XSEDE Capability Delivery Plan
CRI-2 XNIT Jetstream Image
Last Revised 2017-05-

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 use case support gaps, of plans to fill those gaps with new or enhanced capabilities, and of existing operational components that already support aspects of a use case.

Use Case Summary

Use case CB-04 describes how XCI will help enable researchers to perform automated workflows combining both campus and XSEDE resources. IAAS-4 describes how XSEDE users will be able to spin up dedicated virtual clusters, with access to expert assistance from a service provider.

Use case document:
http://hdl.handle.net/2142/94821
http://hdl.handle.net/2142/94822

CDP Summary

The functionality described in this use case is 80% supported by the operational components listed below.

Gap(s) that we currently plan to address:
- Automation of virtual cluster creation on the Jetstream resource

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

Time and effort summary:
- 8 person-weeks of effort in 1 activities

Functionality Gaps

1. Automation of virtual cluster creation on the Jetstream resource (high)

This use case is supported by the XCSR and the Jetstream resource. The scripts and documentation necessary to automatically create virtual clusters on Jetstream will be made available through the XCRI portion of the XCSR. Additional work will be carried out eventually to make this part of the Atmosphere user interface on Jetstream, to ease the administrator

experience. Clusters created with this mechanism will have a similar environment to the XCRI XCBC, and come enabled with the XNIT repository of scientific software. This in turn provides another mechanism for demonstrating the power of XCRI offerings to interested parties.

Plans: Scripts exist for this already, work will continue on better integration with existing Jetstream interfaces and improvement of the cluster implementation itself. Fully elastic clusters with persistent headnodes are planned as well.
Best available effort and time estimate: 8 person-weeks

System Components That Support This Use Case
The following XSEDE operational components currently support this use case:
(Hyperlink the component <Name> to the XCSR Component Description Repository)

Component	Supported Functionality
Local Resource Management	Local management of the Jetstream environment makes this resource remotely available to all US-based academic researchers.
XSEDE Community Software Repository	Software and documentations for creating virtual clusters on Jetstream will be available in the XCRI section of the XCSR.