|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Optimization flags | Execution 1 | Execution 2 | Execution 3 | Mean time | Speedup |
| None | 16578209us | 17194254us | 16940662us |  |  |
| -O | 10183098us | 10316279us | 9846120us |  |  |
| -O2 | 10074655us | 10097865us | 9729460us |  |  |
| -O3 | 1593375us | 1555106us | 1567754us |  |  |
| -Ofast | 1479205us | 1541439us | 1530599us |  |  |

The following table is for 100 iterations and CONVERTGRB2RGBA

Optimization flags here: <https://gcc.gnu.org/onlinedocs/gcc/Optimize-Options.html>

Some troubles in using optimization flags:

<https://stackoverflow.com/questions/11546075/is-optimisation-level-o3-dangerous-in-g>

<https://stackoverflow.com/questions/25198018/compiling-in-gcc-is-o3-harmful?noredirect=1&lq=1>

The following table is for 100 iterations and CONVERTGRB2RGBA\_2

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Optimization flags | Execution 1 | Execution 2 | Execution 3 | Mean time | Speedup |
| None | 9815982us | 10356577us | 9566724us |  |  |
| -O | 1584891us | 1679065us | 1771057us |  |  |
| -O2 | 1641585us | 1773833us | 1574981us |  |  |
| -O3 | 1565442us | 1501222us | 1549904us |  |  |
| -Ofast | 1589518us | 1561597us | 1630990us |  |  |

Practica realizada con un AMD Ryzen 5 3500U

Con 1000, sin optimizaciones, 97877424us, 96168059us

|  |  |  |  |
| --- | --- | --- | --- |
| Optimization flags | Execution 1 | Execution 2 | Execution 3 |
| None | 97877424us | 96168059us | 95501897us |
| -O | 15870262us | 15976569us | 16288209us |
| -O2 | 15572202us | 16062451us | 16360800us |
| -O3 | 15160733us | 15442183us | 15247616us |
| -Ofast | 15411518us | 16039516us | 17372072us |

Crear script para ejecutar n veces y generar un csv automáticamente.

Con 1000 iteraciones y memory alignement en el struct uchar3

|  |  |  |  |
| --- | --- | --- | --- |
| Optimization flags | Execution 1 | Execution 2 | Execution 3 |
| None | 95980655us | 96051743us | 94827184us |
| -O | 16710198us | 17759846us | 16368038us |
| -O2 | 16914941us | 16691046us | 16854331us |
| -O3 | 15879255us | 15953445us | 15991933us |
| -Ofast | 15947108us | 16373531us | 15818892us |

Con 100 iteraciones y memory alignement en el struct uchar3

|  |  |  |  |
| --- | --- | --- | --- |
| Optimization flags | Execution 1 | Execution 2 | Execution 3 |
| None | 9726024us | 9537323us | 9934510us |
| -O | 1851972us | 1768765us | 1697254us |
| -O2 | 1729664us | 1792535us | 1833873us |
| -O3 | 1762586us | 1535765us | 1625286us |
| -Ofast | 1702729us | 1678778us | 1594688us |

Con 1000 iteraciones, memory alignement en el struct uchar3 y paralelizando el primer for

|  |  |  |  |
| --- | --- | --- | --- |
| Optimization flags | Execution 1 | Execution 2 | Execution 3 |
| None |  |  |  |
| -O |  |  |  |
| -O2 |  |  |  |
| -O3 |  |  |  |
| -Ofast |  |  |  |

Con 1000 iteraciones, memory alignement en el struct uchar3 y paralelizando el segundo for

|  |  |  |  |
| --- | --- | --- | --- |
| Optimization flags | Execution 1 | Execution 2 | Execution 3 |
| None |  |  |  |
| -O |  |  |  |
| -O2 |  |  |  |
| -O3 |  |  |  |
| -Ofast |  |  |  |