Institutional Repository Technical Skill Set

Recommendations for managing an Institutional Repository

Executive Summary

The following list describes the kinds of activities to be undertaken in managing a University's Institutional Repository (IR). It specifically relates to an IR using the Vital software supplied by the vendor VTLS which runs on Fedora. It also assumes that Virtual Infrastructure has been adopted by the organization.

There are a range of transferable skills that are applied to the majority of systems managed by a university's IT department and we do not wish to describe everything that ICT staff normally do. All aspects of managing a repository are generic enough to be dealt with by anyone in an IT department. The examples provided are indicative of the kind of work to be undertaken. Other duties may arise in the normal course of managing these systems.

VITAL / Fedora Repository

Server Support

Main Activities	**Skills / Knowledge**
System Administration activities as usually conducted, including but not limited to: • Normal activities to achieve system stability, maximum uptime and timely operation such as installation, backup and upgrades of the operating system and server software	Unix Sys Admin skills Command line syntax Backup procedures

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• Conducting back-ups (preference is for redundant backup performed at the Unix file system level – see RUBRIC Toolkit: Systems Options) • Managing network infrastructure • Running Virtual Machines (VM) • Installation of Operating System • Installation of a database system (n.b. RUBRIC Central used a MySQL download) • Installing System Upgrades supplied by the vendor • Version management control (see notes) • Linking security into the organization's regular signon systems, such as LDAP or Shibboleth Notes: 1. The VITAL system requires a database to be available and then just needs the base platform set up because the VITAL installation program installs everything else required to run the actual software once these are in place. 2. It is highly recommended that anyone maintaining a repository uses version control such as Subversion to manage configuration, customization and any migration scripts. This provides an essential rollback facility to go back to previous configuration if problems are encountered.	Upgrade procedures Ability to follow vendor supplied instructions Managing VM infrastructure Security settings Set up database software

Application Support

Main Activities	Skills / Knowledge
Manage configuration, customization and any migration scripts relevant to the Application level • Version management control (see notes) • Application back-ups • System Administration relating to the application level (install software, edit configuration files, XSLT, XPATH and HTML) • resolving technical issues with the vendor using the VTLS IM system (see notes) • managing application upgrades • ability to identify file format problems (see notes) • knowledge of harvesting protocols, particularly OAI-PMH • Handles administration • Familiarity with web crawlers Notes: 1. It is highly recommended that anyone maintaining a repository uses version control such as Subversion to manage configuration, customization and any migration scripts. This provides an essential rollback facility to go back to previous configuration if problems are encountered.	Command line syntax XSLT HTML XPATH XML Knowledge of file formats OAI-PMH protocol Handles administration

2. Application troubleshooting can be outsourced to the Vendor as part of the annual maintenance agreement. 3. File formats that are non-standard may cause problems. An example is a PDF which has been generated in non-standard software which consequently causes problems when ingested into the repository	

Data Migration

Main Activities	**Skills / Knowledge**
• Digitisation skills • Good database skills • Preparing data Notes: At some stage the organization will need to migrate data and programming in XML will be essential for this. The RUBRIC Toolkit provides a Migration Toolkit based on XSLT and Python with unit test frameworks.	Command line syntax Programming in XML XSLT skills simple Python

Additional Notes

The Vital system comes with a manual which explains most of the technical aspects to be undertaken.

VITAL does not require programming skills unless data migration is required, in which case XSLT skills will be needed.

Communication skills are essential. A successful repository will depend on a good working relationship between the Library repository administrator and the technical staff involved in managing the repository.

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