Table 1 Comparing different algorithms

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Vector size | Number of Nodes | Algorithm applied | Run Time(Seconds) | Comments |
| 10000 | 2 | Linear send/recv | 0. 0001199245452880859 | Linear send/recv has minimum run time |
| Tree structured | 0. 0001349449157714844 |
| MPI\_Bcast | 0. 0003249645233154297 |
| 4 | Linear send/recv | 0. 0002319812774658203 | Linear send/recv has minimum run time |
| Tree structured | 0. 0002431869506835938 |
| MPI\_Bcast | 0. 0006659030914306641 |
| 8 | Linear send/recv | 0. 001145839691162109 | Tree structured has minimum run time |
| Tree structured | 0. 0003509521484375 |
| MPI\_Bcast | 0. 0009939670562744141 |
| 100000 | 2 | Linear send/recv | 0. 0002160072326660156 | Tree structured has minimum run time |
| Tree structured | 0. 0002110004425048828 |
| MPI\_Bcast | 0.0002381801605224609 |
| 4 | Linear send/recv | 0. 0006668567657470703 | MPI\_Bcast has minimum run time |
| Tree structured | 0. 0004529953002929688 |
| MPI\_Bcast | 0. 0004420280456542969 |
| 8 | Linear send/recv | 0. 001536130905151367 | MPI\_Bcast has minimum run time |
| Tree structured | 0. 000698089599609375 |
| MPI\_Bcast | 0. 0006330013275146484 |
| 250000 | 2 | Linear send/recv | 0. 0003190040588378906 | Tree structured has minimum run time |
| Tree structured | 0. 0003149509429931641 |
| MPI\_Bcast | 0. 0003371238708496094 |
| 4 | Linear send/recv | 0. 001099824905395508 | Tree structured has minimum run time |
| Tree structured | 0. 0007100105285644531 |
| MPI\_Bcast | 0. 0009210109710693359 |
| 8 | Linear send/recv | 0. 002561092376708984 | Tree structured has minimum run time |
| Tree structured | 0. 001102924346923828 |
| MPI\_Bcast | 0. 001360177993774414 |

From the above table we can see that Tree structured algorithm works better than two other algorithms most of the cases.