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GlideinWMS

Marco Mambelli, Dennis Box, Bruno Coimbra, Marco Mascheroni
Stakeholders Meeting
January 19, 2022

Agenda

- Status update

- Important changes

- Project Progress and Roadmap

- Developers' spotlight

- Stakeholders Reports or Presentations

- Roundtable

- Open discussion

- ASK

- - stakeholders:

- -- ask about TMP dir

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Project status updates

- v3.7.6 coming soon in OSG upcoming (OSG 3.5)

- v3.9.4 coming soon (Python 3) in OSG 3.5 contrib and OSG 3.6 production

  – Tested in OSG 3.6 w/o GSI

- Moving to GitHub

- Project effort decreased

  – 1.65 FTE

  – Management and 4 developers

  – Everyone involved also in other projects: Factory Ops, HEPCloud, Jobsub, FIFE support, Enstore

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Communication

- Communication
  - Please review periodically your tickets/priorities
    https://cdcvs.fnal.gov/redmine/projects/glideinwms/wiki/RoadmapSummary
  - How can we further improve communication
    - Should we participate in any other meetings?
    - Communicating priorities?

- Redmine/GitHub
  - Working on RPM builds in GitHub
  - Redmine still under restricted access, move to GitHub after 3.7.6
    - GitHub as main Git repository
    - Reviewing issues and migrating open ones to GitHub
      - Will require significant effort (move, ongoing more ticket maintenance)

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Important changes

- 3.7.6
  - Make sure that the condor configuration changes are applied (look for possible .rpmnew files and merge them)
  - Configuration changes to provide and use tokens
- 3.9.4
  - Same as 3.7.6
  - New Glidein and Frontend RPMs. Upgrade will work

- And please review periodically your tickets/priorities
  https://cdcvs.fnal.gov/redmine/projects/glideinwms/wiki/RoadmapSummary

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Release series

- 3.7/3.8 main release in OSG 3.5
  - OSG 3.5 upcoming repo
  - Python 2
  - Support GSI and JWT (with proper HTCondor)
  - OSG 3.5 EOL in February 2022

- 3.9 main release in OSG 3.6
  - OSG 3.5 contrib repo and OSG 3.6 (production)
  - Python 3
  - No GSI in OSG 3.6
  - Updates on Python 3 adoption?

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3.7/3.8 Series (main, Python 2) - Dennis Box

- GlideinWMS 3.7.6
  - Release candidate 2 released in osg-upcoming-development
  - Main goal - Token Auth
    - Support token-only, GSI only and token+GSI configurations
    - Explicit configuration (choose GSI vs Tokens)
    - Clear (main) documentation
    - No errors when configured correctly
    - Helpful errors when misconfigured
  - Other goals
    - Setup CVMFS via cvmfs exec when available
    - Various glidein_startup script improvements

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3.7/3.8 Series (main, Python 2) - Dennis Box

- GlideinWMS 3.7.6
  - New in rc2:
    - Auth tokens date validity checked
    - OSG_autoconf allows override yaml configuruation
  - Bug Fixes (since rc1 release)
    - condor_chirp no longer fail when python2 used in job
    - IDTOKEN issuer change: COLLETOR_HOST -> TRUST_DOMAIN
    - proxy was failing to renew when hybrid SCITOKEN/GSI auth used
    - Fixes to Token Auth for Bosco CEs
    - glidein clears LD_LIBRARY_PATH prior to starting HTCondor
    - glidein no longer sets JOB_TOKENS env if not needed (almost always)
    - OSG_autoconf
      - automatic assignment of submit attributes works
      - common entry fields implemented
      - now possible to append instead of replace values

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3.7/3.8 Series (main, Python 2) - Dennis Box

- Outstanding Tasks
  - Token auth does not yet work for AWS, GCE
  - Better documentation
  - Use of tokens for CE collector (waiting on HTCondor-CE to provide token, HTCondor-735)

- Coming soon (3.7.7 or 3.8.0)
  - Complete token support (CE collector, clouds)
  - Support HTCondor native tarball and config.d

- Coming next
  - De-support GSI, eliminate from code and documentation
  - Better support of CVMFS and Singularity on worker nodes where it is not pre-installed

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3.9 Series (Python 3) Status and plans – Bruno C

- GlideinWMS 3.9.4 RC4 out
  - Includes all fixes and features from the 3.7.6 release
  - Adds support for CentOS 8
  - Adds two new Frontend RPM packages: vofrontend-libs and vofrontend-glidein
    - The new RPMs are meant to facilitate the creation of frontend-like applications
  - Updates libraries for compatibility with PyYAML 6.0
  - Fix string encoding issues affecting the cat log scripts
  - Updates license to Apache 2.0

- The final release will be out at the end of January and will be available for RHEL7 and RHEL8 on OSG 3.5 and OSG 3.6

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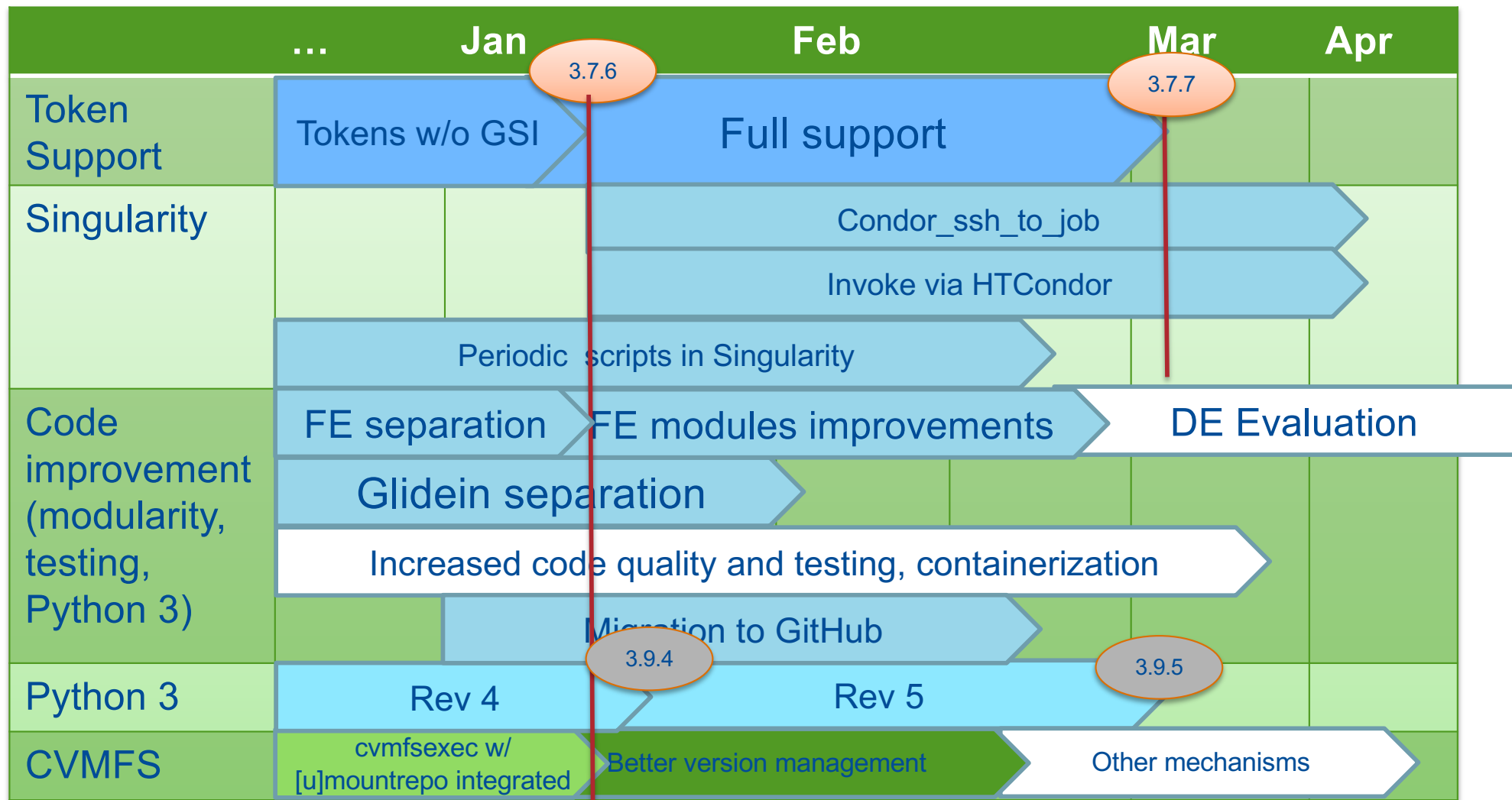# Bruno Coimbra - status

- Current Focus
  - Finalizing tests and releasing GlideinWMS 3.9.4
  - Working on the integration of GlideinWMS and the GlideinWMS HEPCloud Module
  - Improvements to the glidein_startup script.

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Marco Mascheroni

- Focus has been on testing and enabling usage of SCITOKENS for CMS
    - Few bugs found and fixed
    - Ready to start transition with 3.7.6

- Also worked on enabling factories to use native condor tarballs
    - Avoid the need of running the "create_condor_tarball" script that creates a lighter tarball (condor tarballs are not that big nowadays)
    - Allow factory operation a simpler condor tarball management

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Development Roadmap overview

	...	Jan	Feb	Mar	Apr
Token Support		Tokens w/o GSI	Full support		
Singularity			Condor_ssh_to_job		
			Invoke via HTCondor		
		Periodic scripts in Singularity			
Code improvement (modularity, testing, Python 3)		FE separation	FE modules improvements	DE Evaluation	
		Glidein separation			
		Increased code quality and testing, containerization			
		Migration to GitHub			
Python 3		Rev 4	Rev 5		
CVMFS	cvmfsexec w/ [u]mountrepo integrated	Better version management		Other mechanisms	

3.7.6   3.7.7   3.9.4   3.9.5

| Dennis Box | Bruno Coimbra | Marco Mambelli | Marco Mascheroni | Interns | Not assigned |

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Roadmap in detail – Plans for 3.8 / 3.7.6 (mid Nov)

https://cdcvs.fnal.gov/redmine/projects/glideinwms/roadmap

- Complete token authentication (OSG/CMS) – Dennis
    - Improve token implementation
    - Discover and complete missing parts (CE collector, cloud)
- Singularity support (CMS/OSG/Fermilab) – Marco Mambelli
    - Simplified code by Singularity invocation via HTCondor
    - Simplified troubleshooting by allowing ssh to job in Singularity
    - Ongoing collaboration w/ OSG – Mats
- Ease operations
- Containerization (OSG/Fermilab/FactoryOps)
    - Factory and Frontend in containers
    - Ongoing collaboration w/ Fermilab/OSG/FactoryOps – Shreyas, Diego

Roadmap: modularity and code quality (HEPCloud/OSG)

- Improvements of Python 3 version - Bruno
  - Remove additional obsolete code

- Glidein as 3rd component (DE, containerization) – Bruno
  - Separate packaging
  - Easier and more robust support for custom scripts

- Improve modularity of Frontend (DE) – Bruno, Marco Mambelli
  - Configuration
  - Business logic
  - Communication w/ Factory

https://drive.google.com/file/d/1KTThCsx4ZGjxwqe-gfZtonT3eGJamPed/view?usp=sharing

- Integration with HEPCloud/DecisionEngine (HEPCloud/CMS)

- Expand, simplify and automate testing

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Summary

- Development focus
  - Frontend modularity
  - Tokens
  - GitHub migration

- Expect more development also for
  - Glideins
  - Singularity

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Extra Slides

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Reference Slides

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Move to single user Factory

- Starting from release v3.5
- All Glideins will run using the factory user, no more separate users per-VO
  - Currently different VOs (Frontend groups) can use different users to improve isolation
- It is safe
  - The HTCondor team assured us that once we remove Globus GRAM support, the other Gridmanager clients cannot decide which file to retrieve from the Factory (it is HTCondor on the Factory deciding what to send), so will be safe to run as a single user
- The directory structure will remain the same
  - Only the ownership will change
  - Your log files will be in the same place
- Migration:
  - GWMS will provide instructions and tools to ease it: change the files ownership, …
  - if you use HTCondor < 8.7.2 you can upgrade GWMS when convenient for you
  - if you need HTCondor >= 8.7.2 (including 8.8) we recommend to upgrade
    - but if you want to delay the change to 3.5 you can still do that if you are comfortable in using the glideinwms-root-switchboard RPM that we built and tested, but is not supported by OSG.

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Pull Job

NOTE:
Frontend can talk to multiple factories
Factory can serve multiple frontends

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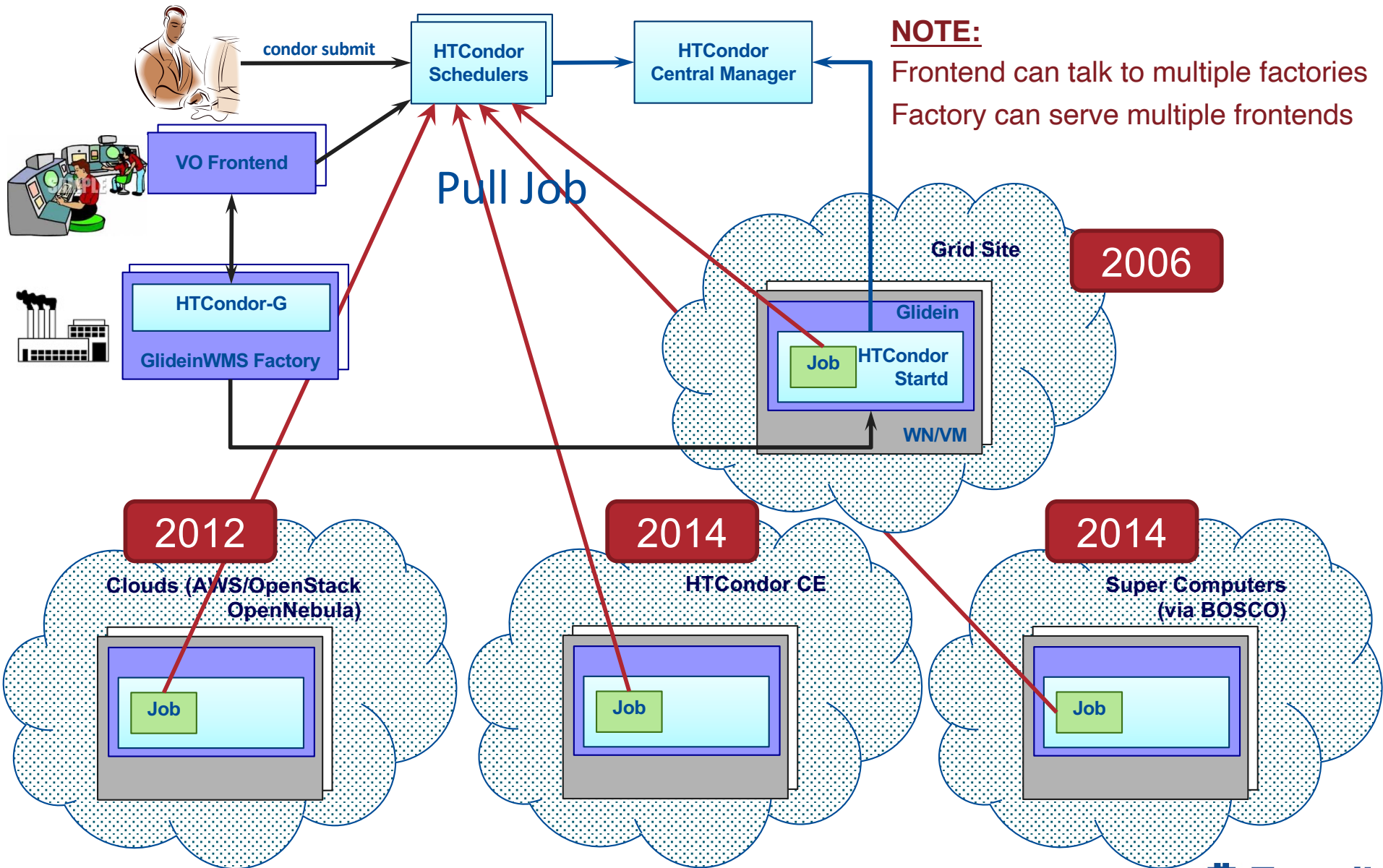
Quick Facts: Releases & Support Structure

- Releases
  - Issues tracked in redmine issue tracker
    - https://cdcvs.fnal.gov/redmine/projects/glideinwms/issues
    - Categorized and prioritized based on impact, urgency and requester
      - Issues are now associated with respective stakeholders
    - Issues are assigned based on developer's expertise and other workload
    - Roadmap for upcoming releases available in redmine (See reference slides)
  - SCM
    - All releases are version controlled and tagged
    - http://glideinwms.fnal.gov/doc.prd/download.html
  - Release notes & history
    - http://glideinwms.fnal.gov/doc.prd/history.html
- Support
  - Entire development team is responsible for support

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Quick Facts: Project Status & Communication Channels

- Project meeting: Wednesdays 10 – 11 am
  - Technical discussions & status updates
  - Regular stakeholder participation
  - Contact Parag Mhashilkar if you need invite for this meeting
- Stakeholders Meeting every two months
- Project Management
  - Project Status reported monthly at CS Project status meetings

Area of Interest	Mailing Lists
Support	glideinwms-support@fnal.gov
Stakeholders	glideinwms-stakeholders@fnal.gov
Release Announcements	glideinwms-support@fnal.gov cms-dct-wms@fnal.gov glideinwms-stakeholders@fnal.gov
Future Release plans	See next slide
Discussions	glideinwms-discuss@fnal.gov
Code commits	glideinwms-commit@fnal.gov Twitter Tag: @glideinwms

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Tracking Releases in Redmine

1. Visit the redmine issues tab for GlideinWMS or the URL

2. Click custom query for stakeholder or version roadmap

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