

Methods for modeling of the desktop grid computations.



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Problems of

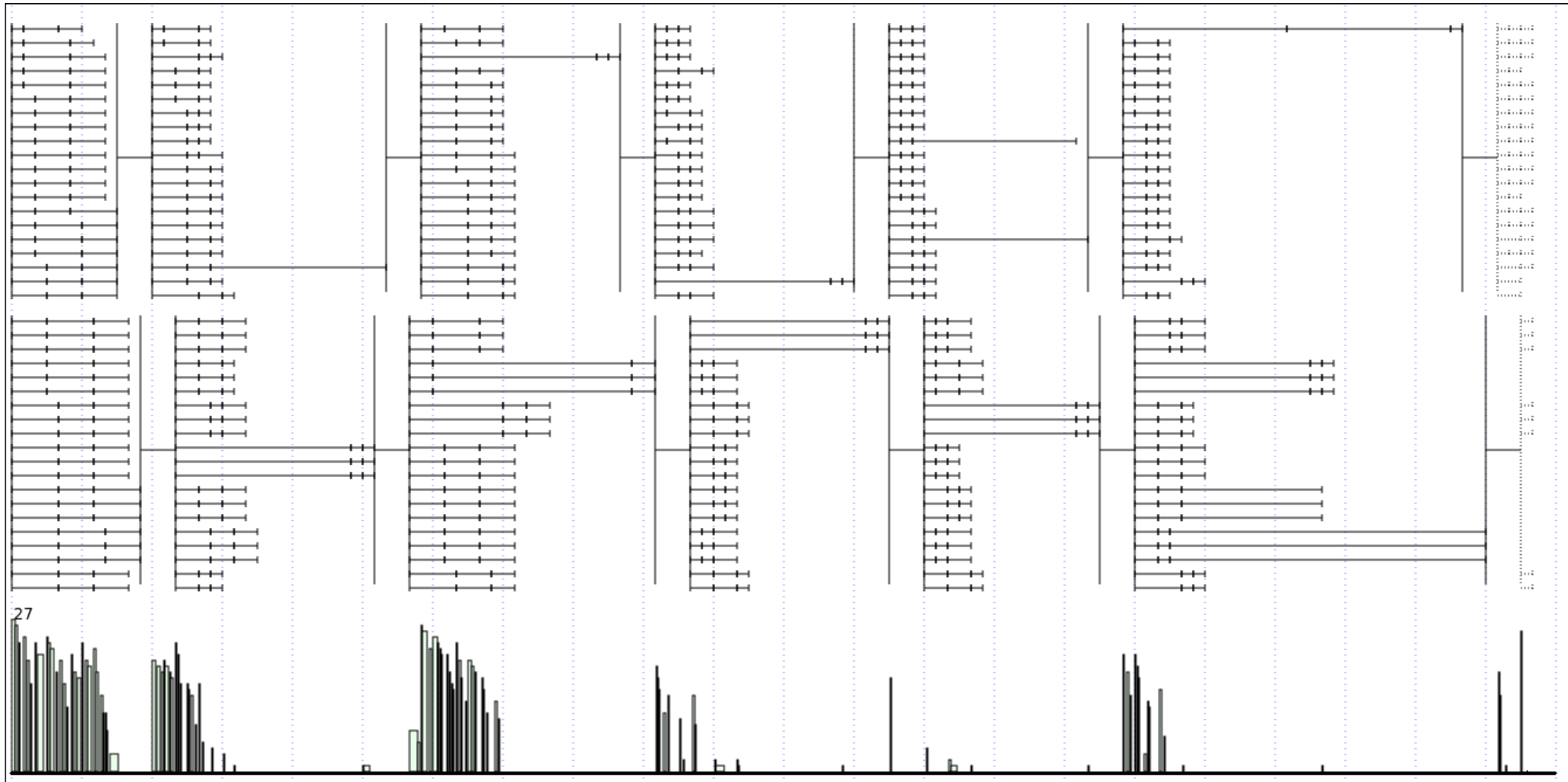
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Topics

- Simulation modeling;
- Probabilistic modeling;
- [USPEX@HOME](#) - current state.

Simulation modeling



Probabilistic modeling

Random Exponential Backoff within BOINC:

- The actual time between requests is equal to the maximum wait time multiplied by a uniformly distributed random number between 0.0 and 1.0.
- The maximum wait time between requests is increased by a factor of 2 with the next unserved request. The maximum wait time between the first and second requests is 10 minutes, between the second and third requests is 20 minutes, and so on.
- The exact upper limit of the maximum time between requests is 24 hours. After reaching this value, the increase will stop, and all subsequent maximum wait intervals will be 24 hours.



Current state

- Bag of Tasks.
- Scheduler.



Scheduler

Vbox feature on Windows hosts:

- Using system memory for VM, that is not identified as memory of process.

BOINC-client suspends the application, if free RAM is less than max RAM of the application.

Server scheduler both sends task to the node and attaches meta-information about the requirements for the RAM.

Possible solution: the server scheduler takes into account the RAM of the compute node, but does not attach meta-information about the memory requirements.



Thanks for your attension!

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