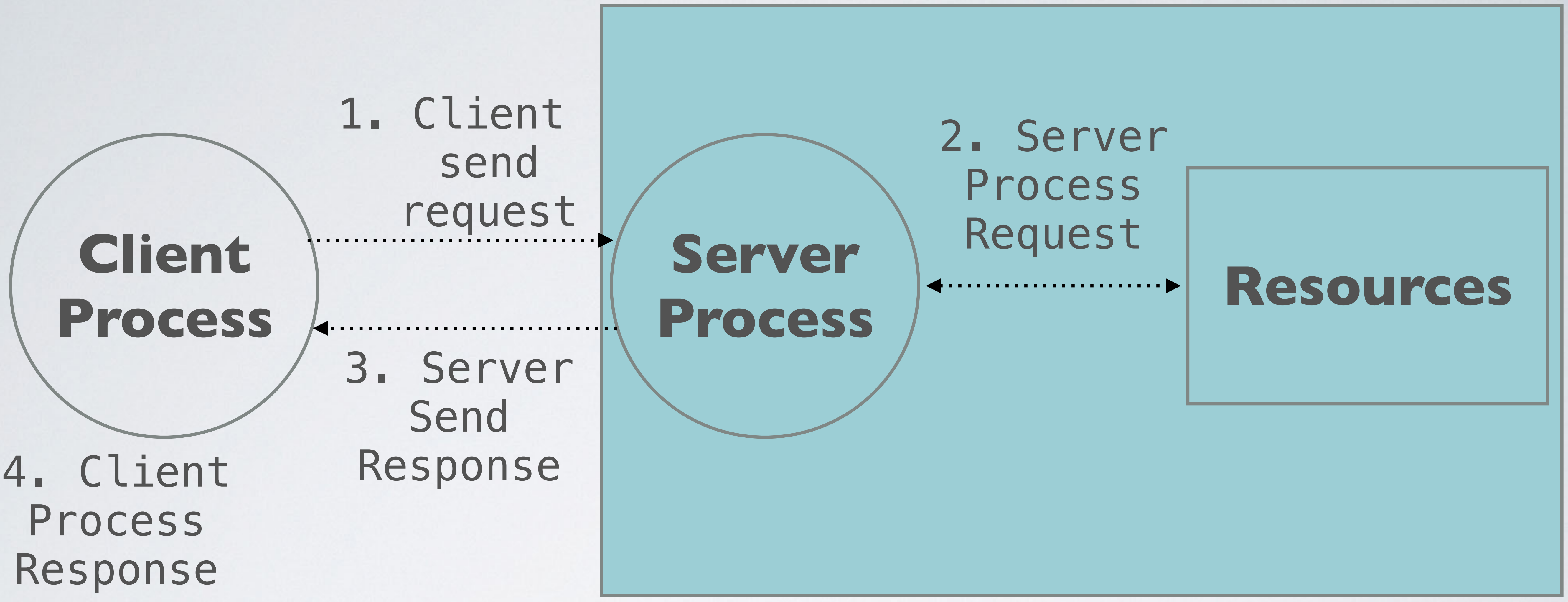
NETWORK - 240,000,000 cycles

BETTER SOFTWARE CAN DO BETTER

WEB SERVERS


1. Client send request
2. Server Process Request
Client Process
Server Process
Resources
3. Server Send Response
4. Client Process Response

WEB SERVER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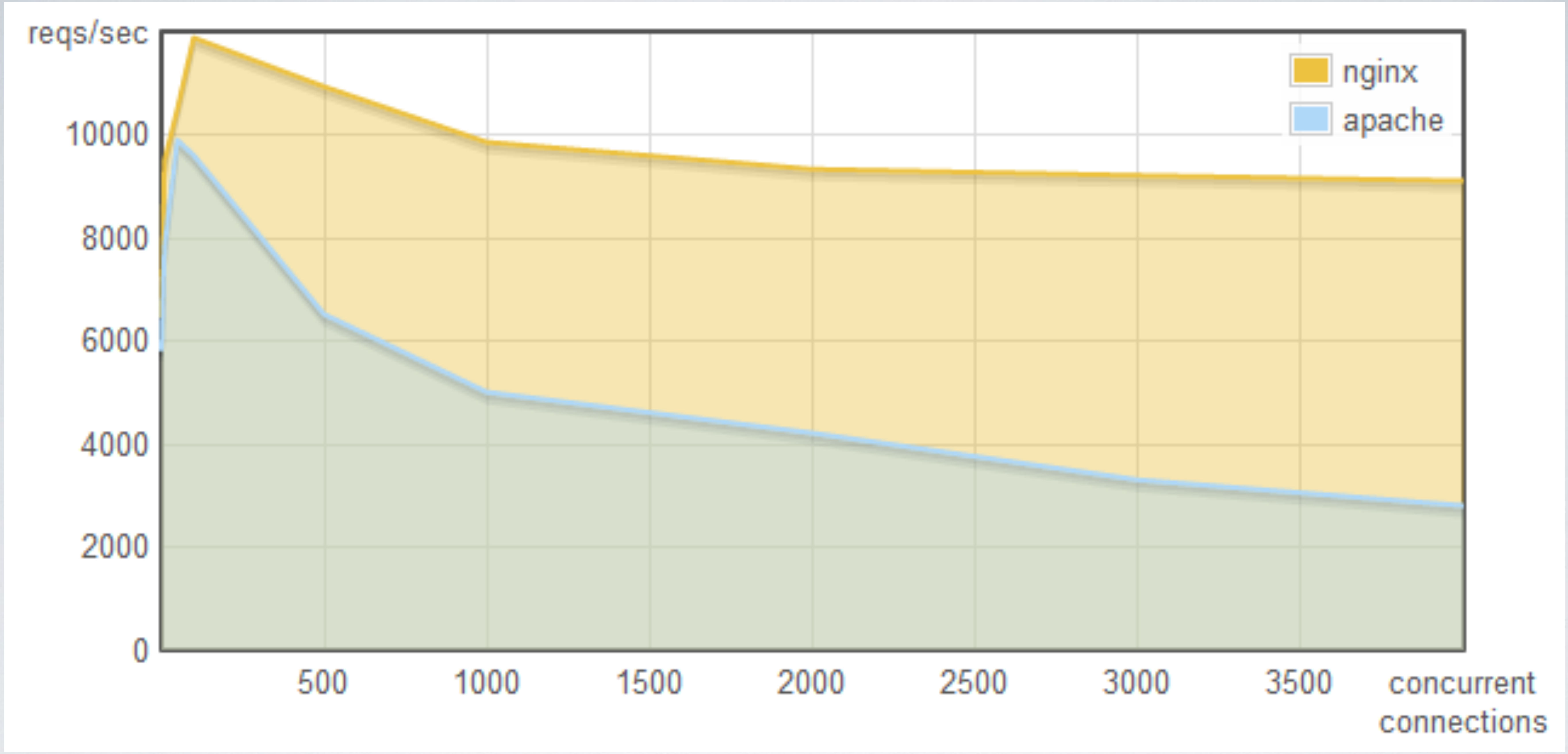
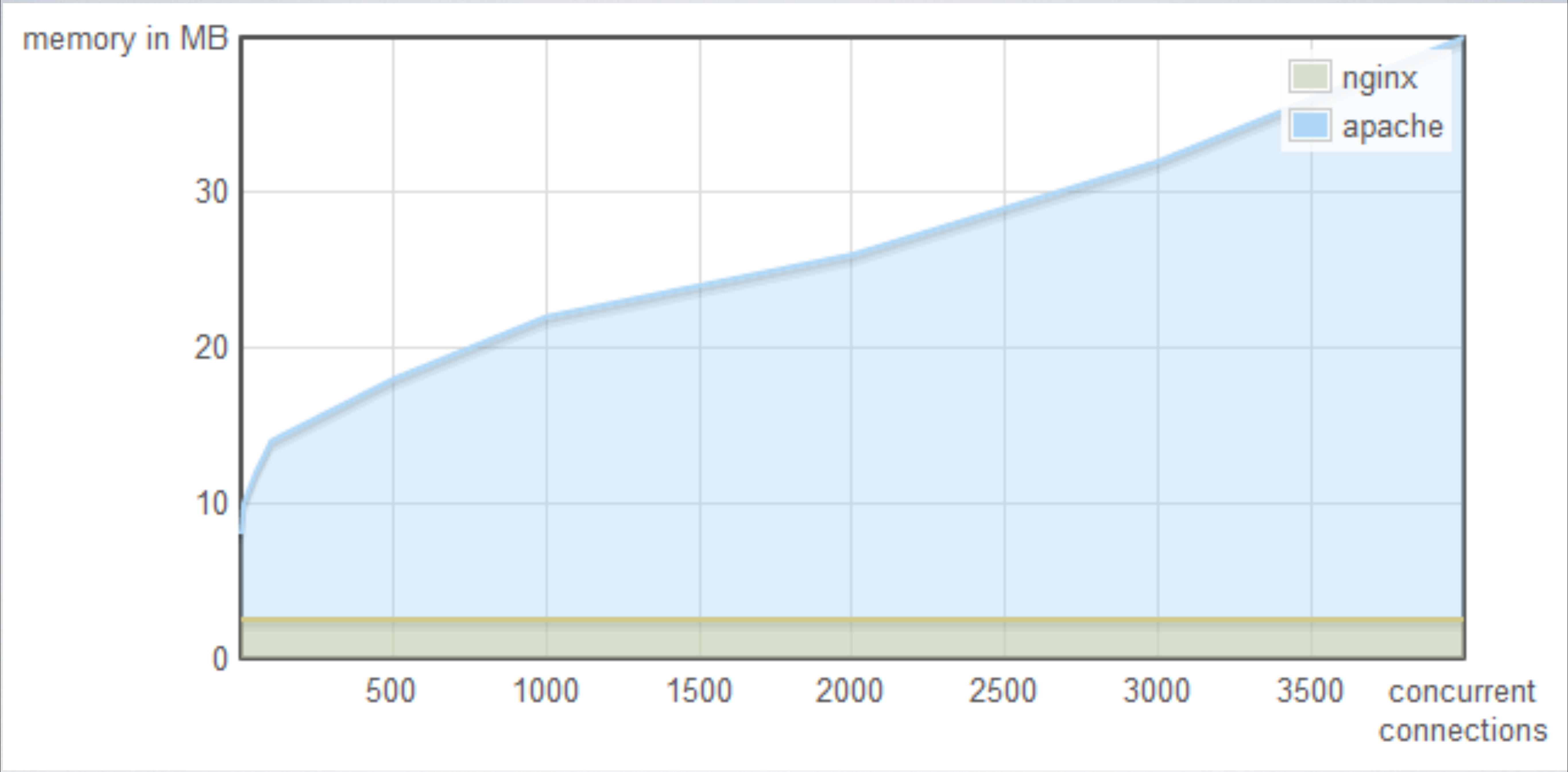
WEB SERVER

APACHE VS NGINX



APACHE VS NGINX

Concurrent connection vs Req/sec



APACHE VS NGINX

Concurrent connection vs Memory

WHATS THE DIFFERENCE?

- APACHE use **thread** per connection
- NGINX use **event loop**

- Context switching cost CPU time
- Each thread require some memory

DOCTOR'S SURGERY VS **FAST FOOD DELIVERY**

CODE LIKE THIS

```
var query = db.select("select * from T")

// use the result
```

Either **block the entire process** or create **multiple execution stack**

WE CAN ALSO DO LIKE THIS

```
var result =(“select *…”,  function(result) {
 // use the result
});
```

Allow program to return to **event loop** immediately

WHY JAVASCRIPT?

- Javascript is designed specifically to be used with event loop
- Anonymous Functions and closures.
- I/O through Event call backs
- Only one call back at a time

AGAIN NODE.JS

- Offers **event driven** and **non blocking I/O** model
- Created by **Ryan Dahl** in **2009**
- Current version is 0.10.25

DEMO

WHEN TO USE NODE

- Realtime applications
- Data Intensive Application

FRAMEWORKS

- Express.js
- Sails

EXPRESS.JS

DEMO

SUMMERY

THE GOOD PART

- Fast and scalable
- Great community
- All javascript

BAD PART

- CPU intensive tasks
- Learning curve

THANKS

Get in touch

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