Rapport between Static, Dynamic and Guided load balancing to calculate the number of prime number.

This experience was realized by QUIEF Hippolyte *(50171350) using a computer with a processor Intel i7 2.7GHz and 8Go of RAM on Linux (Ubuntu 16.04).*

This experience have the goal to demonstrate the difference between a Static, Dynamic and Guided load balancing approach. A short and small program in C using OMP library was created, this program computes the total of prime numbers between 1 and 200000, which is 17984.

This program can take different load approach and different number of thread.
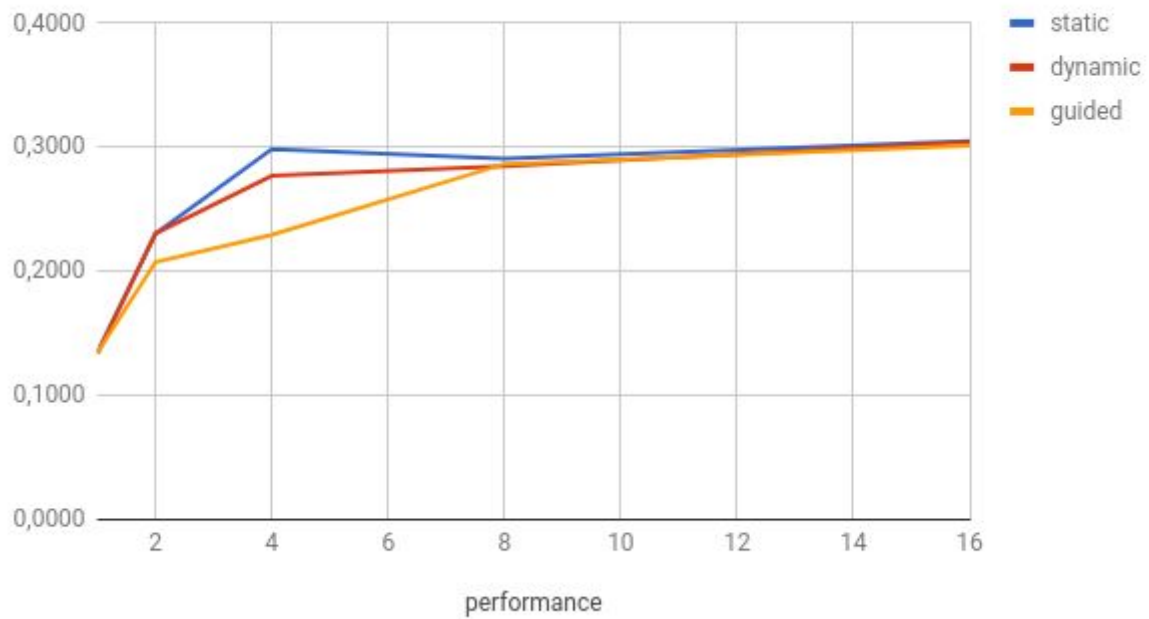
exec time	1	2	4	8	16
static	7,43	4,34	3,35	3,44	3,28
dynamic	7,48	4,34	3,61	3,51	3,29
guided	7,44	4,82	4,36	3,49	3,32
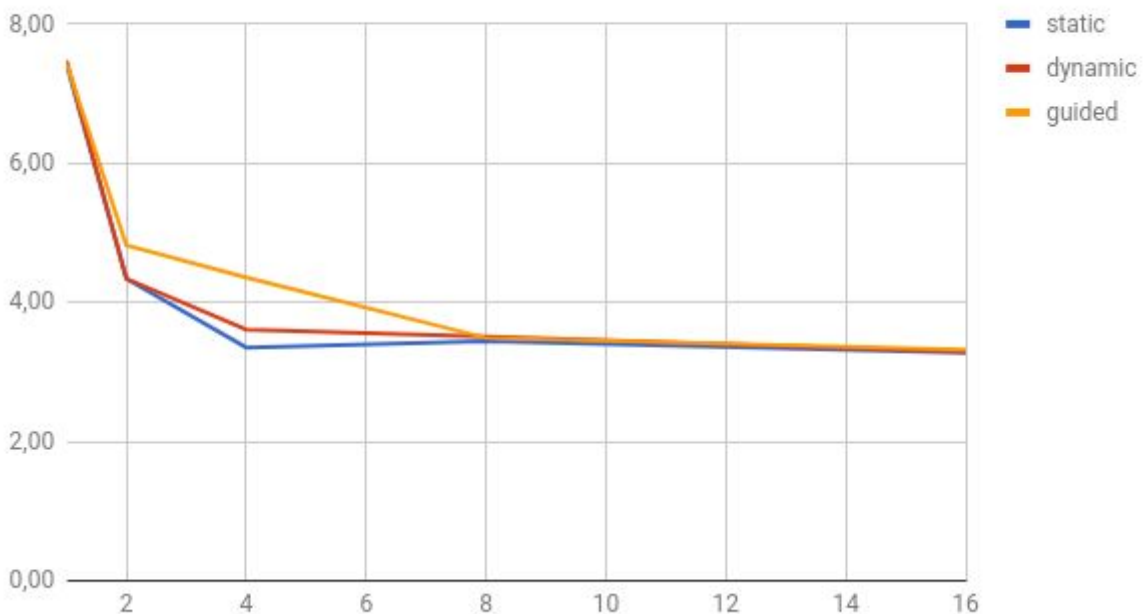
performance (1/exec time)	1	2	4	8	16
static	0,1346	0,2304	0,2985	0,2907	0,3049
dynamic	0,1337	0,2304	0,2770	0,2849	0,3040
guided	0,1344	0,2075	0,2294	0,2865	0,3012

1, 2, 4, 8 et 16

We can see that the 3 differents approaches show a real change in time computation between 2 and 8 threads. After 8 threads, the results are globally similar.