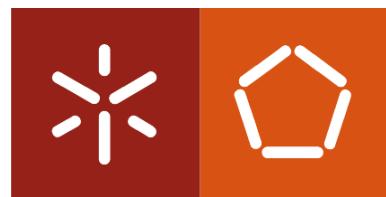


NAS parallel benchmarks

Hugo Gião
PG41073

April 21, 2020



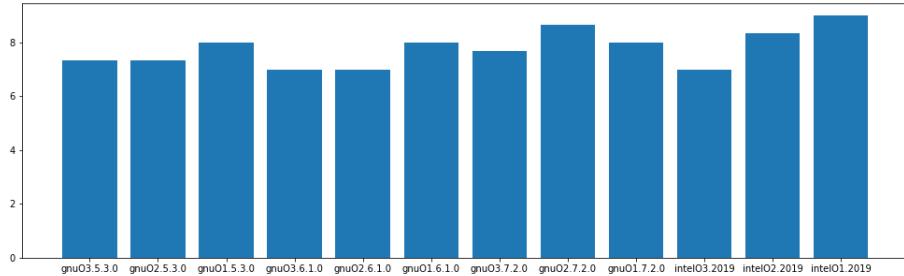
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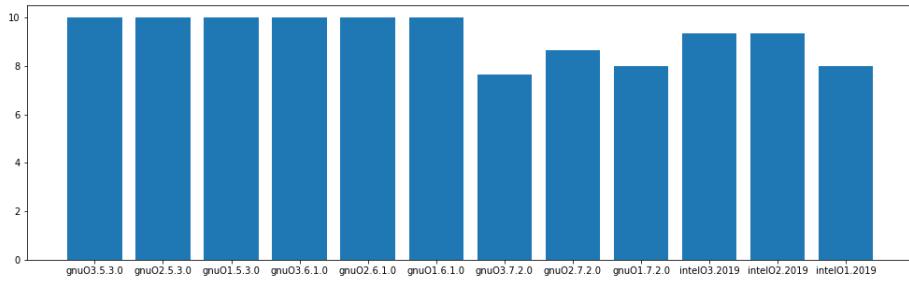
1 Performance dos *benchmarks*

1.1 Versão sequencial

1.1.1 Teste IS classe B

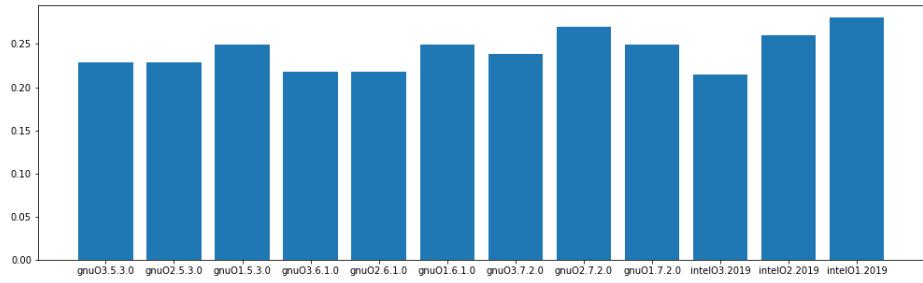


(a) Testes corridos numa maquina r641

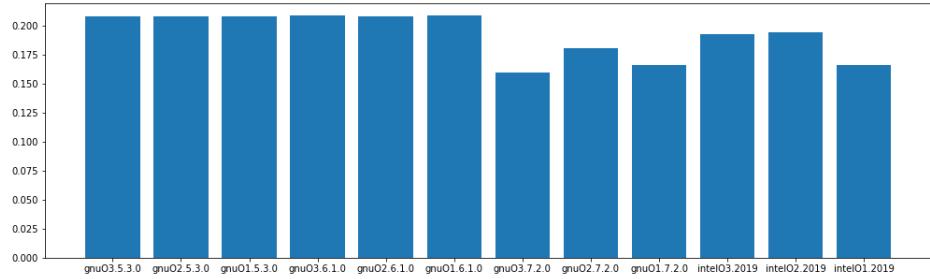


(b) Testes corridos numa maquina r662

Figure 1: Tempo total de uma execução em segundos

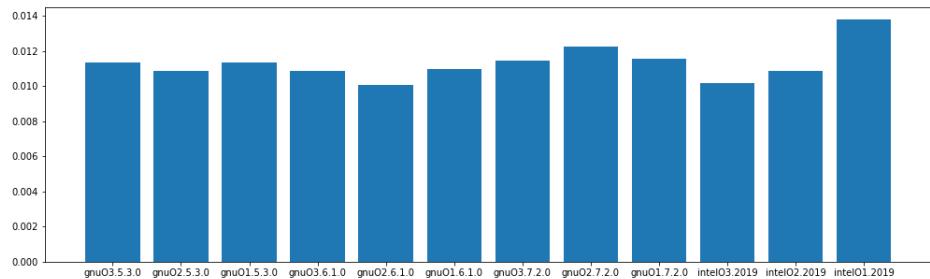


(a) Testes corridos numa maquina r641

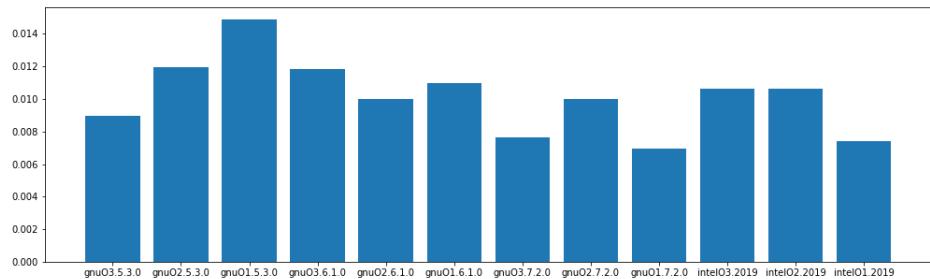


(b) Testes corridos numa maquina r662

Figure 2: Total tempo gasto em *user time* durante uma execução em segundos

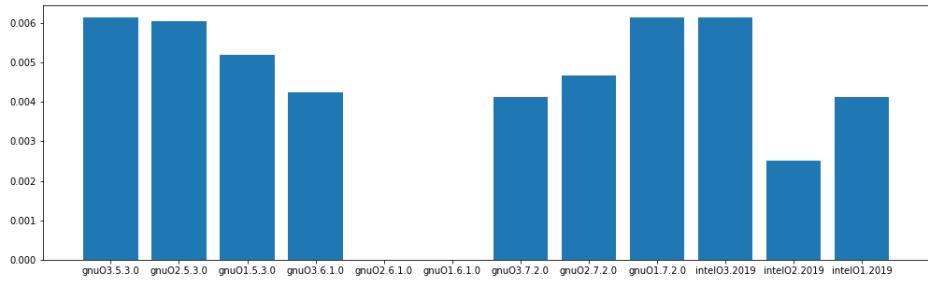


(a) Testes corridos numa maquina r641

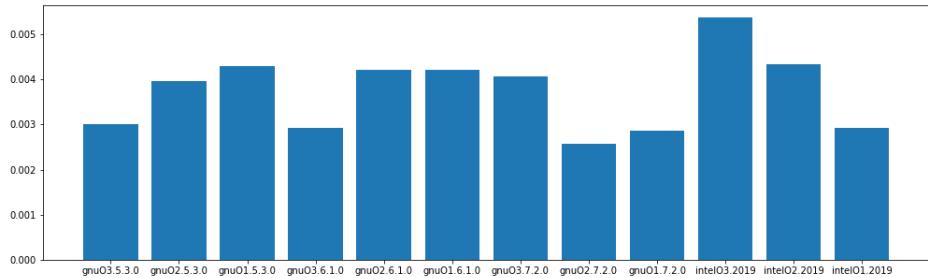


(b) Testes corridos numa maquina r662

Figure 3: Total tempo gasto em *system time* durante uma execução em segundos

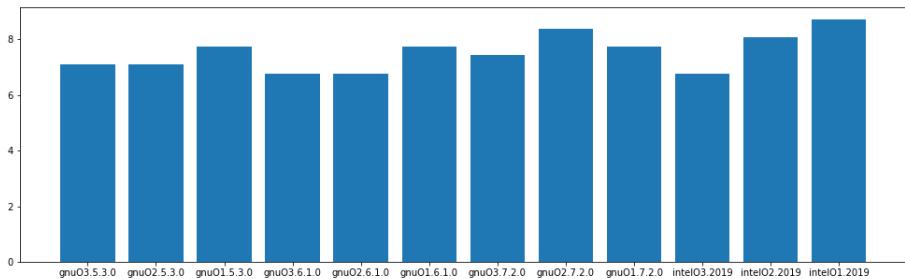


(a) Testes corridos numa maquina r641

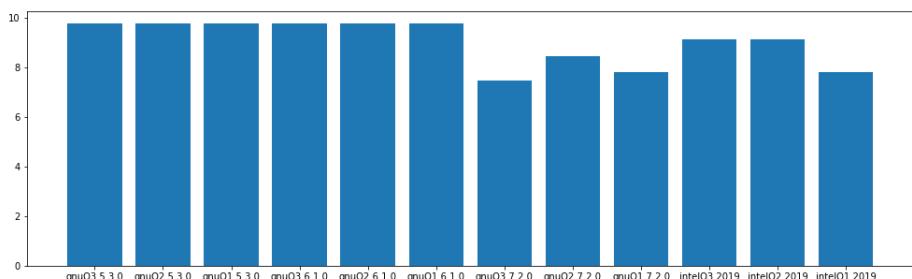


(b) Testes corridos numa maquina r662

Figure 4: Total tempo gasto em *iowait* durante a execução em segundos

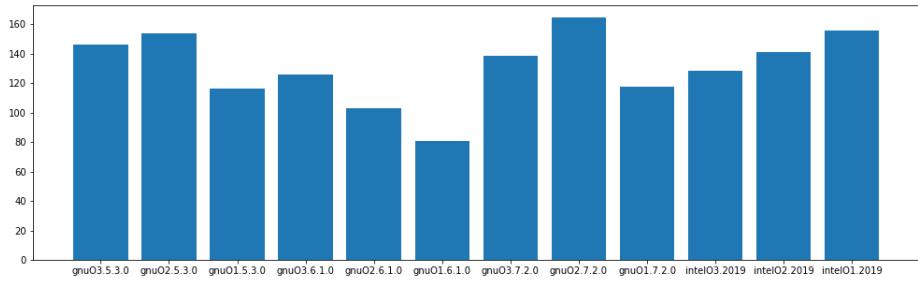


(a) Testes corridos numa maquina r641

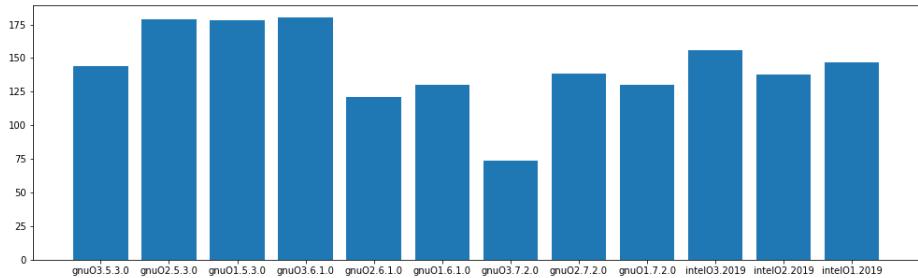


(b) Testes corridos numa maquina r662

Figure 5: Total tempo gasto em *idle* durante a execução em segundos

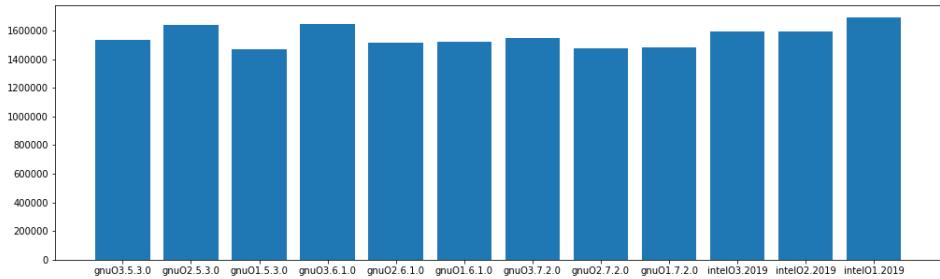


(a) Testes corridos numa maquina r641

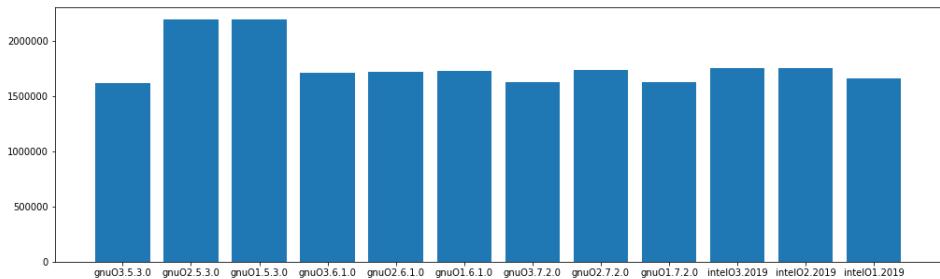


(b) Testes corridos numa maquina r662

Figure 6: Numero de blocos escritos em disco durante a execução do programa

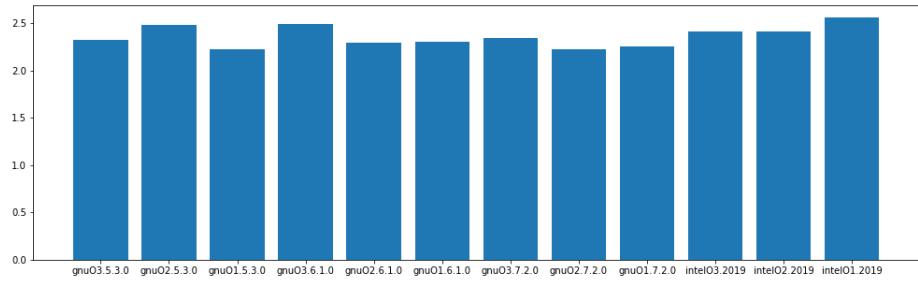


(a) Testes corridos numa maquina r641

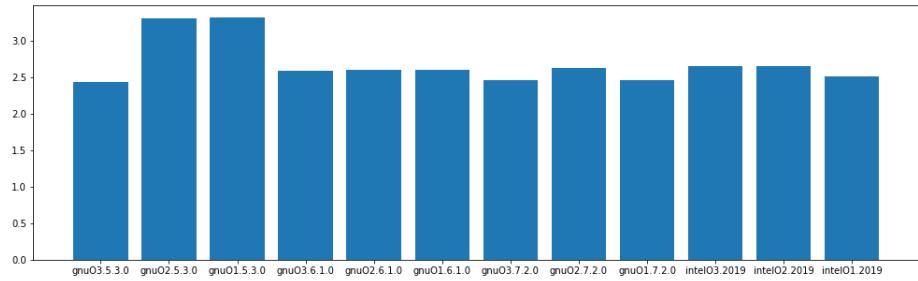


(b) Testes corridos numa maquina r662

Figure 7: Memória utilizada em KiB



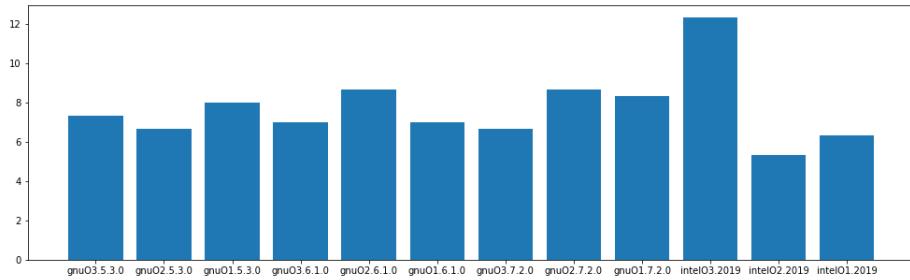
(a) Testes corridos numa maquina r641



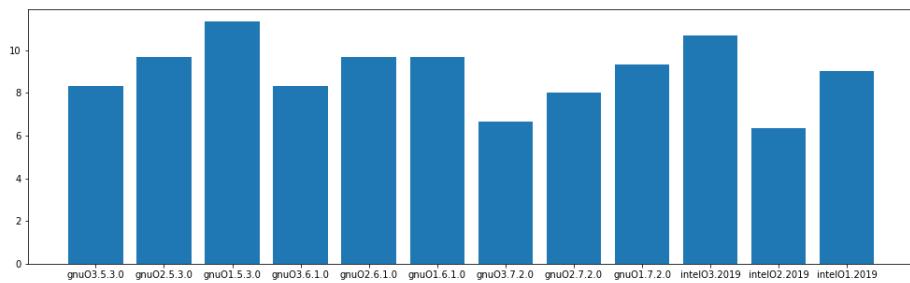
(b) Testes corridos numa maquina r662

Figure 8: Memória utilizada em percentagem

1.1.2 Teste MG classe B

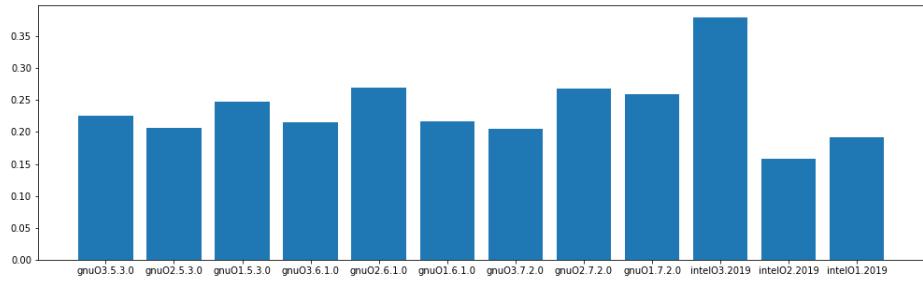


(a) Testes corridos numa maquina r641

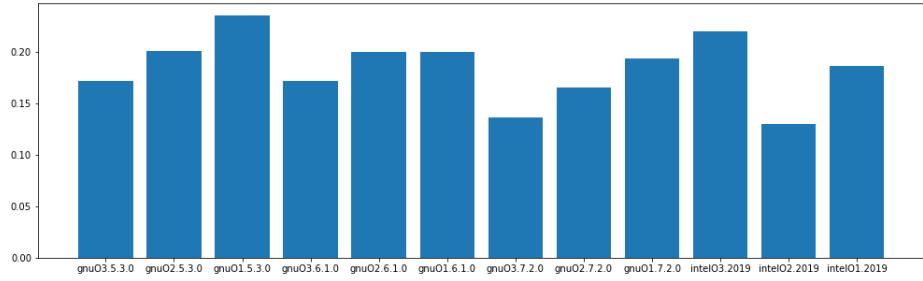


(b) Testes corridos numa maquina r662

Figure 9: Tempo total de uma execução em segundos

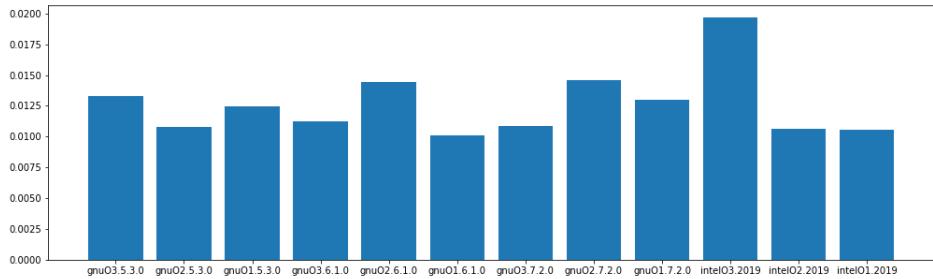


(a) Testes corridos numa maquina r641

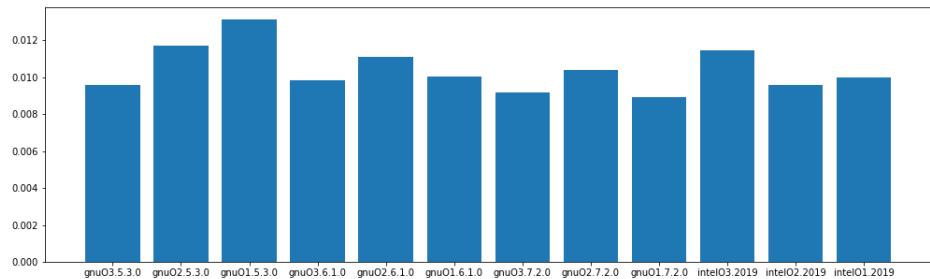


(b) Testes corridos numa maquina r662

Figure 10: Total tempo gasto em *user time* durante uma execução em segundos

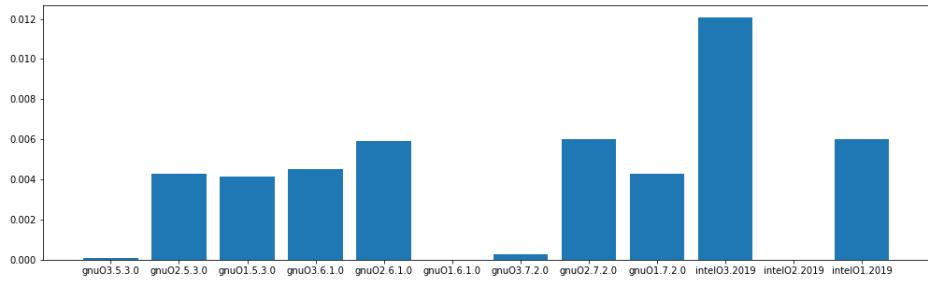


(a) Testes corridos numa maquina r641

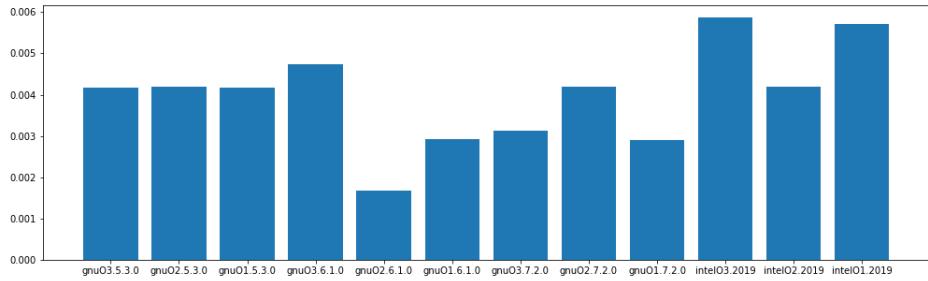


(b) Testes corridos numa maquina r662

Figure 11: Total tempo gasto em *system time* durante uma execução em segundos

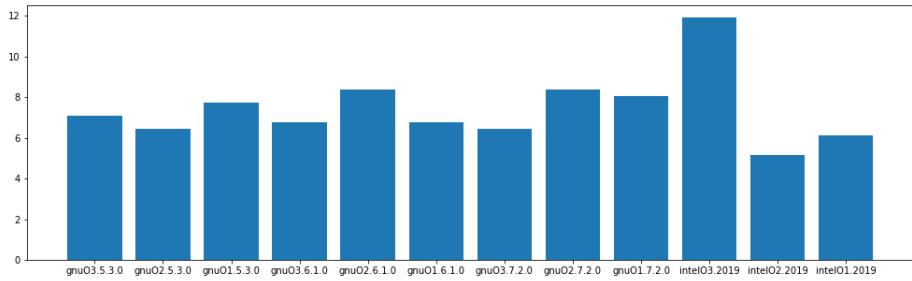


(a) Testes corridos numa maquina r641

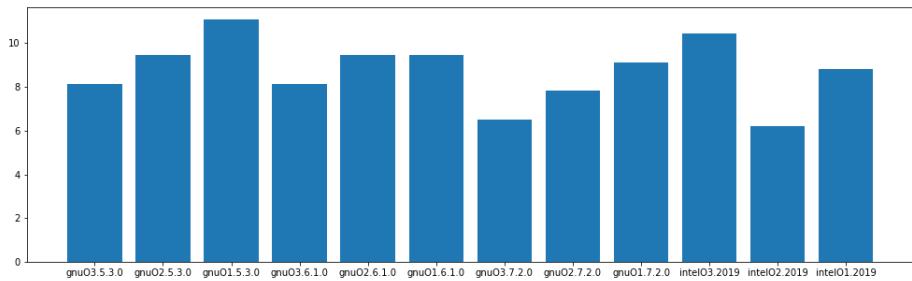


(b) Testes corridos numa maquina r662

Figure 12: Total tempo gasto em *iowait* durante a execução em segundos

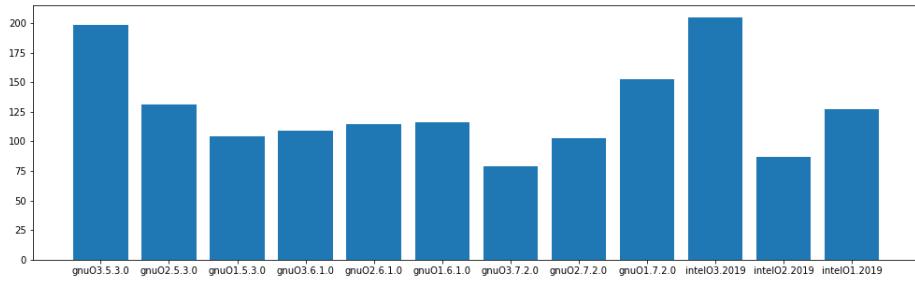


(a) Testes corridos numa maquina r641

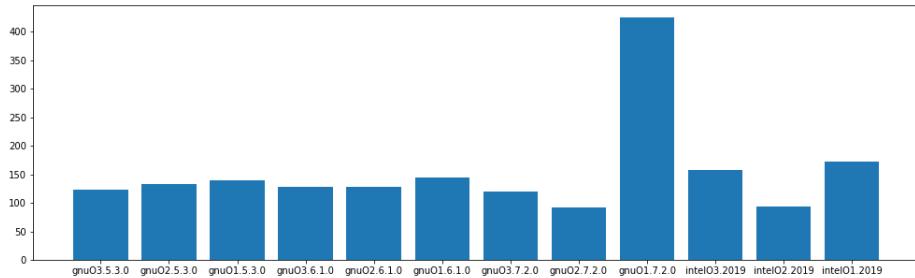


(b) Testes corridos numa maquina r662

Figure 13: Total tempo gasto em *idle* durante a execução em segundos

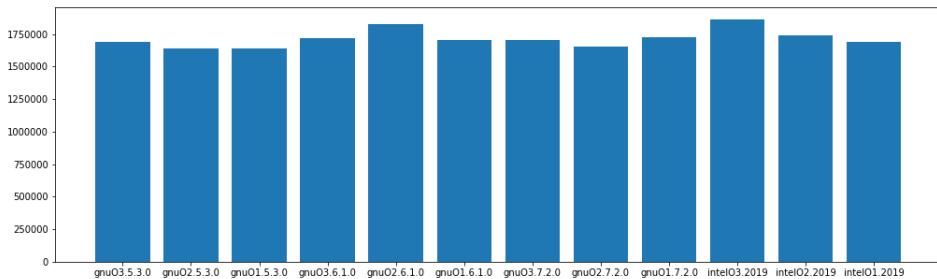


(a) Testes corridos numa maquina r641

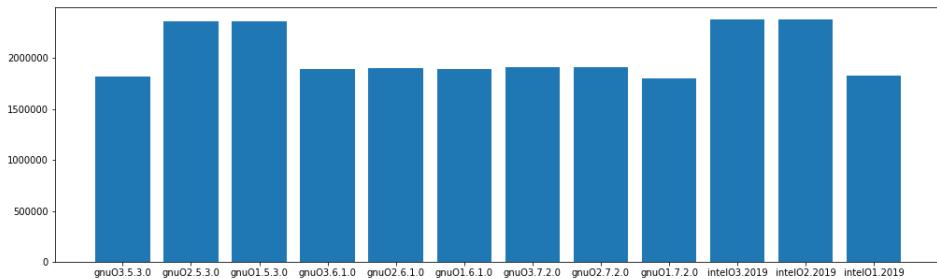


(b) Testes corridos numa maquina r662

Figure 14: Número de blocos escritos em disco durante a execução do programa

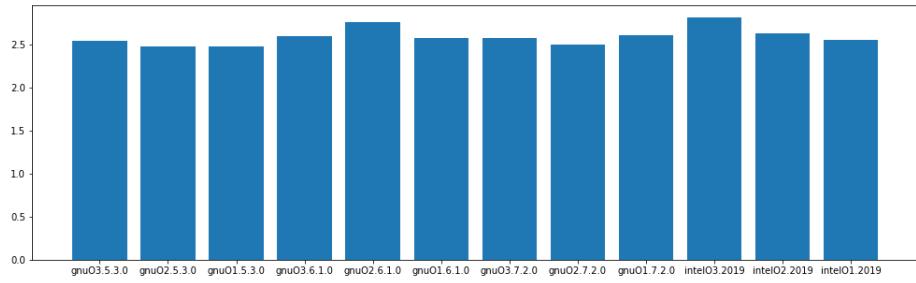


(a) Testes corridos numa maquina r641

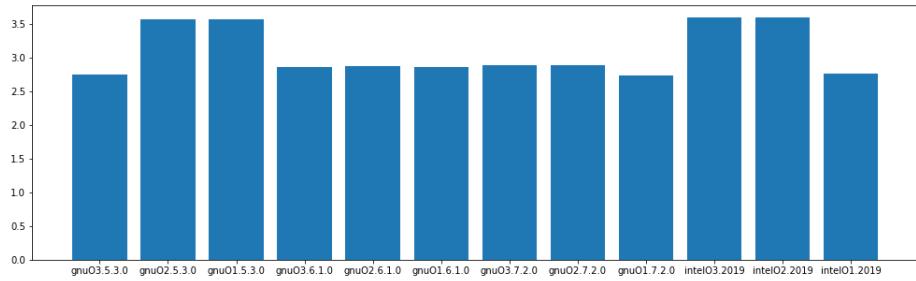


(b) Testes corridos numa maquina r662

Figure 15: Memória utilizada em KiB



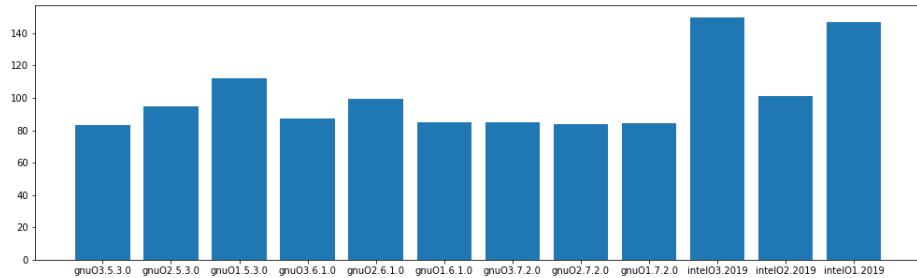
(a) Testes corridos numa maquina r641



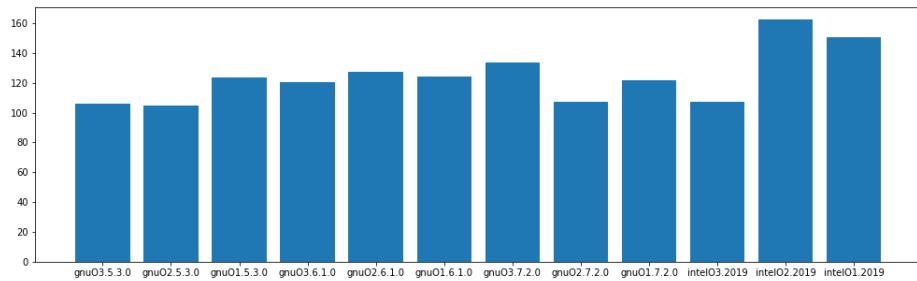
(b) Testes corridos numa maquina r662

Figure 16: Memória utilizada em percentagem

1.1.3 Teste CG classe B

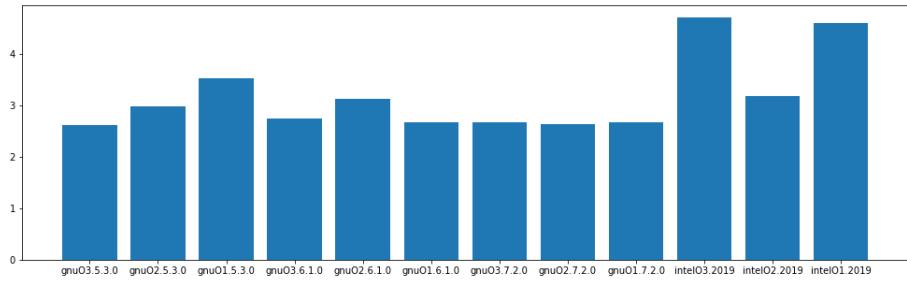


(a) Testes corridos numa maquina r641

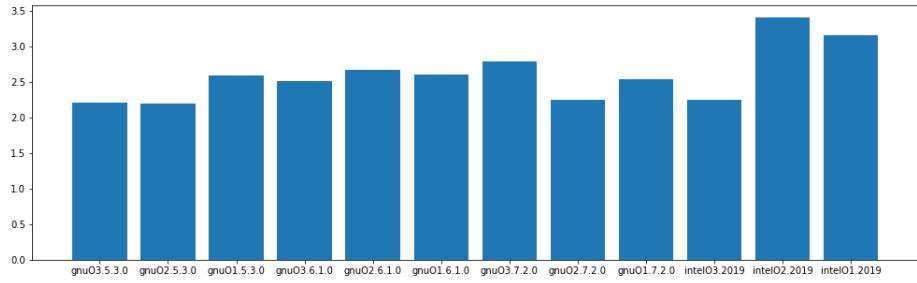


(b) Testes corridos numa maquina r662

Figure 17: Tempo total de uma execução em segundos

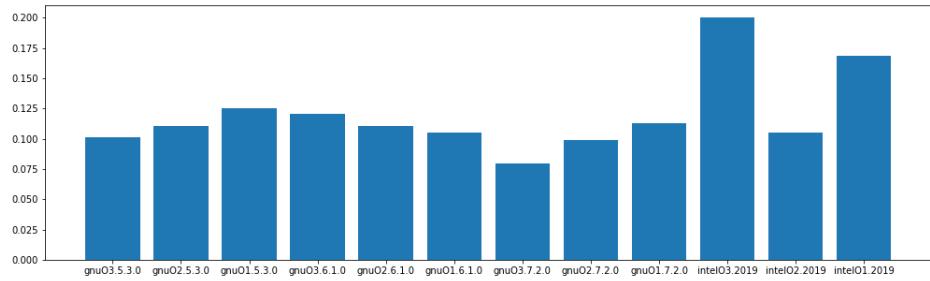


(a) Testes corridos numa maquina r641

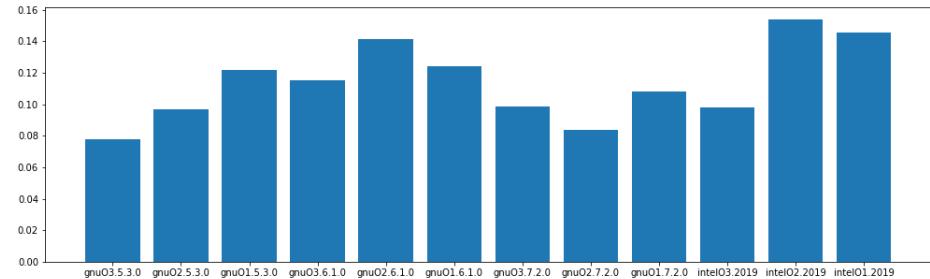


(b) Testes corridos numa maquina r662

Figure 18: Total tempo gasto em *user time* durante uma execução em segundos

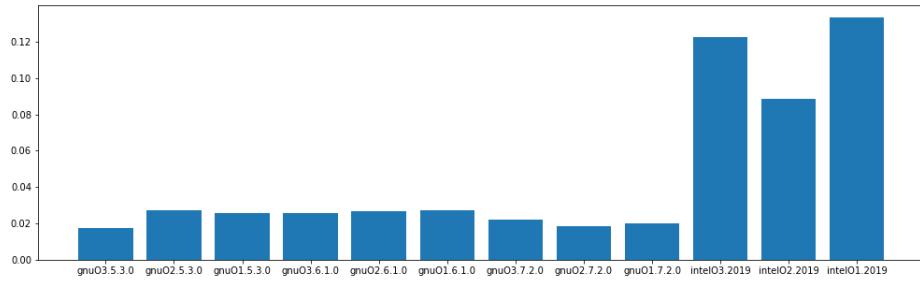


(a) Testes corridos numa maquina r641

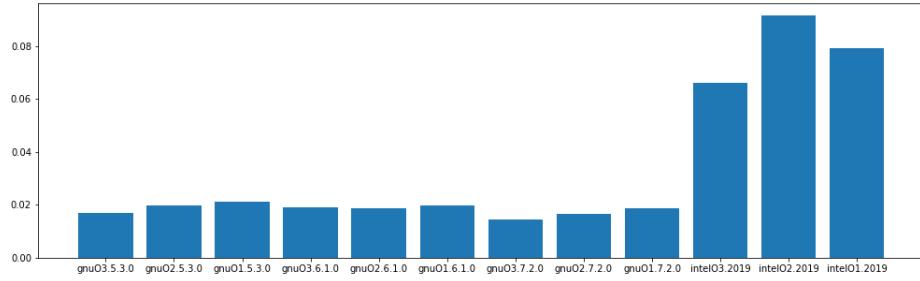


(b) Testes corridos numa maquina r662

Figure 19: Total tempo gasto em *system time* durante uma execução em segundos

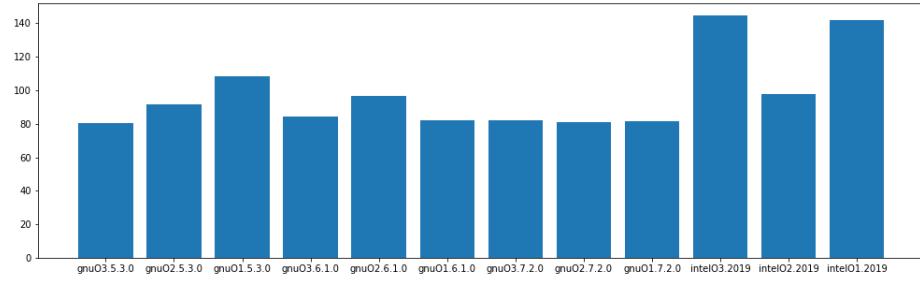


(a) Testes corridos numa maquina r641

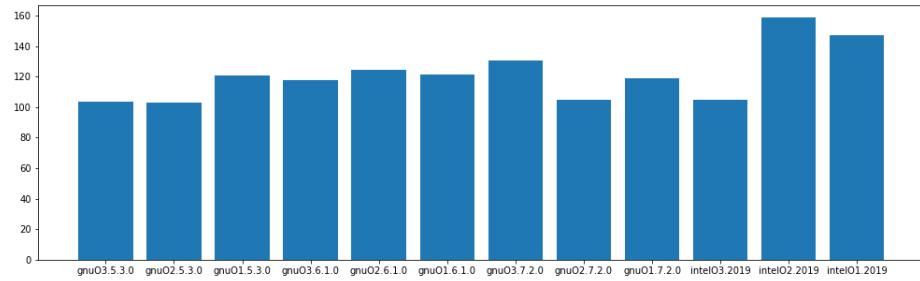


(b) Testes corridos numa maquina r662

Figure 20: Total tempo gasto em *iowait* durante a execução em segundos

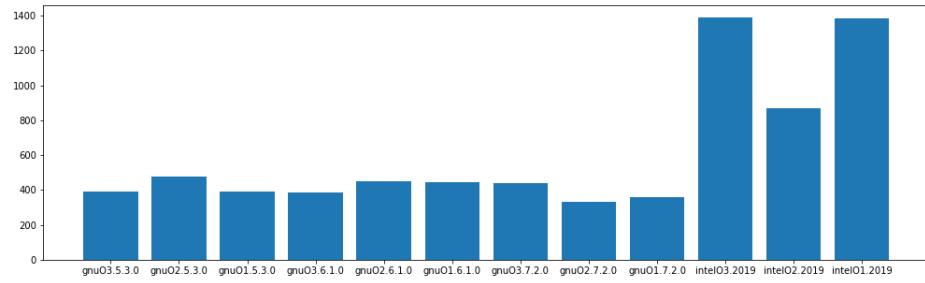


(a) Testes corridos numa maquina r641

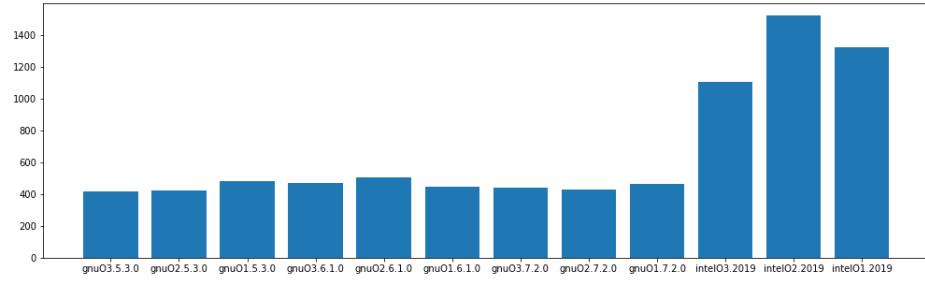


(b) Testes corridos numa maquina r662

Figure 21: Total tempo gasto em *idle* durante a execução em segundos

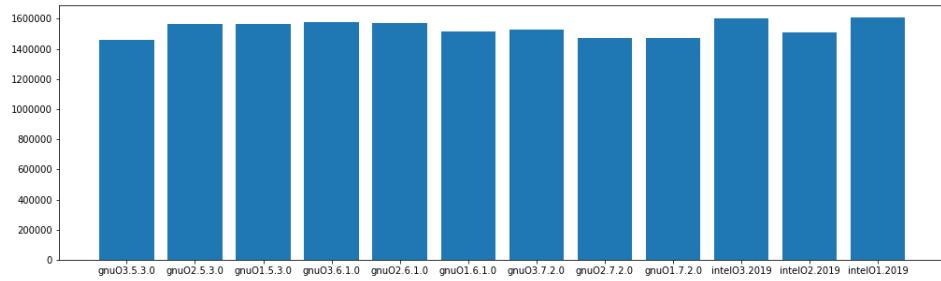


(a) Testes corridos numa maquina r641

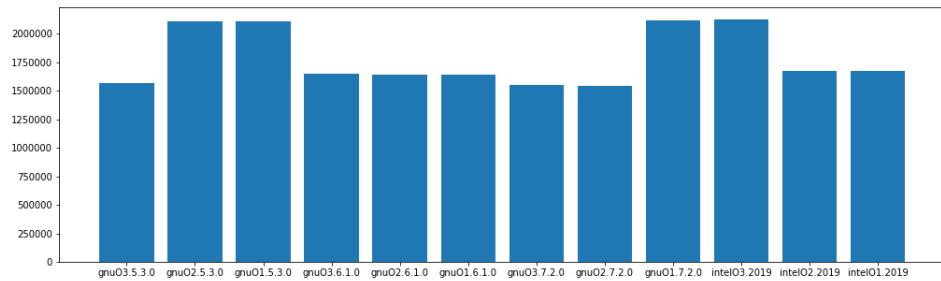


(b) Testes corridos numa maquina r662

Figure 22: Número de blocos escritos em disco durante a execução do programa

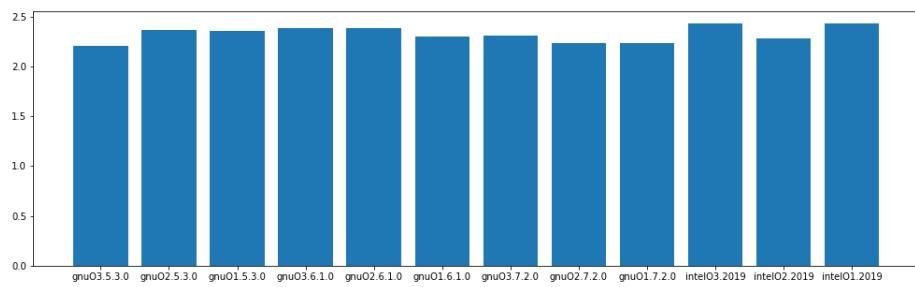


(a) Testes corridos numa maquina r641

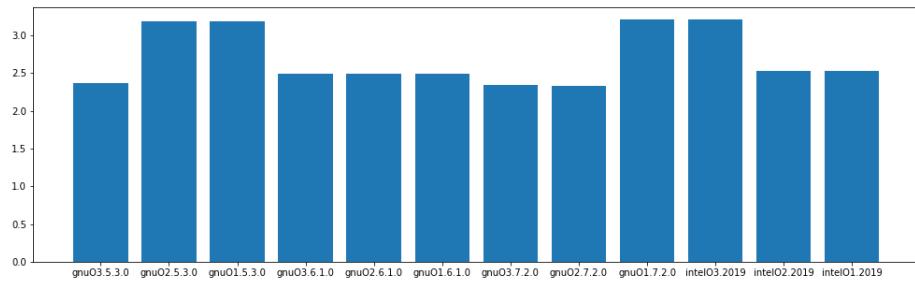


(b) Testes corridos numa maquina r662

Figure 23: Memória utilizada em KiB



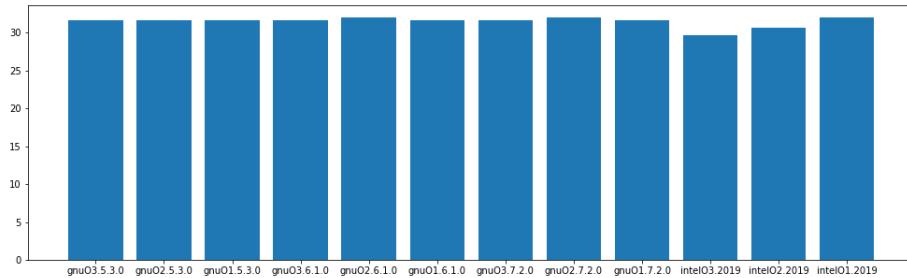
(a) Testes corridos numa maquina r641



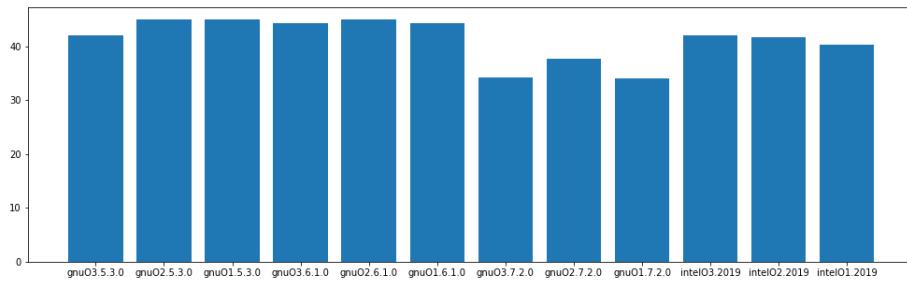
(b) Testes corridos numa maquina r662

Figure 24: Memória utilizada em percentagem

1.1.4 Teste IS classe C

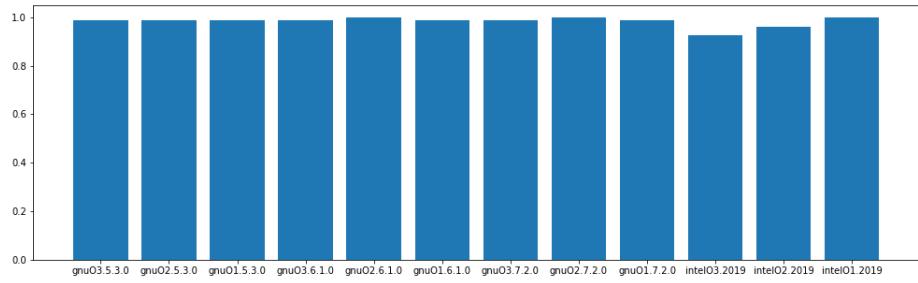


(a) Testes corridos numa maquina r641

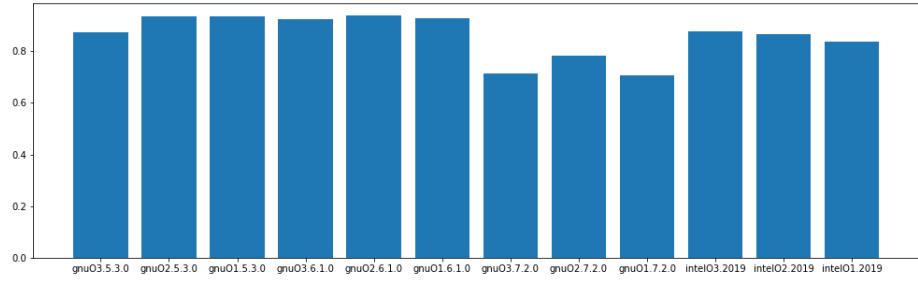


(b) Testes corridos numa maquina r662

Figure 25: Tempo total de uma execução em segundos

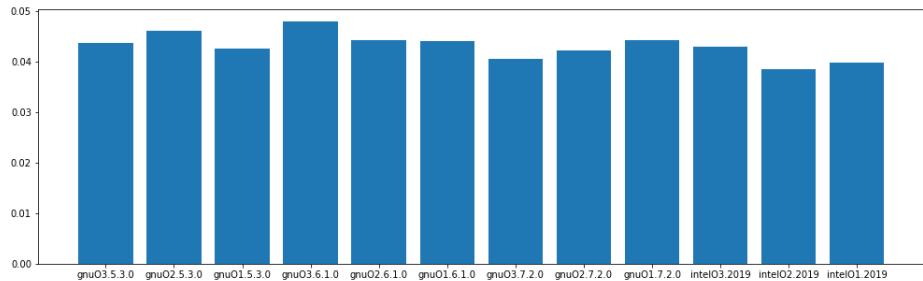


(a) Testes corridos numa maquina r641

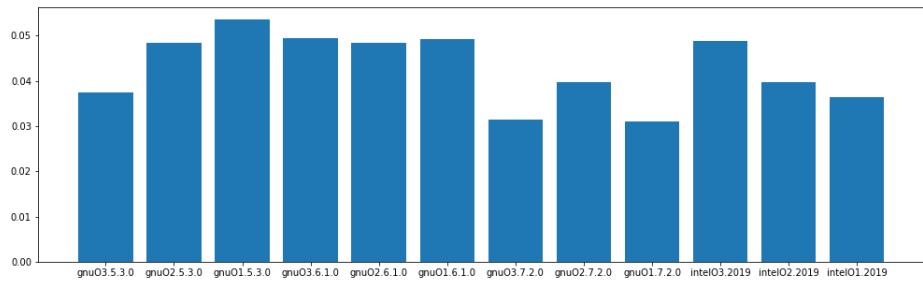


(b) Testes corridos numa maquina r662

Figure 26: Total tempo gasto em *user time* durante uma execução em segundos

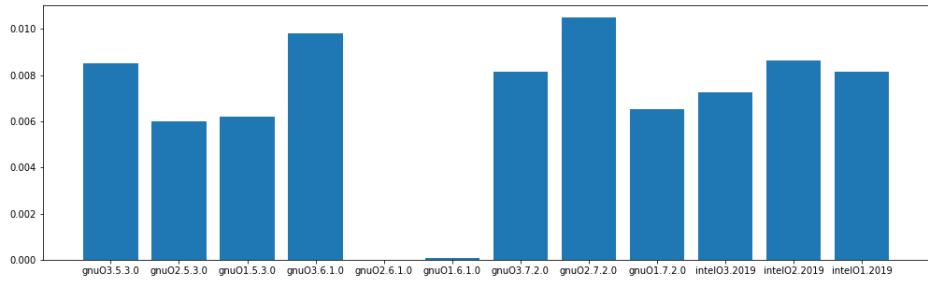


(a) Testes corridos numa maquina r641

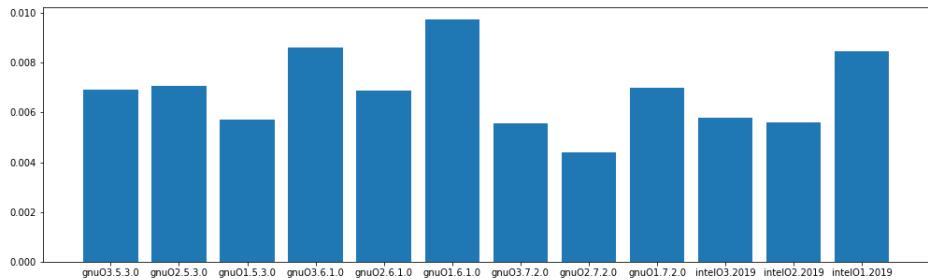


(b) Testes corridos numa maquina r662

Figure 27: Total tempo gasto em *system time* durante uma execução em segundos

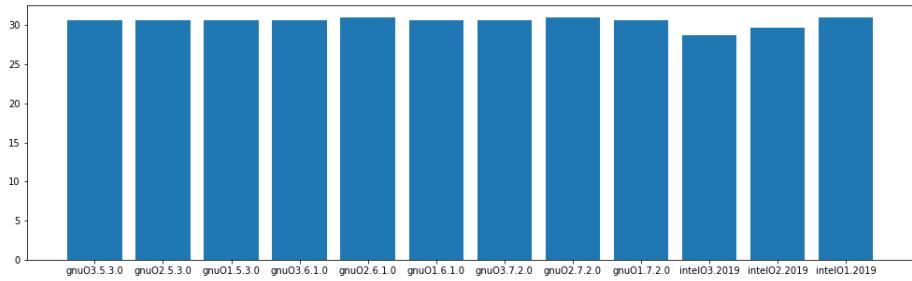


(a) Testes corridos numa maquina r641

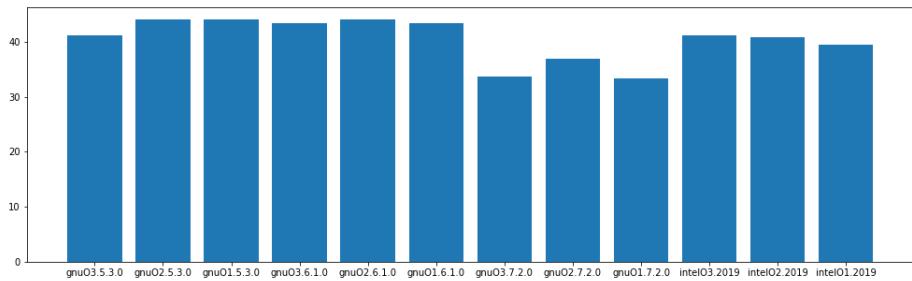


(b) Testes corridos numa maquina r662

Figure 28: Total tempo gasto em *iowait* durante a execução em segundos

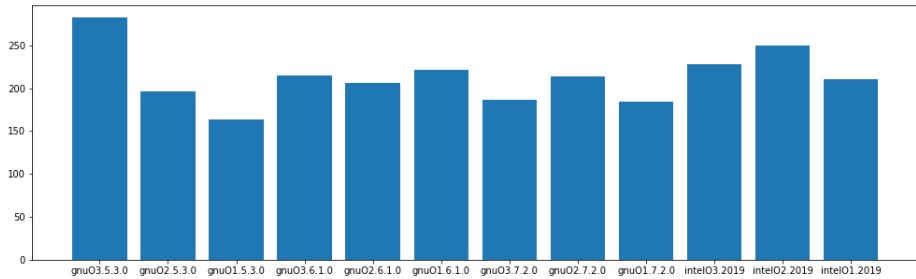


(a) Testes corridos numa maquina r641

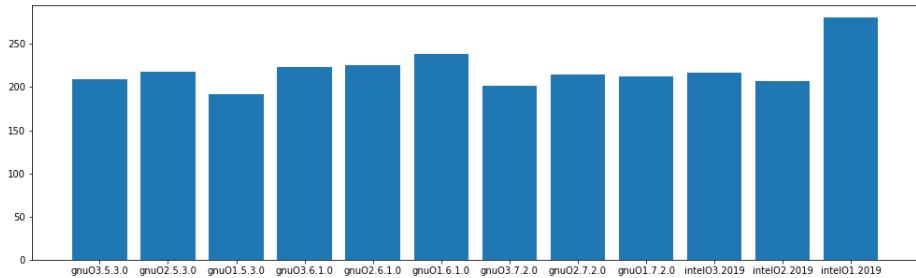


(b) Testes corridos numa maquina r662

Figure 29: Total tempo gasto em *idle* durante a execução em segundos

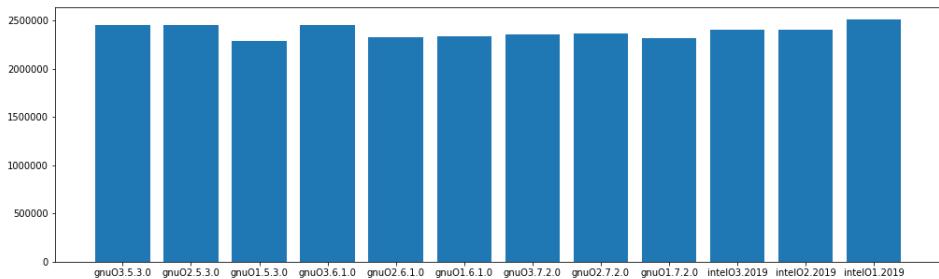


(a) Testes corridos numa maquina r641

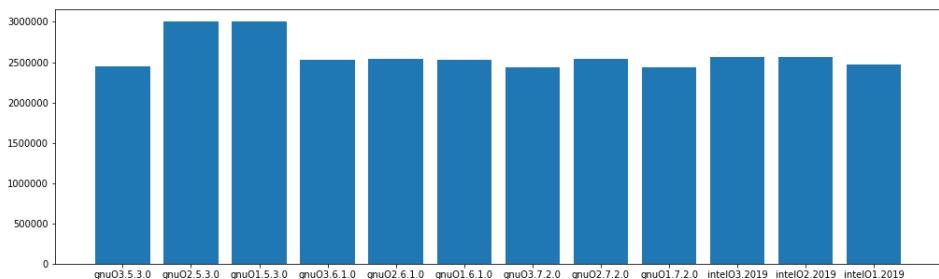


(b) Testes corridos numa maquina r662

Figure 30: Número de blocos escritos em disco durante a execução do programa

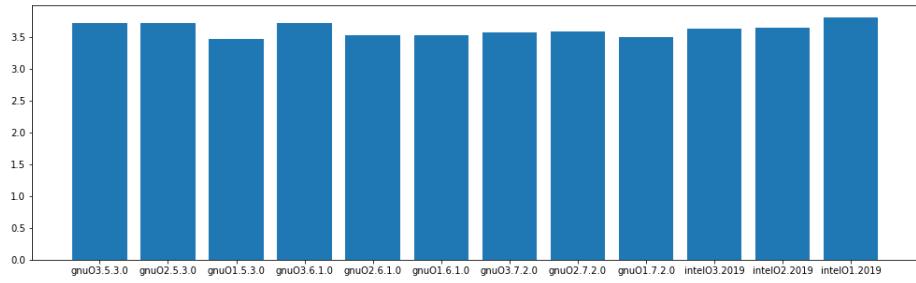


(a) Testes corridos numa maquina r641

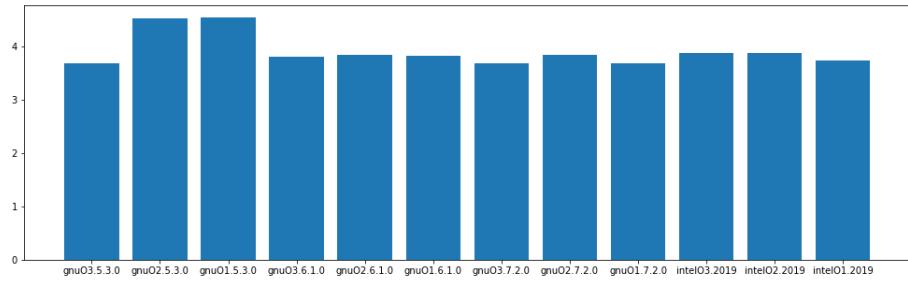


(b) Testes corridos numa maquina r662

Figure 31: Memória utilizada em KiB



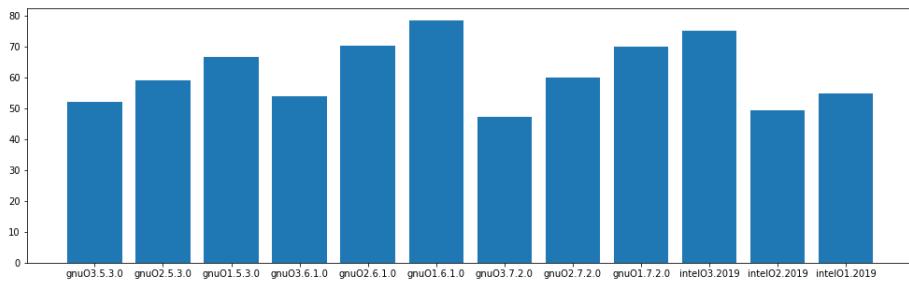
(a) Testes corridos numa maquina r641



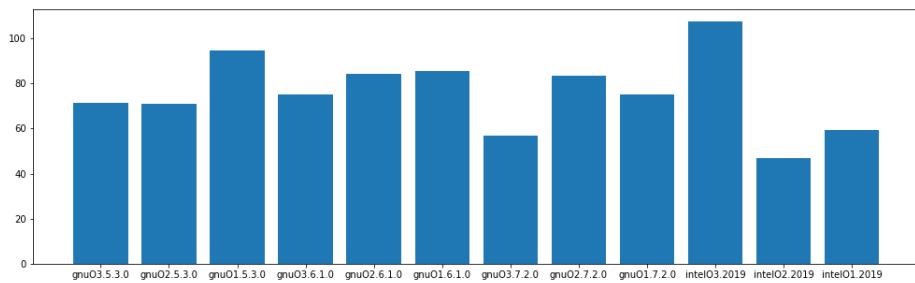
(b) Testes corridos numa maquina r662

Figure 32: Memória utilizada em percentagem

1.1.5 Teste MG classe C

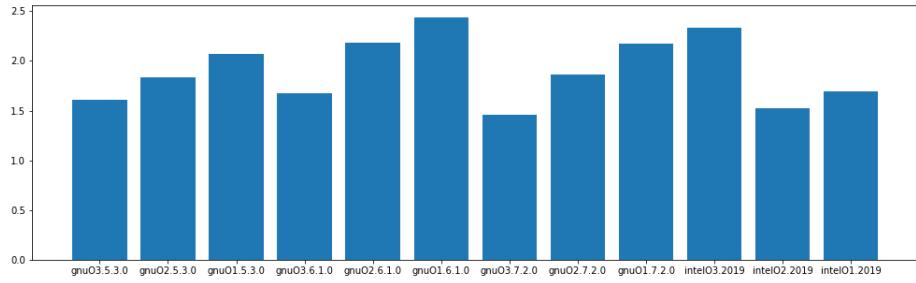


(a) Testes corridos numa maquina r641

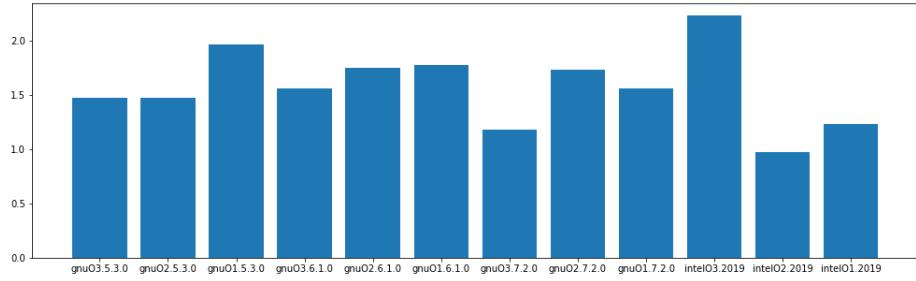


(b) Testes corridos numa maquina r662

Figure 33: Tempo total de uma execução em segundos

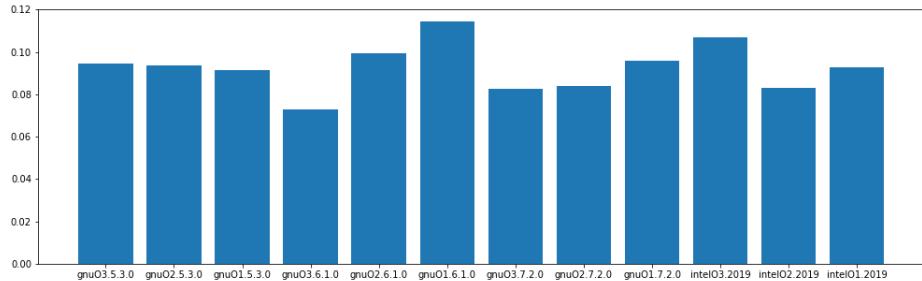


(a) Testes corridos numa maquina r641

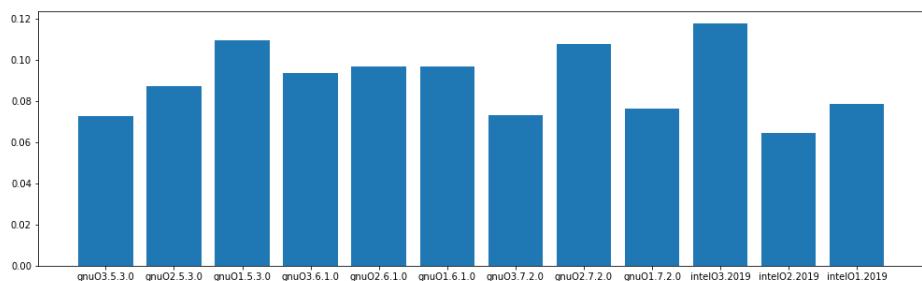


(b) Testes corridos numa maquina r662

Figure 34: Total tempo gasto em *user time* durante uma execução em segundos

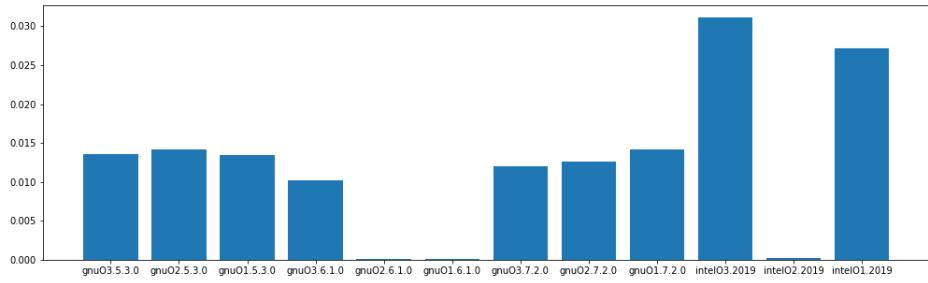


(a) Testes corridos numa maquina r641

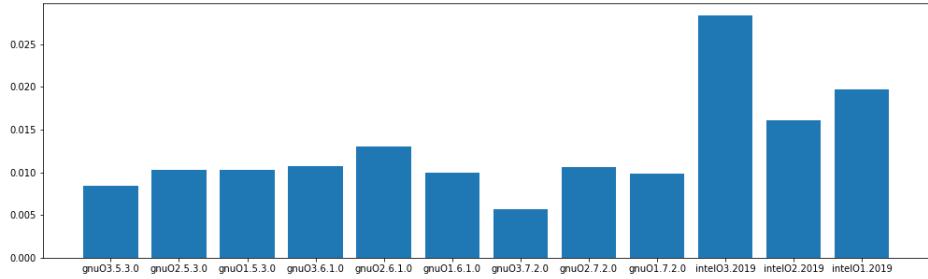


(b) Testes corridos numa maquina r662

Figure 35: Total tempo gasto em *system time* durante uma execução em segundos

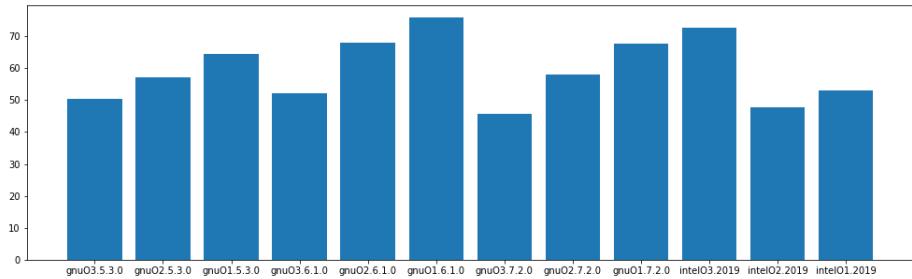


(a) Testes corridos numa maquina r641

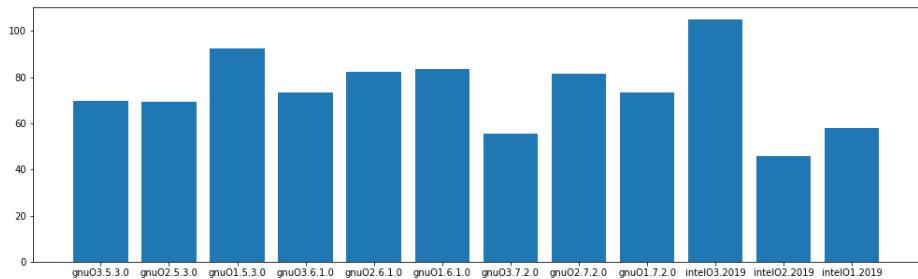


(b) Testes corridos numa maquina r662

Figure 36: Total tempo gasto em *iowait* durante a execução em segundos

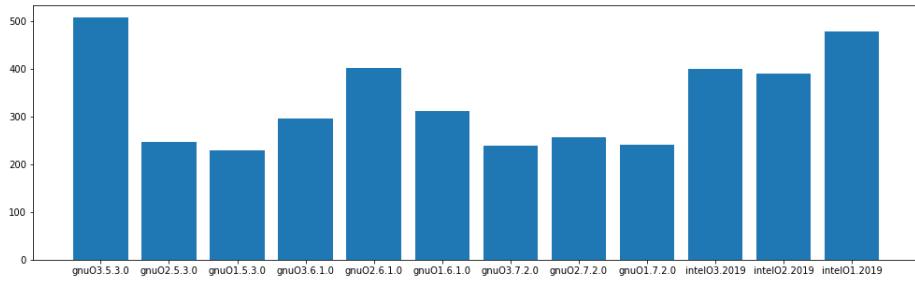


(a) Testes corridos numa maquina r641

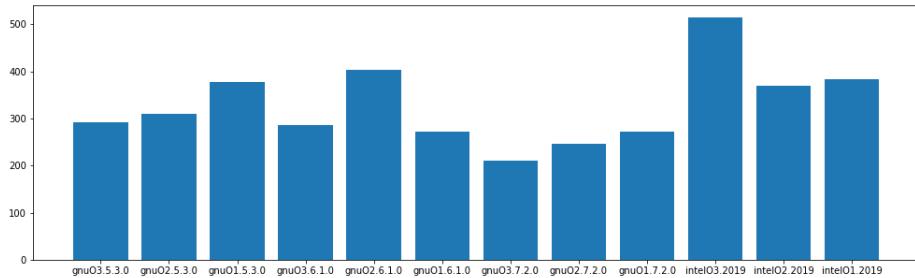


(b) Testes corridos numa maquina r662

Figure 37: Total tempo gasto em *idle* durante a execução em segundos

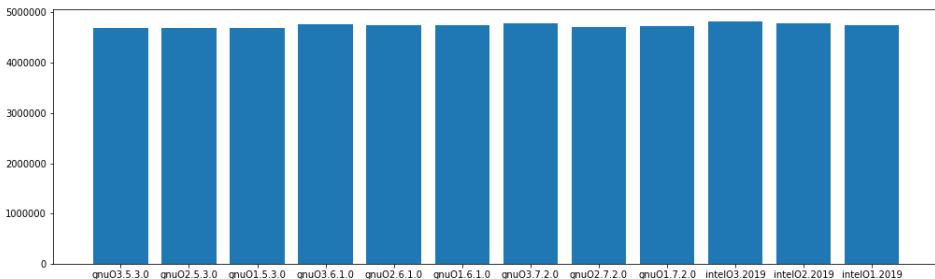


(a) Testes corridos numa maquina r641

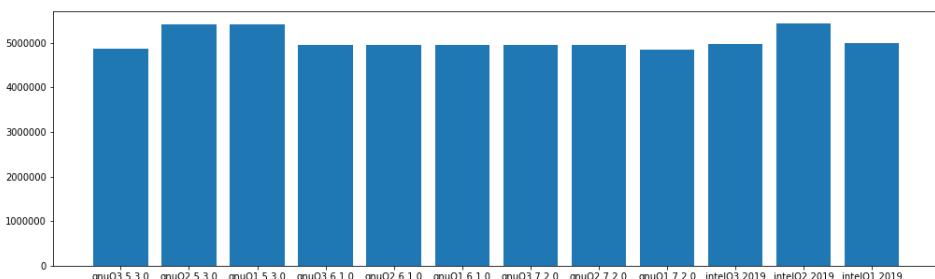


(b) Testes corridos numa maquina r662

Figure 38: Numero de blocos escritos em disco durante a execução do programa

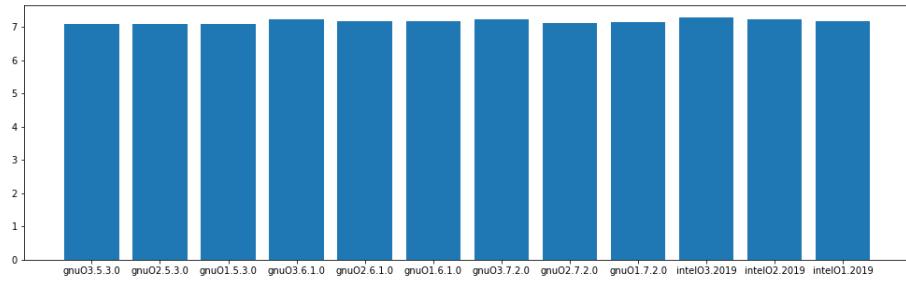


(a) Testes corridos numa maquina r641

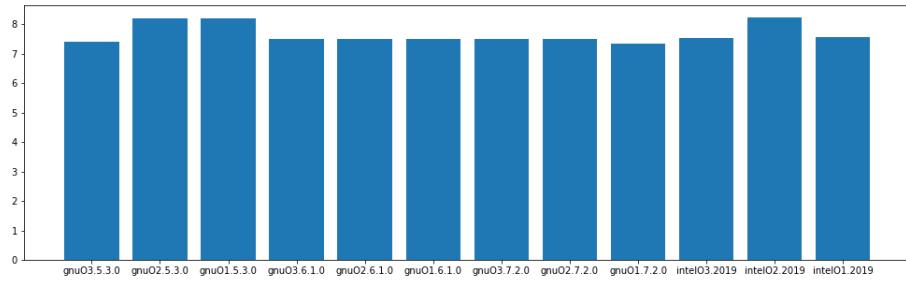


(b) Testes corridos numa maquina r662

Figure 39: Memória utilizada em KiB



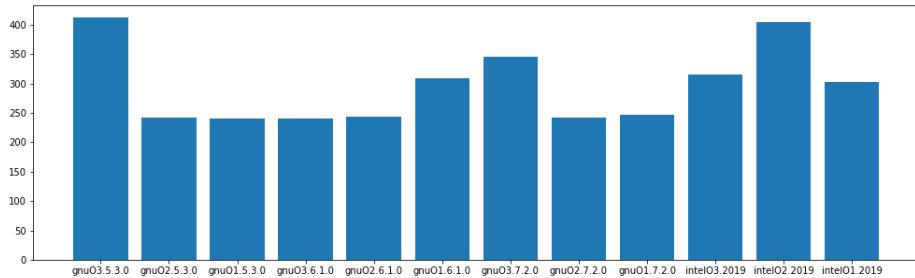
(a) Testes corridos numa maquina r641



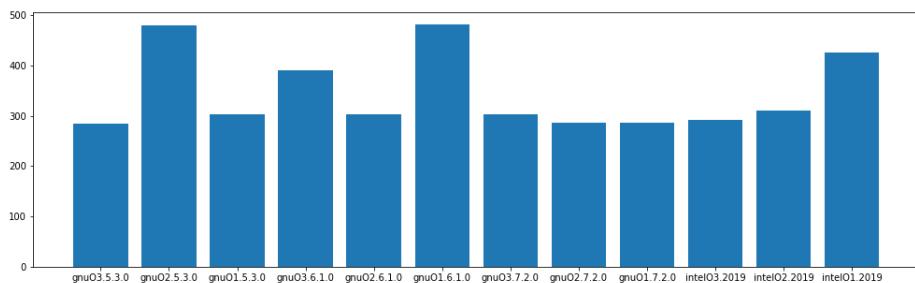
(b) Testes corridos numa maquina r662

Figure 40: Memória utilizada em percentagem

1.1.6 Teste CG classe C

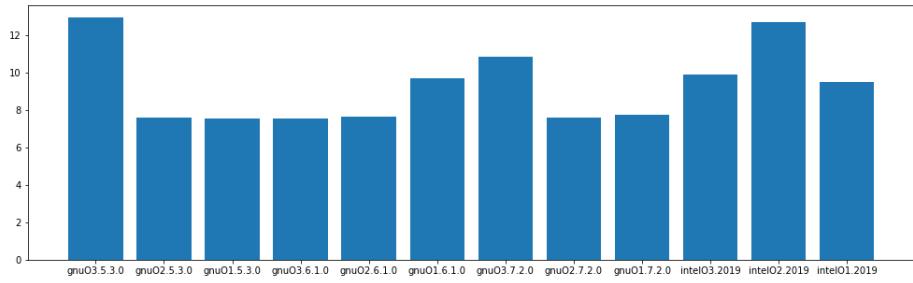


(a) Testes corridos numa maquina r641

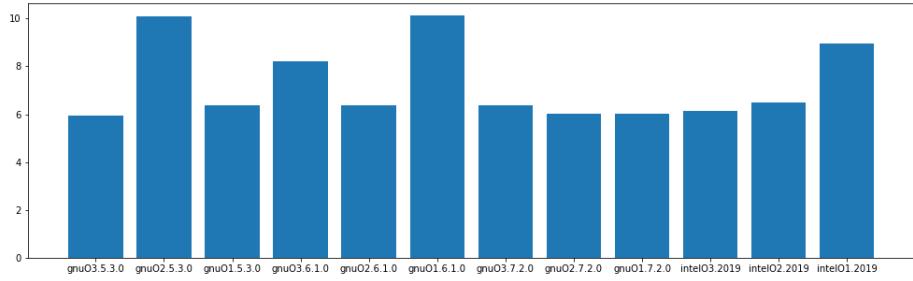


(b) Testes corridos numa maquina r662

Figure 41: Tempo total de uma execução em segundos

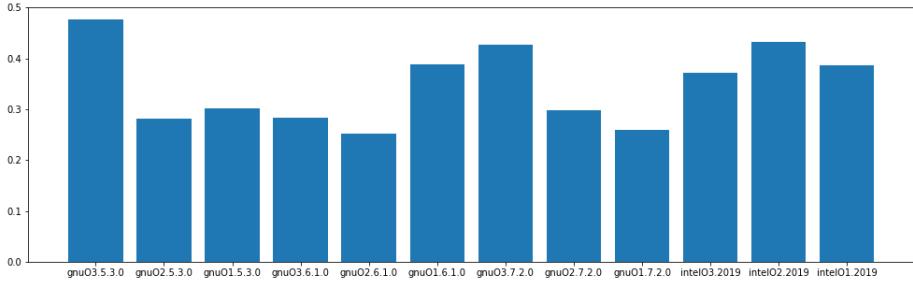


(a) Testes corridos numa maquina r641

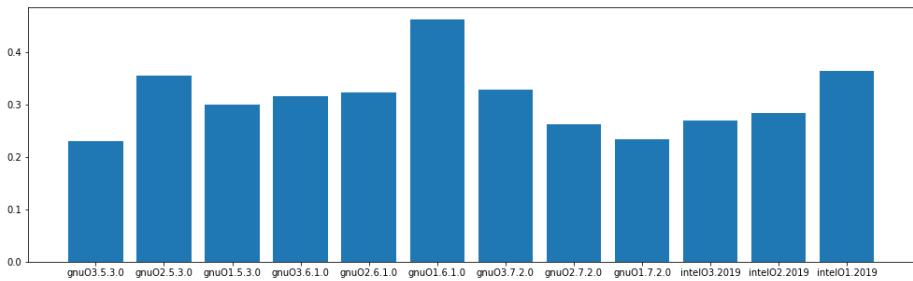


(b) Testes corridos numa maquina r662

Figure 42: Total tempo gasto em *user time* durante uma execução em segundos

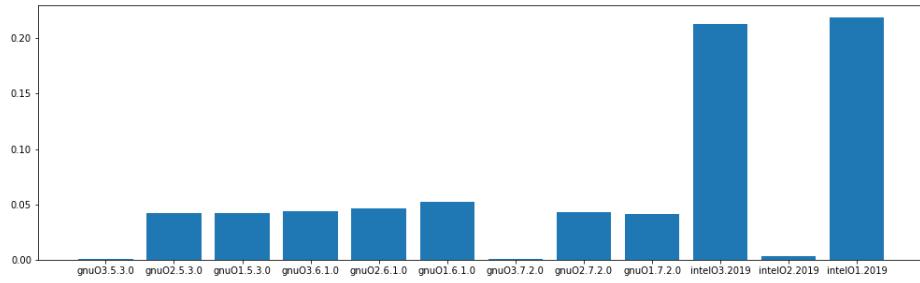


(a) Testes corridos numa maquina r641

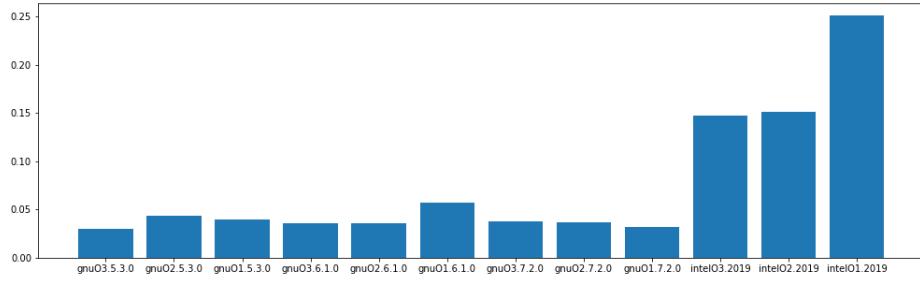


(b) Testes corridos numa maquina r662

Figure 43: Total tempo gasto em *system time* durante uma execução em segundos

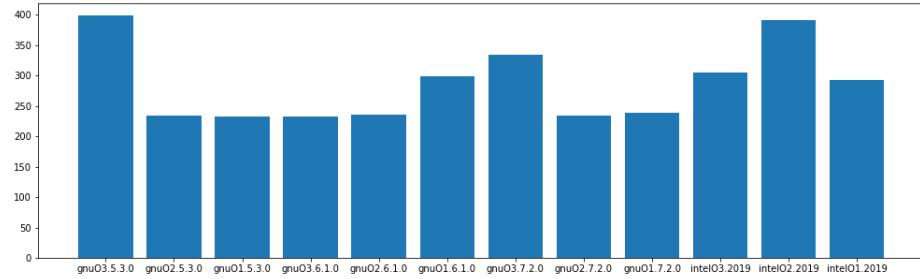


(a) Testes corridos numa maquina r641

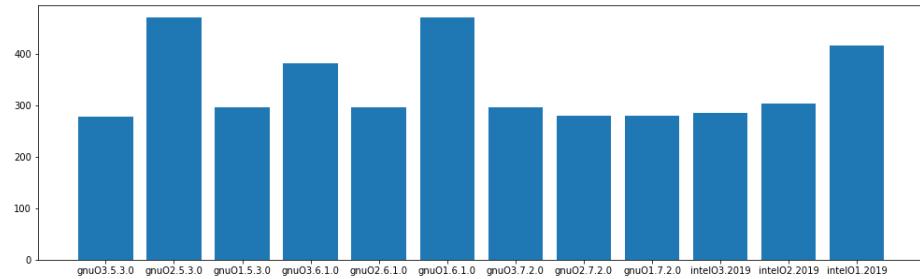


(b) Testes corridos numa maquina r662

Figure 44: Total tempo gasto em *iowait* durante a execução em segundos

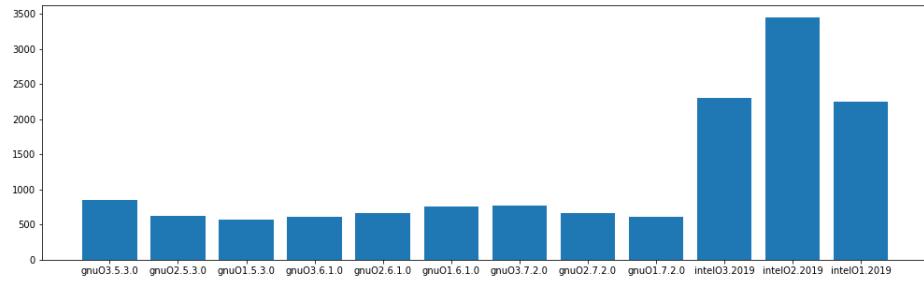


(a) Testes corridos numa maquina r641

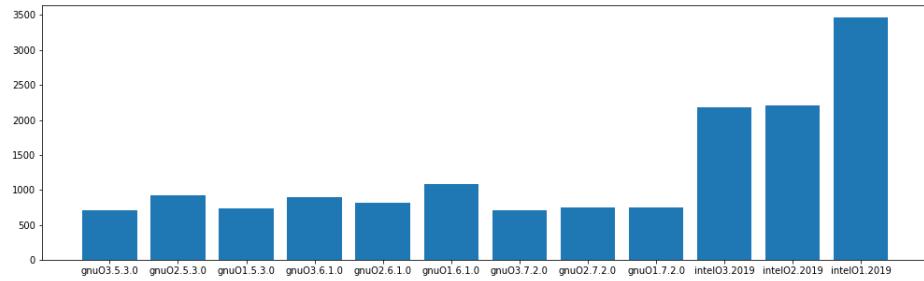


(b) Testes corridos numa maquina r662

Figure 45: Total tempo gasto em *idle* durante a execução em segundos

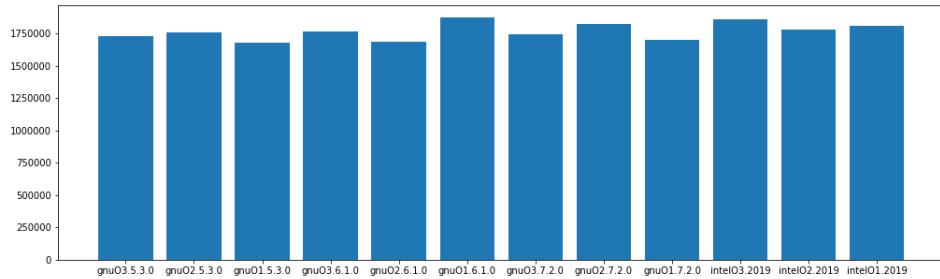


(a) Testes corridos numa maquina r641

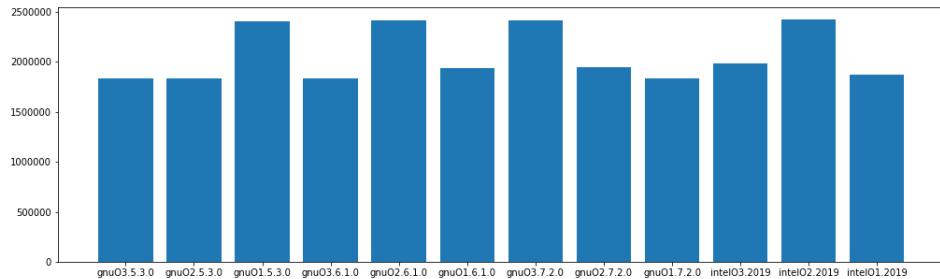


(b) Testes corridos numa maquina r662

Figure 46: Número de blocos escritos em disco durante a execução do programa

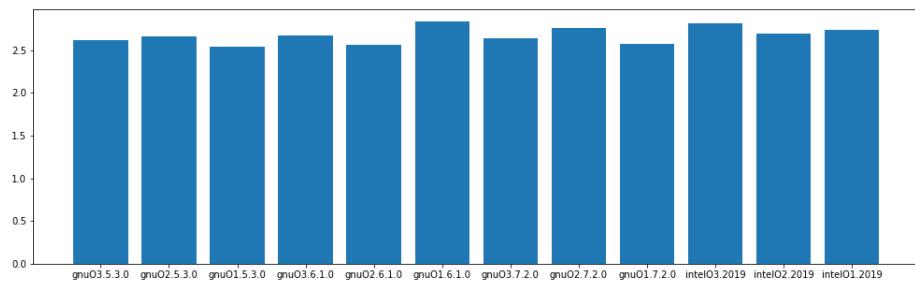


(a) Testes corridos numa maquina r641

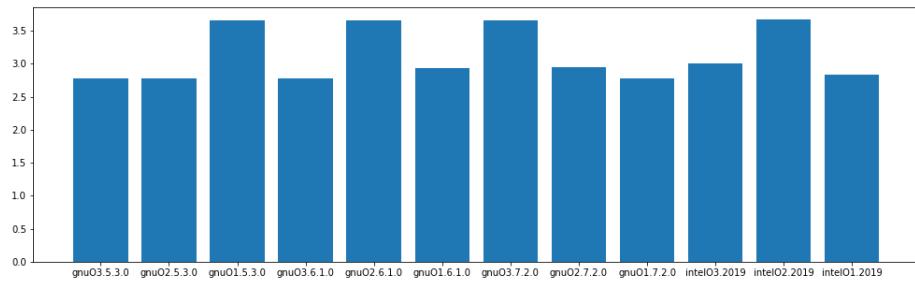


(b) Testes corridos numa maquina r662

Figure 47: Memória utilizada em KiB



(a) Testes corridos numa maquina r641

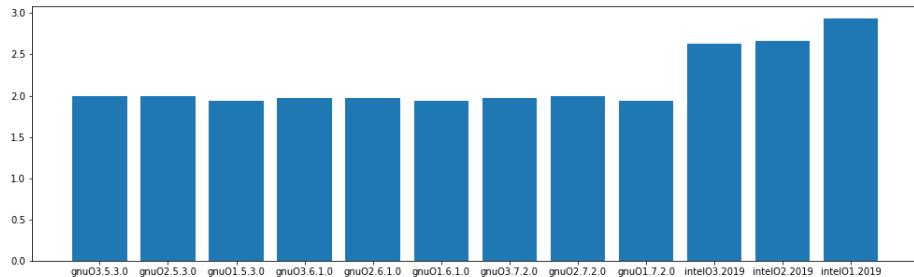


(b) Testes corridos numa maquina r662

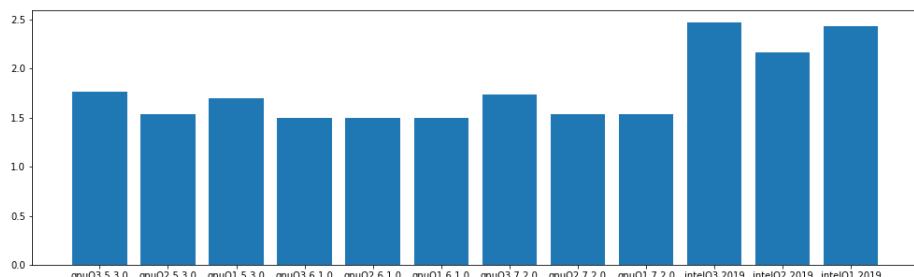
Figure 48: Memória utilizada em percentagem

1.2 Versão OpenMP

1.2.1 Teste IS classe C

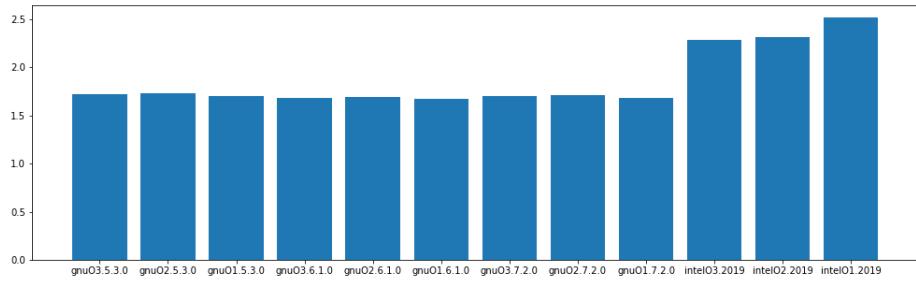


(a) Testes corridos numa maquina r641

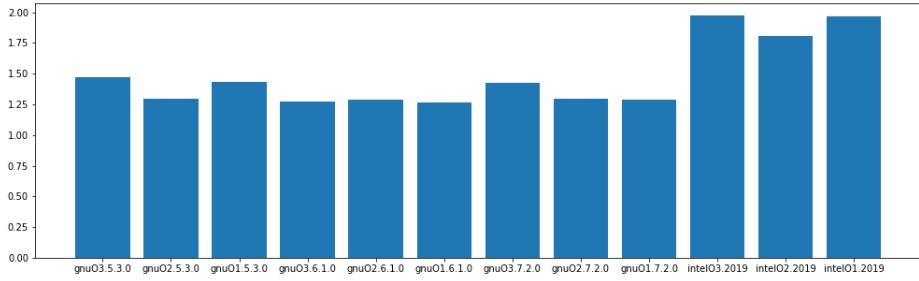


(b) Testes corridos numa maquina r662

Figure 49: Tempo total de uma execução em segundos

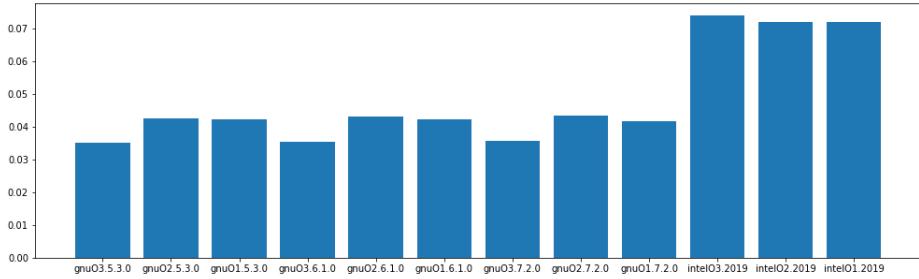


(a) Testes corridos numa maquina r641

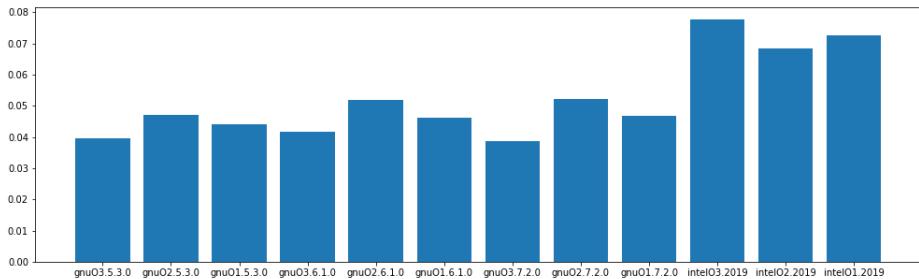


(b) Testes corridos numa maquina r662

Figure 50: Total tempo gasto em *user time* durante uma execução em segundos

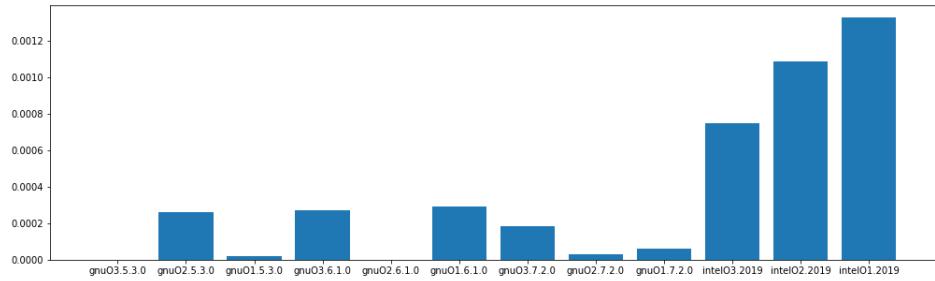


(a) Testes corridos numa maquina r641

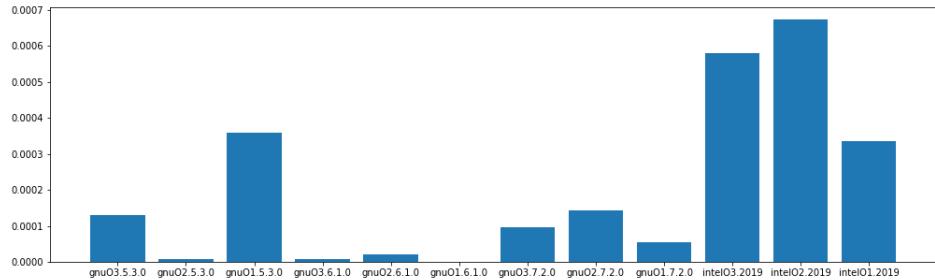


(b) Testes corridos numa maquina r662

Figure 51: Total tempo gasto em *system time* durante uma execução em segundos

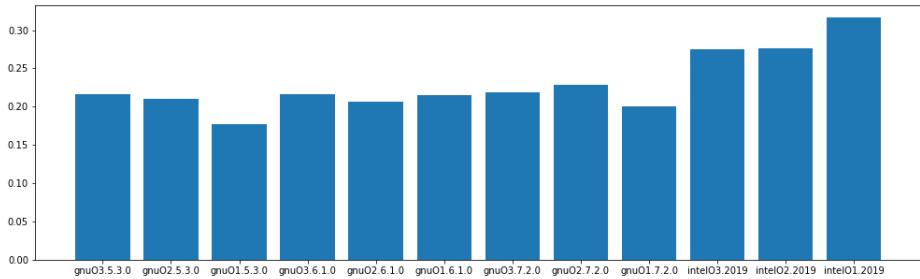


(a) Testes corridos numa maquina r641

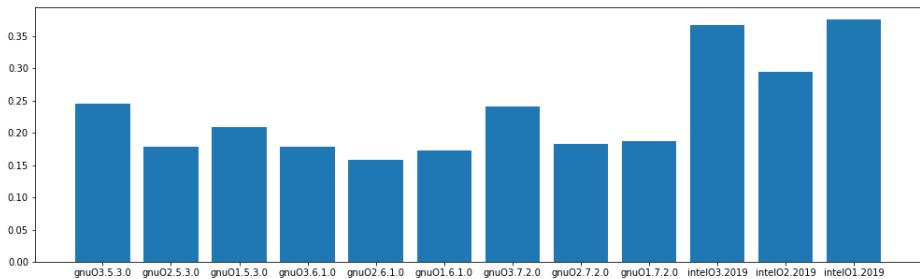


(b) Testes corridos numa maquina r662

Figure 52: Total tempo gasto em *iowait* durante a execução em segundos

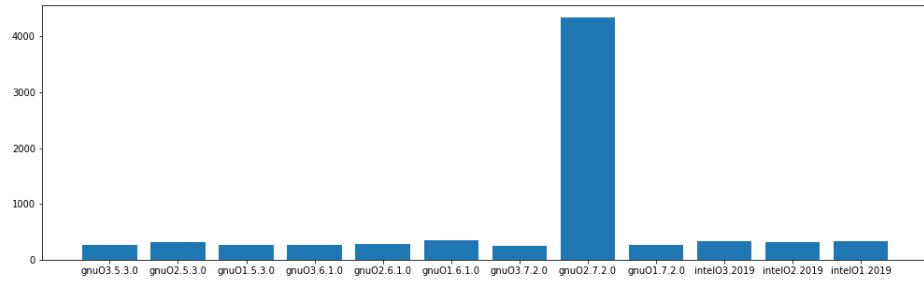


(a) Testes corridos numa maquina r641

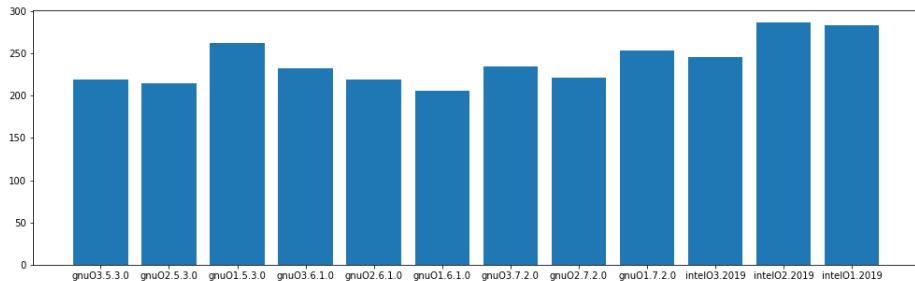


(b) Testes corridos numa maquina r662

Figure 53: Total tempo gasto em *idle* durante a execução em segundos

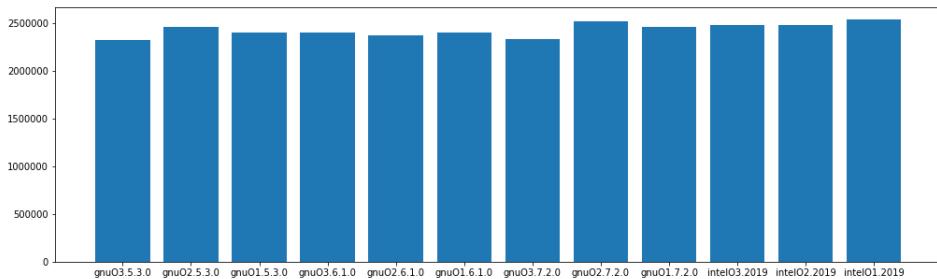


(a) Testes corridos numa maquina r641

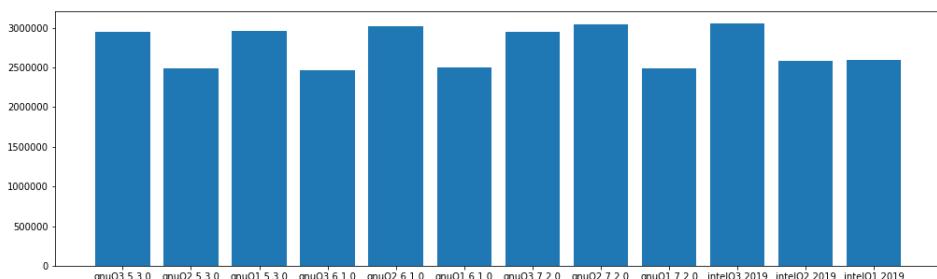


(b) Testes corridos numa maquina r662

Figure 54: Número de blocos escritos em disco durante a execução do programa

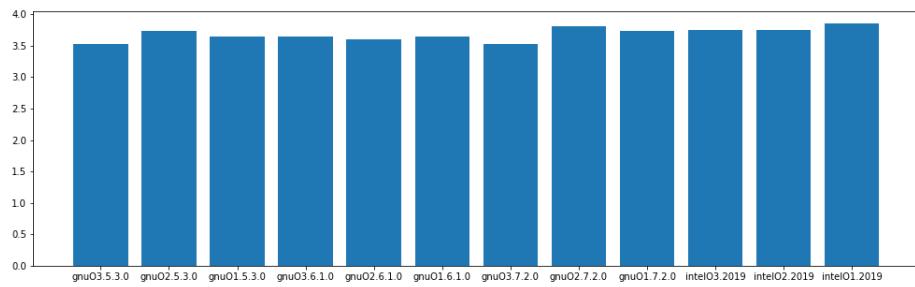


(a) Testes corridos numa maquina r641

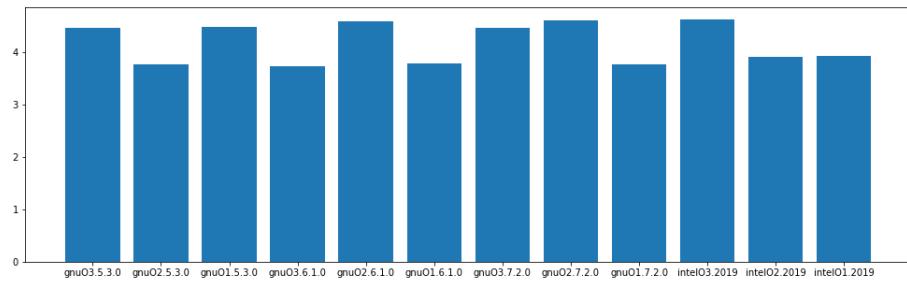


(b) Testes corridos numa maquina r662

Figure 55: Memória utilizada em KiB



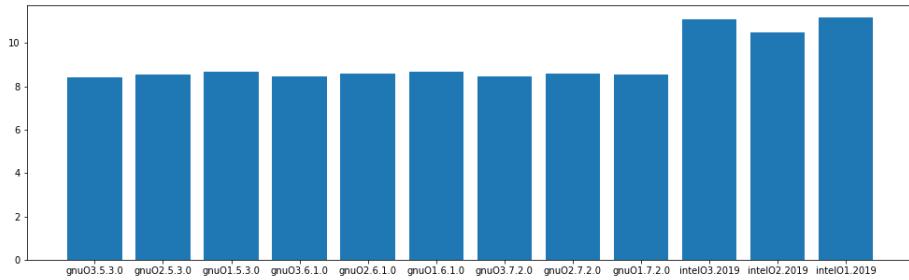
(a) Testes corridos numa maquina r641



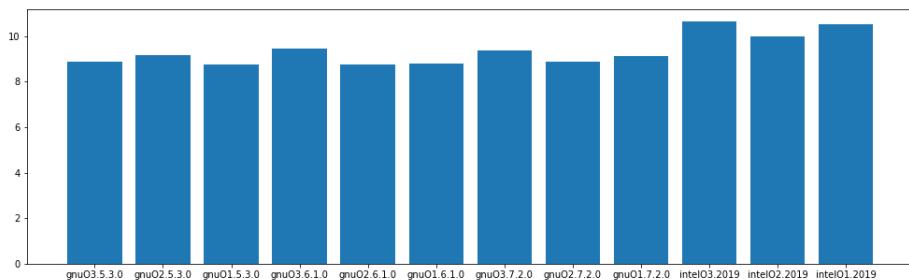
(b) Testes corridos numa maquina r662

Figure 56: Memória utilizada em percentagem

1.2.2 Teste MG classe C

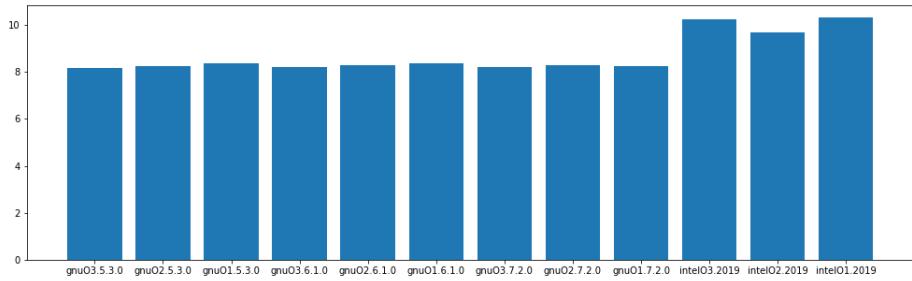


(a) Testes corridos numa maquina r641

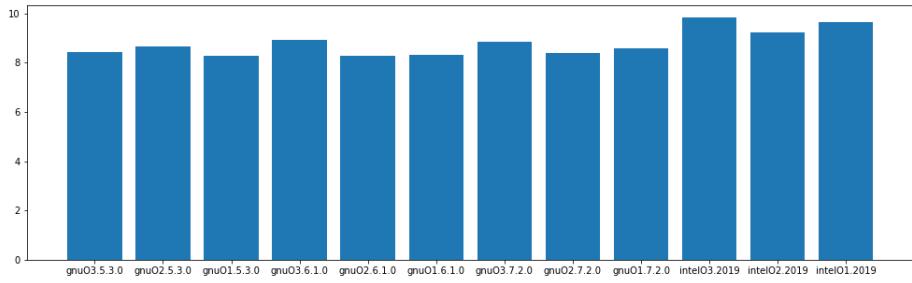


(b) Testes corridos numa maquina r662

Figure 57: Tempo total de uma execução em segundos

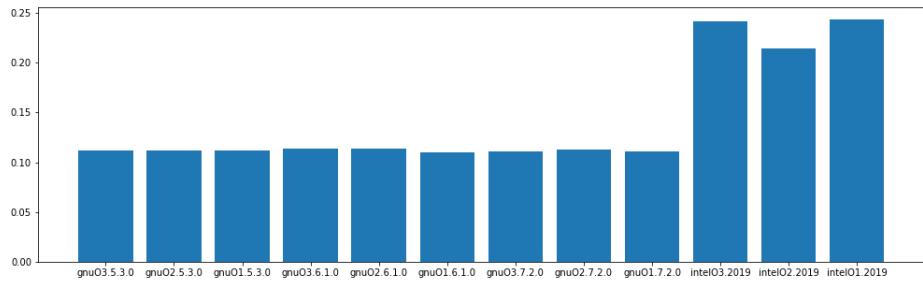


(a) Testes corridos numa maquina r641

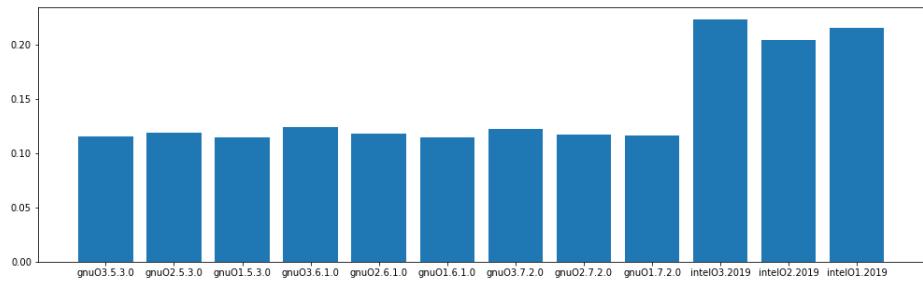


(b) Testes corridos numa maquina r662

Figure 58: Total tempo gasto em *user time* durante uma execução em segundos

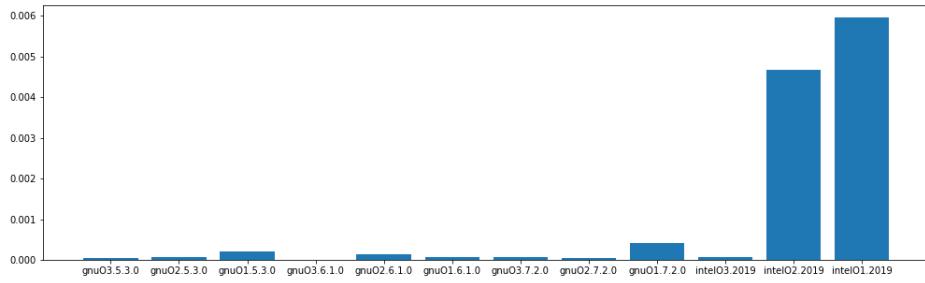


(a) Testes corridos numa maquina r641

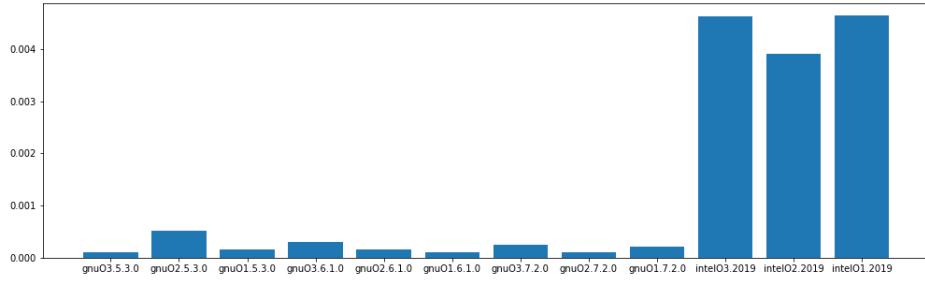


(b) Testes corridos numa maquina r662

Figure 59: Total tempo gasto em *system time* durante uma execução em segundos

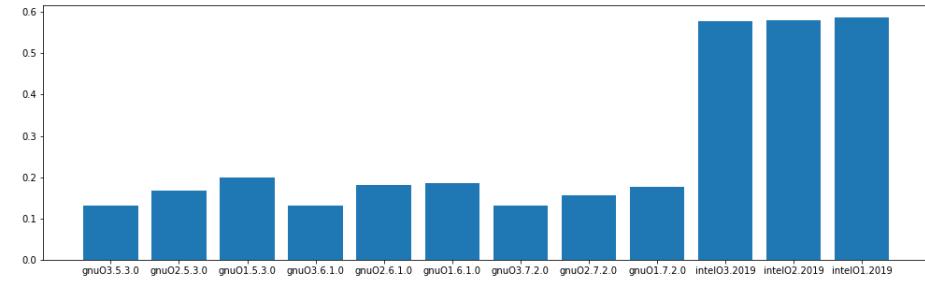


(a) Testes corridos numa maquina r641

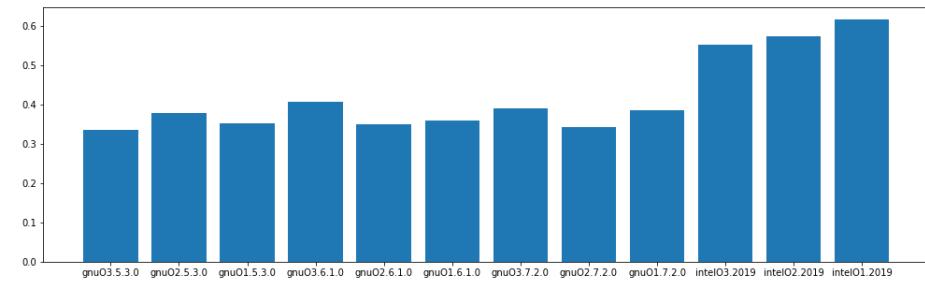


(b) Testes corridos numa maquina r662

Figure 60: Total tempo gasto em *iowait* durante a execução em segundos

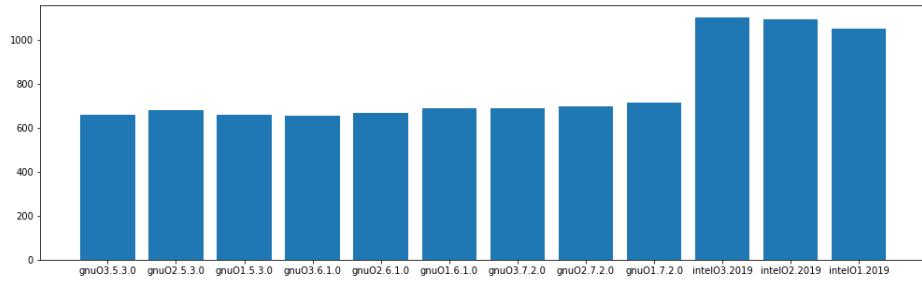


(a) Testes corridos numa maquina r641

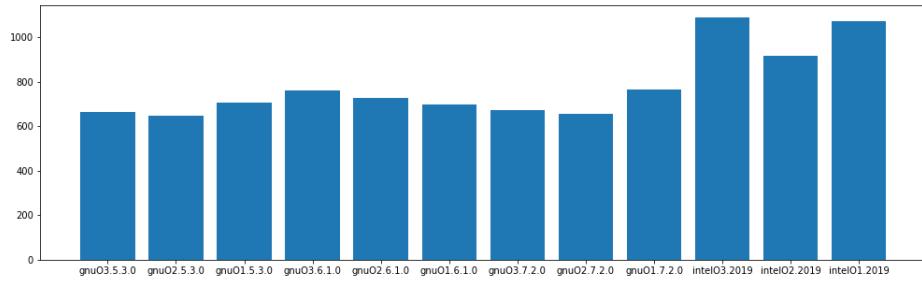


(b) Testes corridos numa maquina r662

Figure 61: Total tempo gasto em *idle* durante a execução em segundos

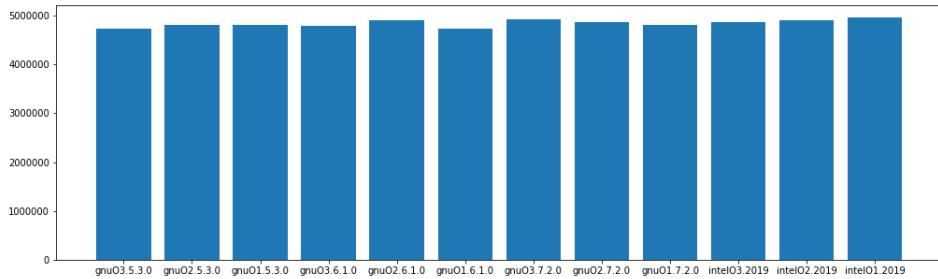


(a) Testes corridos numa maquina r641

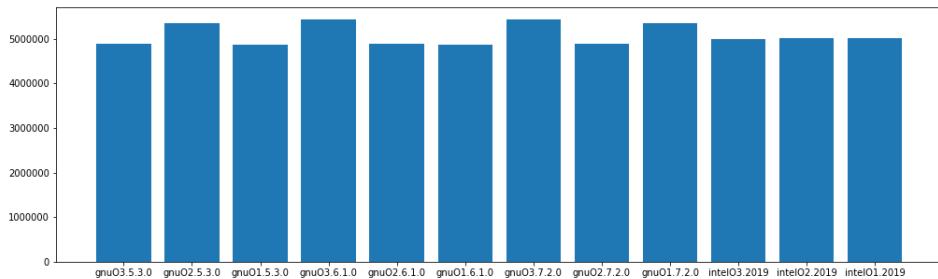


(b) Testes corridos numa maquina r662

Figure 62: Numero de blocos escritos em disco durante a execução do programa

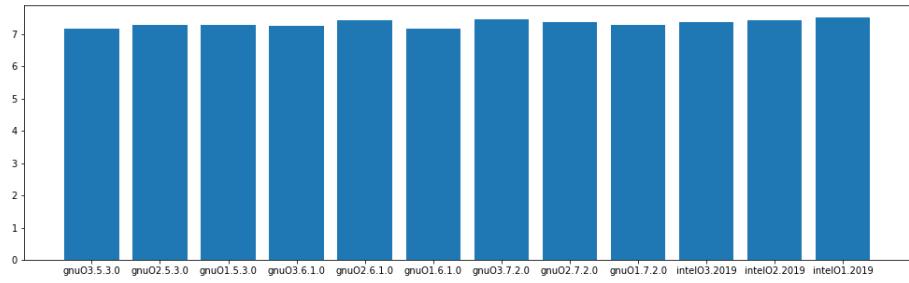


(a) Testes corridos numa maquina r641

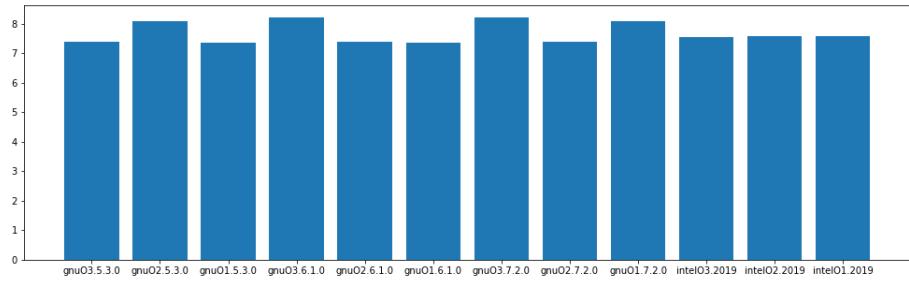


(b) Testes corridos numa maquina r662

Figure 63: Memória utilizada em KiB



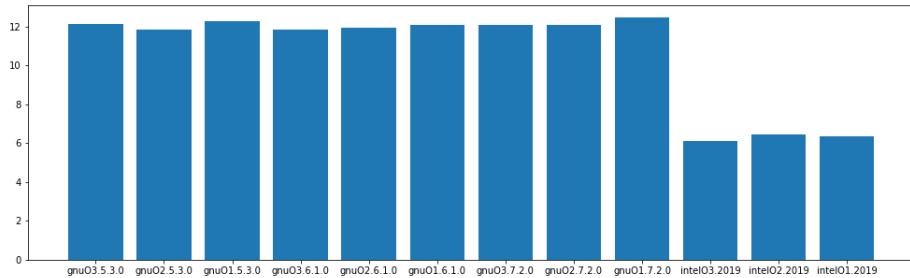
(a) Testes corridos numa maquina r641



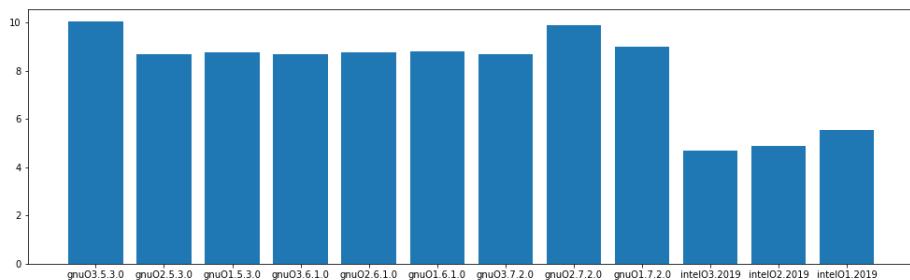
(b) Testes corridos numa maquina r662

Figure 64: Memória utilizada em percentagem

1.2.3 Teste EP classe C

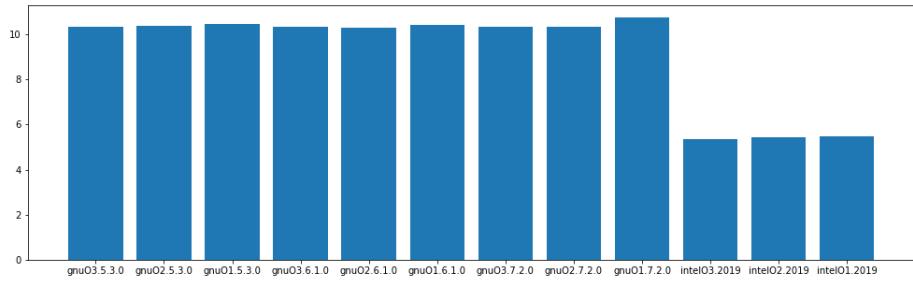


(a) Testes corridos numa maquina r641

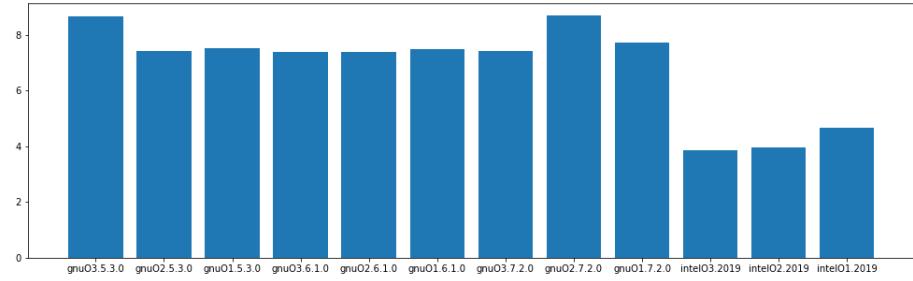


(b) Testes corridos numa maquina r662

Figure 65: Tempo total de uma execução em segundos

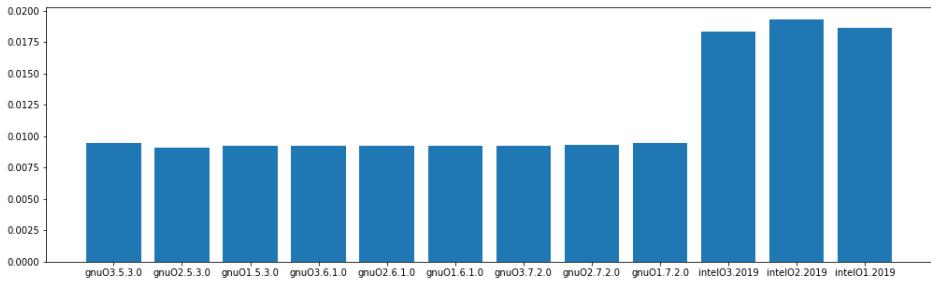


(a) Testes corridos numa maquina r641

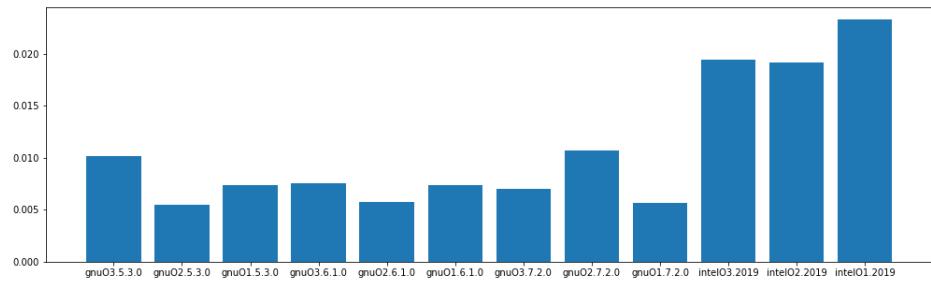


(b) Testes corridos numa maquina r662

Figure 66: Total tempo gasto em *user time* durante uma execução em segundos

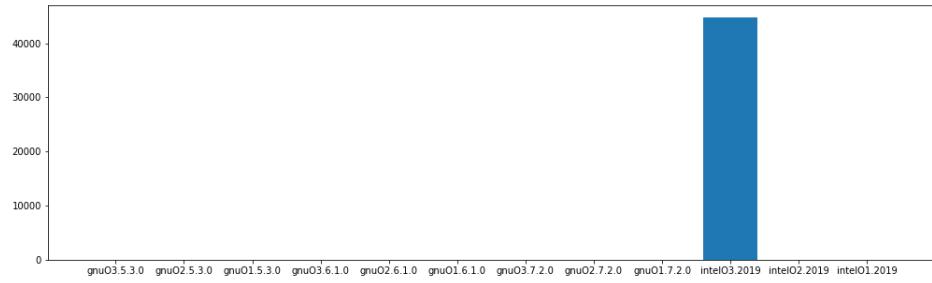


(a) Testes corridos numa maquina r641

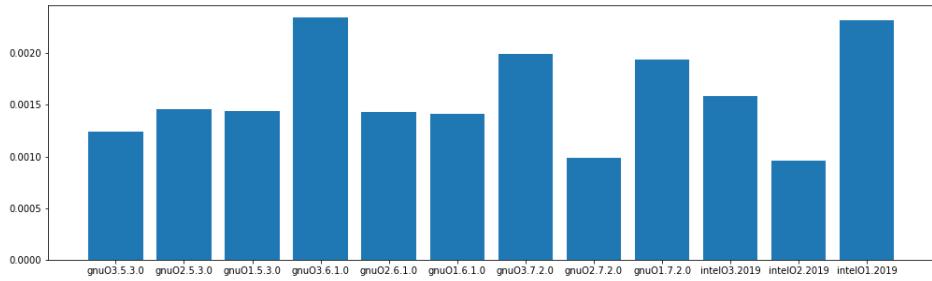


(b) Testes corridos numa maquina r662

Figure 67: Total tempo gasto em *system time* durante uma execução em segundos

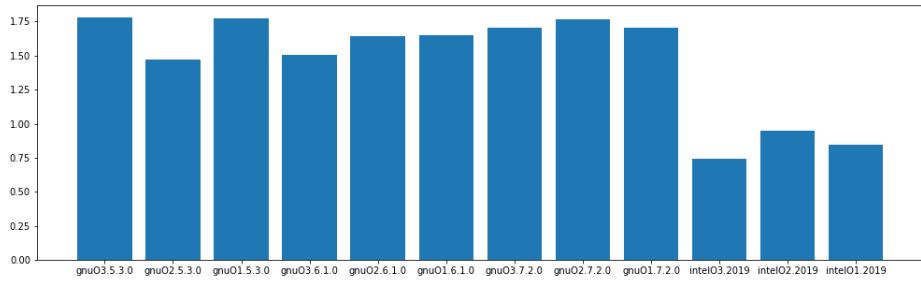


(a) Testes corridos numa maquina r641

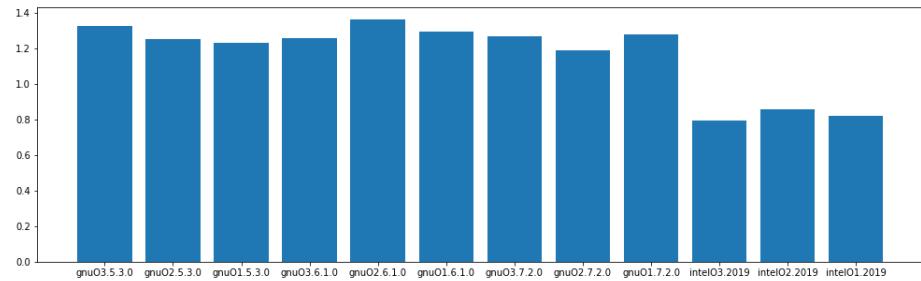


(b) Testes corridos numa maquina r662

Figure 68: Total tempo gasto em *iowait* durante a execução em segundos

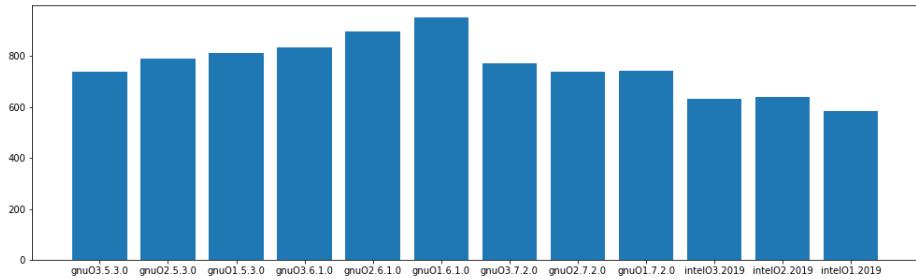


(a) Testes corridos numa maquina r641

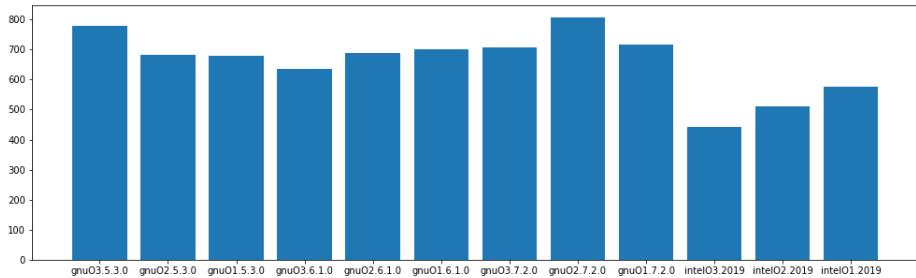


(b) Testes corridos numa maquina r662

Figure 69: Total tempo gasto em *idle* durante a execução em segundos

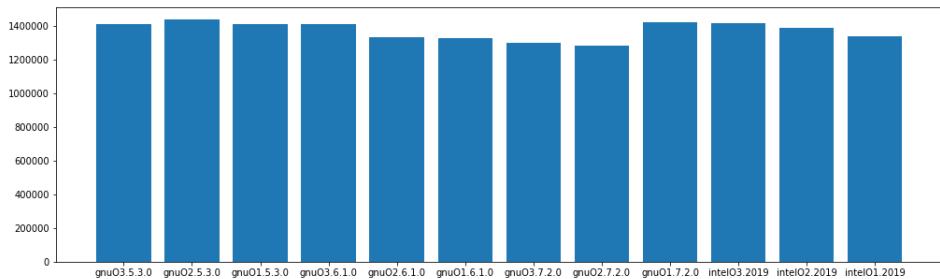


(a) Testes corridos numa maquina r641

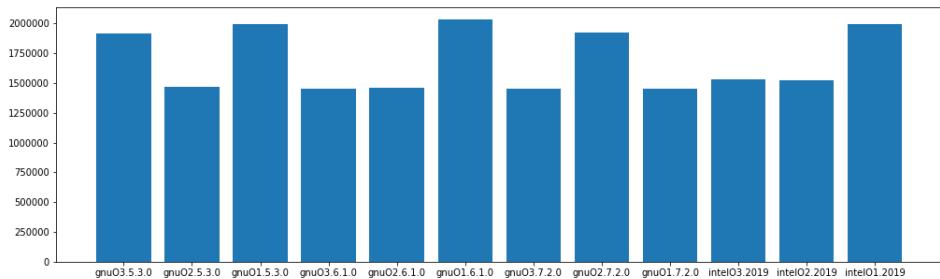


(b) Testes corridos numa maquina r662

Figure 70: Número de blocos escritos em disco durante a execução do programa

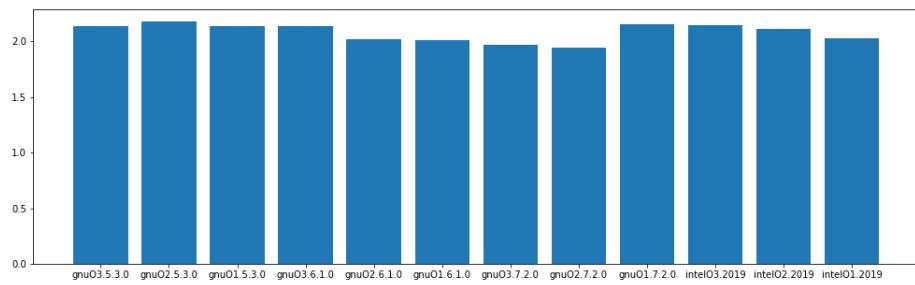


(a) Testes corridos numa maquina r641

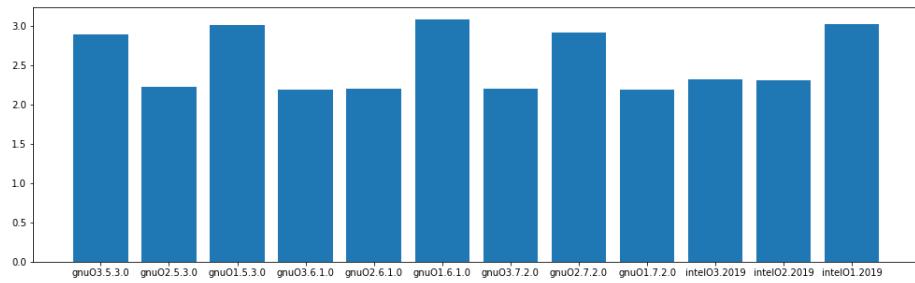


(b) Testes corridos numa maquina r662

Figure 71: Memória utilizada em KiB



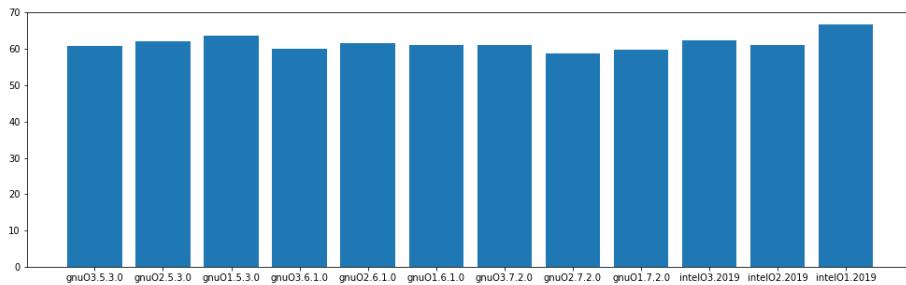
(a) Testes corridos numa maquina r641



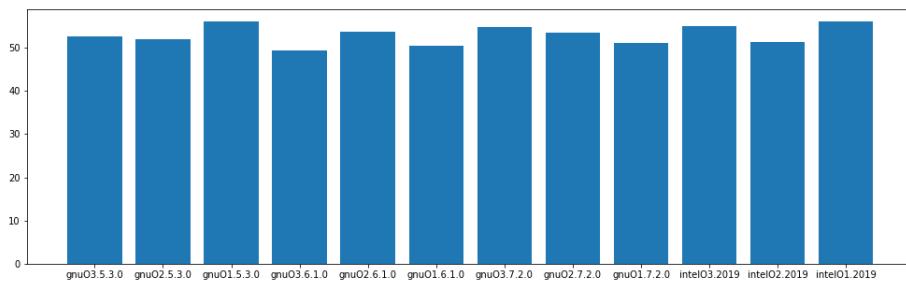
(b) Testes corridos numa maquina r662

Figure 72: Memória utilizada em percentagem

1.2.4 Teste IS classe D

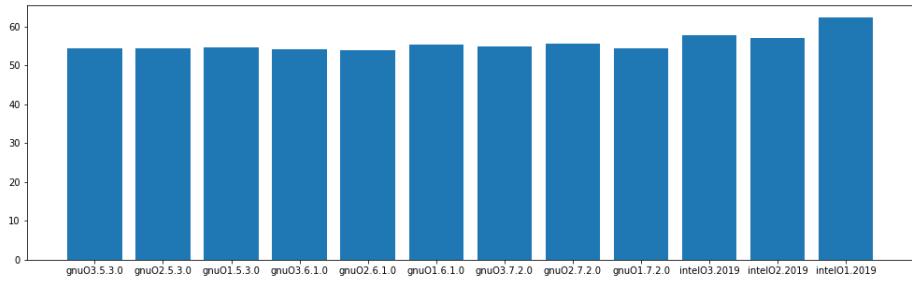


(a) Testes corridos numa maquina r641

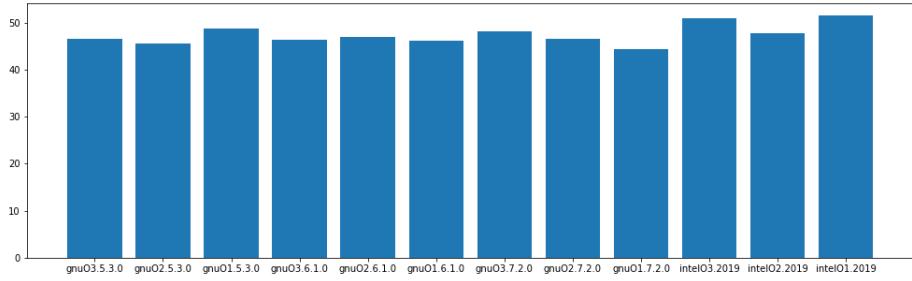


(b) Testes corridos numa maquina r662

Figure 73: Tempo total de uma execução em segundos

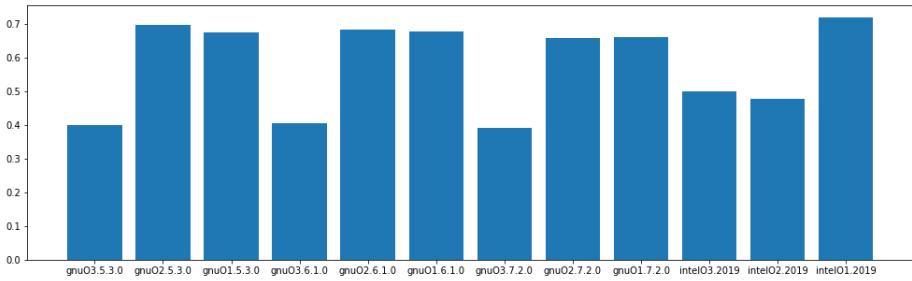


(a) Testes corridos numa maquina r641

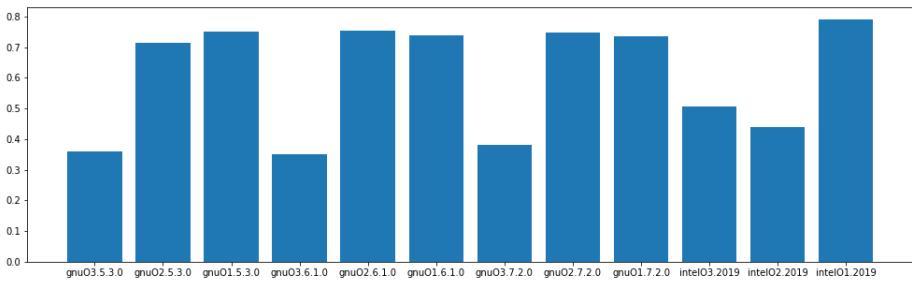


(b) Testes corridos numa maquina r662

Figure 74: Total tempo gasto em *user time* durante uma execução em segundos

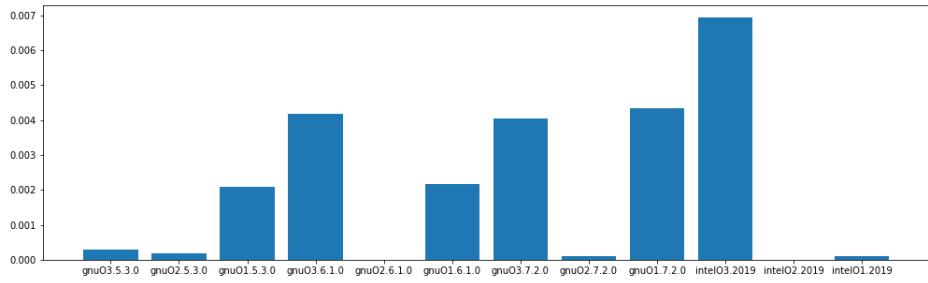


(a) Testes corridos numa maquina r641

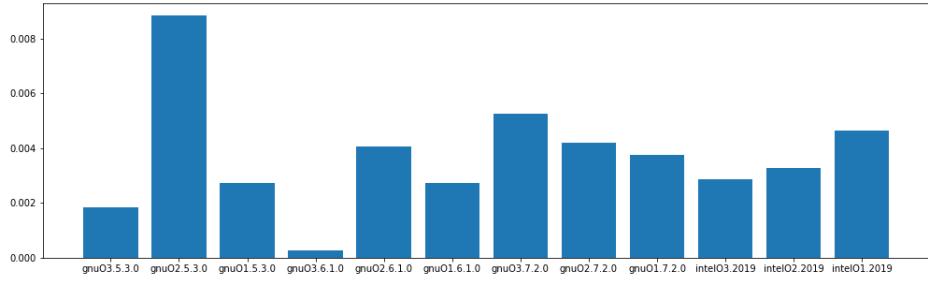


(b) Testes corridos numa maquina r662

Figure 75: Total tempo gasto em *system time* durante uma execução em segundos

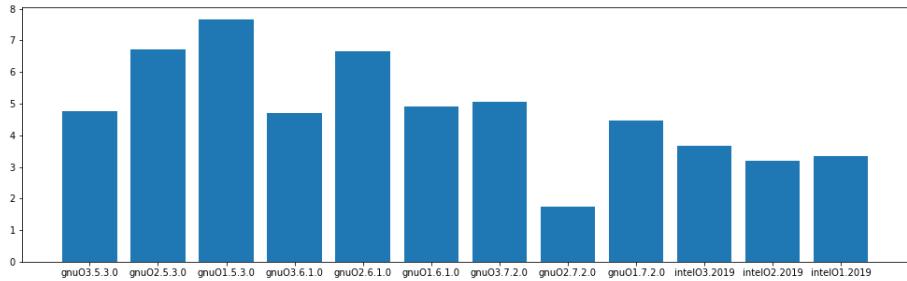


(a) Testes corridos numa maquina r641

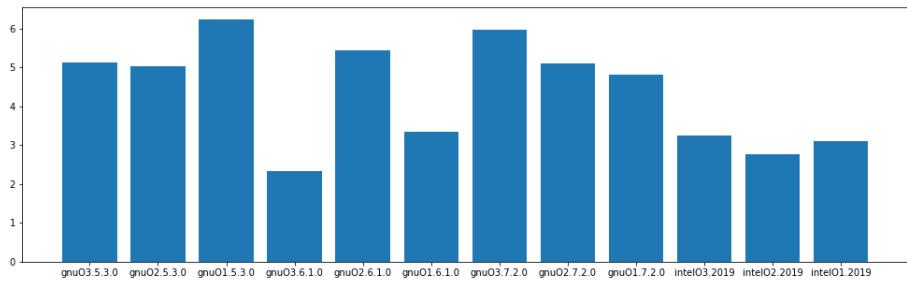


(b) Testes corridos numa maquina r662

Figure 76: Total tempo gasto em *iowait* durante a execução em segundos

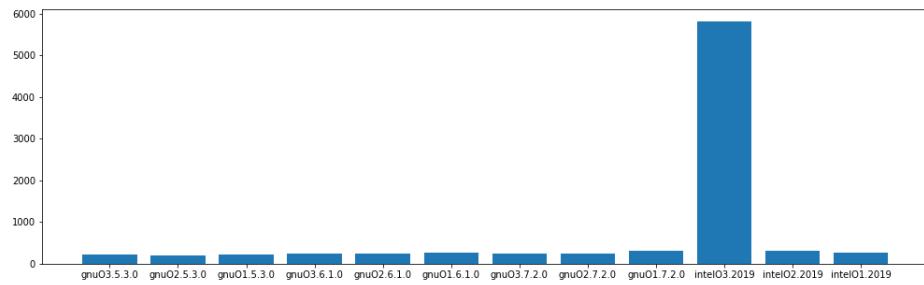


(a) Testes corridos numa maquina r641

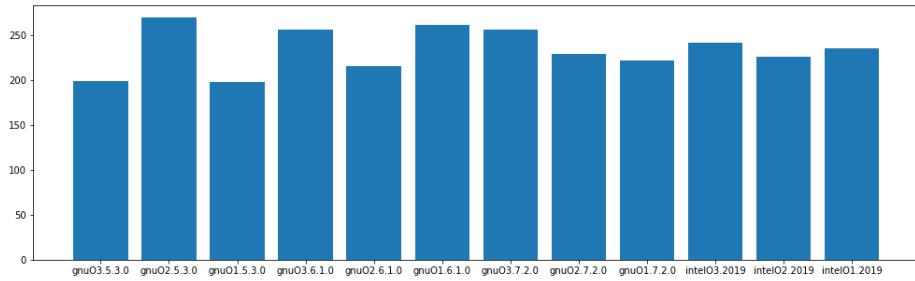


(b) Testes corridos numa maquina r662

Figure 77: Total tempo gasto em *idle* durante a execução em segundos

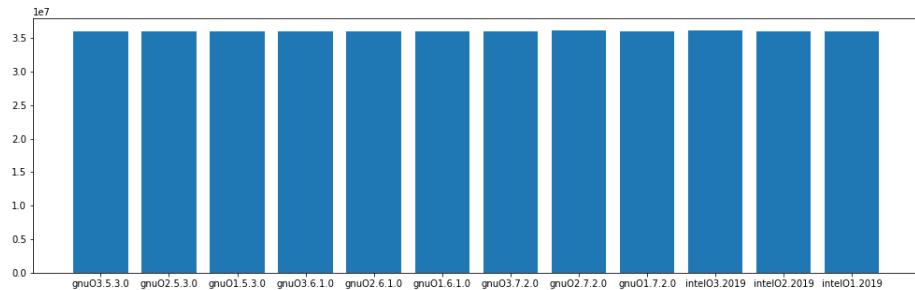


(a) Testes corridos numa maquina r641

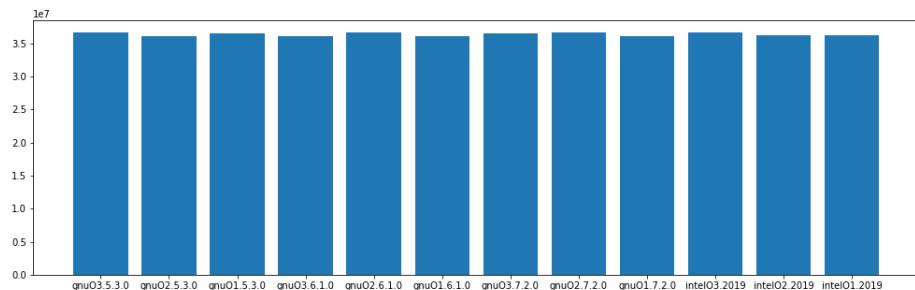


(b) Testes corridos numa maquina r662

Figure 78: Número de blocos escritos em disco durante a execução do programa

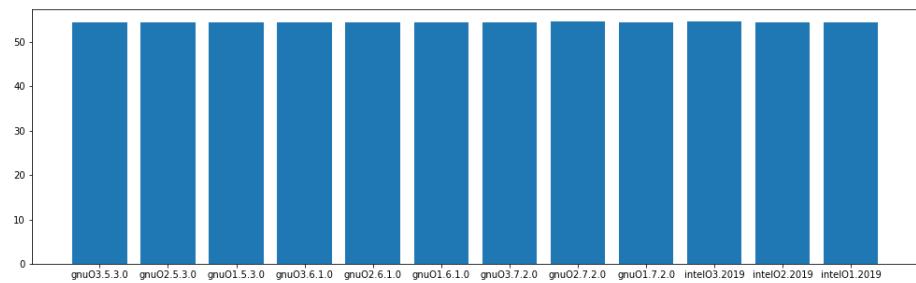


(a) Testes corridos numa maquina r641

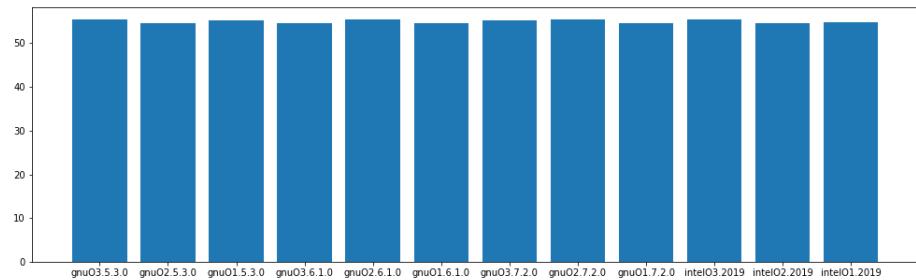


(b) Testes corridos numa maquina r662

Figure 79: Memória utilizada em KiB



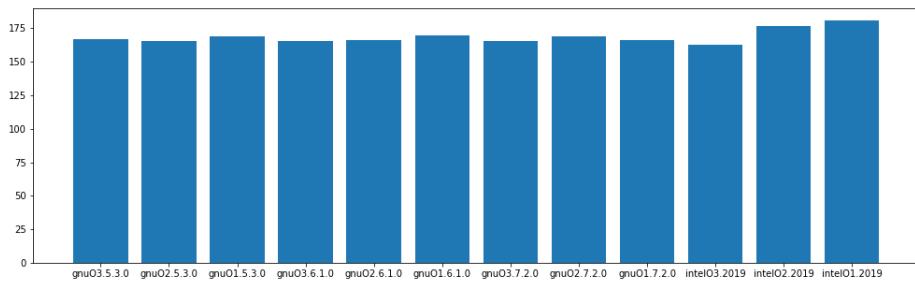
(a) Testes corridos numa maquina r641



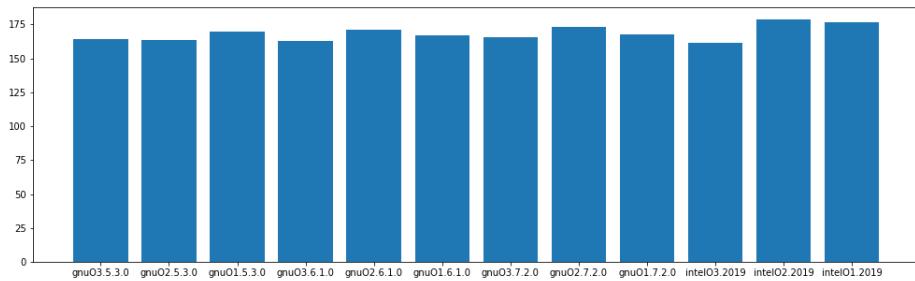
(b) Testes corridos numa maquina r662

Figure 80: Memória utilizada em percentagem

1.2.5 Teste MG classe D

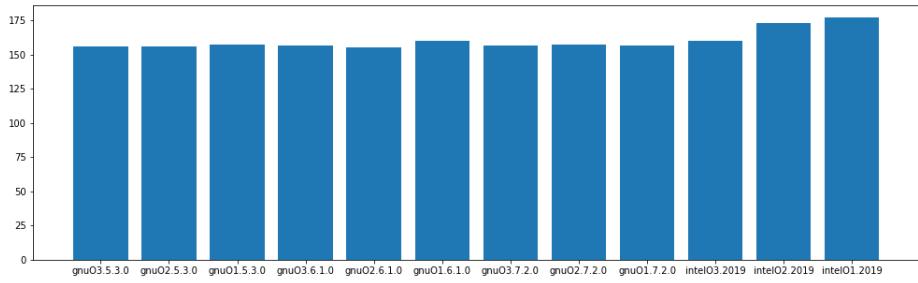


(a) Testes corridos numa maquina r641

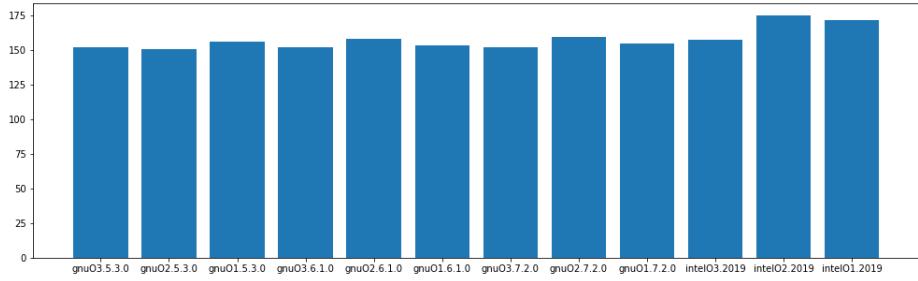


(b) Testes corridos numa maquina r662

Figure 81: Tempo total de uma execução em segundos

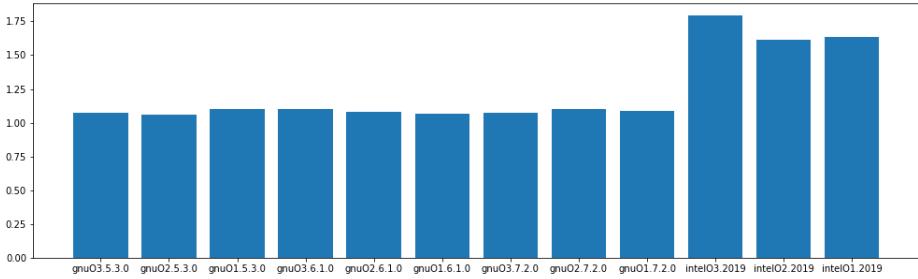


(a) Testes corridos numa maquina r641

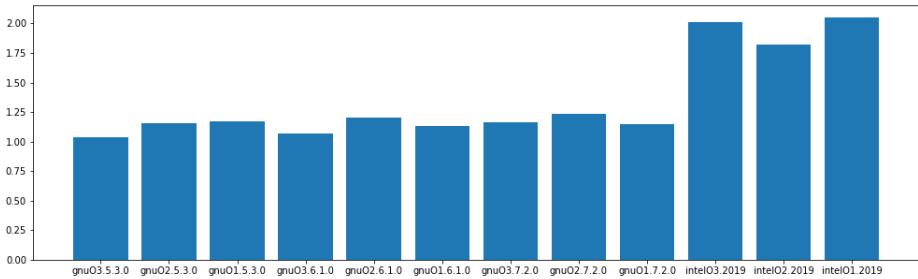


(b) Testes corridos numa maquina r662

Figure 82: Total tempo gasto em *user time* durante uma execução em segundos

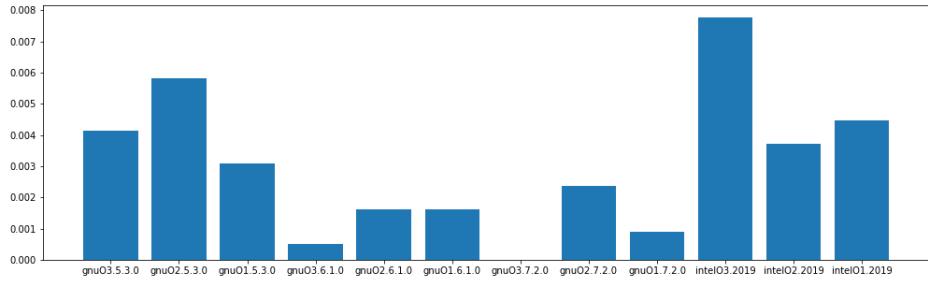


(a) Testes corridos numa maquina r641

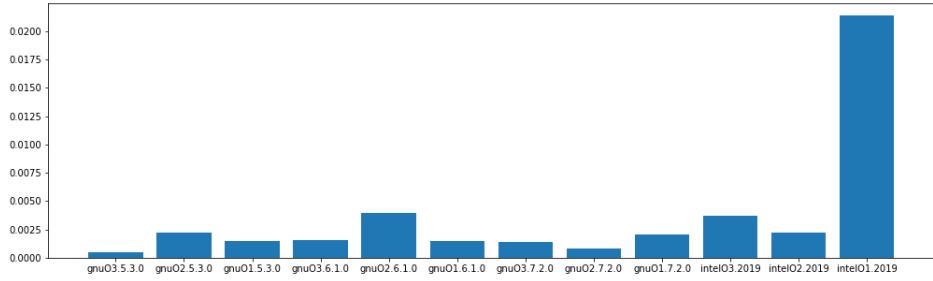


(b) Testes corridos numa maquina r662

Figure 83: Total tempo gasto em *system time* durante uma execução em segundos

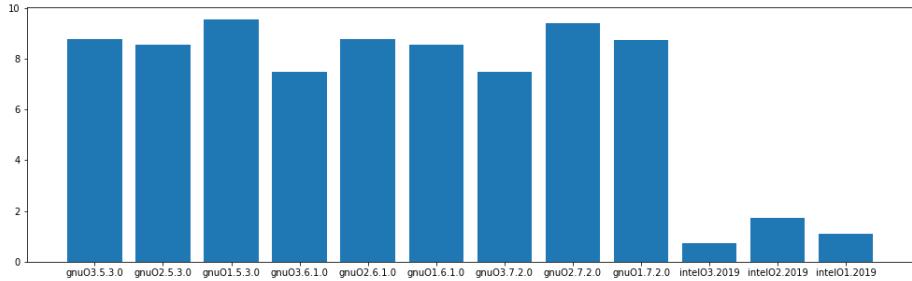


(a) Testes corridos numa maquina r641

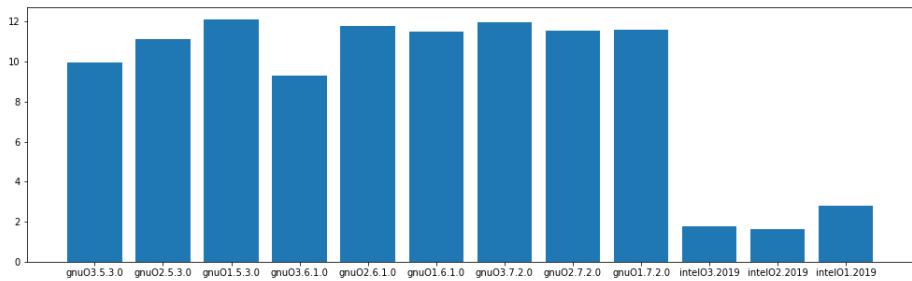


(b) Testes corridos numa maquina r662

Figure 84: Total tempo gasto em *iowait* durante a execução em segundos

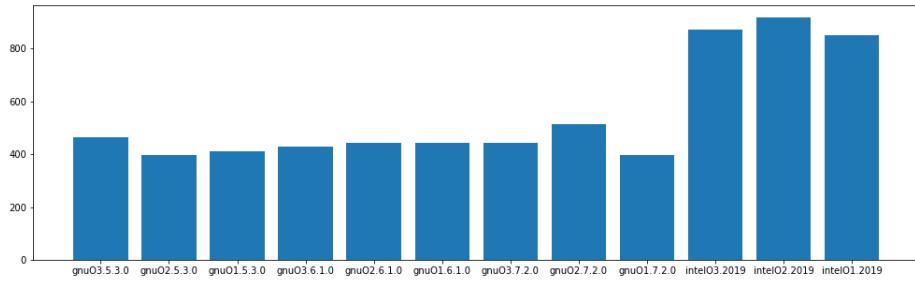


(a) Testes corridos numa maquina r641

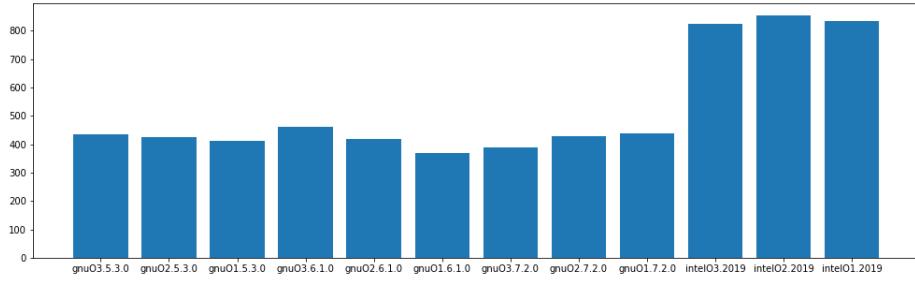


(b) Testes corridos numa maquina r662

Figure 85: Total tempo gasto em *idle* durante a execução em segundos

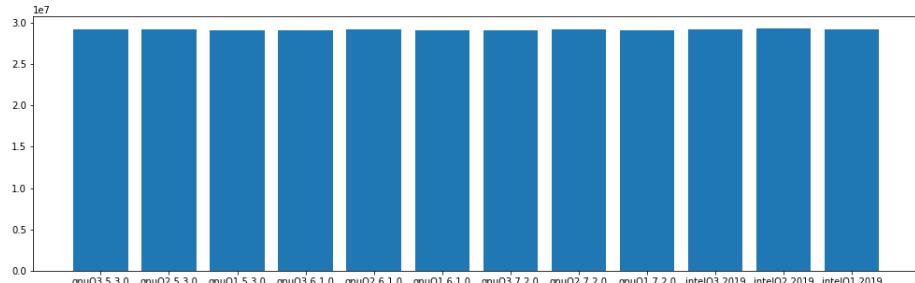


(a) Testes corridos numa maquina r641

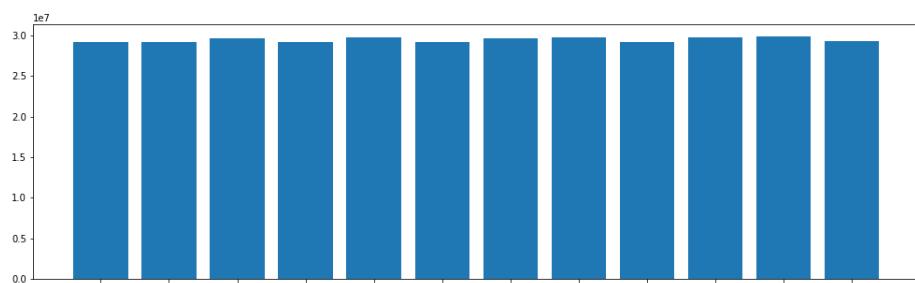


(b) Testes corridos numa maquina r662

Figure 86: Número de blocos escritos em disco durante a execução do programa

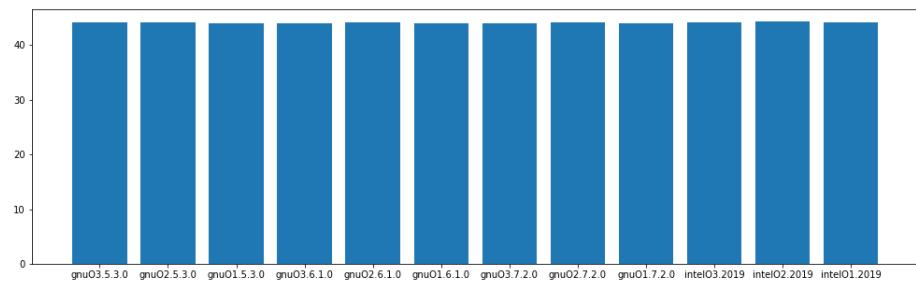


(a) Testes corridos numa maquina r641

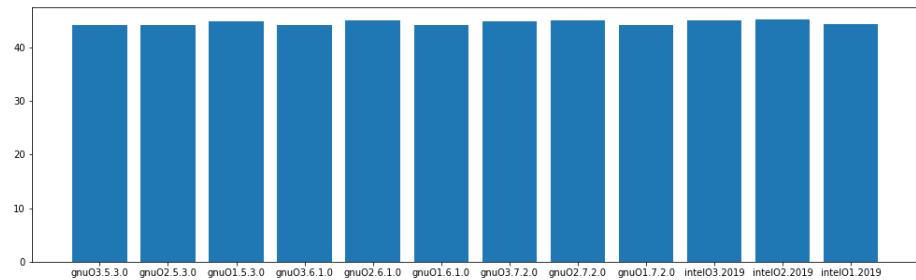


(b) Testes corridos numa maquina r662

Figure 87: Memória utilizada em KiB



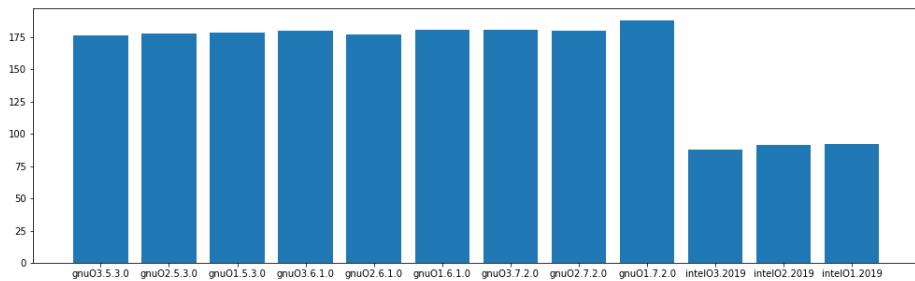
(a) Testes corridos numa maquina r641



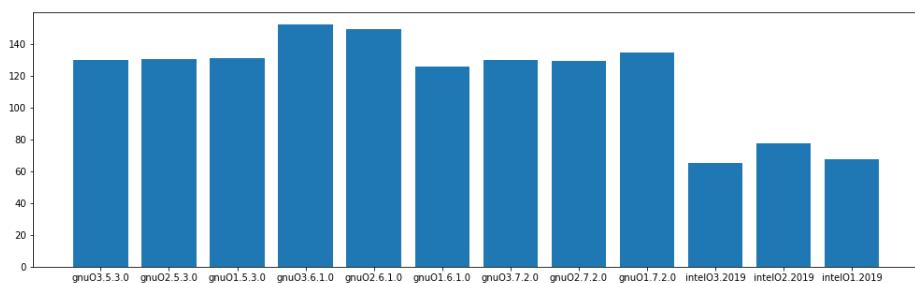
(b) Testes corridos numa maquina r662

Figure 88: Memória utilizada em percentagem

1.2.6 Teste EP classe D

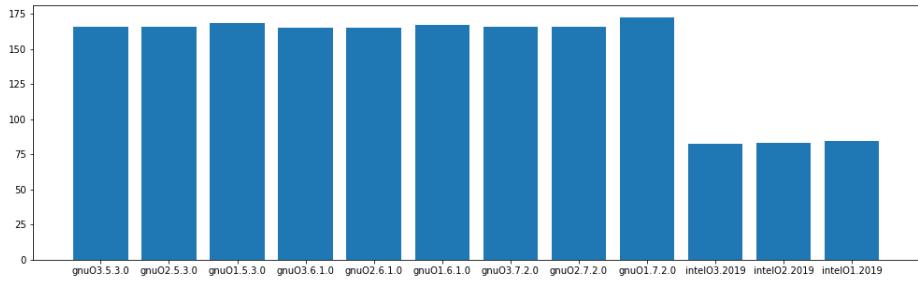


(a) Testes corridos numa maquina r641

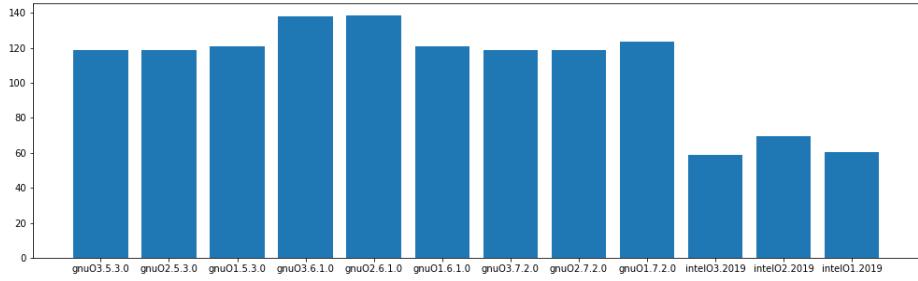


(b) Testes corridos numa maquina r662

Figure 89: Tempo total de uma execução em segundos

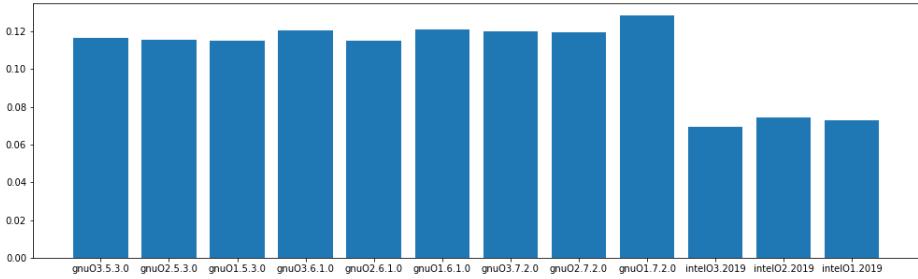


(a) Testes corridos numa maquina r641

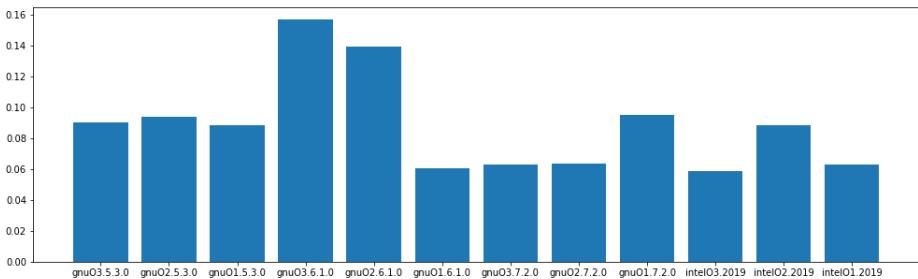


(b) Testes corridos numa maquina r662

Figure 90: Total tempo gasto em *user time* durante uma execução em segundos

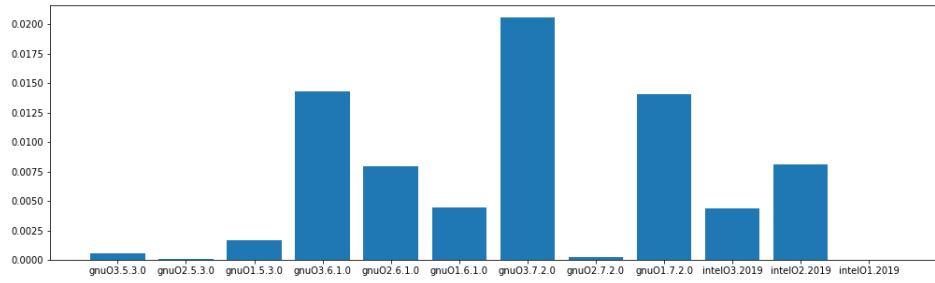


(a) Testes corridos numa maquina r641

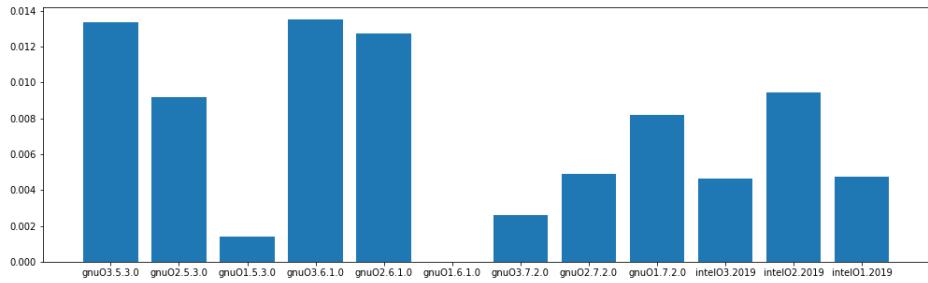


(b) Testes corridos numa maquina r662

Figure 91: Total tempo gasto em *system time* durante uma execução em segundos

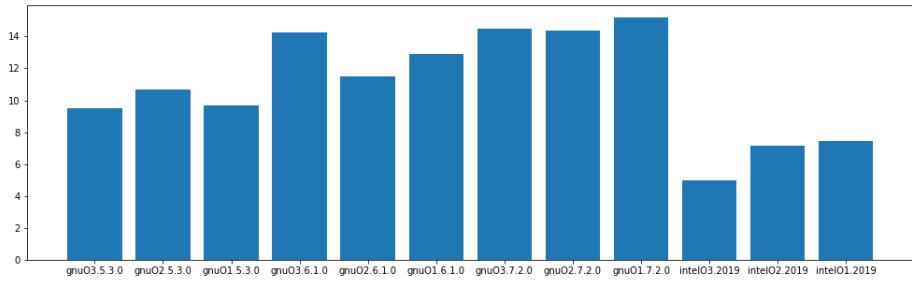


(a) Testes corridos numa maquina r641

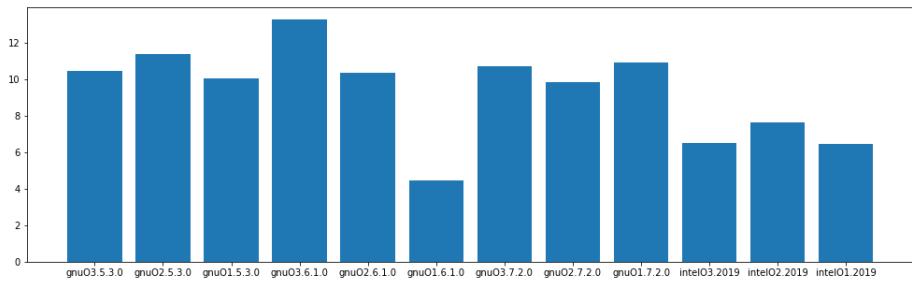


(b) Testes corridos numa maquina r662

Figure 92: Total tempo gasto em *iowait* durante a execução em segundos

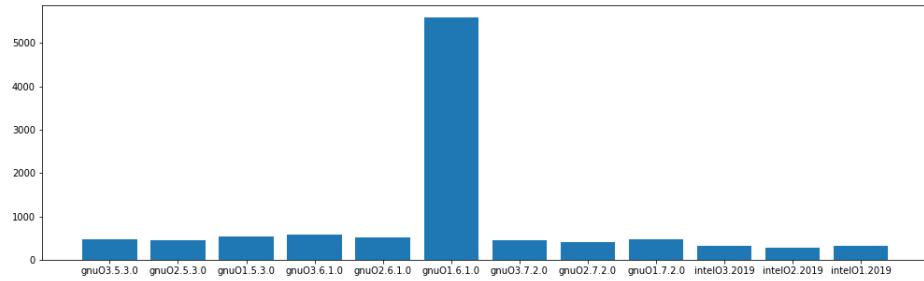


(a) Testes corridos numa maquina r641

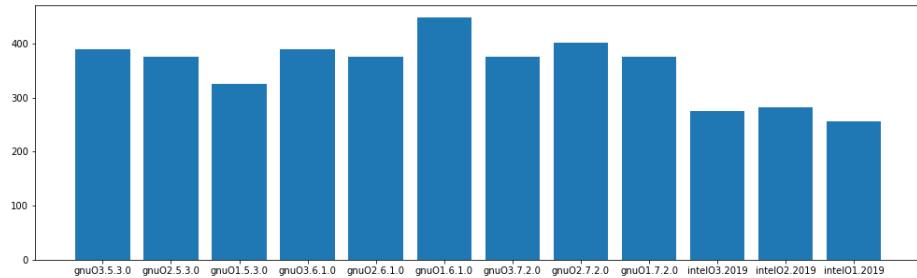


(b) Testes corridos numa maquina r662

Figure 93: Total tempo gasto em *idle* durante a execução em segundos

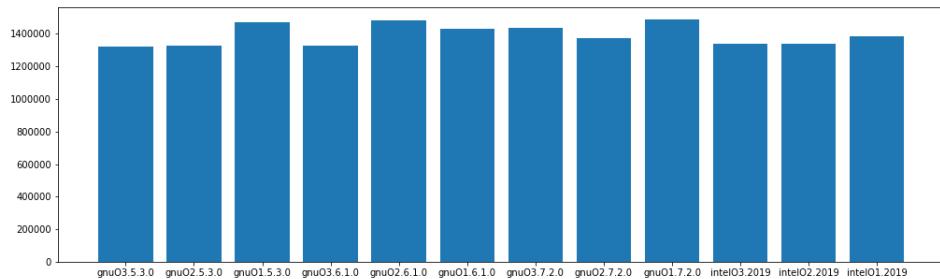


(a) Testes corridos numa maquina r641

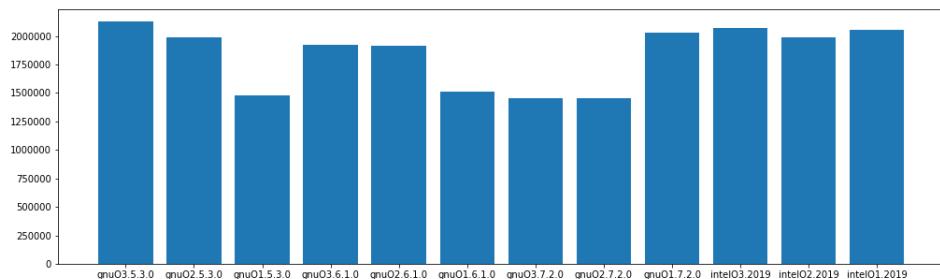


(b) Testes corridos numa maquina r662

Figure 94: Número de blocos escritos em disco durante a execução do programa

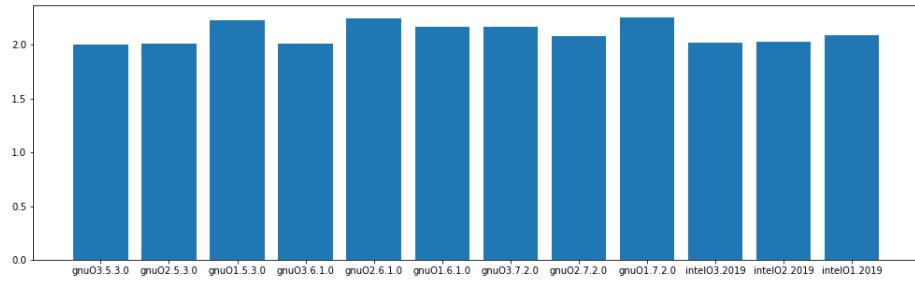


(a) Testes corridos numa maquina r641

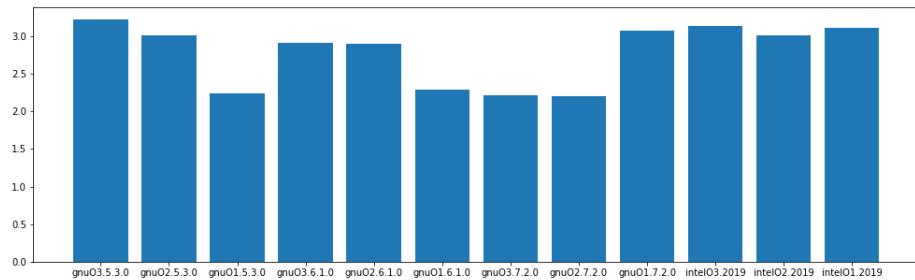


(b) Testes corridos numa maquina r662

Figure 95: Memória utilizada em KiB



(a) Testes corridos numa maquina r641

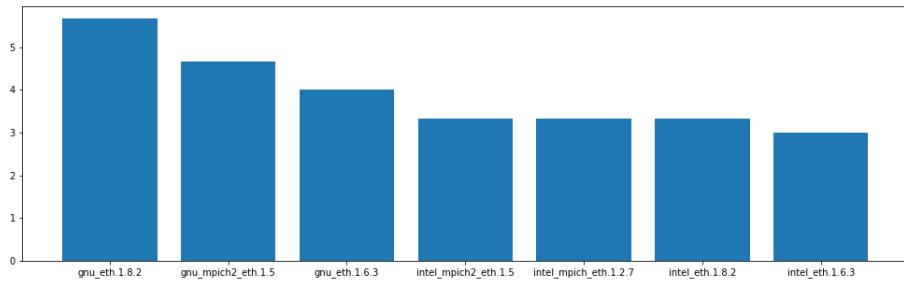


(b) Testes corridos numa maquina r662

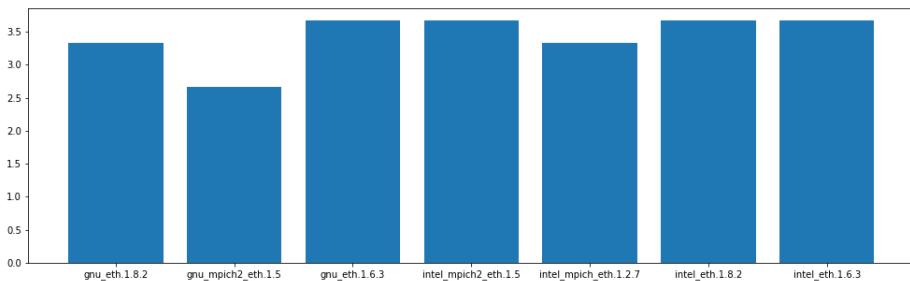
Figure 96: Memória utilizada em percentagem

1.3 Versão MPI

1.3.1 Teste IS classe C

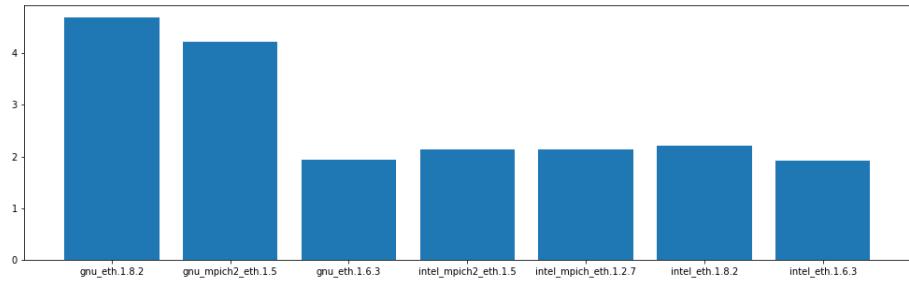


(a) Testes corridos em duas maquinas r641

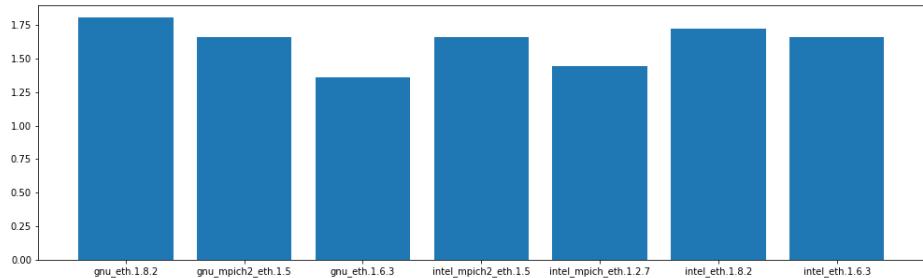


(b) Testes corridos em duas maquinas r662

Figure 97: Tempo total de uma execução em segundos

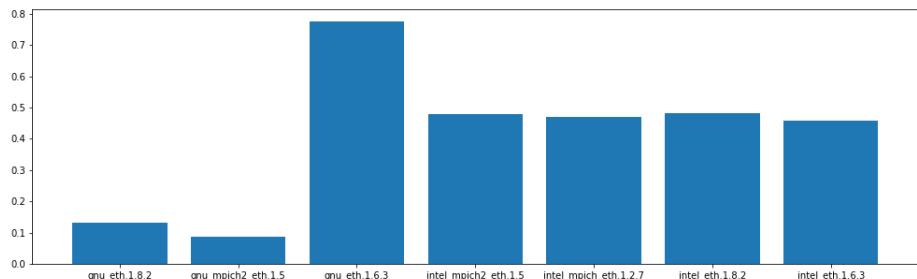


(a) Testes corridos em duas maquinas r641

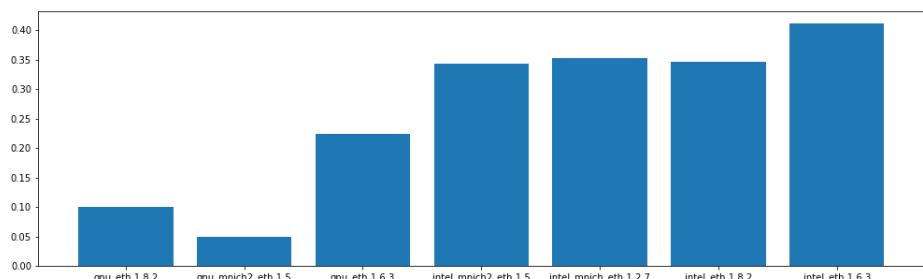


(b) Testes corridos em duas maquinas r662

Figure 98: Total tempo gasto em *user time* durante uma execução em segundos

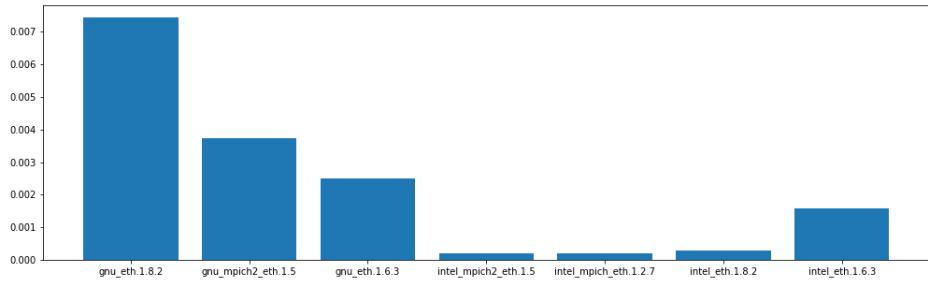


(a) Testes corridos em duas maquinas r641

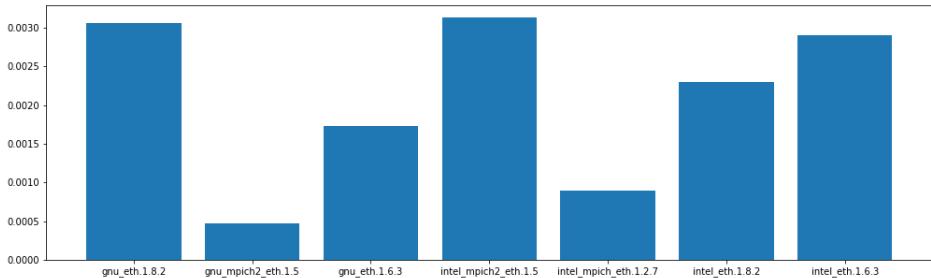


(b) Testes corridos em duas maquinas r662

Figure 99: Total tempo gasto em *system time* durante uma execução em segundos

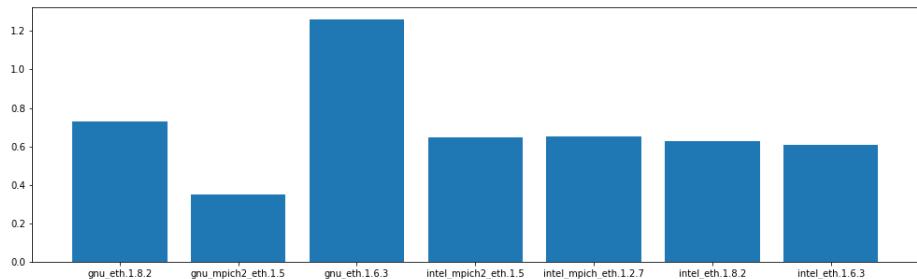


(a) Testes corridos em duas maquinas r641

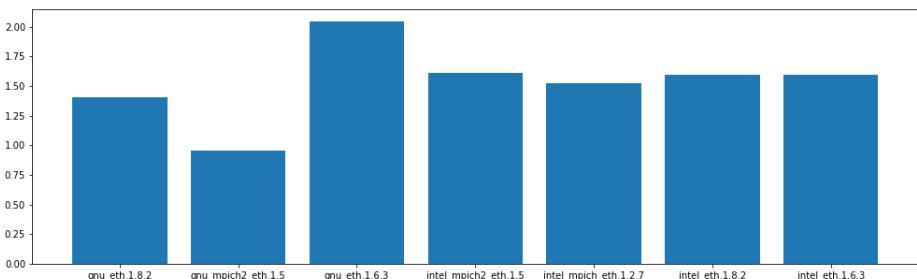


(b) Testes corridos em duas maquinas r662

Figure 100: Total tempo gasto em *iowait* durante a execução em segundos

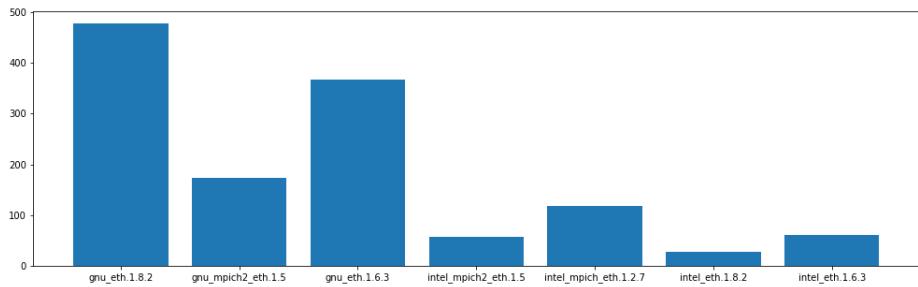


(a) Testes corridos em duas maquinas r641

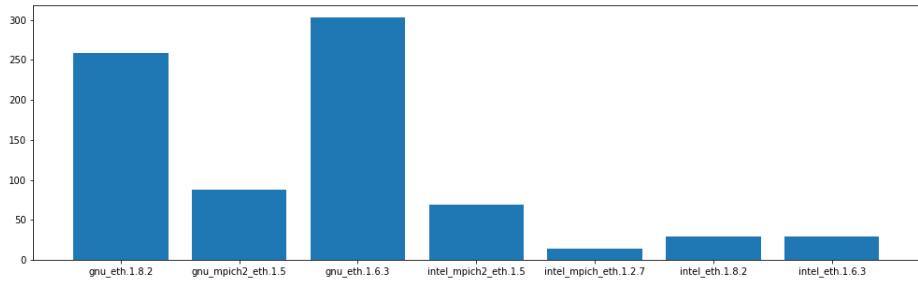


(b) Testes corridos em duas maquinas r662

Figure 101: Total tempo gasto em *idle* durante a execução em segundos

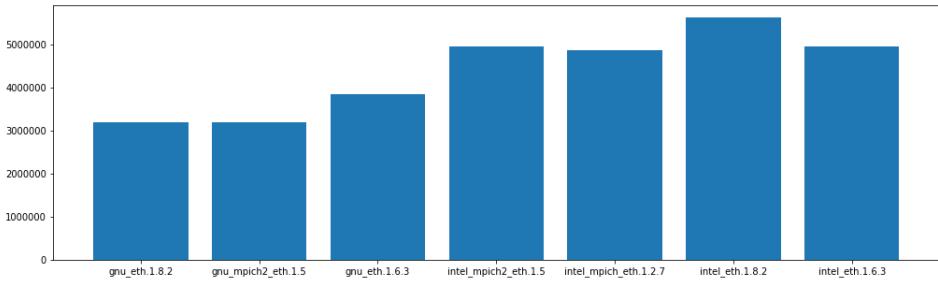


(a) Testes corridos em duas maquinas r641

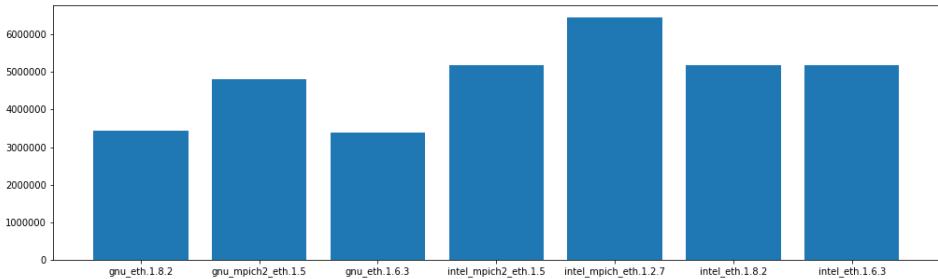


(b) Testes corridos em duas maquinas r662

Figure 102: Número de blocos escritos em disco durante a execução do programa

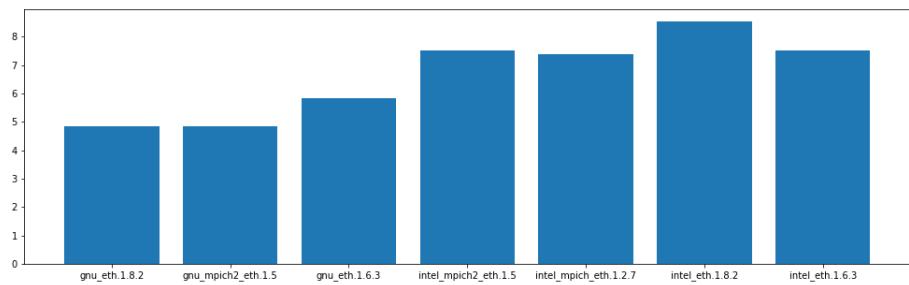


(a) Testes corridos em duas maquinas r641

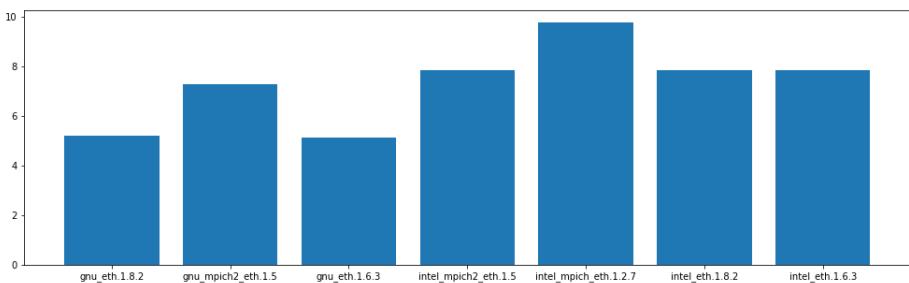


(b) Testes corridos em duas maquinas r662

Figure 103: Memória utilizada em KiB



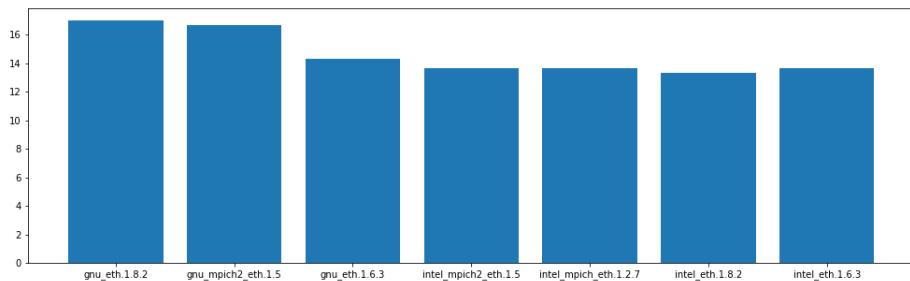
(a) Testes corridos em duas maquinas r641



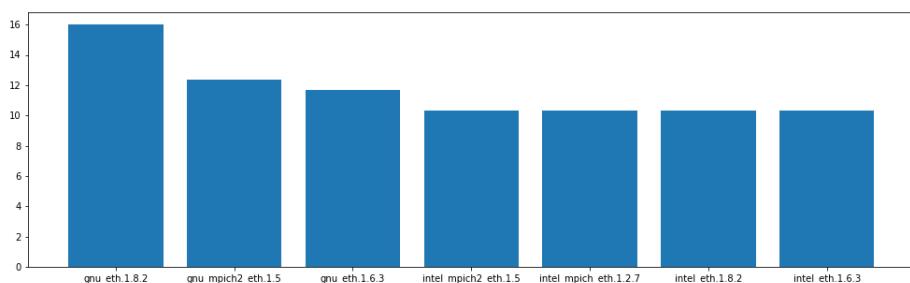
(b) Testes corridos em duas maquinas r662

Figure 104: Memória utilizada em percentagem

1.3.2 Teste MG classe C

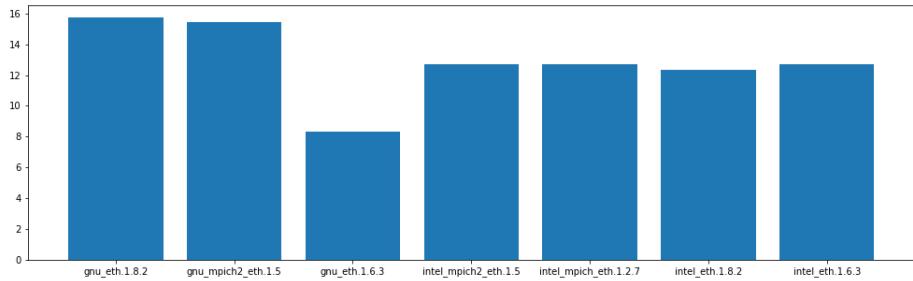


(a) Testes corridos em duas maquinas r641

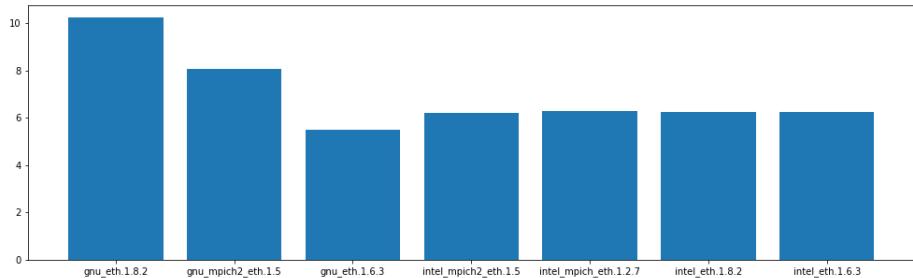


(b) Testes corridos em duas maquinas r662

Figure 105: Tempo total de uma execução em segundos

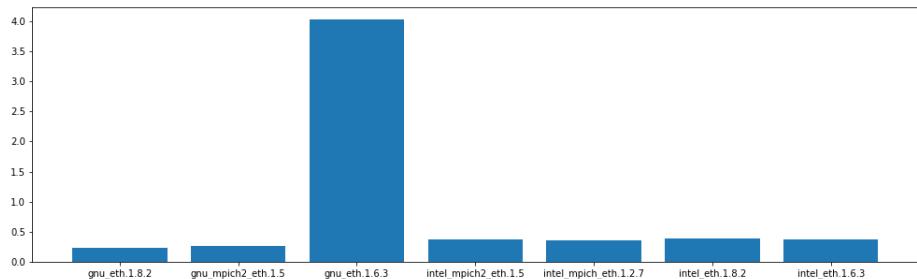


(a) Testes corridos em duas maquinas r641

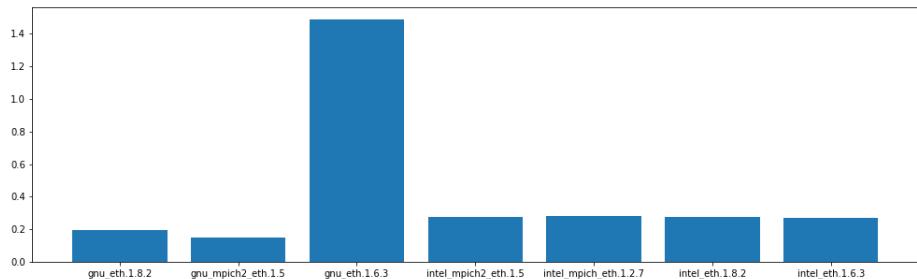


(b) Testes corridos em duas maquinas r662

Figure 106: Total tempo gasto em *user time* durante uma execução em segundos

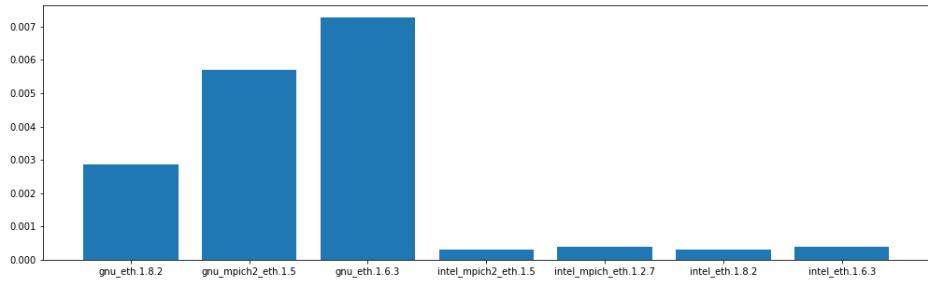


(a) Testes corridos em duas maquinas r641

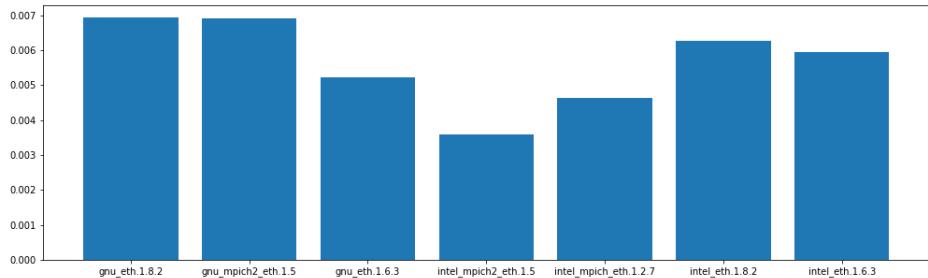


(b) Testes corridos em duas maquinas r662

Figure 107: Total tempo gasto em *system time* durante uma execução em segundos

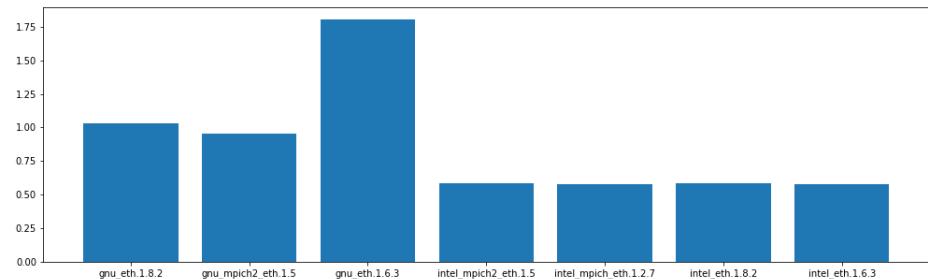


(a) Testes corridos em duas maquinas r641

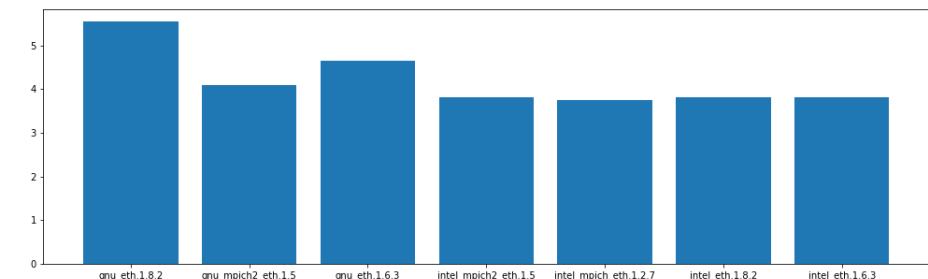


(b) Testes corridos em duas maquinas r662

Figure 108: Total tempo gasto em *iowait* durante a execução em segundos

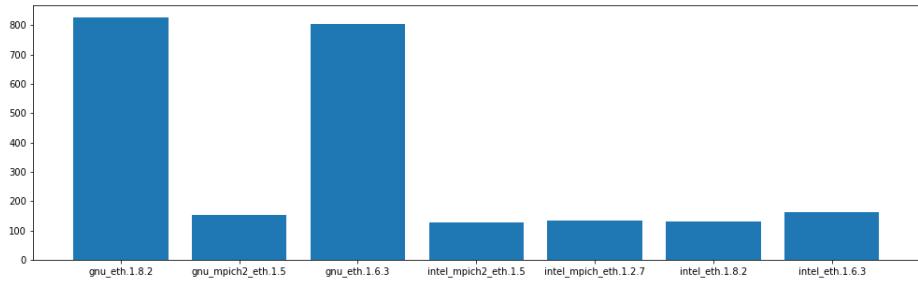


(a) Testes corridos em duas maquinas r641

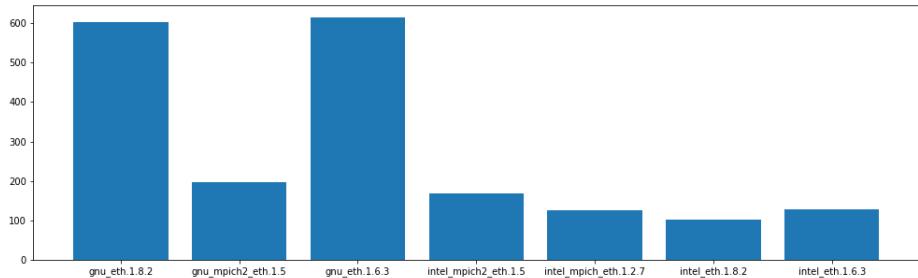


(b) Testes corridos em duas maquinas r662

Figure 109: Total tempo gasto em *idle* durante a execução em segundos

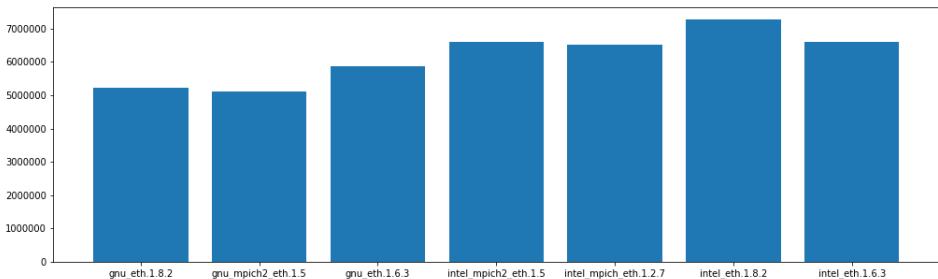


(a) Testes corridos em duas maquinas r641

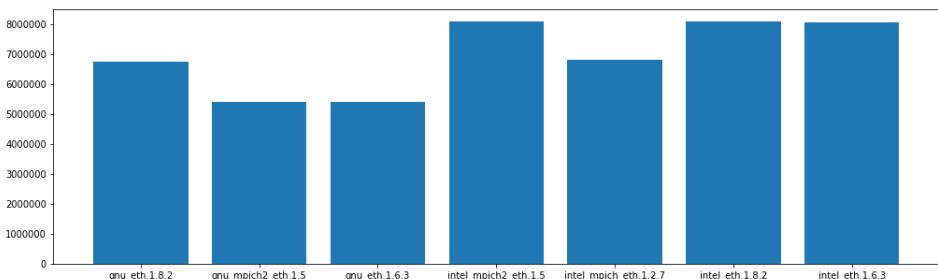


(b) Testes corridos em duas maquinas r662

Figure 110: Número de blocos escritos em disco durante a execução do programa

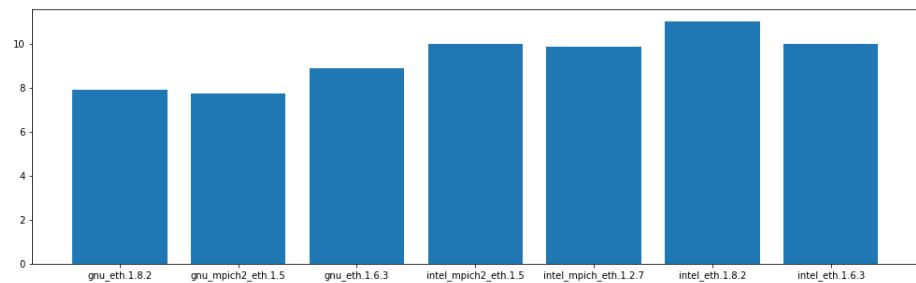


(a) Testes corridos em duas maquinas r641

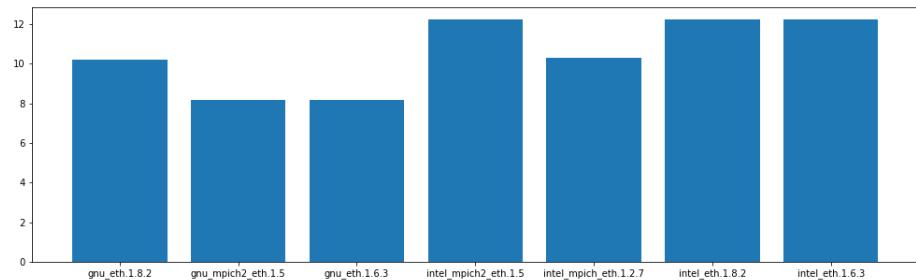


(b) Testes corridos em duas maquinas r662

Figure 111: Memória utilizada em KiB



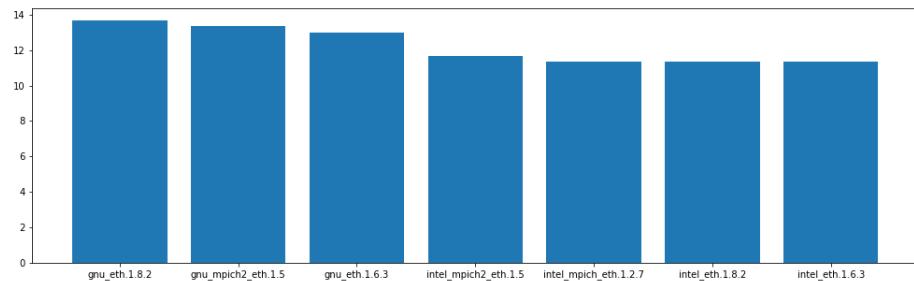
(a) Testes corridos em duas maquinas r641



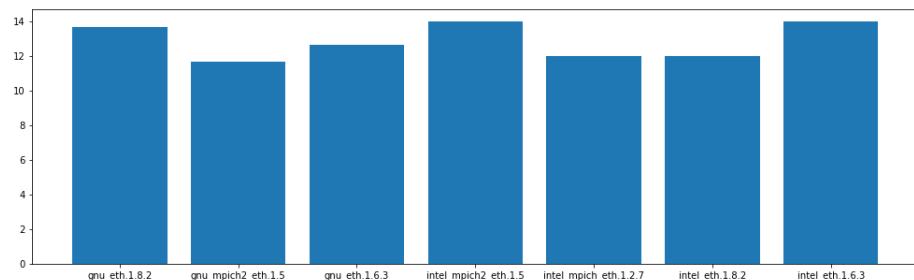
(b) Testes corridos em duas maquinas r662

Figure 112: Memória utilizada em percentagem

1.3.3 Teste EP classe C

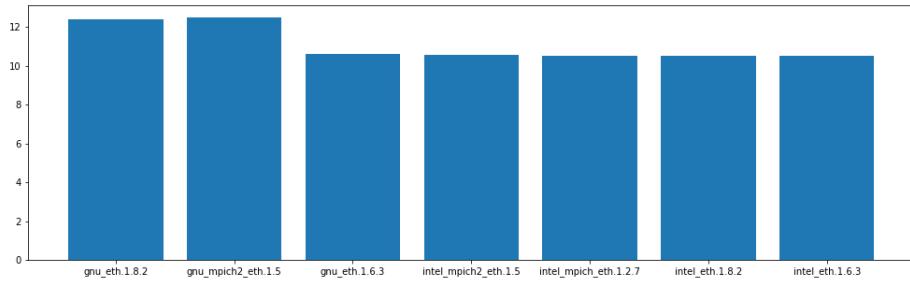


(a) Testes corridos em duas maquinas r641

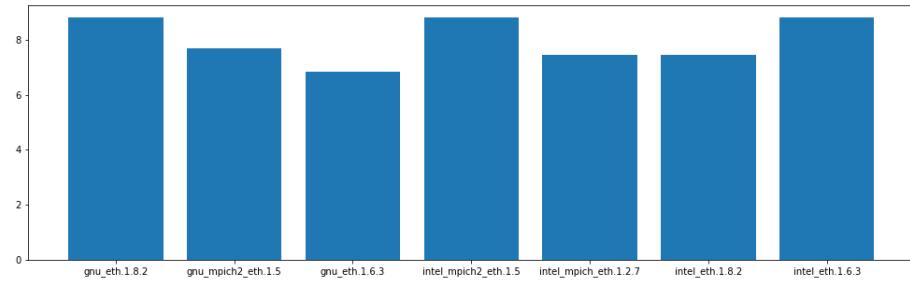


(b) Testes corridos em duas maquinas r662

Figure 113: Tempo total de uma execução em segundos

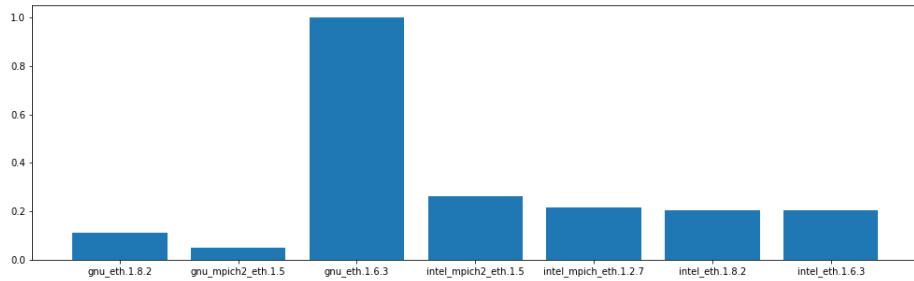


(a) Testes corridos em duas maquinas r641

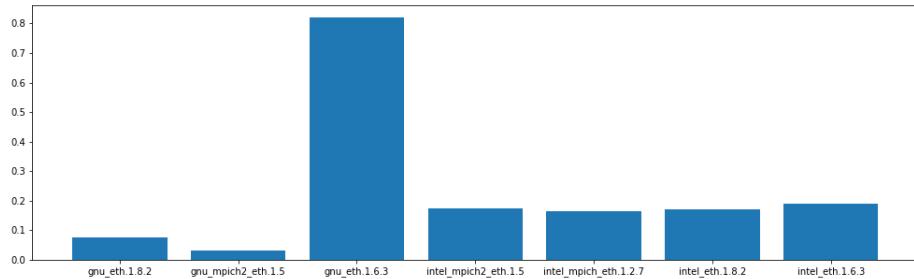


(b) Testes corridos em duas maquinas r662

Figure 114: Total tempo gasto em *user time* durante uma execução em segundos

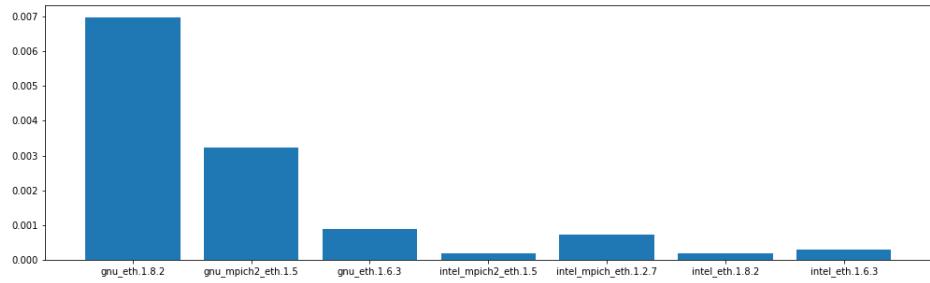


(a) Testes corridos em duas maquinas r641

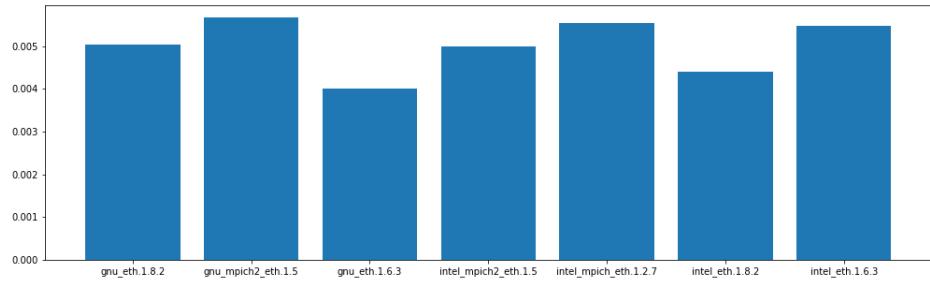


(b) Testes corridos em duas maquinas r662

Figure 115: Total tempo gasto em *system time* durante uma execução em segundos

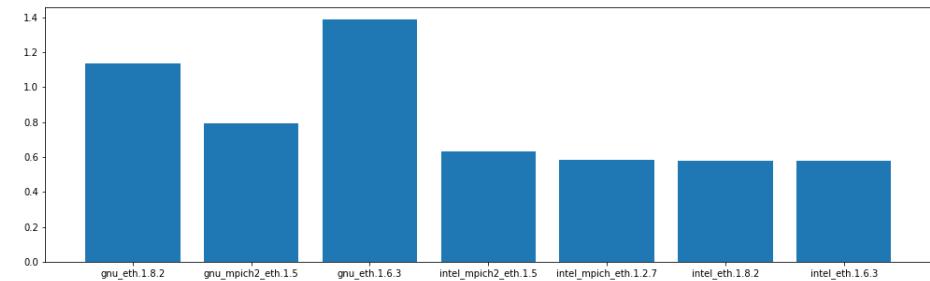


(a) Testes corridos em duas maquinas r641

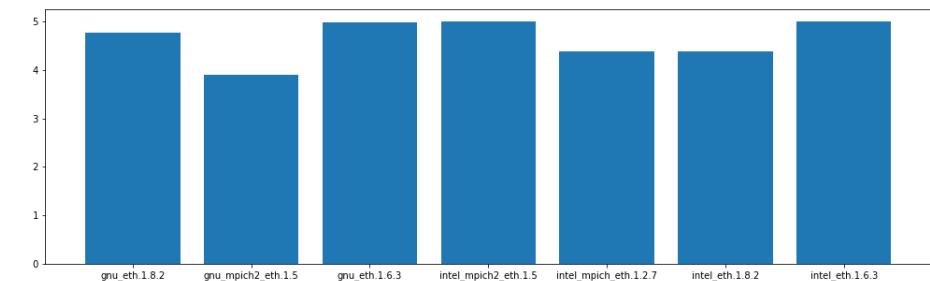


(b) Testes corridos em duas maquinas r662

Figure 116: Total tempo gasto em *iowait* durante a execução em segundos

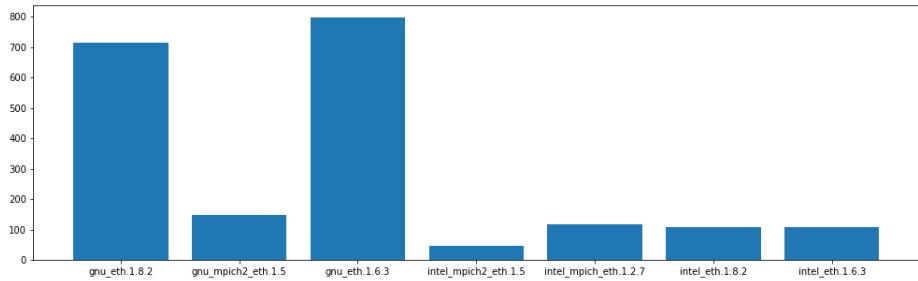


(a) Testes corridos em duas maquinas r641

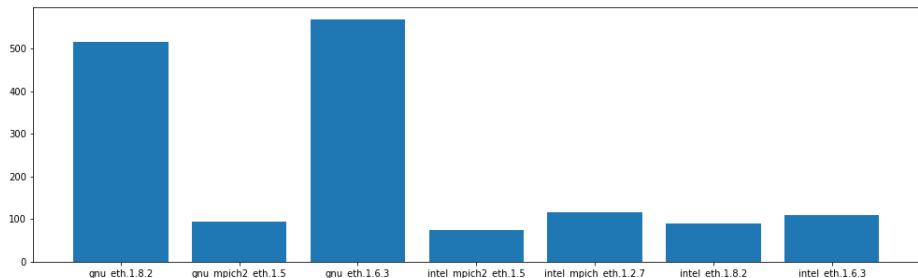


(b) Testes corridos em duas maquinas r662

Figure 117: Total tempo gasto em *idle* durante a execução em segundos

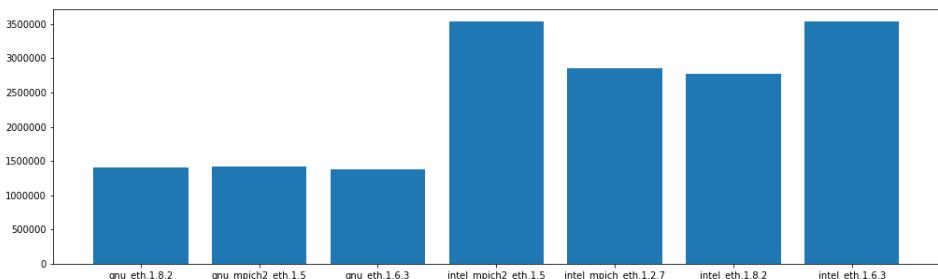


(a) Testes corridos em duas maquinas r641

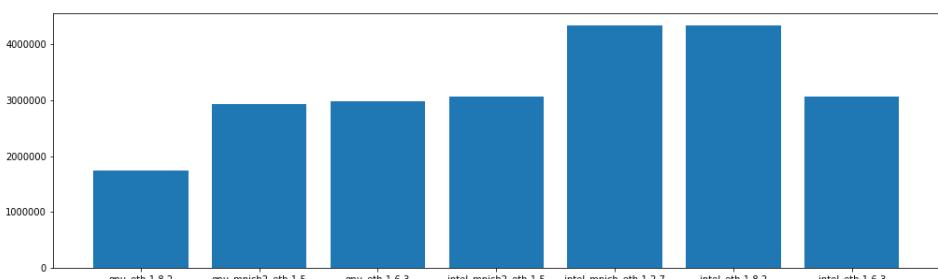


(b) Testes corridos em duas maquinas r662

Figure 118: Número de blocos escritos em disco durante a execução do programa

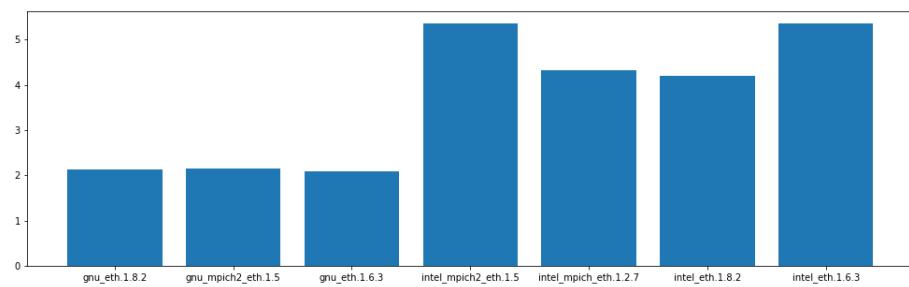


(a) Testes corridos em duas maquinas r641

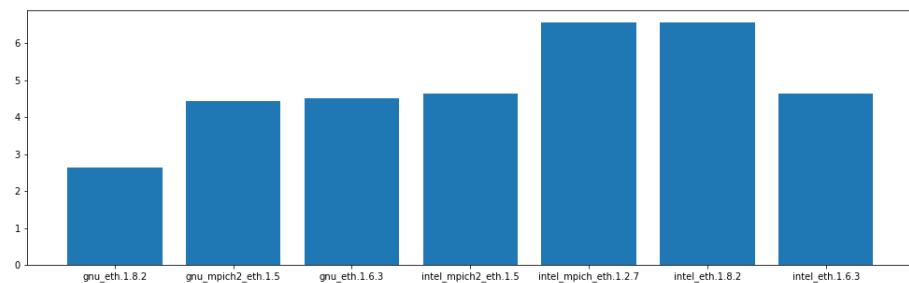


(b) Testes corridos em duas maquinas r662

Figure 119: Memória utilizada em KiB



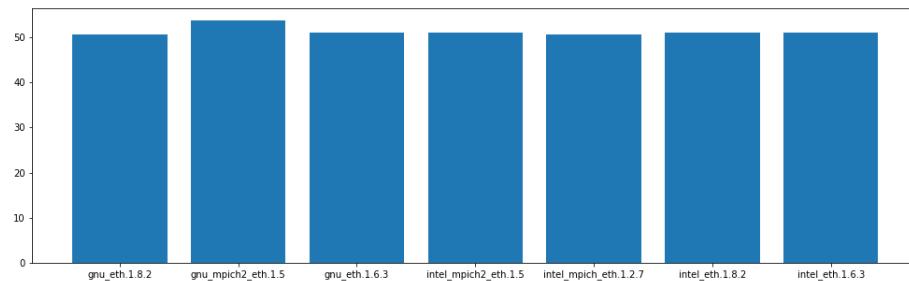
(a) Testes corridos em duas maquinas r641



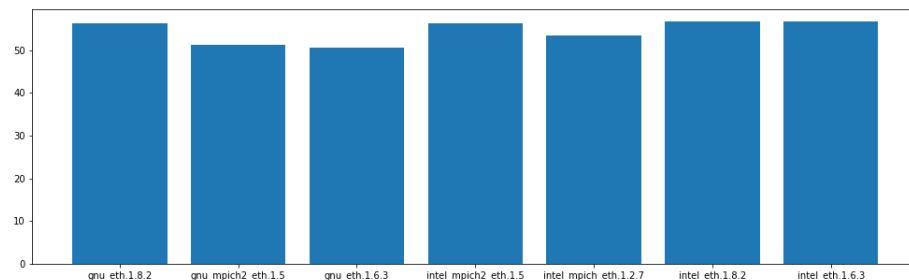
(b) Testes corridos em duas maquinas r662

Figure 120: Memória utilizada em percentagem

1.3.4 Teste IS classe D

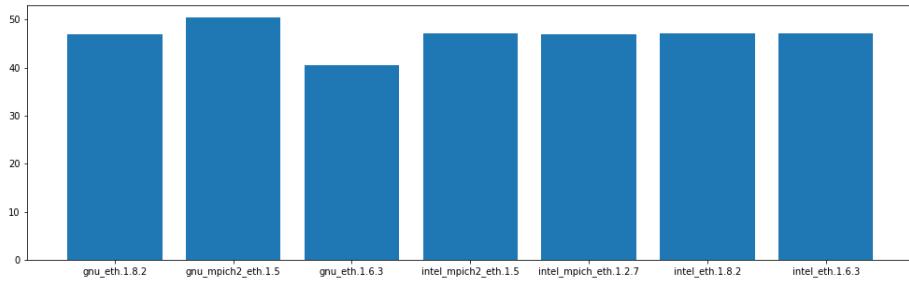


(a) Testes corridos em duas maquinas r641

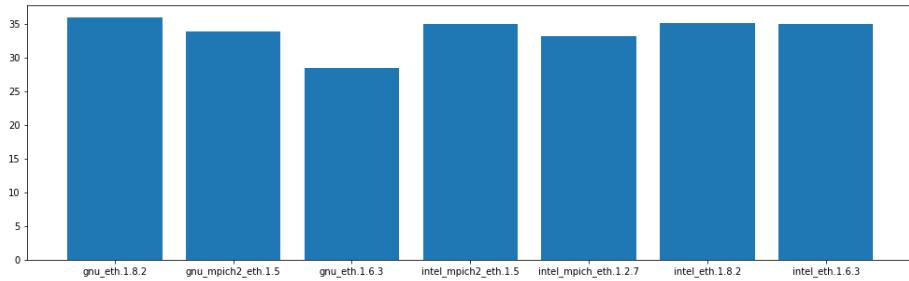


(b) Testes corridos em duas maquinas r662

Figure 121: Tempo total de uma execução em segundos

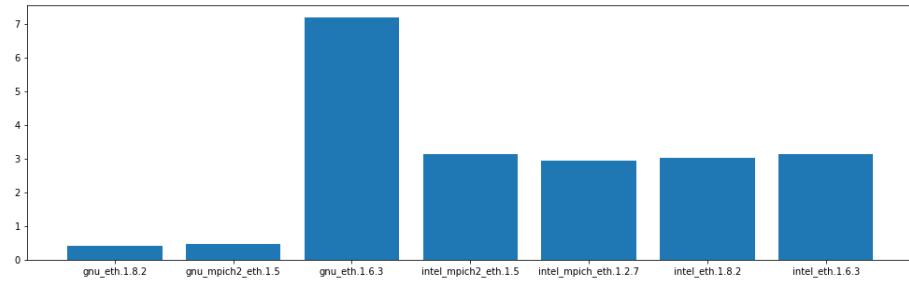


(a) Testes corridos em duas maquinas r641

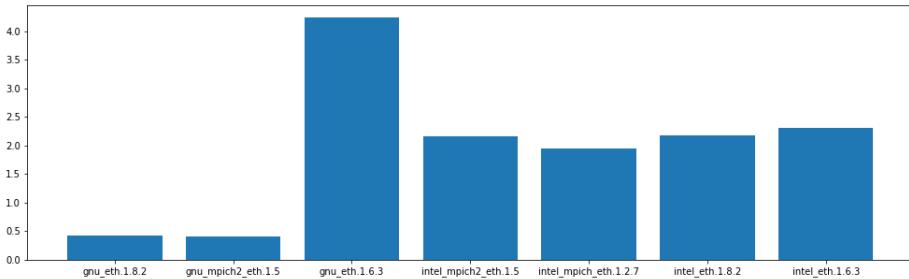


(b) Testes corridos em duas maquinas r662

Figure 122: Total tempo gasto em *user time* durante uma execução em segundos

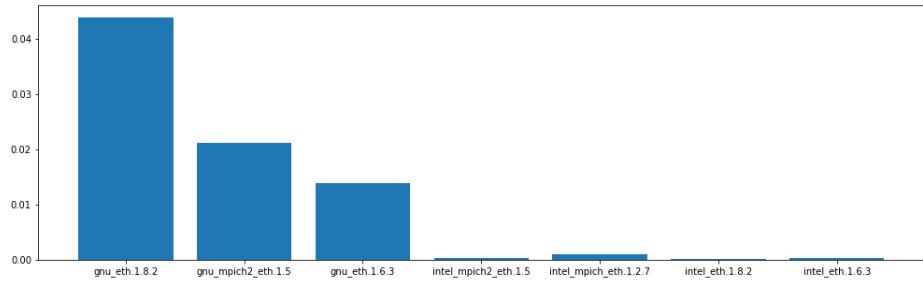


(a) Testes corridos em duas maquinas r641

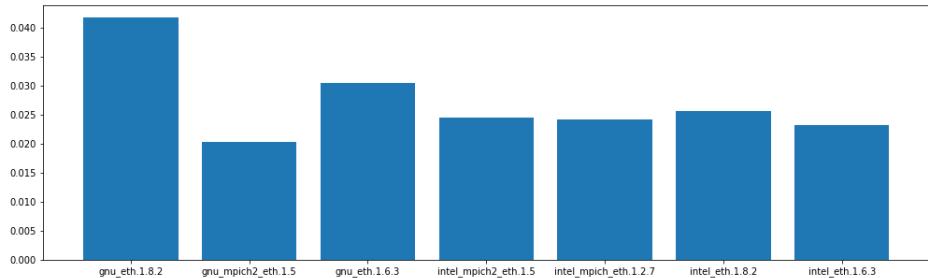


(b) Testes corridos em duas maquinas r662

Figure 123: Total tempo gasto em *system time* durante uma execução em segundos

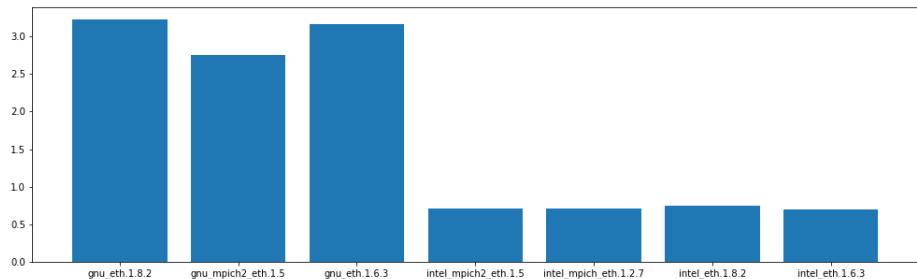


(a) Testes corridos em duas maquinas r641

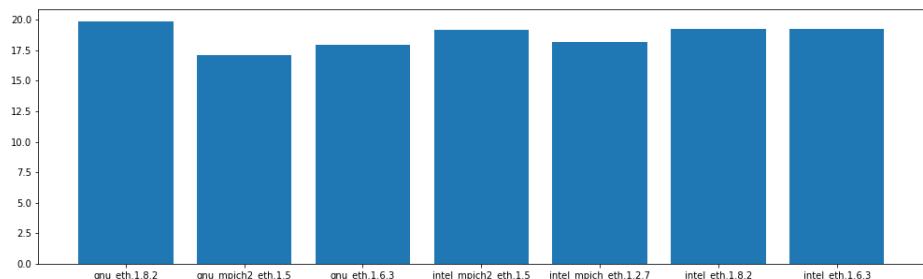


(b) Testes corridos em duas maquinas r662

Figure 124: Total tempo gasto em *iowait* durante a execução em segundos

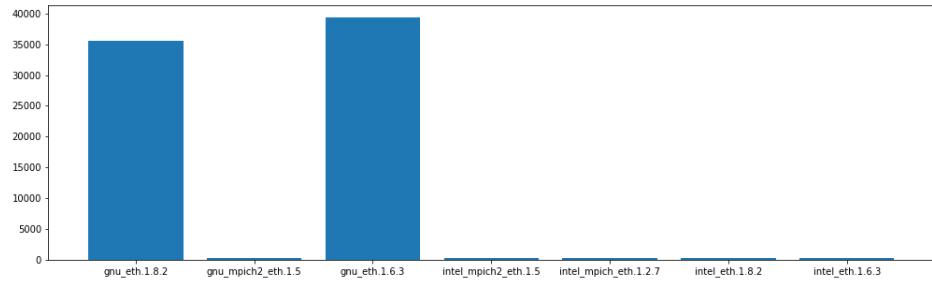


(a) Testes corridos em duas maquinas r641

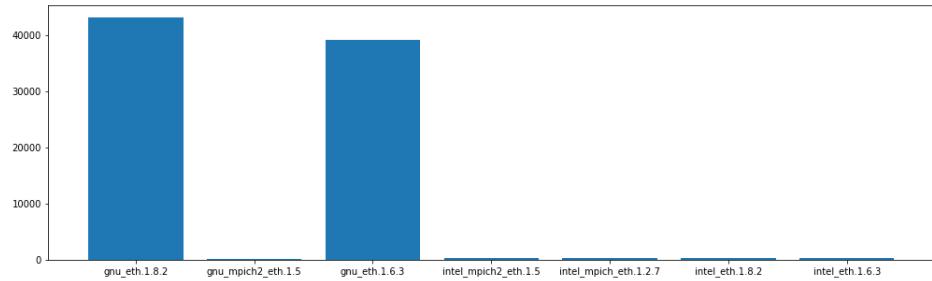


(b) Testes corridos em duas maquinas r662

Figure 125: Total tempo gasto em *idle* durante a execução em segundos

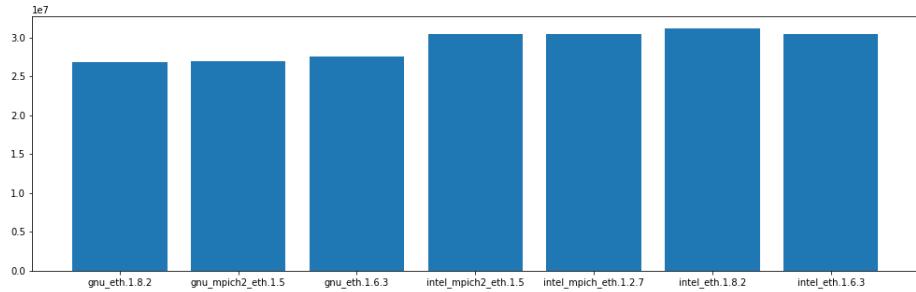


(a) Testes corridos em duas maquinas r641

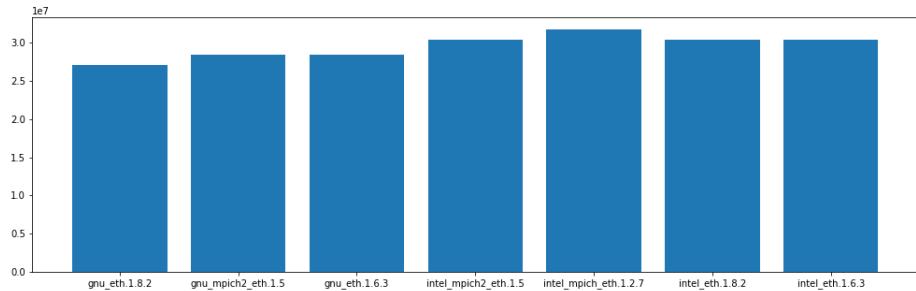


(b) Testes corridos em duas maquinas r662

Figure 126: Número de blocos escritos em disco durante a execução do programa

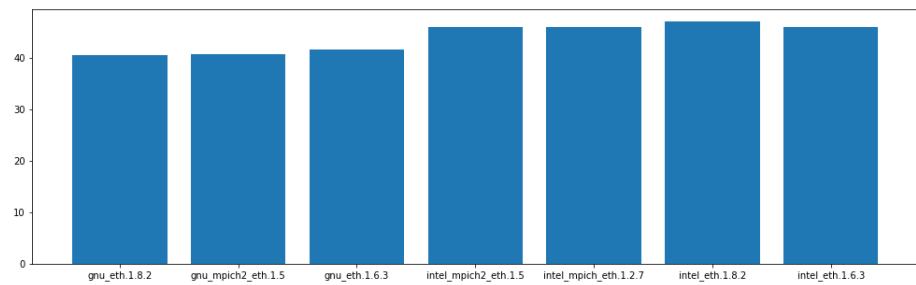


(a) Testes corridos em duas maquinas r641

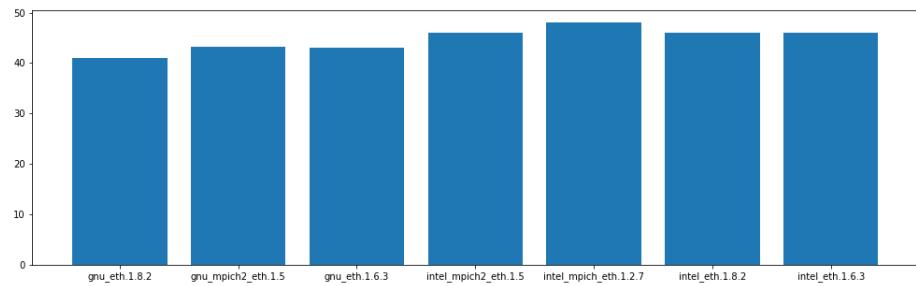


(b) Testes corridos em duas maquinas r662

Figure 127: Memória utilizada em KiB



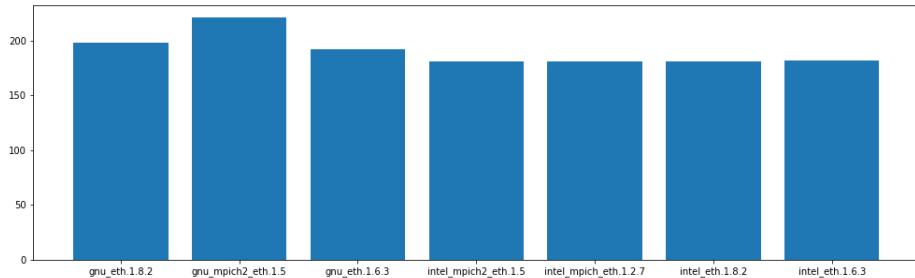
(a) Testes corridos em duas maquinas r641



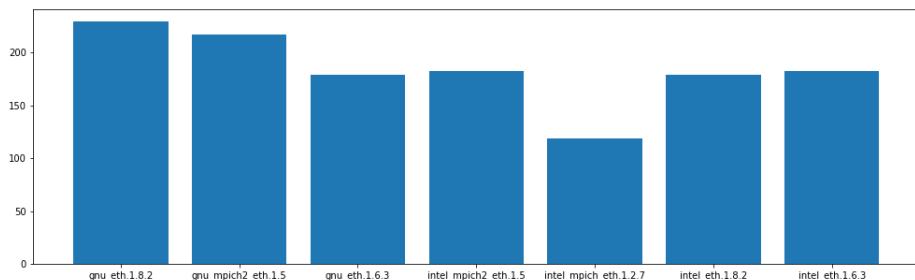
(b) Testes corridos em duas maquinas r662

Figure 128: Memória utilizada em percentagem

1.3.5 Teste MG classe D

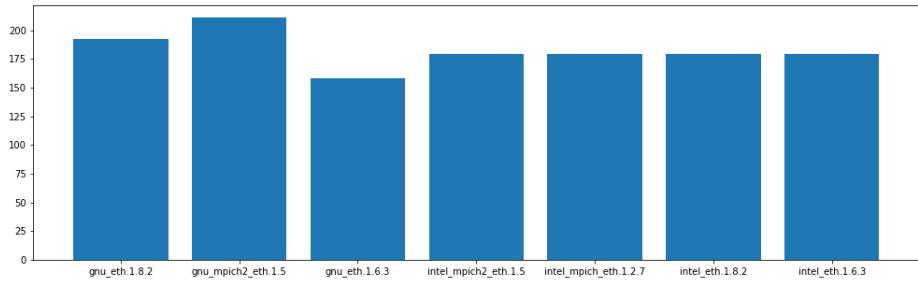


(a) Testes corridos em duas maquinas r641

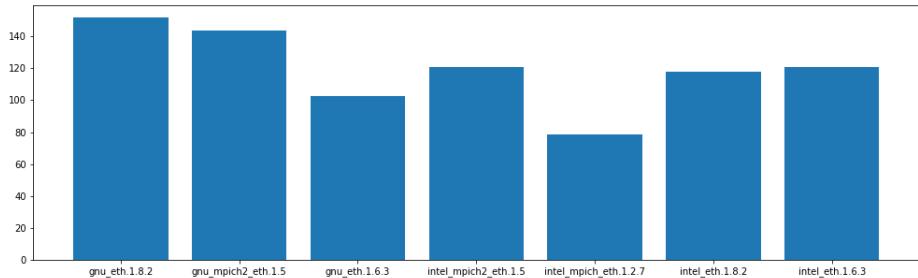


(b) Testes corridos em duas maquinas r662

Figure 129: Tempo total de uma execução em segundos

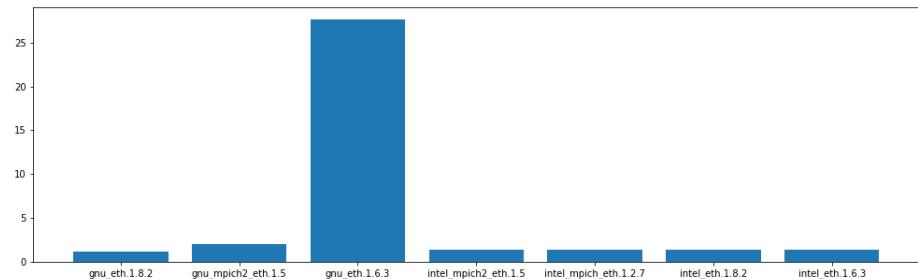


(a) Testes corridos em duas maquinas r641

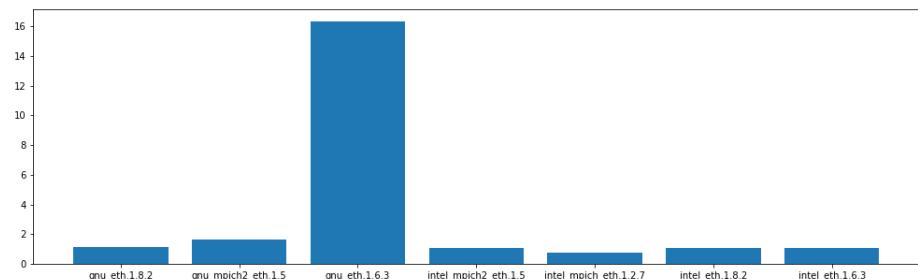


(b) Testes corridos em duas maquinas r662

Figure 130: Total tempo gasto em *user time* durante uma execução em segundos

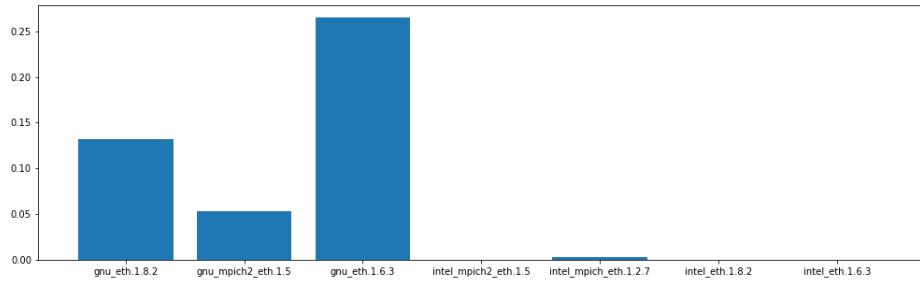


(a) Testes corridos em duas maquinas r641

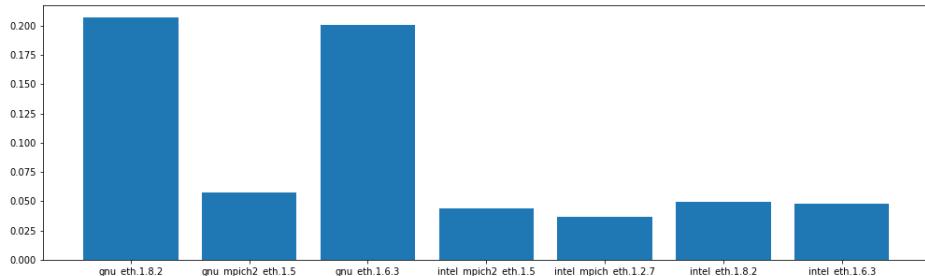


(b) Testes corridos em duas maquinas r662

Figure 131: Total tempo gasto em *system time* durante uma execução em segundos

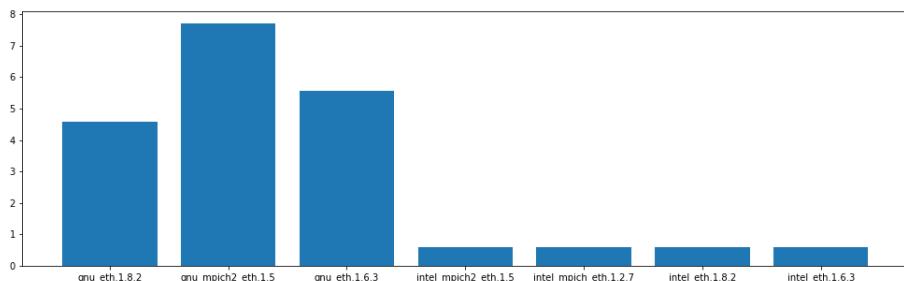


(a) Testes corridos em duas maquinas r641

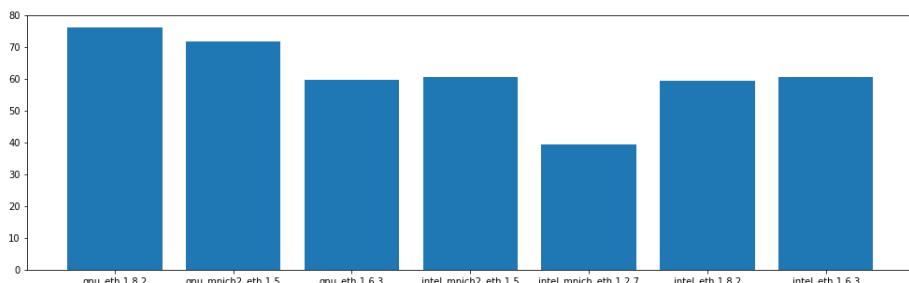


(b) Testes corridos em duas maquinas r662

Figure 132: Total tempo gasto em *iowait* durante a execução em segundos

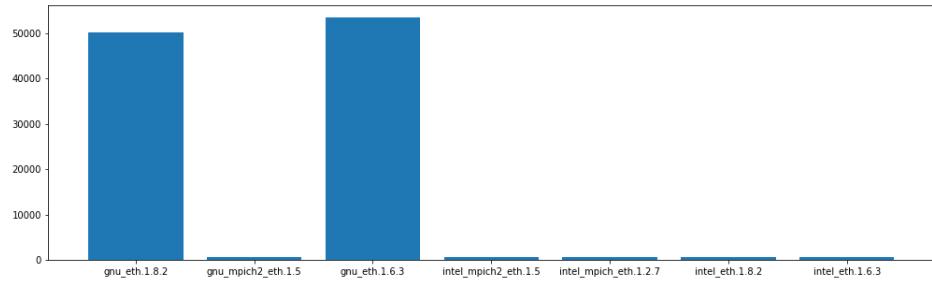


(a) Testes corridos em duas maquinas r641

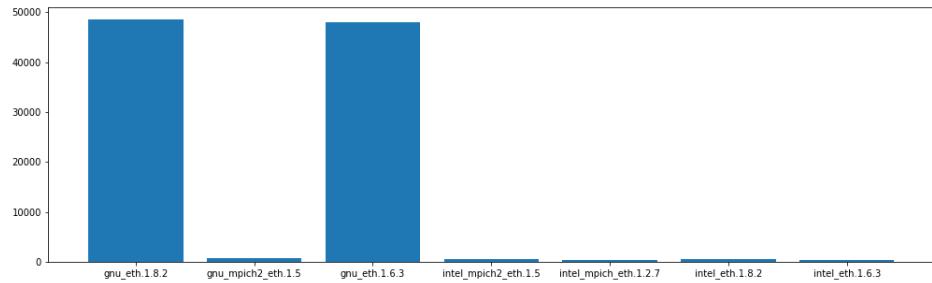


(b) Testes corridos em duas maquinas r662

Figure 133: Total tempo gasto em *idle* durante a execução em segundos

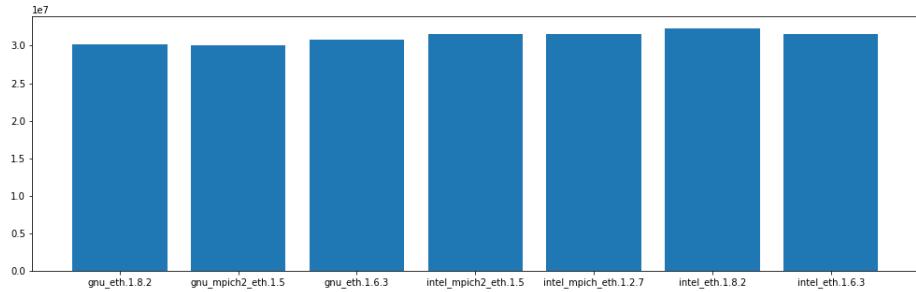


(a) Testes corridos em duas maquinas r641

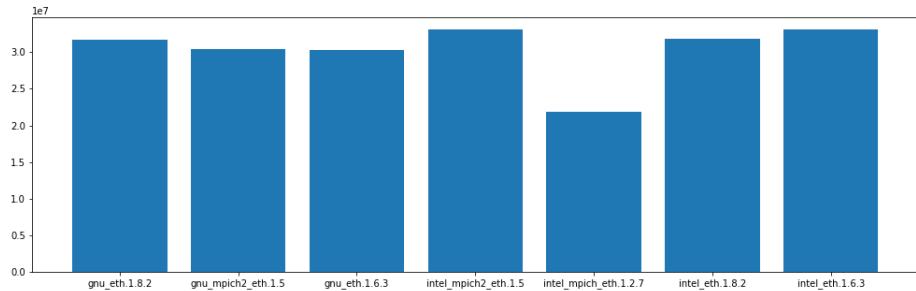


(b) Testes corridos em duas maquinas r662

Figure 134: Número de blocos escritos em disco durante a execução do programa

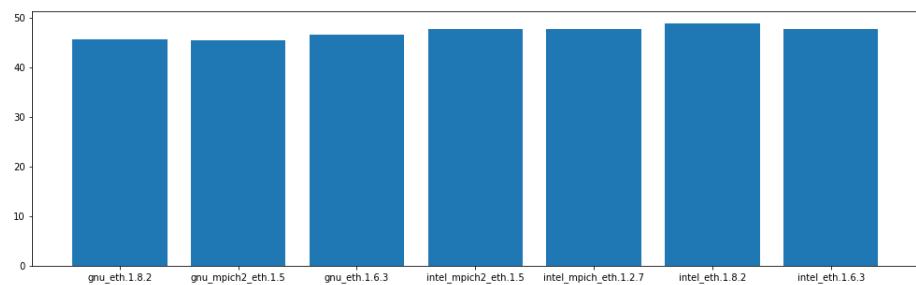


(a) Testes corridos em duas maquinas r641

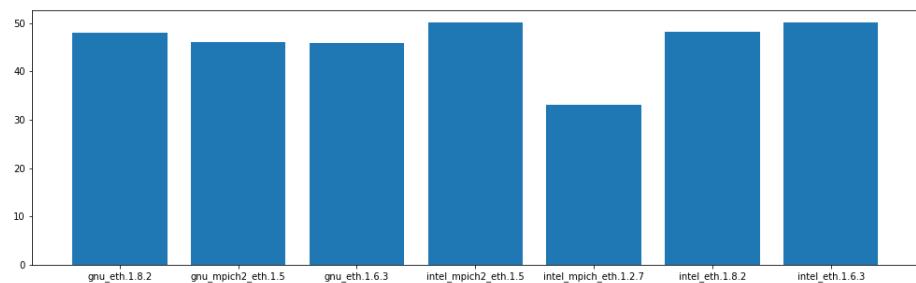


(b) Testes corridos em duas maquinas r662

Figure 135: Memória utilizada em KiB



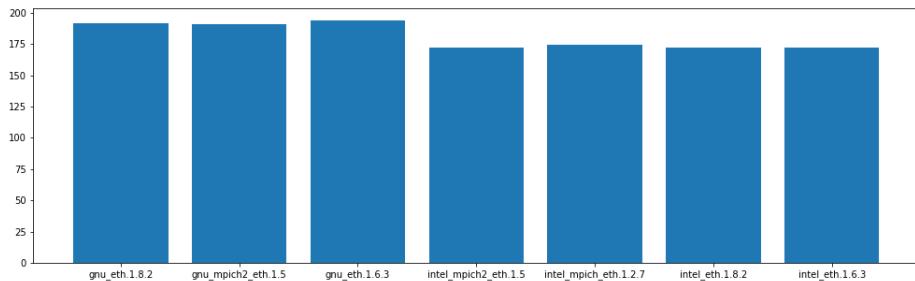
(a) Testes corridos em duas maquinas r641



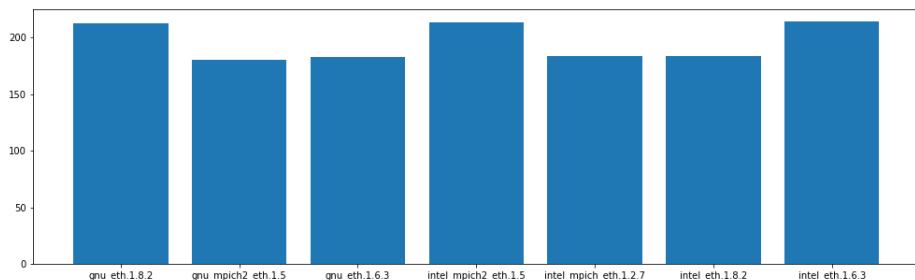
(b) Testes corridos em duas maquinas r662

Figure 136: Memória utilizada em percentagem

1.3.6 Teste EP classe D

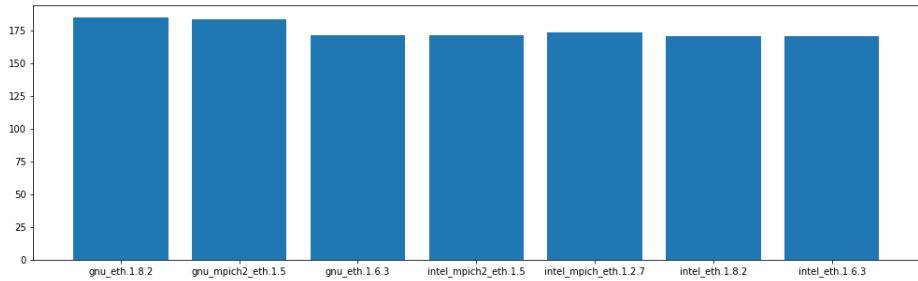


(a) Testes corridos em duas maquinas r641

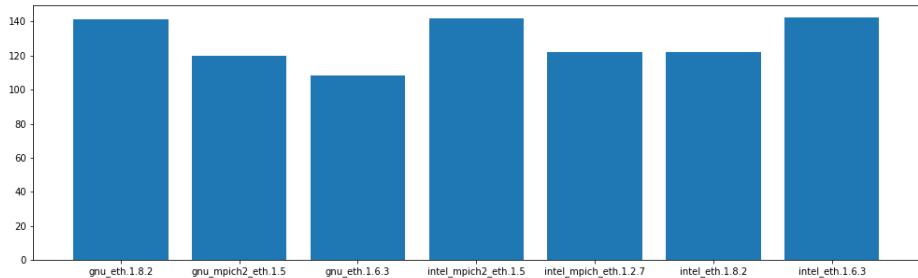


(b) Testes corridos em duas maquinas r662

Figure 137: Tempo total de uma execução em segundos

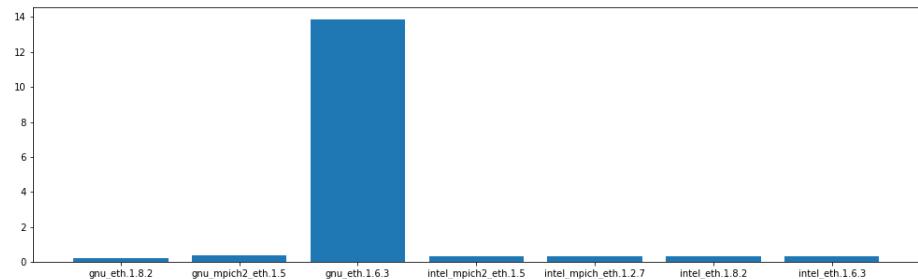


(a) Testes corridos em duas maquinas r641

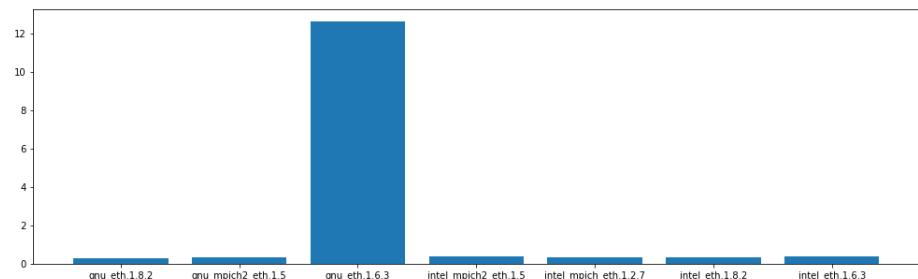


(b) Testes corridos em duas maquinas r662

Figure 138: Total tempo gasto em *user time* durante uma execução em segundos

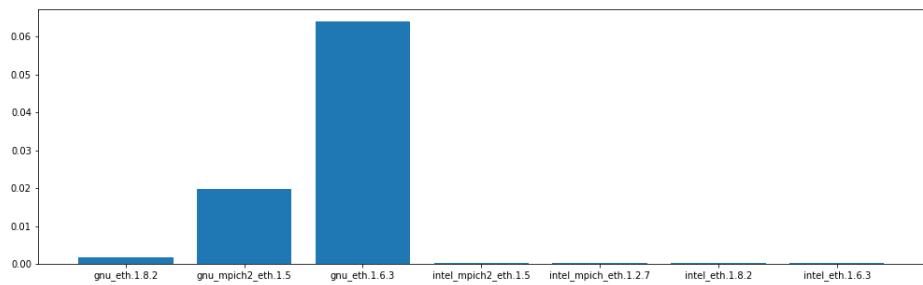


(a) Testes corridos em duas maquinas r641

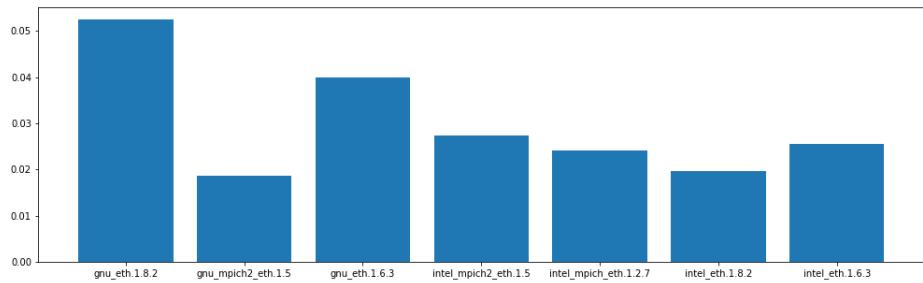


(b) Testes corridos em duas maquinas r662

Figure 139: Total tempo gasto em *system time* durante uma execução em segundos

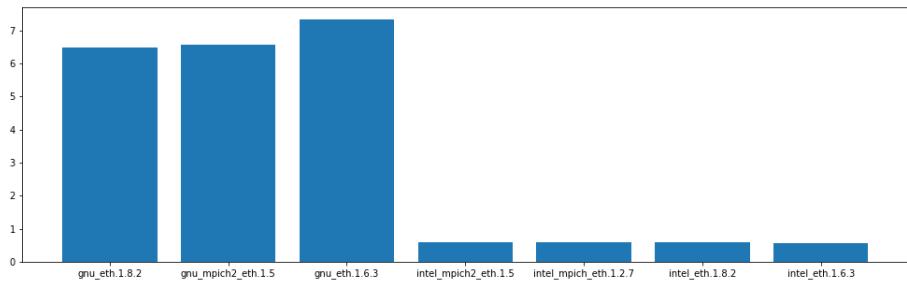


(a) Testes corridos em duas maquinas r641

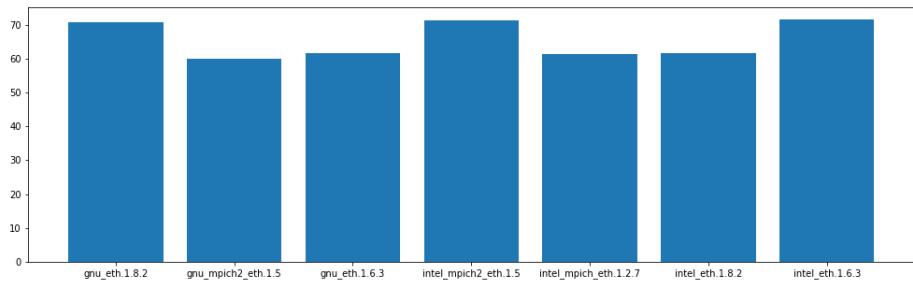


(b) Testes corridos em duas maquinas r662

Figure 140: Total tempo gasto em *iowait* durante a execução em segundos

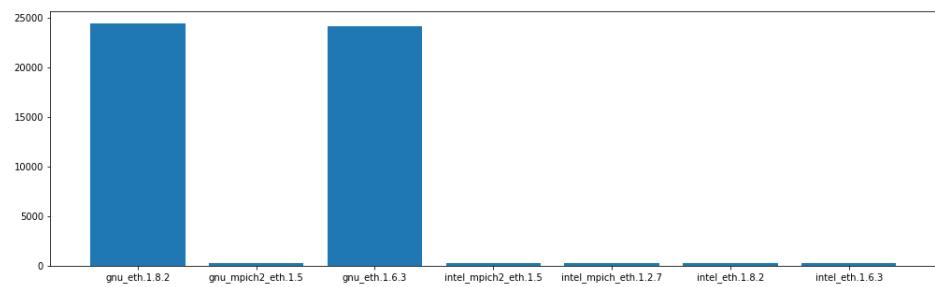


(a) Testes corridos em duas maquinas r641

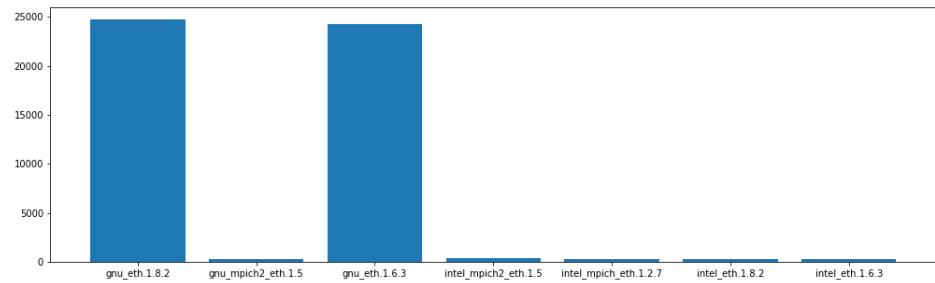


(b) Testes corridos em duas maquinas r662

Figure 141: Total tempo gasto em *idle* durante a execução em segundos

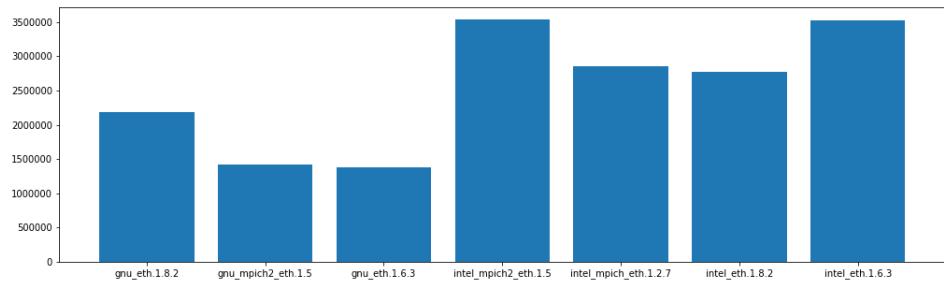


(a) Testes corridos em duas maquinas r641

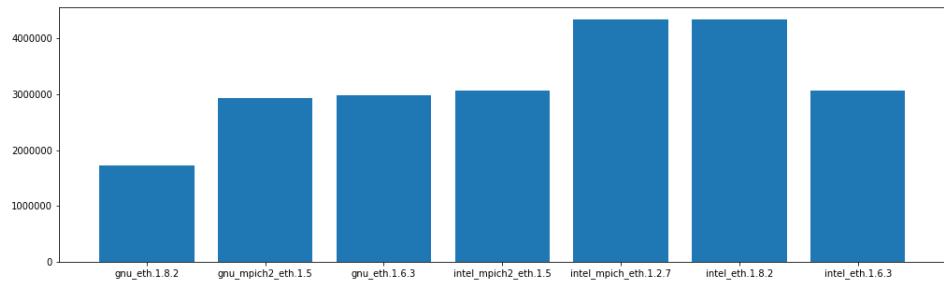


(b) Testes corridos em duas maquinas r662

Figure 142: Número de blocos escritos em disco durante a execução do programa

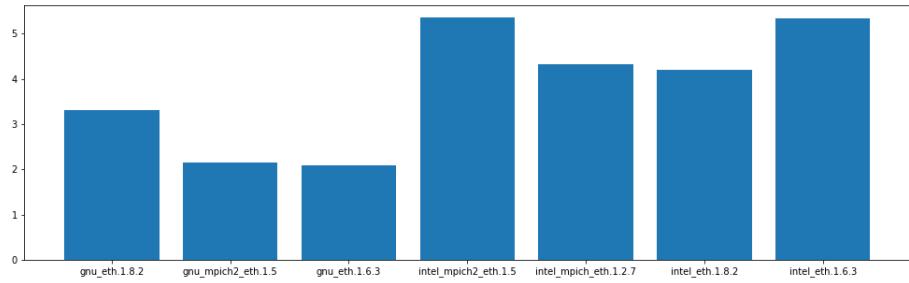


(a) Testes corridos em duas maquinas r641

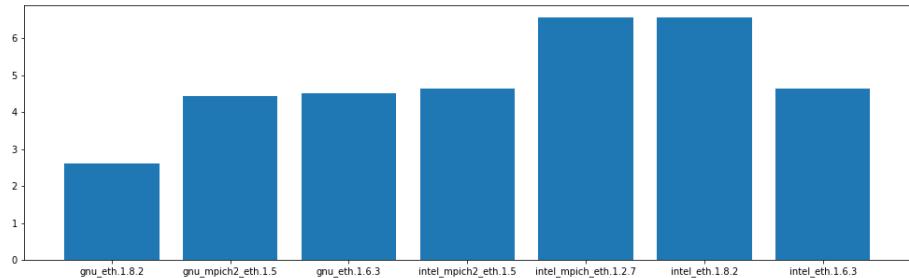


(b) Testes corridos em duas maquinas r662

Figure 143: Memória utilizada em KiB



(a) Testes corridos em duas maquinas r641

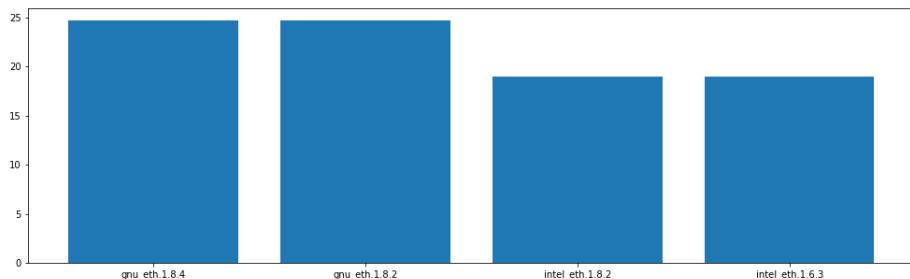


(b) Testes corridos em duas maquinas r662

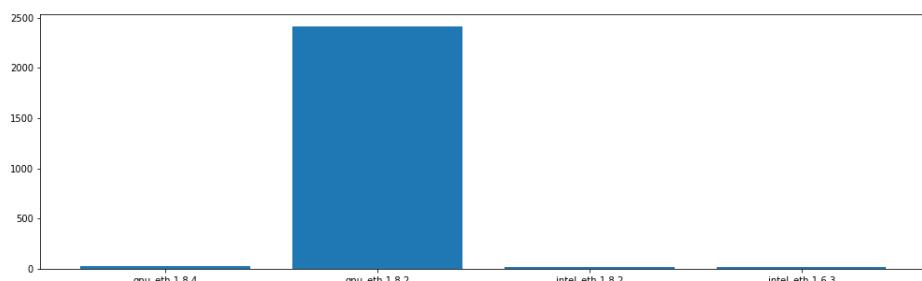
Figure 144: Memória utilizada em percentagem

1.4 Versão Híbrida

1.4.1 Teste SP classe A

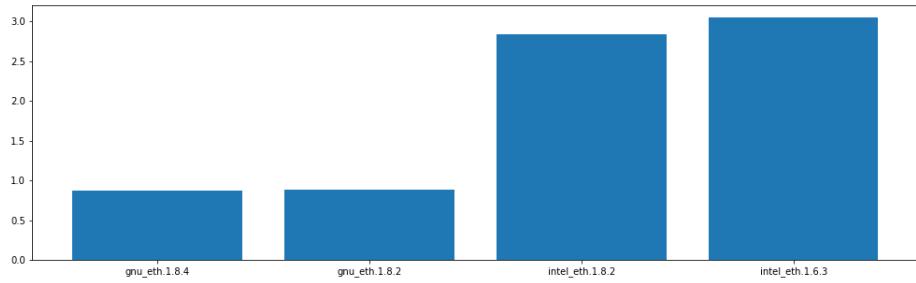


(a) Testes corridos em duas maquinas r641

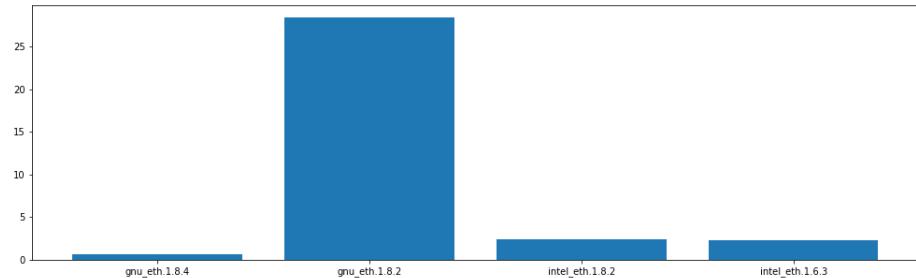


(b) Testes corridos em duas maquinas r662

Figure 145: Tempo total de uma execução em segundos

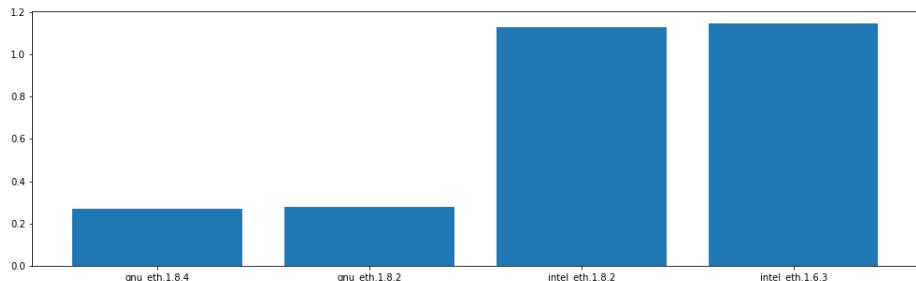


(a) Testes corridos em duas maquinas r641

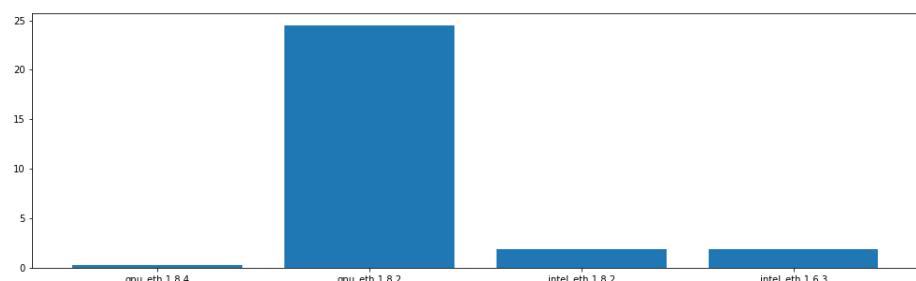


(b) Testes corridos em duas maquinas r662

Figure 146: Total tempo gasto em *user time* durante uma execução em segundos

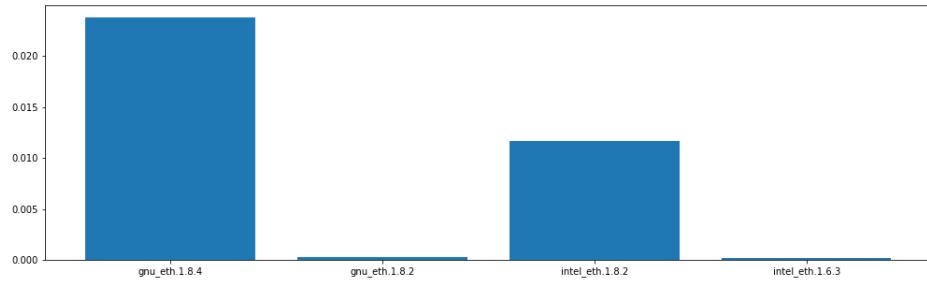


(a) Testes corridos em duas maquinas r641

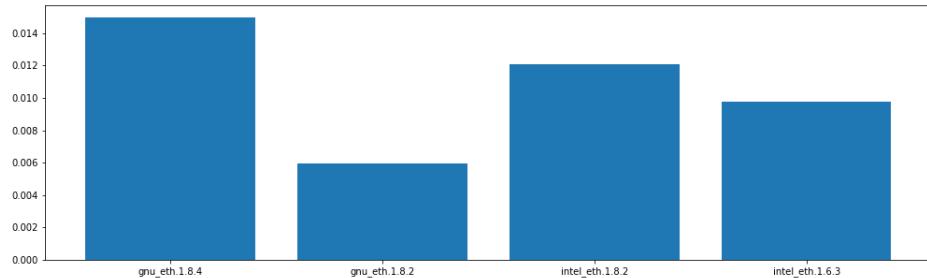


(b) Testes corridos em duas maquinas r662

Figure 147: Total tempo gasto em *system time* durante uma execução em segundos

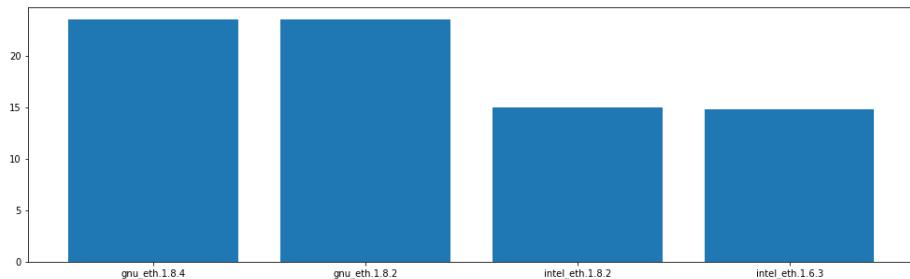


(a) Testes corridos em duas maquinas r641

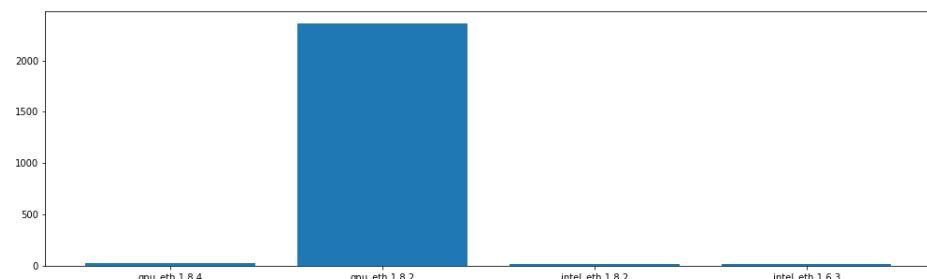


(b) Testes corridos em duas maquinas r662

Figure 148: Total tempo gasto em *iowait* durante a execução em segundos

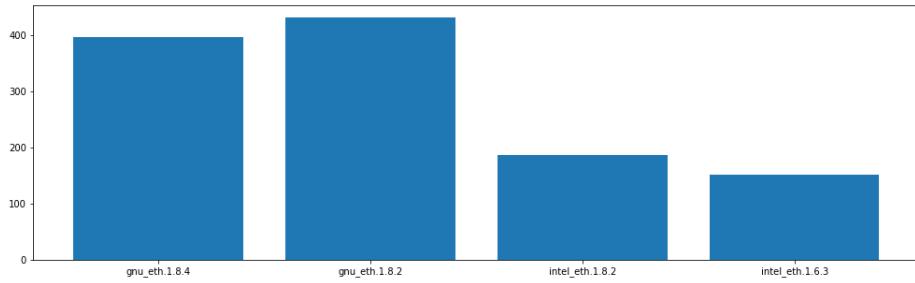


(a) Testes corridos em duas maquinas r641

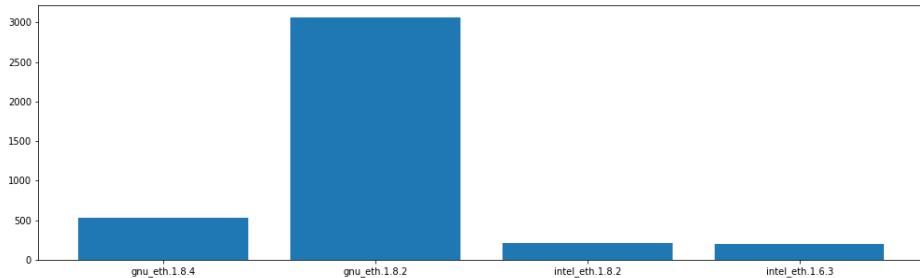


(b) Testes corridos em duas maquinas r662

Figure 149: Total tempo gasto em *idle* durante a execução em segundos

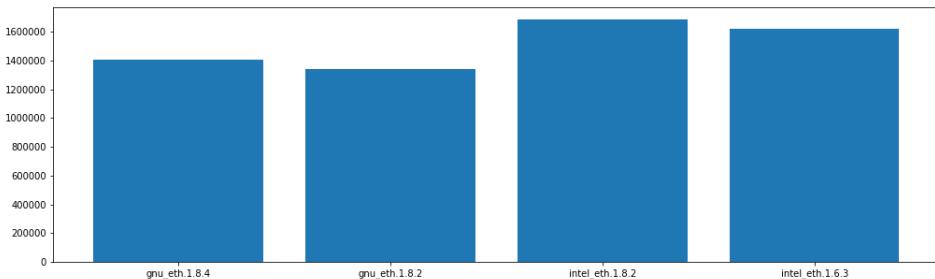


(a) Testes corridos em duas maquinas r641

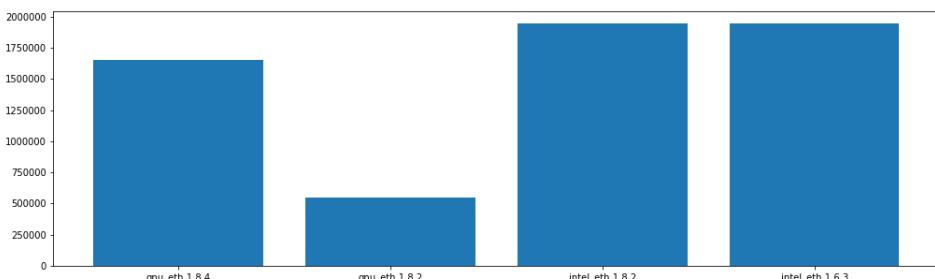


(b) Testes corridos em duas maquinas r662

Figure 150: Número de blocos escritos em disco durante a execução do programa

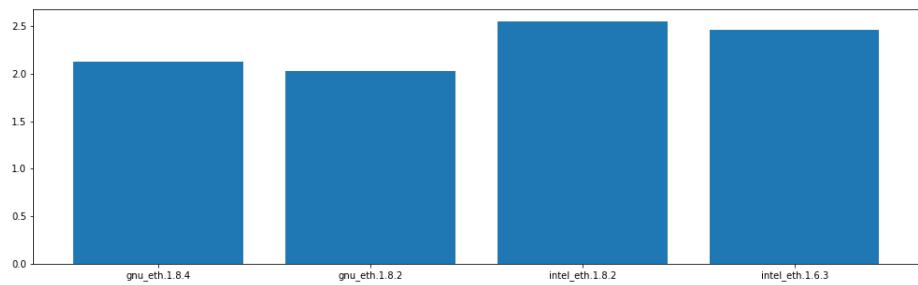


(a) Testes corridos em duas maquinas r641

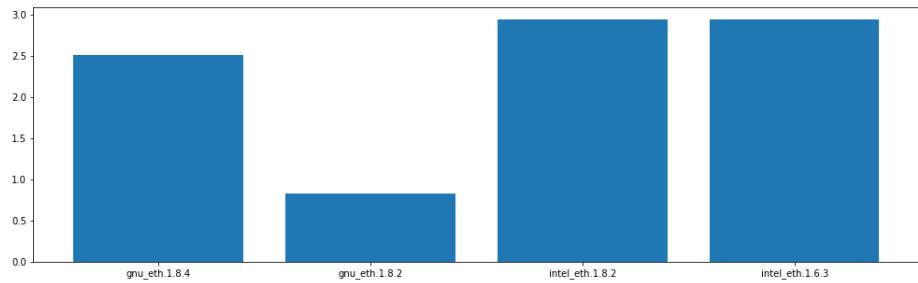


(b) Testes corridos em duas maquinas r662

Figure 151: Memória utilizada em KiB



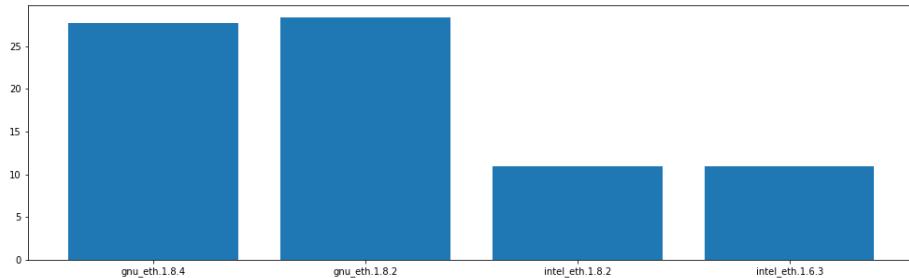
(a) Testes corridos em duas maquinas r641



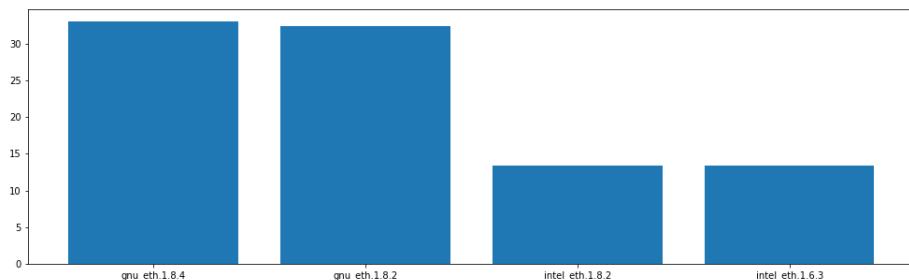
(b) Testes corridos em duas maquinas r662

Figure 152: Memória utilizada em percentagem

1.4.2 Teste BT classe A

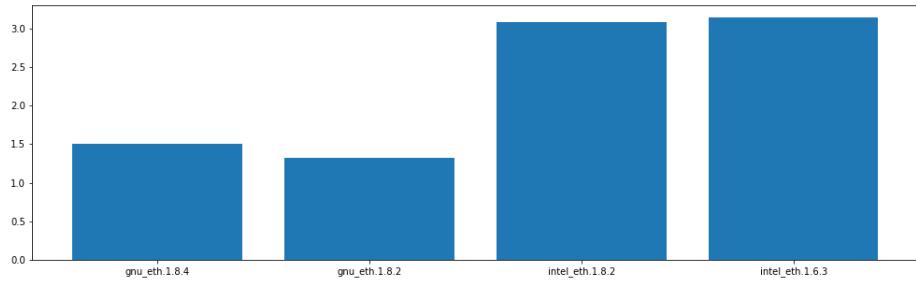


(a) Testes corridos em duas maquinas r641

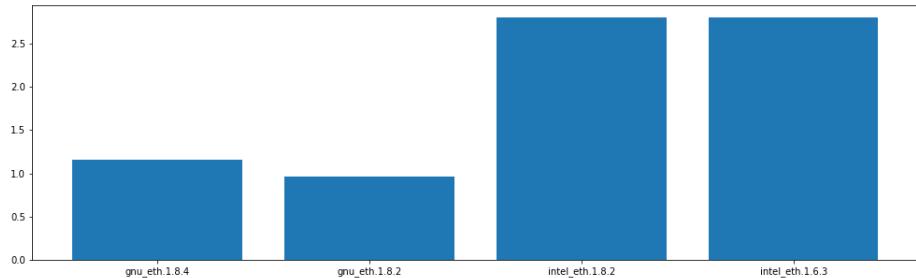


(b) Testes corridos em duas maquinas r662

Figure 153: Tempo total de uma execução em segundos

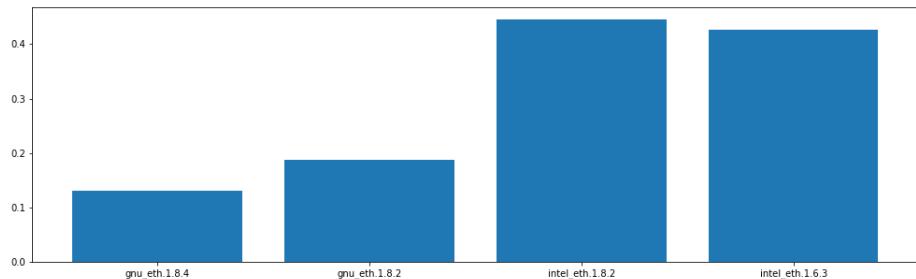


(a) Testes corridos em duas maquinas r641

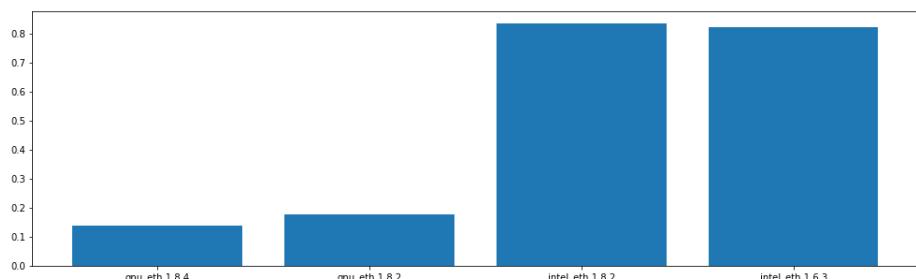


(b) Testes corridos em duas maquinas r662

Figure 154: Total tempo gasto em *user time* durante uma execução em segundos

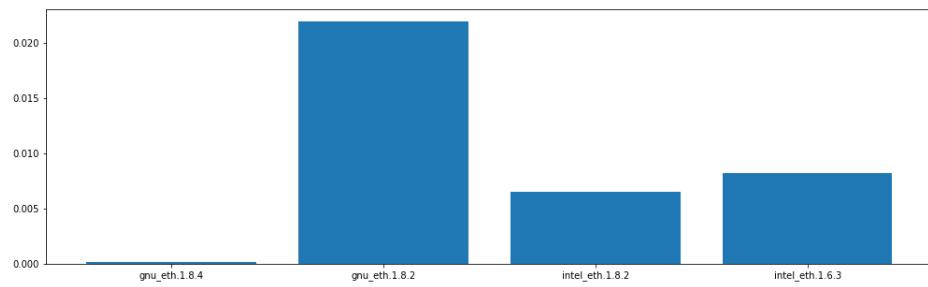


(a) Testes corridos em duas maquinas r641

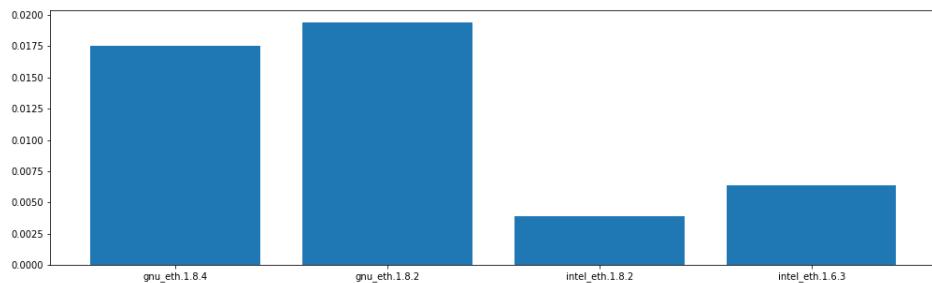


(b) Testes corridos em duas maquinas r662

Figure 155: Total tempo gasto em *system time* durante uma execução em segundos

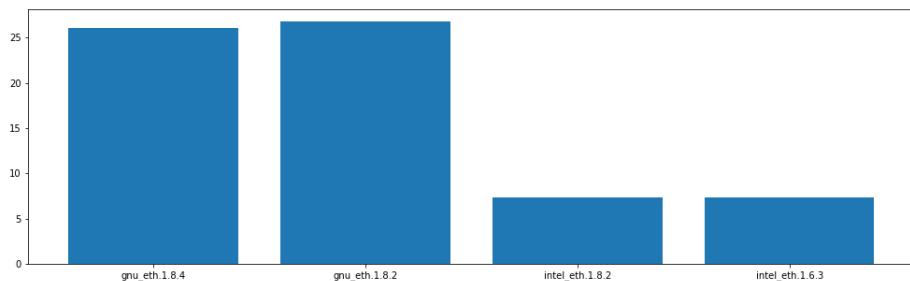


(a) Testes corridos em duas maquinas r641

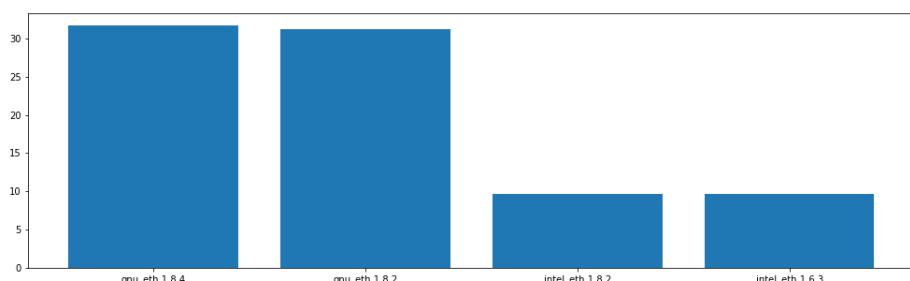


(b) Testes corridos em duas maquinas r662

Figure 156: Total tempo gasto em *iowait* durante a execução em segundos

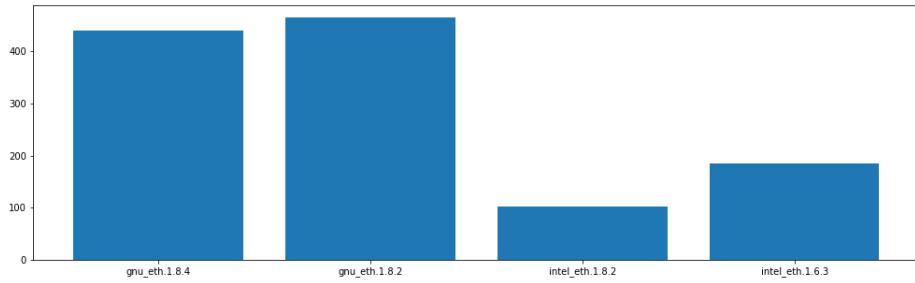


(a) Testes corridos em duas maquinas r641

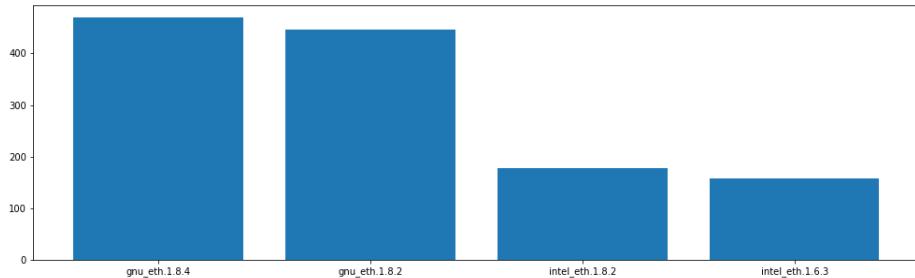


(b) Testes corridos em duas maquinas r662

Figure 157: Total tempo gasto em *idle* durante a execução em segundos

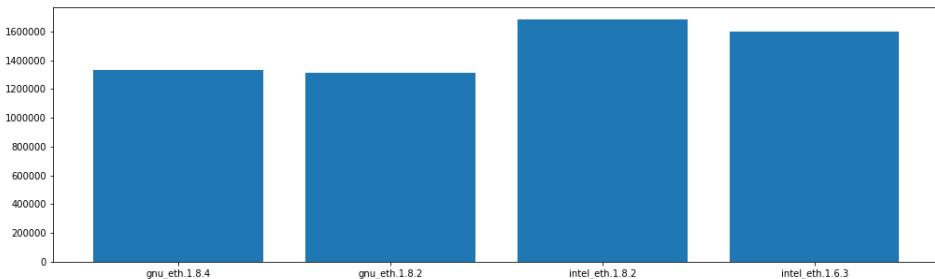


(a) Testes corridos em duas maquinas r641

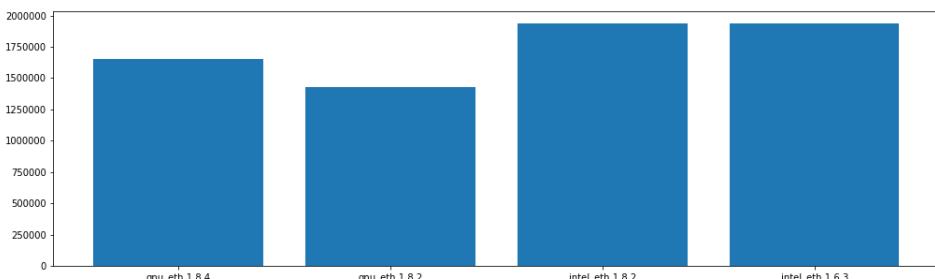


(b) Testes corridos em duas maquinas r662

Figure 158: Número de blocos escritos em disco durante a execução do programa

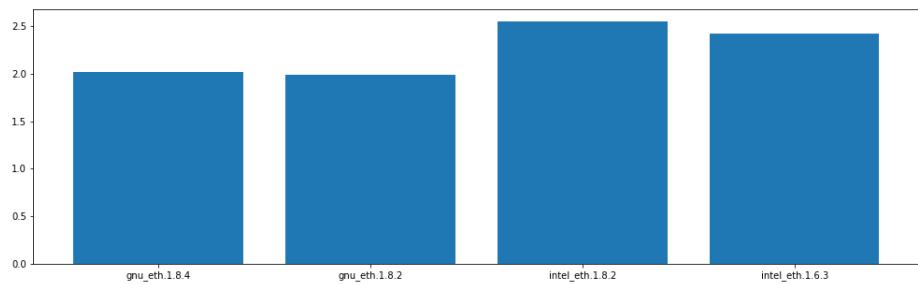


(a) Testes corridos em duas maquinas r641

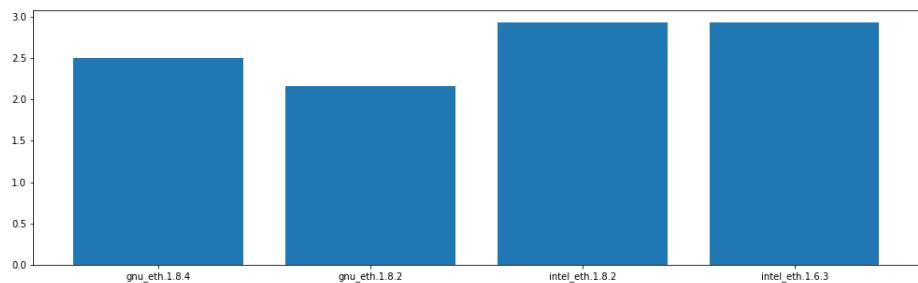


(b) Testes corridos em duas maquinas r662

Figure 159: Memória utilizada em KiB



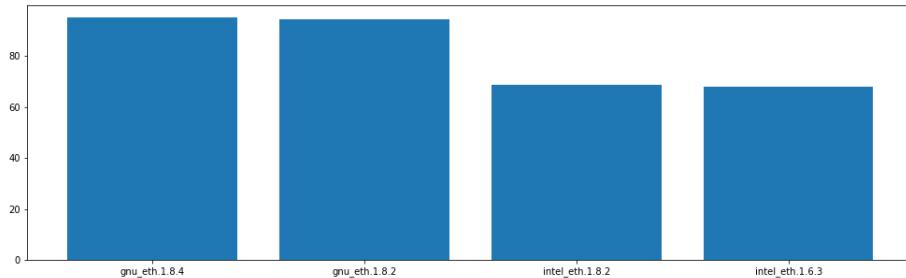
(a) Testes corridos em duas maquinas r641



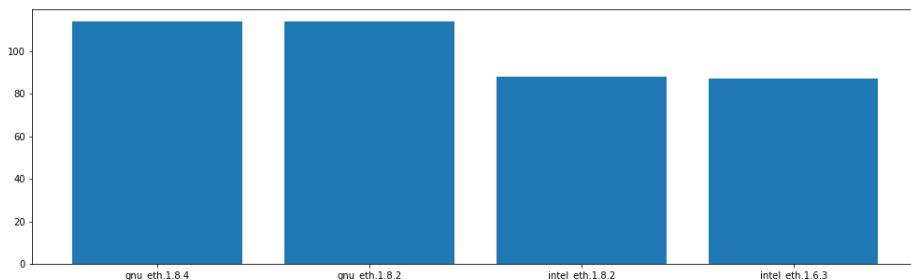
(b) Testes corridos em duas maquinas r662

Figure 160: Memória utilizada em percentagem

1.4.3 Teste SP classe B

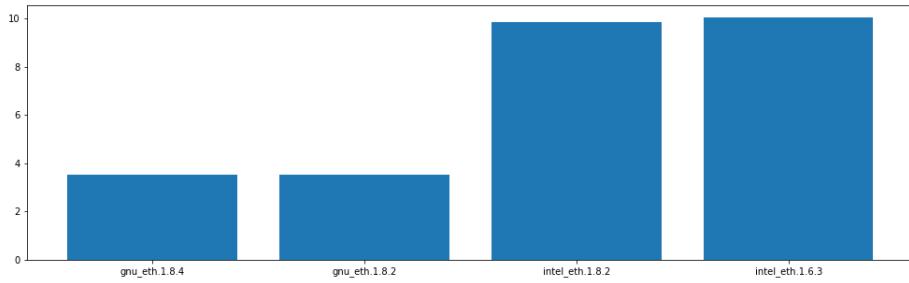


(a) Testes corridos em duas maquinas r641

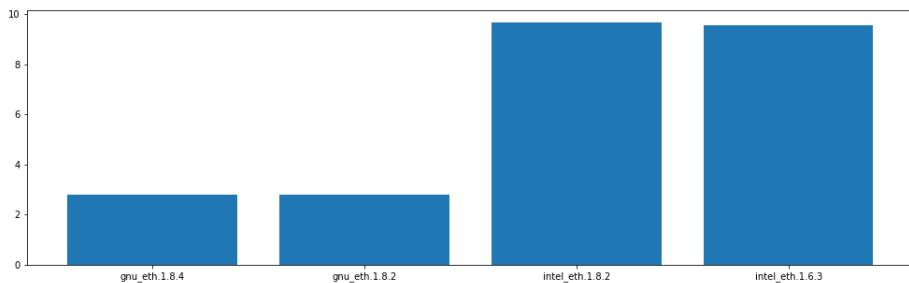


(b) Testes corridos em duas maquinas r662

Figure 161: Tempo total de uma execução em segundos

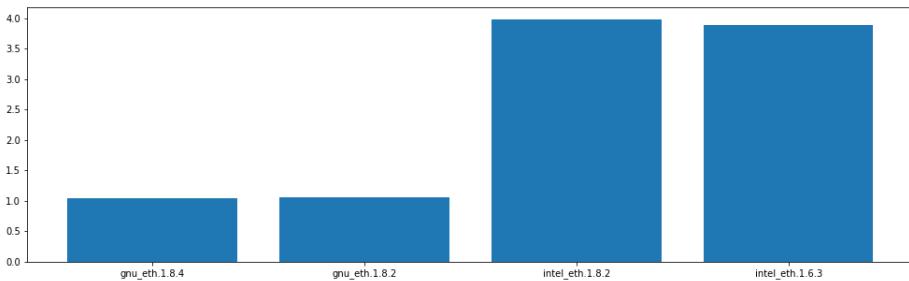


(a) Testes corridos em duas maquinas r641

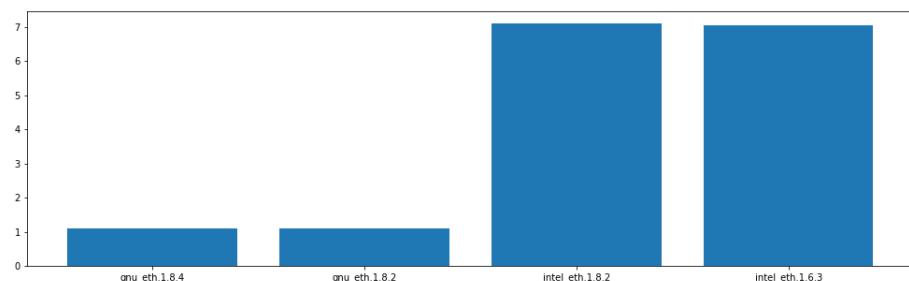


(b) Testes corridos em duas maquinas r662

Figure 162: Total tempo gasto em *user time* durante uma execução em segundos

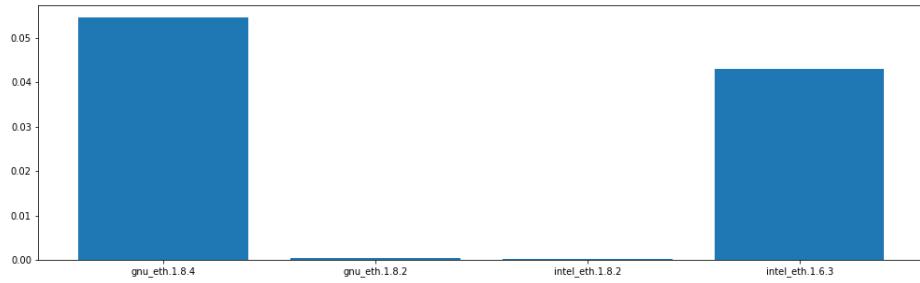


(a) Testes corridos em duas maquinas r641

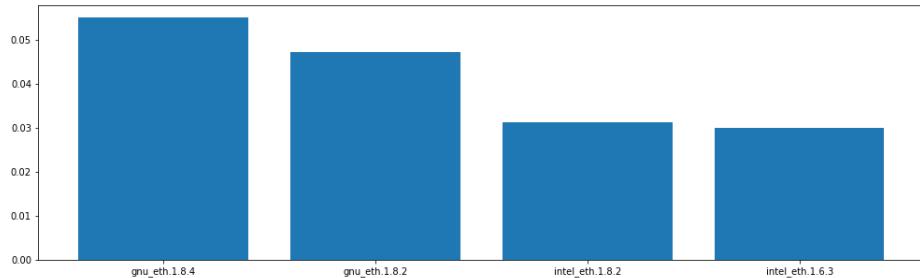


(b) Testes corridos em duas maquinas r662

Figure 163: Total tempo gasto em *system time* durante uma execução em segundos

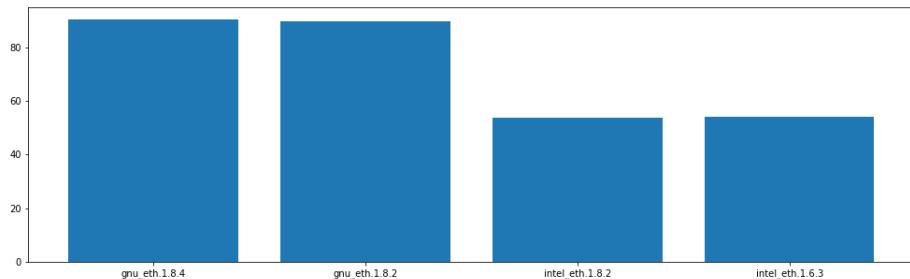


(a) Testes corridos em duas maquinas r641

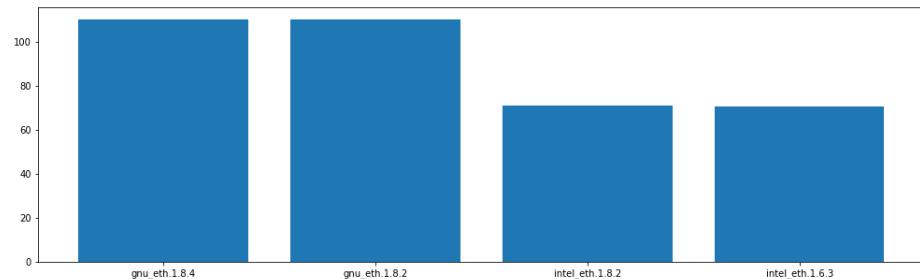


(b) Testes corridos em duas maquinas r662

Figure 164: Total tempo gasto em *iowait* durante a execução em segundos

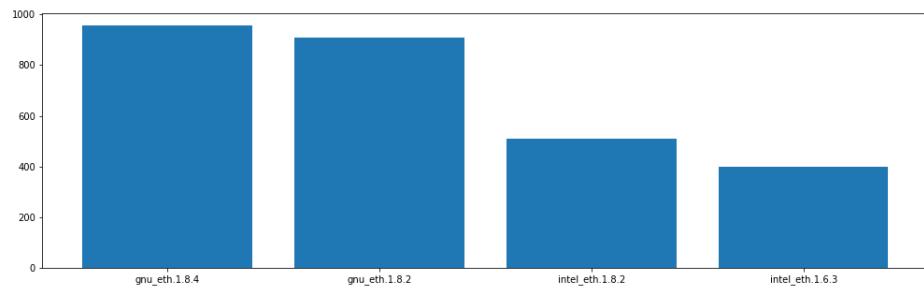


(a) Testes corridos em duas maquinas r641

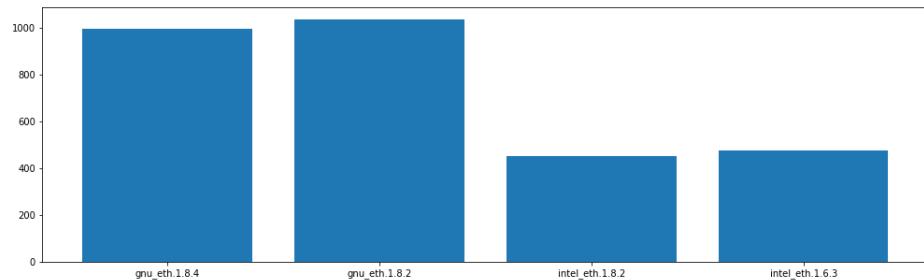


(b) Testes corridos em duas maquinas r662

Figure 165: Total tempo gasto em *idle* durante a execução em segundos

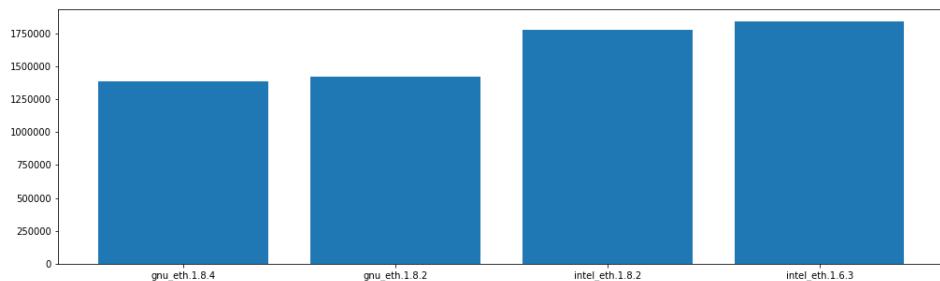


(a) Testes corridos em duas maquinas r641

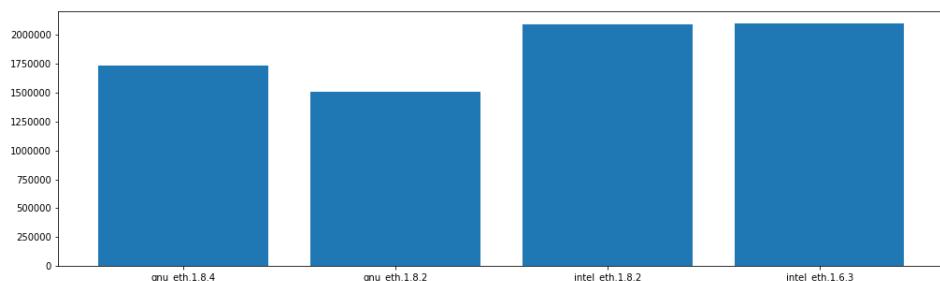


(b) Testes corridos em duas maquinas r662

Figure 166: Número de blocos escritos em disco durante a execução do programa

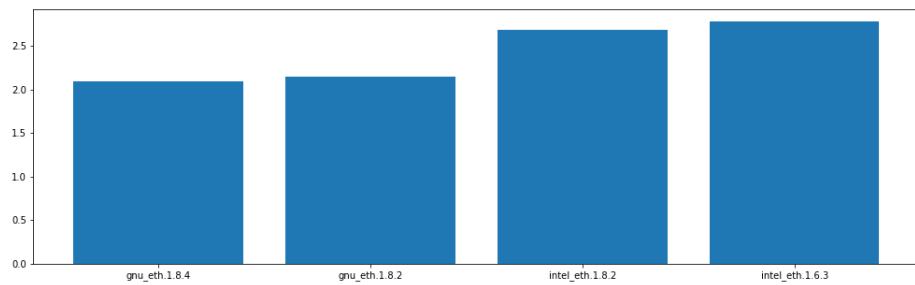


(a) Testes corridos em duas maquinas r641

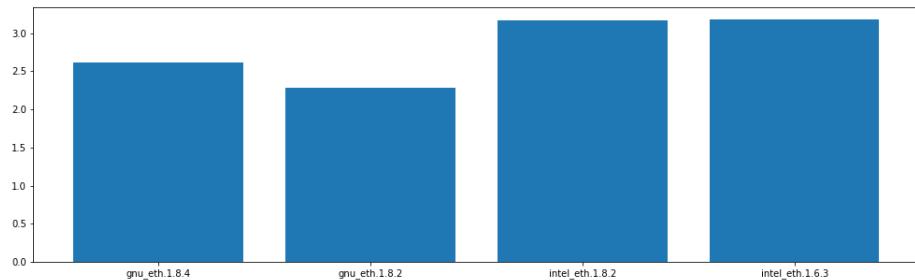


(b) Testes corridos em duas maquinas r662

Figure 167: Memória utilizada em KiB



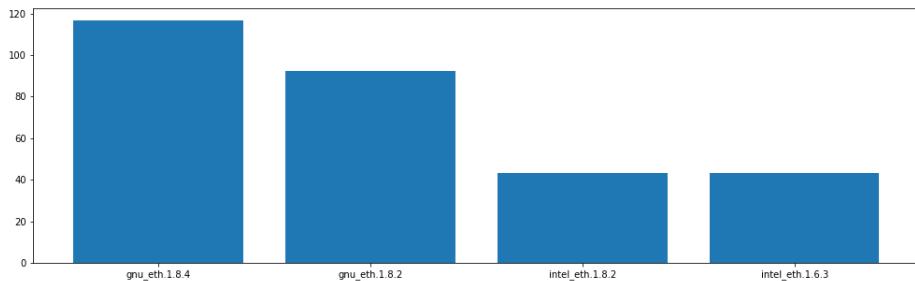
(a) Testes corridos em duas maquinas r641



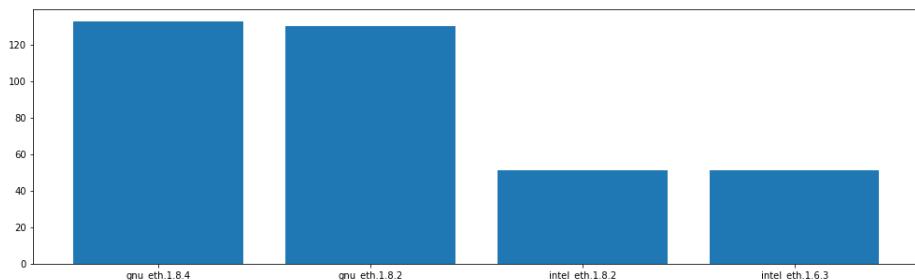
(b) Testes corridos em duas maquinas r662

Figure 168: Memória utilizada em percentagem

1.4.4 Teste BT classe B

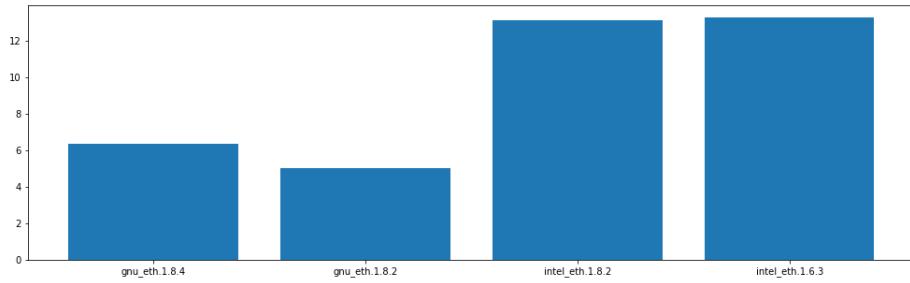


(a) Testes corridos em duas maquinas r641

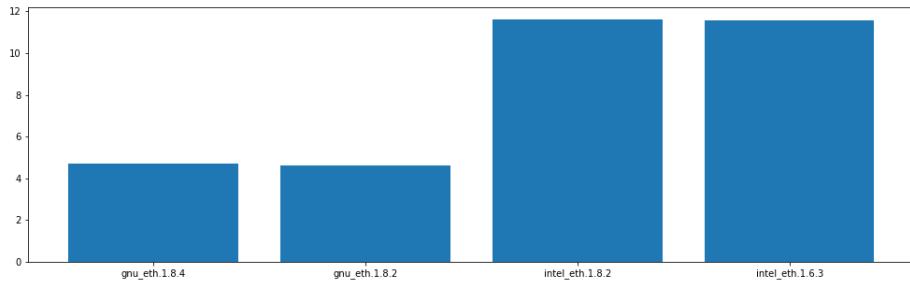


(b) Testes corridos em duas maquinas r662

Figure 169: Tempo total de uma execução em segundos

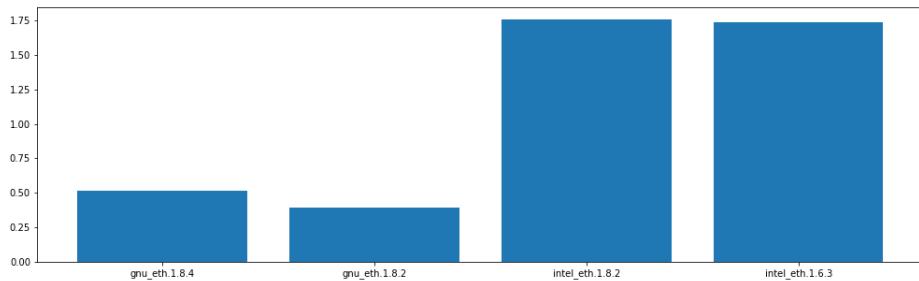


(a) Testes corridos em duas maquinas r641

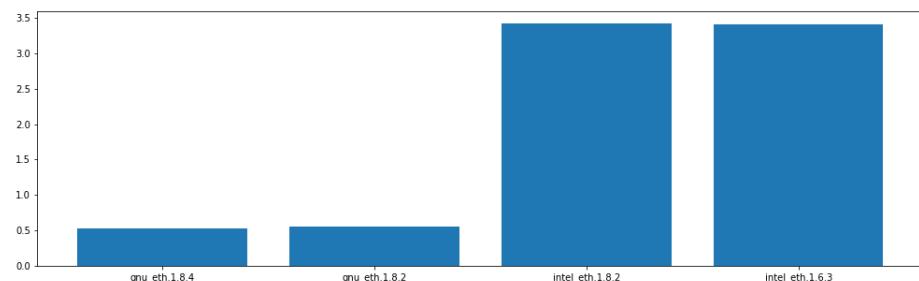


(b) Testes corridos em duas maquinas r662

Figure 170: Total tempo gasto em *user time* durante uma execução em segundos

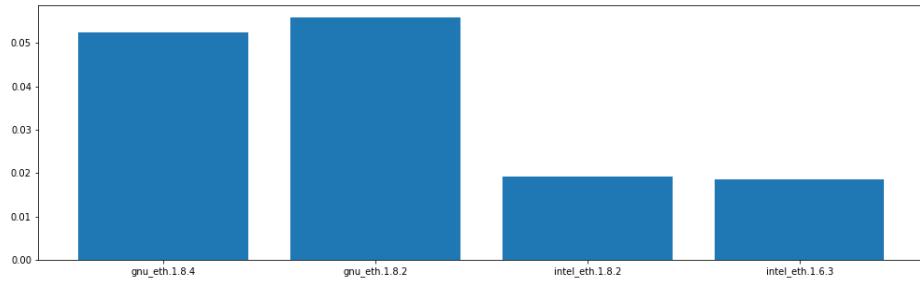


(a) Testes corridos em duas maquinas r641

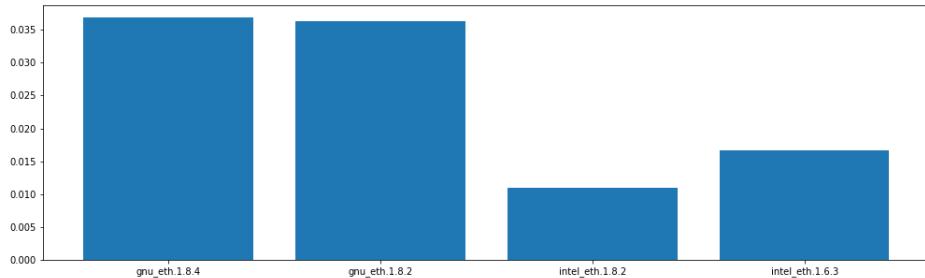


(b) Testes corridos em duas maquinas r662

Figure 171: Total tempo gasto em *system time* durante uma execução em segundos

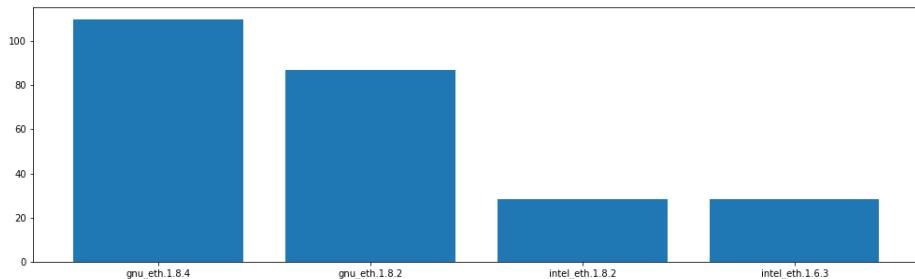


(a) Testes corridos em duas maquinas r641

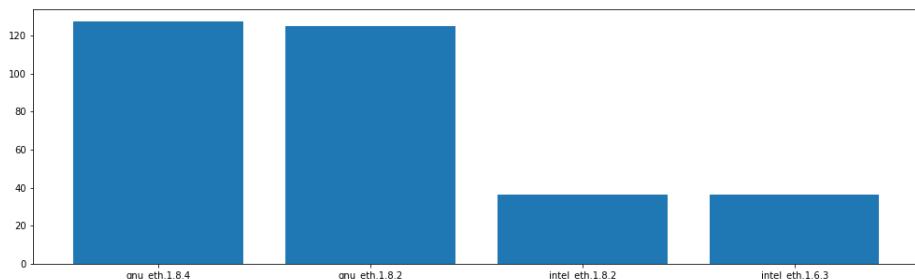


(b) Testes corridos em duas maquinas r662

Figure 172: Total tempo gasto em *iowait* durante a execução em segundos

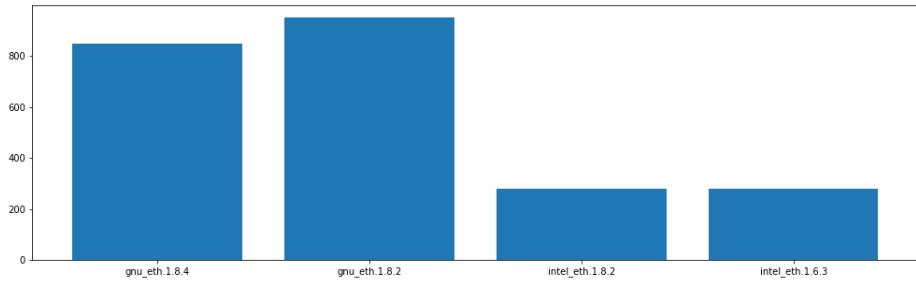


(a) Testes corridos em duas maquinas r641

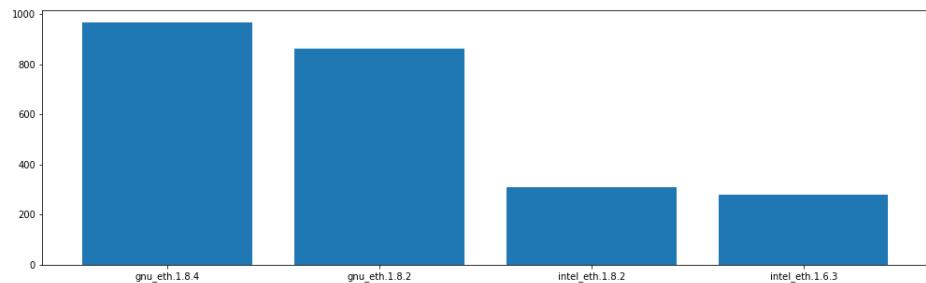


(b) Testes corridos em duas maquinas r662

Figure 173: Total tempo gasto em *idle* durante a execução em segundos

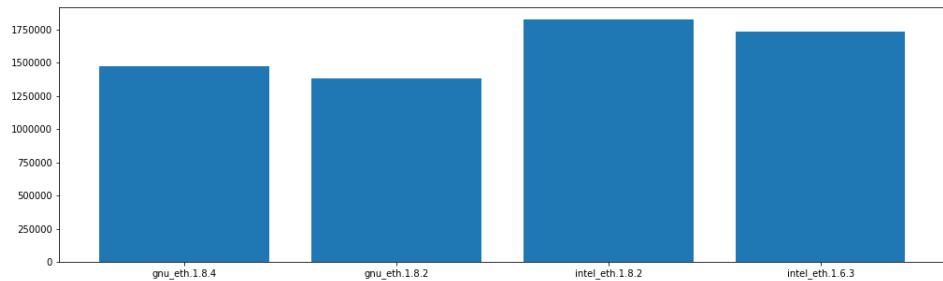


(a) Testes corridos em duas maquinas r641

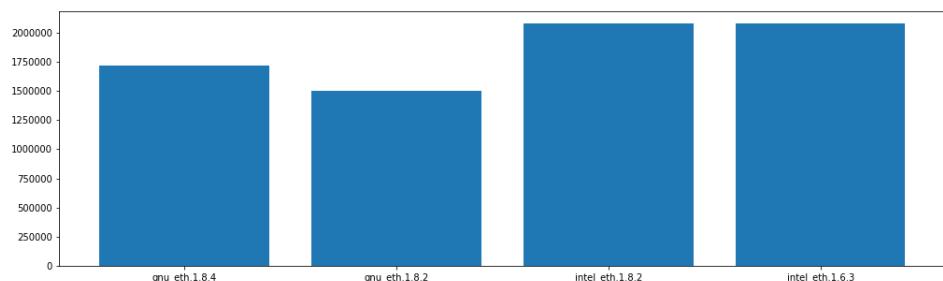


(b) Testes corridos em duas maquinas r662

Figure 174: Número de blocos escritos em disco durante a execução do programa

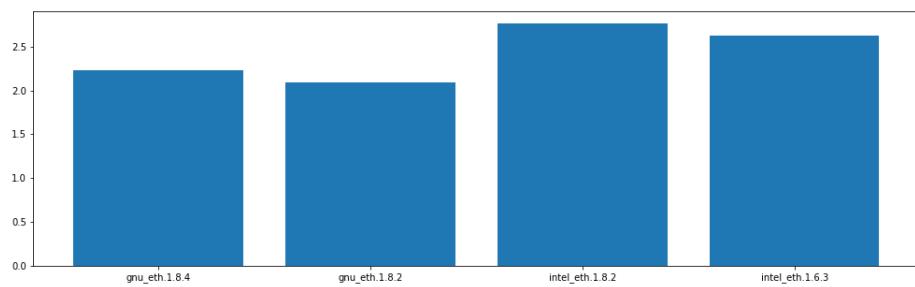


(a) Testes corridos em duas maquinas r641

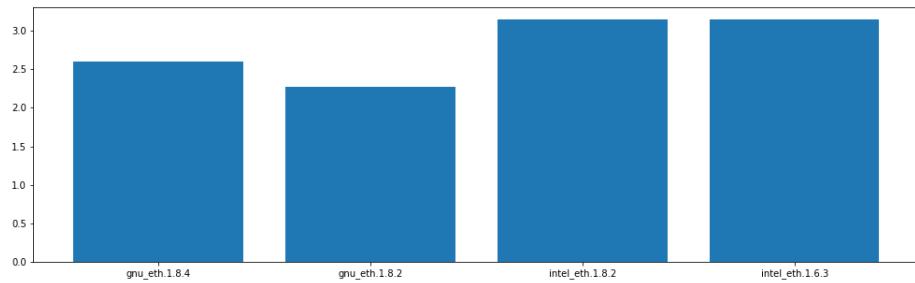


(b) Testes corridos em duas maquinas r662

Figure 175: Memória utilizada em KiB



(a) Testes corridos em duas maquinas r641



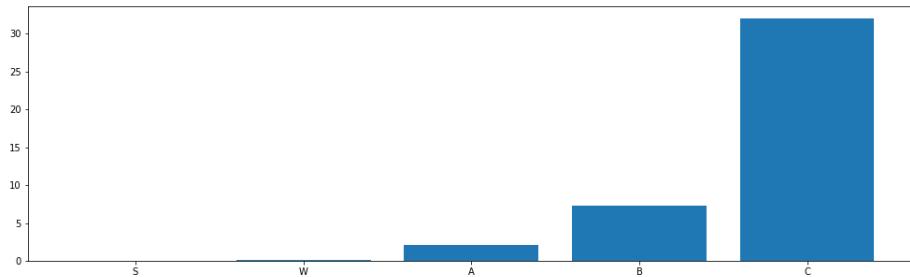
(b) Testes corridos em duas maquinas r662

Figure 176: Memória utilizada em percentagem

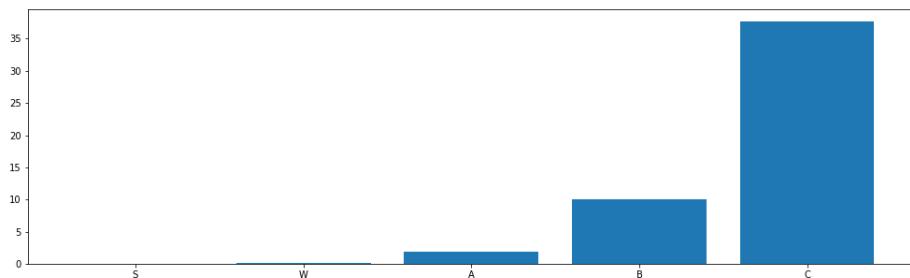
2 Impacto no sistema

2.1 Versão sequencial

2.1.1 Teste IS

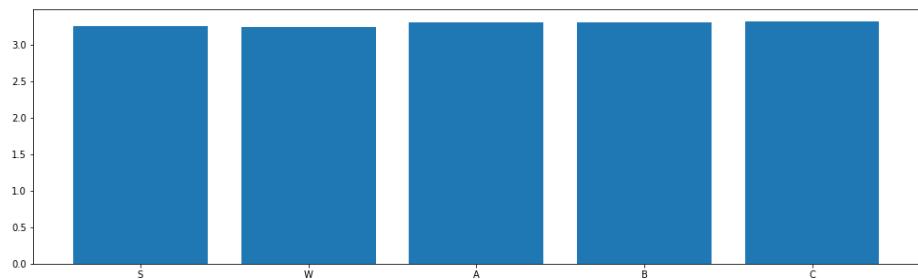


(a) Testes corridos numa maquina r641

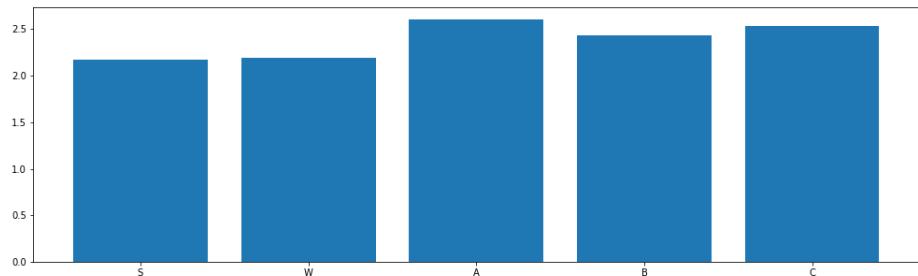


(b) Testes corridos numa maquina r662

Figure 177: Tempo total de uma execução do programa em segundos

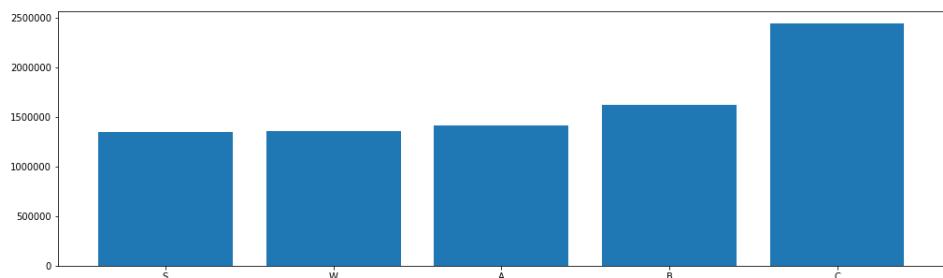


(a) Testes corridos numa maquina r641

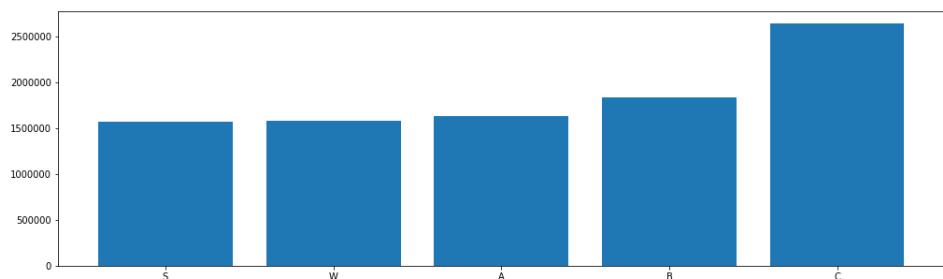


(b) Testes corridos numa maquina r662

Figure 178: Utilização máxima de CPU percentagem

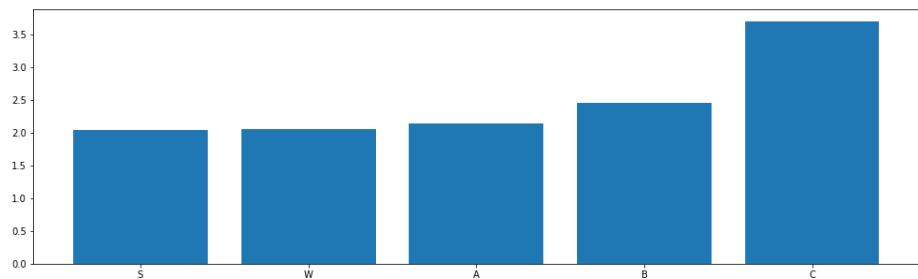


(a) Testes corridos numa maquina r641

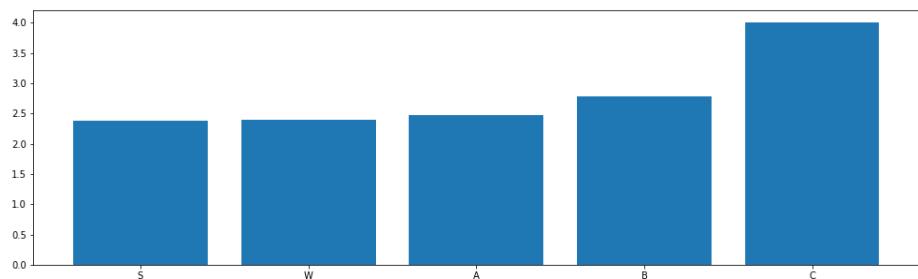


(b) Testes corridos numa maquina r662

Figure 179: Utilização de memória em KiB

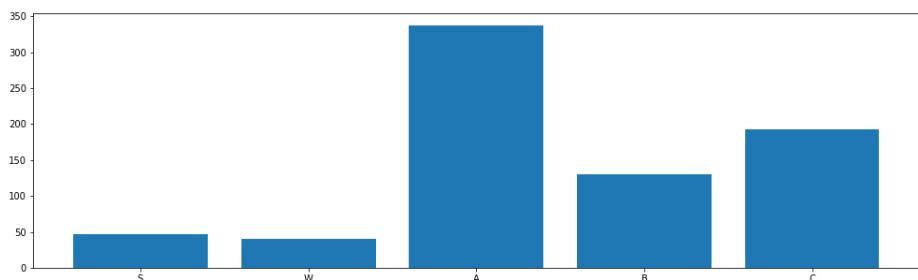


(a) Testes corridos numa maquina r641

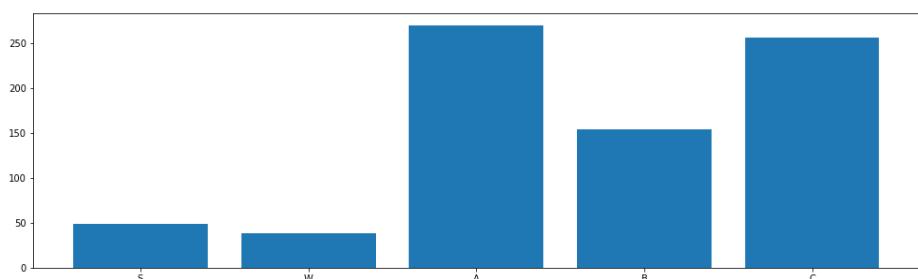


(b) Testes corridos numa maquina r662

Figure 180: Utilização de memória em percentagem



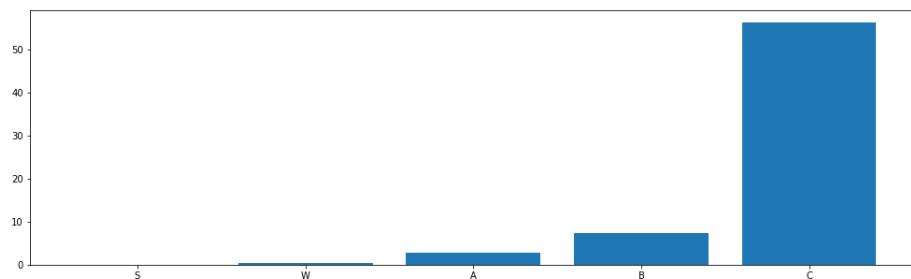
(a) Testes corridos numa maquina r641



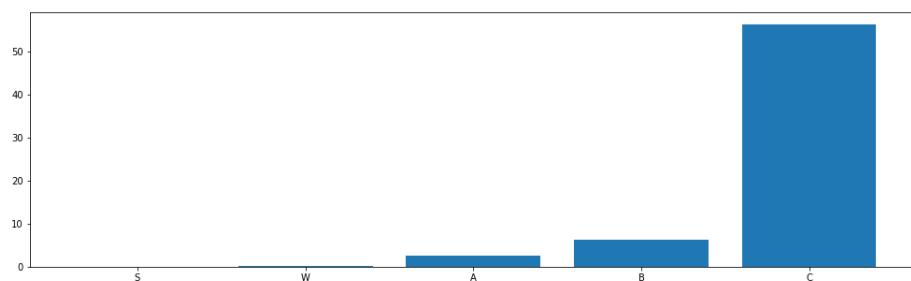
(b) Testes corridos numa maquina r662

Figure 181: Número de blocos escritos e lidos no disco numa a execução do programa

2.1.2 Teste MG

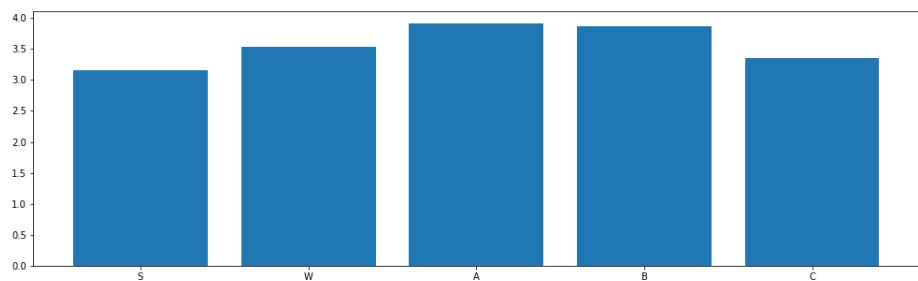


(a) Testes corridos numa maquina r641

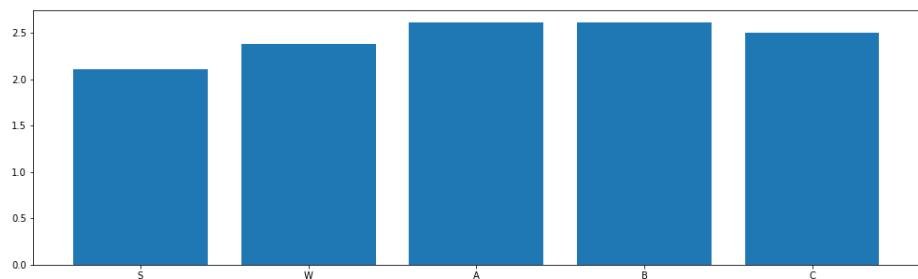


(b) Testes corridos numa maquina r662

Figure 182: Tempo total de uma execução do programa em segundos

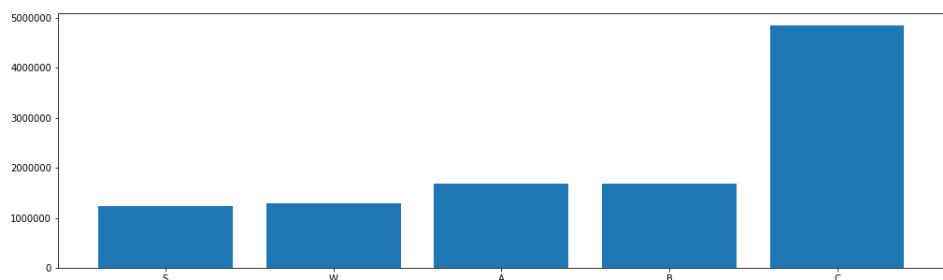


(a) Testes corridos numa maquina r641

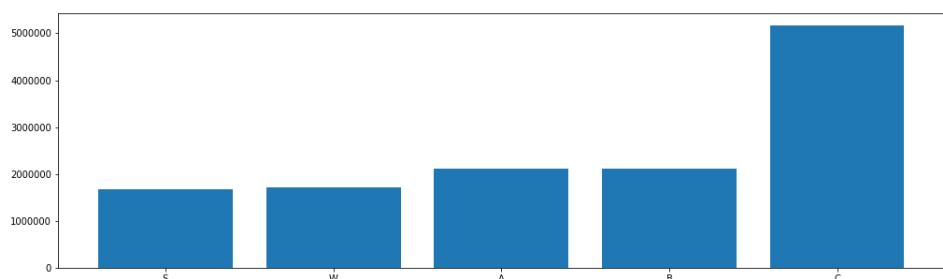


(b) Testes corridos numa maquina r662

Figure 183: Utilização máxima de CPU percentagem

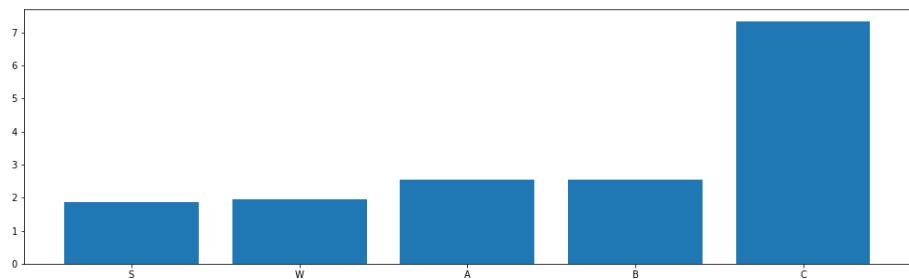


(a) Testes corridos numa maquina r641

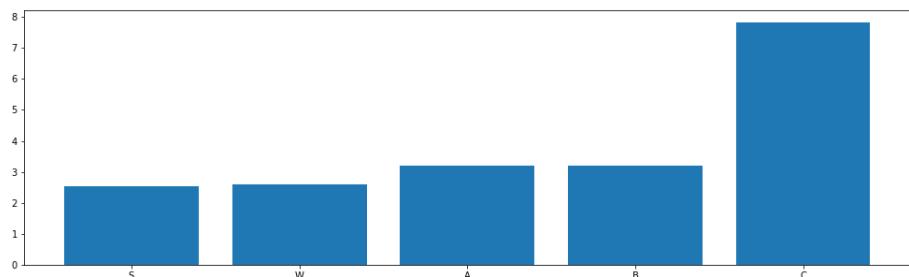


(b) Testes corridos numa maquina r662

Figure 184: Utilização de memória em KiB

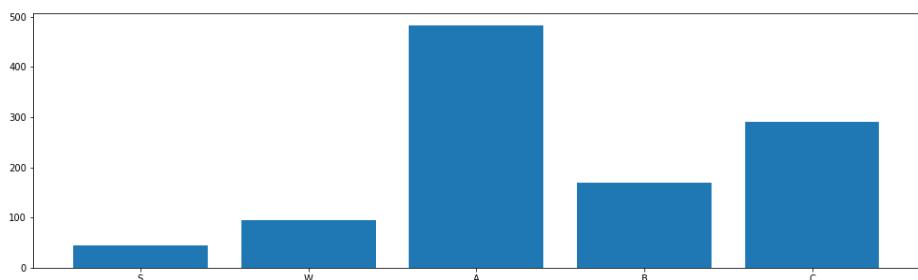


(a) Testes corridos numa maquina r641

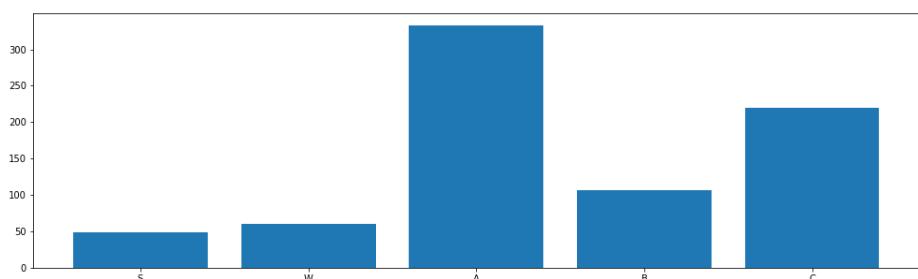


(b) Testes corridos numa maquina r662

Figure 185: Utilização de memória em percentagem



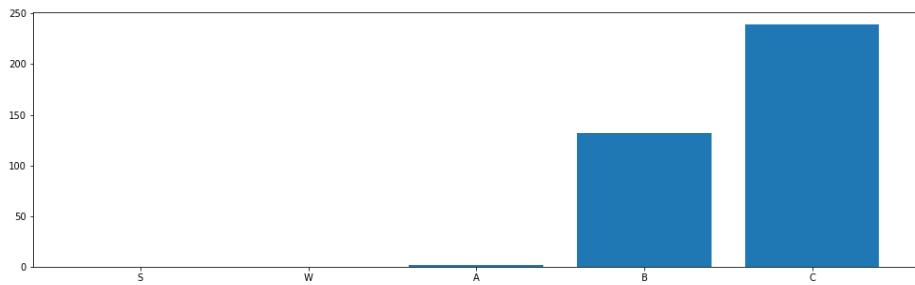
(a) Testes corridos numa maquina r641



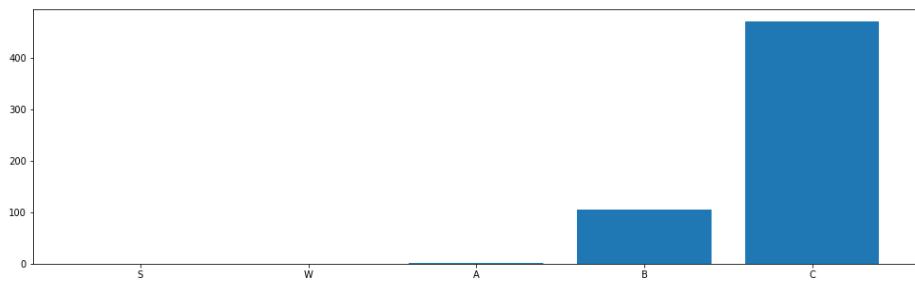
(b) Testes corridos numa maquina r662

Figure 186: Número de blocos escritos e lidos no disco numa a execução do programa

2.1.3 Teste CG

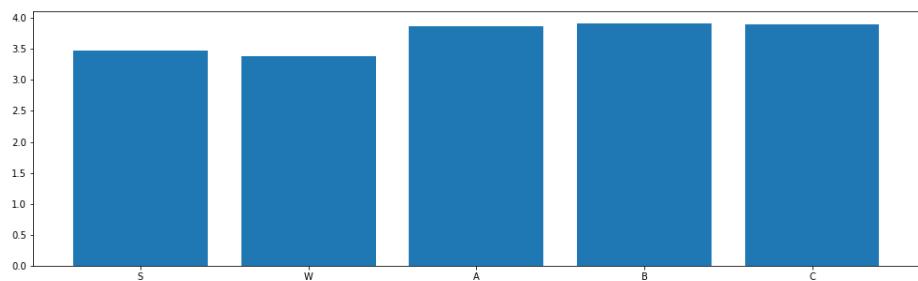


(a) Testes corridos numa maquina r641

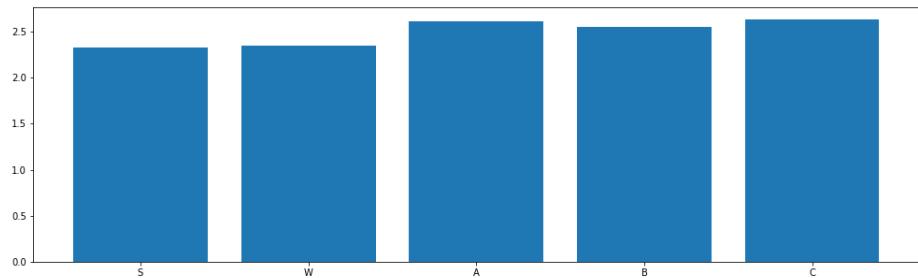


(b) Testes corridos numa maquina r662

Figure 187: Tempo total de uma execução do programa em segundos

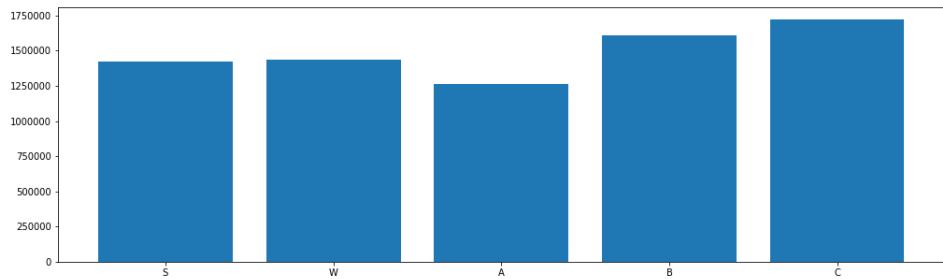


(a) Testes corridos numa maquina r641

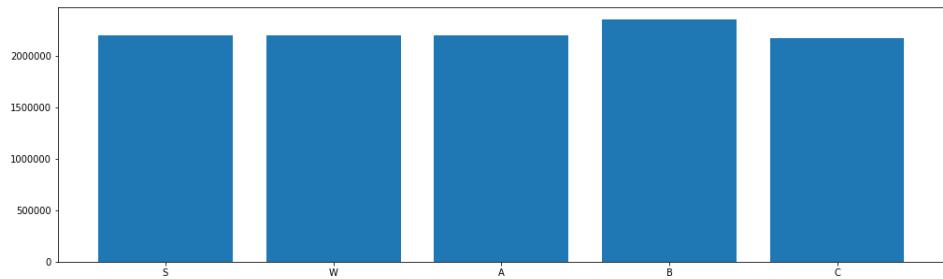


(b) Testes corridos numa maquina r662

Figure 188: Utilização máxima de CPU percentagem

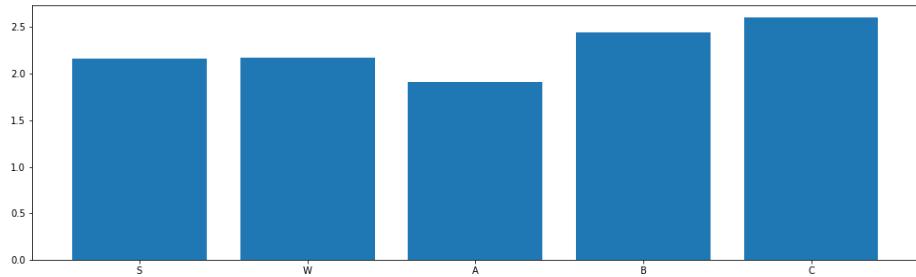


(a) Testes corridos numa maquina r641

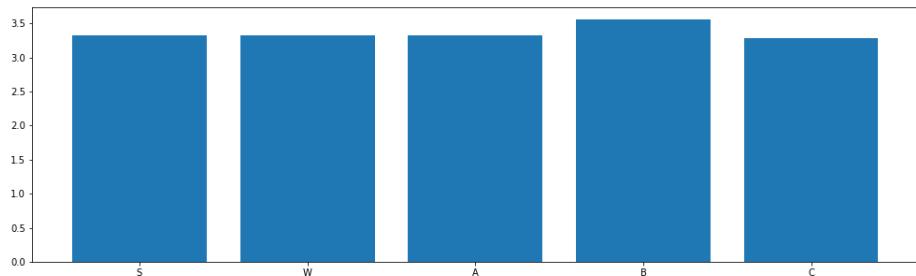


(b) Testes corridos numa maquina r662

Figure 189: Utilização de memória em KiB

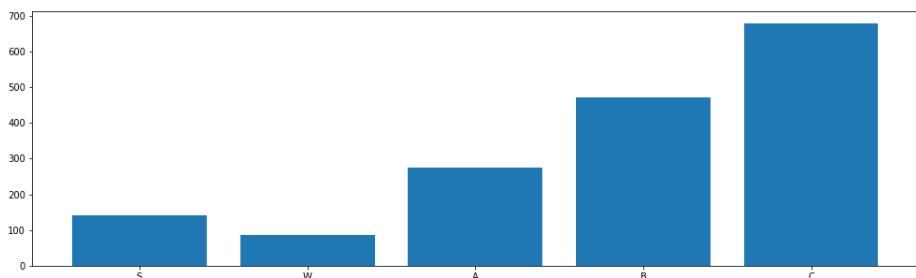


(a) Testes corridos numa maquina r641

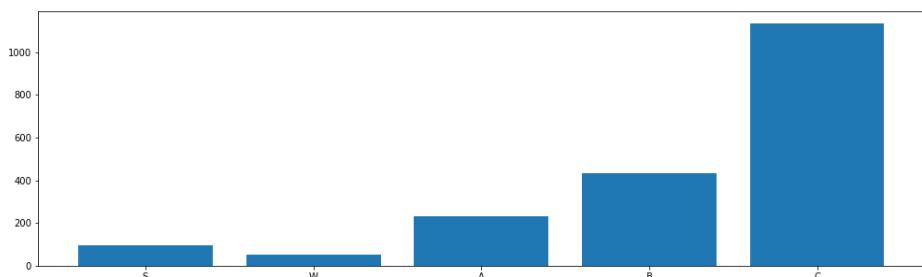


(b) Testes corridos numa maquina r662

Figure 190: Utilização de memória em percentagem



(a) Testes corridos numa maquina r641

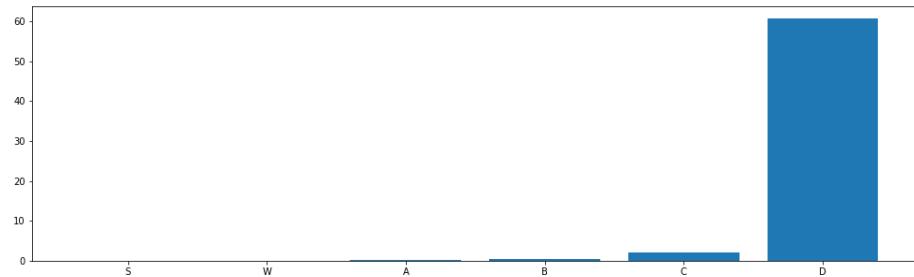


(b) Testes corridos numa maquina r662

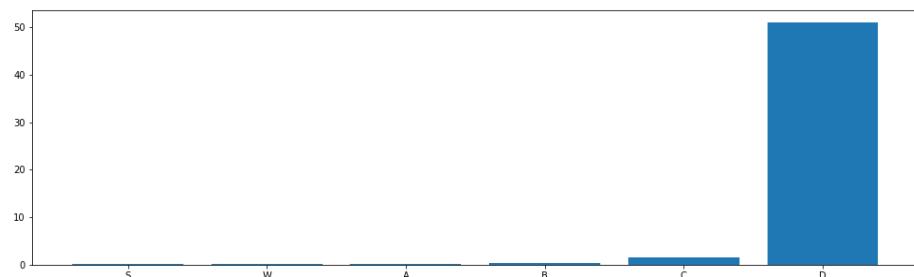
Figure 191: Número de blocos escritos e lidos no disco numa a execução do programa

2.2 Versão OpenMP

2.2.1 Teste IS

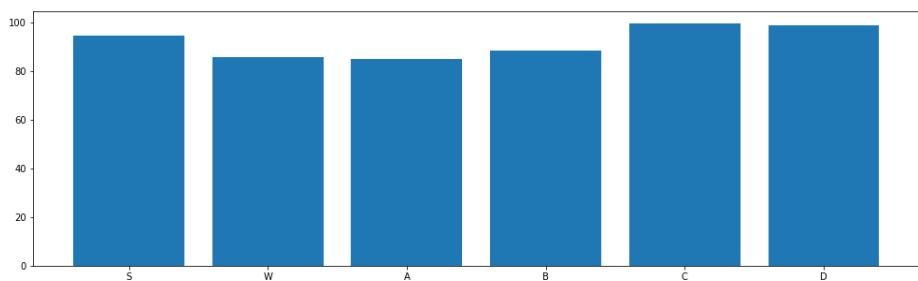


(a) Testes corridos numa maquina r641

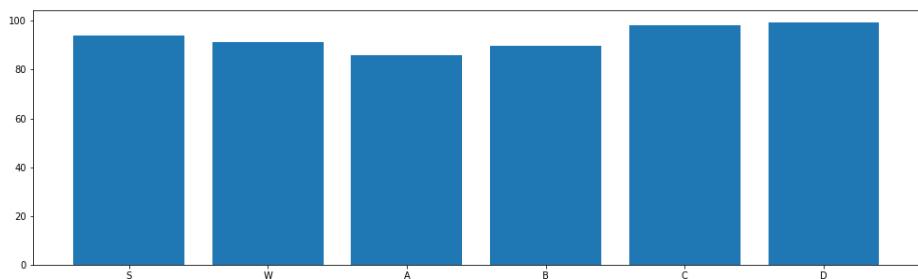


(b) Testes corridos numa maquina r662

Figure 192: Tempo total de uma execução do programa em segundos

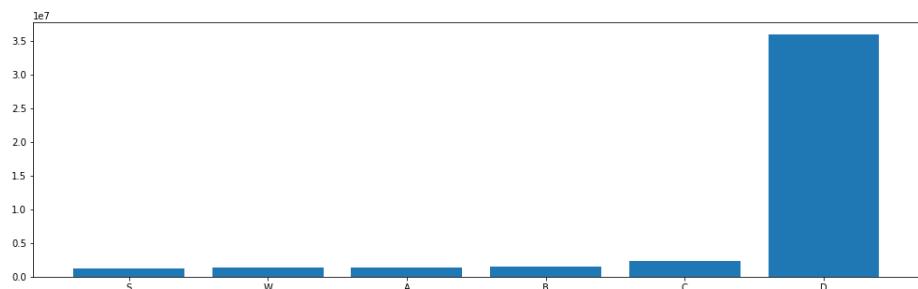


(a) Testes corridos numa maquina r641

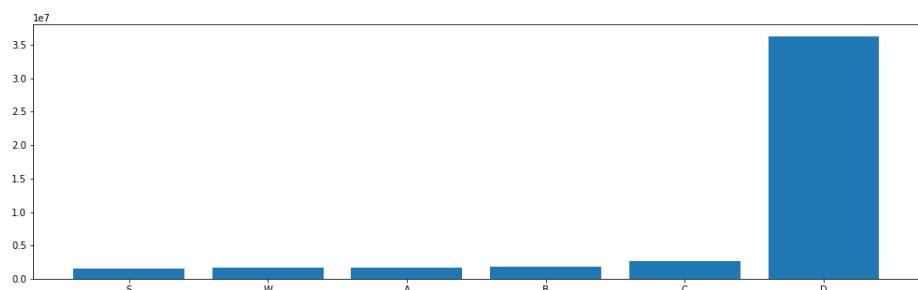


(b) Testes corridos numa maquina r662

Figure 193: Utilização máxima de CPU percentagem

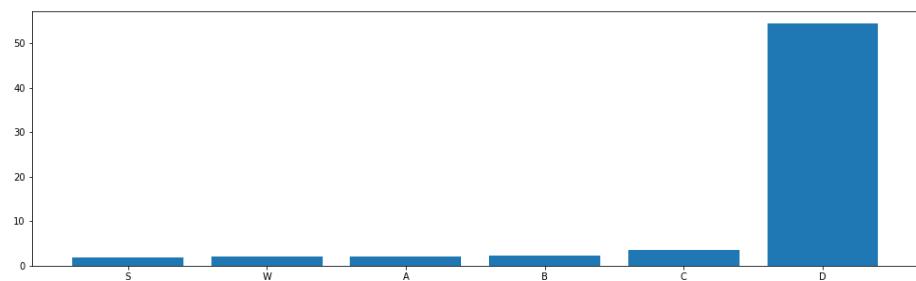


(a) Testes corridos numa maquina r641

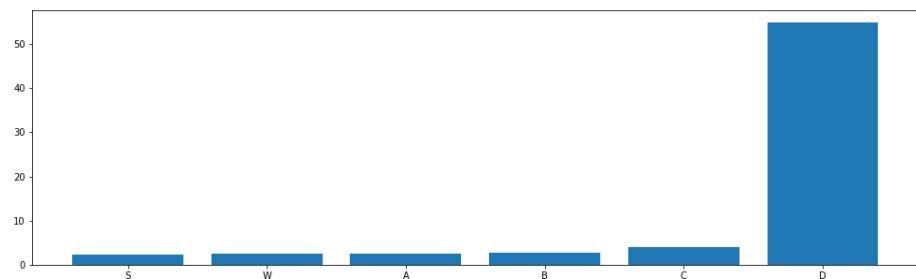


(b) Testes corridos numa maquina r662

Figure 194: Utilização de memória em KiB

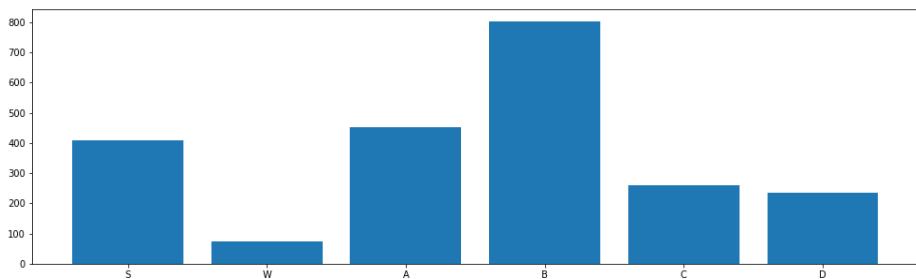


(a) Testes corridos numa maquina r641

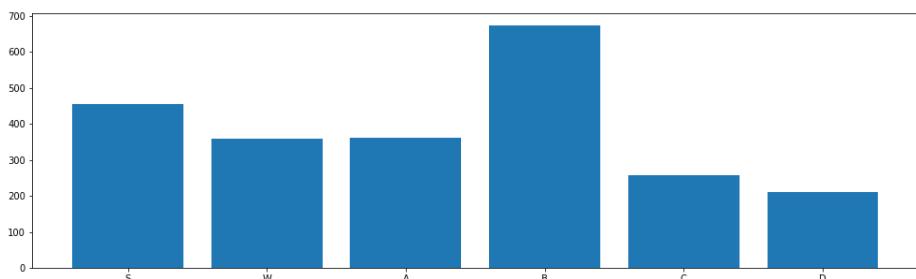


(b) Testes corridos numa maquina r662

Figure 195: Utilização de memória em percentagem



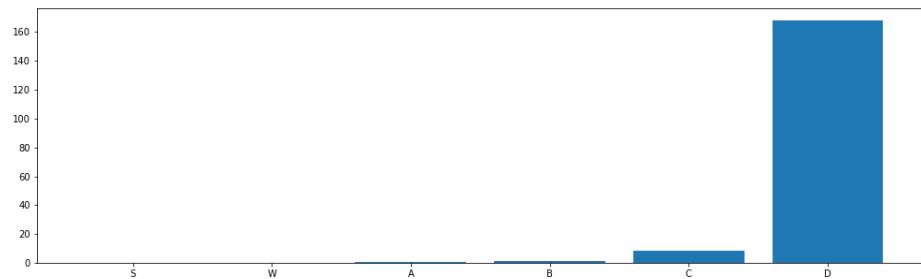
(a) Testes corridos numa maquina r641



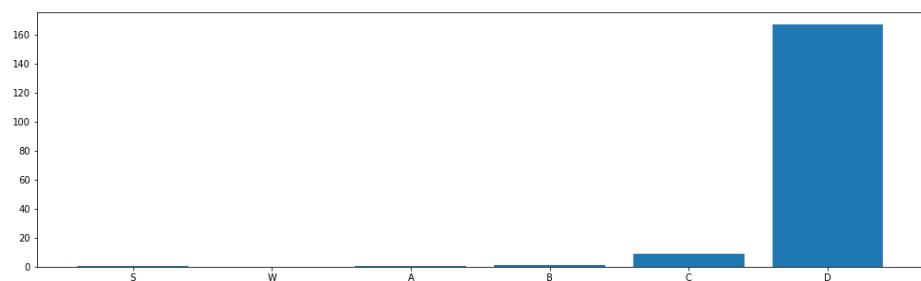
(b) Testes corridos numa maquina r662

Figure 196: Número de blocos escritos e lidos no disco numa a execução do programa

2.2.2 Teste MG

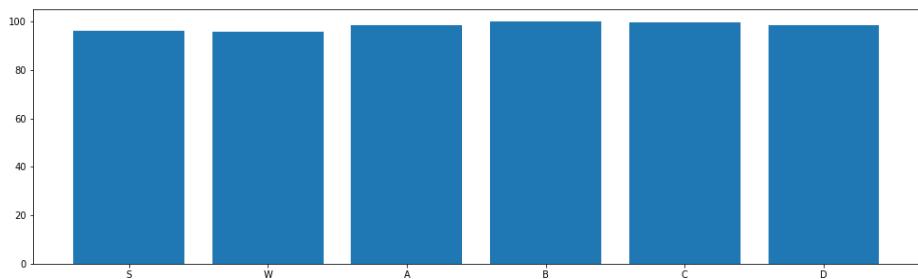


(a) Testes corridos numa maquina r641

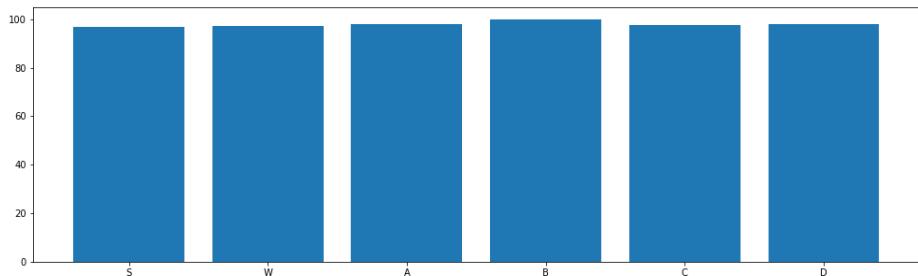


(b) Testes corridos numa maquina r662

Figure 197: Tempo total de uma execução do programa em segundos

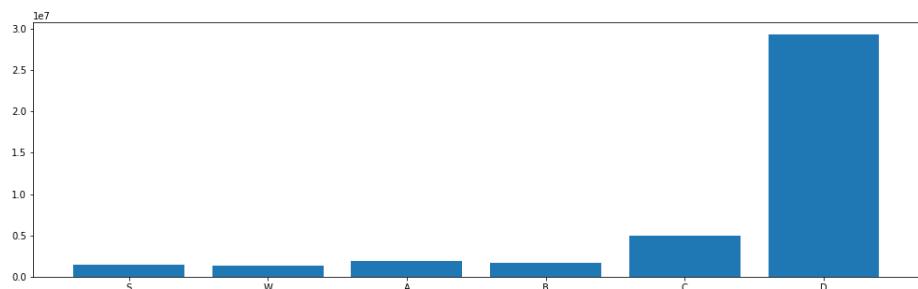


(a) Testes corridos numa maquina r641

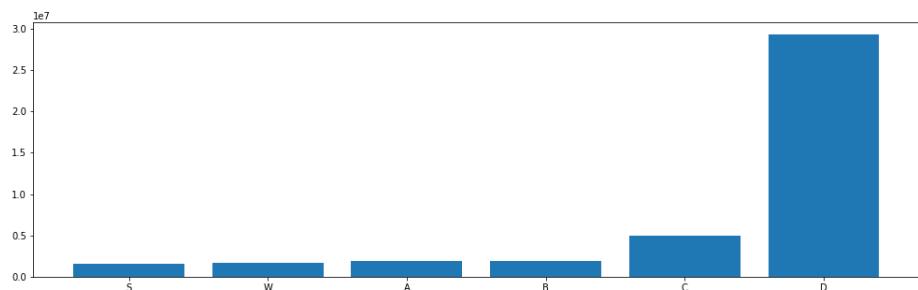


(b) Testes corridos numa maquina r662

Figure 198: Utilização máxima de CPU percentagem

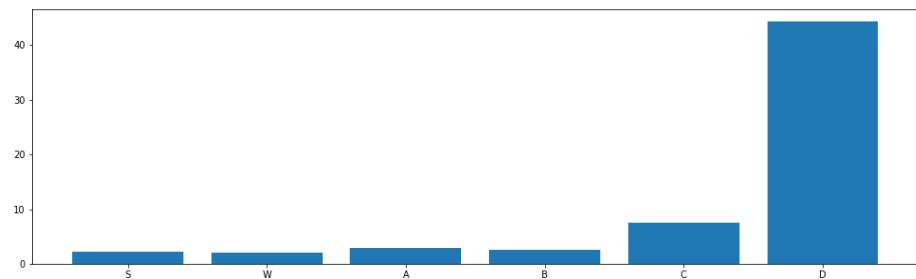


(a) Testes corridos numa maquina r641

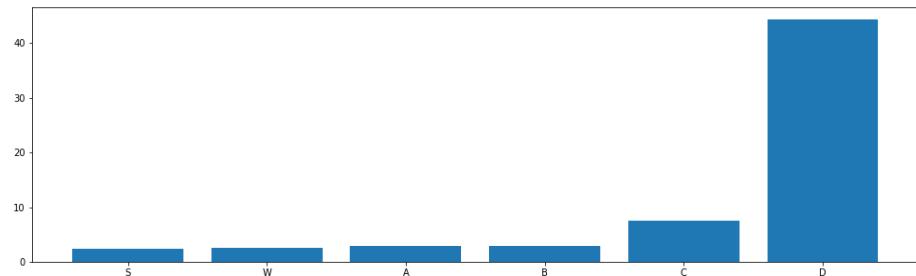


(b) Testes corridos numa maquina r662

Figure 199: Utilização de memória em KiB

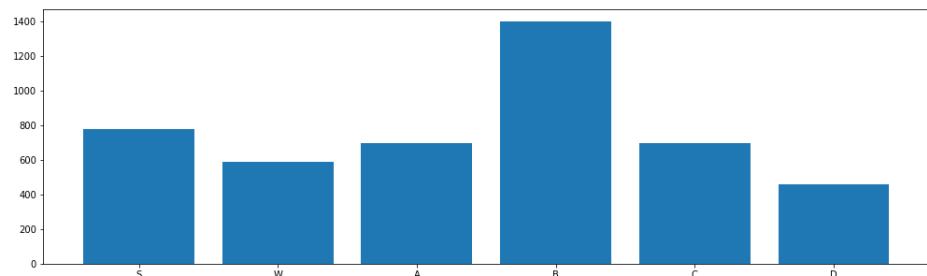


(a) Testes corridos numa maquina r641

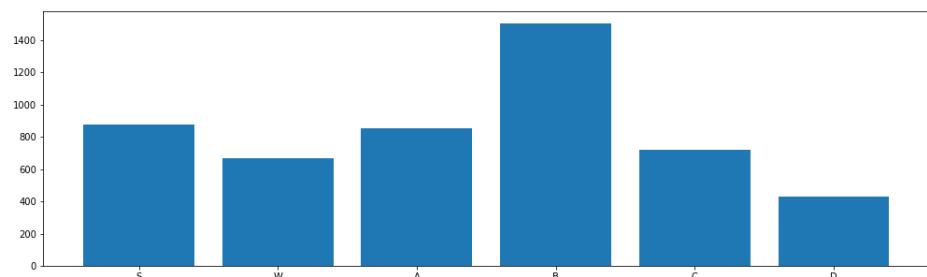


(b) Testes corridos numa maquina r662

Figure 200: Utilização de memória em percentagem



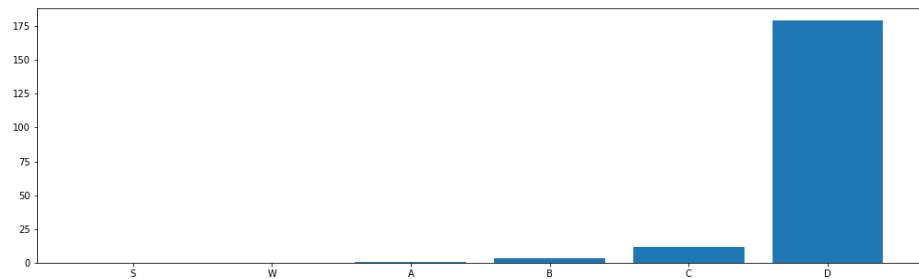
(a) Testes corridos numa maquina r641



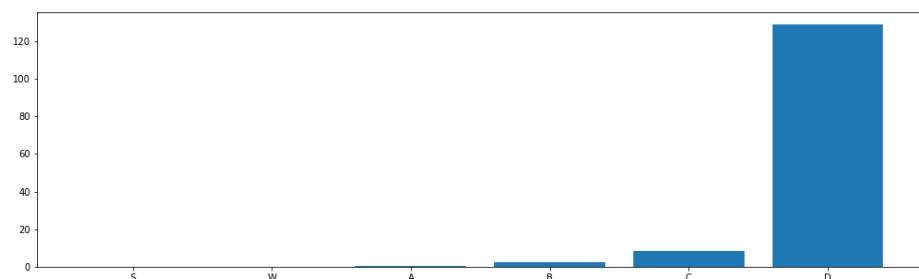
(b) Testes corridos numa maquina r662

Figure 201: Número de blocos escritos e lidos no disco numa a execução do programa

2.2.3 Teste EP

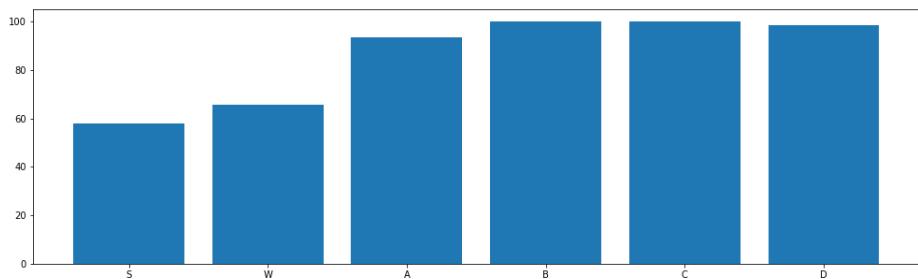


(a) Testes corridos numa maquina r641

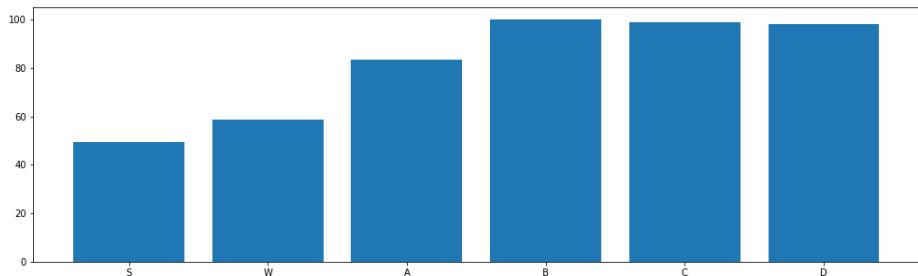


(b) Testes corridos numa maquina r662

Figure 202: Tempo total de uma execução do programa em segundos

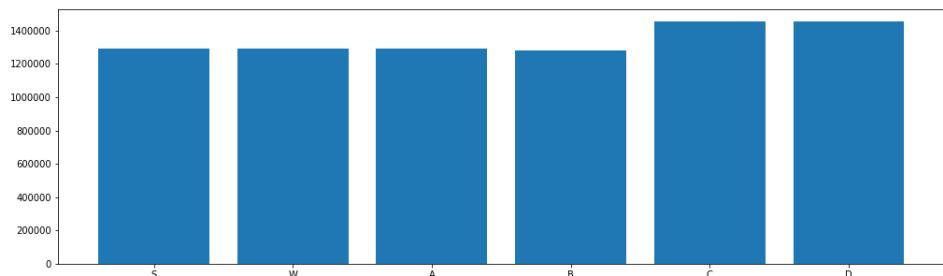


(a) Testes corridos numa maquina r641

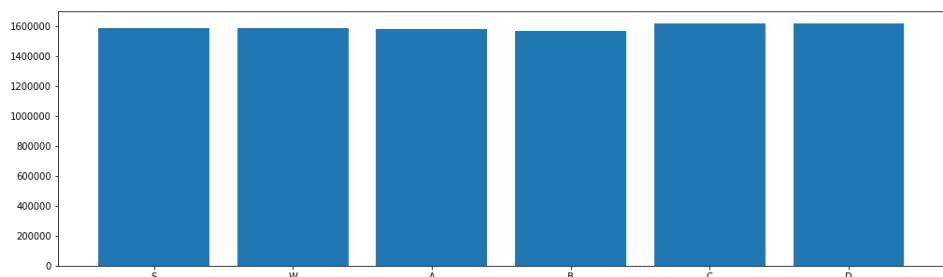


(b) Testes corridos numa maquina r662

Figure 203: Utilização máxima de CPU percentagem

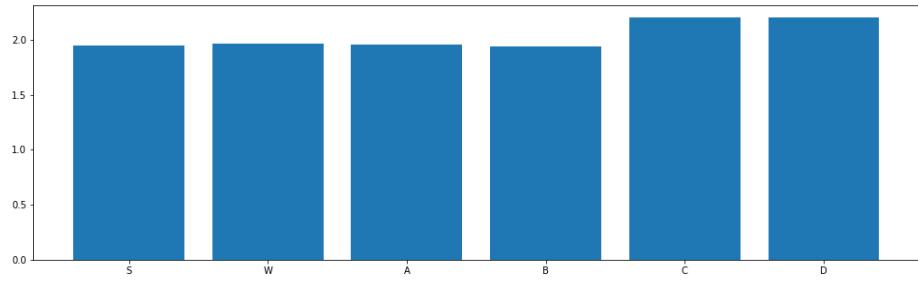


(a) Testes corridos numa maquina r641

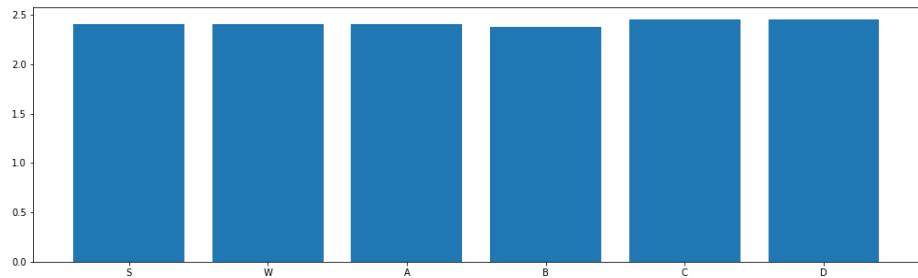


(b) Testes corridos numa maquina r662

Figure 204: Utilização de memória em KiB

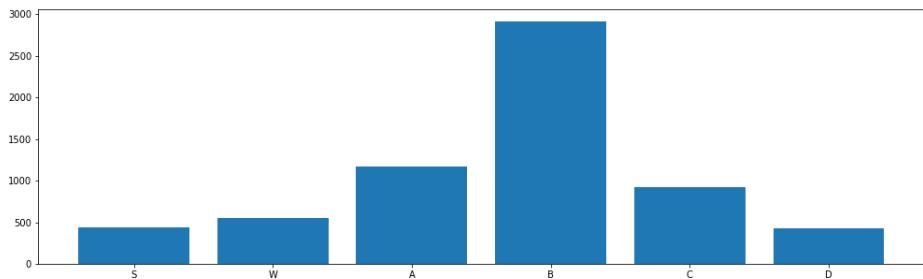


(a) Testes corridos numa maquina r641

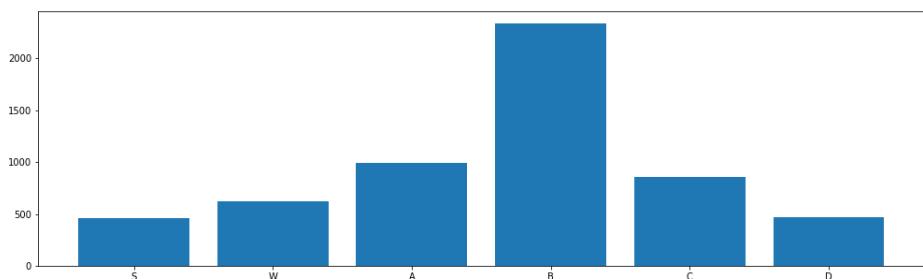


(b) Testes corridos numa maquina r662

Figure 205: Utilização de memória em percentagem



(a) Testes corridos numa maquina r641

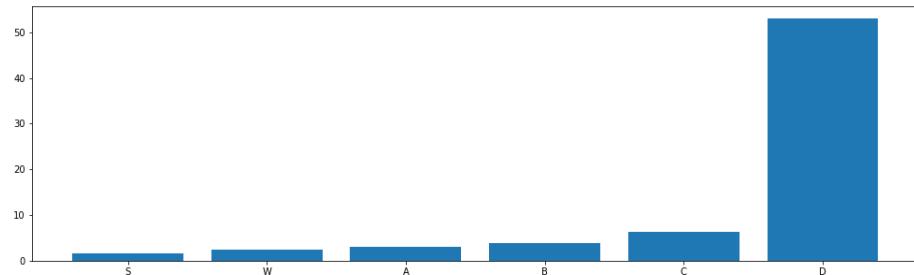


(b) Testes corridos numa maquina r662

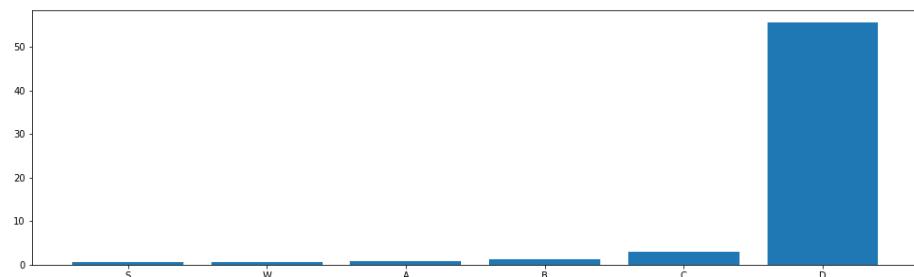
Figure 206: Número de blocos escritos e lidos no disco numa a execução do programa

2.3 Versão MPI

2.3.1 Teste IS

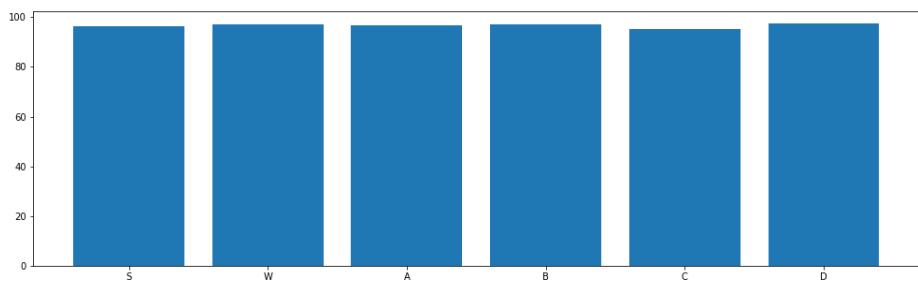


(a) Testes corridos em duas maquinas r641

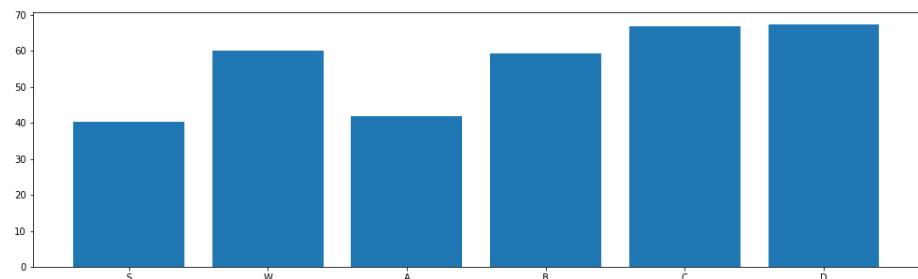


(b) Testes corridos em duas maquinas r662

Figure 207: Tempo total de uma execução do programa em segundos

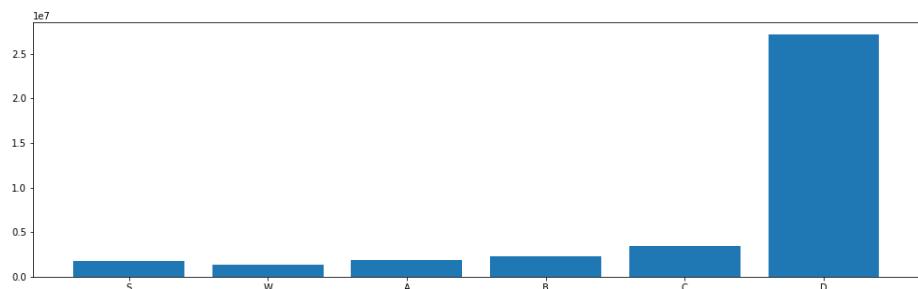


(a) Testes corridos em duas maquinas r641

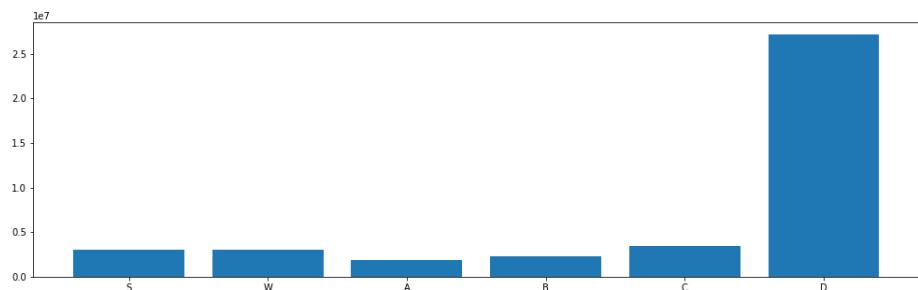


(b) Testes corridos em duas maquinas r662

Figure 208: Utilização máxima de CPU percentagem

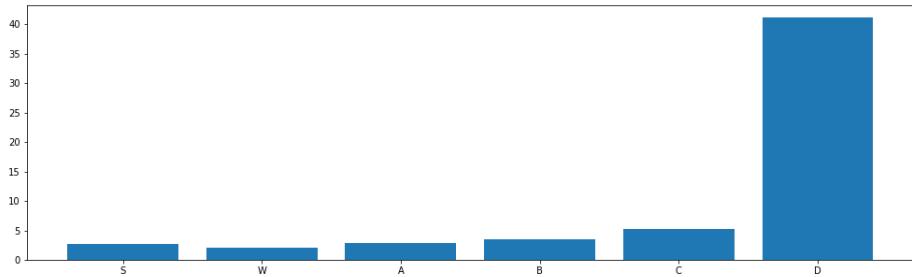


(a) Testes corridos em duas maquinas r641

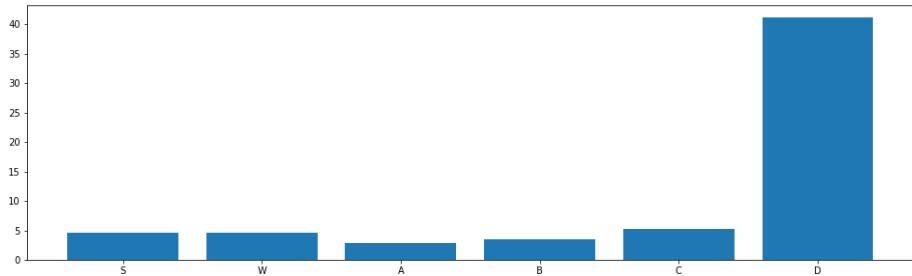


(b) Testes corridos em duas maquinas r662

Figure 209: Utilização de memória em KiB

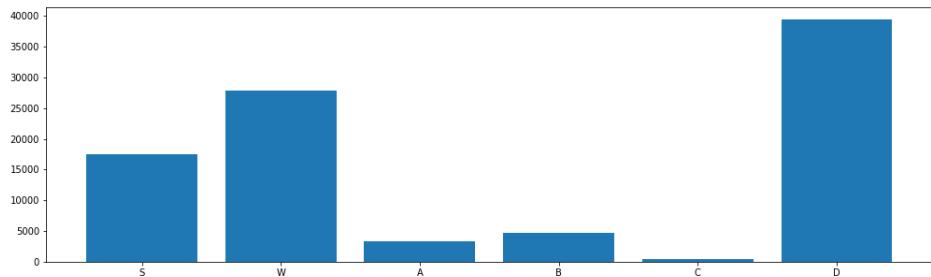


(a) Testes corridos em duas maquinas r641

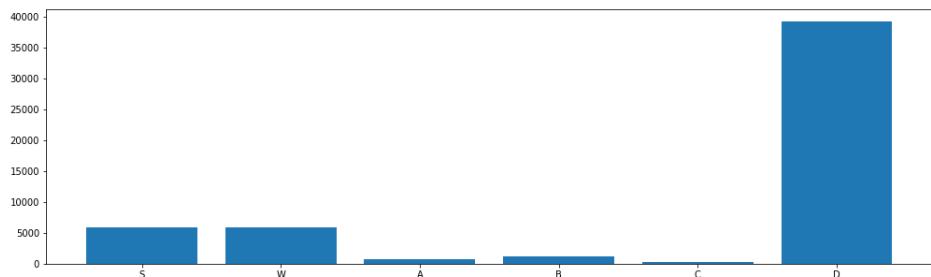


(b) Testes corridos em duas maquinas r662

Figure 210: Utilização de memória em percentagem

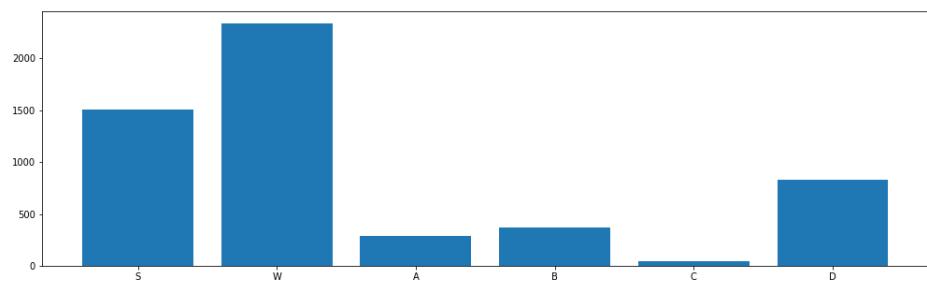


(a) Testes corridos em duas maquinas r641

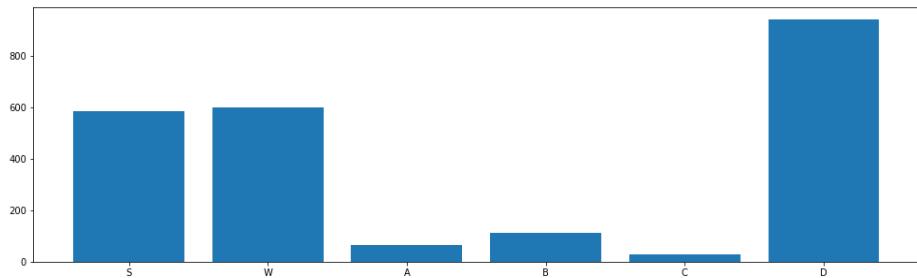


(b) Testes corridos em duas maquinas r662

Figure 211: Número de blocos escritos e lidos no disco numa a execução do programa



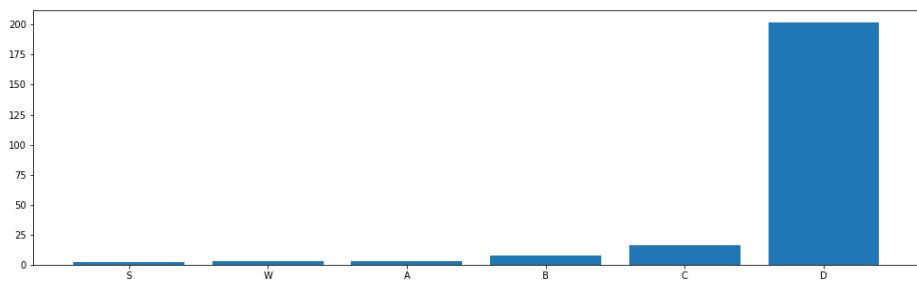
(a) Testes corridos em duas maquinas r641



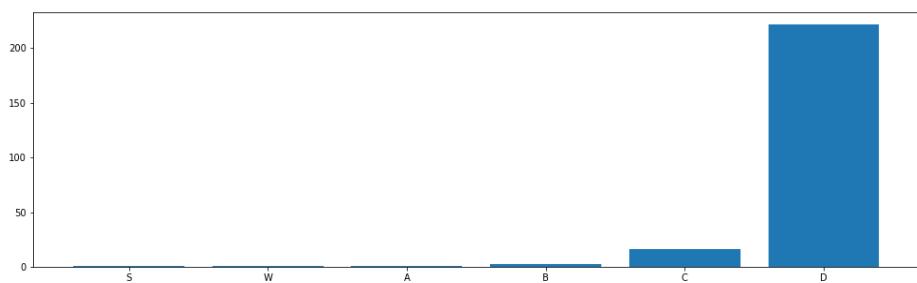
(b) Testes corridos em duas maquinas r662

Figure 212: Numero de packets enviados e recebidos durante execução do programa

2.3.2 Teste MG

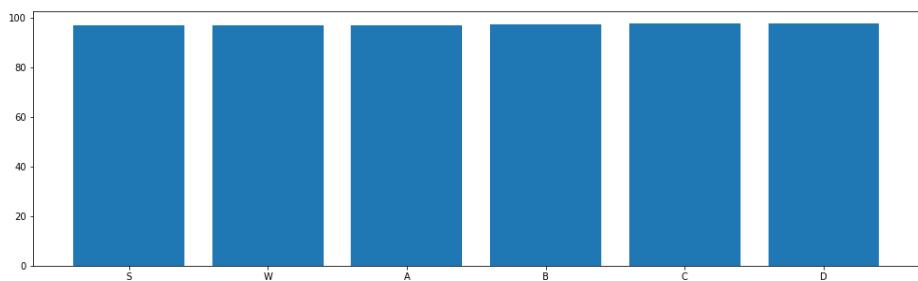


(a) Testes corridos em duas maquinas r641

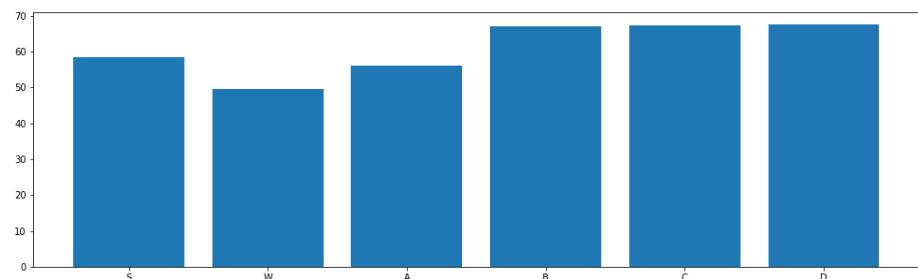


(b) Testes corridos em duas maquinas r662

Figure 213: Tempo total de uma execução do programa em segundos

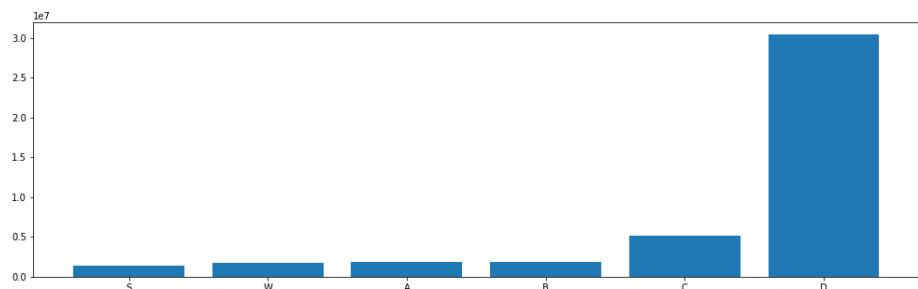


(a) Testes corridos em duas maquinas r641

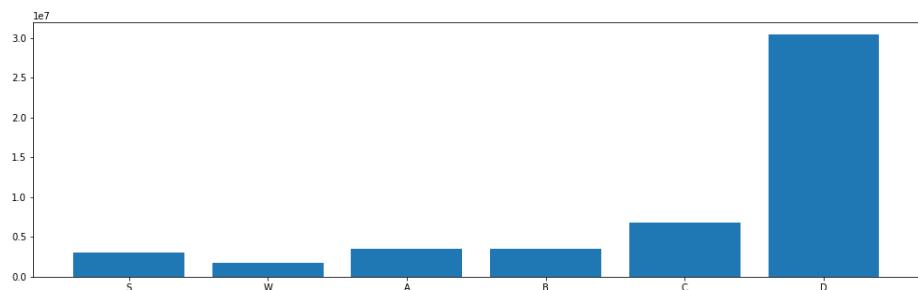


(b) Testes corridos em duas maquinas r662

Figure 214: Utilização máxima de CPU percentagem

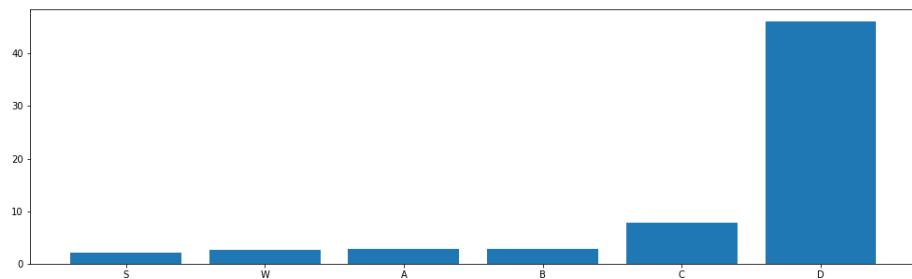


(a) Testes corridos em duas maquinas r641

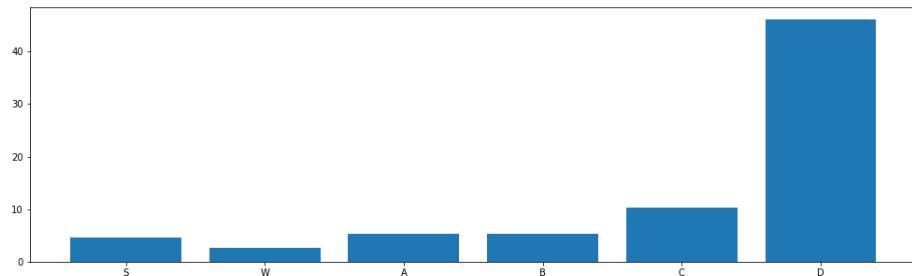


(b) Testes corridos em duas maquinas r662

Figure 215: Utilização de memória em KiB

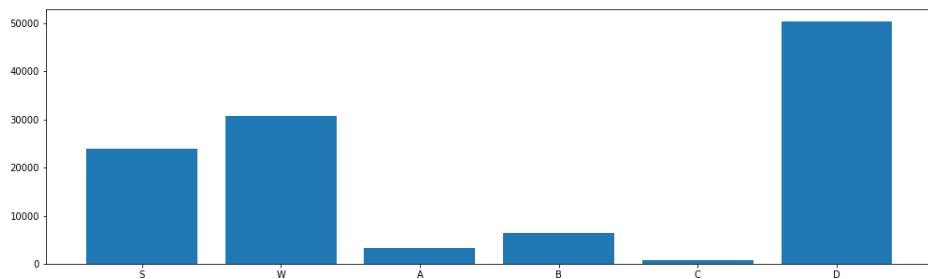


(a) Testes corridos em duas maquinas r641

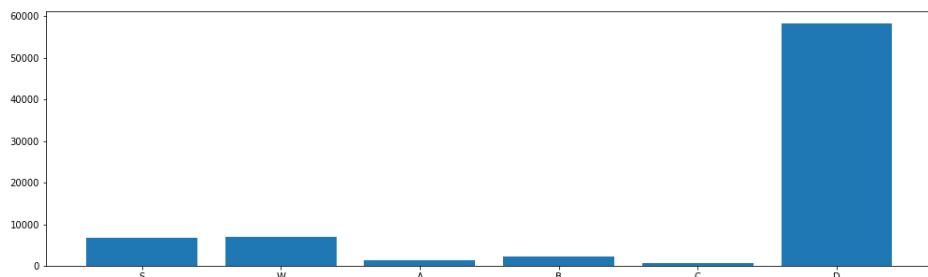


(b) Testes corridos em duas maquinas r662

Figure 216: Utilização de memória em percentagem

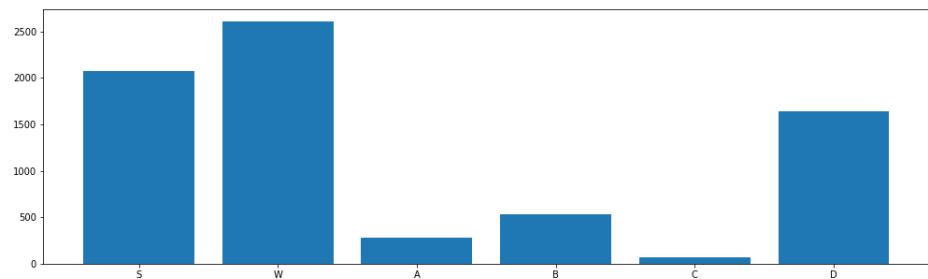


(a) Testes corridos em duas maquinas r641

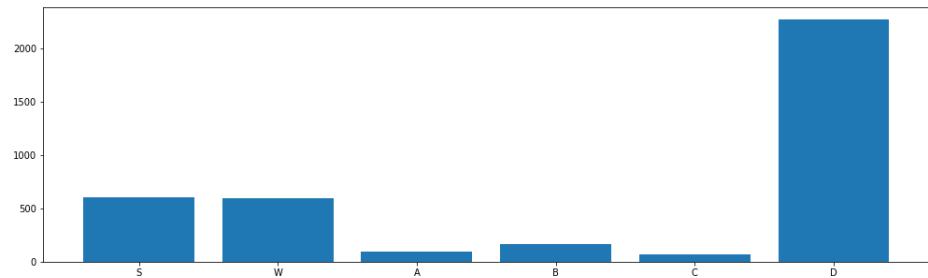


(b) Testes corridos em duas maquinas r662

Figure 217: Número de blocos escritos e lidos no disco numa a execução do programa



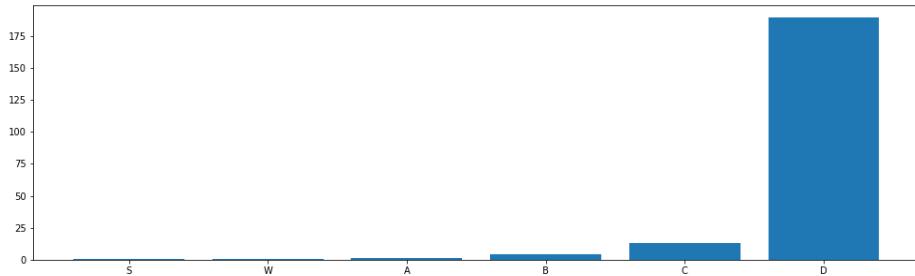
(a) Testes corridos em duas maquinas r641



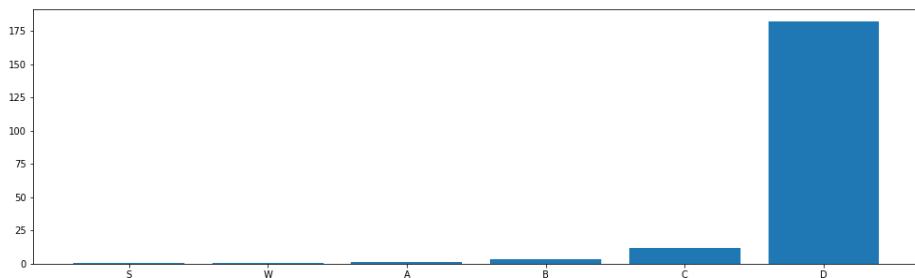
(b) Testes corridos em duas maquinas r662

Figure 218: Numero de packets enviados e recebidos durante execução do programa

2.3.3 Teste EP

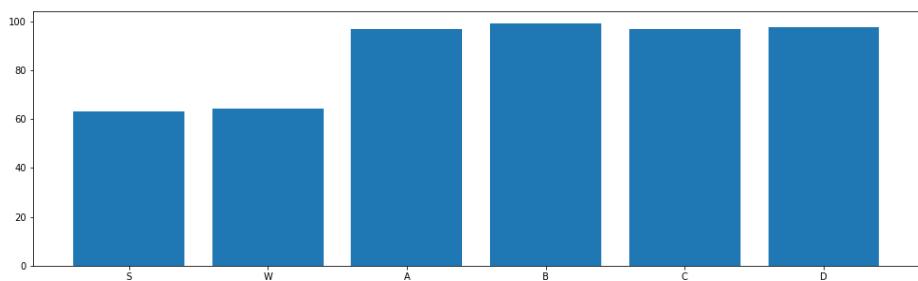


(a) Testes corridos em duas maquinas r641

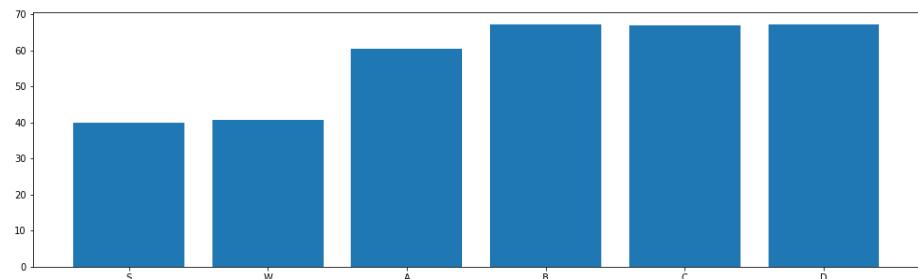


(b) Testes corridos em duas maquinas r662

Figure 219: Tempo total de uma execução do programa em segundos

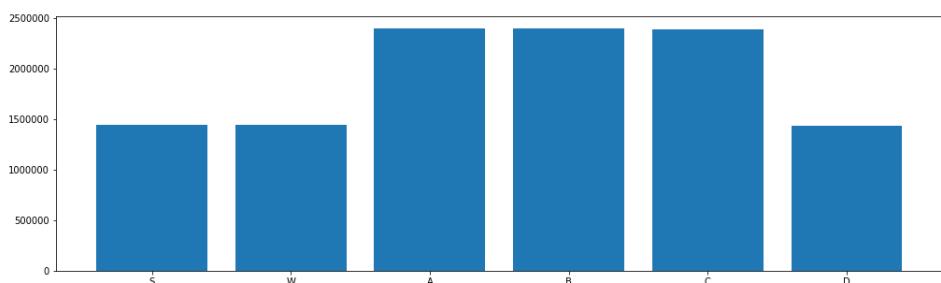


(a) Testes corridos em duas maquinas r641

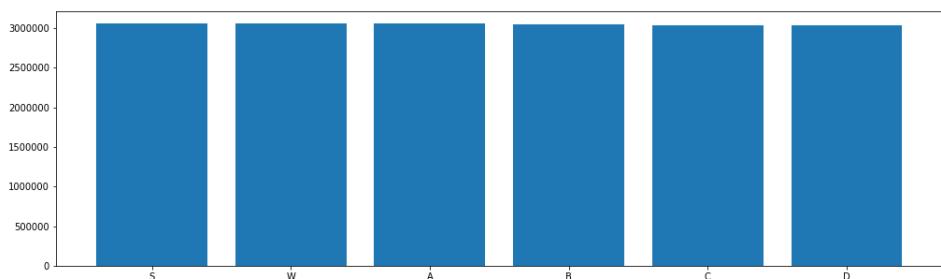


(b) Testes corridos em duas maquinas r662

Figure 220: Utilização máxima de CPU percentagem

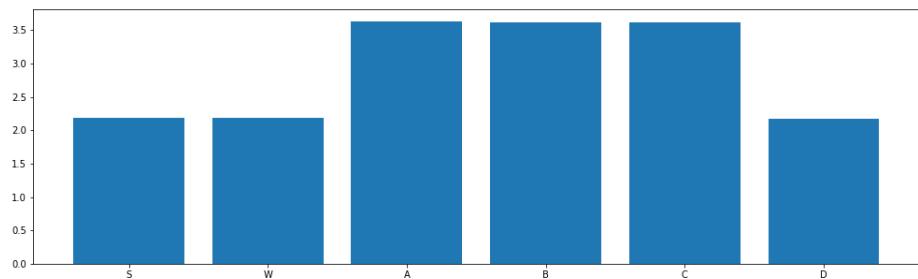


(a) Testes corridos em duas maquinas r641

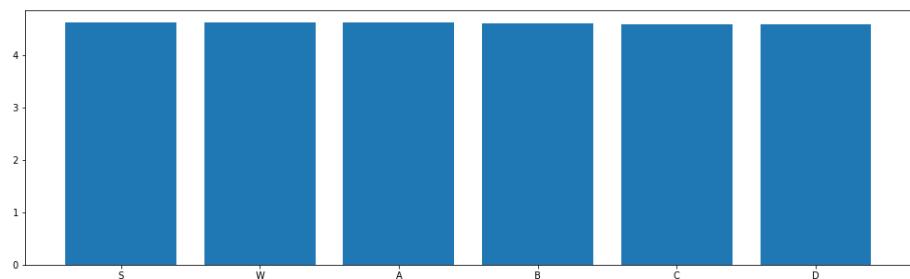


(b) Testes corridos em duas maquinas r662

Figure 221: Utilização de memória em KiB

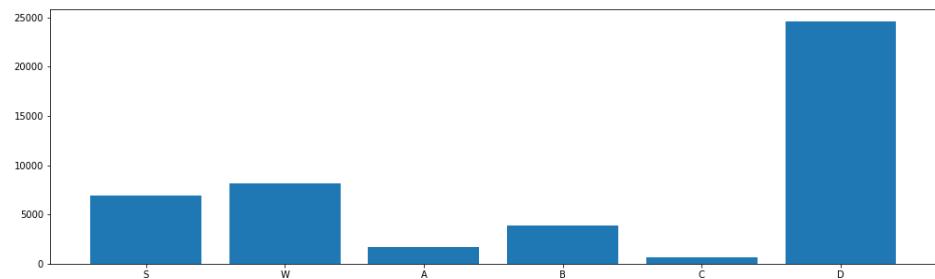


(a) Testes corridos em duas maquinas r641

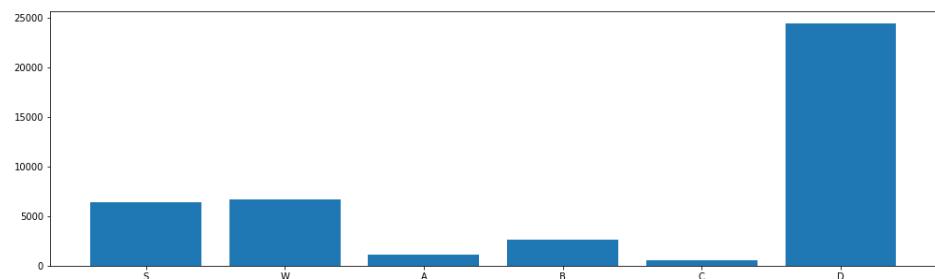


(b) Testes corridos em duas maquinas r662

Figure 222: Utilização de memória em percentagem

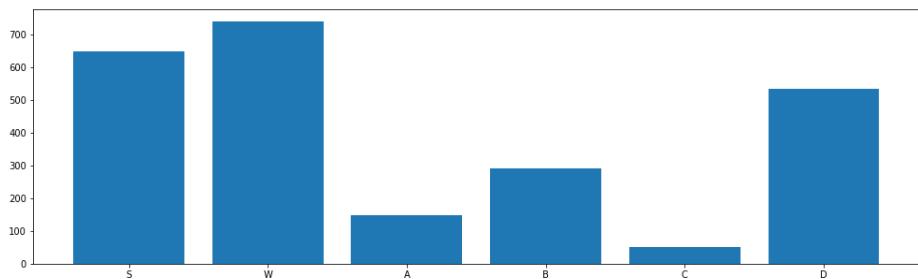


(a) Testes corridos em duas maquinas r641

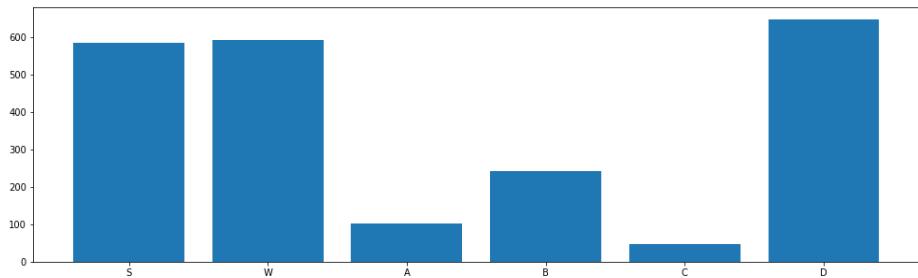


(b) Testes corridos em duas maquinas r662

Figure 223: Número de blocos escritos e lidos no disco numa a execução do programa



(a) Testes corridos em duas maquinas r641

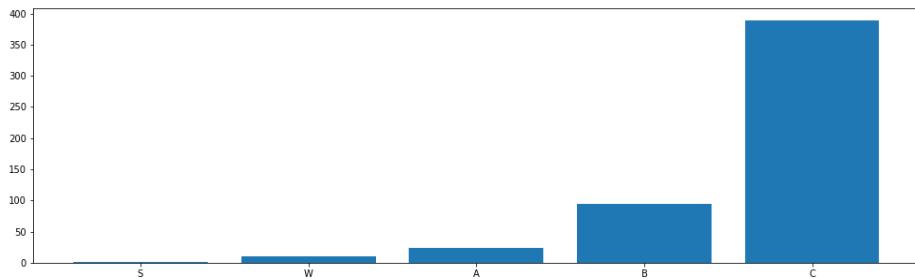


(b) Testes corridos em duas maquinas r662

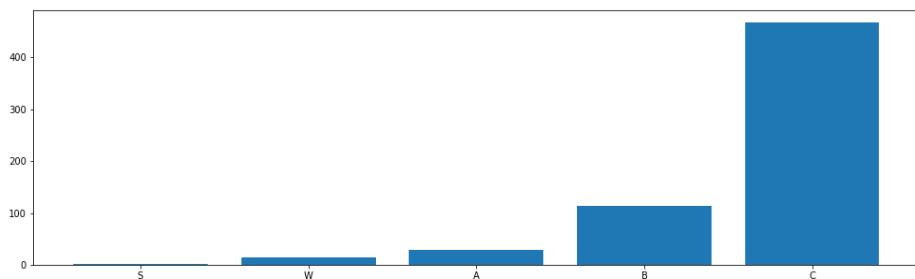
Figure 224: Numero de packets enviados e recebidos durante execução do programa

2.4 Versão Híbrida

2.4.1 Teste SP

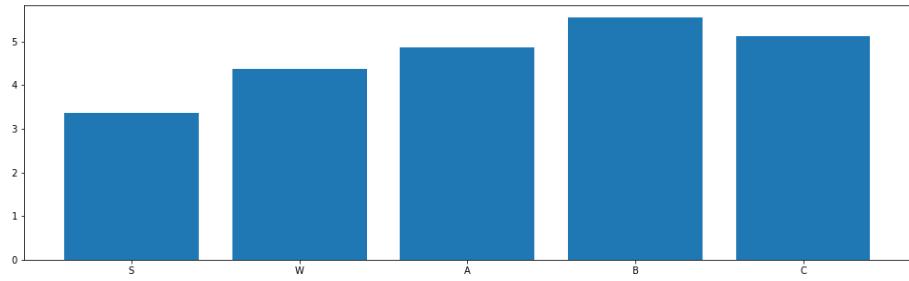


(a) Testes corridos em duas maquinas r641

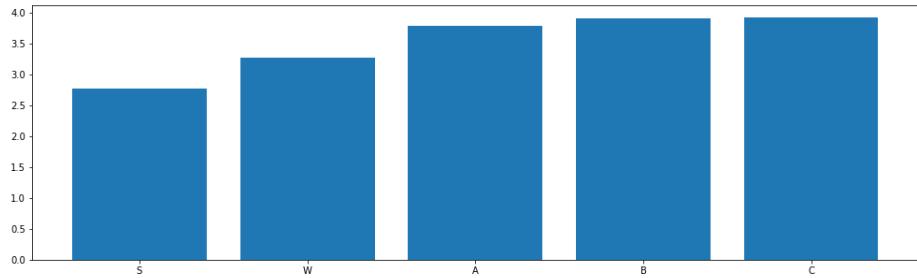


(b) Testes corridos em duas maquinas r662

Figure 225: Tempo total de uma execução do programa em segundos

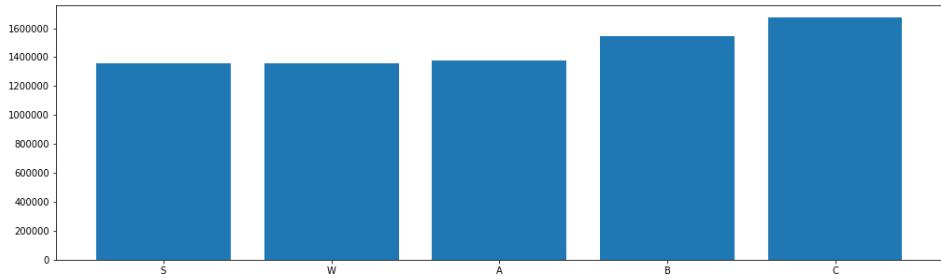


(a) Testes corridos em duas maquinas r641

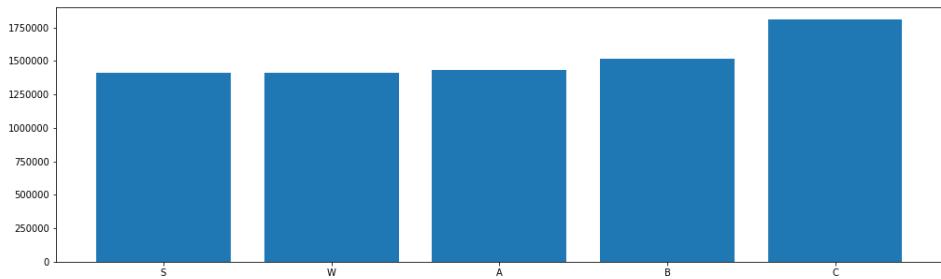


(b) Testes corridos em duas maquinas r662

Figure 226: Utilização máxima de CPU percentagem

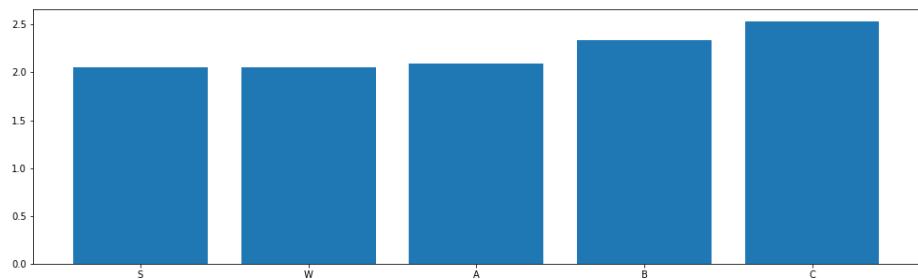


(a) Testes corridos em duas maquinas r641

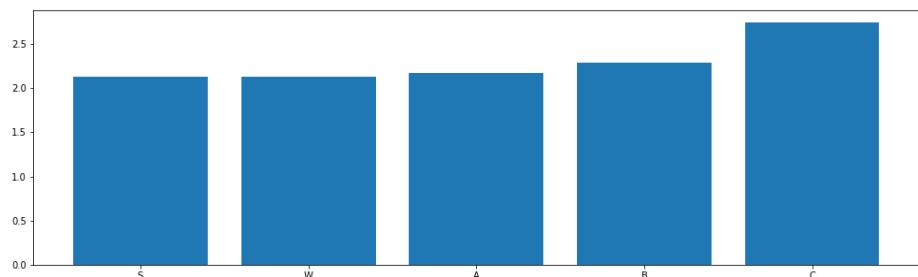


(b) Testes corridos em duas maquinas r662

Figure 227: Utilização de memória em KiB

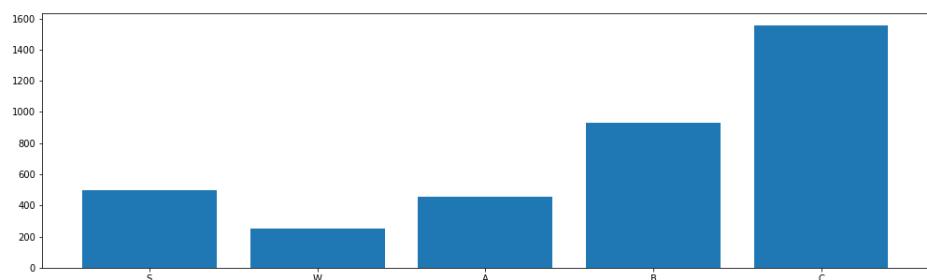


(a) Testes corridos em duas maquinas r641

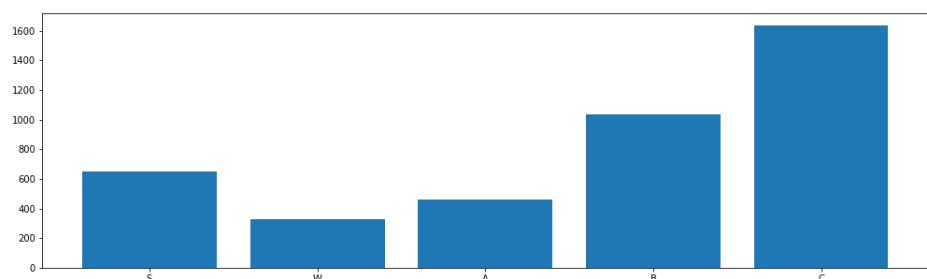


(b) Testes corridos em duas maquinas r662

Figure 228: Utilização de memória em percentagem

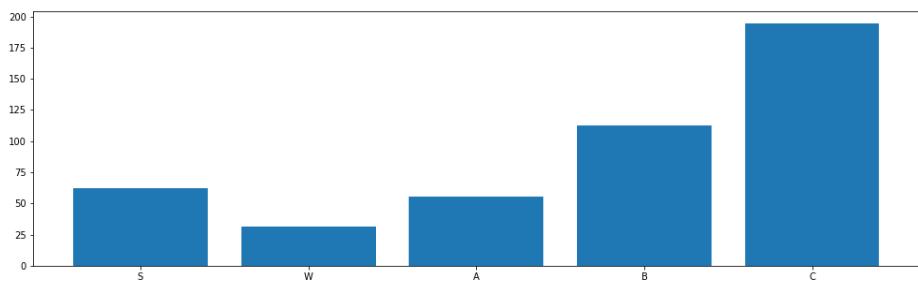


(a) Testes corridos em duas maquinas r641

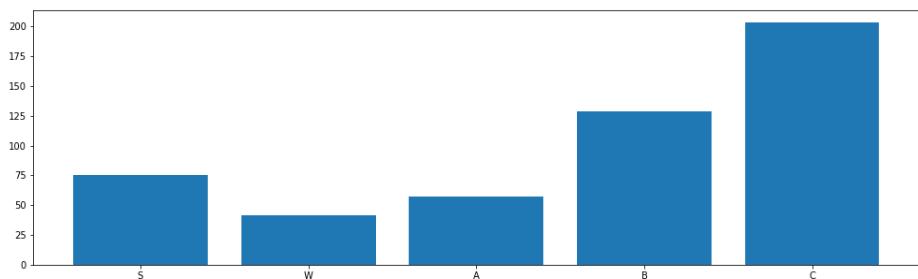


(b) Testes corridos em duas maquinas r662

Figure 229: Número de blocos escritos e lidos no disco numa a execução do programa



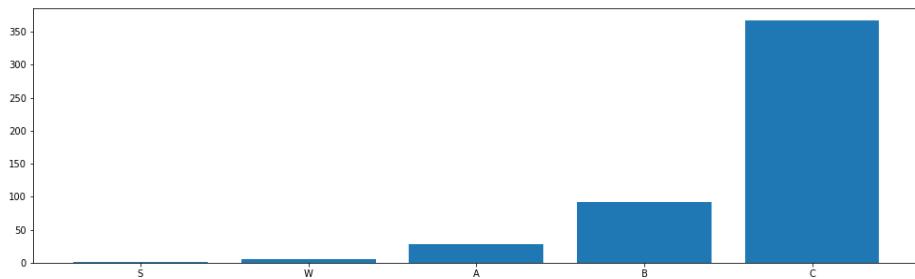
(a) Testes corridos em duas maquinas r641



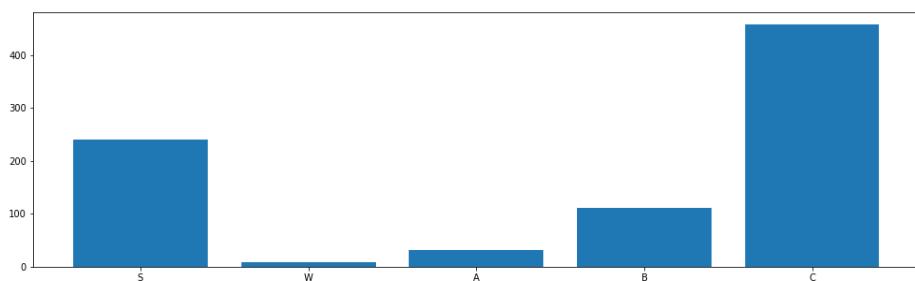
(b) Testes corridos em duas maquinas r662

Figure 230: Numero de packets enviados e recebidos durante execução do programa

2.4.2 Teste BT

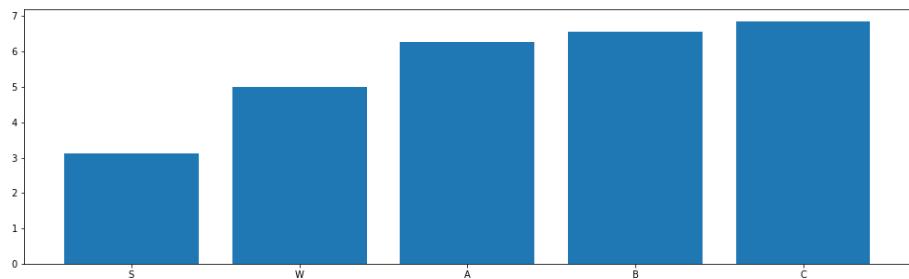


(a) Testes corridos em duas maquinas r641

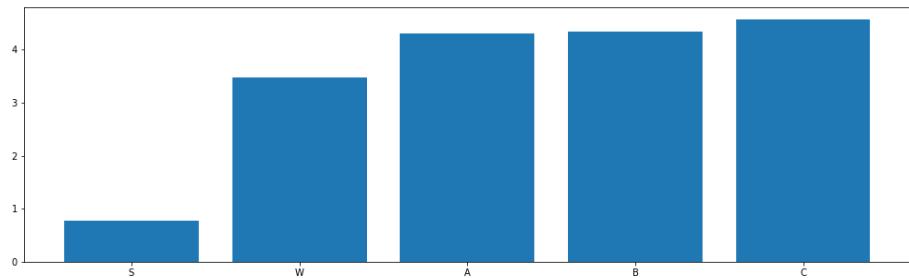


(b) Testes corridos em duas maquinas r662

Figure 231: Tempo total de uma execução do programa em segundos

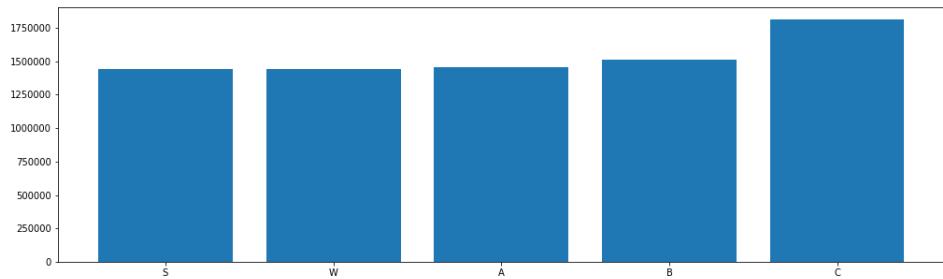


(a) Testes corridos em duas maquinas r641

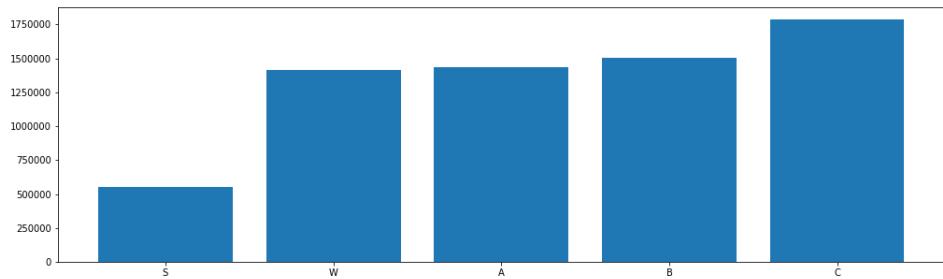


(b) Testes corridos em duas maquinas r662

Figure 232: Utilização máxima de CPU percentagem

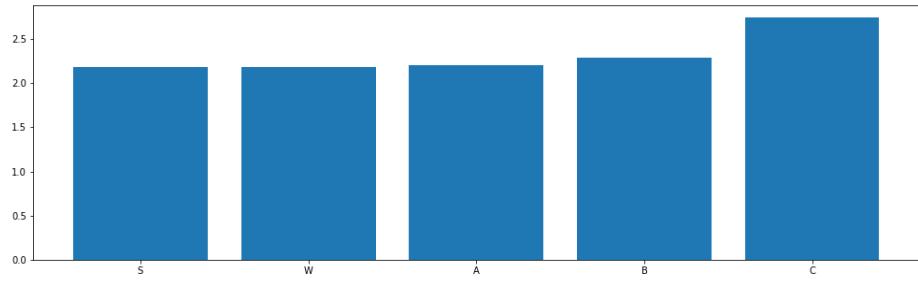


(a) Testes corridos em duas maquinas r641

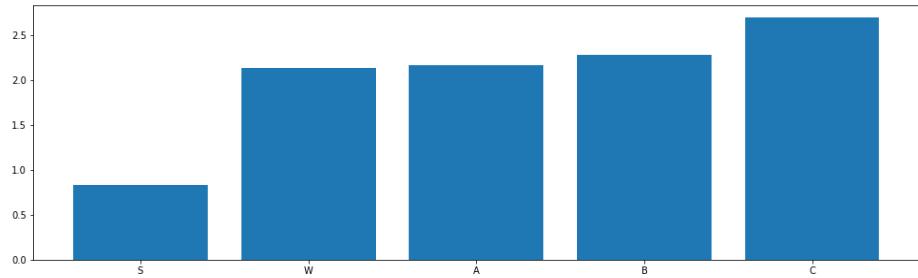


(b) Testes corridos em duas maquinas r662

Figure 233: Utilização de memória em KiB

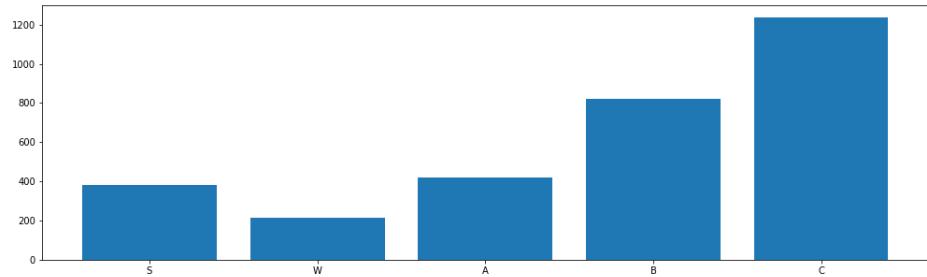


(a) Testes corridos em duas maquinas r641

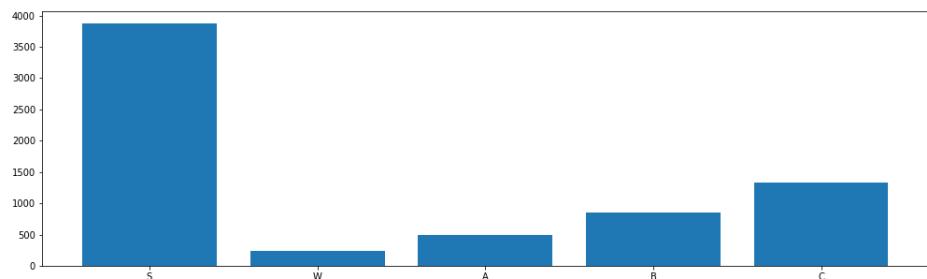


(b) Testes corridos em duas maquinas r662

Figure 234: Utilização de memória em percentagem

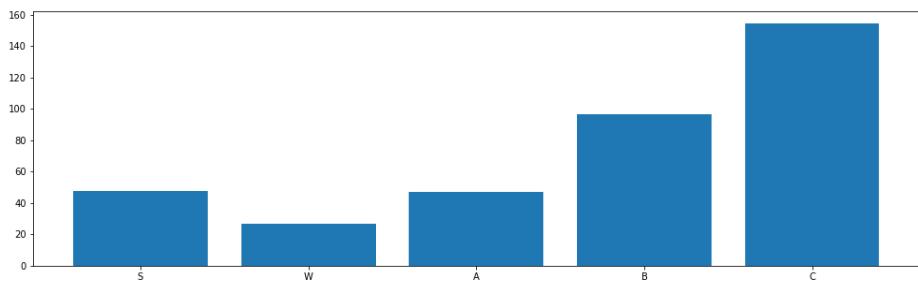


(a) Testes corridos em duas maquinas r641

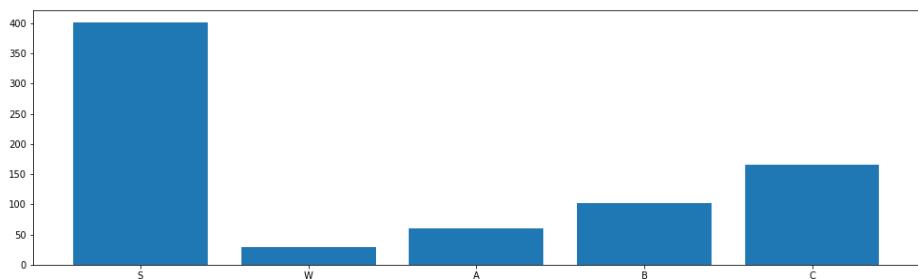


(b) Testes corridos em duas maquinas r662

Figure 235: Número de blocos escritos e lidos no disco numa a execução do programa



(a) Testes corridos em duas maquinas r641



(b) Testes corridos em duas maquinas r662

Figure 236: Numero de packets enviados e recebidos durante execução do programa