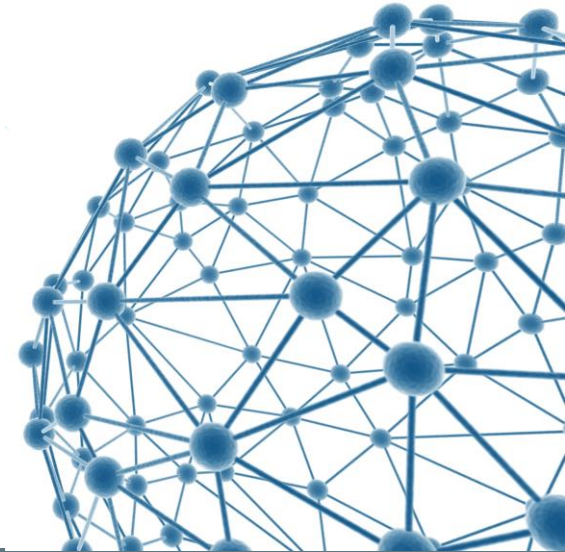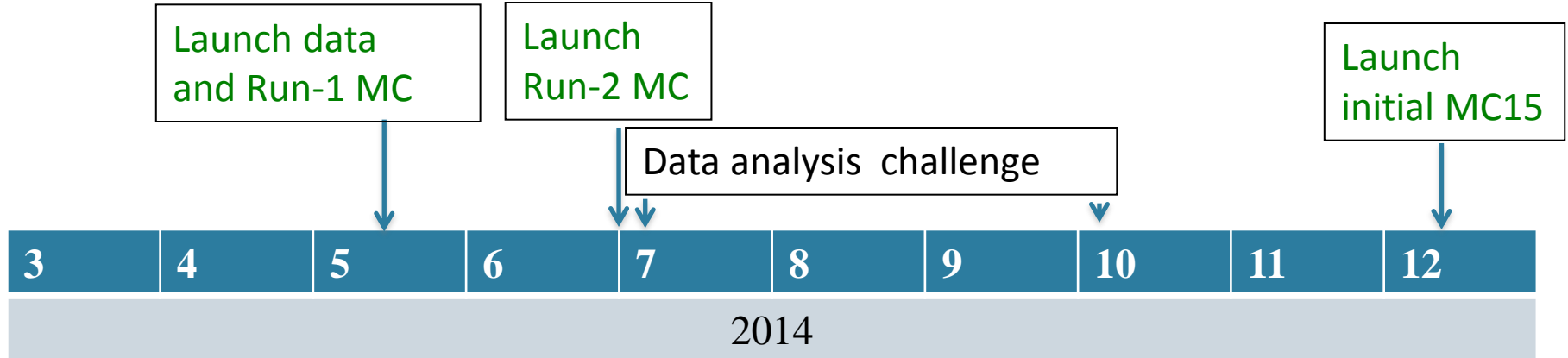# ADC Ops next months

Alessandro Di Girolamo & Andrej Filipcic

on behalf of ADC Ops

N.B. Most of the slides are just a revised/minimally updated version of the ones presented by Simone at an ATLAS internal meeting the 25th of March, focusing on the next 3 months.

Data Challenge: DC14

Launch data and Run-1 MC	Launch Run-2 MC		Launch initial MC15

Data analysis challenge

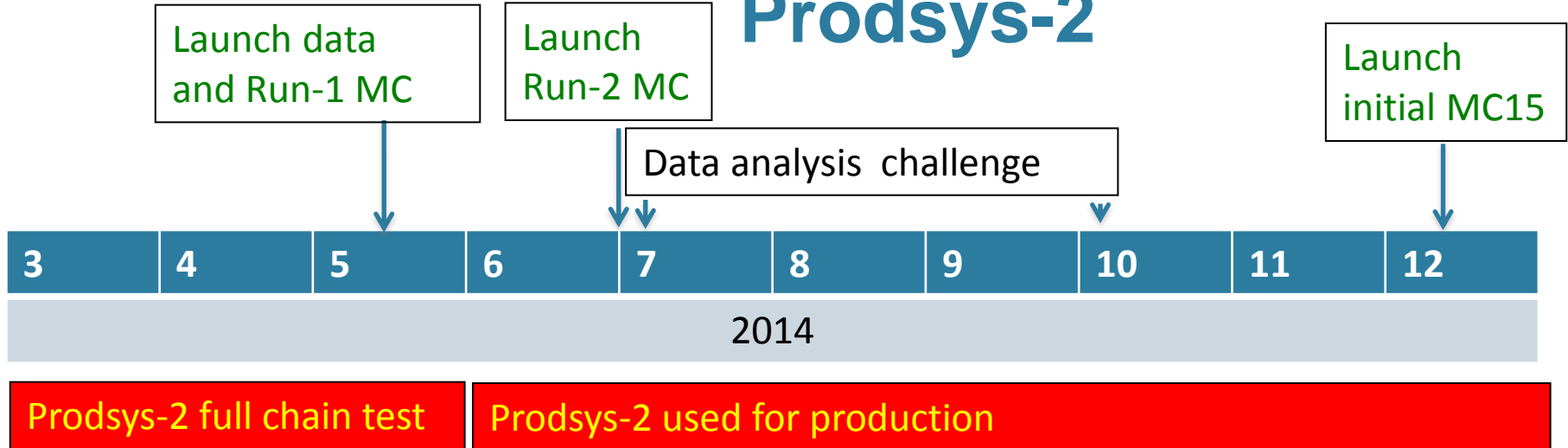| 3	4	5	6	7	8	9	10	11	12

2014

- ATLAS Distributed Computing commissioning decoupled from Software timeline
  - Schedule is tight for both, need to avoid delays
- We will try to perform as much as possible of the DC14 exercises with the new ADC components
- Main interested components:
  - Tier-0
  - Prodsys-2: new generation of ATLAS production system
  - Rucio: new generation of ATLAS Distributed Data Management system (replacing current DQ2)
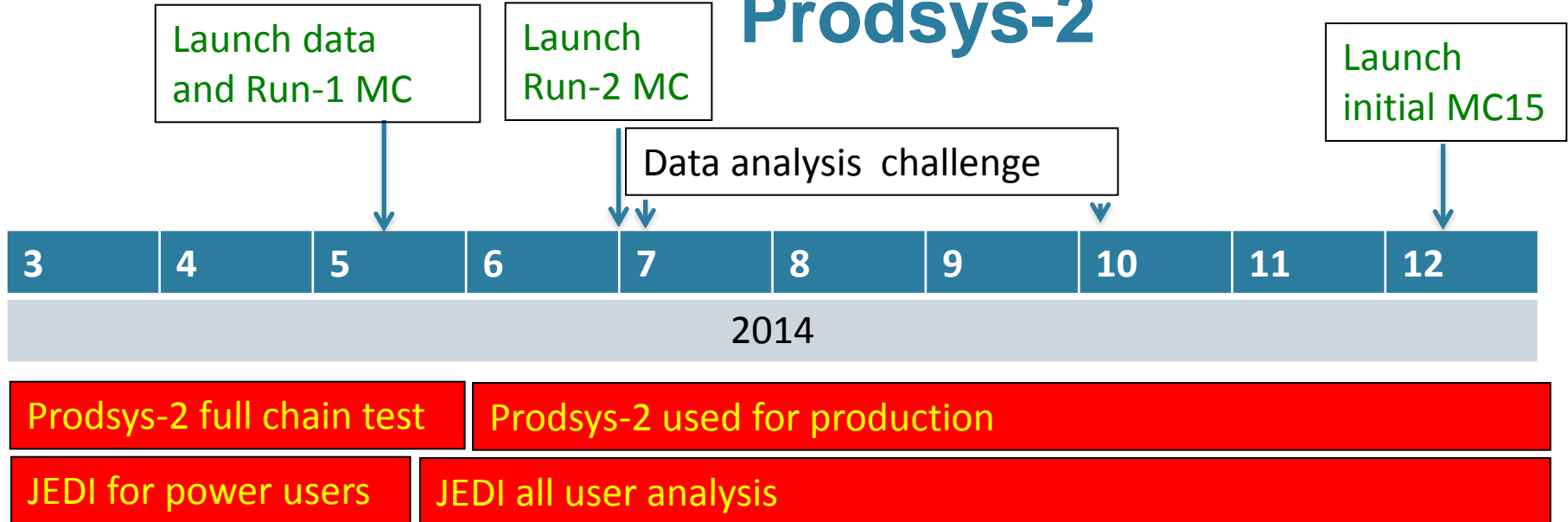 - Databases

Tier-0

- Testing of shared vs dedicated LSF master
  - Ongoing, done by mid April – "shared" already done

- Testing of the new storage model
  - EOS "hot storage", CASTOR archive-only, Distributed Data Management system (DDM) as transfer engine
  - Involvement of the ATLAS Online community

- Testing of new streams and workflows
  - E.g. the "fat stream", xAOD production

- Spill-over to T1s needs some thinking

Prodsys-2

| Launch data and Run-1 MC | Launch Run-2 MC | | Launch initial MC15 |

Data analysis challenge

| 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |

2014

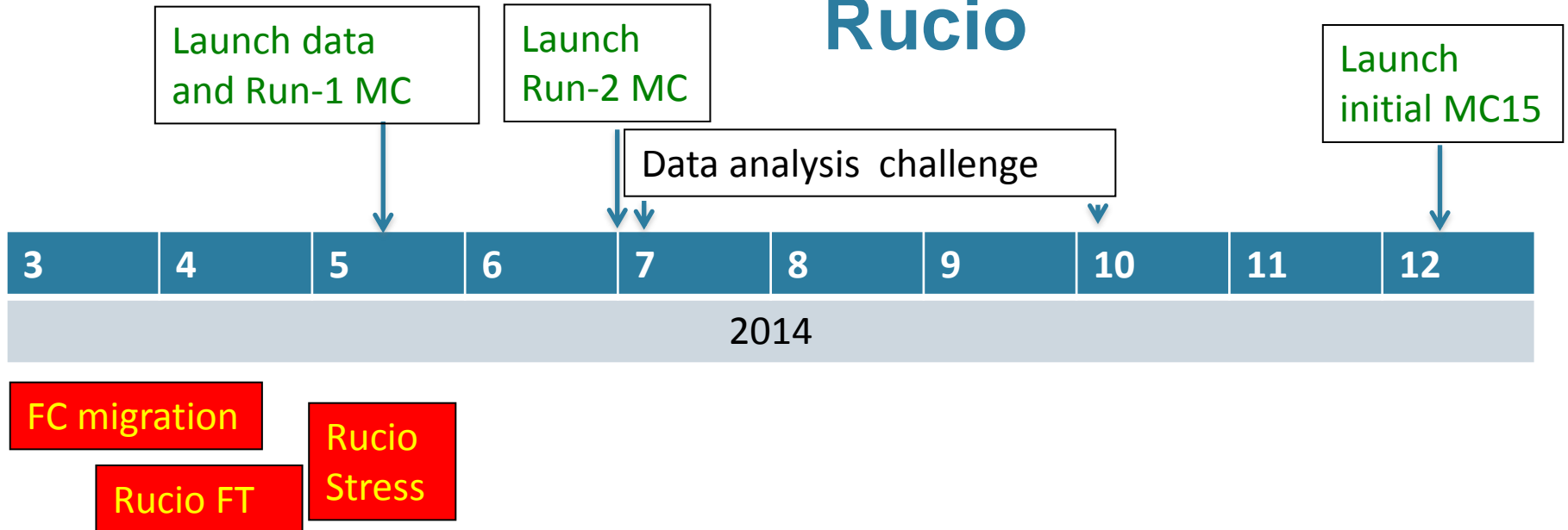| Prodsys-2 full chain test | Prodsys-2 used for production |

- **Many new components**
  - Request I/F: user interface for requesting a production workflow
  - DEfT: translates request in one or more chains of tasks
  - JEDI: generates job definition from task definition and injects them in PanDA

- **Beta version of Request I/F+DEfT+JEDI (a.k.a. Prodsys-2) tested for full chain**
  - Could be used for data and DC14 Run1 MC but we need 2 months to consolidate monitoring (June 1st).
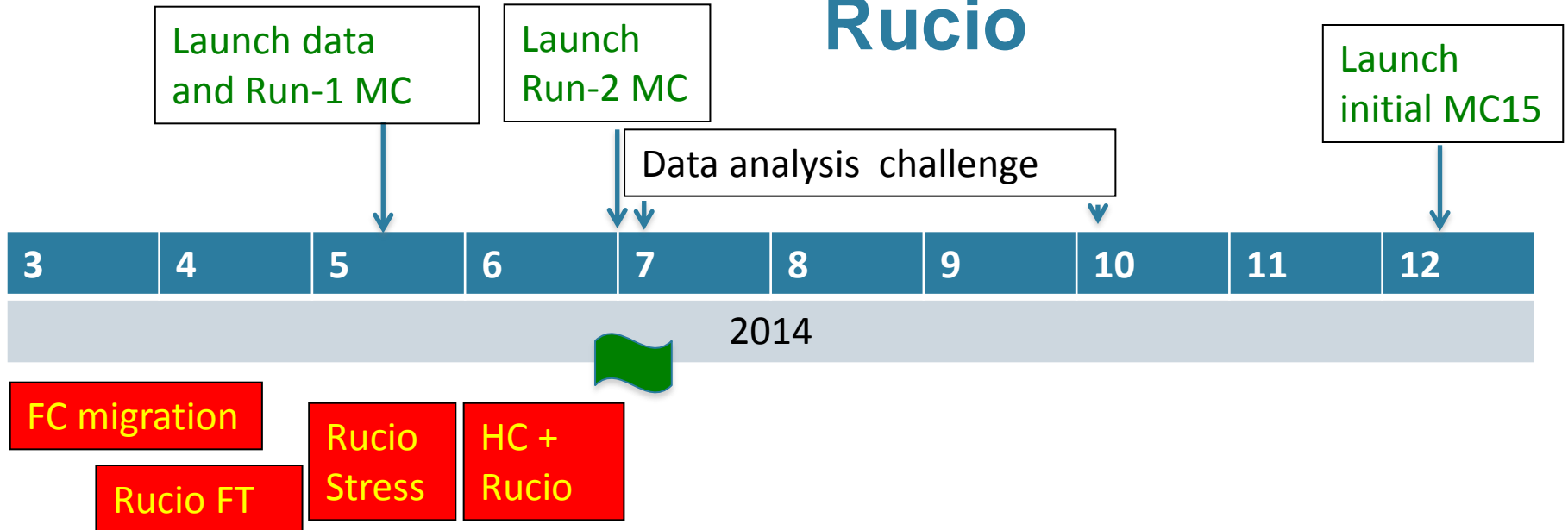 - Surely to be used for DC14 MC Run-2

Prodsys-2

Launch data and Run-1 MC

Launch Run-2 MC

Launch initial MC15

Data analysis challenge

3	4	5	6	7	8	9	10	11	12

2014

Prodsys-2 full chain test

Prodsys-2 used for production

JEDI for power users

JEDI all user analysis

- **JEDI will be used also for analysis**
  - ➢ Will implement the concept of "analysis task"

- **JEDI is ready for analysis**
  - ➢ Used in Functional Tests, exposed to beta users (more users to come)
  - ➢ Surely to be used for DC14 Analysis Challenge

Rucio

3	4	5	6	7	8	9	10	11	12

2014

Launch data and Run-1 MC

Launch Run-2 MC

Data analysis challenge

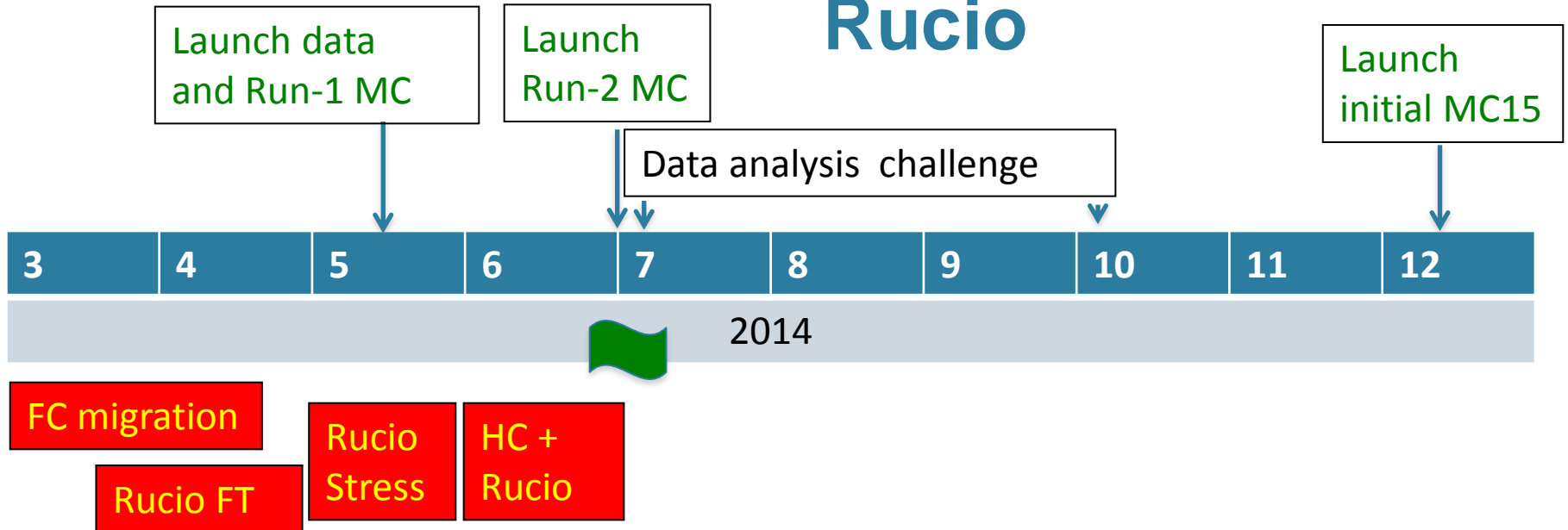Launch initial MC15

FC migration

Rucio FT

Rucio Stress

- **FC migration: moving from current DQ2 file catalog (LFC) to Rucio file catalog**
  - Site-by-site, ongoing. Done by end of April

- **Rucio Functional and Stress tests in April-May**
  - Full chain of data export/distribution at nominal rate + deletion
  - Storage resource utilization needs to be planned

Rucio

Launch data and Run-1 MC

Launch Run-2 MC

Data analysis challenge

Launch initial MC15

3	4	5	6	7	8	9	10	11	12

2014

FC migration

Rucio FT

Rucio Stress

HC + Rucio

- **Test Production/Analysis against Rucio**
  - ➢ Move production and analysis HammerCloud tests to use Rucio
  - ➢ HammerCloud (HC) is our framework for analysis and production jobs functional and stress tests

- **If all tests are successful, Rucio can be considered commissioned**

Rucio

Launch data
and Run-1 MC

Launch
Run-2 MC

Data analysis challenge

Launch
initial MC15

3	4	5	6	7	8	9	10	11	12

2014

FC migration

Rucio FT

Rucio
Stress

HC +
Rucio

- **Migrate production data from DQ2 Central Catalog to Rucio**

  - Implies using the full Rucio machinery for subscriptions/transfers/deletion/location
  - Can not be done site by site, but dataset by dataset
  - DDM and Rucio Catalog can coexist with transparent client fallback
  - Rollback is possible

Databases

- Use of the new COOL instance CONDBR2 instead of COMP200
  - clean start for Run2

- No more DB releases for production
  - all DB access with Frontier

- Commissioning of the EventIndex infrastructure in the second half of 2014
  - a complete catalogue of all ATLAS events in any format
  - Lookup, skimming, completeness and consistency checks

- Access to Combined Performance calibration/alignment/efficiency data files from the new common repository

IT-SDC

xrootd, FAX, HTTP policy & plans

ADC has agreed the following policy regarding xrootd and FAX at T1s and T2Ds:

In the Feb 2014 ATLAS S&C Week ADC Operations session it was agreed as policy that T1s and T2Ds are to offer xrootd access to their storage, where the storage technology allows it. ADC furthermore asks and encourages sites not yet in the FAX federation to take the modest additional step beyond supporting xrootd of joining FAX. If there are technical issues, then please let ADC know.

- We intend to demonstrate WAN data access at scale (<~10% of data access) in DC14, utilizing the technology available today: xrootd, FAX
  - Consequently, timescale for installation is in time for pre-DC14 testing
- We intend to explore and possibly utilize HTTP as technology for federating storages and enabling WAN data access
  - Compare xrootd, http for WAN access during 2014
- Also will put HTTP in production (e.g. downloads/dq2-get) sooner as they solve long standing issues impacting users
  - Does our data have to be ATLAS-only read protected?? Disables caching
- Therefore we ask sites to enable HTTP access via WebDAV on same timescale

The above is from ATLAS SW and Computing week 24-28February 2014.
ATLAS requested it also during WLCG OpsCoord meeting :
https://twiki.cern.ch/twiki/bin/view/LCG/WLCGOpsMinutes140306#ATLAS

IT-SDC

- FAX: We ask sites to deploy FAX by DC14, i.e. June, including commissioning and testing.

- HTTP/WebDAV. ATLAS has use cases for which intend to use http/webDAV as primary protocol for data access/transfer: we ask sites to deploy it with the same timeline of FAX, with slightly lower priority respect to FAX.

! Feel free to discuss with ATLAS in case of any problem or concern

MultiCore

- plan: run DC14 simul, pile on mcore
  - need approx ~50% of resources for that
  - We ask Tier1s and bit Tier2s to deploy 8-core queues
    - If possible with dynamic provisioning
- for now, simlul mc14_8TeV jobs run same num of event as serial:
  - 15 minutes of serial overhead gives cpu efficiency of 70-80%
  - need to run 4-6h walltime jobs in the future to be above 95%
- current mcore workload not steady: lack of tasks, central services (panda) issues causes mcore to drain once per week on average
  - Working on it!
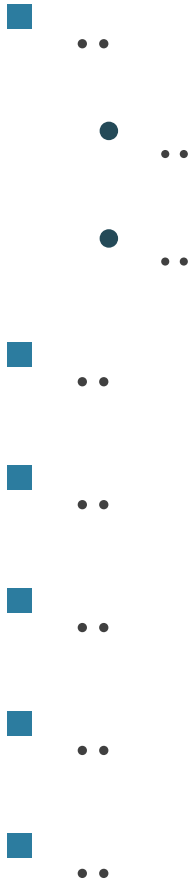- no plan for serial job in mcore pilots

Conclusions

✓ We have a commissioning work plan for ADC components in DC14

! Sites are asked to deploy FAX and HTTP/webDAV access

! Schedule is tight!

BackUp

■ ..
  ✓ ..

■ ..
  ✓ ..

■ ..
  • ,
  • .

■ .
  • .
    ✓ ..
  • ..

! ...
  • .. .. .
  • ..
    ! ..