

# XRootD SRM & Space

WLCG Pre-GDB Meeting  
CERN  
September 13, 2016

---

Andrew Hanushevsky, SLAC

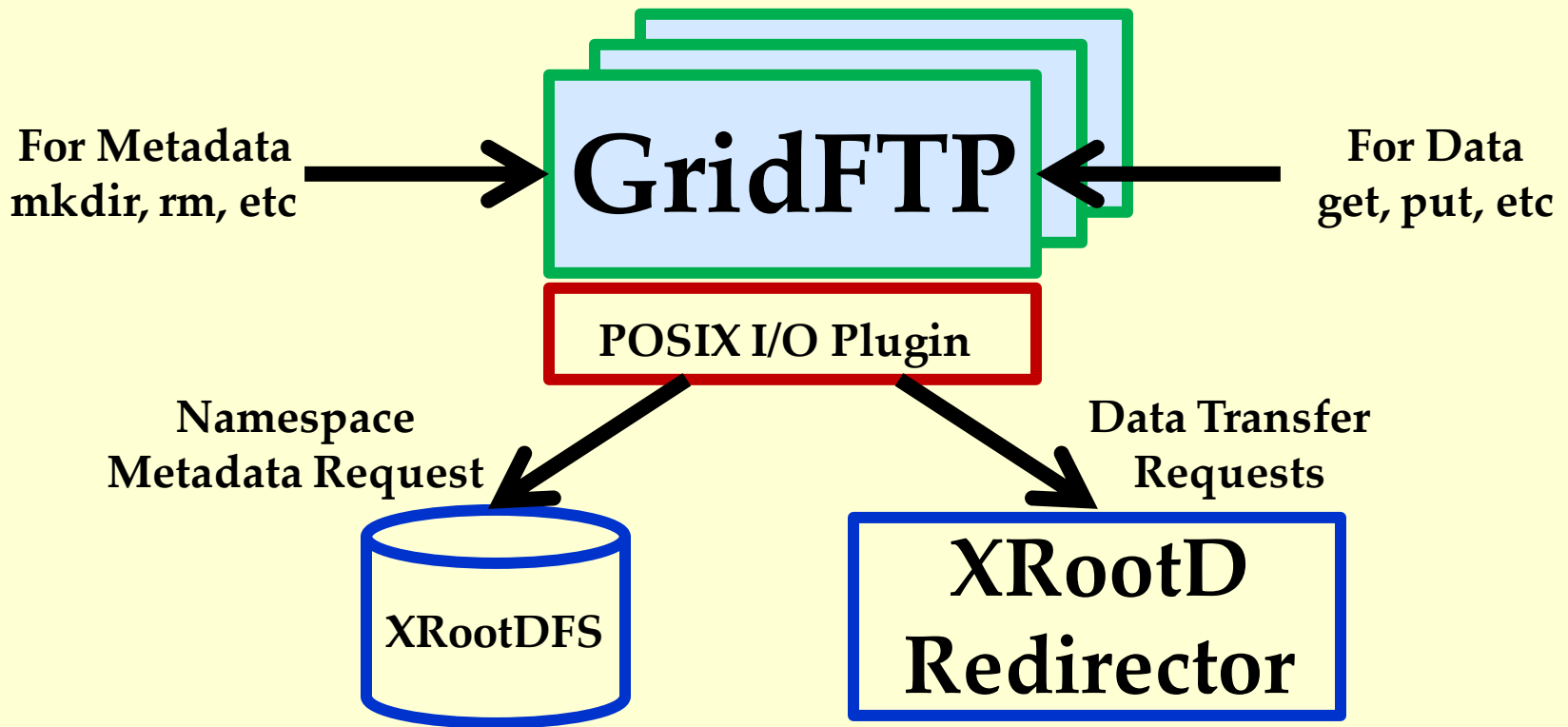
<http://xrootd.org>

# Replacing SRM

- # **XRootD** already has SRM-like features
  - These can be leveraged to replace SRM
    - However, this may be too much for many
- # Perhaps replace SRM with GridFTP
  - Very workable solution
    - Every site has GridFTP or equivalent
    - Won't address Tier 0 tape staging
      - But exceedingly few sites are in this class

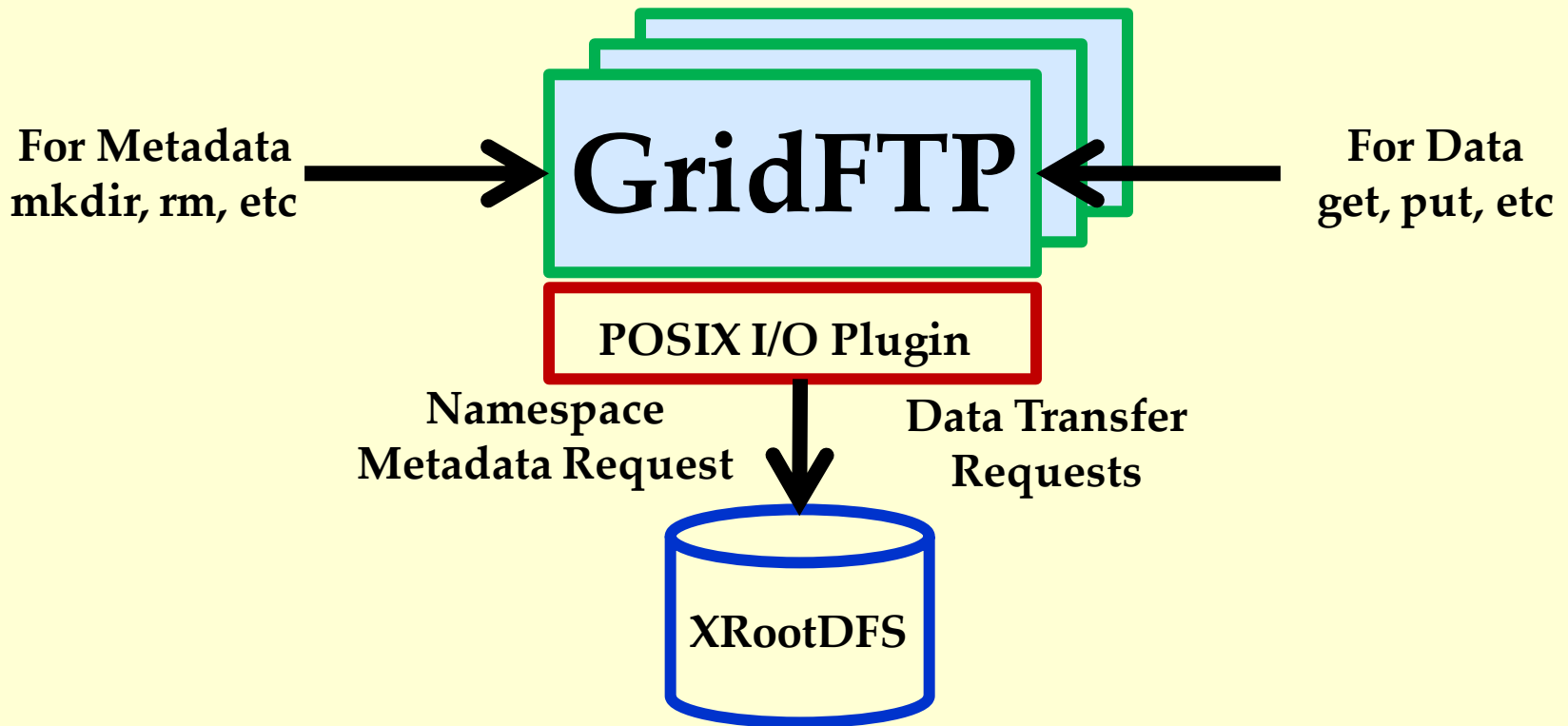
# GridFTP Example

*GridFTP can be replicated via DNS Loadish Balancing or GridFTP V2 redirection*



# Simplified GridFTP Example

*GridFTP can be replicated via DNS Loadish Balancing or GridFTP V2 redirection*



*Simpler and universal but less performance*

# Checksums

---

- # **XRootD** supports all common checksums
  - Adler32, CRC32, MD5, etc
    - A file may have multiple checksums as well
- # GridFTP POSIX DSI also supports adler32
  - Very relevant to ATLAS

# Space Reporting

- # A workable solution already in effect
  - Sites periodically create a JSON file
    - Details space usage by space token
      - Successfully used by ATLAS
      - It is very efficient in **XRootD**
  - File is fetched as needed

```
{  
  "ATLASDATADISK": {  
    "status": "online",  
    "status_message": "",  
    "list_of_paths": [""],  
    "total_space": 1950000000000000,  
    "used_space": 1753191638356992,  
    "num_files": -1,  
    "time_stamp": 1473118341},  
  "ATLASUSERDISK": {  
    "status": "online",  
    "status_message": "",  
    "list_of_paths": [""],  
    "total_space": 1800000000000000,  
    "used_space": 69118215473152,  
    "num_files": -1,  
    "time_stamp": 1473118341},  
}
```



|

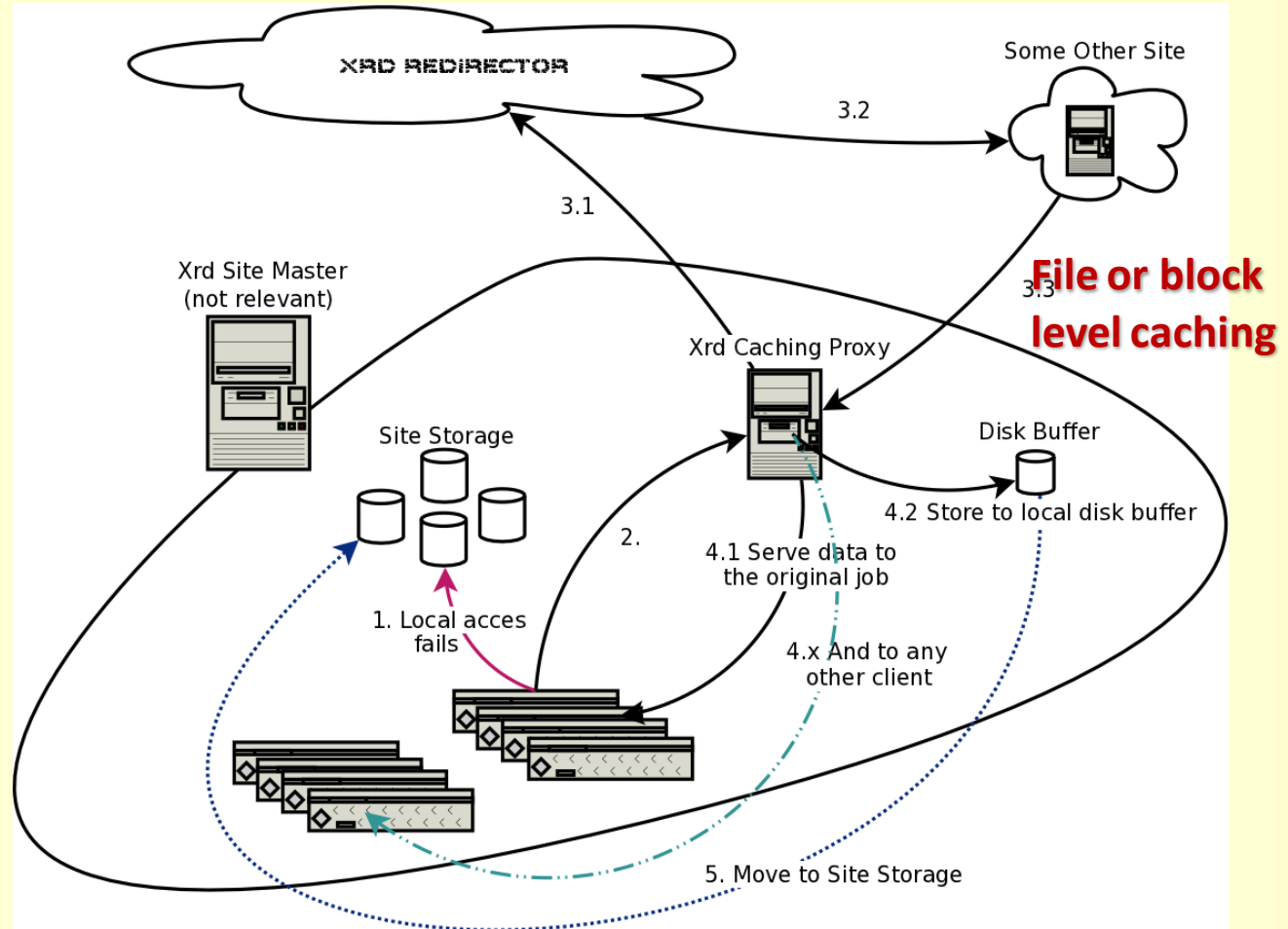
# Third Party Copy

---

- # Supported for **XRootD** to **XRootD** xfrs
  - Used by ALICE, EOS, Ceph, etc
- # Can implement universal 3<sup>rd</sup> Party
  - E.g. based on GridFTP or other transfer modes
    - Would require forwardable grid certificate

# Other News: Disk Caching Proxy

- # Developed by UCSD
  - M & A Tadel
- # Support Pacific Research Platform grant
- # ATLAS & OSG interested in deploying it
- # In stress testing now!





# Final Thoughts

---

- # **XRootD** also supports WEBDAV
  - Via HTTP plug-in
- # This could be used for space management
  - Though it seems more fleshing out is needed
    - The HTTP task force considered many issues
      - Not clear where we are on this as a clean solution