

Community Nextgen and Infrastructure Advancements

NextGen Team at CIROH

Arpita Patel, James Halgren, Zach Wills, Nels Frazier, Benjamin Lee, Sepehr Karimi, Trupesh Patel, Josh Cunningham, Shahab Alam, Jordan Laser, Mike Johnson, Steven Burian, Purushotham Bangalore, Jeff Carver



November 28, 2023

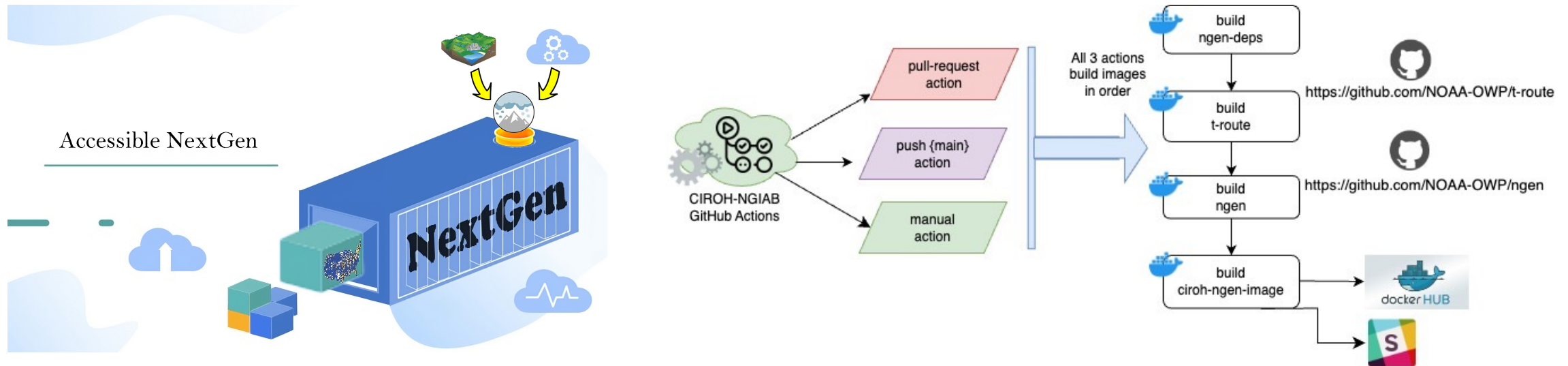
NextGen In A Box (NGIAB)

- **NextGen In A Box** Ready-to-run, containerized and cloud-friendly version of NextGen framework, packaged with scripts to help prepare data and get you modeling more quickly.
 - GitHub repo: [GitHub: CIROH-UA/NGIAB-CloudInfra](https://github.com/CIROH-UA/NGIAB-CloudInfra)
 - Prior recorded training resources: [docs.ciroh.org: NGIAB](https://docs.ciroh.org:NGIAB) (from workshops on 'How to run NGIAB' during CIROHDevCon1 and Summer Institute 2023.)
- **NGIAB is soon to be built on the community version of the** NextGen National Water Resources Modeling Framework
 - GitHub Repo: [GitHub: CIROH-UA/ngen](https://github.com/CIROH-UA/ngen)
 - **Ngen supports CFE, PET, FORTRAN_BMI, SLoTH, topmodel, t-route**
 - NGIAB is compatible with DMOD – NOAA/OWP's framework for testing ngen updates and other similar HPC application tasks.
 - GitHub repo: [GitHub: NOAA-OWP/DMOD](https://github.com/NOAA-OWP/DMOD)
- Documentation, examples, and news at CIROH DocuHub: [docs.ciroh.org: NGIAB](https://docs.ciroh.org:NGIAB)



NextGen In A Box Key Progress

- Template input data package:
 - S3 bucket at: [CIROH data : AWI-002/AWI_03W_113060_002.tar.gz](https://s3.amazonaws.com/CIROH-002/AWI_03W_113060_002.tar.gz)
- NGIAB CI pipeline automatically building and deploying with updates.
- T-Route package integration, build and test
- Continuous data stream – in progress.
- Revisions and refinements to “guide script” that walks user through NGIAB simulation execution.




Data Access Improvements

- Kerchunk Zarr json headers
 - **JSON Headers:** Produced and uploaded for NWM output on an S3 bucket, optimizing data accessibility.
 - Access the [Full Retrospective Zarr Dataset](#).
 - Explore the [Full Operational Zarr Dataset](#).
 - Operational Zarr files are automatically generated and uploaded daily at 12:00 AM.
- Developed to generate customized NWM output file URLs, facilitating seamless access.
 - Customize date range, forecast cycle, lead time, variable input, run input, and dataset for a tailored list of URLs.
 - Find the codebase on [GitHub: CIROH-UA/nwmurl](#).
 - Install library: **pip install nwmurl**
- **Forcing preprocessor** on [GitHub: CIROH-UA/ngen-datastream](#)
- **RTI-Teehr** library extensions - [docs.ciroh.org: RTI-Teehr](https://docs.ciroh.org/RTI-Teehr)
- **CUAHSI** notebooks – [GitHub: CUAHSI/notebooks](#)
- Data Access Demo Notebook (showing how these all work together) – in progress

CIROH DocuHub

Community editable technical documentation hub - **Collaborate now!** at docs.ciroh.org

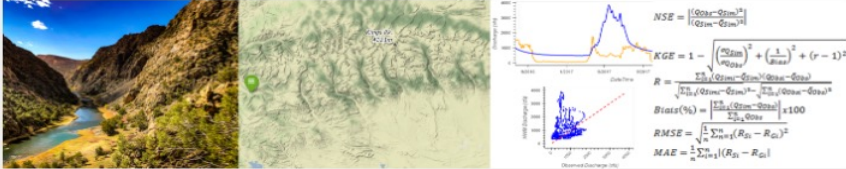
- NextGen Resources
 - Data Access: docs.ciroh.org: data-access
 - CIROH Products: docs.ciroh.org: products
 - CIROH Services: docs.ciroh.org: services
 - News and Updates: docs.ciroh.org: blog
- Other documented resources
 - BYU, USU, RTI, UA, OWP WaterNode
 - Integrating with portal.ciroh.org
 - Submit your PR now!

 [CIROH Docs](#) [Products](#) [Services](#) [Education](#) [ciroh.org](#)

[Home](#) > [Products](#) > [ROSET](#) > [ROSET](#)

Research-Oriented Streamflow Evaluation Tool (ROSET)

Research-Oriented Streamflow Evaluation Tool (ROSET) is a Python-based, user friendly, fast, and model agnostic streamflow evaluator tool. This tool can be used to evaluate any hydrological model that uses NHDPlus dataset. It allows a user to evaluate the performance of a hydrological model at the collocated USGS gauges and NHDPlus stream reaches. This Python-based tool helps visualize the results and investigate the model performance interactively. The current version of the tool is available on GitHub and can be accessed using the following link.



Code

The source code for the Research-Oriented Streamflow Eval tool can be found on GitHub:

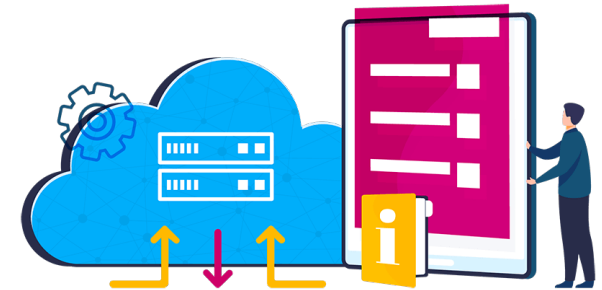
https://github.com/whitelightning450/Streamflow_Evaluator

Tags: [roset](#) [python](#)

[Edit this page](#)

CIROH Cloud (2023 P29)

- CIROHCloud - 2i2c Jupyterhub (Google) and AWS services
- New! On-Premise VMs and ML HPC
- Submit Request
 - Infrastructure : [GitHub: CIROH-UA/NGIAB-CloudInfra/Infrastructure](https://github.com/CIROH-UA/NGIAB-CloudInfra/Infrastructure)
 - OnPremise : [GitHub: CIROH-UA/NGIAB-CloudInfra/OnPremise](https://github.com/CIROH-UA/NGIAB-CloudInfra/OnPremise)



: Case Studies Request Form

template is used to request the resources for Case Studies Call - AWS/Azure/GCP. If this doesn't look right, [choose a different type](#).

Title

Write Preview

****1. Requester Information:****
This should include the name and contact information of the person making the request.

****2. Project Information:****
Provide a brief description of the project and its goals. This can help the infrastructure team understand the context and purpose of the requested resources. *Please highlight how this project will be benefit from and/or provide benefit to other resources on the shared infrastructure.*

****3. Project Description:****
If your project involves developing software or scripts, briefly describe the software you plan to develop.

Assignees
No one assigned

Labels
None yet

Projects
None yet

Milestone
No milestone

Development
Shows branches and pull requests linked to this issue.

Helpful resources
[GitHub Community Guidelines](#)

Contact Us

- Support Team
 - Join us on [CIROH Slack](#)
 - Channel - [CIROH Slack: #nextgen_help_2023](#)
 - Email : [ciroh-it-admin](#)

Thank You !