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GlideinWMS

Marco Mambelli

Stakeholders Meeting

March 13, 2019

Overview

- Completed and Upcoming releases
- GlideinWMS roadmap
- Developers spotlight
- Reference slides
 - GlideinWMS Architecture
 - Quick Facts

Next Planned Releases

- GWMS Release not in OSG because of failed integration testing
- We have 2 releases close to completion
 - v3.4.4 w/ bug fixes and some features originally scheduled for 3.5, for OSG production, expected next week
 - v3.5 w/ single-user Factory, HTCondor started Singularity, for OSG upcoming, planned for end of March.

Next Planned Release, v3.4.4

- v3_4_4 planned next week, for OSG production
 - Propagate to Factory and glidein submission attributes controlled by FE (HEPCloud)
 - Multi-node jobs accounting (CMS, OSG)
 - Fixed Error preventing the Frontend to match jobs
 - Fixed Glidein not killing HTCondor processes (OSG, CMS)
 - Joint effort w/ Diego (CMS) and Eric (Purdue) and OSG
 - Fix problems with Factory monitoring when there are no Frontends (HEPCloud)

https://cdcv.fnal.gov/redmine/projects/glideinwms/issues?query_id=53

Next Planned Release, v3.5

- v3_5 planned for mid April, for OSG upcoming
 - Dropping Globus GRAM support
 - Single-user Factory
 - Invoke Singularity via HTCondor
 - Condor now allows custom parameters that will allow this
 - Will allow condor_ssh_to_job if unprivileged Singularity is used
 - Black hole prevention
 - Automate the generation of factory configuration via CRIC

https://cdcvs.fnal.gov/redmine/projects/glideinwms/issues?query_id=186

GlideinWMS Roadmap – high priority

- Move to Python 3
 - Have a Python 3 version version in OSG upcoming by Summer 2019
 - Is it OK to move to support only Python 3 by the fall?
- Factory supporting multiple WMS middleware/frameworks
 - Decision Engine support started in 3.4.4
- Collaboration with HTCondor
 - Black hole prevention (3.4.4)
 - Singularity invocation (3.5)
- Automatic Factory configuration generation, via CRIC (3.5)

GlideinWMS Roadmap - other

- Monitoring Modernization
 - Retire GlideinWMS monitoring pages
 - Move to grafana/graphite/elastic search based solution
- Support for new HPC sites with stricter policies (e.g. no outbound connection except gateways, MFA)
- Move of the documentation to Jekyll (Summer program)
 - Use of templates will ease page maintenance
- Deploy GlideinWMS in containers

Developers Spotlight

Marco Mambelli

- Make the project visible and available to GlideinWMS users
 - Lead FIFE-Containers working group (Fermilab)
 - Return to the monitoring discussion
 - Joint effort to solve HTCondor not being killed in PBS clusters
- Project and team growth
 - Internal code review March 21-22
- Development topics
 - Accounting multi-node jobs
 - Support of different Factory clients
 - Changes in status monitoring for DE in 3.4.4
 - Review client interaction
 - Singularity
 - invocation via HTCondor in 3.5
 - Easy VO scripts for testing and setup

Lorena Lobato

- More interaction with HTCondor team to support the integration of new stats that will help to identify blackholes (<https://htcondor-wiki.cs.wisc.edu/index.cgi/tktview?tn=6698>)
- Working in better solutions for blacklist script and preventive measures to avoid back-hole effects (expected for GWMS 3.5)
 - Internal discussions FIFE and GWMS
- Attributes controlled by Frontend can be now propagated to the Factory and glidein submission (GWMS 3.4.4)
 - Some attributes need to be controlled by the Frontend admins
- More unit tests are being implemented (GWMS 3.4.4)
 - Reinforcement of object type comparison
- Last details of removal of support Globus GT2/GT5 and dependency of condor_root_switchboard (expected for GWMS 3.5)
- Lot of testing, documentation, tickets reviews..

Marco Mascheroni - Automatic configuration generation

- To help dealing with the ~400 entries in production that are maintained manually by operators
 - Lot of human effort, but catalogs like OSG Topology, GOC DB, and BDII exist, CRIC
- Particularly relevant for CMS which is going to use CRIC as an information system
- Developed a set of script that fetches information from CRIC, saves that in yaml files, and merge them
 - Different scripts for different types of information (see discussion at F2F operations meeting)
 - The merge tool works a-la config.d, and also allows to disable previous
 - Diff script to easily check differences between generated and production entries
- Prototype and auxiliary tools ready, testing on a few set of entries in ITB

Marco Mascheroni - Glideins in a Vacuum

- Allow sites that are not directly connected to any GWMS factory to join an existing (GWMS) pool
- Several cases: HLT, CMS at HOME, HPC centers in general (I have seen this at BLueWater, TACC). Interest at PIC, and DODAS
 - We want to allow admin to add manually started startds to a pool
 - Still relying on the many frontend (and factory) validation scripts to make sure the WN are usable
 - Creative solution found so far, sometimes creating issues (e.g.: recent GRACC “pollution”)
 - (See [Extended CRB](#) James slides)
- Focus mostly on testing, documenting, and supporting existing solution (manual_glidein_startup)
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Dennis Box

- Code quality, testing, github migration

Containerized CI – using github, travis-ci, docker-hub exclusively

Source for CI tests at

<https://github.com/ddbox/gwms-test>

Checkins to github cause a CI build

<https://travis-ci.org/ddbox/gwms-test>

CI build loads containers to

<https://hub.docker.com/r/dbox/gwms-test>

CI build also loads test artifacts, reports, etc, to

<https://github.com/ddbox/gwms-test/documents/test-results>

Html artifacts do not display properly here,

Need to be forwarded to a web server

CI → CD Idea:

build RPMs at CI stage

'smoke test' them for basic functionality

using existing scripts

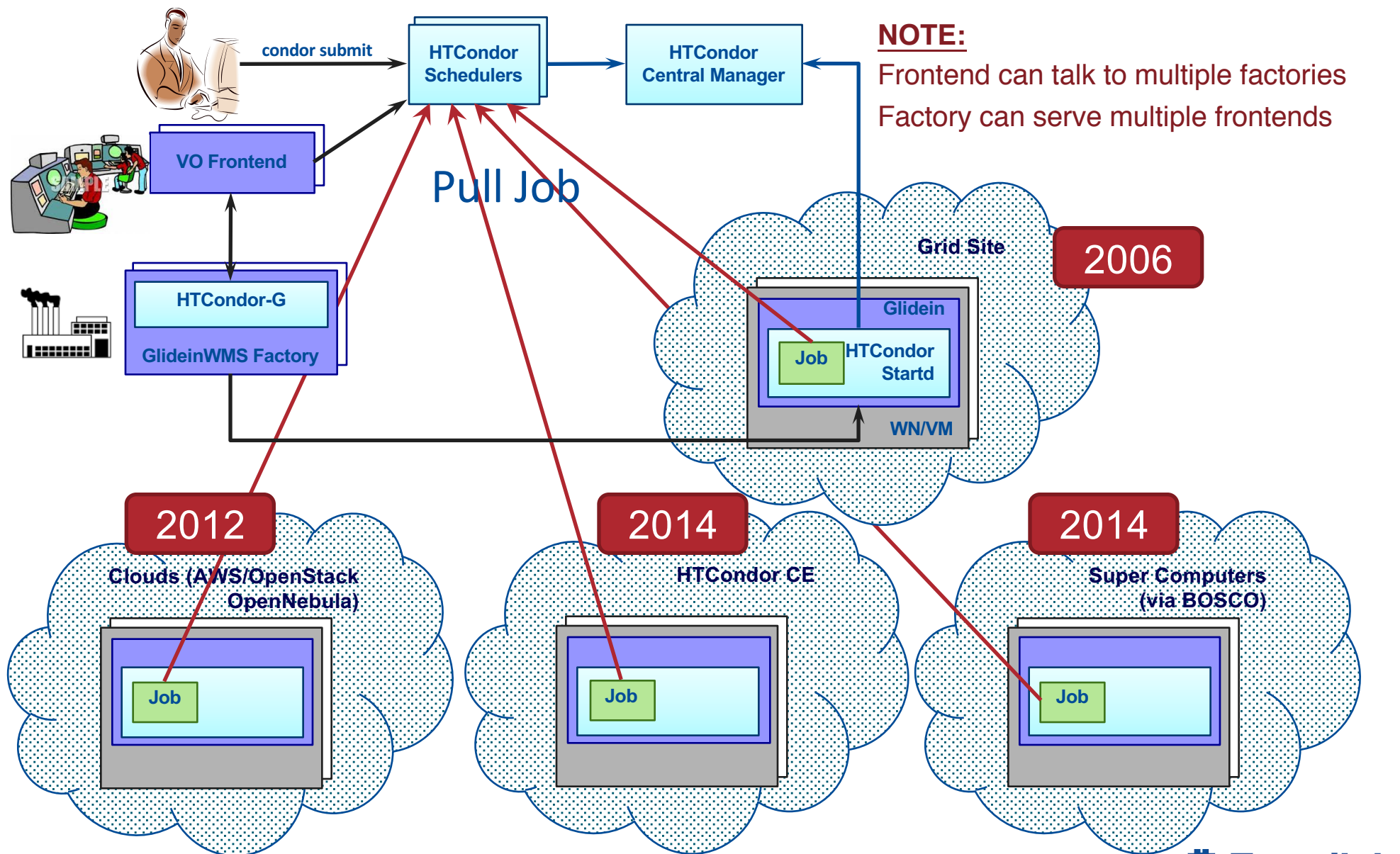
Questions/Comments

Reference Slides

Move to single user Factory

- Will be in the next 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

- 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	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

Tracking Releases in Redmine

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

Default tabs not too useful

2. Click custom query for stakeholder or version roadmap

Issues

View all issues
Summary
Calendar
Gantt

My custom queries

Issues Awaiting My Feedback
My Unassigned 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

#	Tracker	Target version	Status	Priority	Subject	Assignee	Updated	
v3_2_10 7								
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
v3_2_x 12								
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