XSEDE Capability Delivery Plan
IDM-14 - SSH Access using XSEDE identities
for education
Last revised 2017-11-16

Background

Use cases describe community needs, requirements, and recommendations for improvements to cyberinfrastructure (CI) resources and services. A Capability Delivery Plan (CDP) is an executive summary of the current gaps in our support for a use case, current plans to fill those gaps with new or enhanced capabilities, and the operational components that currently support the use case.

Use case summary

Use case IDM-14 describes how educators with education allocations on XSEDE cloud resources need their students to be able to SSH login to virtual machines administered by the educators. The students should authenticate using their XSEDE identities, as opposed to the educators having to set up and issue IDs/passwords or SSH keys to each student. The full description of this use case is available in the CSR's use case registry.

CDP summary

The XSEDE system doesn't currently support this use case as described. Two critical components are in place: the XSEDE User Portal (XUP), where educators and their students can register with XSEDE and obtain XSEDE ID/passwords; and Globus Auth, an OIDC-based public authentication service intended to enable XSEDE authentication to external services, such as those described in this use case. What is currently missing is the ability to use Globus Auth to authenticate SSH connections.

Gap(s) that we currently plan to address:
- We do not expect to fully address any of these gaps in the near term.
- We will conduct a technology readiness assessment to identify and evaluate solutions that satisfy this use case.

Gap(s) that will not be addressed at this time:
- None

Time and effort summary:
- Technology readiness assessment: **4-5 person-weeks** of effort

- ○ Identify implementation, conduct lightweight assessment, and select which ones to do a detailed assessment of: 1 person week
- ○ Detailed assessment/testing of the 2-3 top implementations: 1 week each
- ○ Analyze detailed assessments, select implementation(s), and prepare full implementation CDPs: 1 week

Functionality gaps

1. Simple XSEDE authentication for untrusted SSH services (suggested priority: medium)

The XSEDE system does not currently allow administrators of untrusted hosts (e.g., a virtual machine hosted by an educator) to enable XSEDE authentication in an SSH service as described in use case IDM-14.

Plans: XSEDE provides a similar mechanism for campus IT administrators (see use case CB-08), but the implementation is significantly more challenging to set up than what is described in this use case. *We will conduct a technology readiness assessment to identify and evaluate solutions that offer a simpler setup, as required by this use case. Estimated effort:*

System components that support this use case

The following XSEDE operational components currently support this use case.

Component	Supported Functionality
XSEDE User Portal (XUP)	The front-end (web browser-based) user interface to the XSEDE system where individuals register with XSEDE, manage their user profile information, request allocations to use XSEDE SP resources, and manage membership in projects that have active allocations.
Globus Auth	XSEDE's public authentication interface, based on OpenID Connect (OIDC)