Using iRODS in Sugar deployments

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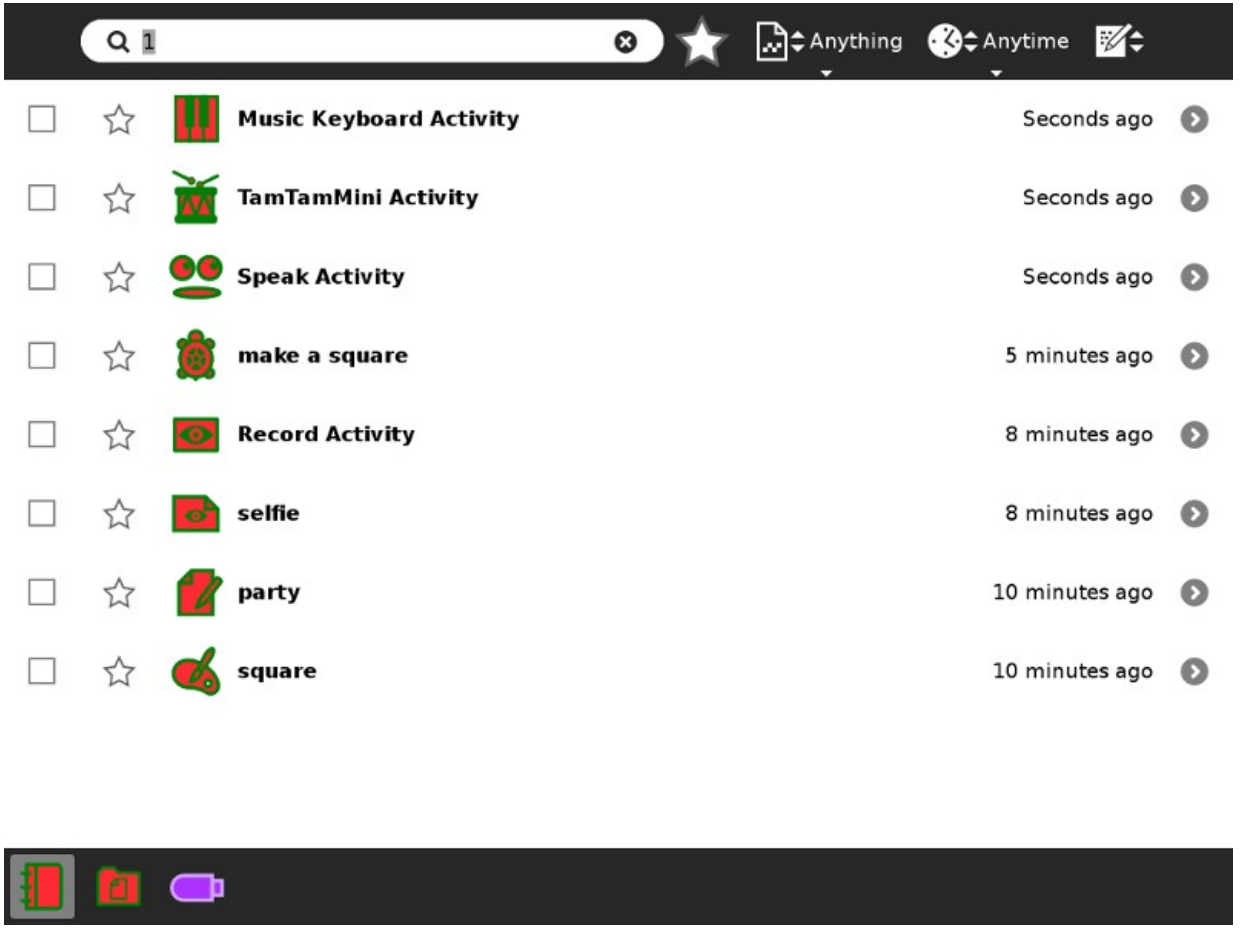
http://schoolserver

Journal View



Problem

- All user's work is stored in Journal
- When unused storage is < 50MB, user reinstalls software to regain working storage
- And erases the Journal!

School Server

- Provides large storage capacity (1TB)
- Makes content from internet available locally
- XO laptops connect to LAN via WiFi

Proposed Solution

- Use iRODS to maintain archive of Journal on school server
- Journal object is metadata record plus optional data file
- IRODS is natural to save metadata and data file
- On connection to school server, archive.py script uploads new Journal objects to school server
- User keeps full Journal record on school server but can select data files to keep or to erase from local store
- If laptop is replaced or software is re-installed, user can restore Journal from school server

Installation

- School server installation from BERNIE – a 1TB external hard drive
- Bash script Installs iRODS on school server from BERNIE
- Must be possible without internet access

```
#!/bin/bash
#first setup db
su -c 'psql -f xc7-irods/cmds' postgres
#install irods
rpm -ivf authd-1.4.3-42.el7.x86_64.rpm
rpm -ivf postgresql-odbc-09.03.0100-2.el7.x86_64.rpm
rpm -ivf python-jsonschema-2.3.0-1.el7.noarch.rpm
rpm -ivf fuse-libs-2.9.2-7.el7.x86_64.rpm
rpm -ivf irods-icat-4.1.9-centos7-x86_64.rpm
rpm -ivf irods-database-plugin-postgres-1.10-centos7-x86_64.rpm
rpm -ivf perl-common-sense-3.0-1.el6.rf.x86_64.rpm
rpm -ivf perl-JSON-2.59-2.el7.noarch.rpm
rpm -ivf perl-Types-Serialiser-1.0-1.el7.noarch.rpm
rpm -ivf python-psutil-2.2.1-1.el7.x86_64.rpm
rpm -ivf python-requests-2.6.0-1.el7_1.noarch.rpm
rpm -ivf python-urllib3-1.10.2-2.el7_1.noarch.rpm
tar -xzf functools32-3.2.3-2.tar.gz
cd functools32-3.2.3-2
python setup.py install
cd ../
tar -xzf vcversioner-2.16.0.0.tar.gz
cd vcversioner-2.16.0.0
python setup.py install
cd ../
tar -xzf ordereddict-1.1.tar.gz
cd ordereddict-1.1
python setup.py install
```

cmds

DROP DATABASE ICAT;

CREATE DATABASE ICAT WITH ENCODING 'UTF8' TEMPLATE template0;

CREATE USER irods WITH PASSWORD 'irodsadmin';

GRANT ALL PRIVILEGES ON DATABASE ICAT TO irods;

Archive.py

- Browser (WebKit) runs archive.py upon connection with school server
- Script registers user (if needed)
- Each object in Journal (datastore class) is examined.

Logic

- If 'keep': if no local copy, download data file
- Else: delete local copy
- If object is new: upload metadata and data file

Registration

- IRODS Vault is /library/users
- New user identified by laptop serial number (one child per laptop)
- Admin user is 'olpc' (no authentication!)
- Archive.py attempts to register user – if fails, continue with archive logic