



# *dCache, insight Cells*

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## Sub-services can be developed and can run location in depended

- Same JVM
- Same host, different JVM
- Different Hosts

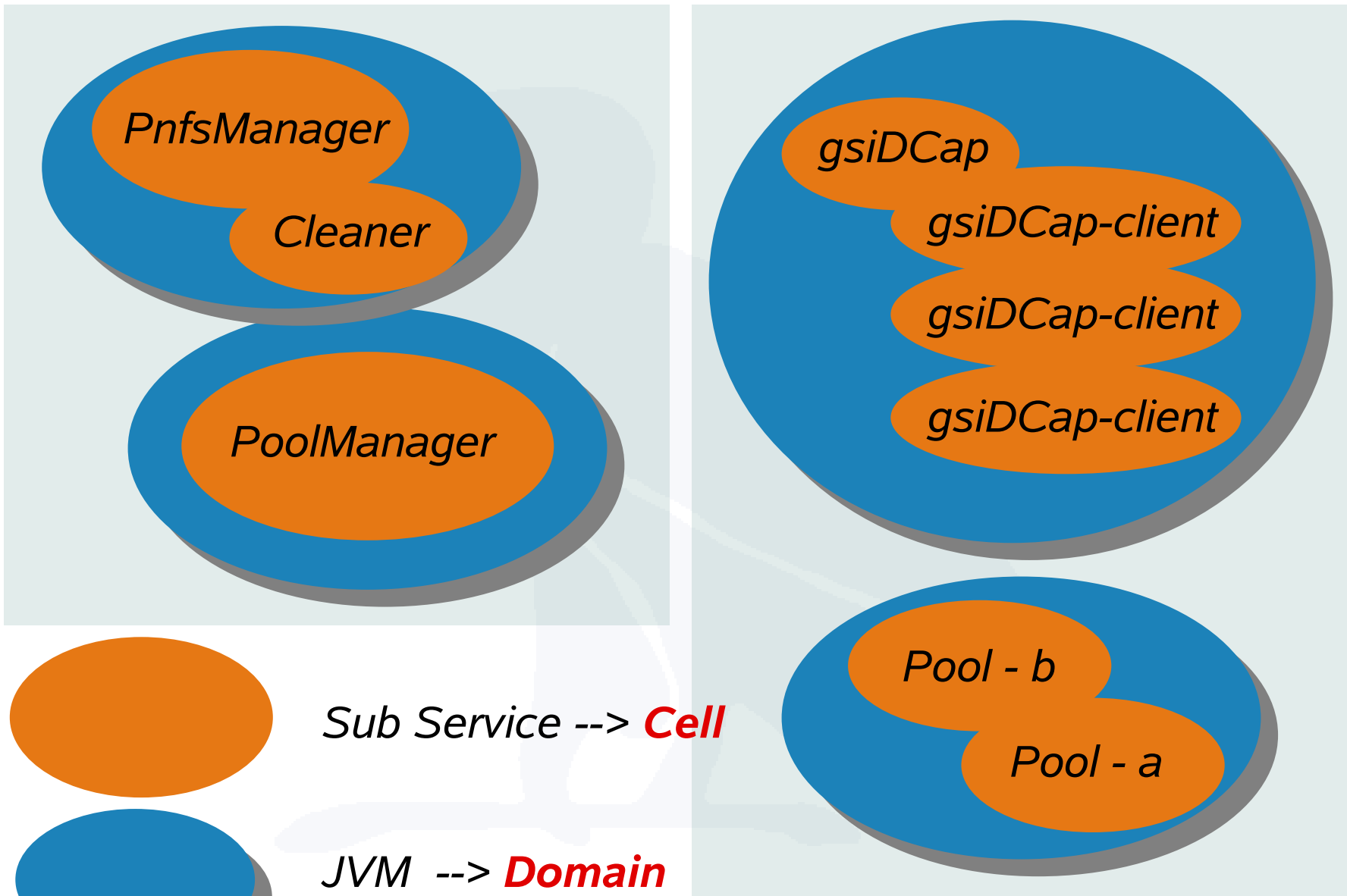
## Cells provide general/global services for all sub services

- Sub services addressed by name
- ssh interface
- http view
- Command interpreter (including help text)



dCache.ORG

dCache.ORG





Cell Communication done by message/object passing only.  
Smallest addressable unit is the Cell.

'Well Known' cells/services may be addressed by name

Sub services may just *'reply'* on request without any knowledge of requesting cell name.

Routing mechanism takes care the message reaches destination.



Programming interface :

Cell needs to *extend CellAdapter*

Three ways of sending / receiving messages

a) Asynchronous

*sendMessage*( 'Destination Cell Name' , Object )

*messageArrived*( Message Object )

b) Synchronous

*sendAndWait*( 'Destination Cell Name' , Object , time )

c) Callback

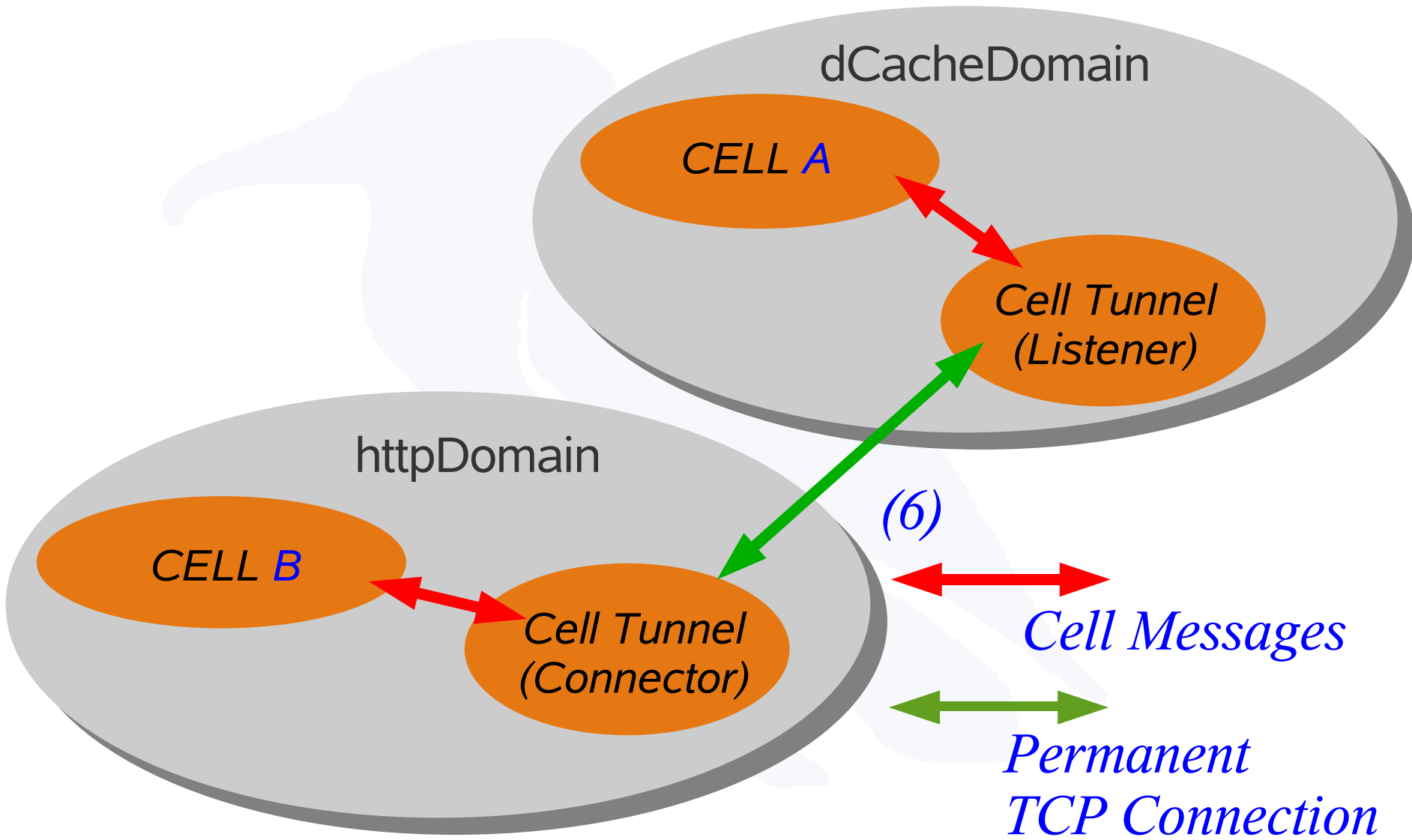
*sendMessage*( 'Destination' , Object , classback , time )



# Cell Communication via Tunnels

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Programming interface :

Cell needs to *extend CellAdapter*

```
String hh_my_first_command = "Useless command"
```

```
String fh_my_first_command = "Some more text ....."
```

```
Object ac_my_first_command_$_1( Args args ) ...
```

```
String firstArgument = args.argv(0) ;
```

```
String host = args.getOpt("host") ;
```

With this, the cell has a new command :

'my first command something -host=whatever' plus

'help my [first [command]]'

available to other cells, ssh plus graphical interface



```
java -jar cells.jar MyFirstDomain -telnet 22123 -tunnel2 22222
```

```
java -jar cells.jar MyOtherDomain -connect2 localhost 22222
```

he.ORG

```
System@TEST2 > ps -f
Cell List
-----
up0          A 0 2  RetryTunnel2  <io>/Connection -> TEST
System      A 0 1  SystemCell    TEST2:IOrec=5;IOexc=0;MEM=457728
System@TEST2 >

System > ps -f
Cell List
-----
tlm-patrick-101 A 0 2  StreamLoginCell patrick@/127.0.0.1
tlm           A 0 3  LoginManager    p=22123;c=StreamLoginCell
System       A 0 1  SystemCell      TEST:IOrec=1;IOexc=0;MEM=750136
down-Unknown-100A 0 2  RetryTunnel2    <io>/Accepted -> TEST2
down         A 0 3  LoginManager    p=22222;c=RetryTunnel2
```





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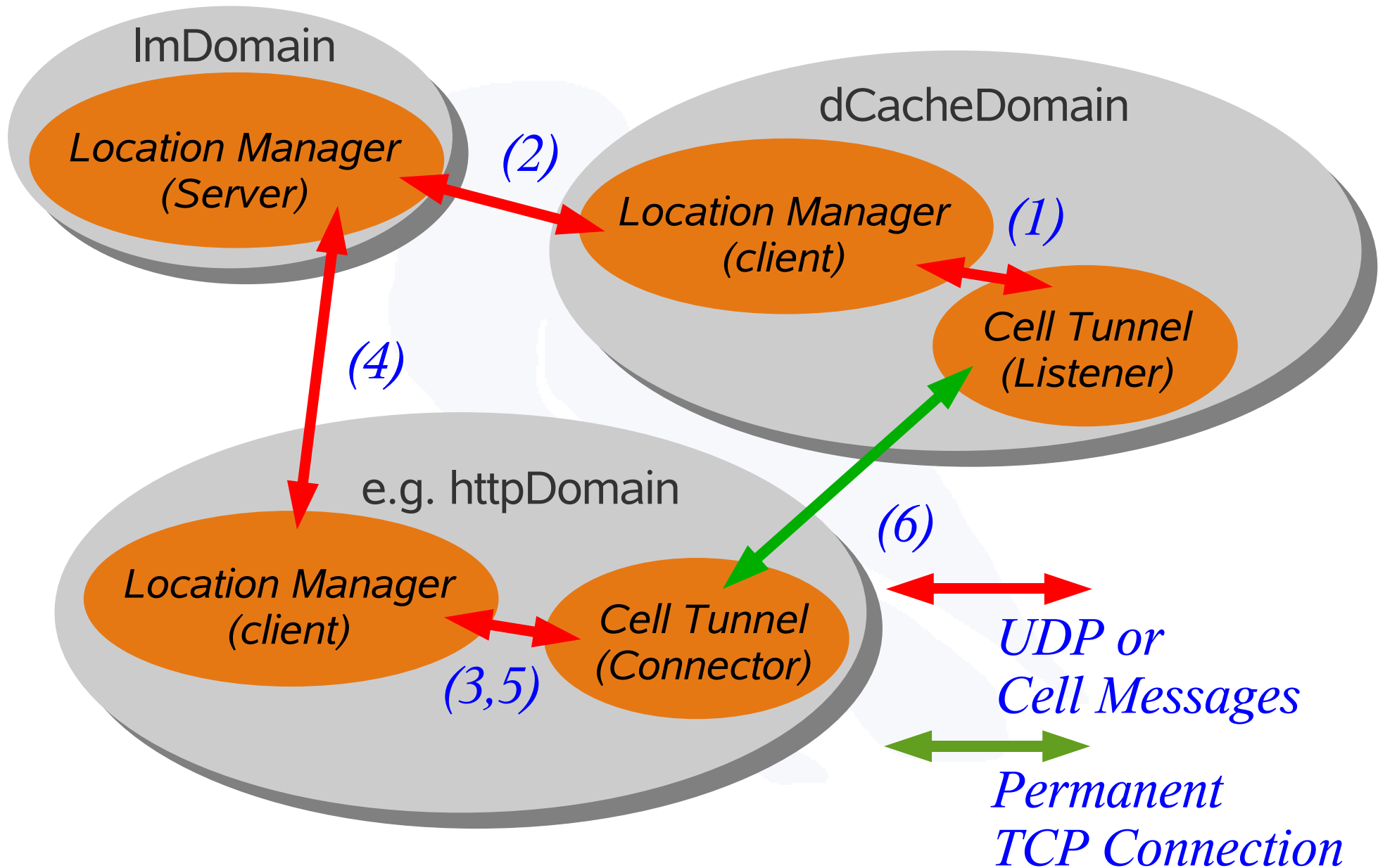
dCache.ORG

# *The Location Manager*





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## httpdDomain

## ImDomain

## dCacheDomain

Cell Tunnel  
(Connector)

Location Manager  
(Client)

Location Manager  
(Server)

Location Manager  
(Client)

Cell Tunnel  
(Listener)

*My Name is dCacheDomain  
WHAT SHALL I DO*

*Listen to port=XXX*

*Launch listener tunnel*

*Register : dCacheDomain listens to port XXXX*

*My Name is httpdDomain  
WHAT SHALL I DO*

*Connect to dCacheDoamin*

*Which addr has dCacheDomain*

*XXXX*

*Launch Connector with XXXX*

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dCache, the Book

*www.dCache.ORG*

need specific help for you installation or help  
in designing your dCache instance.

*support@dCache.ORG*

dCache user forum

*user-forum@dCache.ORG*