



dCache Pool Manager Configuration

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for the dCache Team



dCache.ORG

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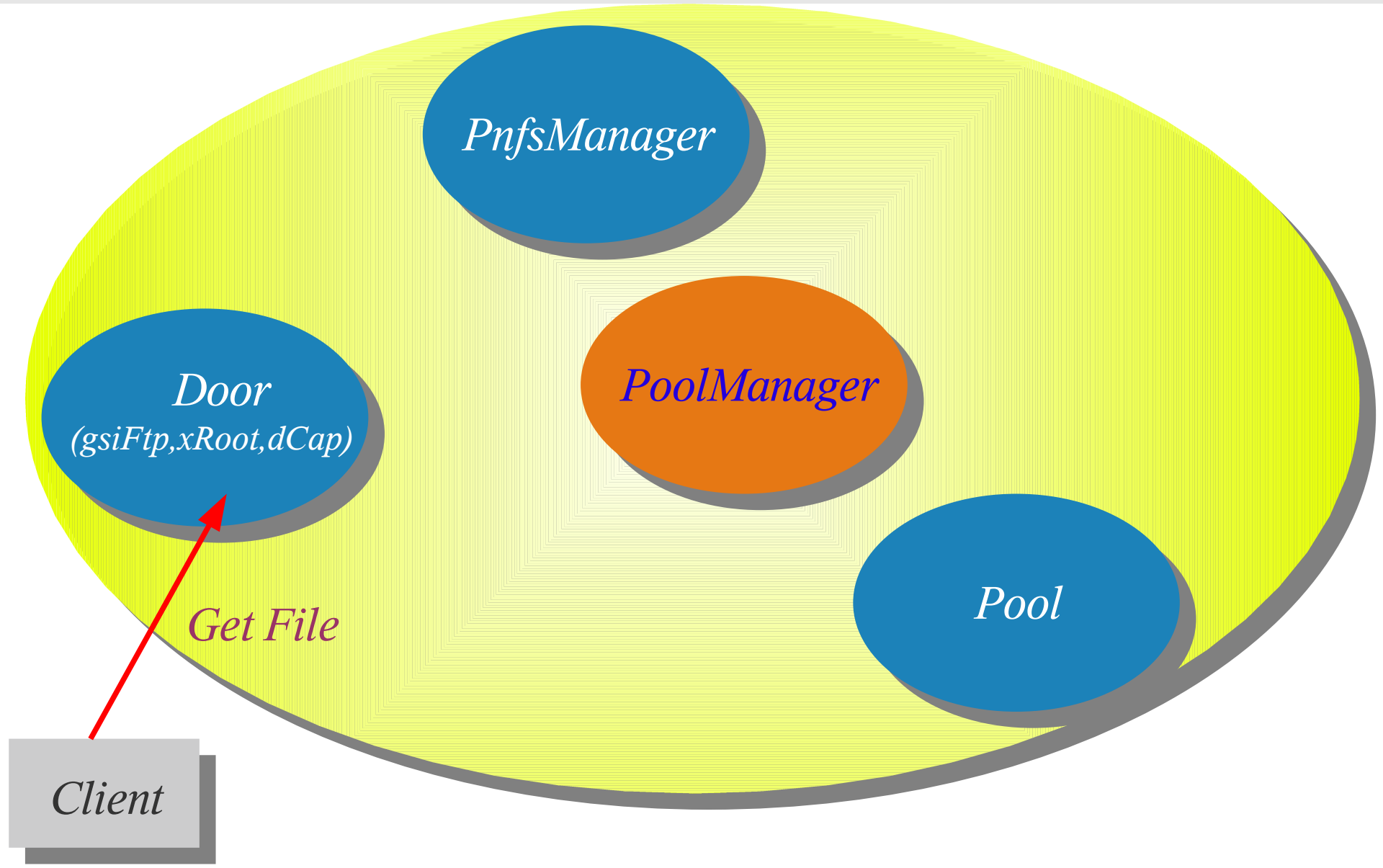
General request message flow



General request message flow

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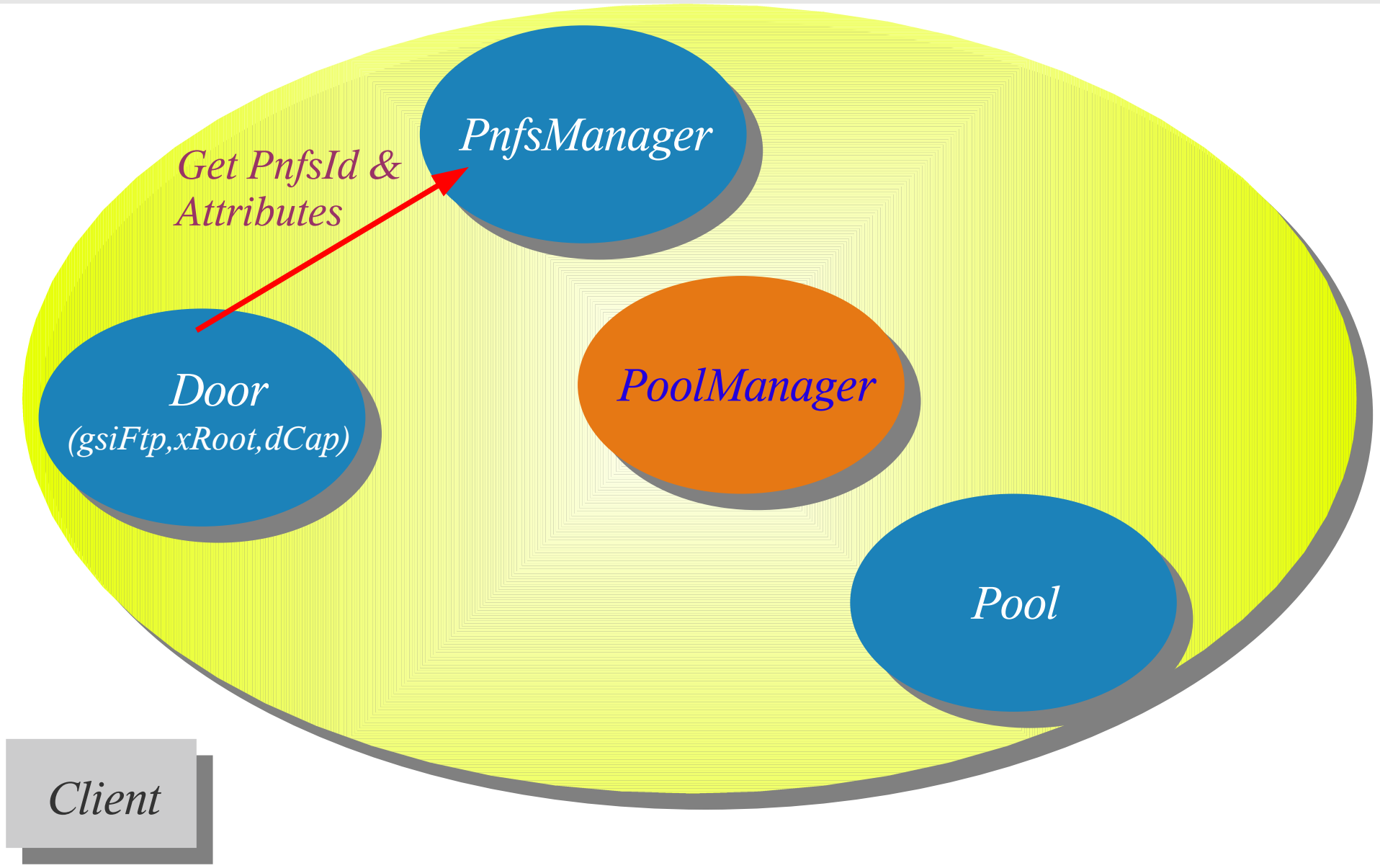




General request message flow

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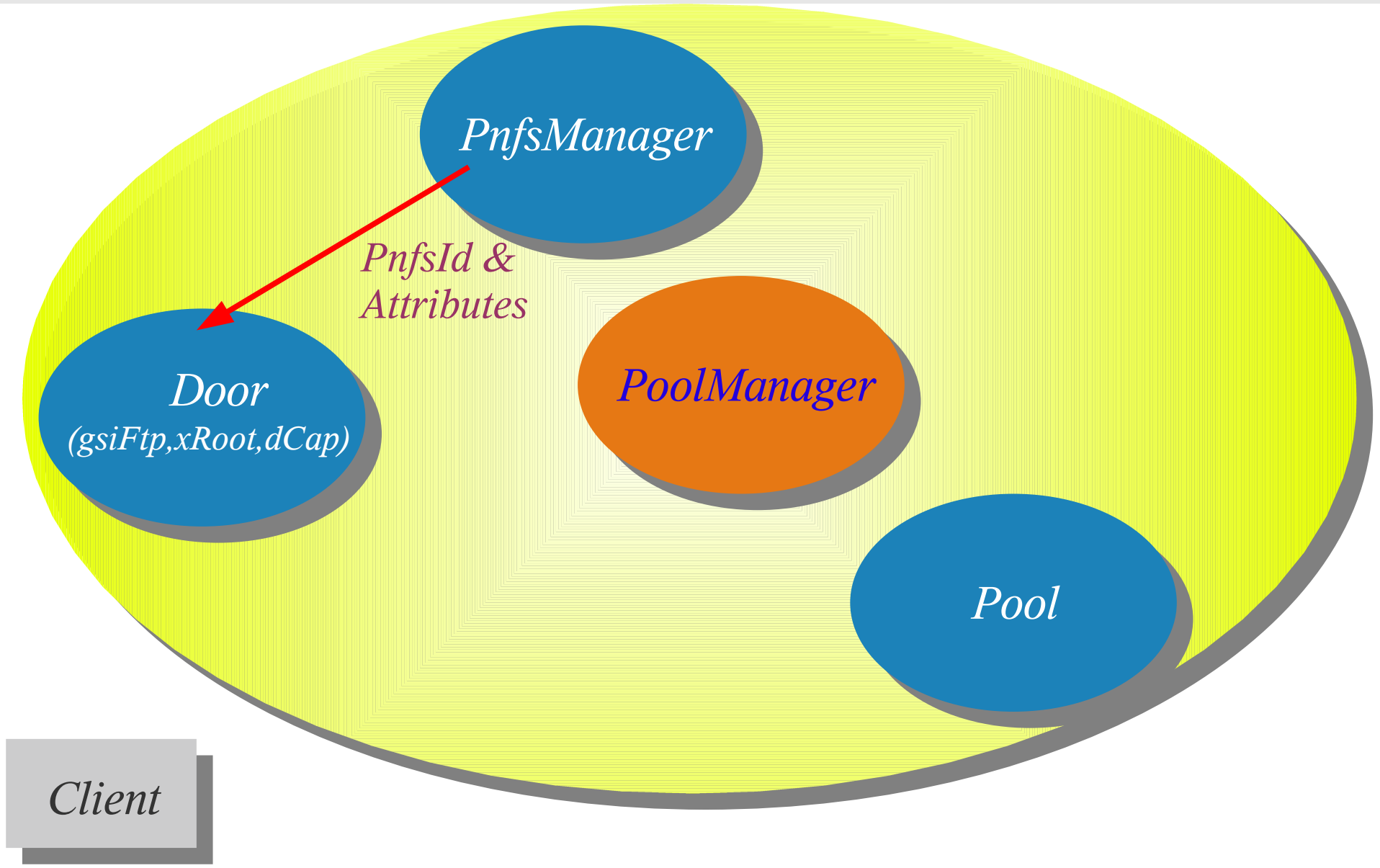




General request message flow

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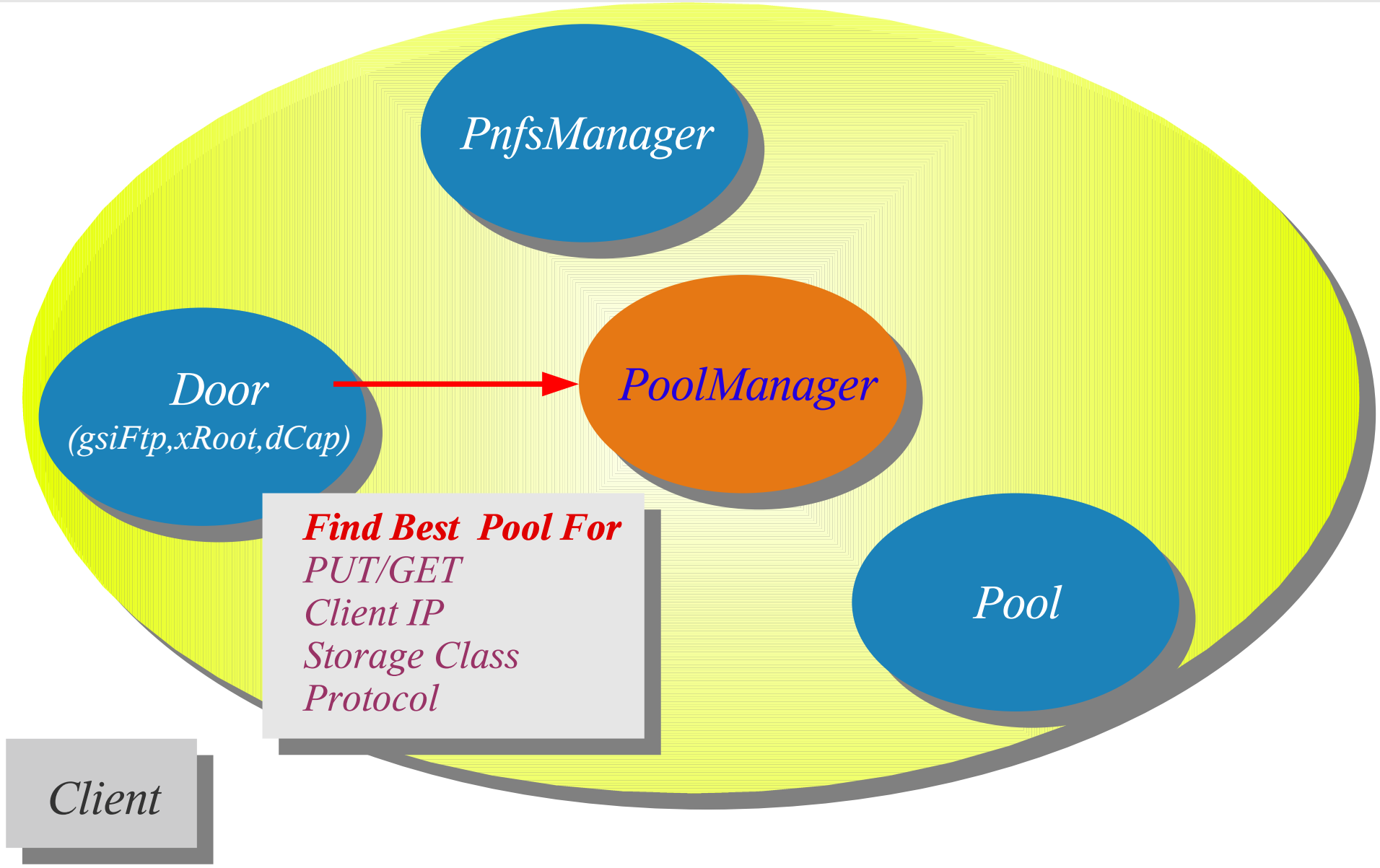


Client



General request message flow

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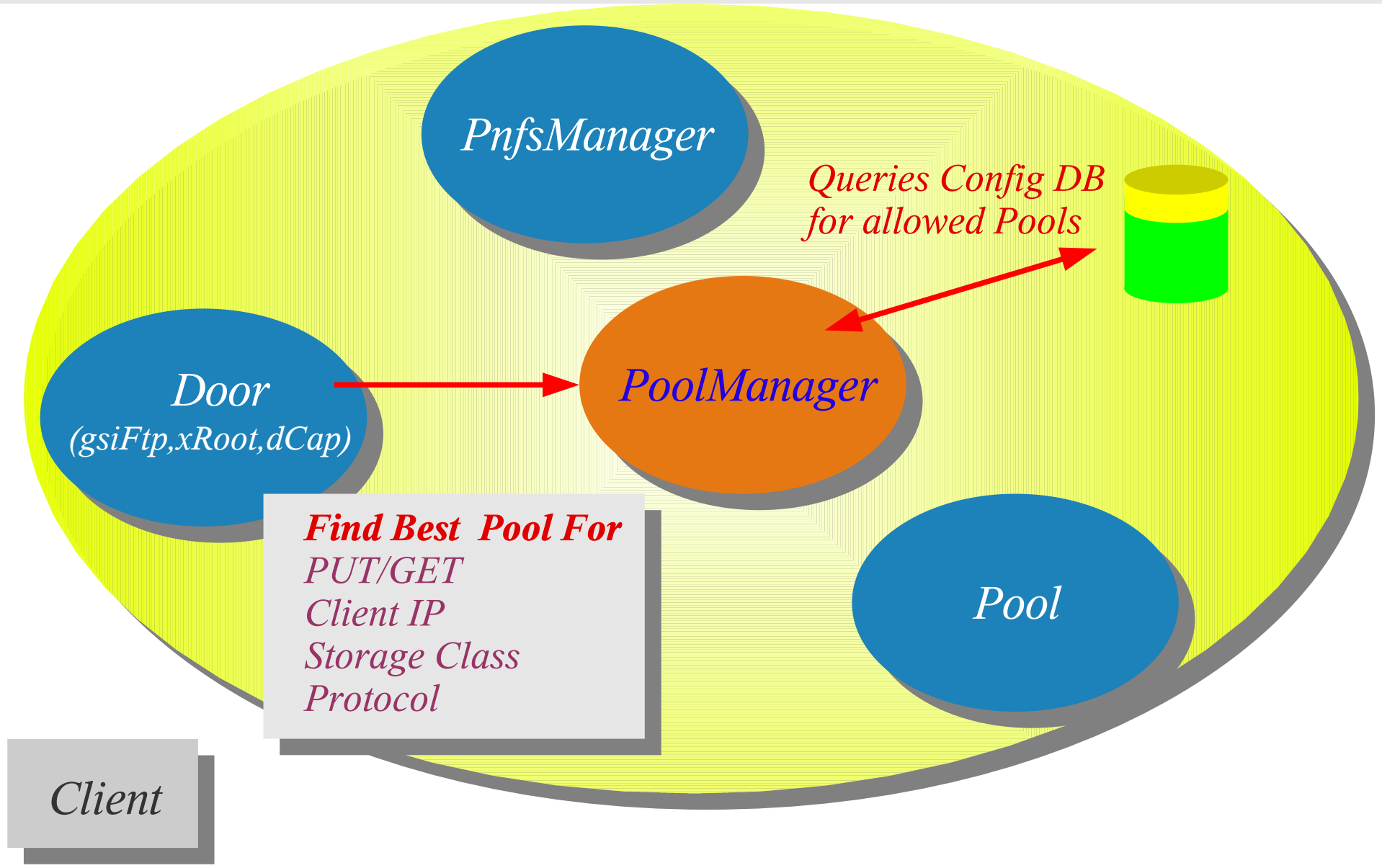




General request message flow

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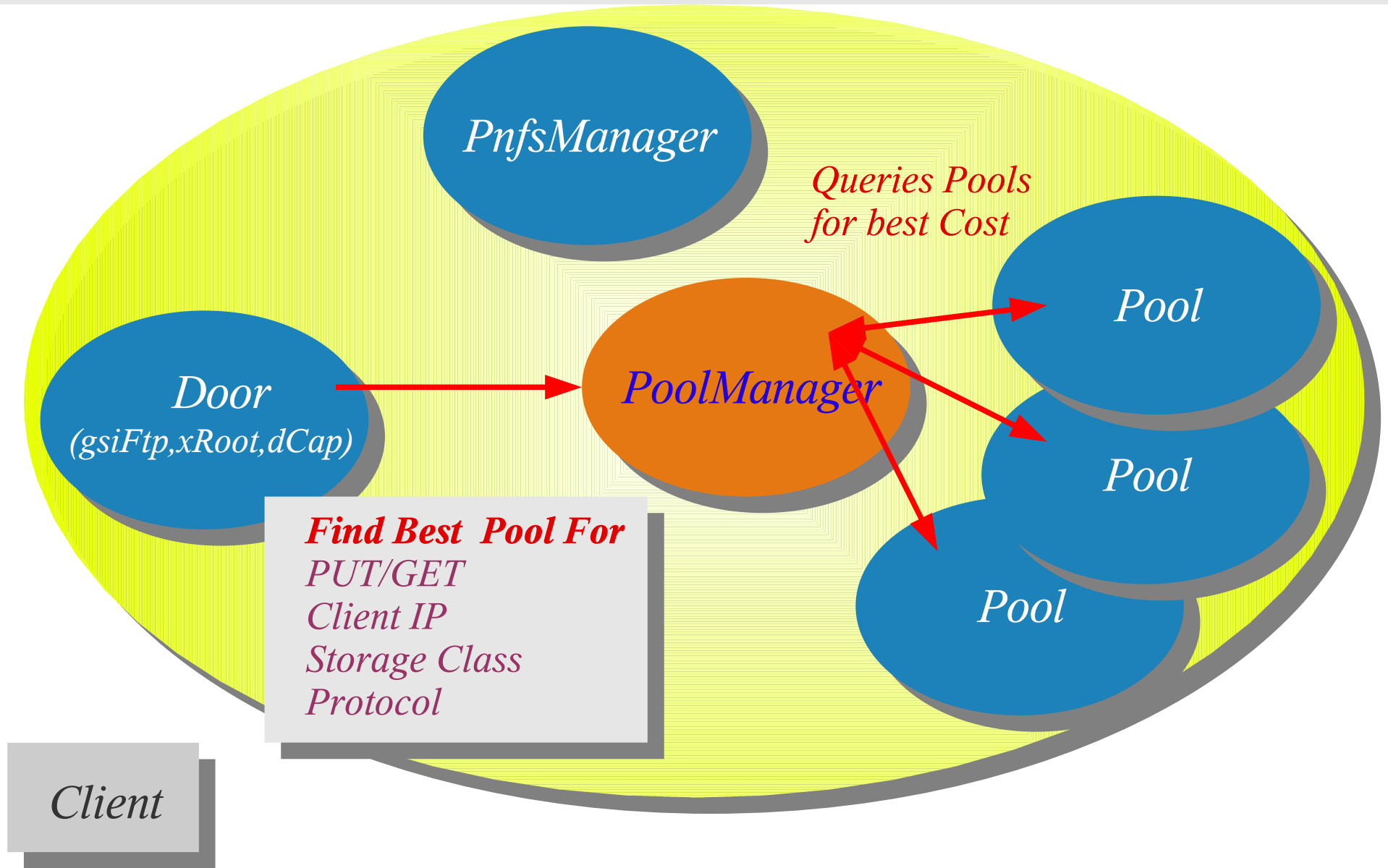




General request message flow

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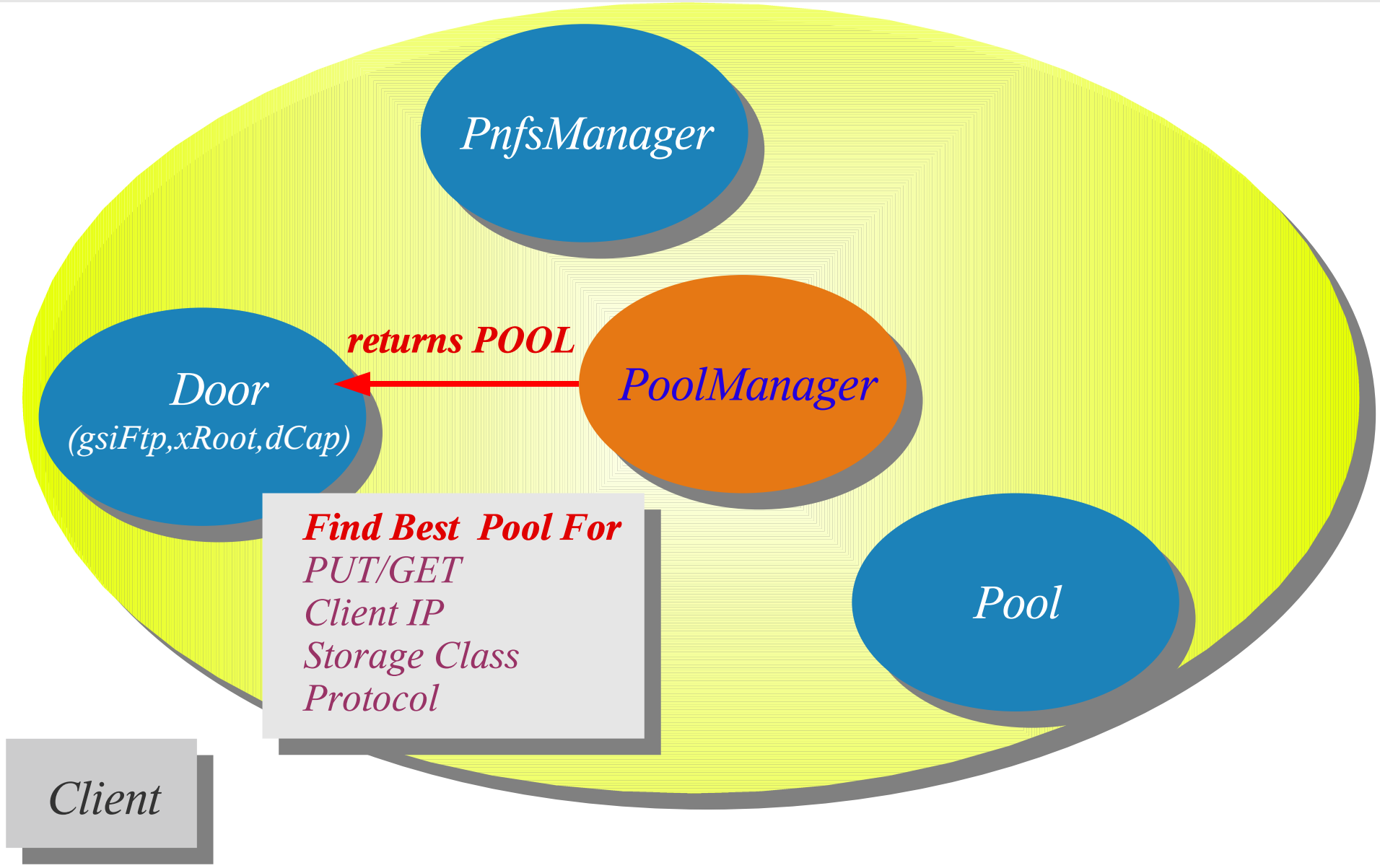
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Pool Manager decision



General request message flow

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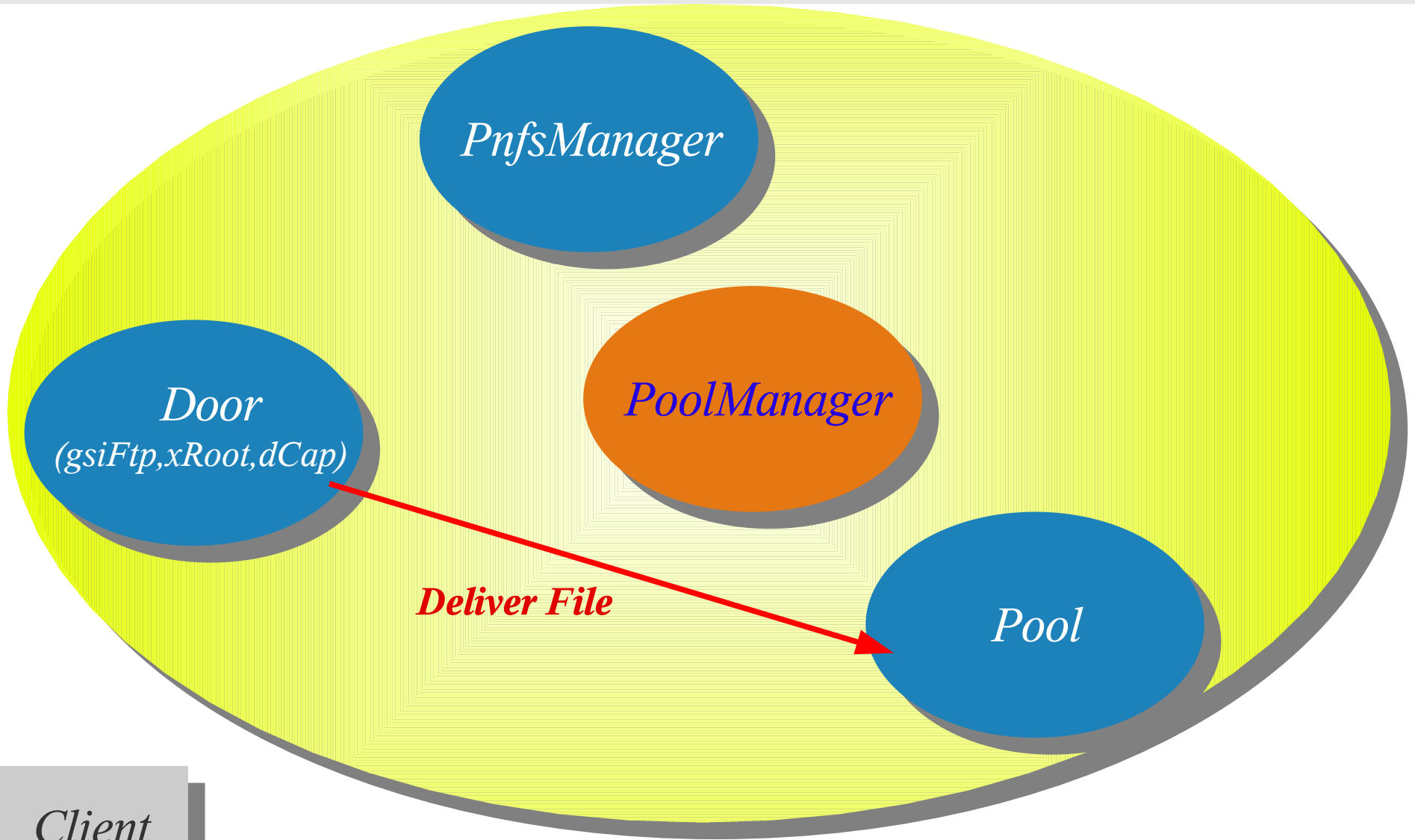




General request message flow

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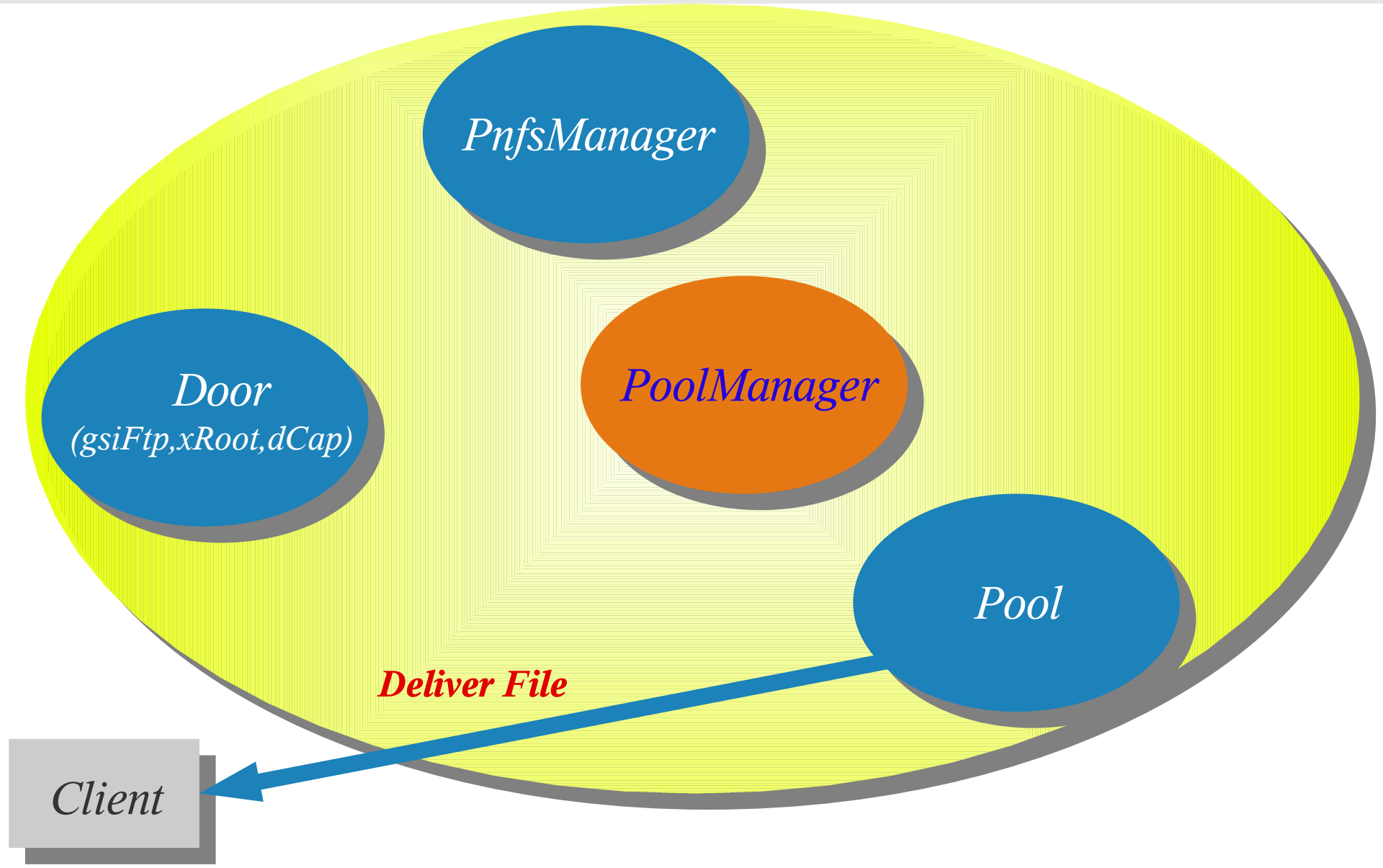




General request message flow

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dCache.ORG





Pool Manager Decision Unit(s)

Sub (Network) Unit

```
psu create unit -net worker001.dCache.org
```

```
psu create unit -net 0.0.0.0/0.0.0.0
```

```
psu create unit -net 131.169.0.0/255.255.0.0
```

Protocol Unit

```
psu create unit -protocol */*
```

```
psu create unit -protocol dCap/3
```

```
psu create unit -protocol xrootd/*
```

Storage Unit

```
psu create unit -store cms:generated@osm
```

```
psu create unit -store *@osm
```



Create Groups of Unit(s)

Sub (Network) Unit Groups

```
psu create ugroup world-net
psu create unit -net 0.0.0.0/0.0.0.0
psu addto ugroup world-net 0.0.0.0/0.0.0.0
```

Protocol Unit Groups

```
psu create ugroup posix-protocols
psu create unit -protocol xrootd/*
psu create unit -protocol dcap/*
psu addto ugroup posix-protocols xrootd/*
psu addto ugroup posix-protocols dcap/*
```



Create Groups of Unit(s)

Storage Unit Groups

```
psu create ugroup all-generated
```

```
psu create unit -store cms:generated@osm
```

```
psu create unit -store atlas:generated@osm
```

```
psu addto ugroup all-generated cms:generated@osm
```

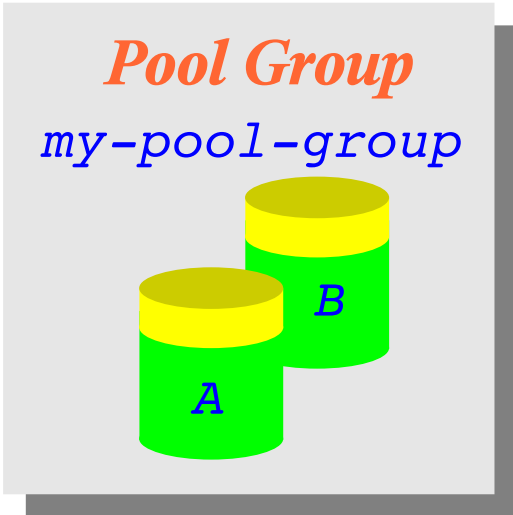
```
psu addto ugroup all-generated atlas:generated@osm
```



Create Group of pools

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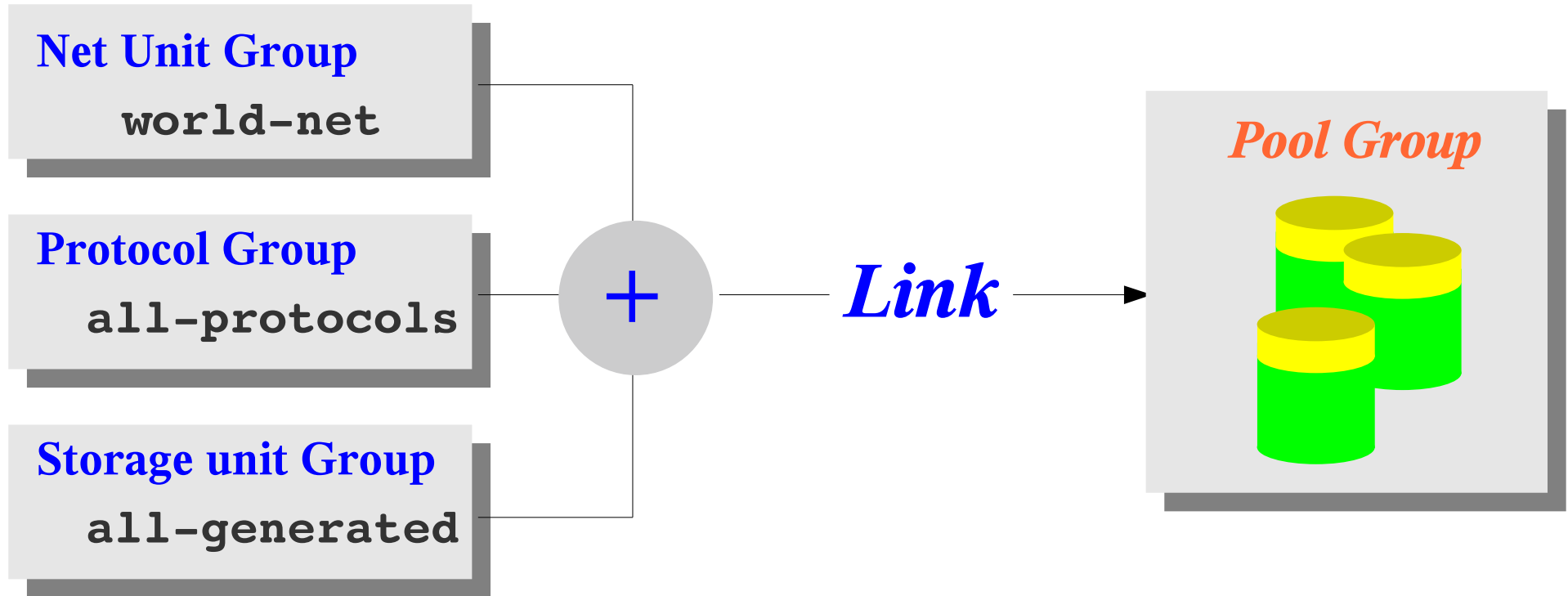
```
psu create pool A
psu create pool B
psu create pgroup my-pool-group
psu addto pgroup my-pool-group A
psu addto pgroup my-pool-group B
```




Create Links (Connects u-groups with pool groups)

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```
psu create link my-link all-generated all-protocols worldnet
```

```
psu addto link my-link my-pool-group
```

```
psu addto link my-link my-other-pool-group
```



Set link preferences

```
psu set link my-link  
-readpref=<X>  
-writepref=<Y>  
-p2ppref=<Z>  
-cachepref=<C>
```

read-pref : file is read by any client out of dCache

write-pref : file is written by any client into dCache

cache-pref : file is restored from tape to disk

p2p-pref : file is restored from tape to disk



Link selection procedure



Client Attributes

Ip Subnet (Host)

Storage Class (Directory Tree)

Data flow direction (put,get)

protocol (dCap,ftp,xrootd)

**Sorted by preference of either read,write ..
depending of request data flow direction**



IP	Store	Prot.	Pref=30	➔	LINK-a
IP	Store	Prot.	Pref=20	➔	LINK-s
IP	Store	Prot.	Pref=5	➔	LINK-c
IP	Store	Prot.	Pref=1	➔	LINK-h



Partitioning



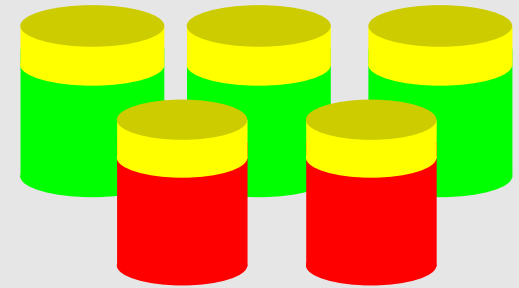
Client Attributes

Ip Subnet (Host)
Storage Class (Directory Tree)
Data flow direction (put, get)
protocol (dCap, ftp, xrootd)

Link



Set of pools



Link Attributes :

readpref, writepref, cachepref, p2ppref

Thresholds : Idle, p2p, ...

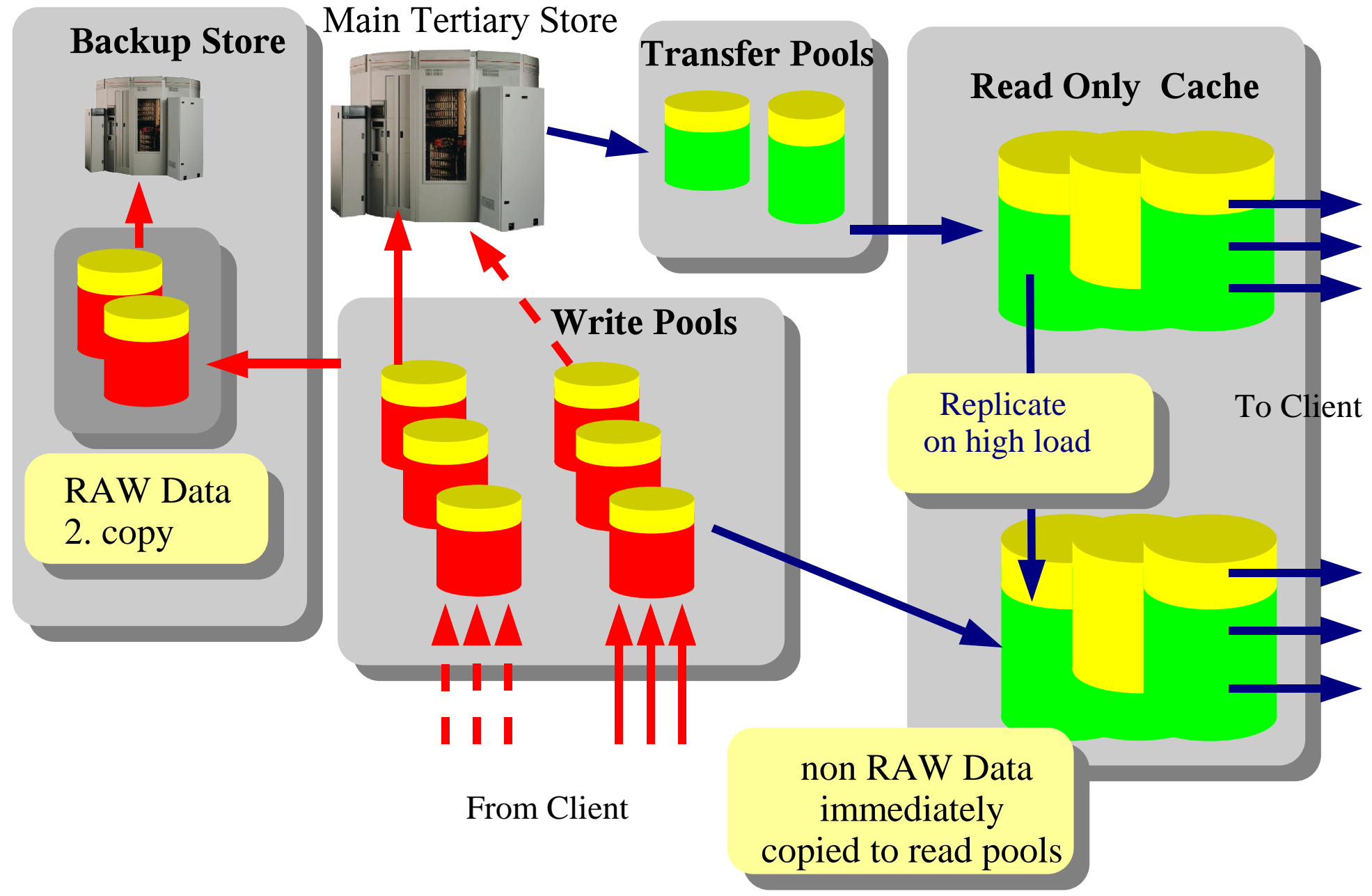
and cost : cpu-factor and space-factor



Nearly all hopping

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Hopping I : intermediate restore cache pool(s)

```
psu set link intermediate-restore-pools  
-readpref=0  
-writepref=0  
-p2ppref=10  
-cachepref=10
```

```
psu set link final-read-pools  
-readpref=10  
-writepref=0  
-p2ppref=10  
-cachepref=0
```



Hopping II : write only pool(s)

```
psu set link write-only-pools  
-readpref=0  
-writepref=10  
-p2ppref=10  
-cachepref=0
```

```
psu set link final-read-pools  
-readpref=10  
-writepref=0  
-p2ppref=10  
-cachepref=0
```



Hopping III : on hot spot

```
pm set [PARITION]  
-spacecostfactor=0.5  
-cpucostfactor=0.5
```

```
pm set [PARITION]  
-p2p-allowed=yes  
-p2p-oncost=yes  
-p2p=0.4
```




Hopping V : replication on arrival

<XXX>.poollist

.... replicateOnArrival[=Manager[,host[,mode]]] ...

Default Manager is PoolManager

Default host is host-name of pool host