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## **GlideinWMS**

Marco Mambelli

Stakeholders Meeting

November 11, 2020

# Agenda

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- Status update
- Communications
- Important changes
- Project Progress and Roadmap
- Developers spotlight
- Stakeholders Reports or Presentations
- Roundtable
- Open discussion

# Project status updates

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- v3.6.5 is in OSG production (OSG 3.4 and 3.5)
- v3.7.1 in OSG upcoming testing (OSG 3.5)
- v3.9.0 in OSG contrib (Python 3)
  
- One new release in the pipeline
  - v3.9.1 (Python 3) in 2 weeks
  
- Project effort decreased
  - 2.15 FTE
  - Management and 4 developers
  - Everyone involved also in other projects: Factory Ops, HEPCloud, Jobsub, FIFE support, Landscape

# Communication

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- 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?
- Support
  - Known issues for 3.6.5
    - Authentication problem using HTCondor 8.9.x [#25068]
  - Known issues for 3.9.0
    - Token Auth not working correctly
    - Multiple glideclident classad advertised to the Factory

# Important changes

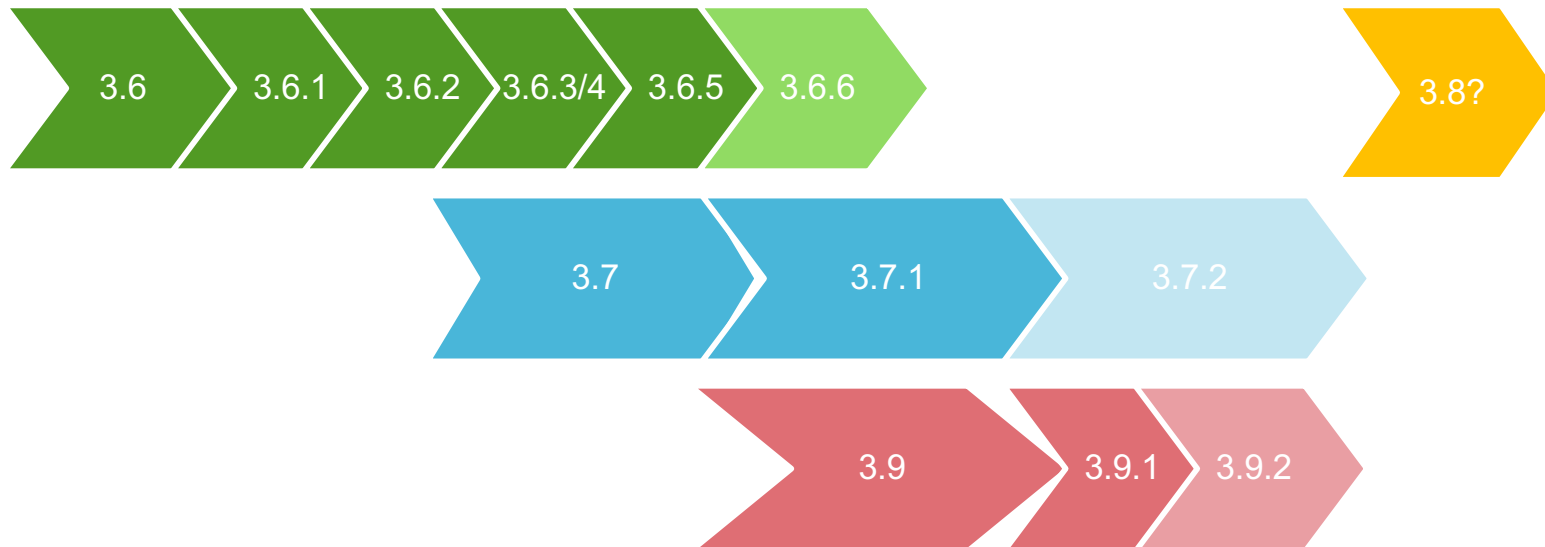
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- 3.7.1
  - Look for HTCondor configuration changes (.rpmnew in /etc/condor/config.d/)
- Scheduled for 3.7.2
  - Drop GExec support
- Planned for 3.7.2
  - Default to shared port in User Collector

# GlideinWMS Releases

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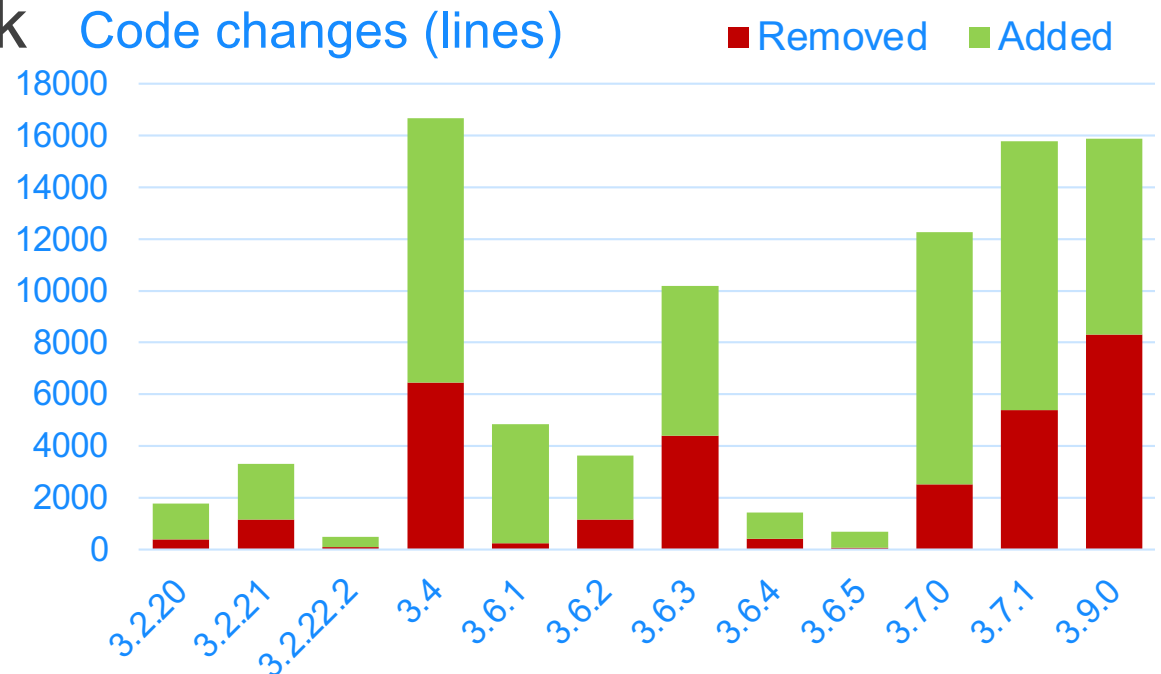
- 3 release series
  - Production, also in OSG 3.4, supporting CREAM Ces [CMS]
  - Development – more disruptive changes (tokens, logging) [OSG]
  - Python 3 [HEPCloud]
- Fixes in the lowest possible series
- Features propagated only to greater series

# Coming next: Focus on code quality and usability

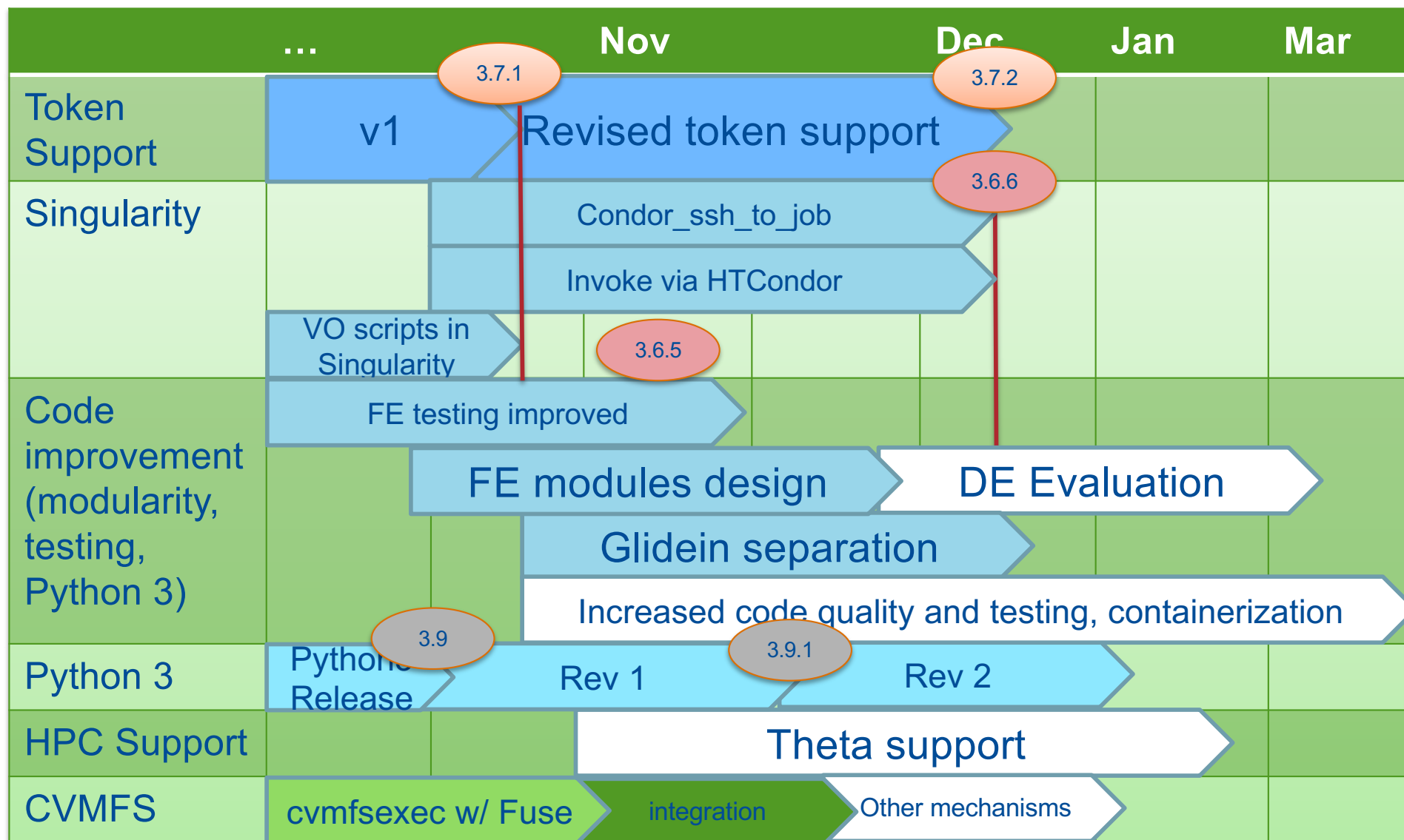
- Major changes in the last releases
  - Update the HTCondor configuration
  - New major features, check the documentation, ask
  - There could be changes in
  - Lines removed > lines added in v3.9

- We want your feedback

- Usability
- Behavior
- Support adoption of 3.7.x and 3.9.x



# Development Roadmap overview



Dennis Box
Bruno Coimbra
Marco Mambelli
Marco Mascheroni
Interns
Not assigned





# Roadmap in detail

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

- Ease operations
- Use of token authentication (OSG) – Dennis
  - Support and cleanup / refactoring of credentials handling
- Singularity support (CMS/OSG/Fermilab) – Marco Mambelli
  - Work on sites without Singularity or CVMFS installed – Dave, Namratha
  - Simplified code by Singularity invocation via HTCondor
  - Simplified troubleshooting by allowing ssh to job in Singularity
  - Ongoing collaboration w/ OSG/UCSD – Mats, Edgar
- Containerization (OSG/Fermilab/FactoryOps)
  - Factory and Frontend in containers
  - Ongoing collaboration w/ Fermilab/OSG/FactoryOps – Shreyas, Farruck, Diego, Edgar
- Leadership Computing Facilities support (HEPCloud/CMS)

# Roadmap: modularity and code quality (HEPCloud/OSG)

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- Improvements of Python 3 version - Bruno
  - Better code structure and packaging
  - Remove additional obsolete code
- Glidein as 3<sup>rd</sup> component (DE, containerization) – Marco Mmb
  - Identify Glidein functions
  - Separate packaging
  - Easier and more robust support for custom scripts - Bruno
- Improve modularity of Frontend (DE) - Marco Mambelli
  - Configuration
  - Business logic <https://drive.google.com/file/d/1KTThCsx4ZGjxwqe-gfZtonT3eGJamPed/view?usp=sharing>
  - Communication w/ Factory
- Integration with HEPCloud/DecisionEngine (HEPCloud/CMS)
- Expand, simplify and automate testing

# Dennis Box

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- 3.7.1 – completed, in osg-upcoming-development
- 3.7.2 - development in progress
  - Better configuration for token auth
    - Give frontend ops ability to override token defaults
    - Refactor to rid logs of spurious GSI errors when token auth used
  - Better configuration for remote logging
    - Remote log endpoint and auth token should be able to be passed from frontend

# Bruno Coimbra

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- GlideinWMS migration to Python 3
  - The GWMS Frontend migration is complete
    - We have a working GlideinWMS running in Python 3
    - The new version is available as GlideinWMS 3.9 on osg-contrib
    - There is a known bug causing frontend classads to show up multiple times
      - This does not affect the factory or frontend functionality
- Current Focus
  - Improvements of Python 3 code
  - Allow VO scripts to run at different times during the Glidein lifetime

# Marco Mascheroni

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- Added protection to OSG\_autoconf to prevent failures when a CE disappears from the OSG Collector
  - Requested by factory operation since it was making the use of OSG\_autconf hard in production
  - A new yaml file for missing CEs is created with the CEs that are in the whitelist but disappeared from the collector
  - Data taken from previous saved yaml
- OSG\_autoconf now supports GPU entries and whole node entries
  - In preparation for [SOFTWARE-4177](#) when both settings will be available for admins in HTCondor-CE configuration files
- Fixed [bug](#) related to *intelligent idle glideins removal*
  - The mechanism is being tested by CMS to replace the old blind removal after a pilot is idle for one hour
  - The bug was hitting entries where idle pilot limit was reached (the frontend pressure is adjusted to 0 by the factory in that case)

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# Extra Slides

# Upcoming new features and fixes (production)

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- 3.6.5
  - OS independent file transfer via “pychirp” (condor\_chirp) integrated inside and outside Singularity (OSG/CMS)
  - Handling of Environment variables in Singularity (OSG/CMS)
    - Better default with cleaner environment
    - Easy variable groups
  - Support for RHEL8 worker nodes (OSG)
  - Improved Factory operation (Factory Ops)
    - Easier configuration and file handling
  - Improved automation and testing:
    - Script to verify that all release tickets have been merged
    - API Documentation via Sphinx and tox
    - TravisCI linked to the GitHub repo to run unit tests
    - Shell linting and unit tests via BATS
    - Better support of Python linting and unit tests in Python 2 and 3
  - Dropped tar ball installation
  - Fix condor\_chirp also when only Frontend or Factory are updated
  - Fix HEPCloud glidein submission problems (insufficient number and ability to disable expiration)

# Upcoming new features and fixes (development)

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- 3.7.1 – November 3
  - Fixed bugs in 3.7
    - No need to touch file
    - Tested and working w/ HTCondor 8.9.9
    - Building correctly HTCondor tarballs w/ IDToken support
    - Reliable use of IDTokens
  - Glidein submission to sites using SciTokens and WLCG tokens (OSG)
  - Factory and Frontend authenticating via HTCondor IDToken
  - Run custom (setup) scripts in Singularity



# Upcoming new features and fixes (Python 3)

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- 3.9.0 – September 8
  - Includes 3.6.3 and 3.7 (3.7.1.rc3) fixes
  - Python 3 code
    - Challenging conversion of the persistency modules (custom dictionaries w/ attributes)
    - Less forgiving (None vs empty strings)
  - Code simplification
    - Replacement of custom components with standard ones, e.g. OrderedDict, subprocess utility functions
  - Improved code documentation

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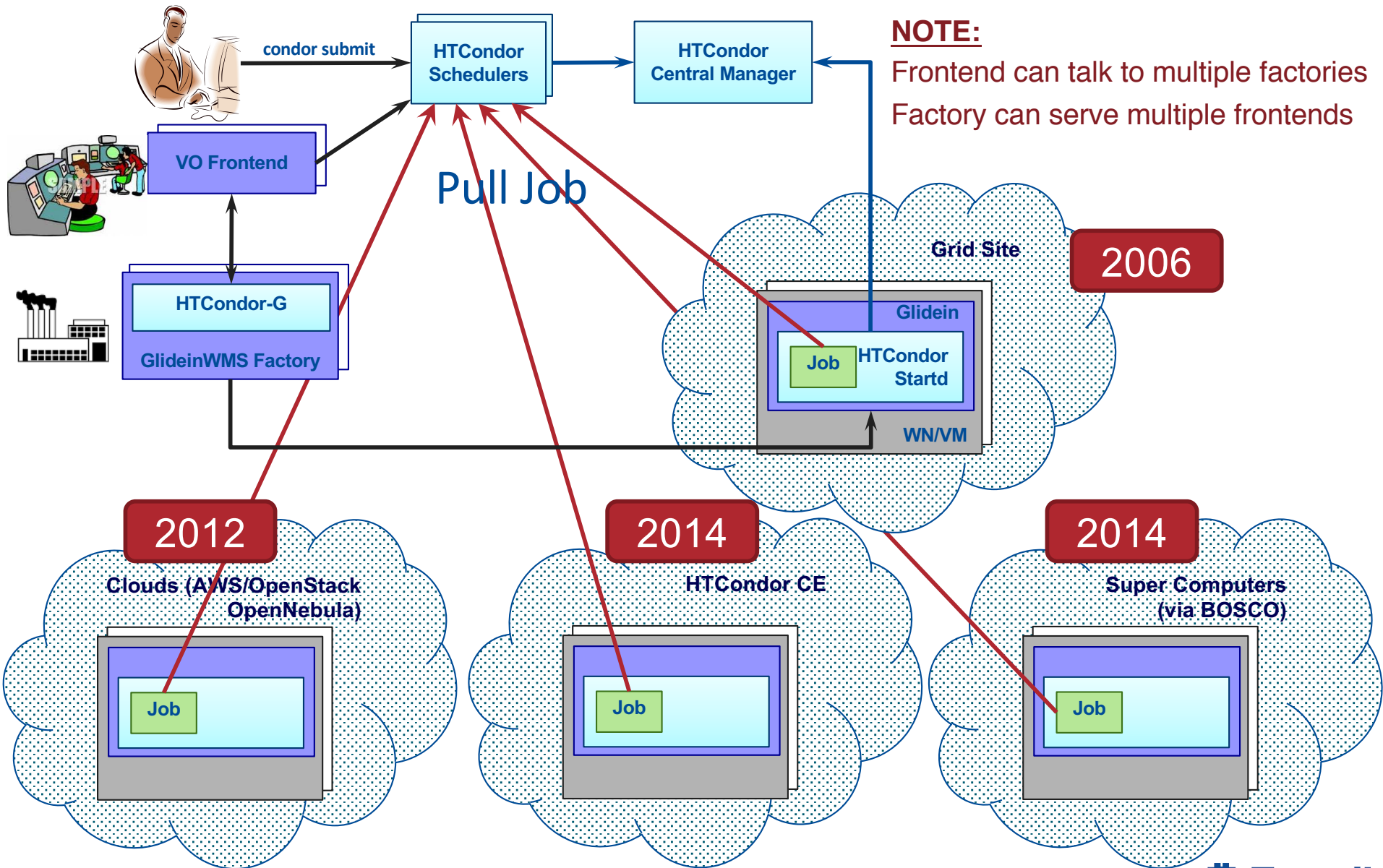
# Reference Slides

# Move to single user Factory

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- 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.

# GlideinWMS



# Quick Facts: Releases & Support Structure

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- Releases
  - Issues tracked in redmine issue tracker
    - <https://cdcvns.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

# 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	<a href="mailto:glideinwms-support@fnal.gov">glideinwms-support@fnal.gov</a>
Stakeholders	<a href="mailto:glideinwms-stakeholders@fnal.gov">glideinwms-stakeholders@fnal.gov</a>
Release Announcements	<a href="mailto:glideinwms-support@fnal.gov">glideinwms-support@fnal.gov</a> <a href="mailto:cms-dct-wms@fnal.gov">cms-dct-wms@fnal.gov</a> <a href="mailto:glideinwms-stakeholders@fnal.gov">glideinwms-stakeholders@fnal.gov</a>
Future Release plans	See next slide
Discussions	<a href="mailto:glideinwms-discuss@fnal.gov">glideinwms-discuss@fnal.gov</a>
Code commits	<a href="mailto:glideinwms-commit@fnal.gov">glideinwms-commit@fnal.gov</a> Twitter Tag: @glideinwms

# Tracking Releases in Redmine

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

2. Click custom query for stakeholder or version roadmap

glideinWMS

Overview Activity Roadmap **Issues** New Issue Gantt Calendar Documents Wiki Files Repository Code reviews Settings

OSG Tickets

#	Tracker	Target version	Status	Priority	Subject	Assignee	Updated	OSG
<b>v3_2_10</b>								
2409	Feature	v3_2_10	New	High	Support validation scripts to run periodically (not just at pilot start)	Marco Mambelli	05/13/2015 01:26 PM	OSG VO
6897	Bug	v3_2_10	Feedback	High	Partitionable glideins not accounted for correctly	Parag Mhashilkar	05/12/2015 04:42 PM	OSG
7927	Feature	v3_2_10	New	High	Per-frontend unique idle job counts	Marco Mambelli	04/13/2015 04:16 AM	OSG
4904	Feature	v3_2_10	Assigned	Normal	Specify a default for GWMS_XSLT_PLUGIN_DIR	Marco Mambelli	04/01/2015 01:43 PM	OSG
4846	Feature	v3_2_10	Assigned	Normal	Include GWMS_XSLT_PLUGIN_DIR setting in generated {factory,frontend}_startup	Marco Mambelli	04/01/2015 01:42 PM	OSG
7807	Feature	v3_2_10	New	Normal	Support CONDORCE_COLLECTOR_HOST for OSG sites	Parag Mhashilkar	04/13/2015 03:21 AM	OSG
8437	Feature	v3_2_10	New	Normal	Split entry configuration from main factory config	Parag Mhashilkar	04/27/2015 12:13 PM	OSG, CMS
<b>v3_2_x</b>								
4587	Bug	v3_2_x	Assigned	Normal	OSG: Automate / fix HTCondor-CE issues	Burt Holzman	02/03/2015 02:44 PM	OSG
6732	Bug	v3_2_x	New	Normal	Glideins report 100% success rate even if startd fails to start/run a matched job.	Marco Mambelli	03/04/2015 04:47 PM	CMS, OSG
3203	Feature	v3_2_x	Assigned	Normal	OSG: condor analyze	Burt	02/03/2015 02:44 PM	OSG

My custom queries

- Issues Awaiting My Feedback
- My Unresolved Issues
- Custom queries**
- CMS Tickets
- FIFE Tickets
- OSG Tickets**
- One Facility Tickets
- Operations Tickets
- CMS Master Ticket
- Igor Sfiligoi's Tickets
- Issues Awaiting Developer Feedback
- Issues by Age
- John Weigand's Tickets
- List With Due Date
- My Open Issues
- Not Closed + Grouped by Assigned To
- Not Closed + Grouped by Target Version
- Open Bugs: High Priority
- Series v2.7.x
- Series v3.2.x
- Series v3.x
- Stakeholder Requests
- Tickets with no version
- Unassigned Tickets
- v3.2.10: Roadmap
- v3.2.9: Open Issues
- v3.2.9: Road Map
- v3.3: Road Map