

Whats new in since 2.6

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HELMHOLTZ
ASSOCIATION

Configuration

Motivation

- adminPort
 - performanceMarkerPeriod
 - qosPluginClass
 - nfs.v3=true
 - what about v4?
 - aclEnable=true
 - where acl are checked?
-

Motivation

Which options effect service X?

Self describing properties

- Doted notation
- First portion shows consuming component
- Time values accept units (MILLISECONDS, SECONDS, MINUTES, HOURS, DAYS)
- **Not all chages 100% backward compatible**

`srm.request.get.lifetime = 8`

`srm.request.get.lifetime.unit = HOURS`

`ftp.performance-marker-period`

`ssh1.net.port`

`pnfsmanager.enable.acl`

```
$ egrep "^ftp|^\.+\.ftp" *.properties
```

Migration

- Only modified properties have to be changed
- 'dcache check-config' will guide you

Services

Group by sec. favors

- no 'gsidcap'
 - no 'kerberos ftp'
 - no option duplication (gsiFtpPortNumber, kerberosFtpPort)
-

Group by sec. favors

[doorDomain/dcap]

dcap.authn.protocol=gsi

Group by sec. favors

```
[doorDomain/dcap]
```

```
dcap.authn.protocol=gsi
```

```
[doorDomain/ftp]
```

```
ftp.authn.protocol=plain
```

```
ftp.net.port=21
```

```
[doorDomain/ftp]
```

```
ftp.authn.protocol=gsi
```

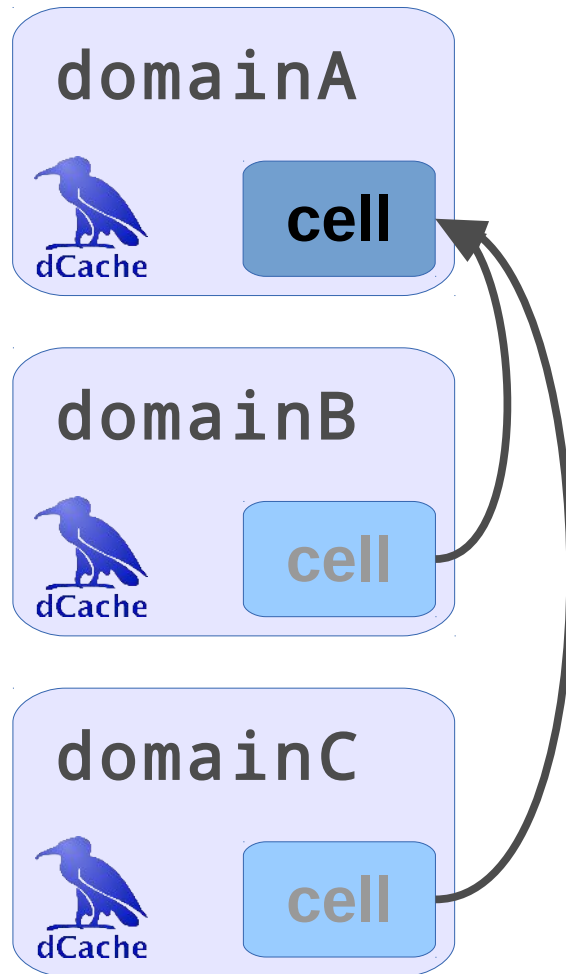
```
ftp.net.port=2811
```

gPlazma changes

- As module doesn't exist since 1.9.5 (?)
- Starts local gPlazma cell
- Use '**gplazma.cell.export=false**'
 - (most of the cells have this option)



- Domain represents a JVM
- Cells are services inside a domain
- Cells addressed by the names
 - **cell@domain**
- **Well known** cells create virtual references



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See Paul's talk from the last year

htpasswd (gPlazma)

- 'Standard' password auth for web
 - replacement for kpwd
- exist for all OSes
- File location controlled by **gplazma.htpasswd.file**

```
$ htpasswd /etc/dcache/auth/htpasswd paul
```

```
# gplazma.conf  
auth optional htpasswd  
map optional authdb
```

See Karsten's after coffee

SRM unique TURL

- file is not 'visible' till end of transfer
 - private file is creates
 - rename on srmPutDone
 - upload path controlled by ***pnfsmanager.upload-directory*** property
 - automatic cleanup if no srmPutDone
-

SRM unique TURL

- No 'dark' data
 - No 'lost' space
 - space reservation based on pnfsid
 - No more 'Already have 1 record(s)' errors
-

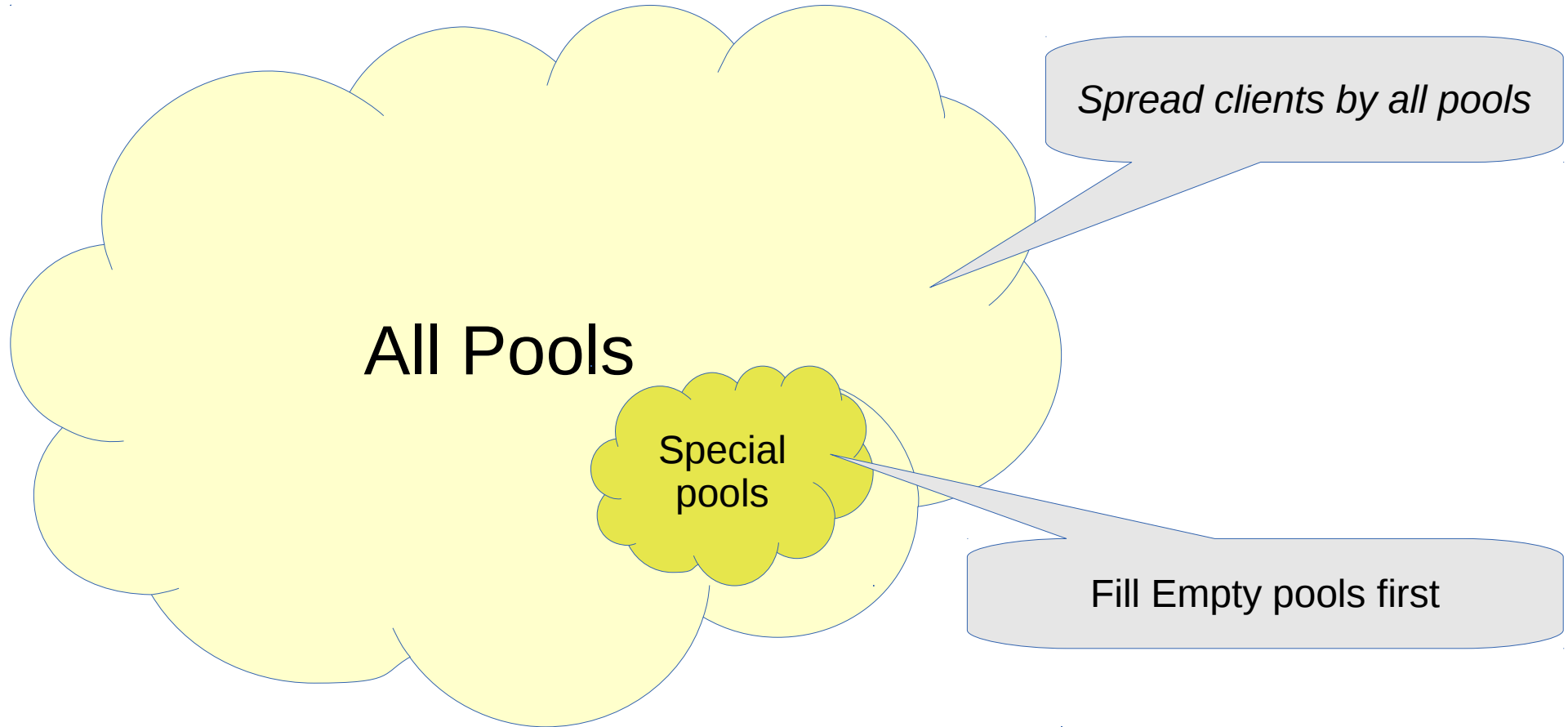
SRM unique TURL

- crates a unique directory in upload directory
 - directories are not ***listable***
 - binds directory to space token
 - creates unique file (pnfsid) for upload
-

PoolManager

- No 'classic' partition
 - default is **wass**
 - ***don't forget to update poolmanager.conf***
 - New 'buffer' partition
 - **wass** optimized for import/export pools
-

Partition Manager



Weighted Available Space Selection

pool	Free space
pool-A	60TB
pool-B	30TB
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rnd: [1, 6, 2, 7, 10, 2, 5, 4, 6, 4]

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[Check our article for complete algorithm description](#)

Chimera

- New field to track creation time
 - first start will take some time ~10min/1M files
 - Support set-gid on directories
 - gid will be inherited for new objects
 - Interactive command shell
-

Chimera-shell

```
# chimera
chimera:/# help
cd path # change current directory
checksum add path adler32|md5_type|md4_type checksum # add checksum to file
checksum delete path adler32|md5_type|md4_type # remove checksum from file
checksum get path adler32|md5_type|md4_type # display checksum of file
checksum list path # list checksums of file
chgrp gid path # change file group
chmod mode path # change file mode
chown uid[:gid path # change file owner and group
exit # exit chimera shell
getfacl path # display access control lists
ls [path] # list directory contents
lstag [path] # list directory tags
mkdir path # make directory
readtag path tag # display tag data
rm path # remove a file
rmdir path # remove directory
rmtag path tag # remove tag from directory
setfacl path subject:+|-mask[:flags... # change access control lists
writedata path [data] # write file content
writetag path tag [data] # write tag data
chimera:/#
```

Webdav

- Expose 'extra attributes' as properties
 - Access Latency
 - Retention Policy
 - Checksum

```
$ curl -X PROPFIND -H Depth:0 http://localhost:2880/public/test-1390395373-1 \  
--data '<?xml version="1.0" encoding="utf-8"?>  
  <D:propfind xmlns:D="DAV:">  
    <D:prop xmlns:R="http://www.dcache.org/2013/webdav"  
      xmlns:S="http://srm.lbl.gov/StorageResourceManager">  
      <R:Checksums/>  
      <S:AccessLatency/>  
      <S:RetentionPolicy/>  
    </D:prop>  
  </D:propfind>'
```

```
<?xml version="1.0" encoding="utf-8" ?>
<d:multistatus xmlns:cs="http://calendarserver.org/ns/" xmlns:d="DAV:"
  xmlns:cal="urn:ietf:params:xml:ns:caldav"
  xmlns:ns1="http://srm.lbl.gov/StorageResourceManager"
  xmlns:ns2="http://www.dcache.org/2013/webdav"
  xmlns:card="urn:ietf:params:xml:ns:carddav">
  <d:response>
    <d:href>/public/test-1390395373-1</d:href>
    <d:propstat>
      <d:prop>
        <ns1:AccessLatency>ONLINE</ns1:AccessLatency>
        <ns2:Checksums>adler32=6096c965</ns2:Checksums>
        <ns1:RetentionPolicy>REPLICA</ns1:RetentionPolicy>
      </d:prop>
      <d:status>HTTP/1.1 200 OK</d:status>
    </d:propstat>
  </d:response>
</d:multistatus>
```

NFS

- Dot commands to expose
 - Checksum
 - Online status
 - Trigger staging
 - Support for RHEL7 (SL7)
 - IO with NFSv4.0 (starting 2.9)
 - (mac os x 10.9 Mavericks)
 - All traffic goes through the door!
-

```
# mount -o v4.1 dcache-lab000.desy.de:/exports/data /mnt
# dd if=/dev/zero of=/mnt/1MB bs=1024 count=1024
1024+0 records in
1024+0 records out
1048576 bytes (1.0 MB) copied, 0.441375 s, 2.4 MB/s
# cat '/mnt/.(get)(1MB)(locality)'
ONLINE
# cat '/mnt/.(get)(1MB)(checksum)'
ADLER32:00f00001
# touch '/mnt/.(fset)(1MB)(pin)(5)(HOURS)'
#
```

Databases

- Chimera, SRM, Space Manager, Billing
 - new schema
 - slow on first start
- Command to inspect changes
 - *'\$ dcache database showUpdateSQL'*

Better Admin Help

```
[dcache-lab000] (local) admin > help help
NAME
    help -- display help pages

SYNOPSIS
    help [-format=PLAIN|ANSI] [command]....
```

ARGUMENTS

command
When invoked with a specific command, detailed help for that command is displayed. When invoked with a partial command or without an argument, a summary of all matching commands is shown.

OPTIONS

-format=PLAIN|ANSI
Output format.

```
[dcache-lab000] (local) admin > █
```

Access Log

- complimentary to billing files
 - record actions which do not trigger a transfer
 - available for SRM and FTP
-

Access Log, SRM

ts=2013-11-08T23:06:03.282+0100 level=INFO
event=org.dcache.srm.request host.remote=127.0.0.1
dn="/O=Grid/O=NorduGrid/OU=nordu.net/CN=Gerd
Behrmann" session=YP4:51:srm2:prepareToPut
request.method=srmPrepareToPut request.token=-
2147477612 status.code=SRM_SUCCESS
status.explanation= user-agent="ARC"

Access Log, FTP

```
level=INFO ts=2014-03-12T09:52:31.350+0100  
event=org.dcache.ftp.response host.remote=/127.0.0.1:38627  
session=door:FTP-vedrfoInir-102@dCacheDomain:1394614351341  
command="USER paul" reply="331 Password required for paul."  
  
level=INFO ts=2014-03-12T09:52:33.423+0100  
event=org.dcache.ftp.response host.remote=/127.0.0.1:38627  
session=door:FTP-vedrfoInir-102@dCacheDomain:1394614351341  
command="PASS ..." reply="230 User paul logged in"
```

Other changes

- IPv6 enabled by default
 - dCache listens IPv6 interfaces as well
 - Better logging
 - Protocol compliance SRM, FTP, NFS, HTTP
 - Full path permission check
 - GridSite2 delegation support
 - No ssh1 any more
-

New Replica manager

See AI's talk at 14:00

Questions?

**Now
and later to
support@dcache.org**
