



EUROPEAN MIDDLEWARE INITIATIVE

# The new FTS – proposal

May 5, 2011

## Why new FTS?

- Architectural limits reached
- Difficult to maintain and improve
- Based on static channel model
- Uses Oracle backend
- Overlaps with other projects
- Requires complex configuration
- Could handle resources better

# Schedule + new features

- Step 1: end of 2011
  - Remove channel model, more transfer protocols (HTTP), replace Java WS, new config, support MySQL?
  - Prototype!
- Step 2: end of 2012
  - Messaging, transfer optimization
  - LHC shutdown starts
- Step 3: middle of 2013
  - Merge FTS and LCG\_Util
- We need to set up priorities

# Channel model

- Reflects hierarchical Tier model
  - Not scalable in Tier2 domain
- Static properties set by admin
  - SE pairs, mutual agreement
- Channel groups, star channel: still not optimal
- SE and network load not taken into account
- Dropping channel model → dropping FTS architecture
  - Users welcome the idea

# Channel model - solution

- Take SE into account
  - Need to discuss it with SE providers
- Take network load into account
  - Collaboration with OSG
  - With DYNES?
- Step 1: no channels
  - SE-s are configured on FTS side
  - Network utilization measured by FTS
- Step 2: using the new interfaces
  - Resource handling: heuristics based on performance of last transfers
  - Ultimately, no configuration needed?
- Open questions. Fair share: how? Control throughput?

# Transfer protocols, WS

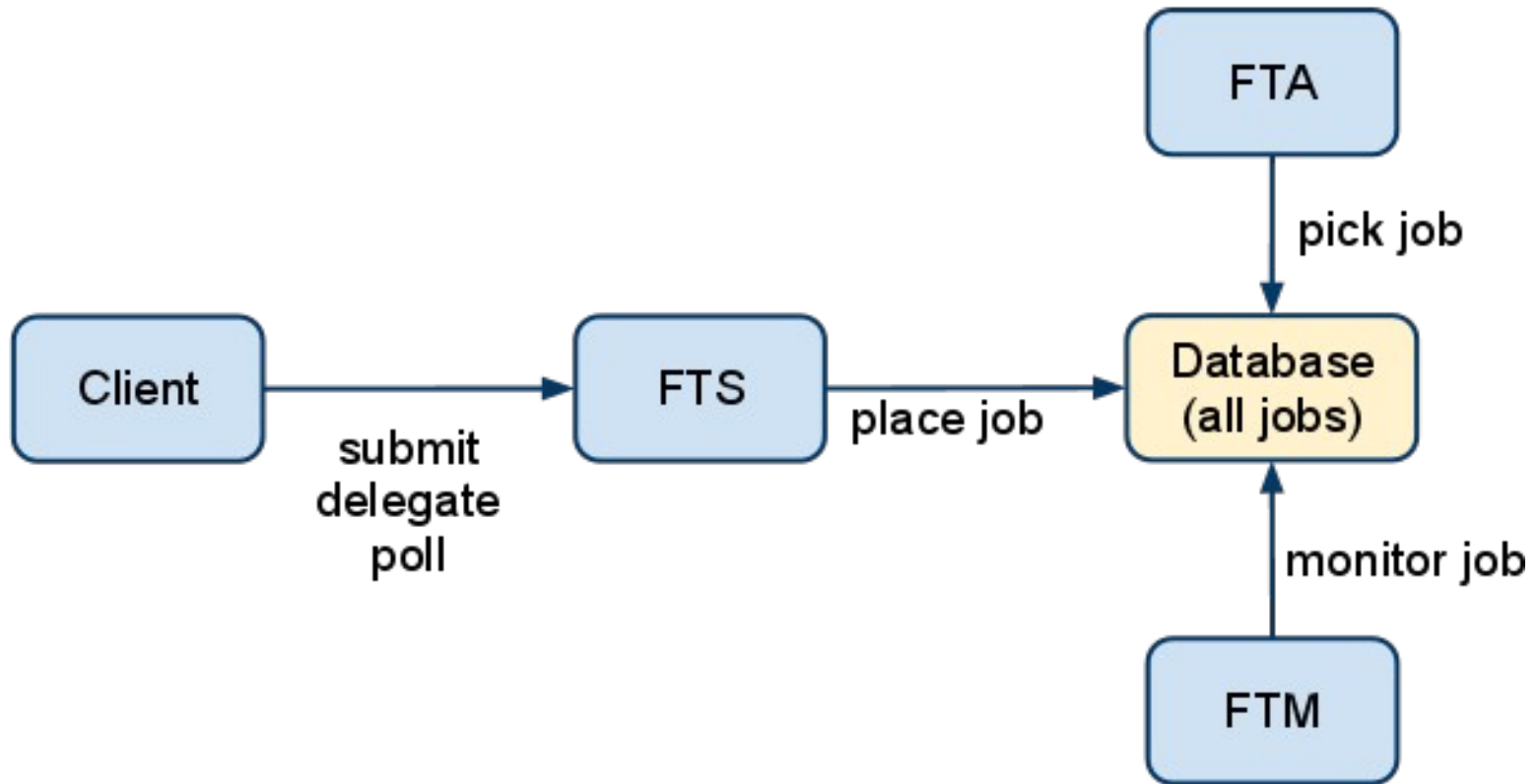
- Currently, SRM + gridFTP
  - LCG\_Util supports more
  - Step 1: Transfer plugins
    - SRM, gridFTP
  - Step 2: HTTP, XRDCP
    - Should HTTP come earlier?
- C++ client ↔ Java web service
  - Duplicates, knowledge of Tomcat, etc. needed
- Solution: everything in C/C++
  - Step 1: FTS in C++, based on new generic components
  - Step 2: No web service?

# Persistency, configuration

- Using Oracle only
  - Problem for Tier2 sites: no license, etc.
  - FTS deployed in T2-s is not a hot use case now - later?
- Step 1: FTS on top of generic DB access
  - Database access plugins
    - MySQL, ProgreSQL implementation if needed
    - Clear architecture
  - Simpler schema (no channels)
  - Store only active jobs
  - Configuration goes to database
    - Simple CLI, query and (re)configure remotely
- Step 2: Job queue based on messaging
  - Global FTS queue? Transparent FTS-es? Monitoring?
  - Problem with delegation

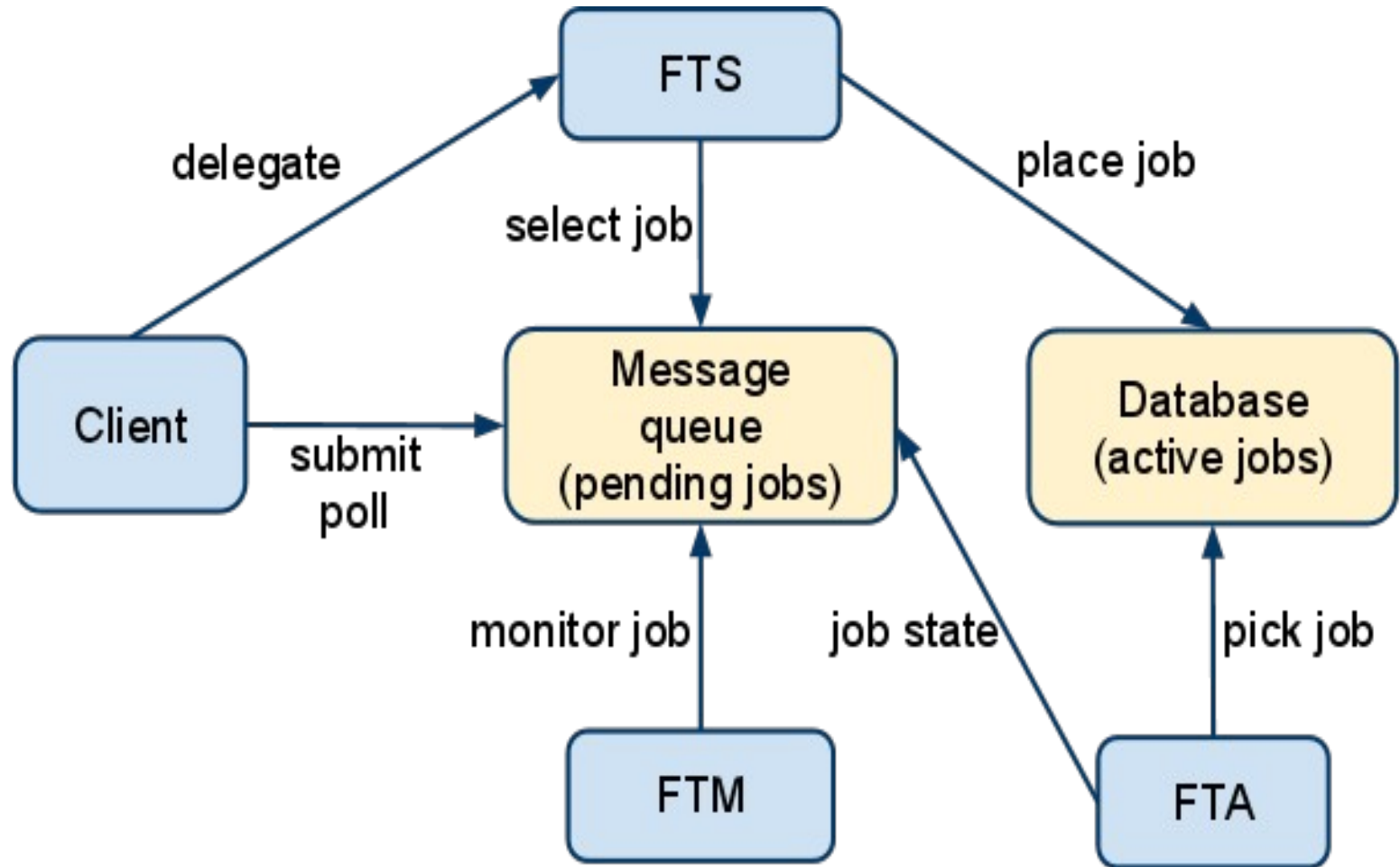


# File Transfer Service now





# New FTS



# Resources

<https://svnweb.cern.ch/trac/glitefts>

*Jean-Philippe Baud*

*Oliver Keeble*

*Zsolt Molnar*

*Michail Salichos*

*+ our students and short term  
visitors*