|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Number of Nodes** | **N** | **Serial execution time** | **Distributed Execution time** | **Speedup = serial time/ dist time** |
| 2 | 1400 | 75 | 79 | 0.949367 |
| 2 | 2500 | 117 | 93 | 1.258065 |
| 2 | 5000 | 226 | 109 | 2.073394 |
| 4 | 10000 | 358 | 153 | 2.339869 |
| 4 | 20000 | 712 | 243 | 2.930041 |
| 4 | 30000 | 1025 | 284 | 3.609155 |
| 5 | 50000 | 1719 | 348 | 4.939655 |
| 6 | 60000 | 2028 | 366 | 5.540984 |
| 7 | 70000 | 2381 | 414 | 5.751208 |
| 8 | 80000 | 2694 | 427 | 6.309133 |
| 9 | 90000 | 3035 | 455 | 6.67033 |
| 8 | 100000 | 3383 | 466 | 7.259657 |
| 10 | 1000000 | 33278 | 2705 | 12.3024 |
| 10 | 10000000 | 332406 | 24718 | 13.44793 |
| 20 | 100000000 | 3324494 | 217052 | 15.31658 |
| **20** | **1000000000** | **33259074** | **2099963** | **15.83793** |

**Table 1 : Speedup Calculation on UAlbany Cluster**

**Table 1 : Speedup Calculation on Amazon EC2 Instance**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Number of Nodes** | **N** | **Serial execution time** | **Distributed Execution time** | **Speedup = serial time/ dist time** |
| 2 | 1400 | 75 | 1372 | 0.054664723 |
| 2 | 2500 | 117 | 1301 | 0.089930822 |
| 2 | 5000 | 226 | 1450 | 0.155862069 |
| 2 | 10000 | 358 | 1340 | 0.267164179 |
| 2 | 20000 | 712 | 1542 | 0.461738003 |
| 2 | 30000 | 1025 | 1595 | 0.642633229 |
| 2 | 50000 | 1719 | 2008 | 0.856075697 |
| 2 | 60000 | 2028 | 2207 | 0.918894427 |
| 2 | 70000 | 2381 | 2049 | 1.162030259 |
| 2 | 80000 | 2694 | 2083 | 1.293326932 |
| 2 | 90000 | 3035 | 2396 | 1.266694491 |
| 2 | 100000 | 3383 | 2309 | 1.465136423 |
| 10 | 1000000 | 33278 | 7500 | 4.437066667 |
| 10 | 10000000 | 332406 | 28732 | 11.56919115 |
| 10 | 100000000 | 3324494 | 220774 | 15.05835832 |
| **10** | **1000000000** | **33259074** | **2142289** | **15.5250174** |