Cenário atual da Paralelização da ferramenta PajeNG

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Outline

PajeNG Features

- PajeNG is a performance analysis tool
  - Simulates the behavior of parallel applications
  - Paje trace file format
    - Dynamism
    - Execution traces without semantics associated
    - Traces are divided in 5 generic types of objects: Containers, Events, States, Variables and Links

PajeNG Failures

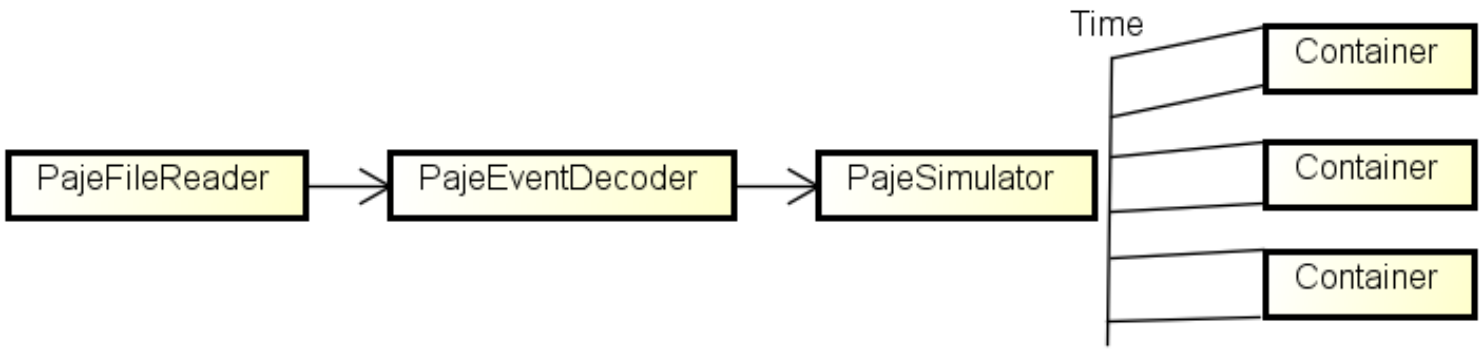
- PajeNG works sequentially
  - Low performance for large trace files
    - Traces with just 700MB spend approximately 30 seconds being processed
- How optimize it?

Work Features

- This work presents the progress of the PajeNG parallelization project
  - Multi-trace file strategy

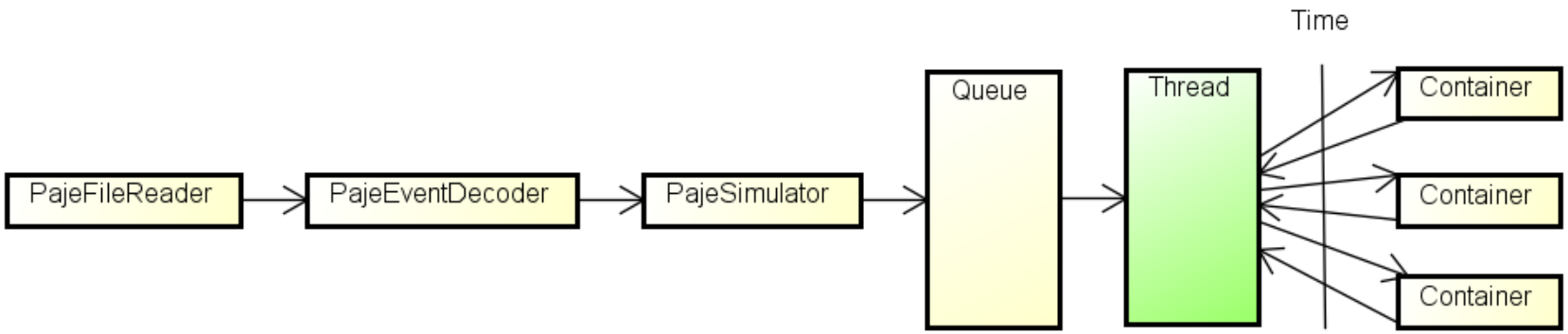
PajeNG Workflow

- The workflow of PajeNG can be basically divided in three steps
  - First, the PajeFileReader class
  - Second, the PajeEventDecoder class
  - Third, the PajeSimulator class

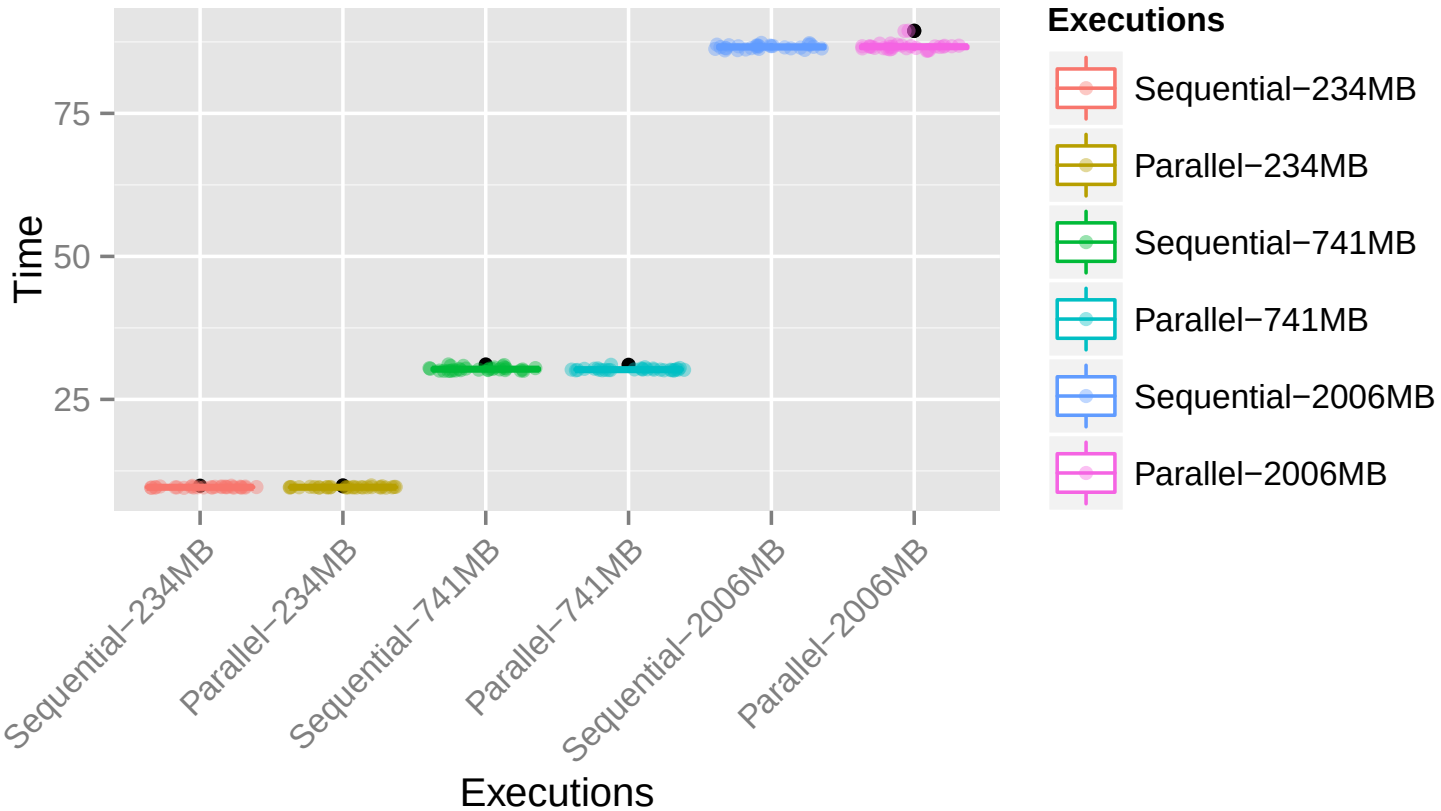


Parallelization Strategy Workflow

- Basically separates the reading of the file from the simulation
  - Queue of objects
  - Threads to process the queue

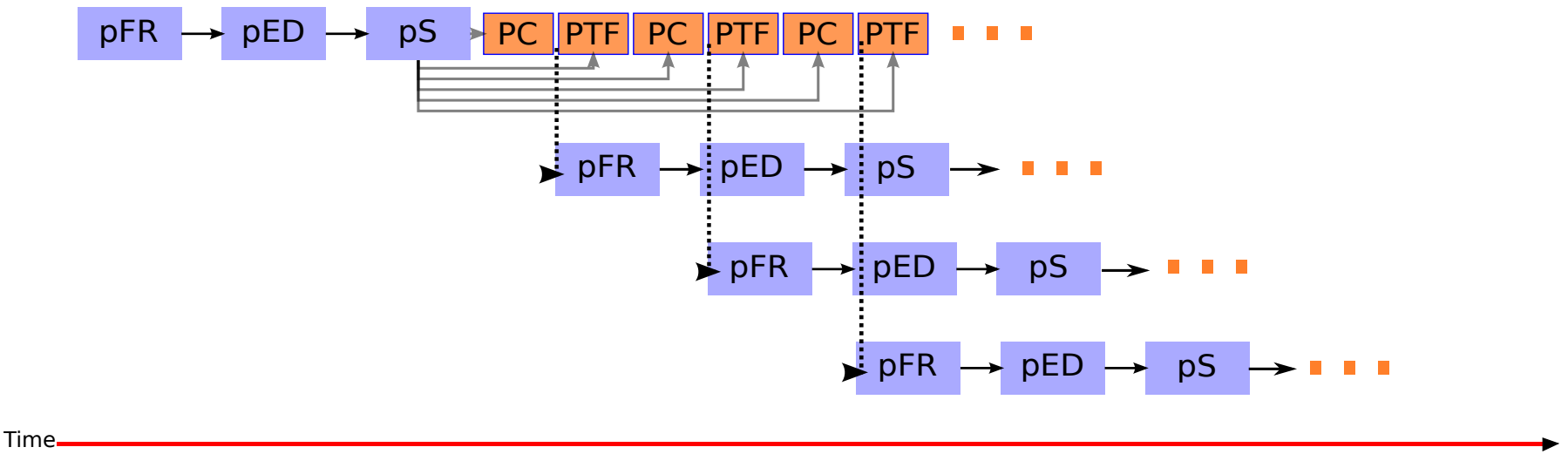


- The graph shows the results obtained comparing our parallelization strategy with the sequential version
  - Machine: 4 cores, running at 3.1GHz and 20GB of memory
  - Executions: 30



Multi-trace file strategy

- Create a new event type and multiple execution flows
  - New event type - PajeTraceFile
    - Contains the location of other trace file and indicates the creation of a new execution flow



Conclusions

- The reading of the file limits the speedup
- The multi-trace file strategy allows several simultaneous execution flows to read and process the files in parallel.

Thank you

Questions?

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