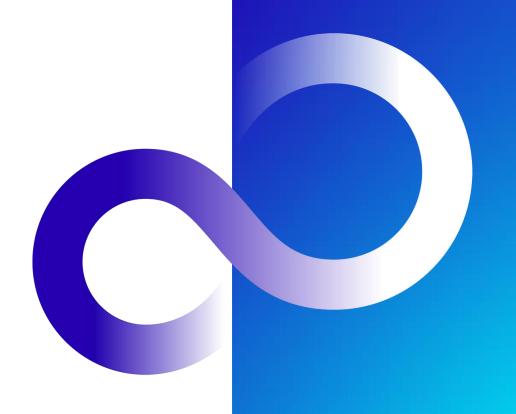


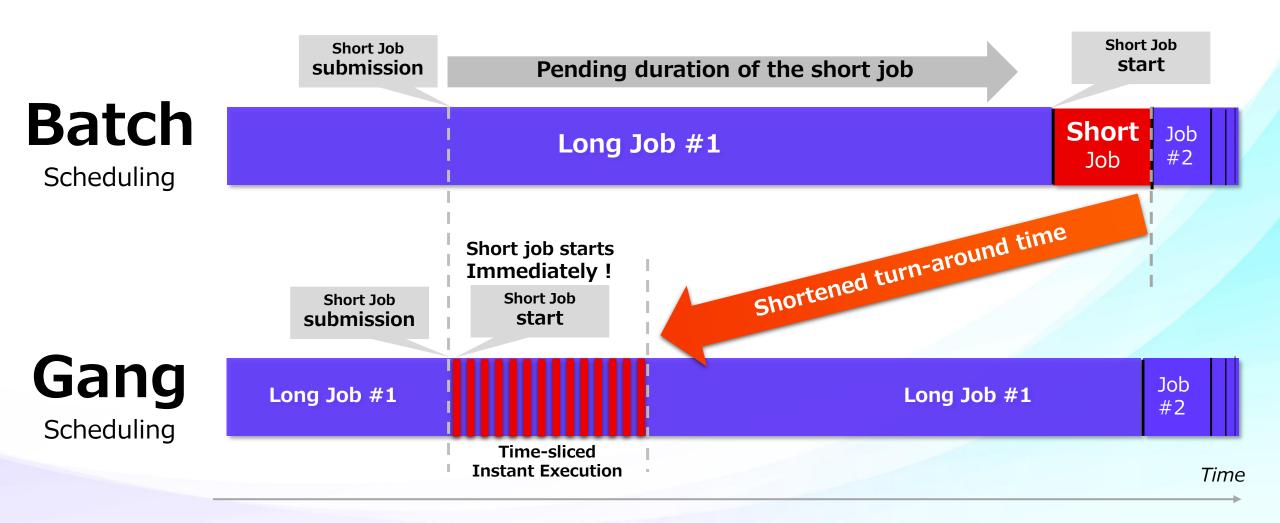
Interactive HPC

Fujitsu Limited



Gang Scheduling Enables Interactivity





Synchronization for Gang Scheduling

Time



Time

Unsynchronized

Scheduling

Node #0 Running Suspended Running

MPI_Send

MPI_Recv

Suspended Running Suspended

Running Suspended

Running Suspended

Node #1

Performance degradation

Only one message can be sent per time-slice (the worst case)

Synchronized

Scheduling

Node #0 Running Suspended Running

MPI_Send

MPI_Recv

Node #1 Running Suspended Running

Node #1

The Same Performance as Batch

Multiple messages can be sent in a single time-slice

Conclusion



• Gang scheduling enables:

Interactivity on HPC systems

Providing interactive parallel programming environment

Running Large-scale real-time applications immediately



Thank you

For more details:

https://www.fujitsu.com/global/about/resources/news/press-releases/2023/1109-01.html

