1.0 Service Level Agreement Overview

This is a Service Level Agreement (SLA) between NCSA's ICI directorate (SET) and <project>. The purpose of this Service Level Agreement (SLA) is to identify the basic services, and any agreed upon optional services, to be provided by ICI to <project>. A description of the systems and services involved is included, along with the time period covered in the agreement.

The details and scope of work are detailed from the Baseline Service Tier in the Appendix

1.1 Description of Customer System / Service / Project

This agreement pertains to the ***Taiga*** system and its services operated and maintained by the NCSA ICI directorate. <more needed>

1.2 Period of Agreement

The length of the agreement is 3 years. This SLA covers the period from *Date* to *Date* and will be reviewed and revised as necessary at the end of this period. Storage rate costs are described in the Appendix for each year of the (3) year period.

1.3 Additional Equipment and Implementation Costs

LNET (Lustre network) routers and their associated cables need to be purchased by any project mounting taiga as a filesystem. A minimum of two LNET routers is required; we have a preferred hardware configuration for this, however we are willing to work with projects in case that needs to vary (for example for a different OEM). Any additional equipment or implementation costs for Taiga itself will be funded via the service storage rate.

1.4 Meeting and Reporting

ICI/SET will host a yearly recurring status meeting concerning taiga. Reporting data will be available to customers via our reporting dashboards.

2.0 Service Agreement

2.1 Service List

- **Parallel storage**
- **System Updates and alerting**
- **Standard storage monitoring (NCSA ICI Monitoring)**
- **Coordination with other NCSA groups**

2.2 Terms of service, Costs, Maintenance, and Metrics

- **Terms of Service**
  - System is available at 99.5% uptime outside of scheduled downtime

    - Desired performance is subject to project requirements and available bandwidth capacity.*
    - Changes in storage allocated (quota) can only be changed on a monthly basis
    - Large new storage requests that exceed the available existing spare capacity of Taiga will require at least a 3-month lead time to order, receive, and integrate new hardware into the taiga storage system.
    - All storage change requests can be made by emailing <need address>@ncsa.illinois.edu and will be implemented within one working week for most cases that do not require additional hardware allocation
- **Standard Costs**
    - Based on storage allocated
    - Measured in TB, not TiB.
    - 1000 GB of filesystem space= 1 TB
    - 625,000 inodes (file/directory/link records) are allocated per 1 TB of capacity
    - Allocations are for 3-month periods (check)
    - Internal = $30.48
    - External (industry) = $48.35
    - Base support includes quotas, ACL support, multi-system access (on connected projects).
    - Data transfer mechanisms: Native Lustre Mount, Globus, SFTP, NFS

- **Extras (costs are not covered in this SLA)**
    - Radiant based (user managed) services for data management/movement. (user pays Radiant project)
    - Granite (tape archive) managed backups. Facilitated through Granite services and SLA
    - Special use cases
    - Dedicated staff support time that goes beyond basic Taiga storage, which is covered by the storage price rate. An example of this would be writing custom scripts for data movement/management beyond existing our existing services.
    - Non-Taiga storage support (such as dedicated project specific storage)
- **Maintenance**
    - Project/user agrees to 2 maintenance outages annually of no more than 12 hrs per outage. Dates of outages:
        - 2nd Thursday in March
        - 2nd Thursday in September
        - Granite maintenance will be on the same days.
        - Taiga/Granite take priority on these days. Other projects align their maintenance schedules to Taiga, however updates for those projects specific storage will only be prioritized on dates other than the Taiga PM dates.
- **Metrics**
    - Standard TIG cluster Metrics provided
        - Utilization of investment over time
        - Utilization of investment on a per-GID basis
        - More metrics are expected to be added over time

2.3 SERVICE RESPONSE

- Responses for issues within 6 Business hours for Break/Fix of current service
- Best effort for hardware issues and equipment return to service using spares and/or other hardware
- A two-week time period is required for responses on projections for new services, hardware, design.

- User will be notified of unplanned downtime within 30 minutes of such emergency unplanned downtime during office hours. Email will be sent out to projects, and/or other alert mechanisms per project preference. Outside office hours will be best effort response.

- Downtimes relating to facility power outages are not counted toward overall uptime.
- Downtimes related to facility networking outages are not counted toward overall uptime
- Allow 2 hrs (business hours) of startup and validation to re-launch the filesystem after a facility related power outage

2.4 EXCEPTION AND LIMITATIONS

- Taiga is not a general purpose “home” or “scratch” filesystem. Preferred usage is to move data to local project scratch to process directly upon. IE. TAIGA(READ) -> PROJECT(SCRATCH) for computation.

2.4 ACCEPTANCE CRITERIA

- Appropriate Taiga space is available
- Separate project-based home and scratch space is available. Or alternatives where appropriate
- appropriate filesystem layout and permissions (Posix and ACL’s) are in place
- appropriate quotas in place and reportable
- Data verification for migrated data
- Project specific acceptance testing (project provided)

3.0 APPENDIX

3.1 Baseline Operations Service Tier

Operations: NCSA/ICI/SET will ensure taiga operates nominally.

SLA: M-F Business Hours 6-hour response time for Break/Fix of existing services only. Weekends/off-hours best effort.

3.2 System Description

Taiga is NCSA's Global File System that can integrate with all non-HIPAA environments in the National Petascale Computation Facility. Built with SSUs (Scaleable Storage Units) spec'd by NCSA engineers with DDN, it provides a center-wide, single-namespace file system that is available to use across multiple platforms and is based on DDN's Exascaler platform, running Lustre. This allows researchers to access their data on multiple systems simultaneously; improving their ability to run science pipelines across batch, cloud, and container resources. Also provided are data transfer mechanisms such as Globus. Taiga is also well integrated with the Granite Tape Archive to allow users to readily stage out data to their tape allocation for long term, cold storage.

3.3 Staffing and Equipment Costs

All costs are covered by the storage costs listed above for standard services. Extras are listed in section 2.2 under Costs: Extras.