



Appverse: Companion Apps

OnDemand Loop



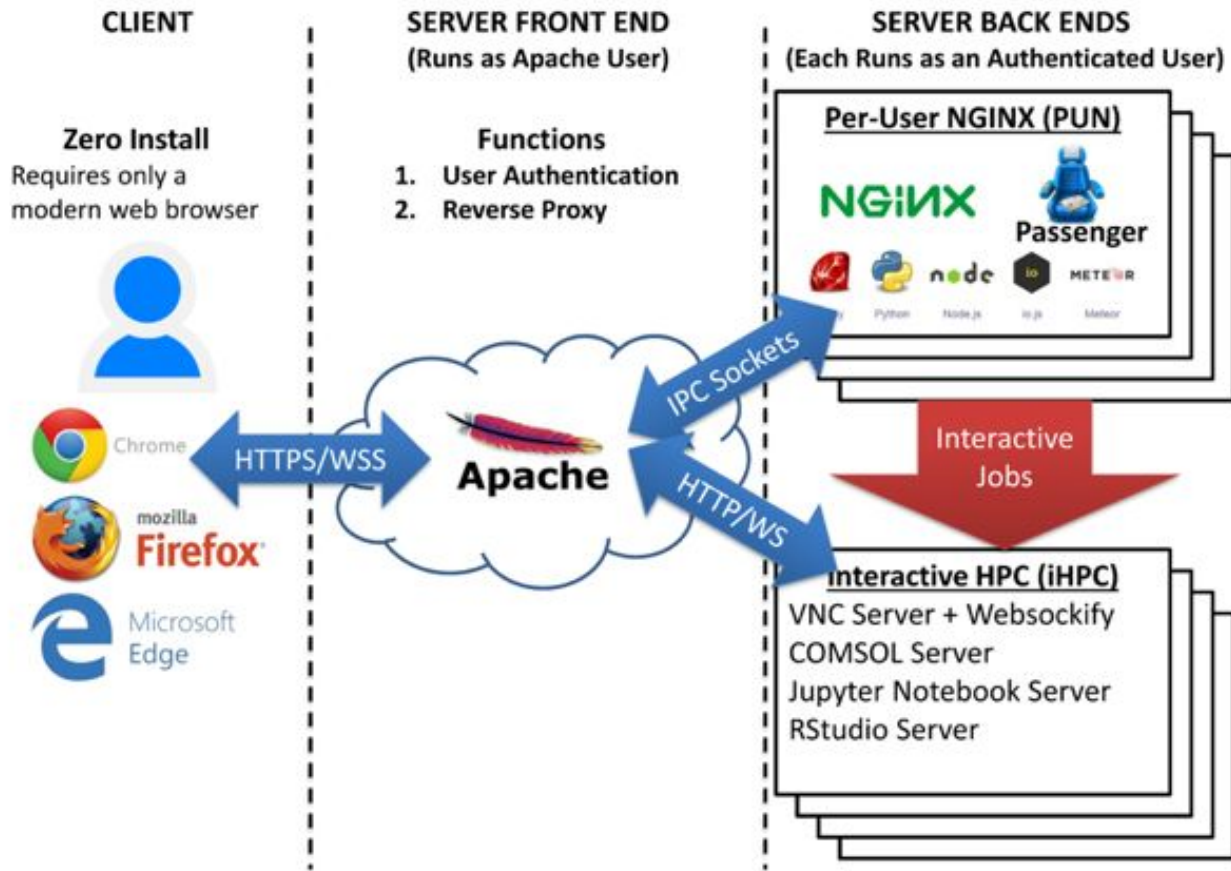
William Horka - Harvard University

The Institute for Quantitative Social Science

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OOD Architecture Diagram



Node Detail with Jobs, App Types, and URL Paths



End User

Companion Apps



Apache

Per-User NGINX

Phusion Passenger

Dashboard app
(ruby on rails)

Shell app
(ruby on rails)

Loop app
(ruby on rails)

custom app
(python)

custom app
(nodejs)

rack interface

rack interface

rack interface

WSGI interface

launch and manage jobs
browse, manage, and edit files
transfer files with Globus and rclone

web-based terminal
download and upload files
to/from repository datasets

up to you!

up to you!

Scientific Apps



Remote Desktop
app (launcher)

RStudio app
(launcher)

Software & Jobs



Remote Desktop
software (job)

RStudio software
(job)

OOD node

Cluster node

`/pun/sys/${app}`

`/pun/sys/dashboard/batch_connect/sys/${app}`

VNC: `/pun/sys/dashboard/noVNC...${node}...${port}`
HTTP: `/rnode/${node}/${port}`



OnDemand Loop

Moving Data Between HPC and Remote Repositories

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<https://github.com/IQSS/ondemand-loop>
<https://iqss.github.io/ondemand-loop/>



The Institute for Quantitative Social Science



Why This Project?

Research data sharing is now a critical requirement for reproducibility, transparency, and funding compliance. Repositories like Dataverse make it easier for researchers to preserve and share their data globally, while also enabling others to reuse datasets for new discoveries.

The Opportunity

Researchers at Harvard already rely on powerful tools like Dataverse and Open OnDemand, but these platforms operate separately. This separation creates friction when moving data or workflows between the two, making reproducible research more difficult in practice.

The Solution

Led by **Len Wisniewski** and **Stefano Iacus**, this project—funded by the FAS-HUIT Project Review Board—bridges the gap between Dataverse and Open OnDemand by enabling researchers to seamlessly upload and download research data between systems, directly from their HPC environment.



What is OnDemand Loop?

OnDemand Loop is a companion application to Open OnDemand that simplifies how researchers move data between HPC clusters and remote repositories like Dataverse and Zenodo.

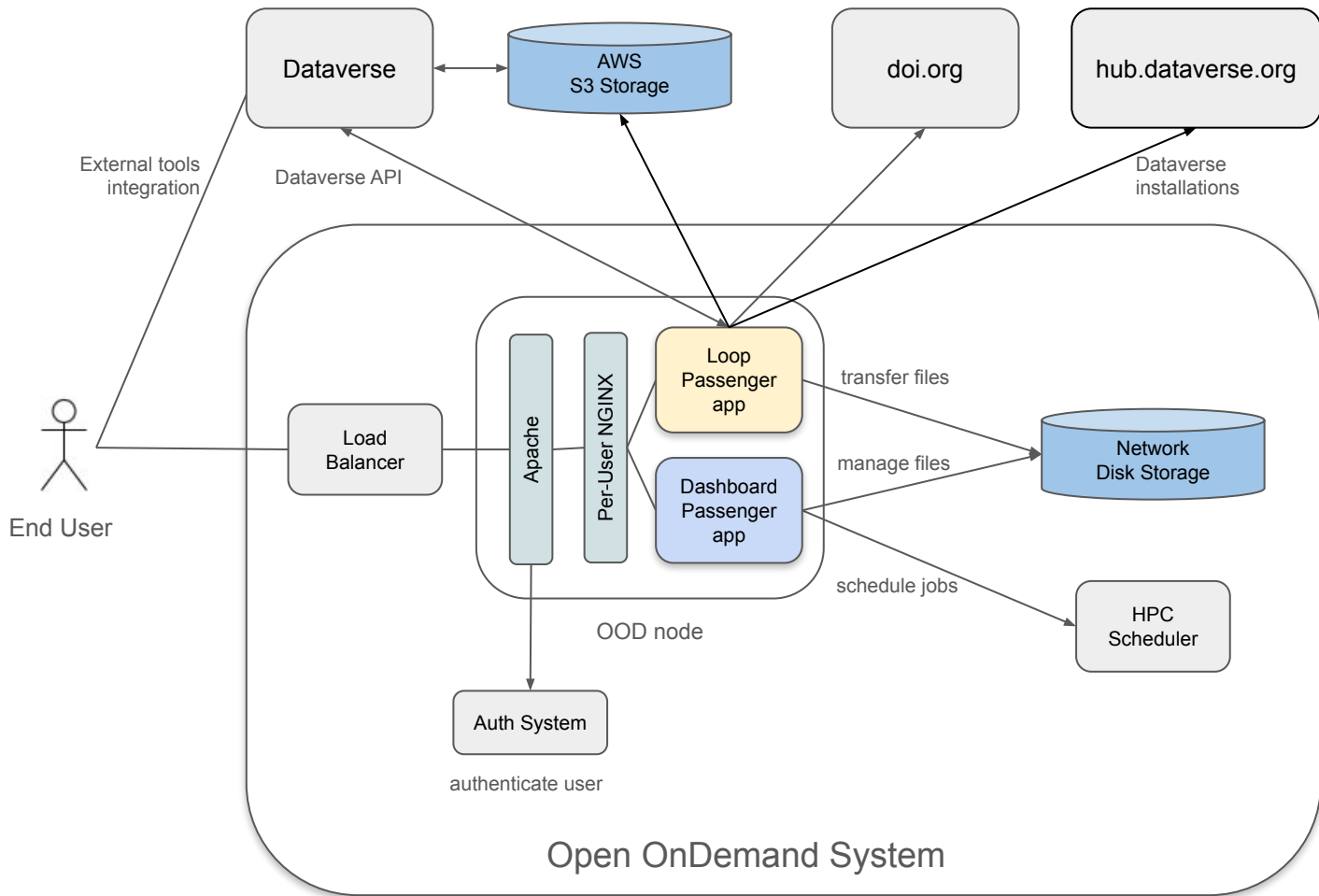
Why It Matters

The app is designed for researchers—not sysadmins—making it easy to upload and download data without writing custom scripts or using the command line.

How It Helps

With a clean interface embedded in Open OnDemand, OnDemand Loop lowers technical barriers and supports reproducible research by integrating data sharing directly into the HPC workflow.

Components Diagram



Demo

Thank You!

- Code <https://github.com/IQSS/ondemand-loop>
- Docs <https://iqss.github.io/ondemand-loop/>
- Appverse:
<https://openondemand.connectci.org/appverse#/ondemand-loop>

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