ISIS AUTOREDUCTION

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https://github.com/mantidproject/autoreduce

Science & Technology Facilities Council

INSPIRATION

Thanks to the SNS

AUTOREDUCTION

noun

1. The process of performing reduction without human interaction
2. A new ISIS webapp service

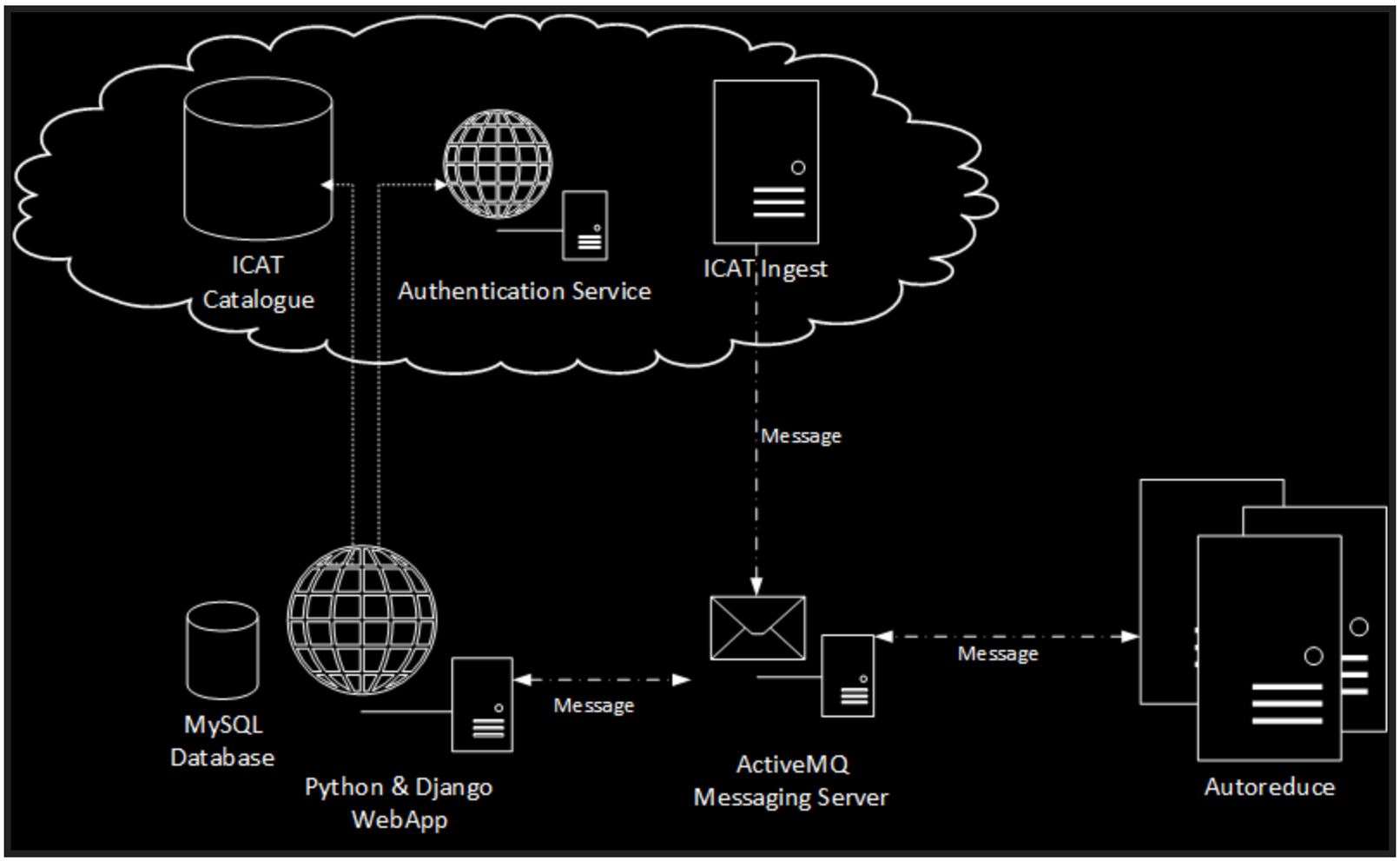
OVERVIEW

- A system for running user provided reduction scripts as soon as data becomes available from the beamline.
- A web application to manage and monitor automatic reduction jobs.

HOW IT WORKS

1. User sets up reduction scripts and variables in advance
2. Run completes on an instrument
3. Message is sent to let autoreduction know
4. A reduction script is generated based on pre-defined variables
5. The data is reduced and saved to a user-accessible location

TECHNOLOGY STACK



FEATURES:

- Automatically run user provided scripts as early as possible
- Provide different scipts for different experiments
- Modify variables used by the reduction script
- View previous reduction jobs
- Re-run failed/incorrect jobs
- Multi-device friendly

ISIS Auto-reduction

Search

View By Experiment Number | View By Job Number

⌄	WISH		Edit Reduction Variables
	26667	**Completed**	**Last updated:** March 20, 2015, 12:09 p.m.
›	LET		Edit Reduction Variables
›	MERLIN		Edit Reduction Variables
›	MAPS		Edit Reduction Variables
›	MARI		Edit Reduction Variables

ISIS Auto-reduction

MARI

Status

All reduction jobs complete.

View upcoming saved variable changes

By Experiment Reference Number **By Run Number Range**

Run Number Start 1 **Finished** (Optional)

sample_rmm 10

energy_bins -11, 0.05, 9

incident_energy 10

sample_mass 10

sum_runs

monovan_run 19628

wb_run 19585

sample_run 19683

> Advanced Variables

Cancel | Submit Changes

Additional Actions

- Preview Reduction Script
- Reset to default values

ISIS Auto-reduction

Reduction Job #26667

Status: Completed
Instrument: WISH
RB Number: 1320363
Last Updated: March 20, 2015, 12:09 p.m.
Data:

Start: March 20, 2015, 12:09 p.m.
Finish: March 20, 2015, 12:09 p.m.
Duration: 46 seconds

Reduced:

Re-run reduction job

Re-run description

var_4 22413, 22450

var_3 2.87

var_2 5,2,4,30.0

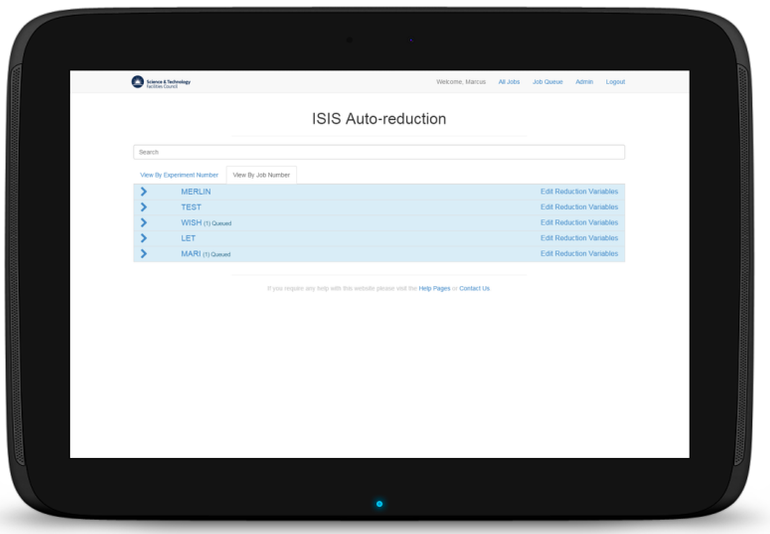
var_1 -3,-5,-4,-5.0

Advanced Variables

Cancel | Re-run with new variables

Additional Actions

- Preview Reduction Script
- Reset to default values
- Reset to current script and values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Welcome, Marcus
All Jobs
Job Queue
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Edit Reduction Variables
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Edit Reduction Variables
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LET
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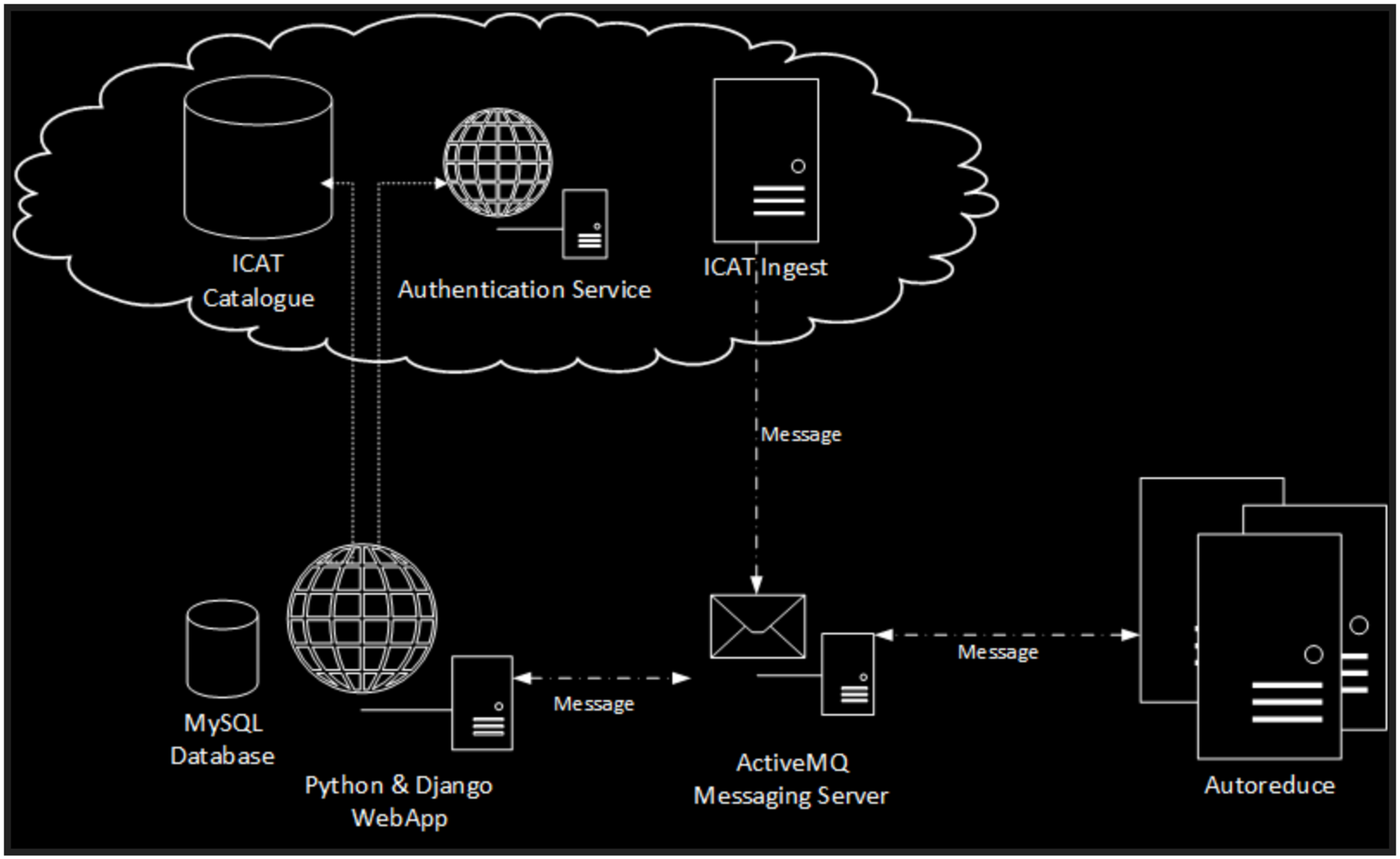
SO WHERE DOES ICAT FIT IN?


ICAT
Catalogue
Authentication Service
ICAT Ingest
Message
MySQL
Database
Python & Django
WebApp
Message
ActiveMQ
Messaging Server
Message
Autoreduce

ICAT - PERMISSIONS

- Access is controlled by ICAT permissions.
- New groups created for Autoreduction Admins.
- Instrument scientists given access to their associated instrument.
- Users given access to experiments they were part of.

ICAT - BACKFILL

- Ability to reduce past data
- Calls ICAT for a given run range and instrument, returning all data paths
- "Emulates" the message sent when a run finishes on the beamline

THANK YOU