

PART 01

Processes	CPU time	Wall-clock time	Max processes
20000	1.4	1.55	1048576
40000	1.225	1.45	1048576
100000	0.91	1.07	1048576
300000	0.77	0.88	1048576

PART 02

```
iex --erl "+P 3000000" processes.ex
```

Processes	CPU time	Wall-clock time	Max processes
300000	0.80	1.05	4194304
1000000	0.914	1.086	4194304
2000000	0.994	1.2375	4194304
4000000	1.04125	1.35725	4194304

```
:observer.start
```

Number of Logical CPUs	Number of Online Schedulers
8	8

After running 1,000,000 processed

Greatest scheduler utilization	Largest Memory Usage
65%	2400 MB

```
> :math.log2(1048576)
> 20.0
```

Since log2(max\_number\_of\_processes) is an integer, it is a power of 2

Part 03

erlang:system\_info/1:

The `erlang:system_info/1` function provides information about the Erlang system, including process limits, memory, version, and more.

**process\_limit:** **Usage:** `erlang:system_info(process_limit)` **Description:** Returns the maximum number of processes that the Erlang VM can create. This limit is usually configurable and can be useful to monitor or control for high-concurrency applications.

### **`erlang:statistics/1`**

The `erlang:statistics/1` function provides various runtime statistics of the Erlang VM, such as memory usage, reductions, and time metrics.

**runtime:** **Usage:** `erlang:statistics(runtime)` **Description:** Returns the total runtime of the Erlang VM in milliseconds, excluding time when the system is idle.

**wall\_clock:** **Usage:** `erlang:statistics(wall_clock)` **Description:** Returns the elapsed wall-clock time (real time) since the Erlang VM started, in milliseconds. This includes idle time and is useful for tracking total uptime.

The `:die` message in Erlang (and Elixir) is a convention used to gracefully terminate a spawned process. When a process receives `:die`, it knows to stop its operations, allowing it to clean up or log information before exiting. This provides a controlled and predictable way to end processes without abruptly killing them, enhancing code clarity and stability.