**Topics for PERCCOM student presentations at ITMO University**

**June 2018**

**Course: computing clusters, computing grids, computing clouds**

**The list of topics for the research (any student could suggest another topic which is not in the list)**

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| **Student** | **Topic** |
|  | Large data storage – 1 PB and more (examples, volumes, challenges). Problems to store, transfer and process the Big Data. https://bigdatawg.nist.gov/ |
|  | File system orangefs (http://www.orangefs.org/): main features |
|  | File system Ceph: main features |
|  | Cloud platform Openstack: main features |
|  | Cloud platform Amazon: main features |
|  | Openstack vs Amazon (provocative question) !!! |
|  | Worldwide LHC Computing Grid (http://wlcg.web.cern.ch/) |
|  | Globus ([www.globus.org](http://www.globus.org/)) system and Globus data transfer |
|  | Computing clusters: examples, features |
|  | File system EOS (at CERN https://eos.web.cern.ch/): main features |
|  | Cloud platform NIMBUS (<http://www.nimbusproject.org/>) |
|  | OpenNebula (<https://ru.bmstu.wiki/OpenNebula>, <https://opennebula.org/>) |
|  | Other topics |

Quick instruction to prepare the presentation.

* Strong requirements:
  + Title slide: name, mail, topic, place, date, course, course moderator.
  + Content: detailed description of the main topic features (max = 15 slides). With all urls!
    - The topic intro.
    - Technical features.
    - Advantages and disadvantages.
    - The prices if applicable.
    - Your recommendations where to use it.
    - How difficult (or easy) to use it.
  + Text doc with topic explanation (not less than 5 pages).
* **Advanced**: to deploy the software which you observe on available resource (laptop, desktop, etc).

Sources of the information:

* <http://wlcg.web.cern.ch/> - CERN Grid
* [http://www.openstack.org](http://www.openstack.org/) – Cloud infrastructure
* <http://aws.amazon.com/ec2/>
* [https://ceph.com/](https://ceph.com/ceph-storage/file-system/) - distributed storage
* <https://www.globus.org/> - Globus project (the base of Grid infrastructure)
* https://sites.google.com/site/clustergateorg/ - the site with lot of info and examples on the clusters and related topics
* <http://www.computerhistory.org/> - computer history museum in California
* <https://www.hepix.org/> - series of the conferences on computing for High Energy Physics
* <https://computing.llnl.gov/tutorials/linux_clusters/> - Linux Clusters Overview