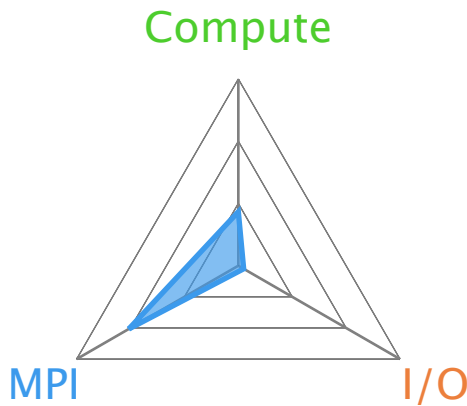
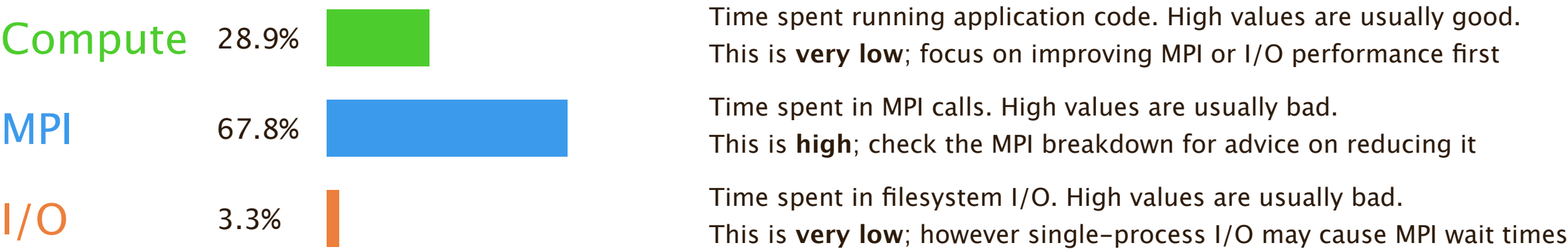


arm
PERFORMANCE
REPORTS

Command: aprun -n 4 ./mandelbrot
Resources: 1 node (64 physical, 256 logical cores per node)
Memory: 252 GiB per node
Tasks: 4 processes
Machine: xcimom2
Start time: Tue Jul 20 11:03:43 2021
Total time: 162 seconds (about 3 minutes)
Full path: .



Summary: mandelbrot is **MPI-bound** in this configuration



This application run was **MPI-bound**. A breakdown of this time and advice for investigating further is in the **MPI** section below.

CPU Metrics

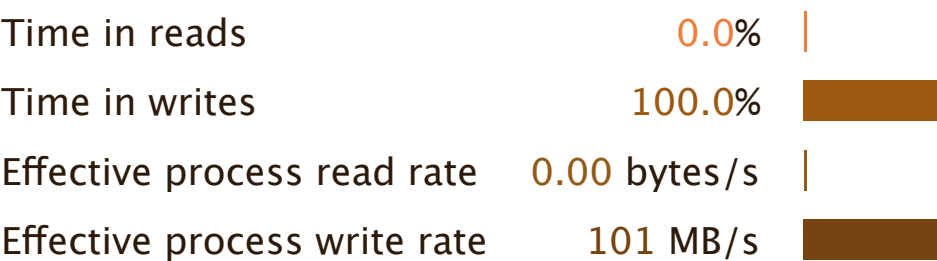
Linux perf event metrics:



Cycles per instruction is moderate. Lower values are better but are application-dependent. High values may indicate memory latency or branch mispredictions.

I/O

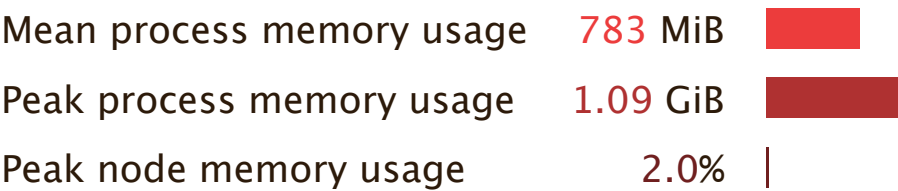
A breakdown of the 3.3% I/O time:



Most of the time is spent in **write operations** with an **average** effective transfer rate. It may be possible to achieve faster effective transfer rates using asynchronous file operations.

Memory

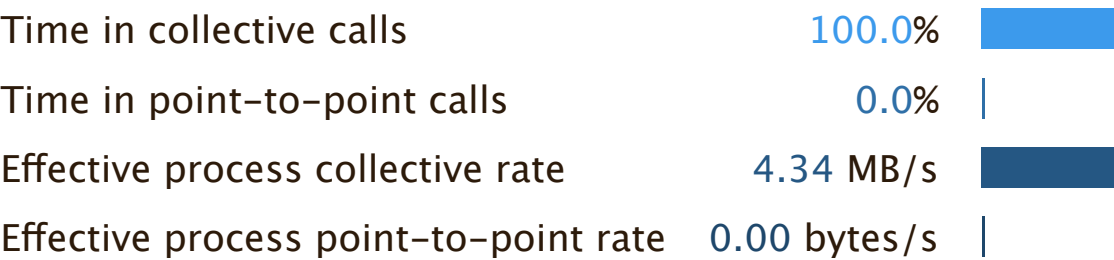
Per-process memory usage may also affect scaling:



The **peak node memory usage** is very low. Running with fewer MPI processes and more data on each process may be more efficient.

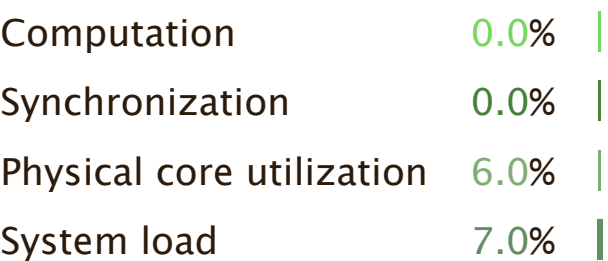
MPI

A breakdown of the 67.8% MPI time:



Threads

A breakdown of how multiple threads were used:

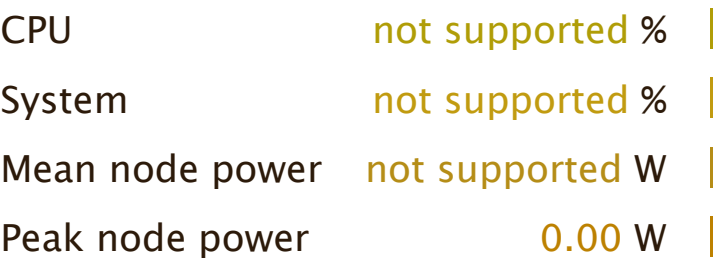


No measurable time is spent in multithreaded code.

Physical core utilization is low. Try increasing the number of processes to improve performance.

Energy

A breakdown of how energy was used:



Energy metrics are not available on this system.