

XSEDE Capability Delivery Plan

UCCAN-7, 8, 11, and 12 Resource Information

Last revised 2016-10-05

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 Cases CAN-7 (“Canonical 7”), 8, 11, and 12 describe how to produce and consume information about CI resources within the XSEDE system. These capabilities are important for maintaining XSEDE’s user documentation, for continuous system testing, and to support scientific workflow use cases. Two of the use cases cover publishing information and subscribing to information (with notifications on changes, also known as the “push” method), and the other two cover updating information and searching for information (also known as the “pull” method).

Use case document(s):

- <http://hdl.handle.net/2142/48902>
- <http://hdl.handle.net/2142/48903>
- <http://hdl.handle.net/2142/48904>
- <http://hdl.handle.net/2142/48905>.

CDP Summary

The functionality in this use case is **fully (100%)** supported by operational components listed below. However, the specific CI resource information that needs to be accessible and managed is evolving as the technology building blocks of CI resources evolve, and as the use cases for using CI resources emerge or evolve.

Functionality Gaps

1. Evolving CI resource information

Engineering activities that enhance available CI resource information will be created and associated with the capability delivery plans of the use cases that require the enhanced CI resource information.

2. Quality attributes

Verifying many quality attributes require significant one time and ongoing testing. XSEDE has decided that the costs of this testing would not bring sufficient benefit. Instead XSEDE will monitor user satisfaction, usage, and available performance metrics and address quality issues when raised by users.

Plans: There are no plans to address this verification gap.

System Components That Support This Use Case

The following XSEDE operational components currently support this use case:

Component	Supported Functionality
RabbitMQ (need link)	Implements the AMQP standard for publishing and subscribing to CI resource information and enables the “push” method for discovery.
Information Services Warehouse (need link)	Provides a central, reliable, fault tolerant, and scalable repository of discoverable resource information. This component is specifically design to support the discovery use case and often contains copies of the authoritative resource information produced or managed by other components.
Warehouse REST API (need link)	Implements RESTful interfaces to update and search CI resource information and enables the “pull” method for discovery.
Information Services Routers (need link)	Components that move/route information between publish/subscribe components and update/search components. This enables information that is published (pushed) to be discoverable thru search (pull) interfaces, and information that is updated to be forwarded to subscribers.