

SRCNet - CHSRC infrastructure and development

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Agenda

- What happened since the last SKACH meeting
- Highlights from new features
 - FirecREST integration
 - Contributions to SRCNet monitoring stack
 - Security training and impact on CHSRC
 - PanDA updates
 - Log collection and observability
 - Science Gateway updates
- Future plans



What happened since the last SKACH meeting

Team changes

- Welcome to Yves joining
- Lukas moving on to new adventures
- SRCNet team assignment becoming more dynamic between Project Increments

Development and Operations changes in SRCNet

- CHSRC now more focused on operations

New features



FirecREST integration

- Work done by Lukas in his last PI
- Enables users registered at CSCS to use Daint via Jupyterhub
- Custom Firecrest spawner added to the Jupyterhub deployment at CHSRC
- Work continued by Jean-Daniel on the token setup and handling
- <https://jupyterhub.src.skach.org>

Server Options

K8s Compute

HPC (CSCS / FirecREST)

⚠ Client credentials are stored in JupyterHub's database. Future service account credentials should be k8s-secrets and solve this issue.

CSCS Credentials

Client ID:

<client-id>

Client Secret:

<client-secret>

Job Parameters

Cluster:

daint

CSCS-Project:

<cscs-project>

CPUs:

2

Memory (e.g. 16G):

16G

Walltime (HH:MM:SS):

01:00:00

Partition:

jupyterhub

Start



Contributions to SRCNet monitoring stack

- Making a prototype umbrella chart production ready
- Moving to using upstream charts and latest versions
- Integrating the chart with the SRCNet deployment stack and staging environment
- Work continued by colleagues in Neon team



Open Telemetry image source: <https://opentelemetry.io/img/logos/opentelemetry-horizontal-color.svg>, accessed 28-08-2026
Prometheus logo source: https://commons.wikimedia.org/wiki/File:Prometheus_software_logo.svg, accessed 28-08-2026
Elastic logo source: https://en.wikipedia.org/wiki/Elastic_NV#/media/File:Elastic_NV_logo.svg, accessed 28-08-2026

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Security training and impact on CHSRC

SRCNet security training held at EGI, Amsterdam

- Participants from various SRCs
- Introduction to information security, AuthNZ, threats, forensics...
- Practical exercise for incident response

Future plans

- Physical site audits happening at SRCNet
- Defining a SRCNet CSIRT (Computer Security Incident Response Team)
- Defining and agreeing on SRCNet security standards
- Implementation of the agreements will fall on SRCs



PanDa updates and sidequest for alternative



- Neon team colleagues contributed valuable **upstream changes** to improving secrets management in Helm charts
- Enabling **better GitOps integration** for PanDA deployment
- We've also started working on an **alternative solution to Federated Execution**
- More information about federated execution solution in **dedicated presentation** by Dev Null et al (tomorrow)

11:15 → 12:30

Meeting on SRCNet Execution frameworks deep-dive - BY INVITATION ONLY (If interested please contact Rohini Joshi)

🕒 1h

📍 Meeting room -...

15m

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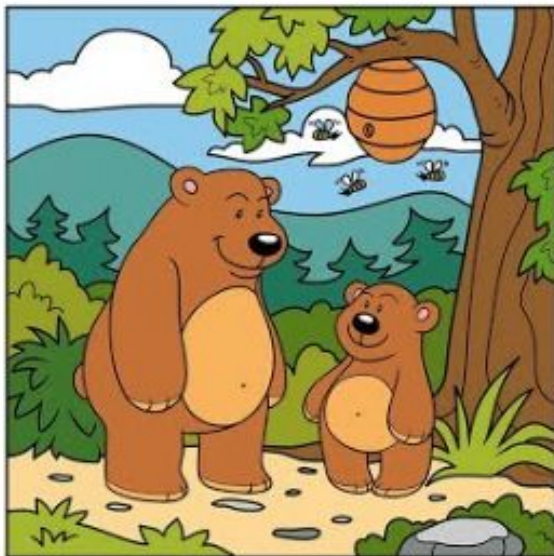
PanDA vs SRCNet homebrew execution

Architectural components - how do both compare? Main trade-offs



PanDA

Submit work



SRCNet solution



FIND THE 5 DIFFERENCES

DM-API

Rucio

Gateway
(Pilot
actory)

pawns pilots

- Written from scratch, we make it as we want it.
- Native support for SRCNet services (site-capabilities, DM-API, permissions-api)
- HTCondor-based
- Never tried in production
- SRCNet governance.

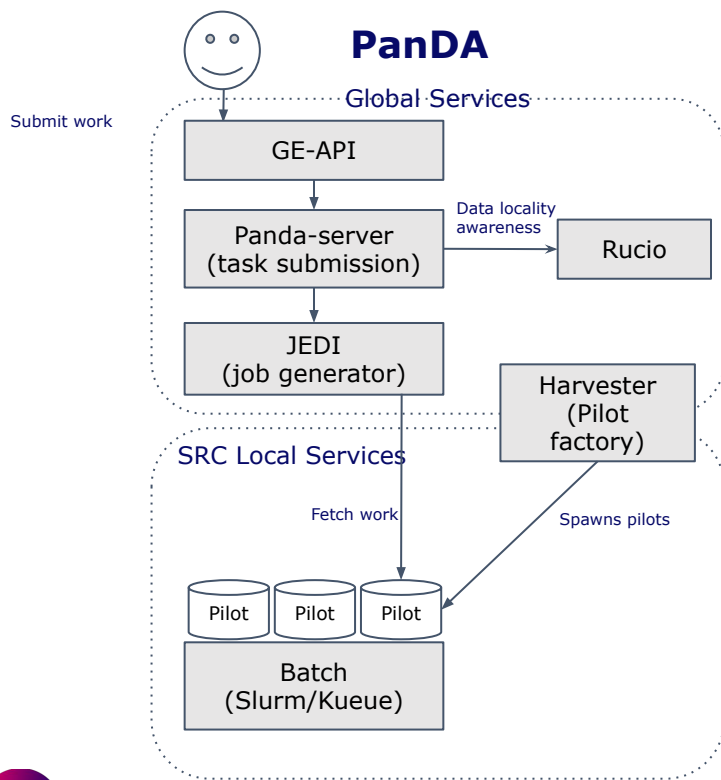
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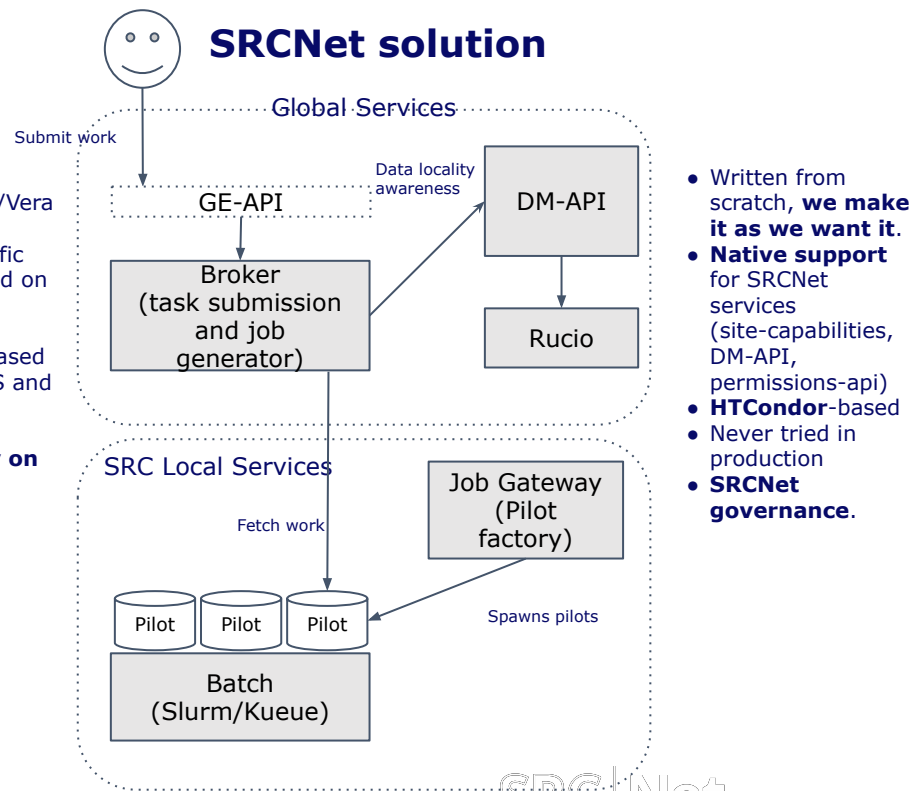


PanDA vs SRCNet homebrew execution

Architectural components - how do both compare? Main **trade-offs**



- **Written by CERN/ATLAS/Vera Rubin**
- SRCNet-specific services added on (mostly via GE-API)
- **HTCondor**-based
- Powers ATLAS and Vera Rubin production
- **Dependency on PanDA developers**

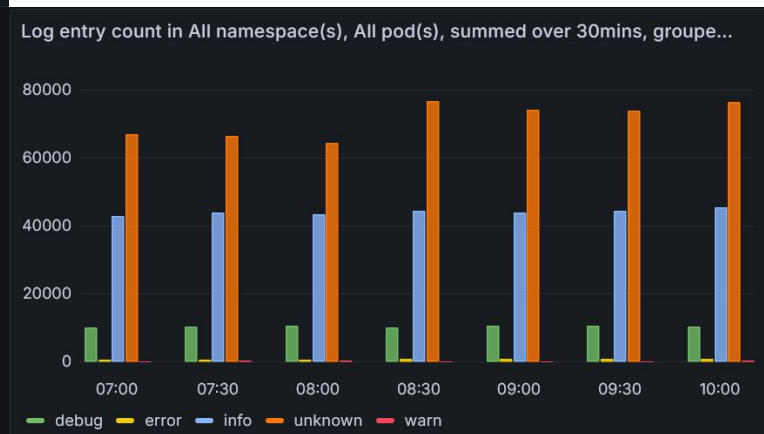
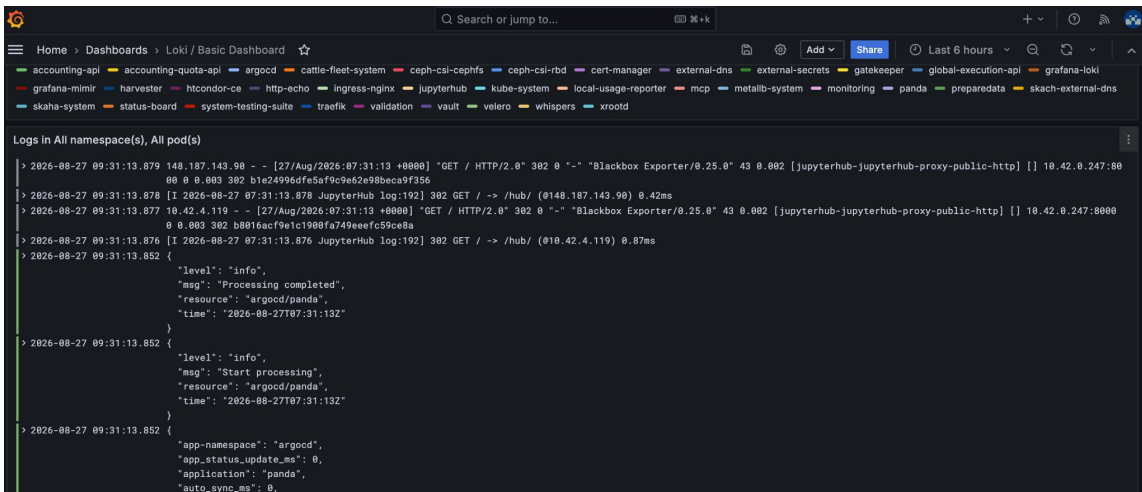


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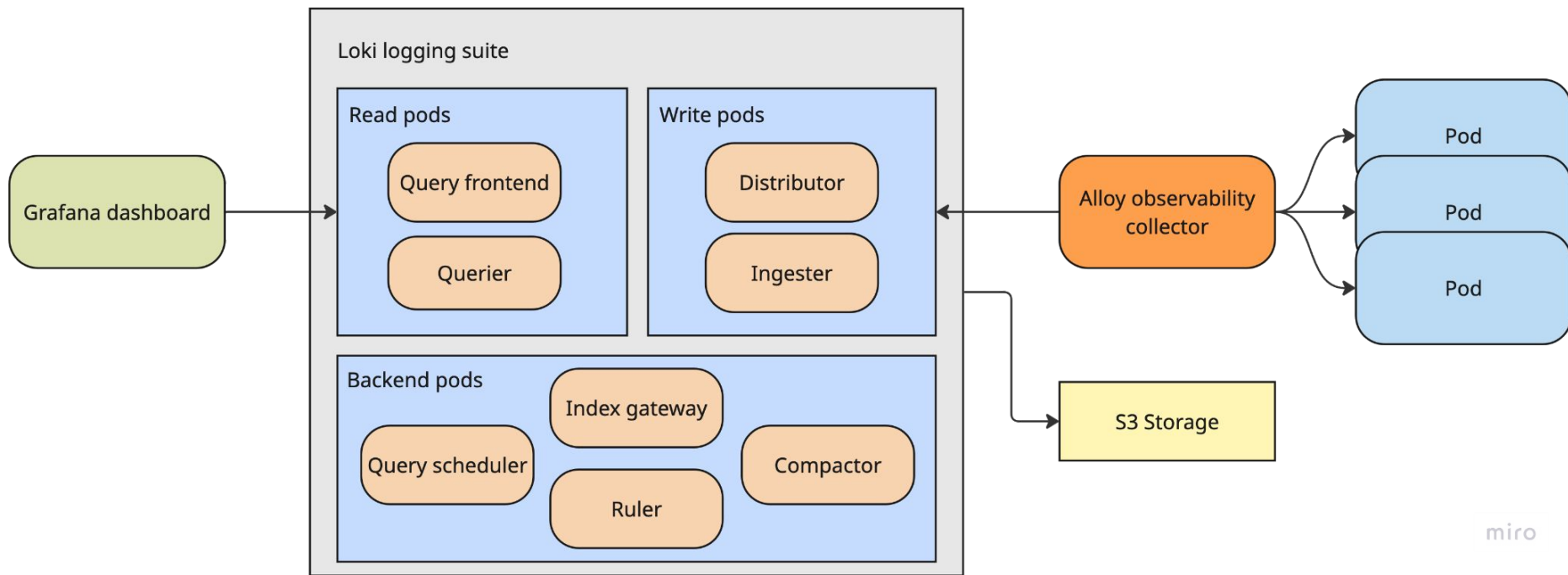
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Log collection with Grafana Loki

- New log collection solution for CHSRC
- Integrated with long-term S3 storage and Grafana
- Next steps: merge to production, create more dashboards, (and monitor storage buildup)



Log collection with Grafana Loki - architecture



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Science Gateway

— Architectural Foundation

- **Frontend Framework** : Built using React and TypeScript, managing user interfaces, job controls, log outputs, and user profiles.
- **Backend API** : RESTful microservices interacting with background execution engines, data transport systems, and service databases.
- **Authentication & Access** : Integrated directly with SKAO IAM (Identity and Access Management) to grant secure access based on user permissions.



Science Gateway

— Active Workstreams & Refactoring

- **Interactive Compute Sessions** : Developing and refining session request forms (e.g., SKAHA and CANFAR container sessions), including adding support for GPU compute resource allocations.
- **Session Lifecycle & Logging** : Improving real-time log filtering and state tracking to handle active, terminating, and failed compute sessions reliably.
- **Modernizing the Frontend** : UI/UX Improvements
- **Backend Architecture Refactoring** : Undergoing a full refactoring and restructuring of the backend codebase to improve modularity, to clean up service layers, and streamline microservice architecture.



Future plans

- Implementing SRCNet release management process
- Creating more dashboards with relevant information for CHSRC operators
- Further work on the federated execution solution
- Continuing to prepare the node for science verification



Thanks & Questions?

