

# PILOT 2 STATUS

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# Pilot 2 Commissioning Status

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- Currently 75 sites have been migrated to Pilot 2 by the DPA team
  - 18 sites ready for migration
    - Next to be migrated: OSCER (request sent), TRIUMF (request sent), INFN-FRASCATI (request sent), TECHNION, IL-TAU, AGLT2, NET2 ... (list may change)
  - 13 sites running Pilot 2 are ready for singularity
  - During vacation period commissioning at 1 site per day – 5 sites per day were migrated in July
  - Aim is still to finish as soon as reasonably possible
    - Progress rate occasionally unpredictable – many tedious complications due to containers, until recently any problem with containers meant switch back to Pilot 1 (for Pilot 2 migration it would have been better to switch off containers which is now the case)
- Pilot 2 commissioning tied to CentOS7 migration to allow for containers
  - CentOS7 migration status here:  
<https://twiki.cern.ch/twiki/bin/view/AtlasComputing/CentOS7Deployment>
  - Plans for SL6 sites, see next slide

# Lingering SL6 Sites

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- Several sites can already be set to brokeroff (or are already)
  - ANALY\_ROMANIA02 (site currently disabled due to lack of manpower)
  - ANALY\_INFNO-MILANO-ATLASC\_SL6 (site has a centos7 analysis queue)
  - ANALY\_RRC-KI (already in brokeroff, looks like the site is going to be decommissioned)
  - ANALY\_UIO (to be decommissioned)
  - ANALY\_QMUL\_HIMEM\_SL6 (site has analysis centos7 queues already)
  - ANALY\_QMUL\_SL6 (site has analysis centos7 queues already)
- Will be set to brokeroff on august 15, PanDA will move the data
  - ANALY\_GOEGRID
  - ANALY\_INFNO-COSENZA-RECAS (site has nodes in test)
  - ANALY\_INFNO-LECCE
  - ANALY\_INFNO-ROMA3 (site only talked about test nodes but seems to have centos7 nodes in production)
  - ANALY\_JINR
  - ANALY\_IHEP
  - ANALY\_SHEF\_SL6 (site has nodes in test)
  - ANALY\_GLASGOW\_SL6 (site has nodes in test)
  - ANALY\_RHUL\_SL6
  - ANALY\_FREIBURG
  - ANALY\_WEIZMANN-CREAM

# Recent Issues

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- Lots of container related issues
  - E.g. memory monitor running inside container has been a major headache (seems to work now – ps output still being dumped to log in case of further corner cases but will be removed eventually)
- Error diagnoses
  - New failure scenarios, reported errors not precise or overwritten by lesser error, exceptions
- General bugs
  - Triggered by other corner cases not seen in testing or long term production, e.g. large logs
- Large CPU usage in Event Service
  - Only noticed by observant site admins
  - Loops running at high frequency

# Recent Developments

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Focus has been on reaching stability rather than adding many new features, but some new developments have slipped through..

- **Log file cleanup**
  - Pilot reads list of file and directory name patterns (to be removed prior to log file creation) from external file located in /cvmfs, allowing for fast update when issue with jobs producing large log files are discovered
- **Changes to allow generic workflows from Harvester on an HPC Edge node**
  - Natural improvement since we only had a plugin for Titan before
  - Required for BNL IC development and testing
- **Support for new Memory Monitor**
  - prmon replacing old MemoryMonitor
- **Support for AthenaMT**
  - Now setting ATHENA\_CORE\_NUMBER (to same value as ATHENA\_PROC\_NUMBER - which is still set as well)
- **Many new error codes added**
  - See next slide

Pilot 2 version history: <https://docs.google.com/document/d/1-xzViEm5FjDZdHmrEfMnMuinkorutiHIRfG6gclmEu0/edit?usp=sharing>

# New Error Codes (since SW&C Week in NYC)

- Pilot 2 error codes listed here: <https://twiki.cern.ch/twiki/bin/view/PanDA/Pilot2ErrorCodes>

Pilot error codes	Error meaning
1333	No space left on device
1334	AtlasSetup failed with a fatal exception (consult Payload log)
1335	User code not available on PanDA server (resubmit task with --useNewCode)
1336	Job is already running elsewhere
1337	Memory monitor produced bad output
1338	Authentication failure during stage-in
1339	Local DBRelease handling failed (consult Pilot log)
1340	Singularity: Failed invoking the NEWUSER namespace runtime
1341	Bad queue configuration detected
1342	Failed to import middleware (consult Pilot log)

# Near term plans

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- Continue sorting out corner case issues, improvement of error recognition/reporting
- There are several pull requests pending in the Pilot 2 GitHub repo
  - Represent larger code changes – no major changes will be merged during vacation period, independent tests
    - Restructuring/refactoring of Data API to unify Event Service staging clients (A. Anisenkov/W. Guan)
    - Rucio traces via Rucio API (T. Javurek)
- Resume tests with stage-in/out containerization
- HPC plug-ins development
  - Summit (D. Oleynik)
  - BNL IC (D. Benjamin/P. Nilsson)