Los siguientes datos fueron obtenidos utilizando la funcion "console.log()" en la ruta /info (modo fork):

Artillery con params -c 20 -n 50:

Running scenarios... Phase started: unnamed (index: 0, duration: 1s) 19:57:11(-0300) Phase completed: unnamed (index: 0, duration: 1s) 19:57:12(-0300) All VUs finished. Total time: 5 seconds Summary report @ 19:57:15(-0300) ._____ http.requests: 1000 http.response time: min: 4 max: 83 median: 54.1 p95: 71.5 p99: 79.1 vusers.completed: 20 vusers.created: 20 vusers.created_by_name.0: 20 vusers.failed: 0 vusers.session length: min: 2392 p95: 2725

Autocannon con params -d 20 -c 10:

p99: 2725

| Stat | 2.5% | 50% | 97.5% | 99% | Avg | Stdev | Max |
|-----------|--------|--------|--------|--------|-----------|---------|-----------|
| Latency | 130 ms | 149 ms | 263 ms | 286 ms | 162.18 ms | 36.02 m | ns 395 ms |
| Stat | 1% | 2.5% | 50% | 97.5% | Avq | Stdev | Min |
| Req/Sec | 300 | 300 | 659 | 741 | 612.75 | 112.08 | 300 |
| Bytes/Sec | 355 kE | 355 kE | 780 kB | 878 kB | 725 kB | 133 kB | 355 kB |

Node –inspect con chrome y artillery con params -c 20 -n 50: Logger:

```
148
149
                 passport.use("register", registerStrategy);
150
                 passport.use("login", loginStrategy);
151
152
                 passport.serializeUser((user, done) => {
153
                  done(null, user._id);
154
155
156
                 passport.deserializeUser((id, done) => {
157
                   User.findById(id, done);
158
159
                 app.use((req, res, next) => {
  logger.log("info", `metodo: ${req.method}, ruta:${req.url}`);
160
        4.8 ms
161
162
       0.4 ms
                   next();
163
164
                 app.all("/", async (req, res, next) => {
165
166
                   if (req.isAuthenticated()) {
167
                     return next();
168
169
                   return res.render("login.hbs");
170
                 });
171
                 app.use(express.static(path.join( dirname, "../public")));
172
173
174
                 app.use(compression());
175
                 app.get("/login", (req, res) => {
176
177
                   res.render("login.hbs");
178
```

Ruta /info:

```
288
                const info = {
289
                  argumentos: JSON.stringify(args),
290
291
                  path: process.execPath,
292
                  os: process.platform,
293
                  processid: process.pid,
294
                  nodev: process.version,
295
                  folder: process.cwd(),
296
                  memoria: util.inspect(process.memoryUsage()),
297
                  procesadores: cpus.length,
298
299
300
                app.get("/info", (req, res) => {
       0.8 ms
301
                  console.log(info)
302
      12.7 ms
                  res.render("info.hbs", { info });
303
304
305
                app.get("/*", (req, res) => {
306
                  logger.log(
307
                    `ruta: ${req.url} con metodo: ${req.method} es inexistente`
308
309
310
                  res.json({
311
                            `ruta: ${req.url} con metodo: ${req.method} es inexistente`,
                    Error:
312
                  });
313
                });
314
              logger.log("info", isCluster);
315
316
```

El –prof de node.js procesado con –prof-process: (partes mas relevantes)

```
Statistical profiling result from consolelog-06-log, (424 ticks, 5 unaccounted, 8 excluded)

[Shared libraries]:

[Statistical profiling result from consolelog-06-log, (424 ticks, 5 unaccounted, 8 excluded)

[Statistical profiling result from consolelog-06-log, (424 ticks, 5 unaccounted, 8 excluded)

[Statistical profiling result from consolelog-06-log, (424 ticks, 5 unaccounted, 8 excluded)

[Statistical profiling result from consolelog-06-log, (424 ticks, 5 unaccounted)

[Statistical profiling result from consolelog-06-log, (424 ticks, 5 unaccounted)

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[Statistical profiling results from consolelog-06-log, (424 ticks, 5 unaccounted)

[Statistical profiling results from consolelog-06-log, (424 ticks, 5 unaccounted)

[Statistical profiling results from consolelog-06-log, (424 ticks, 5 unaccounted)

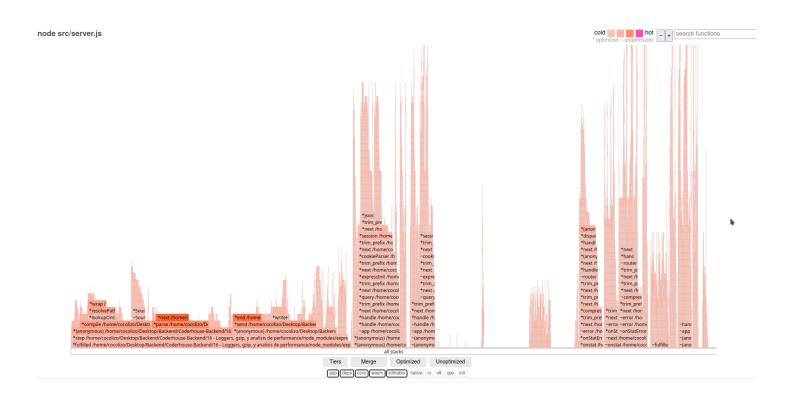
[Statistical profiling results from consolelog-06-log, (424 ticks, 5 unaccounted)

[Statistical profiling results from consolelog-06-log, (424 ticks, 5 unaccounted)

[Statistical profiling results from consolelog-06-log, (424 ticks, 5 unaccounted)

[Sta
```

Diagrama de flama con 0x, autocannon con params -d20 -c100:



Los siguientes datos fueron obtenidos SIN utilizar la funcion "console.log()" en la ruta /info (modo fork):

Artillery con params -c 20 -n 50:

Running scenarios... Phase started: unnamed (index: 0, duration: 1s) 19:56:11(-0300) Phase completed: unnamed (index: 0, duration: 1s) 19:56:12(-0300) All VUs finished. Total time: 5 seconds Summary report @ 19:56:16(-0300) _____ http.response time: min: 3 max: 91 p95: 59.7 p99: 85.6 vusers.completed: 20 vusers.failed: 0 vusers.session length: p95: 2276.1 p99: 2276.1

Autocannon con params -d 20 -c 10:

| Stat | 2.5% | 50% | 97.5% | 99% | Avg | Stdev | Max |
|-----------|--------|--------|--------|--------|-----------|---------|----------|
| Latency | 115 ms | 133 ms | 196 ms | 237 ms | 140.85 ms | 24.14 m | s 328 ms |
| | | | | | | | |
| Stat | 1% | 2.5% | 50% | 97.5% | Avg | Stdev | Min |
| Req/Sec | 407 | 407 | 738 | 800 | 705 | 94.48 | 407 |
| Bytes/Sec | 482 kB | 482 kE | 874 kB | 948 kB | 835 kB | 112 kB | 482 kB |
| | | | | | | | |

Node –inspect con chrome y artillery con params -c 20 -n 50:

Logger:

```
148
149
                 passport.use("register", registerStrategy);
150
                 passport.use("login", loginStrategy);
151
152
                 passport.serializeUser((user, done) => {
153
                   done(null, user. id);
154
                 });
155
                 passport.deserializeUser((id, done) => {
157
                  User.findById(id, done);
158
159
                 app.use((req, res, next) => {
  logger.log("info", `metodo: ${req.method}, ruta:${req.url}`);
160
        2.4 ms
161
162
                   next():
163
                 });
164
165
                 app.all("/", async (req, res, next) => {
166
                   if (req.isAuthenticated()) {
167
                     return next();
168
169
                   return res.render("login.hbs");
170
                 });
171
172
                 app.use(express.static(path.join(__dirname, "../public")));
173
174
                 app.use(compression());
175
176
                 app.get("/login", (req, res) => {
177
                   res.render("login.hbs");
178
```

Ruta /info:

```
288
                const info = {
                  argumentos: JSON.stringify(args),
290
291
                  path: process.execPath,
292
                  os: process.platform,
293
                  processid: process.pid,
                  nodev: process.version,
294
295
                  folder: process.cwd(),
296
                  memoria: util.inspect(process.memoryUsage()),
297
                  procesadores: cpus.length,
298
299
                app.get("/info", (req, res) => {
300
301
                  //console.log(info)
                  res.render("info.hbs", { info });
       2.4 ms
302
303
304
                app.get("/*", (req, res) => {
305
                  logger.log(
306
307
                     "warn",
308
                     `ruta: ${req.url} con metodo: ${req.method} es inexistente`
309
310
                  res.json({
                            `ruta: ${req.url} con metodo: ${req.method} es inexistente`,
311
                    Error:
312
                  });
313
                });
314
315
              logger.log("info", isCluster);
316
```

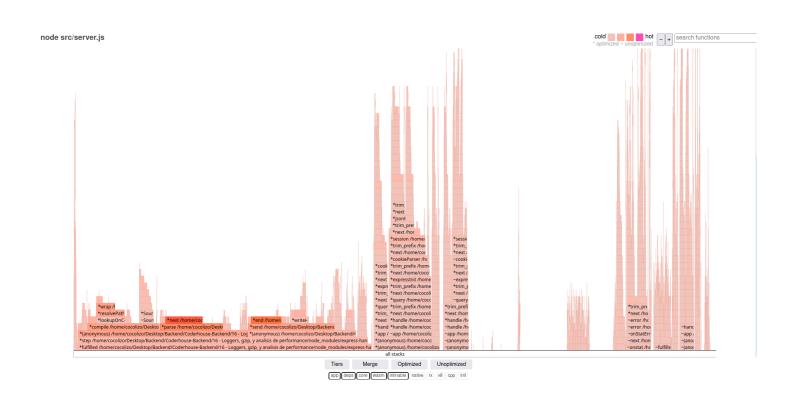
El –prof de node.js procesado con –prof-process: (partes mas relevantes)

```
Struttical profiling result from nonconclosing-oil log. (1876 ticks. 18 unoccounted, 4 excluded).

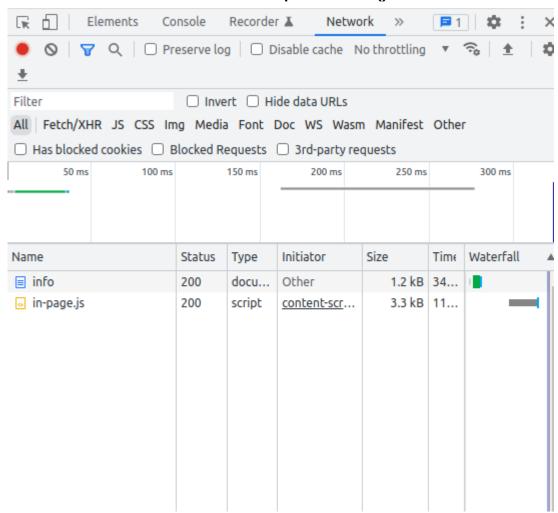
| Part | Institute | Part | P
```

```
2.1% 14.1% __write
0.9% 5.9% __libc_1
                  0.9% 5.9% __libc_read
0.5% 3.3% epoll_pwait
0.5% 3.1% fwrite
                  0.4% 2.8% __pthread_cond_wait 0.3% 2.3% __GI__pthread_mutex_unlock
                                 2.3% _oi_phiread_autex_uniock
2.1% std::basic_ostream<char, std::char_traits<char> >& std::_ostream_insert<char, std::char_traits<char> >(std::basic_ostream<char, std::char_traits<char> >&, char_const*, long)
2.1% _mprotect
1.7% _libc_malloc
1.4% _10_file_xsputh
                  0.3%
0.3%
0.3%
0.2%
                                1.4s _lo_lile_xspuch
1.2k _lll_lock_wait
0.5% syscall
0.5% std::ostream::sentry::sentry(std::ostream&)
0.5% cfree
0.5% _pthread_cond_signal
0.5% _mmap
                                0.3% operator delete(void*)
0.3% _GI__pthread_rwlock_wrlock
0.2% std::ostream::put(char)
0.3% _std::ostream::put(char)
0.2% std::ostream&std::ostream::_M_insert<unsigned long>(unsigned long)
                  0.1%
0.1%
0.0%
0.0%
                              0.2% std::_detail:_Prime_rehash_policy::_M_next_bkt(unsigned long) const
0.2% operator new(unsigned long)
0.2% operator delete[](void*)
0.2% operator delete[](void*)
0.2% flush
0.2% accept4
0.2% __vsnprintf
0.2% __unmap
0.2% __lib_vwrite
0.2% __clock_gettime
0.2% __clock_gettime
0.2% __oseth
                   0.0%
0.0%
                   0.0%
0.0%
                   0.0%
0.0%
                   0.0%
0.0%
                   0.0% 0.2% _IO_setb
0.0% 0.2% _IO_padn
                   0.0%
0.0%
                                  0.2% _IO_file_sync
0.2% _IO_default_xsputn
[Summary]
   ticks total nonlib name
297 7.7% 51.7% JavaScript
     267 6.9% 46.5% C++
136 3.5% 23.7% GC
   3302 85.2%
                                              Shared libraries
                11.5% 0.3% *Write
8.6% 0.3% std::basic_ostream<char, std::char_traits<char> >& std::_ostream_insert<char, std::char_traits<char> >(std::basic_ostream<char, std::char_traits<char> >&, char const*, long)
7.1% 0.3% _approtect
5.7% 0.2% _libc_malloc
5.7% 0.2% _libc_malloc
6.9% _0.2% _libc_malloc
6.9% _0.2% _libc_malloc
6.9% _0.2% _lo_file_xsputn
```

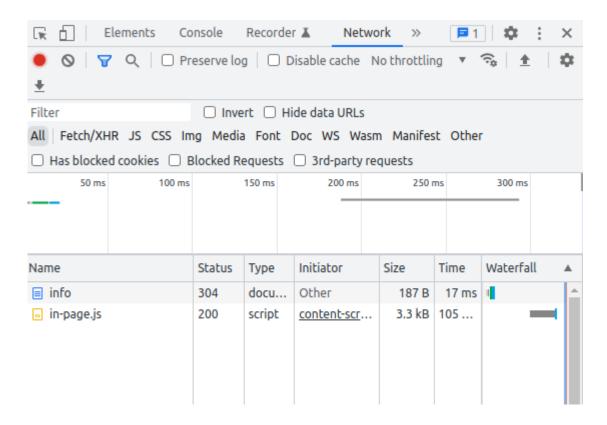
Diagrama de flama con 0x, autocannon con params -d20 -c100:



Ruta /info sin utilizar "compression()":



Ruta /info utilizando "compression()":



Conclusiones:

Observando los datos obtenidos se puede entender que al no utilizar la funcion "console.log()" en la ruta de /info, los request a esta misma ruta tuvieron una respuesta mas rapida que al utilizar la funcion "console.log()".

Asimismo se ve una mayor optimizacion en el codigo, si interpretamos el grafico de flama, ya que cuando no se utiliza "console.log()" se ven picos mas "delgados" a la derecha del diagrama.

Tanto Artillery como Autocannon nos dan una idea muy clara de los tiempos de respuesta con y sin console.log(), esta a la vista la velocidad de respuesta en cada caso.

En tanto en el modo -inspect con chrome se puede ver el tiempo de los procesos menos performantes se multiplican hasta 5 veces utilizando "console.log()"

En el –prof de node se puede tomar la diferencia de "ticks" lo que da a lugar como interpretacion de que se realizaron mas operaciones cuando el codigo se corre con la funcion "console.log()", haciendo de este un codigo menos optimizado.

Sin lugar a dudas no utilizar console.log() en la ruta de /info nos da un mayor rendimiento al hacer requests a esta ruta, por lo que como conclusion puedo decir que no es aconsejable el utilizar console.log() en el codigo, en especial cuando no esta en etapa de desarrollo.

Asimismo esta claro que es recomendable utilizar compression() en todas las rutas de nuestro proyecto, ya que el temaño de las paginas es considerablemente menor a cuando no se utiliza, en nuestra prueba en la ruta /info fue de casi 7 veces menor el tamaño.