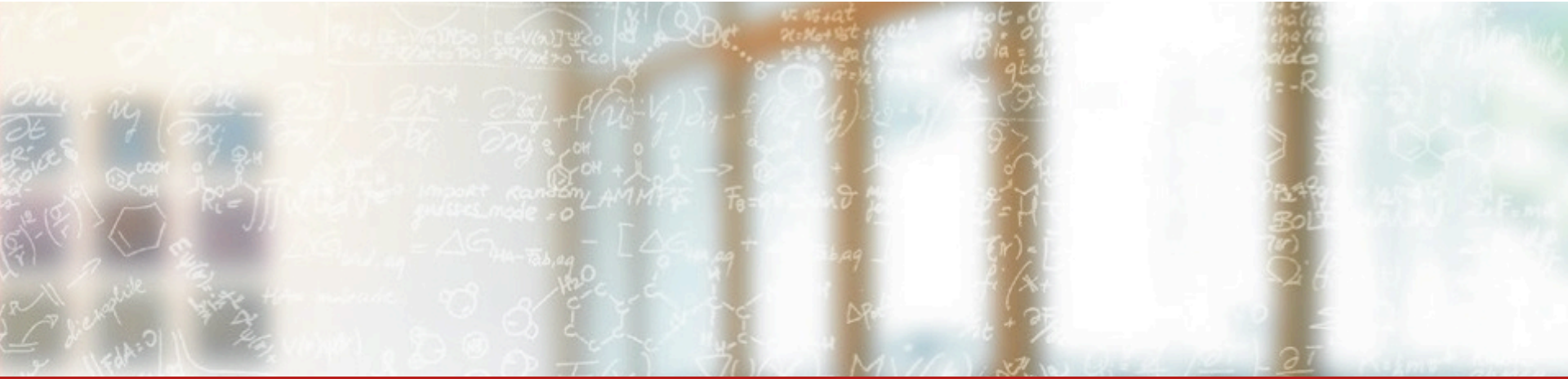




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Data Mover Service

CSCS User Meeting 2015

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Why a Data Mover Service

The need to move in/out

Big Datasets (TB)

to/from CSCS with

high throughput (>1 GB/s)

Solution Selected

GridFTP-SSH:

- Easy setup
- Very good performance
- Large base install
- Command line interface

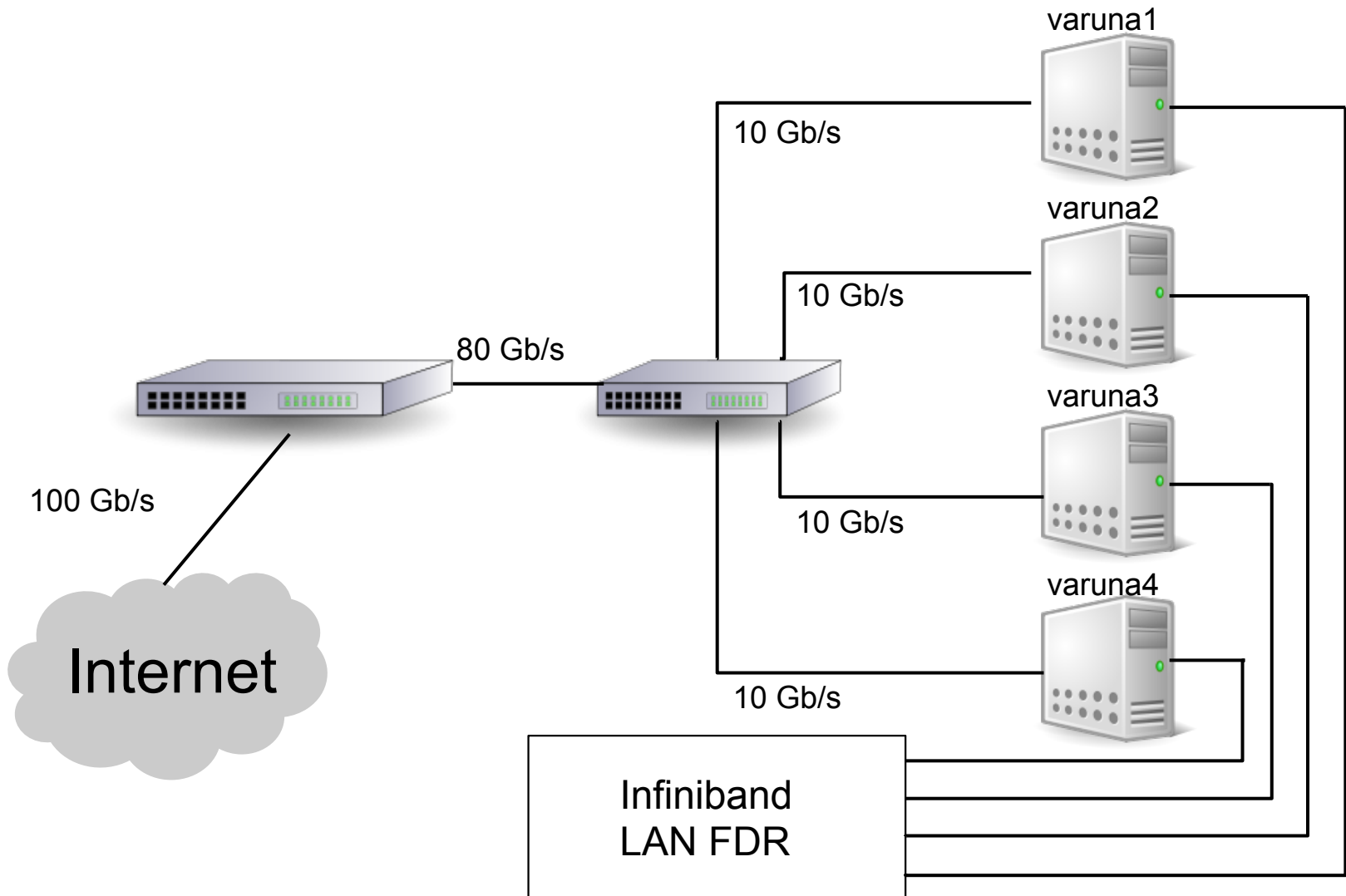
What is/why GridFTP-SSH

- FTP version enhanced by the Globus project
- Secure: control channel encrypted with SSH keys
- High performance: multi-stream transfers, TCP buffers, block size ...
- Nice features like restartable/partial transfers, 3rd party control
- Wide install base
- Easy setup

Data mover: servers

- New 4 nodes cluster:
 - 2 x Eight Core Intel Xeon E5-2670 2.6GHz Processor
 - 64GB DDR3 1600MHz ECC Server Memory
 - Dual-Port Infiniband ConnectX-3 FDR Controller
- URL: `sshftp://gridftp.cscs.ch`
- Load balance (lbcd)
- Bandwidth: 4x10 Gbit/s
- File systems: /users, /apps, /store, /project, /scratch/daint
- **Scalability and availability: shared file systems + lbcd**

Data mover: data networks



Data mover: security

- Iptables: 22, 50000-51000
(This is the range used at CSCS but a single site could select any range on his side)
- sshd: only ssh keys, no password
- The login is not allowed on the Data Movers: only GridFTP requests are allowed

```
vico ~ > ssh varuna1
Last login: Wed May  6 18:17:03 2015
interactive login not permitted
Connection to varuna1 closed.
vico ~ > ssh varuna1 some_nasty_cmd
remote commands are not permitted
```


Conclusion

- Thanks to CSCS Storage and Network team.
- 4 server in production deployed with Puppet.
- Future: 40 Gb/s NICs
- Demo...

Conclusion - Demo

```
vico ~ > ssh ela  
Last login: Fri May 22 11:40:54 2015 from 2001:620:808:2000:7414:6fc5:7031:db26  
/usr/bin/manpath: can't set the locale; make sure $LC_* and $LANG are correct
```

```
=====
```

IMPORTANT REMINDER FOR USERS of CSCS facilities

help@cscs.ch - +41 91 610 82 10 - <http://user.cscs.ch>

```
=====
```

CSCS next preventive maintenance is scheduled for:

>>> June 01, 2015 <<<

```
loreg@ela1:~> host gridftp  
gridftp.cscs.ch is an alias for varuna.plb.cscs.ch.  
varuna.plb.cscs.ch is an alias for varuna2.cscs.ch.  
varuna2.cscs.ch has address 148.187.25.202
```

Conclusion - Demo

```
loreg@ela2:~> ll -h /users/loreg/myfile
-rw-r--r-- 1 loreg csstaff 1.0G May 22 11:46 /users/loreg/myfile
loreg@ela2:~> globus-url-copy -vb sshftp://loreg@gridftp.cscs.ch/users/loreg/myf
ile sshftp://lore@malin1.physik.uzh.ch/tmp/myfile
Source: sshftp://loreg@gridftp.cscs.ch/users/loreg/
Dest:   sshftp://lore@malin1.physik.uzh.ch/tmp/
       myfile
Connecting to sshftp://loreg@gridftp.cscs.ch/users/loreg/myfile ...

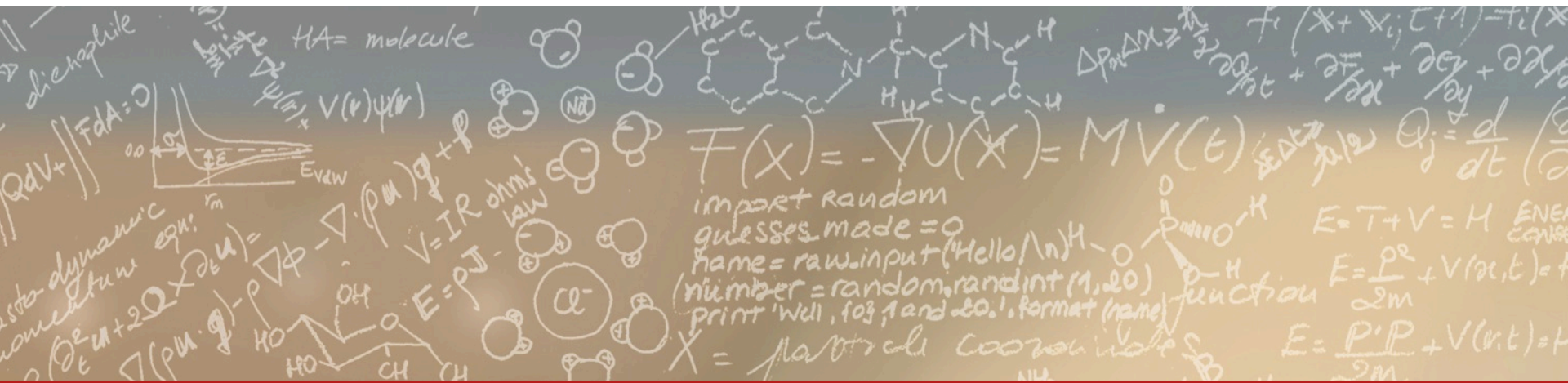
Connecting to sshftp://lore@malin1.physik.uzh.ch/tmp/myfile ...
1073741824 bytes          124.88 MB/sec avg          124.88 MB/sec inst
```



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Thanks for your attention.