

# DIAL status

ATLAS GRID meeting  
CERN

David Adams  
BNL  
July 16, 2003



David Adams  
**BROOKHAVEN**  
NATIONAL LABORATORY



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# Introduction

DIAL described many times before

- This talk is status report

More information:

- Talk for RTAG11 yesterday
- Talk at the grid session of the last SW workshop
- CHEP paper
- DIAL home page (above and more)
  - <http://www.usatlas.bnl.gov/~dladams/dial>

DIAL provides interface to connect

- user analysis (or production) environment
- to distributed job processing



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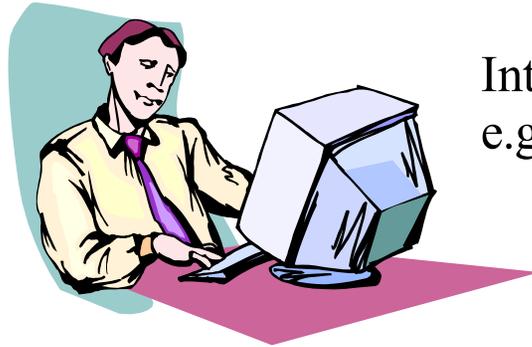
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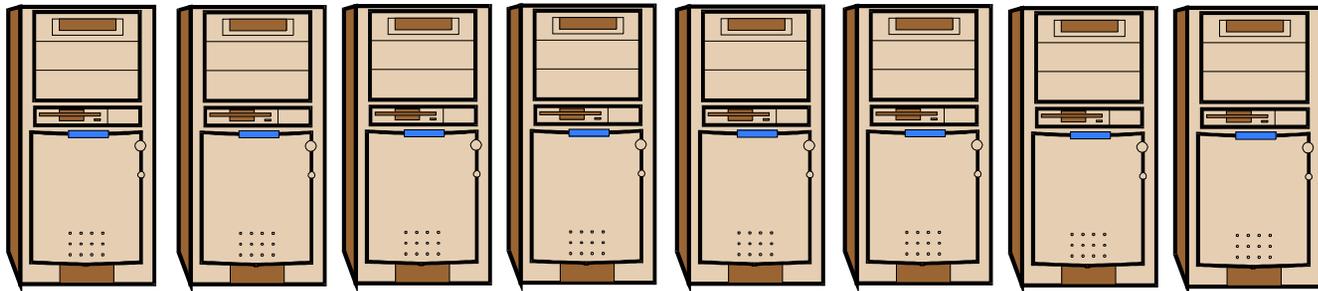
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Interactive analysis  
e.g. ROOT, JAS, ...



Distributed processing running data-specific application



# Design

DIAL has the following major components

- **Dataset** describing the data of interest
- **Application** defined by experiment/site
- **Task** is user extension to the application
- **Job** uses application and task to process a dataset
- **Result** is the output of a job
- **Scheduler** creates and manages jobs

Together these define a high-level JDL

- (job definition language)

Figure shows how these components interact →



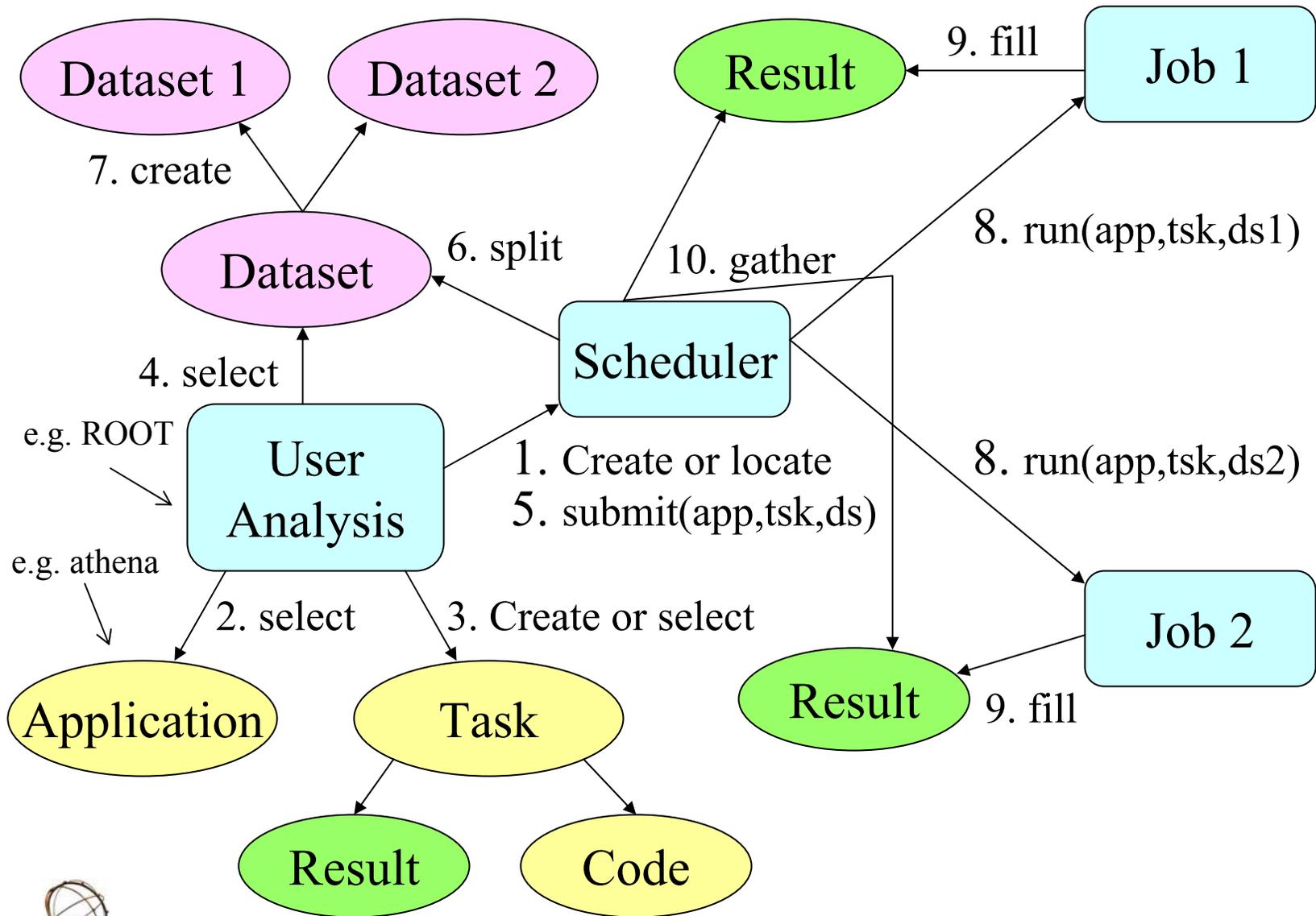
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# Release 0.3

Release 0.3 was made last month

It includes:

- Implementations of identified DIAL components
- Simple local scheduler with no job splitting
- Dataset describing combined ntuple file
- Application dial\_cbnt to run PAW using PAW macro from task
- Demo to illustrate look and feel
  - Runs at BNL (ACF and RCF) and CERN (lxplus)
  - Script runs job defined by
    - > Application (dial\_cbnt)
    - > Task with PAW macro and empty hbook file
    - > Combined ntuple dataset



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# Release 0.4

Release 0.4 expected in mid-August

It will add the following

- Access to files in Magda
- Local distributed processing
  - Most likely using LSF
  - Available at least at BNL
- Interface and simple implementation of dataset/job splitting
- Demo(s) to illustrate distributed processing with combined ntuple dataset with multiple files



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# Later this year

## Condor-based processing

- local, COD, master-worker, Condor-G?

## Remote access to scheduler

- Job submission from anywhere
- Web service

## Add response time to scheduler interface

## ATLAS-POOL dataset

- After ATLAS incorporates POOL

## Atlsim and Athena as applications

- DIAL provides interface for data production
- Need transformation and dataset catalogs
  - AMI, next week's metadata meeting



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# Batch production

Original goal of DIAL was to provide means for interactive data analysis.

However interactive analysis and batch production are not so easily separated

- DIAL JDL is appropriate for either
- Schedulers will need to operate over a continuum of
  - Produced data size
  - Acceptable response time
- Some users will want to interactively browse a small sample and then submit larger sample to batch



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# Other projects

## JDL (job definition language)

- DIAL may be thought of as a proposal for a user-level (high-level) JDL
- Like to come to agreement on this JDL with other projects so components can be shared
- Language issues: C++, Java, Python, XML, ...

## Scheduler

- Look to other projects to deliver robust and efficient implementations of the DIAL scheduler
- In the mean time DIAL will
  - Try to wrap analogous components from other projects
  - Make relatively simple implementations to meet our project goals



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## Other projects (cont)

### Candidates to provide DIAL schedulers:

- Look to **Condor** to deliver a grid scheduler
- Scheduler can be implemented using **Chimera**
- Scheduler restricted to ROOT as an application could be implemented using **PROOF**
- Scheduler for athena jobs can come from **GANGA**
- Tech-X has SBIR to develop **JDAP** scheduler for use with JAS
- A java-based scheduler is being developed by **STAR**
- Last (but not least?), **DIAL** will provide schedulers



## Other projects (cont)

Build web services to create and access DIAL schedulers

- Using **Clarens** and/or **OGSA**

Environments that might use DIAL schedulers:

- A Python implementation of the JDL would enable **GANGA** and **PI/SEAL** to use DIAL schedulers
- DIAL is already imported into **ROOT**
- A Java version of the JDL would enable **JAS** to use DIAL schedulers
- Web or script based user-level production for **any experiment** could benefit from the scheduler interface



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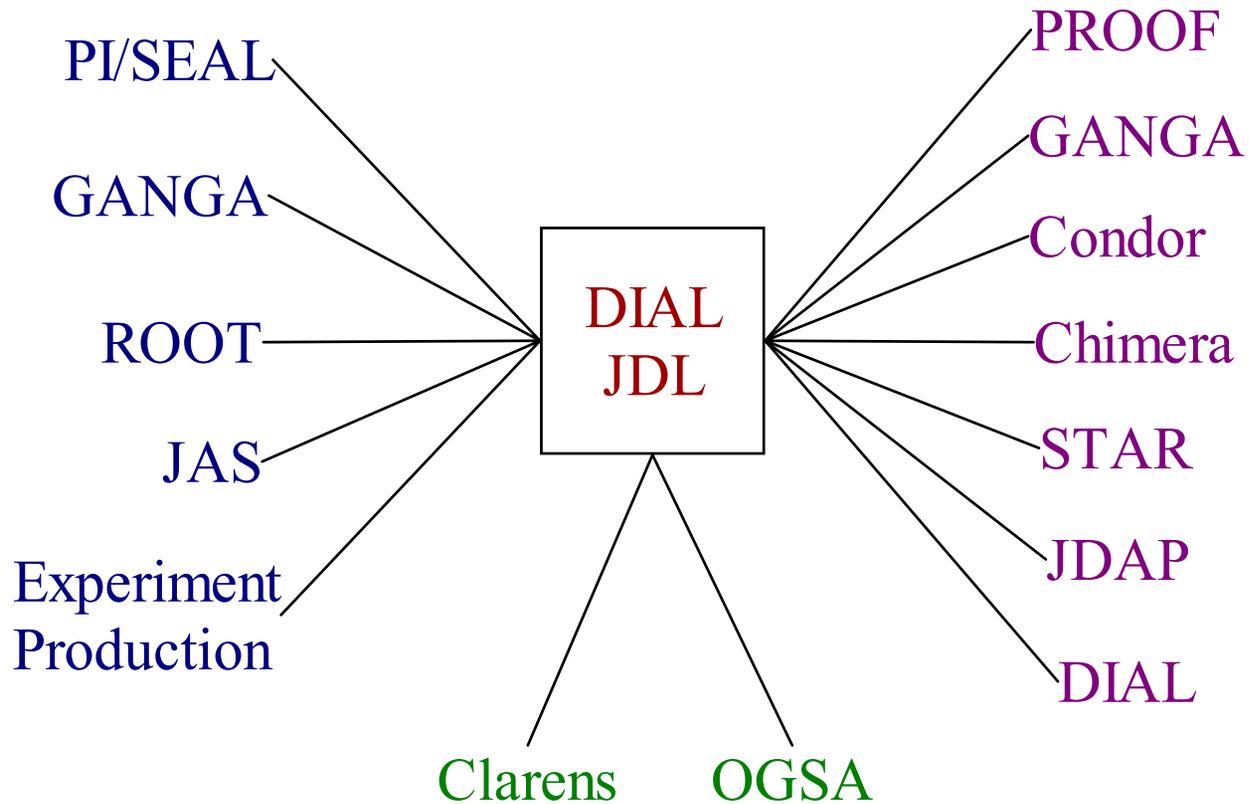


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*User interfaces*

*Schedulers*



*Web service infrastructure*



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