

Process binding

How to pin MPI processes to CPU cores depends on if the programs are pure MPI programs, hybrid MPI, or OpenMP programs. This [PBS Pro job script documentation](#) includes examples of how commands mentioned below are used.

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Pure MPI programs (MPI only, no threads)

For pure MPI programs, the **mpiexec_mpt** launcher automatically pins MPI processes to CPU cores. This ensures that processes do not migrate between the CPUs on a node during a run and results in better performance.

Hybrid MPI + OpenMP programs

The **omplace** command is an HPE wrapper script for use with multithreaded MPI programs. Used in conjunction with the **mpiexec_mpt** launcher, the **omplace** script pins processes and threads to the CPUs and ensures optimal memory locality and performance.

Put the **omplace** command between the **mpiexec_mpt** command and your executable, as in this example.

```
mpiexec_mpt omplace ./a.out
```