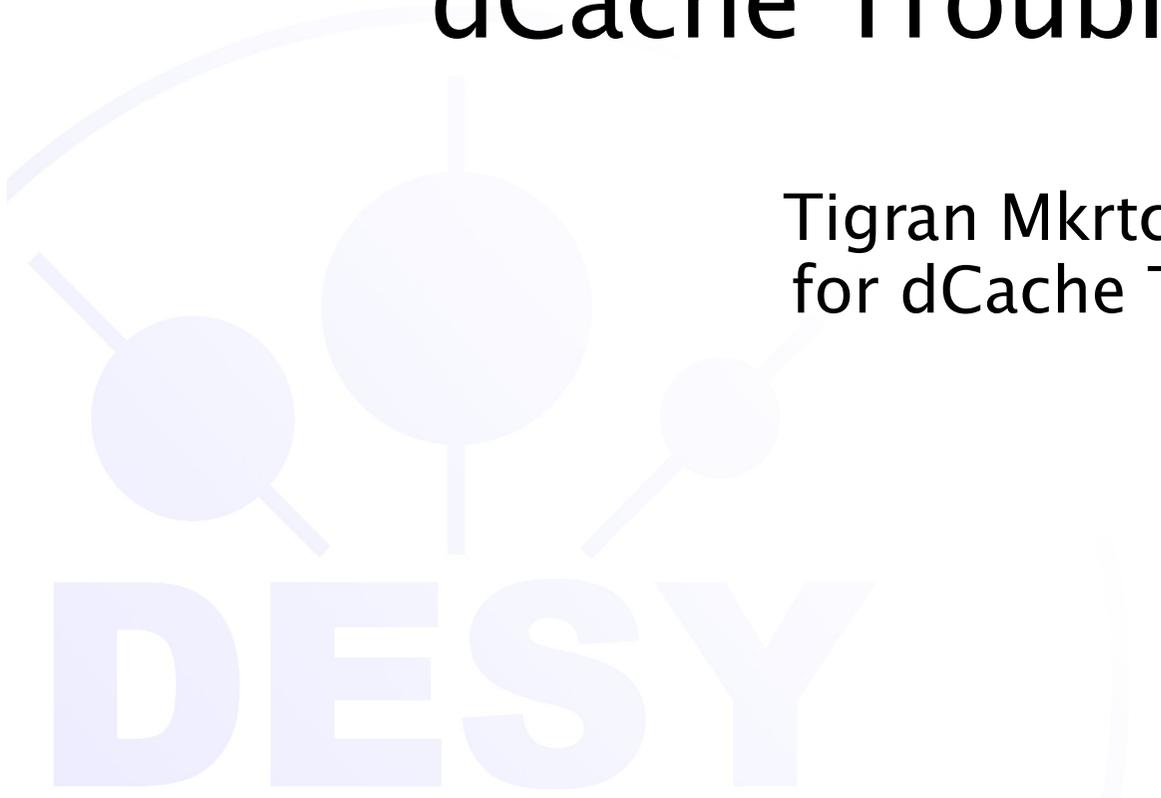


# dCache Troubleshooting

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DESY

This talk compiled on e-mails to:  
[support@dcache.org](mailto:support@dcache.org)  
[user-forum@dcache.org](mailto:user-forum@dcache.org)

There is two major category of Questions:

**Troubleshooting and Tuning**

1. Do NOT customize startup scripts
2. Do NOT copy startup scripts into /etc/init.d  
( use wrappers or sym-links if you really want to do so)
3. DO NOT customize .batch files  
( use dCacheSetup instead )

Q:

After update 1.7.0-n to 1.7.0-m SRM does not work any more.

A:

While our RPMs does not have 'active' scripts inside, you have to run `install.sh` to finish update.

Q:

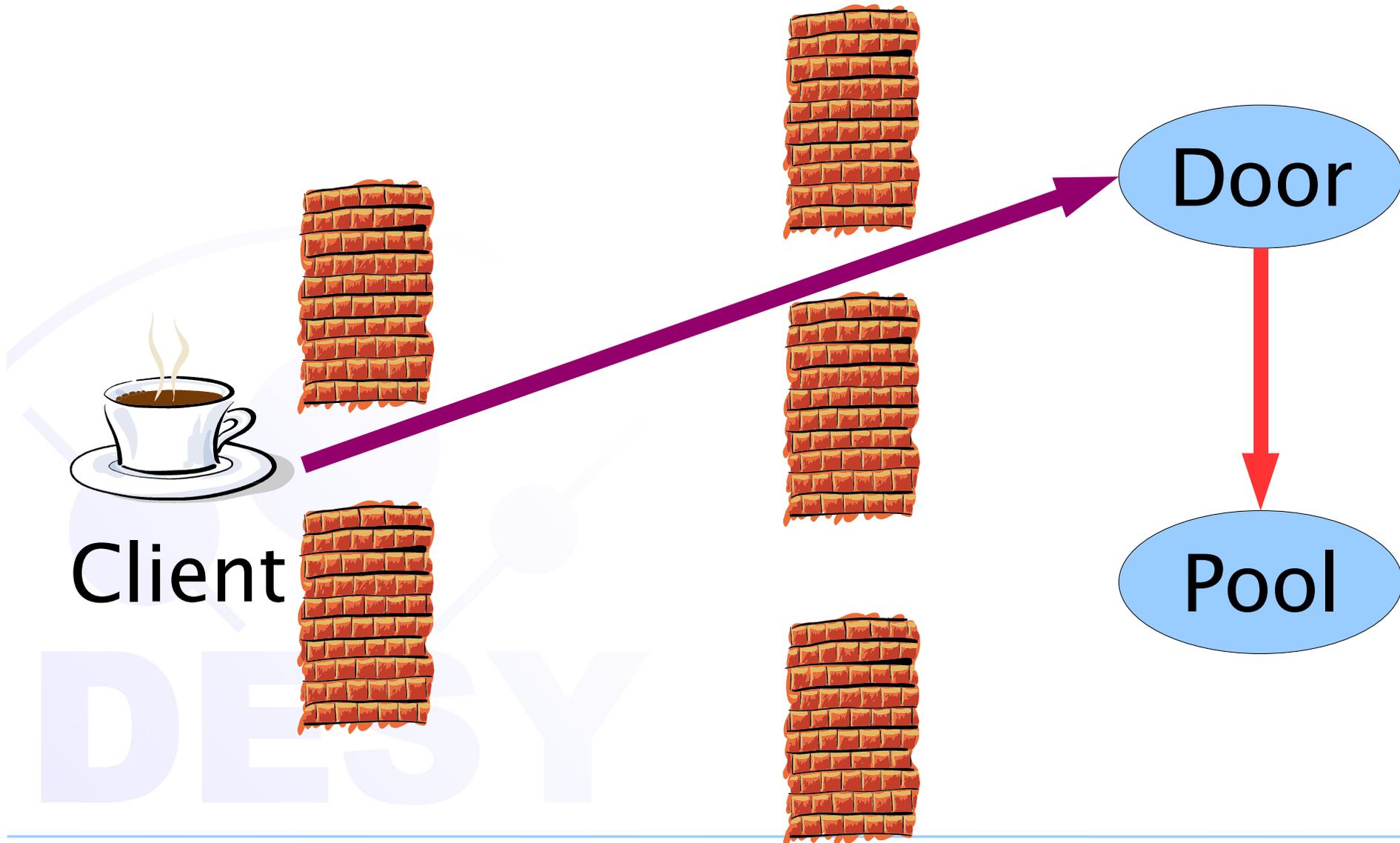
After successful installation I can write a file with srmcp/g-u-c, but can not read it back.

A:

The main difference between read and write, that write is an passive transfer, e.g. on write client connects to the door for a data transfer, while on read pool connects to. Please check your firewall configuration.

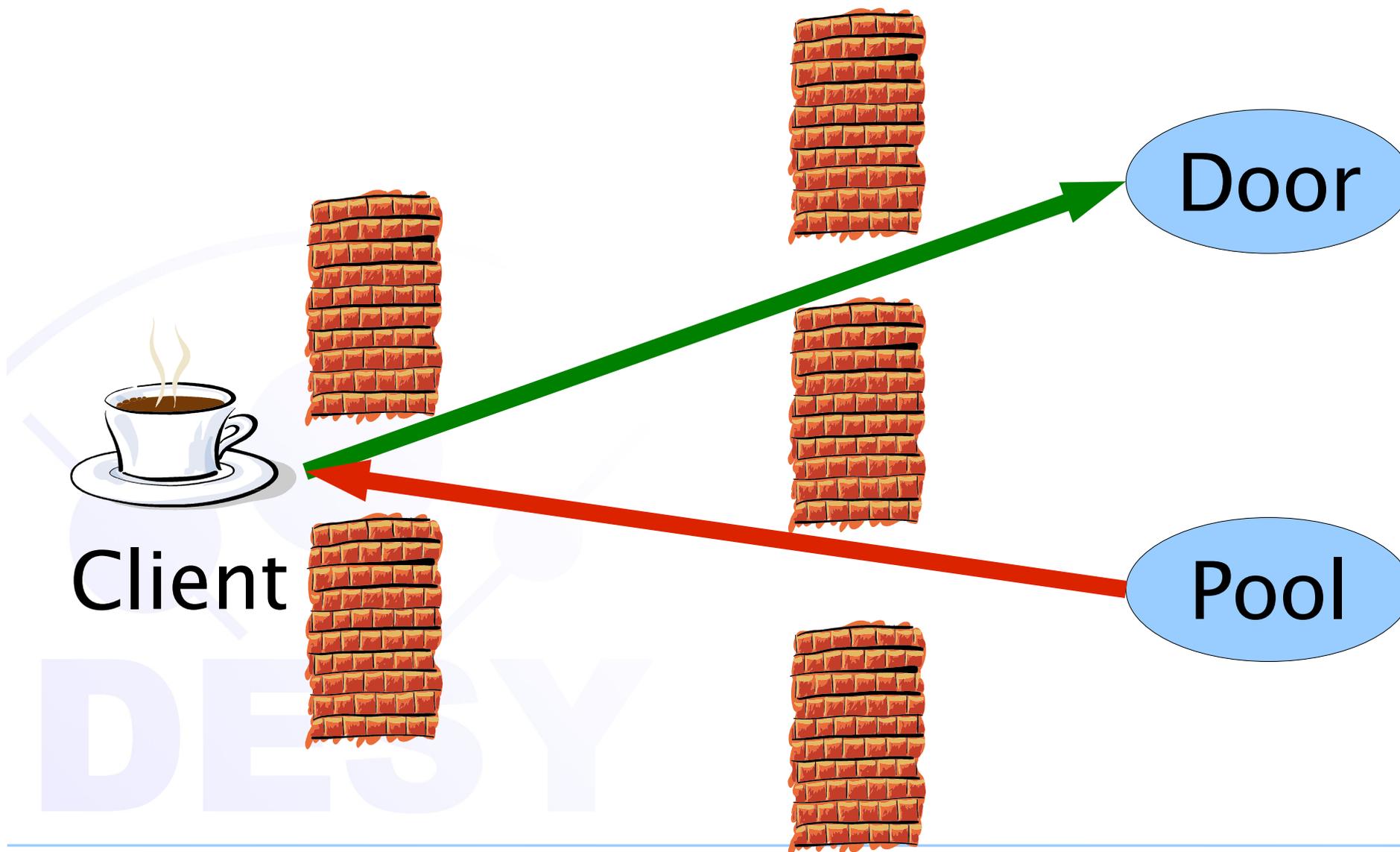
# FTP write

*dCache.ORG*



# FTP read

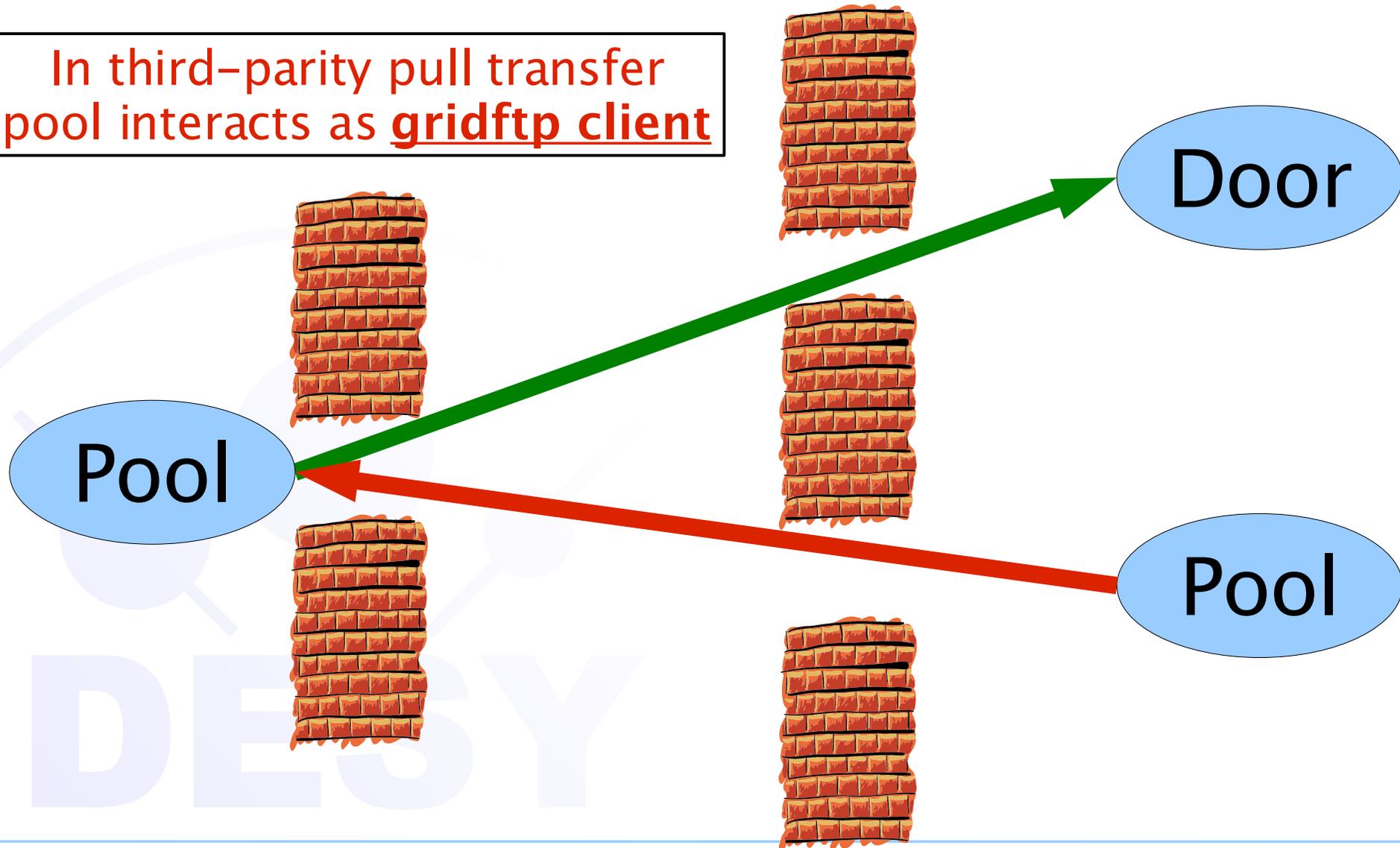
*dCache.ORG*



# SRM-PULL

*dCache.ORG*

In third-parity pull transfer  
pool interacts as gridftp client



Q:

After successful installation I can write a file, but can not read it back.

A:

Please check `/var/log/pnfsDomain.log` for errors. Check that '*companion*' database populated.

```
companion=# select * from cacheinfo where  
pnfsid='003C00000000000000001895498';
```

pnfsid	pool	ctime
003C00000000000000001895498	dcache21_1	2006-02-22 01:35:21.839

(1 row)

Q:

TURL returns internal interface.

A:

By default, doors bind to all available interfaces and SRM chooses one of them. Please check 'Complex Network Configuration' chapter of 'The Book'.

Q:

TURL returns 127.0.0.x address.

A:

Please check that /etc/hosts does not contains something like:

```
# /etc/hosts  
127.0.0.1 localhost  
127.0.0.2 myhost # bad entry
```

Q:

I am unable to force srmcp to use dcap, nevertheless, plain dcap works fine.

A:

To avoid dcap on wide area transfers dcap doors are not published to SRM.

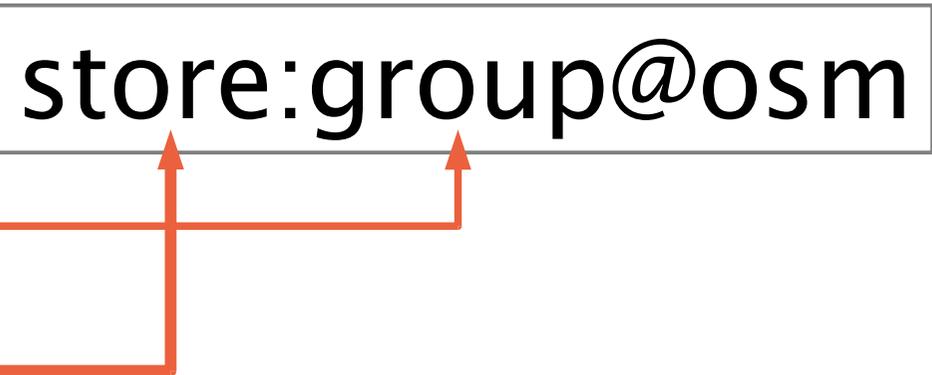
Q:

I would like to write into a directory, but getting an error: “No storageInfo available”

A:

Please check that in the destination directory tags 'sGroup' and 'OSMTemplate' exists and not empty.

```
# cat '.(tag)(sGroup)'  
group  
# cat '.(tag)(OSMTemplate)'  
StoreName store  
#
```



store:group@osm

The diagram shows a box containing the text 'store:group@osm'. Two orange arrows point from the text 'group' in the first code block and 'store' in the second code block to the 'group' and 'osm' parts of the box, respectively.

Q:

I have no HSM, but some transfers hangs in 'Tape Restore Queue'

A:

File located on a pool which is off-line or was off-line at request time. Check that file reregistered by *companion*. Use *retry* in PoolManager after pool is back.

# Tuning (howto)

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**dCache.ORG**

Q:

Is there a way to control log files?

A:

we successfully using *logrotate* utility.  
In addition, version 1.7.0 has a log4j  
support.

# Tuning (howto)

**dCache.ORG**

Q:

howto move ***data disk*** from one pool to another?

A:

after attaching the disk to the new hosts:

- adjust x.poollist file;
- start the pools;
- run *pnfs register* in the new pool or

```
# UPDATE cacheinfo SET pool='<new pool name>' WHERE  
pool='<old pool name>';
```

# Tuning (howto)

**dCache.ORG**

Q:

howto find out which files was located on crushed disk ?

A:

in companion database:

```
# SELECT * FROM cacheinfo WHERE pool='<dead pool>';
```

# Tuning (howto)

**dCache.ORG**

Q:

howto switch *companion* on?

A:

- set *cacheinfo=companion* in dCacheSetup file;
- create a database called companion:  
`psql -U postgres -O srmdache companion`
- initialize companion:  
`psql -U srmdache <  
/opt/d-cache/etc/psql_install_companion.sql`
- run *pnfs register* on all pools;
- restart pnfsManager

# Tuning (howto)

**dCache.ORG**

Q:

howto move the *PNFS-gdbm* to a different host ?

A:

- install the pnfs on the new host
- shutdown old pnfs
- copy /opt/pnfsdb to the new host
- start the new pnfs

We recommend to migrate to  
*PNFS-postgres*

# Tuning (howto)

**dCache.ORG**

Q:

howto move the *PNFS-postgres* to a different host ?

A:

- install the pnfs on the new host
- shutdown old pnfs
- dump postgres databases with *pg\_dumpall > pnfs.dump*
- copy */opt/pnfsdb* to the new host
- restore postgres database with *psql -U postgres template1 < pnfs.dump*
- start the new pnfs

# Tuning (howto)

**dCache.ORG**

Q:

howto move dCache component to a different host ?

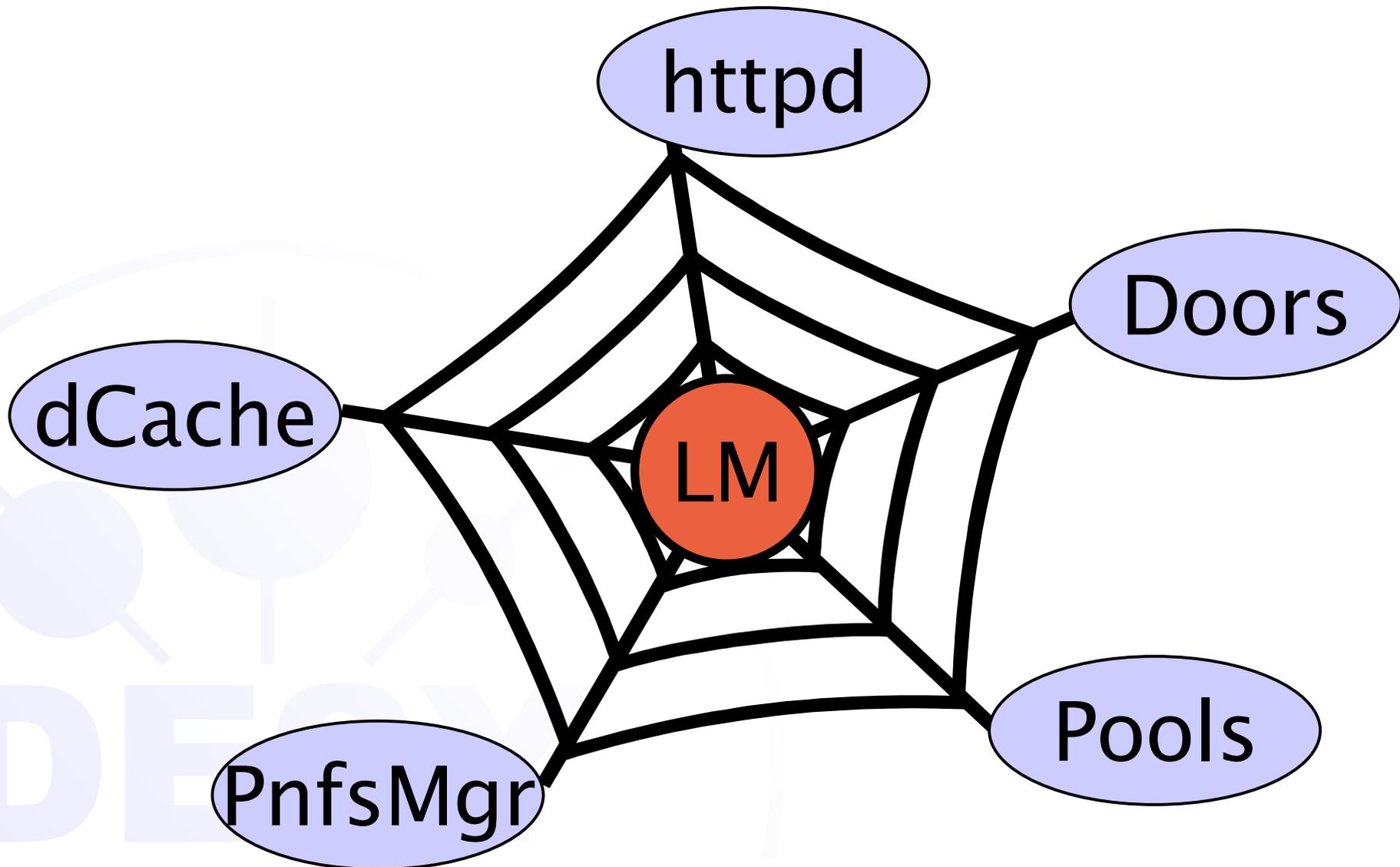
A:

1.7.0-x supports a new node type '*custom*'. Please be sure that set of all services on all custom nodes have to contain:

*lm, dCache, adminDoor, pnfs, httpd, utility*  
*Service locator should point to lm host*

# Tuning (howto)

*dCache.ORG*



# Tuning (howto)

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*dCache.ORG*

Q:

do I need to mount pnfs on all host ?

A:

pnfsDomain, dirDomain and gridftp-doors requires pnfs to be mounted. In addition, all HSM backhanded write pools have to mount pnfs as well.

# Tuning (howto)

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*dCache.ORG*

Q:

How can I do some action on poolGroup

A:

GUI is the best place to do so



# Tuning (howto)

**dCache.ORG**

The screenshot shows the dCache-HH Pool Commander interface. The window title is "Cell Login". The menu bar includes "Session", "Windows", "Specials", and "Help". The main window has tabs for "Commander", "Restore", "Transfer", "Pools", and "CostModule". The "Pools" tab is active, displaying the "Pool Commander" window. On the left, a "Pool Groups" list contains various group names, with "write-pools" selected. Below the list are "Update Groups" and "Toggle Source" buttons. The main area is a table with columns "Pool", "Time", and "Result".

Pool	Time	Result
it-dcache15-0		
it-dcache3-0		
it-dcache3-1		
it-dcache4-0		
it-dcache4-1		
it-dcache5-0		
it-dcache5-1		
it-dementor2-0		
it-dementor2-1		

At the bottom right of the Pool Commander window is a "To Your Selection" button.

# Tuning (howto)

---

*dCache.ORG*

Q:

If a file in the *SUSPENDED* mode is there a way to distinguish between:

- Pool is down
- File not in dCache

A:

Not really, but we can add more logic behind for some obvious cases.

# Tuning (howto)

---

**dCache.ORG**

Q:

How to change default permission mask with SRM?

A:

There is no way to set something like umask in all URL-based protocols, but SRMv2.2 will have some kind of *chmod methods*.

# Tuning (howto)

---

*dCache.ORG*

Q:

How to agregate number of *stores* and *restores*?

A:

The *FlushManager* does it for stores (Patrick's talk later today).

For restore it's planed, but still in design phase (Patrick's talk)

# Tuning (howto)

*dCache.ORG*

Q:

which TCP ports used by dCache

A:

50000:52000 => gridftp in pools  
33115:33145 => passive dcap & xrootd  
8443 => SRM  
22223 => ssh  
22125 => dcap  
22128 => gsidcap  
1049 => xrootd  
2811 => gridftp

# Tuning (howto)

**dCache.ORG**

Q:

I am not a PostgreSQL expert....

A:

- version:  $\geq 8.1.0$
- disk: as more spindle as possible, RAID 5+1
- keep `<PGDATA>/data` and `<PGDATA>/data/pg_xlog` on different disks:

```
mv pg_xlog /xLog/pg_xlog
```

```
ln -s /xLog/pg_xlog pg_xlog
```

# Tuning (howto)

---

**dCache.ORG**

in postgres.conf:

```
stats_start_collector = on  
stats_command_string = on  
stats_row_level = on
```

```
autovacuum = on  
autovacuum_naptime = 600  
autovacuum_vacuum_threshold = 1000  
autovacuum_analyze_threshold = 500
```

# Tuning (howto)

**dCache.ORG**

## Linux, PostgreSQL Server with 4GB of RAM

```
shared_buffers = 16384  
sort_mem = 4096  
vacuum_mem = 32168  
work_mem = 8192  
max_fsm_pages = 1000000  
effective_cache_size = 262144  
random_page_cost = 2
```

***Change the kernel parameter for maximum shared memory segment size in /etc/sysctl.conf :***

```
kernel.shmmax = 288435456
```