ISS Service Development

Grouper

Service Definition Document

Author:	ISS Service Development
Owner:	ISS Service Development
Approvers:	Dave Wolfendale ISS Assistant Director
Status:	Draft
Document Reference:	Grouper Service Definition Document
Document Version:	0.3

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1 Introduction

1.1 Purpose

The purpose of this document is to:

- Provide a description of the live Grouper service
- Document the scope of the live Grouper service in terms of customer base
- Define the targets that will apply to delivery and support of the live Grouper service
- Provide a description of the service management processes that will be implemented to support the live Grouper service
- Define how performance of the live Grouper service will be measured and reported on

1.2 Background

Current web application provision is complex and resource intensive, and is usually developed for large user populations with specific needs.

Grouper is an open source group management toolkit developed by Internet2. Grouper provisions group information to and from integrated applications and repositories. Grouper not only holds information about the membership, but it describes the hierarchy of authority regarding who may create, update, and delete it. Grouper gives the group owner authority to define membership, create groups and delegate group rights to someone else.

A pilot Grouper service has already been deployed and supported by ISS. This pilot scheme was put in place to test the integration of Grouper with the existing Shibboleth infrastructure. This pilot deployment of Grouper services proved to be successful, especially with wikis and blogs. A campus wide live Grouper service can be deployed and supported by ISS based on the results from the test implementations.

2 Service Description

2.1 Overview

Grouper is an open source toolkit developed by Internet 2, and aims to address the needs of managing groups. Grouper enables developers to augment and integrate with existing identity infrastructures, enabling authenticated access to group data from applications and repositories across an institution. Grouper allows for the augmentation of existing group infrastructure information, with the control of the augmentation process being delegated to appropriate users.

Features of Grouper include:

- a common user interface and standard API for managing groups
- the same groups are made available to many applications
- distributed authorities are able to directly manage access information
- advanced group management capabilities, such as subgroups and composite groups, to support many access management needs
- A Grouper Web Services interface which exposes common Grouper business logic through SOAP and REST.

Besides basic group management and search capabilities, Grouper also provides support for managing groups and subgroups by distributed authorities, forming composite groups, custom group types and custom attributes, and delegation

2.2 Architecture

The live Grouper service is based on Grouper v1.3.0, which is the latest stable version. It is a Java based web application to complement the Grouper API, which is also Java based. It maintains group data and metadata in a Relational Database Management System (RDBMS). Object persistence is provided by Hibernate, which in turn uses JDBC to connect with the back-end RDBMS. It has been tested thoroughly on Apache Tomcat 5.5.

The live Grouper service will be installed on the secure community server: https://community.ncl.ac.uk which is a Red Hat AS 5 server, running PHP 5 with Shibboleth 2.0 installed, using Java 1.6, with Apache Tomcat 5.5 has the servlet container, and MySQL as its RDBMS.

3 Customer Base

The Grouper service will be evaluated by internal users of collaborative tools, which include wikis, blogs, group calendars and mailing lists. This set of users can be broadly divided into three groups:

- **Normal users**: This group of users will consist of both students and staff members. For example, students can use Grouper to set up and manage "my-coursework-partners" and enable members to participate in mailing lists, wikis, and blogs. Normal users will benefit from group membership and they will be allowed to view what groups they are members of.
- **Non-technical administrative staff**: This group of users are generally business/group owners and they deal with membership decisions and group maintenance.
- **Technical administrative staff**: This group of users generally deal with access control and the implementation details of Grouper such as stem creation and account provisioning.

4 Summary of Commitments

Successful delivery and support of the live Grouper service relies on commitments from both ISS and the customer base. These commitments are summarised below.

4.1 ISS Commitments

ISS will:

Commitment	Document References
Provide the service infrastructure for the duration of the service	2.2 Besides basic group management and search capabilities, Grouper also provides support for managing groups and subgroups by distributed authorities, forming composite groups, custom group types and custom attributes, and delegation Architecture on page 2
Ensure that service restrictions are in place	5 Usage Policy and Guidelines on page 5
Provide service support	6 Service Targets and Reporting on page 6 7 Incident Management Process on page 8 8 Request Management Process on page 9 10 Change Management Process on 11 11 Capacity Management Process on 12
Develop and manage customer surveys	12 Service Improvement and Feedback on page 13

4.2 Customer Commitments

Users of the Grouper service will:

Commitment	Document References
Ensure that the service is used appropriately and securely	5 Usage Policy and Guidelines on page 5
Provide first-level support to end-users	6.2 Support Structure on page 6
Ensure that appropriate requests, issues and changes are directed through the ISS Helpdesk	6.2 Support Structure on page 6
Provide feedback regarding the service to ISS	12 Service Improvement and Feedback on page 13

5 Usage Policy and Guidelines

It is envisaged that for the most part the Grouper service will be accessed by Newcastle University users and also groups consisting of Newcastle users and external collaborators. External collaborators will either be provided with a Newcastle based user ID or be redirected to a 3rd party Identity Provider. External collaborators will be provided with instructions on how to do this at relevant locations.

For the duration of the Grouper service, the following restrictions will be in place:

- Only group administrators can add or delete groups.
- Normal users will not be allowed to view the groups a particular user is member of.

6 Service Targets and Reporting

6.1 Scheduled Service Hours

The Grouper service should be available for normal use 24 hours a day, 7 days a week.

6.2 Support Structure

Site administrators should act as the first point of contact for all end-user incidents, requests and queries. ISS will provide second level support to site administrators for the Grouper service as follows:

Support Function	**Description**	**Availability**
ISS Helpdesk	Single point of contact and first-level ISS support for Grouper-related incidents, requests and queries	The ISS Helpdesk is staffed 0800 - 1730, Monday to Friday. Outside these times, an Out of Hours support service is available: 1730 - midnight, Monday - Friday 0800 - midnight on Saturdays, Sundays and Bank Holidays Reporting of incidents, requests and queries via email is available 24 x 7
Technical Support	Second-level ISS support for all Grouper-related incidents, requests and queries Management and implementation of operational changes to the service	08:30 - 17:00 Monday to Friday

6.3 Availability

It is expected that the live Grouper service will be available a minimum of 99% of the normal service hours during each 4-week period.

6.4 Unscheduled Service Interruptions

It is intended that the number of unexpected outages to the Grouper service shall not exceed two during any 4-week period.

6.5 Performance

It is intended that the live Grouper service shall perform sufficiently well to facilitate normal usage. In practice, querying large sets of stems and groups might take up to a

minute to load. However, it is not envisaged for a normal user to be a member of more than 50 groups, and as such, the response time will be significantly lower.

6.6 Capacity

ISS will ensure that sufficient infrastructure resources are available and in place to support the normal day-to-day operation of the Grouper service. Monitoring processes will be implemented to provide trend reporting and analysis to ensure that resource capacity matches the evolving usage requirements of the customer base in the most cost-effective and timely manner. Known larger scale changes or potential changes in usage of the service by the customer base should be reported to ISS as soon as possible to assist in the Capacity Management process, however normal usage patterns and organic growth is not something that has to be reported.

6.7 Housekeeping

ISS will ensure that backup and recovery procedures are developed, tested and implemented to help prevent loss of data in the Grouper service.

The backup process implemented for the pilot will facilitate data recovery at two levels, as follows:

- Full site restore
  It will be possible to request a restore of a complete site from a backup copy held on magnetic tape. However, due to the amount of effort required to perform a full site restore, this will only be considered under exceptional circumstances. Requests for full site restores should be directed to the ISS Helpdesk as described in Section 8 Request Management Process**.** Once received, ISS will investigate the requirement, and determine the action to take as appropriate.

- Grouper XML export/import tool
  The Grouper Export XML tool can be used for provisioning to other systems, reporting, backups, and switching database backends. The Export tool writes to a file and contains the entire Grouper structure and hierarchy. We will be doing regular backups of Grouper by using the Export tool.
  The Import XML tool can be used to add or update existing Stems, Groups and Group Types. It is generally used to initialise a new, empty registry from a previous state.

ISS will implement additional housekeeping routines as appropriate to ensure that the service is maintained in optimum condition.

6.8 Disaster Recovery

There are two single points of failures within the Grouper service; loss of either the Grouper UI (the front end) or the MySQL back-end that serves as the Grouper registry would result in the service being unavailable. Disks in both servers are hardware mirrored so disk failure should not cause a problem.

7 Incident Management Process

An incident is any event which is not part of the standard operation of a service, and which causes, or may cause, an interruption to, or a reduction in the quality of, that service. The primary goal of Incident Management is to restore normal service operation as quickly as possible with minimum disruption to the business, thereby ensuring that the best achievable levels of availability and service are maintained.

All incidents relating to the live Grouper service should be reported to the ISS Service Desk, either by calling extension 5999 or sending an email to helpline@ncl.ac.uk. Details of the caller and the incident will be logged in the Service Management system, and a reference number will be provided. If the incident cannot be resolved immediately by the Service Desk, it will be assigned to the appropriate ISS support group (Webmaster) for further investigation and resolution. When the incident is considered by ISS to be resolved, the reporter will be contacted by a Service Desk Analyst to confirm that the resolution is satisfactory. If the incident resolution is acceptable, the Service Management record will be closed; otherwise, the record will be updated and progressed to resolution as appropriate.

To assist in the resolution of Grouper-related incidents, Service Desk Analysts will have access to information regarding known service errors and workaround procedures. In addition, relevant ISS support group(s) will provide the Service Desk with information to assist the incident logging process, i.e. what information needs to be collected and recorded for all Grouper-related incidents.

See Incident/Request Management Process Flow for a diagram representing the high-level process flow of Request and Incident Management for the pilot Grouper service.

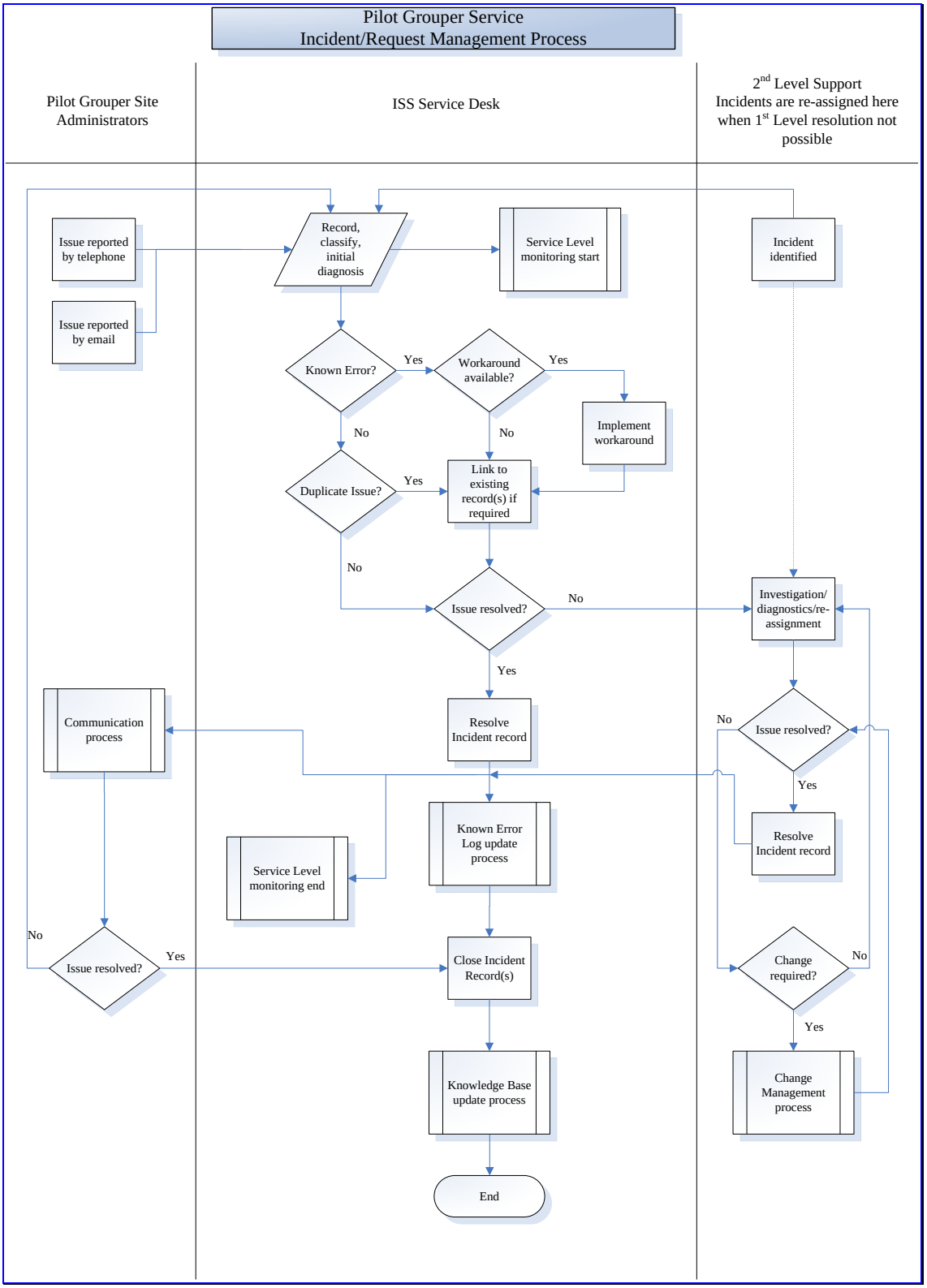
8 Request Management Process

The Request Management process is intended to provide a mechanism for site administrators of the Grouper service to, for example:

- Get help with product functionality, i.e. "How do I …?"
- Get information about, or request a change to, an aspect relating to the delivery and support of the service, e.g. "Will the service be available this weekend?" or "What is the policy regarding …?"
- Request a functional change to the product, e.g. "I would like to use xxx function, which is currently turned off"

The overall Incident and Request Management processes flows are the same (see Incident/Request Management Process Flow), i.e. all requests should be reported to the ISS Helpdesk, are logged in the Service Management system etc., but differ in some details, e.g. service targets.

9 Incident/Request Management Process Flow



10 Change Management Process

Change Management is the process for managing the implementation of changes to the IT infrastructure or any aspect of services, in a controlled manner, and with minimal disruption to the business. A change may be required because of a technical failure or problem, or because of a new software or hardware requirement.

Changes relating to the Grouper service will be managed by ISS. This process will include impact analysis, testing, scheduling, implementation and recovery procedures. Changes will be implemented as follows:

- Simple changes
  Changes deemed to be of low risk with little or no impact, or potential impact, on IT services will be implemented during the weekly system maintenance slot. See Scheduled Service Hours for details of the system maintenance hours.

- Complex changes
  Changes deemed to be of high risk, with significant impact, or potential impact, on IT services, will be defined as projects by ISS, and managed as such. Implementation and backout plans will be defined and agreed with all interested parties.

11 Capacity Management Process

The Capacity Management process ensures that adequate processing and storage capacity is available in a cost-effective and timely manner at all times to meet the requirements of the business. The process includes monitoring the performance and throughput of IT services and supporting components, tuning activities to make efficient use of resources, understanding the current demands for IT resources and deriving forecasts for future requirements.

ISS will implement routine internal monitoring and reporting processes to ensure that sufficient capacity is available to run the Grouper service, and identify potential problem areas. Areas monitored will include, but not be limited to, the following:

- Storage
- Availability
- Concurrent Usage
- Performance

12 Service Improvement and Feedback

The Grouper service will be used to define the requirements for a continuous programme of work to ensure that the service meets the future requirements of the user community. This process should be jointly developed and implemented by ISS and the user community.

During the initial phase of the service, ISS may ask the customer base to provide feedback regarding any aspect of the service. This feedback will take the form of a customer survey, and users will be asked to comment on issues encountered setting up and expanding group membership.

Users will also be asked to comment on the ease of using the Grouper UI to add and delete groups, add and delete users and delegating rights. The Grouper UI will consist of pre-packaged scripts and also Newcastle University developed scripts.

As Grouper is primarily concerned with encouraging collaborative work between Newcastle user and external users, we will also request feedback from external users on the ease and usability of applying for user accounts. We envisage external users to apply for user accounts from ProtectNetwork and feedback on using ProtectNetwork will be requested.