Workflow Management and Instrument Web Monitoring
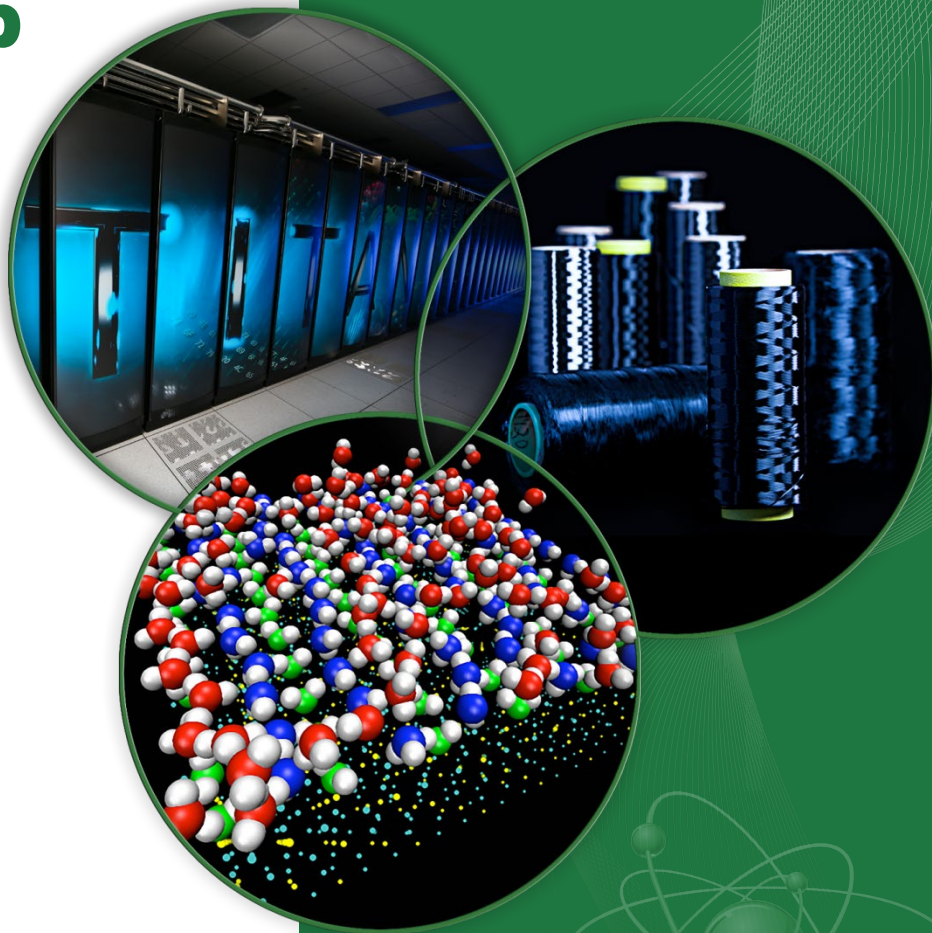
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Post-Processing Overview

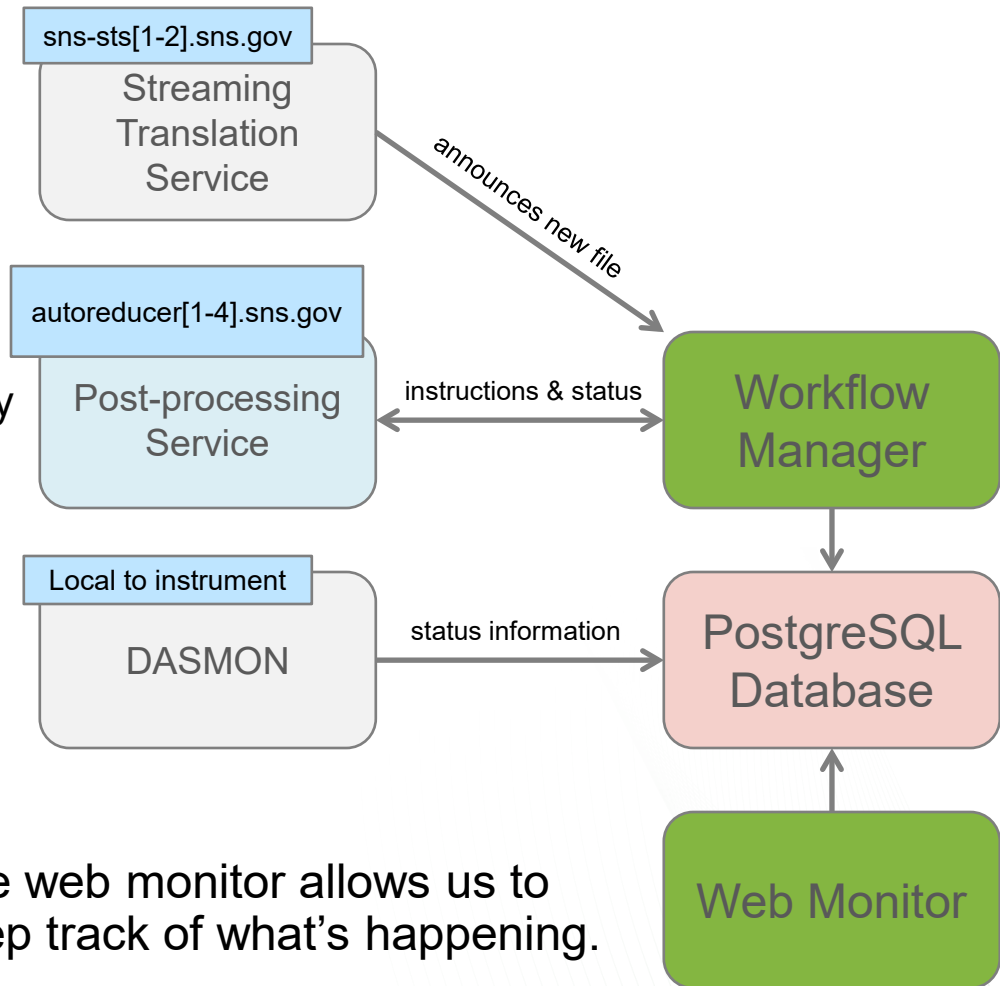Translation service notifies the workflow manager when a new data file is ready.

The auto-reduction service takes care of reduction and cataloging.

➔ Reduction script can be modified by instrument staff.

/SNS/REF_L/shared/autoreduce/reduce_REF_L.py
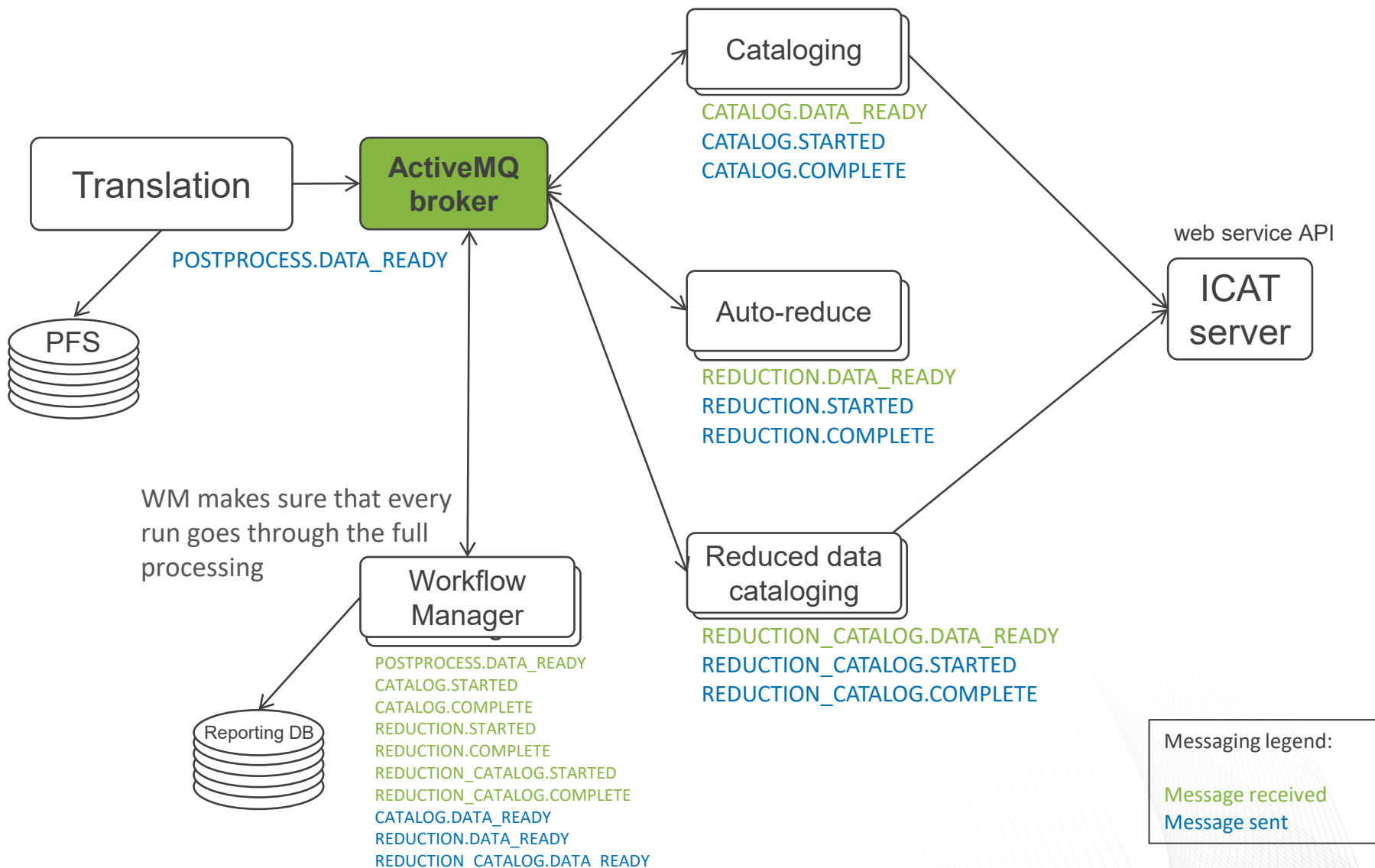
DASMON reads in the stream and performs diagnostics.

sns-sts[1-2].sns.gov

Streaming Translation Service

announces new file

autoreducer[1-4].sns.gov

Post-processing Service

instructions & status

Workflow Manager

Local to instrument

DASMON

status information

PostgreSQL Database

The web monitor allows us to keep track of what's happening.

Web Monitor

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Post-Processing Architecture

ActiveMQ message

direct access

Translation Service — announces new file → **Workflow Manager**

workflowmgr.sns.gov

autoreducer[1-4].sns.gov

Post Processing — instructions & status

heartbeat

Web Monitor

webmon.sns.gov

livedata.sns.gov

heartbeat

DASMON — heartbeat, status → **DASMON Listener**

PV updates

pvsd — heartbeat

PostgreSQL Database

workflowdb2.sns.gov

AMQ broker + PostgreSQL

amqbroker[1-2].sns.gov

Workflow Management and Instrument Web Monitoring at the SNS

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ActiveMQ Communication Flow

Workflow Management and Instrument Web Monitoring at the SNS

Online Diagnostics

- A diagnostics page allows us to verify the health of the system.

- Pinpoints the issue for common problems.

- The system tries to self-diagnose as much as possible.

Workflow Management and Instrument Web Monitoring at the SNS

Failure Rates

- Web monitor: never

- AR clients: never

- Workflow manager: < 2/yr

- AMQ brokers: once per 2-3 months

- Workflow DB: frequent high IO due to system. No actual problem. The issue is being resolved.

- ICAT: has to be restarted once every 6 weeks

- DASMON listener: once a month, due to high traffic and WorkflowDB IO problems.

Workflow Management and Instrument Web Monitoring at the SNS

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Where's the code?

Web monitor and workflow manager:

https://github.com/neutrons/data_workflow

Auto-reduction clients:

https://github.com/neutrons/post_processing_agent

Reduction script repo:

https://github.com/mantidproject/autoreduce/tree/master/ReductionScripts/sns

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