

Russian Tier2-Cluster

Cluster of institutional computing centers with Tier2 functionality and summary resources at 50-70% level of the canonical Tier1 center for each experiment (ALICE, ATLAS, CMS, LHCb):
analysis; simulations; users data support.

Participating institutes:

Moscow	SINP MSU, ITEP, KI, ...
Moscow region	JINR, IHEP, INR RAS
St.Petersburg	PNPI RAS, ...
Novosibirsk	BINP SB RAS

Coherent use of distributed resources by means of DataGrid technologies.

Active participation in the LCG Phase1 Prototyping and Data Challenges (at 5-10% level).

	2002 Q1	2002 Q4	2004 Q4	2007
CPU kSI95	5	10	25-35	410
Disk TB	6	12	50-70	850
Tape TB	10	20	50-100	1250
Network Mbps LCG/commodity	2-3/10	20-30/15-30	155/...	Gbps/...

FTE: 10-12 (2002 Q1), 12-15 (2002 Q2), 25-30 (2004 Q4)

Farms, mass storage, networking

Today:

- 4 Linux farms for share use by all four experiments in *SINP MSU, ITEP, JINR* and *IHEP*.
Each farm: 16 dual PIII-1GHz nodes with 512 MB RAM, PBS, monitoring system “mon”.
- 4 IDE RAID file servers (1.2 TB each) for share use by all four experiments.
- 10 TB (soon 20 TB) DLT robot in *JINR, HP OmniStorage*.
- software servers for ALICE (*ITEP, JINR*), ATLAS (*IHEP*), CMS (*SINP MSU, ITEP*), LHCb (*ITEP*).
- *EDG/LCG* testbed/testing resources (*few WN's, + file-servers*) in *SINP MSU* and *JINR*.

Regional networks:

SINP MSU – ITEP 1 Gbps (GE, 2002 Q1)

JINR-Moscow 30 Mbps (2002 Q1), 155 Mbps (2002 Q4), Gbps (2004-2005)

IHEP-Moscow 8 Mbps (2002 Q1), ...

PNPI-Moscow 0.256 Mbps (2002 Q1), 34 Mbps (2002 Q4), ...

BINP-Moscow 30 Mbps (2002), ...

Dedicated channel to CERN (plus LCG centers in Europe):

Moscow-Frankfurt (FASTNet based) 10 Mbps (2002 Q2), 30 Mbps (2002 Q4), ...

Connectivity with USA-LCG (Fermilab, BNL, ...), not a commodity Internet:

Moscow-StarTAP FASTNet link 90 Mbps (2002 Q1), ...

Russian DataGrid Certificate Authority

- CP/CPS is accepted by EDG CA's,
- currently running with 6 Registration Authorities,
- RPM package is included in testbed1,
- issued about 70 certificates.

Plans:

1. improvement of CP/CPS according to other EDG CA managers recommendations;
2. software solution of scalability issues with big number of Requests to the Certification and Registration Authorities.

Currently individuals must have an account on farms and must contact farm administrator to obtain an entry in the *site-wide gridmap file*.

Authorization via VOs is currently not active (have no software which requires such authorization installed yet) but it can be turned on at any moment.

DataGrid middleware deployments: we have a UI, and in the nearest future we plan to install a SE and a CE with 2-3 WN's. Also we are planning to test LCFG software.

Cluster of Tier2 centers - horizontal Tier2-Tier2 links
should be understand (!)

Connection to the Tier1 cloud:

- ❑ *CERN Tier1 - current (last 2 years) development (CMS MC Runs at ~10% level);*
- ❑ *Germany (FZK) Tier1 – proposal on developing and testing Tier2-Tier1 linkage (plus cross-use of EDG and CrossGRID tools).*

Plan to collaborate with CMS Tier2 center in Padua (start in spring 2002).

Participation in EU DataGrid project:

- *WP6 - testbed0, tesbed1, ...*
- *WP8 - through Collaborations*

Advanced Gigabits network technologies to use in regional links – proposal for deployment of DataTAG results.