

ATLAS Distributed Computing Operations Automation

- Switcher
- PanDA centralized site exclusion
- SAAB Storage Area Automatic Blacklisting

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- **Aim: decrease amount of repetitive manual operations**
 - Less manual queue manipulations
 - Less manual test submissions
 - Less manual spacetoken exclusion
- Re-allocate saved manpower to more urgent tasks
 - ADC Operations
 - Site administrators, Cloud squads
 - ADC Shift teams
- **Documentation entry point for Cloud squads**
<https://twiki.cern.ch/twiki/bin/view/Atlas/SquadHowTo>

ATLAS Distributed Computing Automation

Switcher

- **Aim: decrease amount of manual operations**
 - Less manual queue manipulations
 - Less manual test submissions
 - Faster queue recovery
 - After end of SRM/CE downtime queue automatically set to test
 - HC sends AFT/PFT and recoveres according to policies
 - Sites do not have to ask ADCoS to test a queue
 - Just set queue to '**test**' with comment '**HC.Test.Me**'
 - And HammerCloud makes the rest for you!

If downtime longer than 4 hrs (if shorter, do not touch queue(s)):

Production queue

T-8h: set offline +

set.offline.by.SSB

- if online, any comment
- if brokeroff, set.brokeroff.by.SSB
- if test, HC.Test.Me
- otherwise do not touch

Analysis queue

T-6h: set brokeroff +

set.brokeroff.by.SSB

- if queue is online, any comment

T-2h: set offline +

set.offline.by.SSB

- if online, any comment
- if brokeroff, set.brokeroff.by.SSB
- if test, HC.Test.Me
- otherwise do not touch

T: Downtime starts: keep offline

T+D: Downtime finishes/is shortened: set test+HC.Test.Me

- if queue offline + set.offline.by.SSB
- HC with AFT/PFT takes care of recovery

[TWiki SiteStatusBoardInstructionForShifter#switcher-howto](#)

- Running since 20th Feb 2012
- Recorded queue incidents: over 2900
<http://panda.cern.ch/server/pandamon/query?overview=incidents&limit=2500>
- Every action is logged → easier to debug
http://adc-ssb.cern.ch/SITE_EXCLUSION/switcher/switcher.log
- Enabled queues
http://adc-ssb.cern.ch/SITE_EXCLUSION/switcher/switcher_queues.txt
 - Full coverage for all clouds but ND and US
- Two service accounts with robot certificates available
 - adcssb01, adcssb02; switch during this week

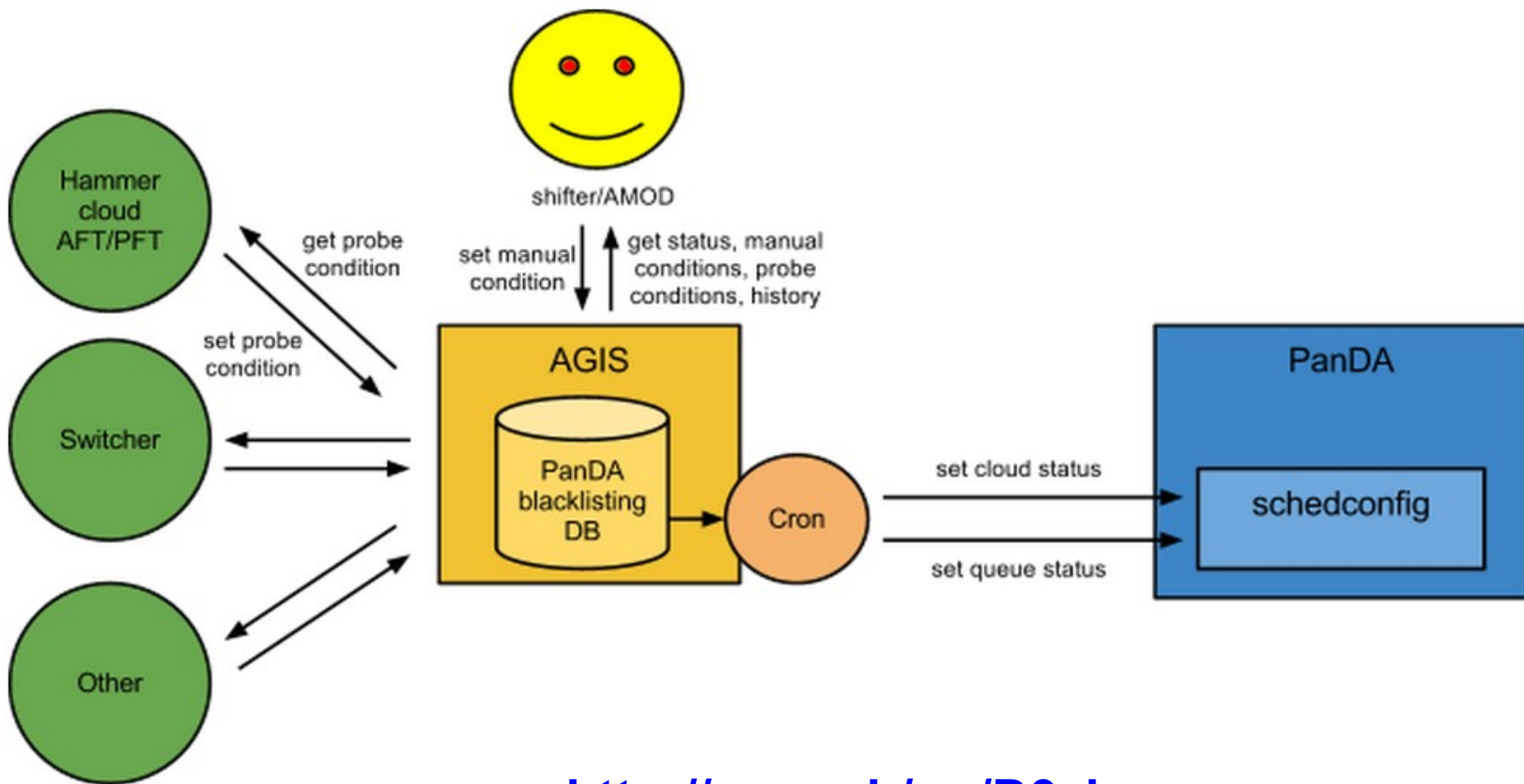
- Issue for a PanDA site ID with more queues
 - when a single PanDA queue set test and at least one of the other queues is online, test PanDA queue is not set online automatically
 - Manual action necessary: site, cloud squad
- **AGIS provides the mapping of**
 - PanDA queue - PanDASiteID - list of CE/SRM resources
 - CE/SRM resources vs. their downtimes

→ **let's change the Switcher behaviour!**

- **Move away from PanDA queue exclusion to PanDA Site ID exclusion**
 - Exclude only PanDA Site ID which has all underlying CEs on downtime, or storage endpoint on downtime
 - Do not exclude PanDA Site IDs which have only 1 of N queues with CE on downtime
 - Timescale:
 - Adapt Switcher before Xmas 2012
 - Test over Xmas 2012 and in January 2013
 - In production: January 2013

ATLAS Distributed Computing Automation

PanDA centralized site exclusion



<http://cern.ch/go/D9zj>

- Document: <http://cern.ch/go/D9zj>
- Centralize PanDA-related exclusions in 1 place
 - Manual action overrides probe decision
 - Limit probes race conditions

MANUAL	PROBE 1	PROBE 2	STATUS
OFFLINE	*	*	OFFLINE
TEST	*	*	TEST
BROKEROFF	*	*	BROKEROFF
ONLINE	*	*	ONLINE
AUTO	OFFLINE	*	OFFLINE
AUTO	TEST	TEST BROKEROFF ONLINE	TEST
AUTO	BROKEROFF	BROKEROFF ONLINE	BROKEROFF
AUTO	ONLINE	ONLINE	ONLINE

- ATLAS Authorship Qualification task of Arwa Bannoura
- Based on centralized blacklisting that exists in DDM
 - PanDA centralized site exclusion will be integrated into AGIS
 - **Great support received from the AGIS team!**
- Arwa has her own development environment
 - Django, AGIS instance, AGIS DB dump
 - DB schema is defined
 - Server: functionality and views to be implemented
 - Clients
 - ADC Ops and exclusion agents interact with the system via curl calls (which is common in AGIS)
 - Later a web interface will be provided

ATLAS Distributed Computing Automation

SAAB Storage Area Automatic Blacklisting

- Algorithm designed for **blacklisting** DDM endpoints' **permissions** (d, f, r, u, w) using **SRM SAM tests results** as input
 - DATADISK, GROUPDISK, LOCALGROUPDISK, SCRATCHDISK
- SRM tests executed every **13** minutes: Put (u, w) - Get (f, r) - Del (d)
- SAM results from last **90 minutes** evaluated every **15 minutes**
- The algorithm flags the DDM EP as:
 - **RED** if good tests are 0%
 - **GREEN** if good tests are 60% or more
 - **YELLOW** if good tests are in between



- SSB page for each of the three test
<http://dashb-atlas-ssb.cern.ch/dashboard/request.py/siteviewhistorywithstatistics?columnid=10074> (Put, 75 Get, 76 Del)
- Starting now with the PUT

- **SRMPing** added to **blacklisting conditions** (similarly to AGIS and SpaceCollector)
 - **YELLOW** No action (keep previous status unchanged)
 - **RED** Permission(s) set 'off' for 1 hour (configurable)
 - **GREEN** Permission(s) set 'on' if previously off
- **Automatic mail** sent on **status changes**
 - TBD final recipients of exclusion emails: probably starting with **ADCoS shifters** once the tool is stable and reliable enough.
- To avoid common blacklisting when **central issues affect test infrastructure**:
 - If SAAB would blacklist > 50% of DDM EP: **no action** taken, an automatic **mail** is sent to expert to **check** the SAAB behavior.
- SAAB in **production** now for **IT cloud**:
 - **Cross check** with SAM monitoring pages is more than **encouraging**
 - **Christmas** may be useful for lower scale **testing** and check **stability**

- ✓ Autoexclusion works and saves manpower
- ✓ Next steps
 - *Switcher*: move from PanDA Queues exclusion to PanDA Site ID exclusion
 - *PanDA centralized site exclusion*: move from “many probes take actions” to “probes provide decision and action is taken centrally”
 - *SAAB*: looking for volunteering clouds/sites!
- ✓ Documentation for Cloud squads/Site administrators
<https://twiki.cern.ch/twiki/bin/view/Atlas/SquadHowTo>
- ✓ Questions?