WP4 - Monitoring

Progress report

sylvain.chapeland@cern.ch

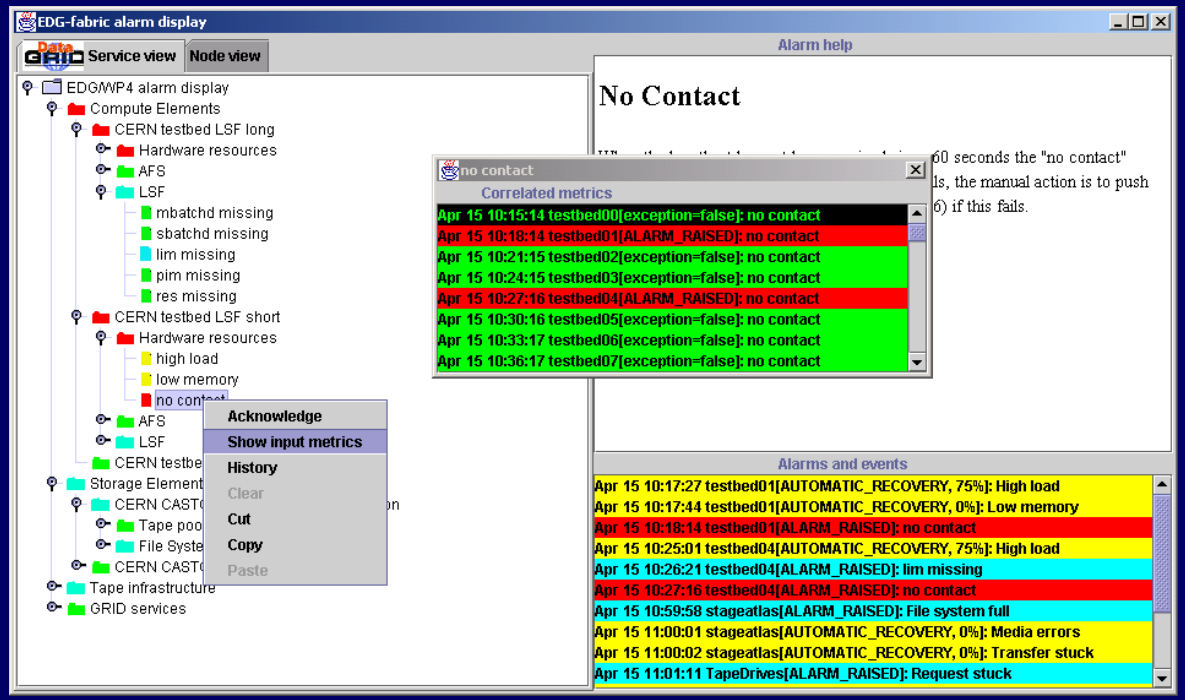
Overview

- Work completed
  - New monitoring sensor agent (MSA)
- Work in progress
  - Alarm display
  - Repository : database and server
  - Transport
- Work to be done

MSA

- Release 1.3
- Deployed on ~325 nodes at CERN
- New features:
  - Smart reconfiguration
  - Multiple transport mechanism supported
  - Self-monitoring capabilities
  - Tree-like configuration
  - Works on Solaris

Alarm display



To be released in July

Repository

- Multithreaded server being implemented
- Currently, data still stored in flat files.

- Two relational databases being tested :
  - MySQL
  - Oracle

Repository : database structure

- Database aimed at storing samples:
  - Metric identifier — WHAT
  - Target identifier — WHERE
  - Timestamp — WHEN
  - Value
- Value is very different from one metric to the other.

Repository : database structure

One table per metric

Repository : database structure

CPU load

Timestamp	Target	User	Nice	System	Idle
1022146593	Tbed023	12	30	4	54
1022146620	Tbed026	88	0	11	1
1022146653	Tbed023	15	27	2	56

Repository : database structure

Network traffic

Timestamp	Target	Interface	Read	Write
1022146593	Tbed023	lo	25	4
1022146593	Tbed023	eth0	1341	11
1022146620	Tbed026	eth1	42	168

Repository management

- Not clear what to use for subscription mechanism
- A simple ASCII protocol might be used
  - Server side already implemented, missing client implementation of C API and subscription.

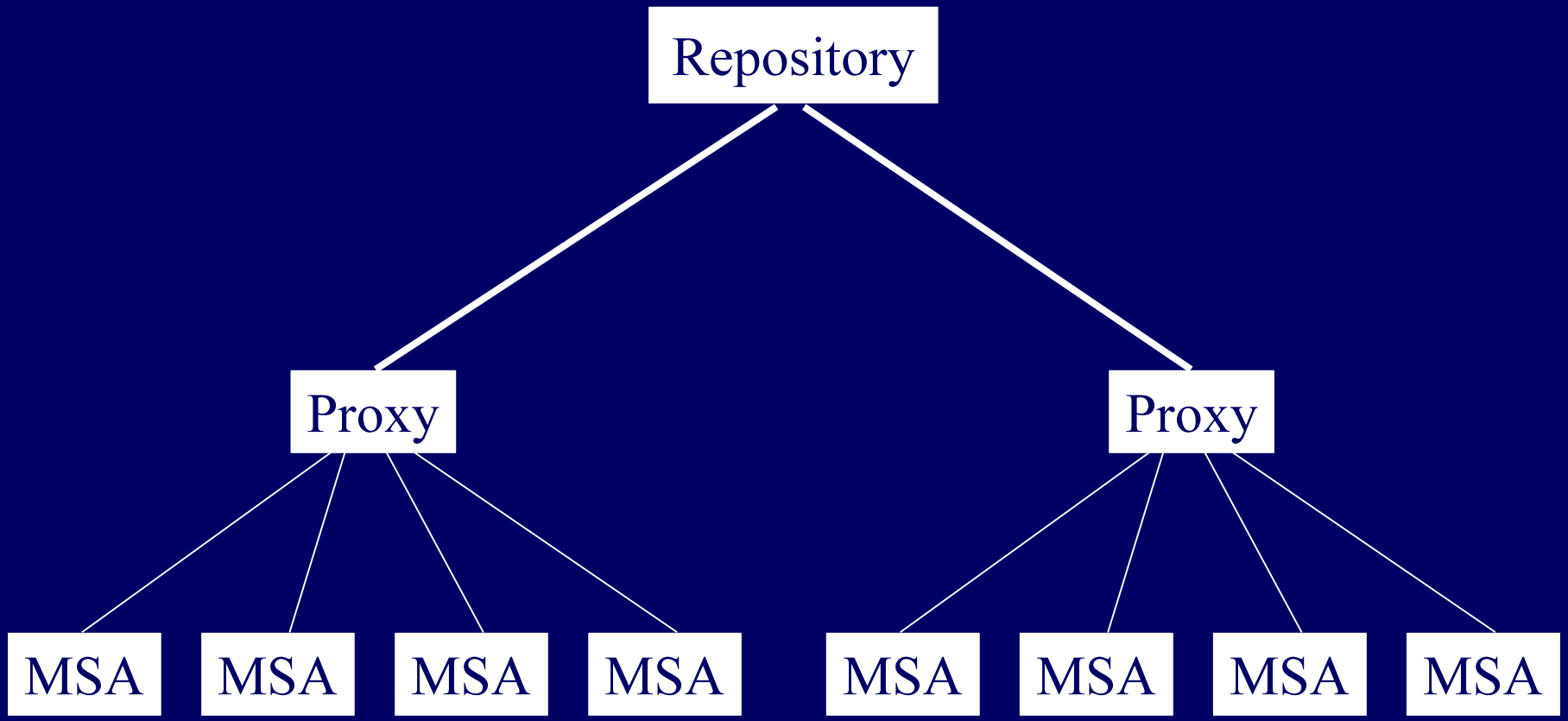
Transport

- UDP transport easy to use and deploy, but:
  - Data loss : 0.01% to 10%
  - Currently no security
  - Lack of scalability
- New transport to be released in July.

Transport

- TCP: direct connection to server not scalable.
- Possible solution: use of proxies
- Proposed transport mechanism: pull data, file transfer, proxy collector.

Transport



Transport

Repository

Proxy

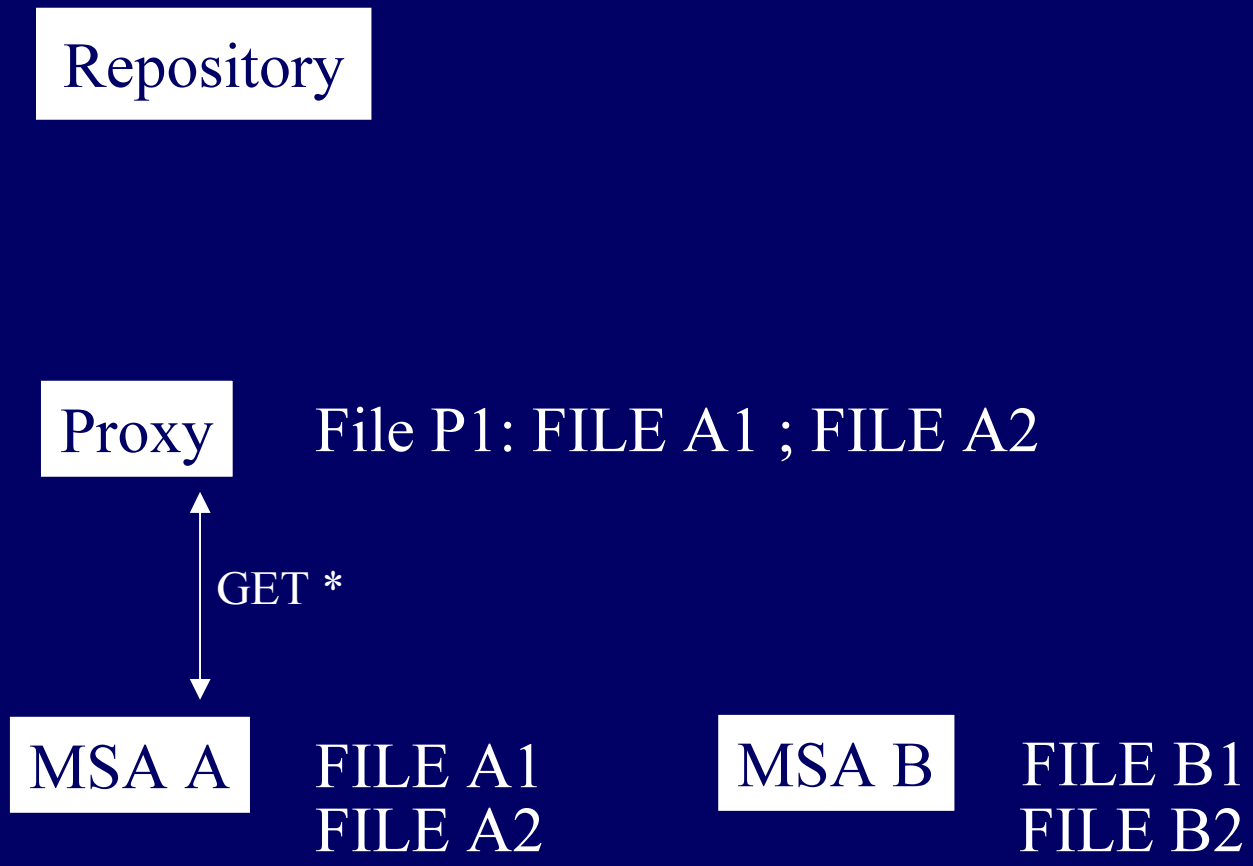
MSA A

FILE A1
FILE A2

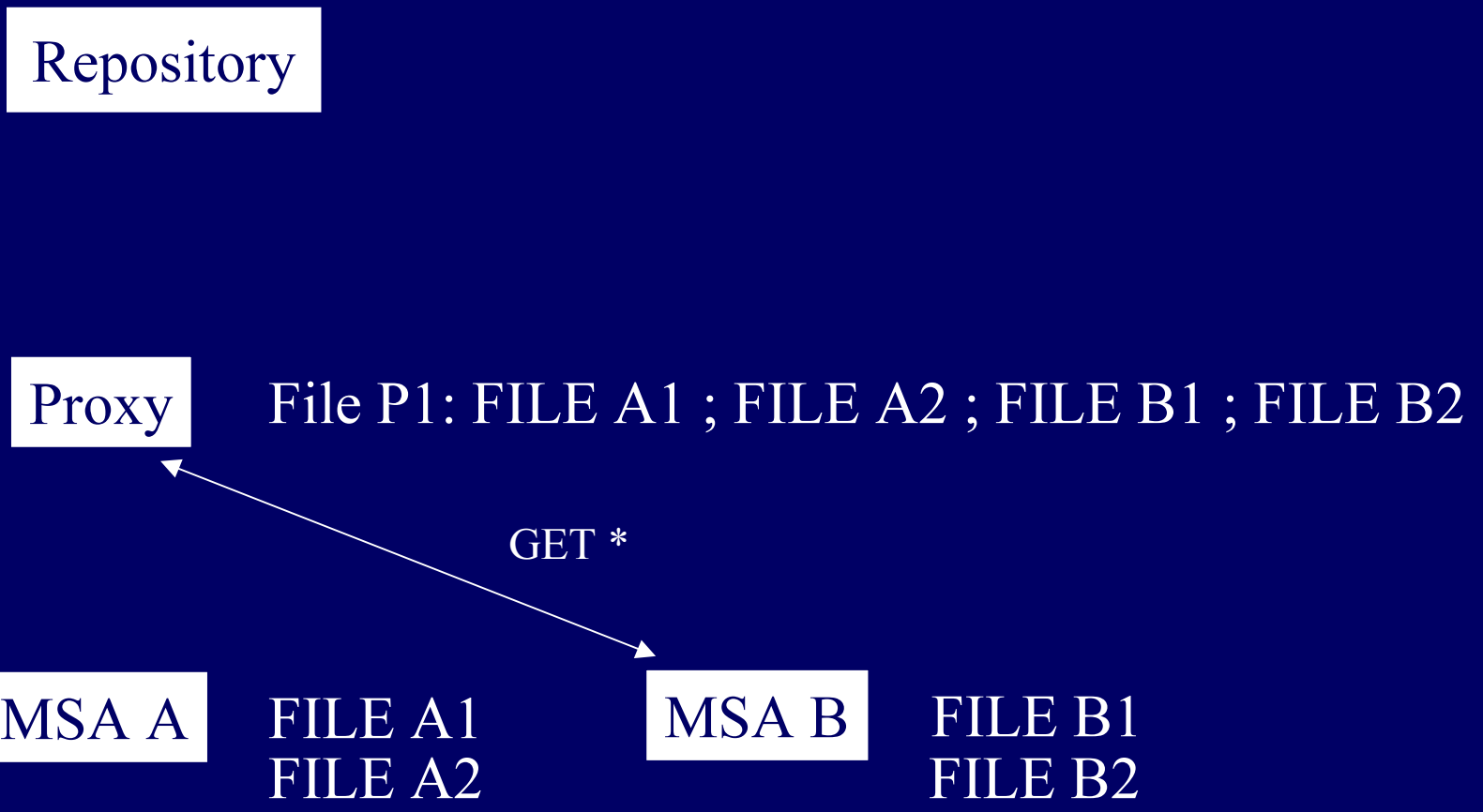
MSA B

FILE B1
FILE B2

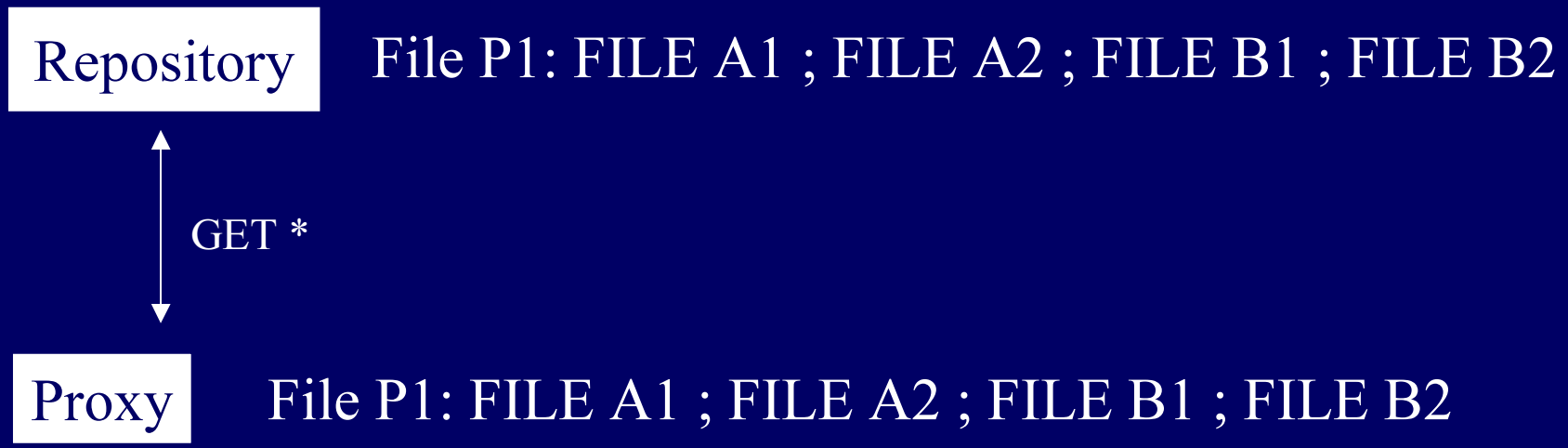
Transport


Repository
Proxy
File P1: FILE A1 ; FILE A2
GET *
MSA A
FILE A1
FILE A2
MSA B
FILE B1
FILE B2

Transport


Repository
Proxy
File P1: FILE A1 ; FILE A2 ; FILE B1 ; FILE B2
GET *
MSA A
FILE A1
FILE A2
MSA B
FILE B1
FILE B2

Transport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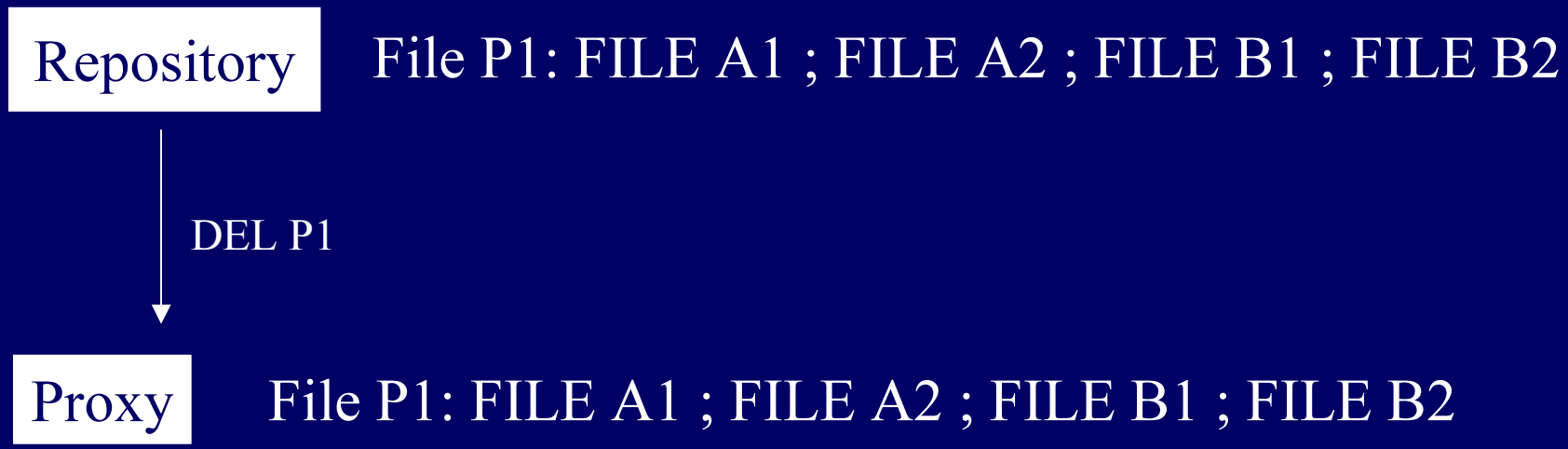
Proxy
File P1: FILE A1 ; FILE A2 ; FILE B1 ; FILE B2
MSA A
FILE A1
FILE A2
MSA B
FILE B1
FILE B2

Transport



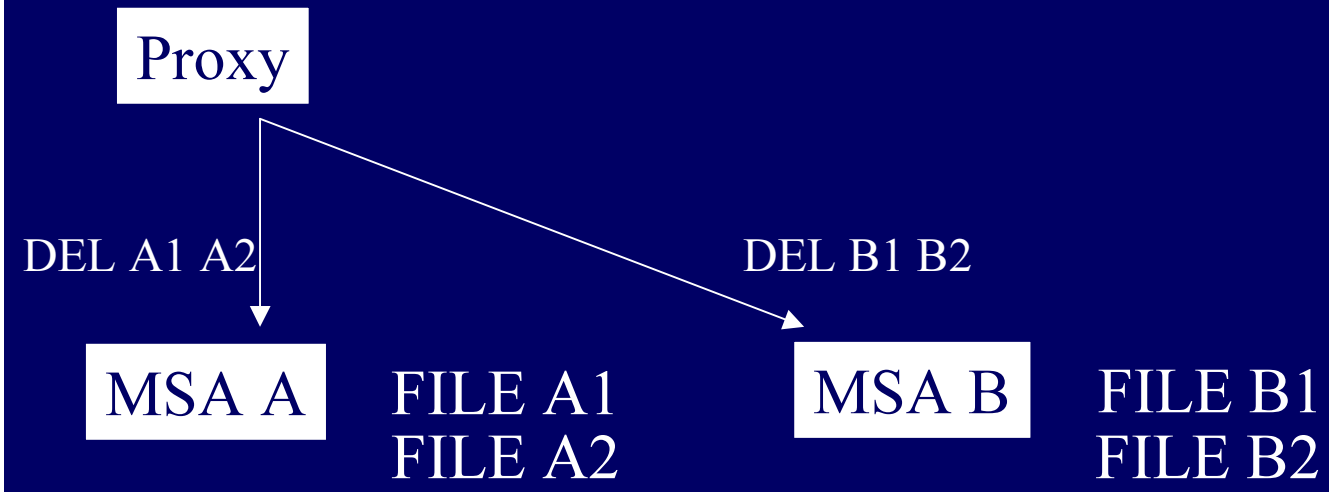
MSA A
FILE A1
FILE A2

MSA B
FILE B1
FILE B2

Transport

Repository

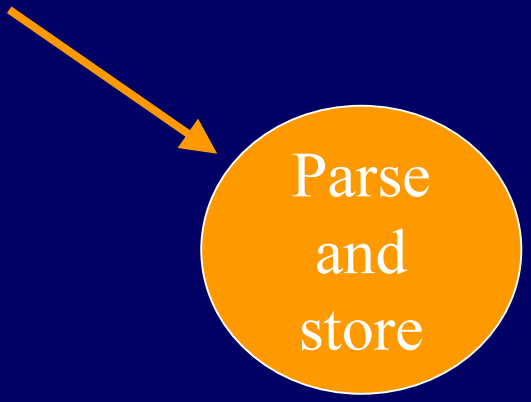
File P1: FILE A1 ; FILE A2 ; FILE B1 ; FILE B2



Transport

Repository

File P1: FILE A1 ; FILE A2 ; FILE B1 ; FILE B2



Proxy

MSA A

MSA B

Transport

- Transport safe
- Duplication of transport possible
  - Need a file index. Repository only keeps highest index. File already inserted in DB are rejected.
- Can be implemented with FTP.
  - But then polling required.
- Push/Pull possibles

Transport

- Open issue : security
  - Possible use of Grid-FTP
  - Other solutions also easy to implement
    - Tunneling, or use of wide spread libraries
  - Anyway, key distribution?

Are there any preferred method?

Work to be done

- Complete work in progress
  - Architecture defined, but implementation choices to be tested and clarified
- Integration:
  - Lcfg object
  - Sensors : what do we need?