Pseudo Code:

1. *St* <- transmit speed
2. *m* <- sum of total cores
3. *orderedJobs* <- a sorted indices of jobs in descending order of Max Block Size
4. *cores* ("*Set*" in code) <- a priority queue of cores in ascending order of finish time
5. for job *i* in *orderedJobs* do:
   1. *orderedBlocks* <- a sorted indices of blocks of job I in descending order of Block Size
   2. *Sc* <- compute speed
   3. for *j* from *1* to *min(totalblocks, totalcores, MaxJobCores*(e.g.10) *)* do:
      1. *assignedCores* <- an empty priority queue of cores assigned to *job i*
      2. for *block k* in *orderedBlocks* do:
         1. if *cores* aren't not fully assigned:
            1. for *core l* in *cores* with minimal *finishTime* do:

if the *host h* of *core l* stores the data of *block k* do:

insert *core l* to *assignedCores* as *core c*：

*c.processingTime* = *size of block k / Sc* + *size of block k / St*

*c.startTime* = *l.finishTime*

* + - * 1. if *block k* is not assigned with any cores do:

insert the *cores[0]* to *assignedCores* as *core c*:

*c.processingTime* = *size of block k / Sc*

*c.startTime* = *l.finishTime*

* + - 1. else (e.g. blocks are already assigned to *j* cores) do:
         1. for *core l* in *assignedCores*:

*l.finishTime* > *assignedCores[0].processingTime* + *size of block k* / *St* do:

break

else if the *host h* of *core l* stores the data of *block k* do:

assign *block k* to core *l*

*l.processingTime* += *size of block k* / *Sc*

* + - * 1. if *block k* is not assigned with any core do:

assign *assignedCores[0]* to *block k*

*l.processingTime* += *size of block k / St* + *size of block k / Sc*

* + - 1. *maxStartTime* <- max of *startTime* of cores in *assignedCores*;
      2. *maxProcessingTime* <- max of *processingTime* of cores in *assignedCores*;
      3. if *j* > 1:
         1. if *maxStartTime* + *maxProcessingTime* < *prevMaxStartTime + prevMaxProcessingTime*  do:

*j* = *j - 1*

break

* + - 1. *prevAssignedCores* <- *assignedCores*
      2. *prevMaxStartTime* <- *maxStartTime*
      3. *prevMaxProcessingTime* <- *maxProcessingTime*
  1. # assign the cores to blocks according to *prevAssignedCores*
  2. for core *l* in *cores* do:
     1. if *l* in *prevAssignedCores do:*
        1. *l.finishTime* = *prevMaxStartTime* + *prevMaxProcessingTime*