

RAM	SWAP Space
RAM \leq 2GB	RAM 크기의 2배 (최소 32MB)
2GB < RAM < 32GB	4GB + (RAM - 2GB)
32GB \leq RAM	RAM 크기에 1배



```
[ec2-user@ip-172-30-0-233 ~]$ free -h
```

	total	used	free	shared	buff/cache	available
Mem:	964M	136M	607M	564K	220M	667M
Swap:	2.0G	0B	2.0G			

<--- JS stacktrace --->

FATAL ERROR: Ineffective mark-compacts near heap limit Allocation failed - JavaScript heap out of memory

```
1: 0xa3ac30 node::Abort() [node]
2: 0x970199 node::FatalError(char const*, char const*) [node]
3: 0xbba76e v8::Utils::ReportOOMFailure(v8::internal::Isolate*, char const*, bool) [node]
4: 0xbbaae7 v8::internal::V8::FatalProcessOutOfMemory(v8::internal::Isolate*, char const*, bool) [node]
5: 0xd76d05 [node]
6: 0xd7788f [node]
7: 0xd856cb v8::internal::Heap::CollectGarbage(v8::internal::AllocationSpace, v8::internal::GarbageCollectionReason, v8::GCCallbackFlags) [node]
8: 0xd8928c v8::internal::Heap::AllocateRawWithRetryOrFailSlowPath(int, v8::internal::AllocationType, v8::internal::AllocationOrigin, v8::internal::AllocationAlignment) [node]
9: 0xd5796b v8::internal::Factory::NewFillerObject(int, bool, v8::internal::AllocationType, v8::internal::AllocationOrigin) [node]
10: 0x109ffbf v8::internal::Runtime_AllocateInYoungGeneration(int, unsigned long*, v8::internal::Isolate*) [node]
11: 0x14491d9 [node]
Aborted
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[ec2-user@ip-172-30-0-233 backend]\$ free -h

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Mem:	964M	111M	628M	276K	225M	692M
Swap:	2.0G	19M	2.0G			

[ec2-user@ip-172-30-0-233 backend]\$

Heap Memory ?

Solutions - Memory SWAP

Amazon Linux 2 기준

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[ec2-user@ip-172-30-0-233 backend]$
```


Heap Memory ?

Solutions

1. Node 의 메모리 늘리기

Node Js 의 기본 메모리 Size : 512MB

(v12↓: 1.35GB / v14↓: 2GB / v14↑: 4GB)

여기가 문제였으면, 이미 PC에서 컴파일 중 터졌어야 했다.

2. EC2 용량 늘리기 및 Auto Scale

항상 비용이 문제다.

Auto Scale은 일단 구동이 된 이후에 문제이다.

3. 로컬환경에서 컴파일 후 완료된 파일만 업로드 하기

최후의 방법

4. 메모리 스왑

매우 좋은 방법은 아니지만 해볼만 하다.