

Campus Cluster Login using XSEDE SSO

Service Provider Implementation Instructions

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Background

XSEDE allocated compute users can login to XSEDE's SSO hub (login.xsede.org) using their XSEDE username and password plus a 2nd factor. From the SSO hub users can then login to their XSEDE allocated compute resources without providing additional security credentials. This two step login process enables users to login to all their XSEDE allocated compute resources using any OpenSSH client software and their XSEDE credentials. Users don't have to install a special GSI OpenSSH client, to remember and use a service provider specific username and passwords, or remember resource specific login hostnames. Authentication between the SSO hub and compute resources is transparent to the user and is based on XSEDE issued X.509 user credentials, a GSI OpenSSH client on the SSO hub, and GSI OpenSSH servers on service provider login nodes.

This document explains how XSEDE federated level 3 campus service providers can use this XSEDE SSO based two step login process to give users login access to campus resources that are NOT compute allocated through XSEDE by using a new type of "login allocation" used only to grant login access.

Implementation Steps

0) Prerequisites

All campus service provider staff implementing this capability must first obtain an XSEDE user portal account via the “Create Account” link at <https://portal.xsede.org/#/guest>.

1) Register the campus resource in RDR

Summary

XSEDE’s Resource Description Repository (RDR) contains descriptive information about XSEDE resources. All resources participating in the XSEDE federation as Level 1, 2 or 3 (Campus) resources must be described in RDR.

To request access to RDR e-mail help@xsede.org with the “Subject: Requesting access to RDR to register campus resources” and provide the XSEDE username(s) of: 1) the RDR administrator(s) that will administer RDR accounts for the service provider, and 2) the initial person(s) that will maintain RDR resource information. RDR administrators can grant/revoke RDR access to other local service provider staff and thus maintain the initial person(s) granted access to maintain RDR resource information. The request should also contain the name of the Service Provider and the URL to the Service Provider’s home page.

With RDR access service providers should enter resource information at <https://rdr.xsede.org>. In RDR follow the User Guide link for instructions on how to describe resources, especially the section detailing what information is needed for *campus cluster login* integration.

2) Establish a campus resource login allocation

Summary

To enable campus cluster login through the SSO hub a campus administrator needs a new login allocation that will control access to their campus resource. When users are added to that login allocation they will be able to login through the SSO hub to the local campus cluster login node(s).

To establish a new login allocation, the Campus administrator should email help@xsede.org requesting that the *Campus SSO allocation opportunity* be opened for a submission. This opportunity is generally kept “closed” and only opened when a campus requests it. Once opened the allocation submission page will display the Campus SSO allocation opportunity.

When XSEDE acknowledges that the *Campus SSO allocation opportunity* is "open" or visible on the Allocations submission site the Campus administrator will then be able to submit an allocation request under the *Campus SSO allocation opportunity* by visiting the XSEDE User Portal at <https://portal.xsede.org/submit-request#/>. The request should include the legal names and XSEDE portal username(s) of the individual(s) that will be *Allocation Manager(s)* and be responsible for adding campus resource users to the login allocation.

3) Implement user and allocation packet processing

Summary

To enable campus cluster login through the SSO hub the campus resource needs to integrate with the XSEDE AMIE process to receive XSEDE user and allocation packets. These packets communicate to the campus which users need to be granted login access once they are added to the login allocation.

AMIE data packets are transferred to the campus using RabbitMQ queue and include information about the user accounts that need to be created. For each AMIE data packet that is received and processed the campus will need to create a local user account and then generate a response AMIE packet with the information that XSEDE needs to map XSEDE usernames to Campus assigned local username.

To implement user and allocation packet processing download https://github.com/ResearchComputing/amie_rabbitmq, review the document *amie_rabbitmq_implementation_sso.docx*, and integrate the reference implementation for processing AMIE data packets. Local hooks and customizations will be necessary to process and reply to AMIE data packets.

4) Install the campus resource login service

Summary

To enable campus cluster login through the SSO hub a campus administrator will need to install a GSI OpenSSH server on their campus resource login node(s) and configure them to accept XSEDE issued credentials. They will also need to register their GSI OpenSSH with XSEDE.

Campus administrators can install and configure the GSI OpenSSH server following the most recent instructions here:

- <https://software.xsede.org/production/gsi-openssh-server/latest/>

Campus administrator must register their GSI OpenSSH server with XSEDE using **one** of the following methods:

- A. Email help@xsede.org requesting the registration of the GSI OpenSSH server in the Research Software Portal. In the request provide the name of the RDR registered resource and the hostname and port (if not 22) for the GSI OpenSSH service.

- B. Install XSEDE's Information Publishing Framework "IPF", and configure it for publishing service information as explained here: <https://software.xsede.org/production/ipf/latest/>

IPF is a tool available to all XSEDE federated services providers (whether allocated or not) that dynamically publishes resource information to XSEDE, including: available software modules, network accessible service, batch service information, and job event information.

SPs implementing Campus Cluster Login using XSEDE SSO who do not wish to publish resource information but only want to register their GSI OpenSSH service can do so using Option A.

5) Provide users campus resource login through XSEDE

Summary

Campus administrators will need to add users to their campus resource login allocation or inform their users how to request access to their campus resource login allocation.

Before a user can be added to a campus resource login allocation they must first have an XSEDE portal account. To obtain an XSEDE portal account users should:

- Browse <https://portal.xsede.org/>
- Follow the "SIGN IN" link near the top right
- Click on the "CREATE ACCOUNT" link near the bottom of the login window
- Follow the instructions provided

A campus administrator may submit a list of initial users that should be given access to their campus resource login allocation when they submit the allocation request. The list must include the XSEDE username of those users.

After the campus resource login allocation has been established the designated allocation PI and manager(s) will be able to add or remove users from the campus resource login allocation thru the XSEDE portal Add User form:

<https://portal.xsede.org/group/xup/add-remove-user>

Campus administrators should advertise through appropriate local channels and documentation how their local users can request Campus Cluster Login through XSEDE's SSO Hub once they have obtained an XSEDE portal account.