NATIONAL INSTITUTE FOR RESEARCH AND DEVELOPMENT OF ISOTOPIC AND MOLECULAR TECHNOLOGIES
Donath St. 65-103, 400293, Cluj-Napoca, ROMANIA
Tel.: +40-264-584037; Fax: +40-264-420042; GSM: +40-731-030060
e-mail: itim@itim-cj.ro, web: http://www.itim-cj.ro

Current status and future upgrade at ITIM Grid site

General situation in datacenter

INCDTIM

- A **10 GBps** link to RoEduNet
- Starting with Oct 2014, RO-14-ITIM Grid site is part of the **Installation of National Interest**, along other 5 Grid sites
- IBM iDataPlex HPC cluster of **7 Tflops** dedicated for **MPI processing**
- A **storage** for internal use – 16TB
- Network, web, mail and database servers

Certificate of Achievement

Presented to

INCDTIM Cluj-Napoca

upon the successful completion of runing linpack on Romanian National Institute for Research and Development of Isotopic and Molecular Technologies IBM iDataPlex system with the performance of

7.04 Tflops

and in recognition thereof is awarded this certificate on

February 25, 2013

Backup situation

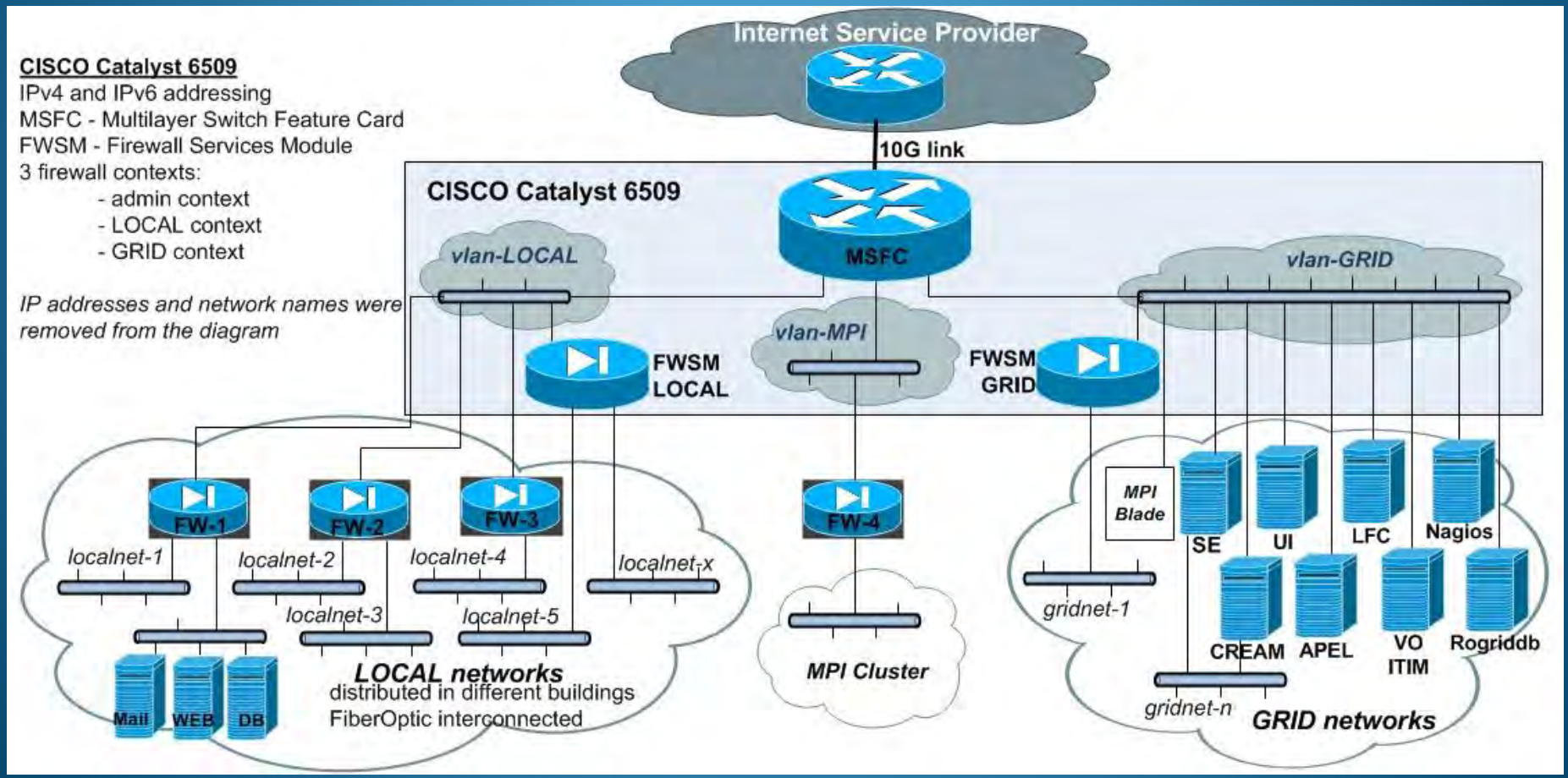
INCDTIM

- **1 Power generator** for emergency situation as power failures;
  - starts in **8 seconds;**
  - can function up to **8 hours**
- Monitoring and alarm system for **temperature, humidity** and **fire.**
- **UPS 96 kVA**, maximum load was **65 kW** for the whole datacenter
- *Bkp* Network link ~ just **100 MBps** ☹☹

Power generator 275kW

INCDTIM Netowork Schema

INCDTIM



Grid Site

- Name: **RO-14-ITIM**
- **53** Processing work-nodes, (from which functioning are only **45**)
- Storage capacity: 70TB, online 60 **TB**
- Virtual Organization: **ATLAS**
- Used Technology: Intel & IBM, HP Blade systems
- Middleware: **EMI v3 for 64 bit**
- Operating system: **SL 6.7**

http://grid.itim-cj.ro

INCDTIM

HOME Contact

- Scurta descriere a domeniului
- Baza de date a tuturor site-urilor Grid din Romania

Procedura pentru accesarea serviciilor Grid:

- Certificarea potentialului utilizator
- Inregistrarea in organizatia virtuala
- Cadru general de utilizare al Grid-ului

Capacitatea si resursele site-ului RO-14-ITIM

- Capacitatea de stocare 80 TB
- Capacitatea de procesare 400 Core

Site-ul Grid RO-14-ITIM ofera:

- Servicii de certificare a potentialilor utilizatori ai sistemului Grid
- Asistenta tehnica in vederea accesarii si utilizarii sistemului Grid
- Servicii de procesare si stocare de date tertilor prin organizatia virtuala **vo-itim**
- Servicii de pocesare de date in domeniul calculului paralel
- Servicii de procesare de date si stocare in cadrul experimentului ATLAS (CERN)

Persoana de contact:
Ing. Farcas Felix
Ing. Trusca Radu
E-mail:
felix at itim-cj dot ro
radut at itim-cj dot ro

Team responsible for the Grid site

Albert Stefan,
team member

Trusca Radu,
security responsible

Farcas Felix, project
coordinator at ITIM

Nagy Jefte,
monitoring responsible

Financial Resources

INCDTIM

1. 15 EU/ 7EU/ 6EU 2008 – present
2. 12 EU / 8EU/ 7EU – ConDeGrid / 2009 – present
3. POS-CCE 192/2719, Sectorial Operational Program, "Increase of Economic Competitiveness", contract 42/11.05.2009 Axis 2, Operation 2.2.3~ *Improving the capacity and reliability of INCDTIM GRID center for integration in international networks (INGRID)*, Value: 2.345.800 lei ~ **500.000 Euro**
4. Cooperation program "Hulubei-Meshcheryakov" together with the Laboratory of Information Technologies at JINR –Dubna
5. Capacity – Module I – Big Projects and investments, **Molecular and Biomolecular Physics Department Upgrading** – MDFMOLBIO, Project number **2 PM/I/07.10.2008**, Value, **30.034.930 lei, The value of the MPI Cluster was 1.000.000 lei**

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Results for Grid site RO-14-ITIM

All data are taken from

http://accounting.egi.eu

We are not sure they are right!!

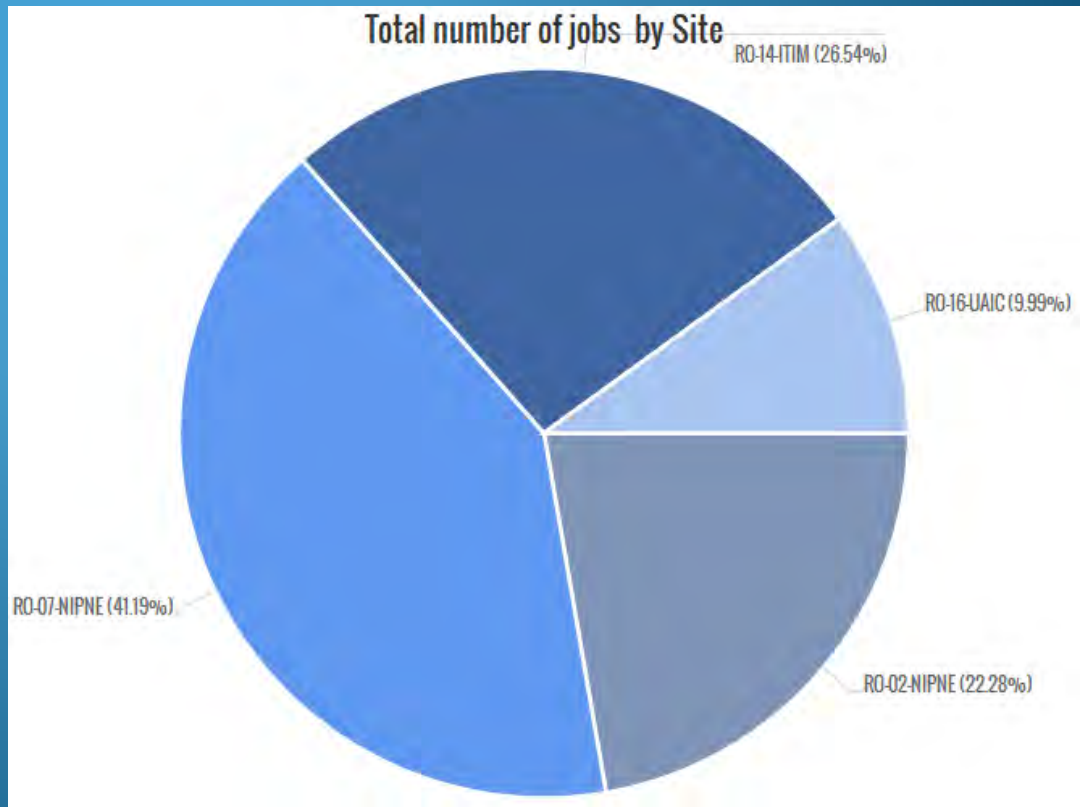
Number of Jobs

INCDTIM

- 2016 until now **1,779,262**
- **~26% of all jobs processed in Romania regarding ATLAS**

Romania - Total number of jobs by Site

	Total	Percent
NIHAM	32,097	0.33%
RO-02-NIPNE	1,493,326	15.48%
RO-07-NIPNE	5,357,884	55.53%
RO-11-NIPNE	91,662	0.95%
RO-13-ISS	188,085	1.95%
RO-14-ITIM	1,779,262	18.44%
RO-15-NIPNE	36,111	0.37%
RO-16-UAIC	669,590	6.94%



Number of jobs around the world

Countries - Total number of jobs by Country (LHC VOs)

Country	Total	Percent
United States of America	120,393,788	16.95%
United Kingdom	101,612,721	14.30%
Switzerland	90,241,554	12.70%
Germany	70,682,936	9.95%
Italy	66,051,264	9.30%
Canada	59,378,745	8.36%
France	52,007,597	7.32%
Spain	25,707,038	3.62%
Russia	18,626,662	2.62%
Netherlands	15,389,271	2.17%
Romania	13,263,442	1.87%
Taiwan	9,516,744	1.34%
Japan	7,551,326	1.06%
Sweden	7,073,900	1.00%
Israel	6,369,573	0.90%
Czech Republic	5,328,181	0.75%
Poland	4,998,334	0.70%

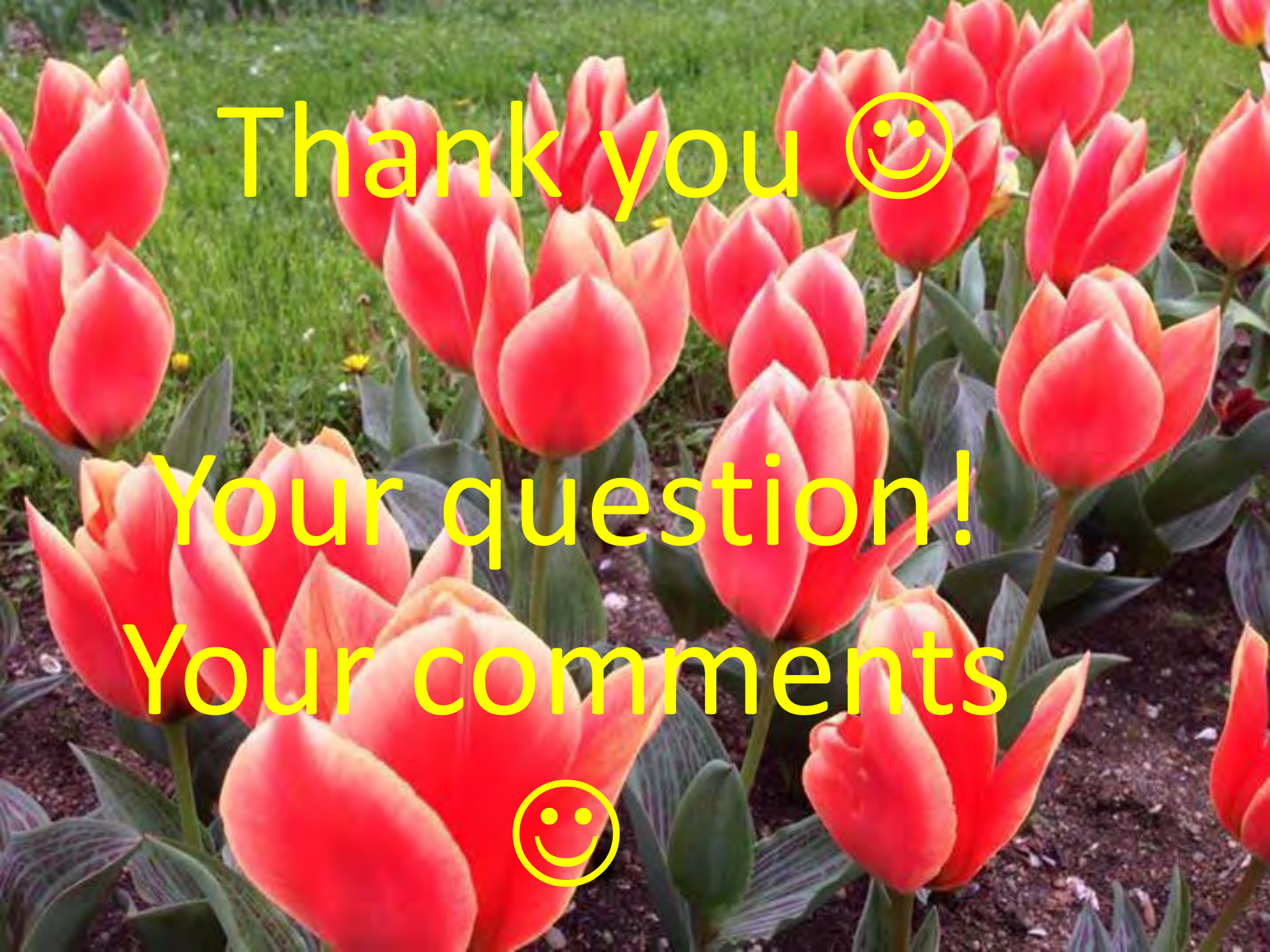
Romania nr 11 in the world => Most important is the unity between the sites in Romania not the competition !!!

Future plans

- We think the best idea for RO-14-ITIM is to invest in **processing power**
- If financial support may exist, in the future we would upgrade the hardware infrastructure too, enlarging the datacenter and upgrading the UPS support which now is hardly holding the functionality of the datacenter for 10 minutes

Further upgrades would be:

- **Urgent upgrade** as the next phase will be - upgrade of software to UMD3 or UMD4, we are planning on studying these solution in the future
- Another upgrade that we would like to improve will be the investments in the cooling system of the datacenter


Thank you ☺
Your question!
Your comments
☺