

# XRootD / Xcache Status & Plans

DOMA / Access Meeting  
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Andrew Hanushevsky, SLAC

<http://xrootd.org>

# Introduction

- # **XRootD** has an aggressive release schedule
  - Perhaps too aggressive for available FTE's
    - Release delays occur
- # Latest patch/enhancement release is 4.8.5
- # Upcoming feature release is 4.9.0
  - Currently available as a release candidate
- # Next planned major release is 5.0.0
  - Target is 2Q19 barring 4.9.0 patch releases

# XRootD 4.8.5

# No major issues except...

- **Xcache** crashes with multi-user file replicas
  - I.e. 2+ users for same file at different locations
  - This used to be rare but with Rucio it's common
- Many non-conforming HTTP issues
- Write **Xcache** doesn't really work well
  - But, we really don't support writable caches

# XRootD 4.9.0 Part 1

## # Features

- Vector write (kXR\_writev)
- Support xrdcp stream specification via TPC
- xrdcp cross protocol copies (xroot <-> HTTP)
- Allow client to force server disconnect
- Enhancements to ease containerization
- Pipelining dataflow API in the client
- Redirect trace back
- HTTP Macaroon support
- Deferred close requests

# XRootD 4.9.0 Part 2

## # Features

- Subject Alternative Name (SAN) support
  - X509 and RFC 2818 compliance
- Full delegated proxy support
  - Congruent with RFC 2818
    - A rather convoluted interaction with DNS usage
      - Largely on how sites register DNS names
  - Proper security requires reissuance of certs
  - Currently a very contentious feature
- TPC support for delegated proxies

# XRootD 4.9.0 and Xcache

- # Only one significant feature
  - Support Xcache ingest via HTTP
- # Only one significant bug fix
  - Fix SEGV when reading a file from multiple sources.
- # Yet, here we are looking at RC6
  - This has been a difficult release!
    - First RC 4Q18, official release likely end of 1Q19

# XRootD 5.0.0 Part 1

## # Features

- User settable file extended attributes
  - Restricted to user namespace
- Full TLS support (i.e. xroots)
- Extended stat information
  - Support for uid/gid tracking
- Trivialize ofs plug-in wrapping
  - Avoids disabling **XRootD** performance features
- Allow checksum check on close()
  - New request code: kXR\_closev

# XRootD 5.0.0 Part 2

## # Features

- State full redirects (i.e. on read)
  - Redirect to local data source
    - Implements HPC RDMA data access
- Remove old client
  - At least no longer compiled
    - This impacts ALICE
- Prepare for TPC version 3
  - Add getFile() & putFile() ofs APIs
    - Set stage for safe SciToken support
    - Compliance with **XRootD** security architecture



# XRootD 5.0.0 and Xcache

## # Only one feature

- Integrated monitoring interface for Xcache

## # Things we are not considering

- Proxy delegation for Xcache requests
  - Too many security implications

# Conclusion

- # **XRootD** has a plethora of requests
  - Current LHC experiments
  - New experiments
    - E.g. Dune and LSST
  - Other systems based on **XRootD**
    - CTA, DPM, EOS, StashCache, QSERV, Xcache ...
- # It's difficult to prioritize all of them
  - Regular collaboration meetings may help
    - Watch xrootd-l for announcements!