

HIGH PERFORMANCE RESEARCH COMPUTING

HPRC Primer

Introduction to the Drona Workflow Engine

February 20th, 2026

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High Performance
Research Computing

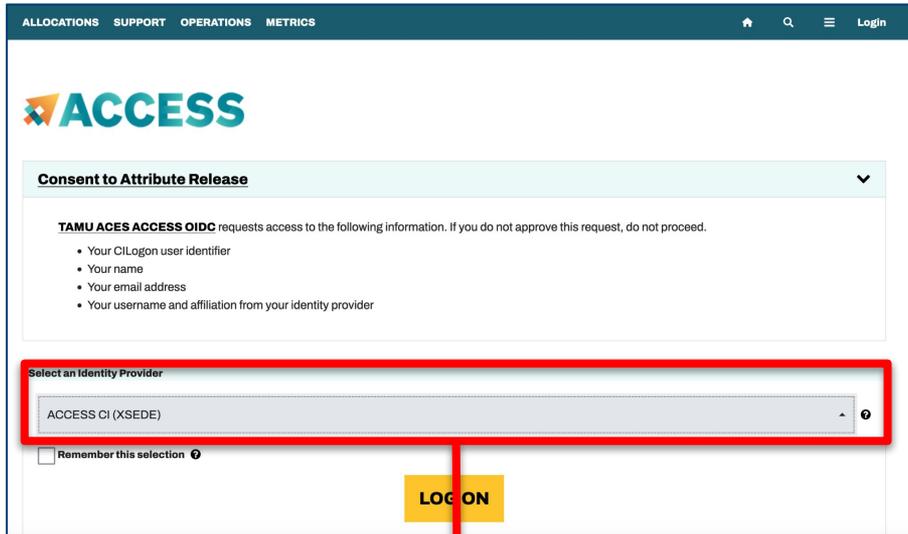
DIVISION OF RESEARCH

Accessing the ACES Portal

- HPRC webpage: hprc.tamu.edu
- Aces portal shortcut: portal-aces.hprc.tamu.edu
 - Requires an ACCESS ID!

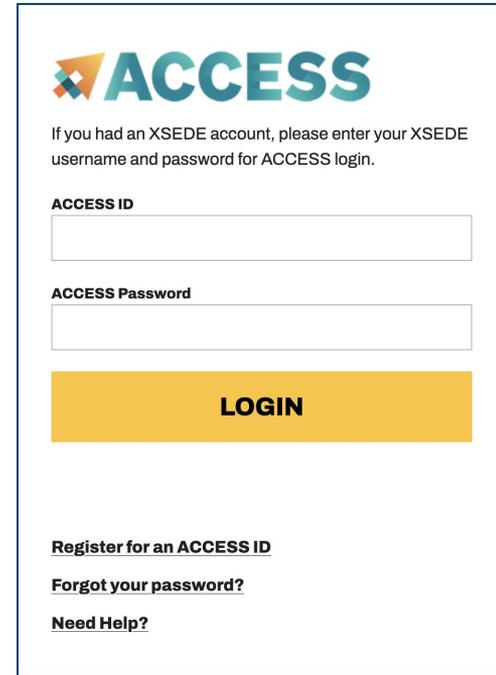


Accessing ACES via the Portal (ACCESS)



The screenshot shows the ACCESS portal interface. At the top, there is a navigation bar with links for ALLOCATIONS, SUPPORT, OPERATIONS, and METRICS, along with a home icon, a search icon, a menu icon, and a 'Login' link. Below the navigation bar is the ACCESS logo. A 'Consent to Attribute Release' section is visible, with a dropdown arrow. The consent text states: 'TAMU ACES ACCESS OIDC requests access to the following information. If you do not approve this request, do not proceed.' The list of requested information includes: 'Your CILogon user identifier', 'Your name', 'Your email address', and 'Your username and affiliation from your identity provider'. Below the consent section is a 'Select an Identity Provider' section with a dropdown menu. The dropdown menu is highlighted with a red border and contains the option 'ACCESS CI (XSEDE)'. Below the dropdown menu is a checkbox labeled 'Remember this selection' with an information icon. A yellow 'LOG ON' button is positioned below the dropdown menu, with a red line pointing from the dropdown menu to the button.

Select the Identity Provider appropriate for your account.



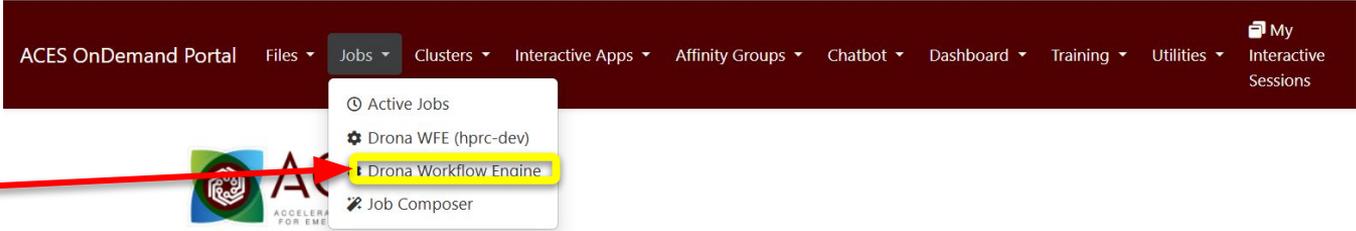
The screenshot shows the ACCESS portal login form. At the top, there is the ACCESS logo. Below the logo is the text: 'If you had an XSEDE account, please enter your XSEDE username and password for ACCESS login.' Below this text are two input fields: 'ACCESS ID' and 'ACCESS Password'. Below the input fields is a yellow 'LOGIN' button. At the bottom of the form, there are three links: 'Register for an ACCESS ID', 'Forgot your password?', and 'Need Help?'.

Log in using your ACCESS or institutional credentials.

Drona Workflow Engine

- A framework to assist you with generating and creating jobs

Once in the Portal,
select at the top:
“Jobs” → “Drona
Workflow Engine”



The screenshot shows the top navigation bar of the ACES OnDemand Portal. The 'Jobs' menu is open, and 'Drona Workflow Engine' is highlighted with a yellow box. A red arrow points from the text on the left to this menu item. The navigation bar also includes 'Files', 'Clusters', 'Interactive Apps', 'Affinity Groups', 'Chatbot', 'Dashboard', 'Training', 'Utilities', and 'My Interactive Sessions'. Below the navigation bar, the page content includes a message about HPC resources, a 'Message of the Day' section with important policy information, and a warning about backups.

ACES OnDemand Portal Files Jobs Clusters Interactive Apps Affinity Groups Chatbot Dashboard Training Utilities My Interactive Sessions

- Active Jobs
- Drona WFE (hprc-dev)
- Drona Workflow Engine**
- Job Composer

OnDemand provides an integrated, single access point for all of your HPC resources.

Message of the Day

IMPORTANT POLICY INFORMATION

- Unauthorized use of HPRC resources is prohibited and subject to criminal prosecution.
- Use of HPRC resources in violation of United States export control laws and regulations is prohibited.
- Sharing HPRC account and password information is in violation of State Law. Any shared accounts will be DISABLED.
- Authorized users must also adhere to ALL policies at: <https://hprc.tamu.edu/policies>

WARNING: THERE ARE ONLY NIGHTLY BACKUPS OF USER HOME DIRECTORIES.

SCRATCH IS NOT BACKED UP AND IS NOT MEANT FOR LONG TERM STORAGE.

Drona Workflow Engine

Job submission made easy

DRONA COMPOSER (ACES)

Job Name

Location Change /scratch/user/u.mp108705/drona_composer/runs

Environments -- Choose an option -- + - Show History

Cautions: Job files will overwrite existing files with the same name. The same principle applies for your executable scripts.

Provide job name

Import additional environments

Show previously ran jobs

Select location where job should run

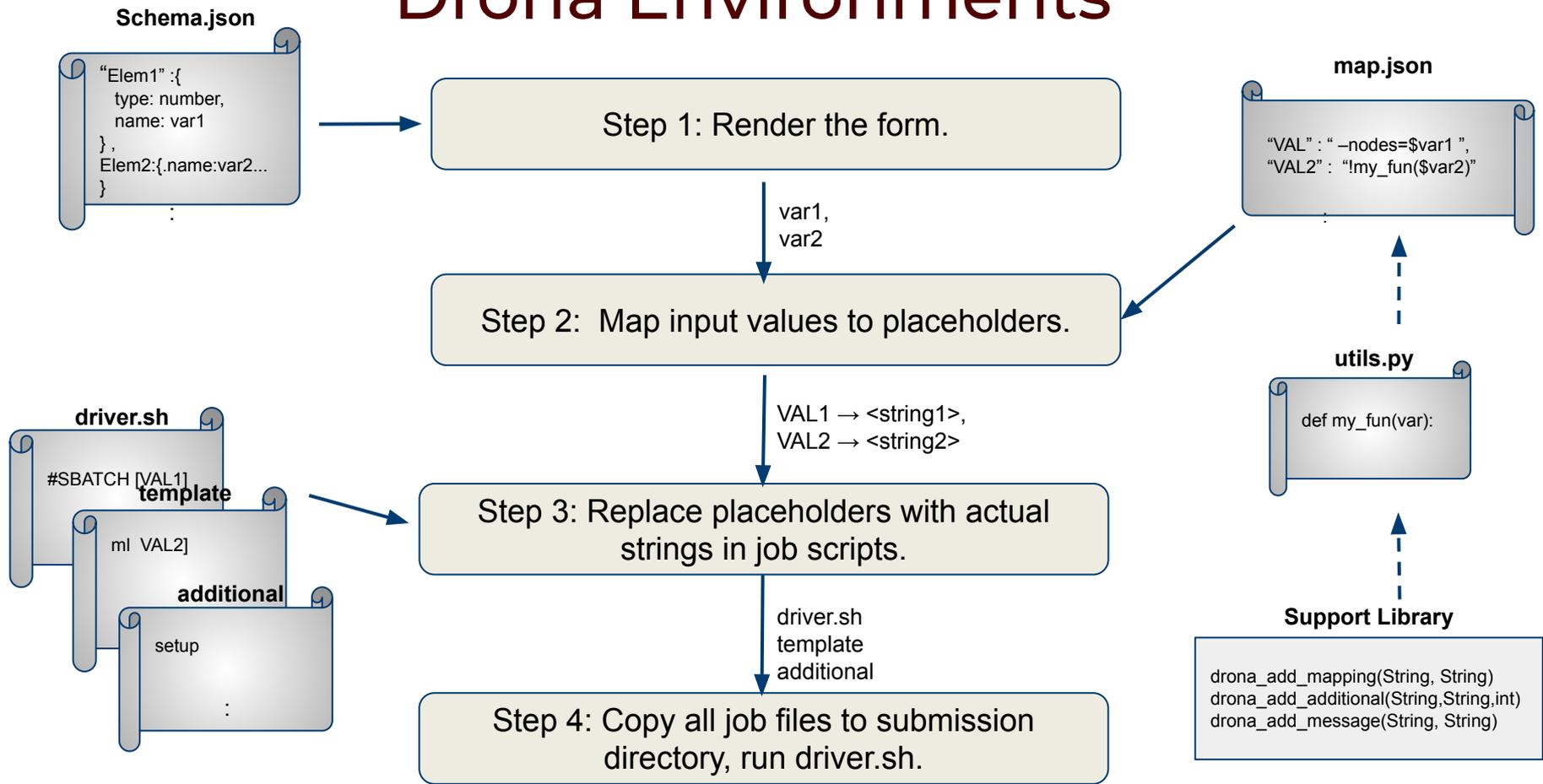
Select environment

Drona Demo

Hands on Activity - 5 minutes

1. Add the **DronaPrimer** env using the import functionality.
2. Check the environment dropdown again and see **DronaPrimer** in the list of environments.
3. Using the ACES portal, inspect the contents of directory.
`$$SCRATCH/drona_composer/environments/DronaPrimer`

Drona Environments



Case Study: Adapting DronaPrimer Environment

DronaPrimer: Simple workflow that compiles a provided source file and then runs it using given number of tasks and cpus-per-task. We will modify the environment as follows:

1. Add an extra dropdown element in schema.json.
 - Dropdown has optimizations O0,O1, O2, O3
 - Update template.txt to add the compiler flag placeholder
 - Add a warning when a user selects 'O3'
2. Adjust number of cpus to make it fit on single node.
3. Add a README file to the preview.

Advanced Drona Features

1. Conditional fields
2. Dynamic Elements

```
"account": {  
  "type": "dynamicSelect",  
  "label": "Project Account",  
  "name": "account",  
  "retriever": "list_accounts.sh"  
},
```

Advanced Drona Features

1. Conditional fields
2. Dynamic Elements
3. Drona Job History

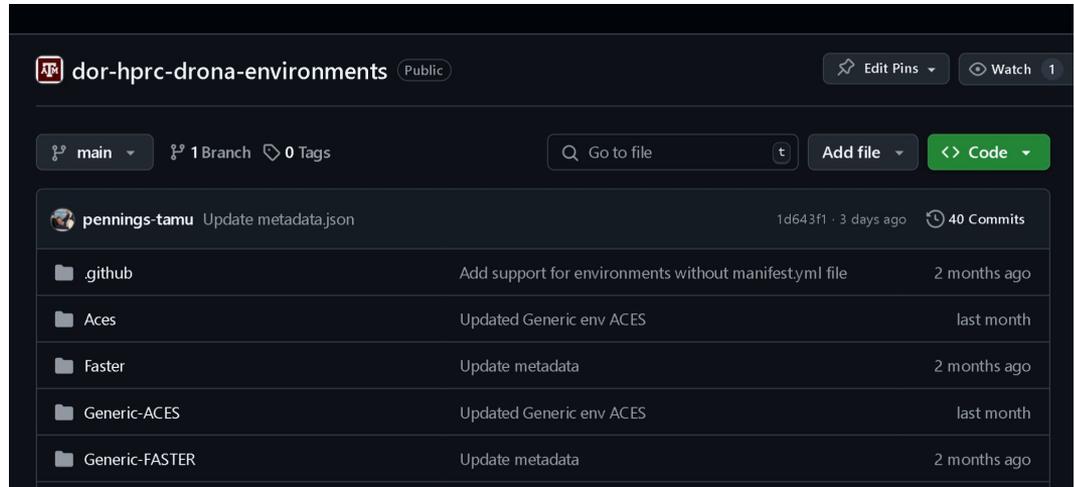
From To

ID	Name	Location	Environment	Date	Actions
1008736	DronaPrimerTest2	drona_composer/runs/DronaPrim...	DronaPrimer	2025-04-03 13:52:38	<input type="button" value="Actions"/> Rerun Recreate
1008734	DronaPrimerTest	drona_composer/runs/DronaPrim...	DronaPrimer	2025-04-03 13:48:45	
N/A	AlphaFold_run	drona_composer/runs/AlphaFold...	AlphaFold	2025-04-03 13:39:18	<input type="button" value="Actions"/>
N/A	ML_training	drona_composer/runs/ML_training	Generic	2025-04-03 13:35:31	<input type="button" value="Actions"/>
N/A	molecular_dynamics_...	drona_composer/runs/molecular...	Generic	2025-04-03 13:34:48	<input type="button" value="Actions"/>
1008710	fluid_dynamics_simula...	drona_composer/runs/fluid_dyna...	Generic	2025-04-03 13:34:16	<input type="button" value="Actions"/>

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Advanced Drona Features

1. Conditional fields
2. Dynamic Elements
3. Environment Repository

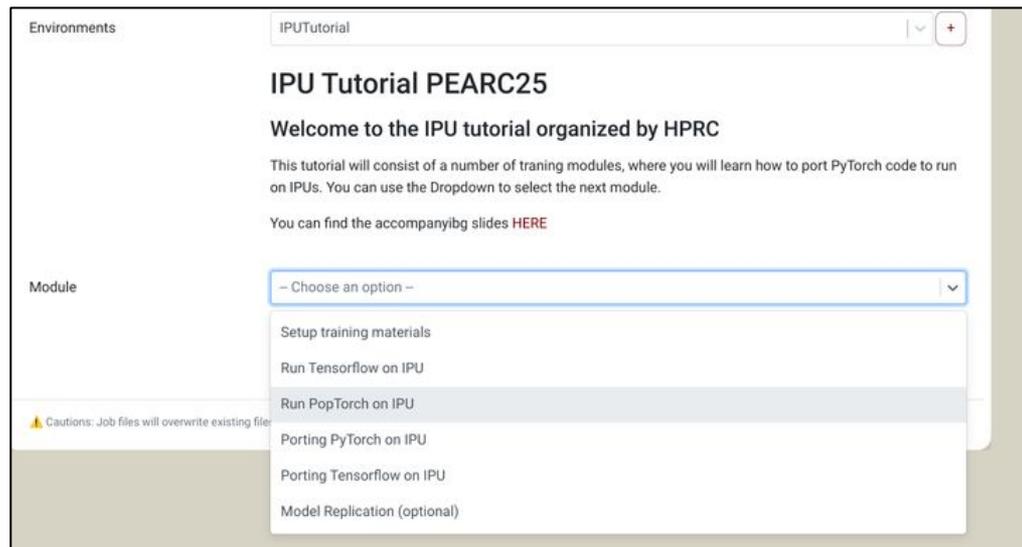


manifest.yml:

```
name: "Matlab"  
description: "Matlab"  
category: "Scientific"  
version: "1.0.0"  
author: "HPRC"
```

Advanced Drona Features

1. Conditional fields
2. Dynamic Elements
3. Environment Repository
4. HTML Elements



IPU Tutorial

Drona Preview

Continued Learning

[Drona Composer Documentation](#)

[Drona Form Elements](#)

[Drona Repository](#)

[ACES Batch System](#)

[ACES Quick Start Guide](#)

[HPRC YouTube](#)



**HIGH PERFORMANCE
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TEXAS A&M UNIVERSITY

<https://hprc.tamu.edu>

HPRC Helpdesk:

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Phone: 979-845-0219

Take our short course survey!



https://u.tamu.edu/hprc_shortcourse_survey

HPRC Survey

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Help us help you. Please include details in your request for support, such as, Cluster (ACES, FASTER, Grace, Launch), NetID (UserID), Job information (JobID(s), Location of your jobfile, input/output files, Application, Module(s) loaded, Error messages, etc), and Steps you have taken, so we can reproduce the problem.



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Thank you!
Any questions?

u.tamu.edu/hprc_shortcourse_survey