Installing alice

Server Configuration

sudo yum update
sudo hostnamectl set-hostname alice-centos

/etc/hosts
127.0.0.1   alice-centos localhost localhost.localdomain localhost4 localhost4.localdomain4
127.0.1.1   alice-centos
::1   alice-centos localhost localhost.localdomain localhost6 localhost6.localdomain6

<ip> alice-centos
<ip> bob-cantos
<ip> iarchive-centos

sudo iptables -F
sudo iptables -A INPUT -i lo -j ACCEPT
sudo iptables -A INPUT -m conntrack --ctstate RELATED,ESTABLISHED -j ACCEPT
sudo iptables -A INPUT -p tcp -m tcp --dport 22 -j ACCEPT
sudo iptables -A INPUT -p tcp -m tcp --dport 1247 -j ACCEPT
sudo iptables -A INPUT -p tcp -m tcp --dport 1248 -j ACCEPT
sudo iptables -A INPUT -p tcp -m tcp --dport 20000:20199 -j ACCEPT
sudo iptables -A INPUT -p tcp -m tcp --dport 2811 -j ACCEPT
sudo iptables -A INPUT -p tcp -m tcp --dport 50000:51000 -j ACCEPT
sudo iptables -A INPUT -p icmp -j ACCEPT
sudo iptables -A INPUT -j DROP
sudo iptables -P FORWARD DROP

sudo service iptables save
sudo reboot

Postgresql

sudo yum install postgresql-server
sudo service postgresql initdb

sudo vi /var/lib/pgsql/data/pg_hba.conf
Change
	# IPv4 local connections:
	host all all 127.0.0.1/32 ident
to
	# IPv4 local connections:

```
host    all             all             127.0.0.1/32            md5
# IPv6 local connections:
host    all             all             ::1/128                 md5
```

```
sudo service postgresql start
sudo su - postgres
psql

create database "ICAT";
create user irods with password 'irods';
grant all privileges on database "ICAT" to irods;
\q
exit

sudo systemctl enable postgresql
```

iRODS 4.2.1

```
sudo rpm --import https://packages.irods.org/irods-signing-key.asc
wget -qO - https://packages.irods.org/renci-irods.yum.repo | sudo tee /etc/
yum.repos.d/renci-irods.yum.repo
sudo yum install epel-release
sudo yum install irods-server irods-database-plugin-postgres

sudo python /var/lib/irods/scripts/setup_irods.py

Database Type: postgres
ODBC Driver:   PostgreSQL
Database Host: localhost
Database Port: 5432
Database Name: ICAT
Database User: irods

Zone name:                aliceZone
iRODS server port:        1247
iRODS port range (begin):   20000
iRODS port range (end):     20199
Control plane port:       1248
Schema validation base URI: file:///var/lib/irods/configuration_schemas
iRODS server administrator: alice

ALICE_ZONE_KEY
TEMPORARY_32byte_negotiation_key
TEMPORARY__32byte_ctrl_plane_key

sudo systemctl enable irods
```

Test iRODS 4.2.1

iinit
ils
echo “test” > test.txt
put -K test.txt
ils -L

B2SAFE

Requirements: HANDLE prefix —> place folder HandleCerts in /opt/eudat
sudo chown -R irods:irods /opt/eudat/HandleCerts/

sudo yum install -y git
sudo yum install rpm-build

git clone https://github.com/EUDAT-B2SAFE/B2SAFE-core
cd ~/B2SAFE-core/packaging
./create_rpm_package.sh
cd
sudo rpm -ivh rpmbuild/RPMS/noarch/irods-eudat-b2safe-4.0-1.noarch.rpm

conf-file
sudo vi /opt/eudat/b2safe/packaging/install.conf
#
parameters for installation of irods module B2SAFE
#
# the absolute directory where the irods config is installed
IRODS_CONF_DIR=/etc/irods
#
# the absolute directory where irods is installed
IRODS_DIR=/var/lib/irods/iRODS
#
# the directory where B2SAFE is installed as a package
B2SAFE_PACKAGE_DIR=/opt/eudat/b2safe
#
# the default iRODS resource to use. Will be set in core.re
DEFAULT_RESOURCE=demoResc
#
# epic credentials type and location
CRED_STORE_TYPE=os
CRED_FILE_PATH=$B2SAFE_PACKAGE_DIR/conf/credentials
SERVER_ID="irods://alice-centos:1247"
#
epic credentials file usage parameters
#
old epicclient parameters
#BASE_URI="https://<fully_qualified_hostname_epic_server>/<instance>/

```
handles/"
#USERNAME=<username_for_prefix>
#PREFIX=<prefix>
#
# new epicclient2 parameters
HANDLE_SERVER_URL="https://epic4.storage.surfsara.nl:8007"
PRIVATE_KEY="/opt/eudat/HandleCerts/308_21.T12995_USER01_privkey.pem"
CERTIFICATE_ONLY="/opt/eudat/HandleCerts/
308_21.T12995_USER01_certificate_only.pem"
PREFIX="21.T12995"
HANDLEOWNER="200:0.NA/$PREFIX"
REVERSELOOKUP_USERNAME=21.T12995
HTTPS_VERIFY="False"
#
# users for msiexec command
USERS="user0#Zone0 user1#Zone1"
#
# loglevel and log directory
# possible log levels: DEBUG, INFO, WARNING, ERROR, CRITICAL
LOG_LEVEL=DEBUG
LOG_DIR=/var/log/irods
#
#
# iRODS behavioral parameters
#
# check if user is authorized to perform several functions
AUTHZ_ENABLED=true
#
# enable if iRODS contrib package is installed with msifree microservice to
# prevent memory leaks in iRODS
MSIFREE_ENABLED=false
#
# enable if a speedup is to be used. (won't work in future versions)
MSICURL_ENABLED=false
#

source /etc/irods/service_account.config
sudo su - irods
cd /opt/eudat/b2safe/packaging/
./install.sh
        —> provide password from /opt/eudat/HandleCerts/passwords for
21.T12995
exit

sudo yum install python-pip
sudo pip install --upgrade pip
```

sudo pip install queuelib
sudo pip install dweepy
sudo yum install python-lxml
sudo yum install python-defusedxml
sudo yum install python-httplib2

cd
git clone https://github.com/EUDAT-B2SAFE/B2HANDLE
cd B2HANDLE/
python setup.py bdist_egg
cd dist/
sudo easy_install b2handle-1.1.1-py2.7.egg

Test B2HANDLE

sudo su - irods
/opt/eudat/b2safe/cmd/epicclient2.py os /opt/eudat/b2safe/conf/credentials
create www.test.com
exit

Test B2SAFE

cd B2SAFE-core
irule -F rules/eudatGetV.r
irule -F rules/eudatRepl_coll.r

GridFTP server

sudo curl -LOs https://downloads.globus.org/toolkit/globus-connect-server/globus-connect-server-repo-latest.noarch.rpm
sudo rpm --import https://downloads.globus.org/toolkit/gt6/stable/repo/rpm/RPM-GPG-KEY-Globus
sudo yum install globus-connect-server-repo-latest.noarch.rpm

sudo yum install globus-data-management-server
sudo yum install globus-data-management-client
sudo yum install globus-gridftp globus-gsi

grid-cert-request
name alice

sudo grid-ca-sign -in /home/admincentos/.globus/usercert_request.pem -out /home/admincentos/.globus/usercert.pem
SUBJ=`grid-cert-info -subject`
sudo grid-mapfile-add-entry -dn "$SUBJ" -ln admincentos

sudo vi */etc/gridftp.conf*
# globus-gridftp-server configuration file

```
# this is a comment

# option names beginning with '$' will be set as environment variables, e.g.
 $GLOBUS_ERROR_VERBOSE 1
 $GLOBUS_TCP_PORT_RANGE 50000,51000

# port
port 2811
log_level ALL
log_single "/var/log/globus-gridftp-server.log"
log_transfer "/var/log/globus-gridftp-server-transfer.log"
control_interface 0.0.0.0

sudo /etc/init.d/globus-gridftp-server restart
sudo systemctl enable globus-gridftp-server
```

GridFTP certificates

```
mkdir GridCerts
sudo cp /etc/grid-security/certificates/7f69d827.* GridCerts/
scp bob-centos/GridCerts/* GridCerts
sudo cp GridCerts/* /etc/grid-security/certificates/
```

GridFTP tests

```
grid-proxy-init
globus-url-copy -dbg -list gsiftp://alice-centos/tmp/
```

GridFTP-B2STAGE known issue

Always use
sudo /etc/init.d/globus-gridftp-server restart
to restart server do not use
sudo service globus-gridftp-server restart

B2STAGE

```
sudo yum -y install irods-devel
sudo yum install irods-externals-*

sudo yum install -y globus-gridftp-server-progs globus-gass-copy-progs
 sudo yum install -y globus-common-devel globus-gridftp-server-devel
globus-gridmap-callout-error-devel
 sudo yum install -y libcurl-devel
 sudo yum install -y git
 sudo yum install -y gcc-c++
 sudo yum install -y globus-gsi-cert-utils-progs
 sudo yum install -y globus-proxy-utils
```

```
mkdir iRODS_DSI
DSI='/home/admincentos/iRODS_DSI'
export PATH=/opt/irods-externals/cmake3.5.2-0/bin:$PATH
export GLOBUS_LOCATION="/usr"
export IRODS_PATH="/usr"
export DEST_LIB_DIR="/home/admincentos/iRODS_DSI"
export DEST_BIN_DIR="/home/admincentos/iRODS_DSI"
export DEST_ETC_DIR="/home/admincentos/iRODS_DSI"
export IRODS_EXTERNALS_PATH=/opt/irods-externals

export C_INCLUDE_PATH=/usr/include/globus/
export IRODS_42_COMPAT=true

cd B2STAGE-GridFTP/
vi CMakeLists.txt
        find_package(IRODS 4.2.0 EXACT REQUIRED CONFIG) —
>find_package(IRODS 4.2.1 EXACT REQUIRED CONFIG)
cmake .
make install

sudo su -
mkdir .irods
vi .irods/irods_environment.json
{
    "irods_port": 1247,
    "irods_host": "alice-centos",
    "irods_user_name": "alice",
    "irods_zone_name": "aliceZone",
    "irods_default_resource": "demoResc"
}
iinit

exit

sudo vi /etc/irods/server_config.json
        "default_hash_scheme": “SHA256”, —> "default_hash_scheme": "MD5",
sudo vi /var/lib/irods/.irods/irods_environment.json
        "default_hash_scheme": “SHA256”, —> "default_hash_scheme": "MD5",

sudo vi /etc/gridftp.conf
        $LD_LIBRARY_PATH "$LD_LIBRARY_PATH:/home/admincentos/iRODS_DSI"
        $irodsConnectAsAdmin "rods"
        load_dsi_module iRODS
        auth_level 4
```

sudo vi /etc/init.d/globus-gridftp-server
export LD_LIBRARY_PATH="$LD_LIBRARY_PATH:/home/admincentos/iRODS_DSI/"
/etc/init.d/globus-gridftp-server restart

sudo vi /etc/grid-security/grid-mapfile
Change previously set mappings to iRODS accounts
"/O=Grid/OU=GlobusTest/OU=simpleCA-alice-centos/OU=Globus Simple CA/CN=alice" alice

B2STAGE tests

grid-proxy-init
globus-url-copy -dbg -list gsiftp://alice-centos/aliceZone/home/alice/

Upon restart

sudo service postgresql restart
sudo service irods restart
sudo service globus-gridftp-server restart

Install iRODS resources

- Status after installation and connection to "iarchive":

ilsresc
demoResc:unixfilesystem
iarchive-centosResource:unixfilesystem

- Create folder for resources:

sudo mkdir /iRODS-data
sudo mkdir /iRODS-data/resource1
sudo mkdir /iRODS-data/resource2
sudo mkdir /iRODS-data/resource3
sudo mkdir /iRODS-data/resource4
sudo chown -R irods:irods /iRODS-data/

- Create unix FS resources:

iadmin mkresc resource1 unixfilesystem `hostname`:/iRODS-data/resource1
iadmin mkresc resource2 unixfilesystem `hostname`:/iRODS-data/resource2
iadmin mkresc resource3 unixfilesystem `hostname`:/iRODS-data/resource3
iadmin mkresc resource4 unixfilesystem `hostname`:/iRODS-data/resource4

- List and test

ilsresc
demoResc:unixfilesystem
iarchive-centosResource:unixfilesystem
resource1:unixfilesystem
resource2:unixfilesystem

resource3:unixfilesystem
resource4:unixfilesystem

iput -R resource1 test.txt resc1.txt
iput -R resource2 test.txt resc2.txt
iput -R resource3 test.txt resc3.txt
iput -R resource4 test.txt resc4.txt

alice 0 resource1 20 2018-01-03.08:23 & resc1.txt
alice 0 resource2 20 2018-01-03.08:23 & resc2.txt
alice 0 resource3 20 2018-01-03.08:23 & resc3.txt
alice 0 resource4 20 2018-01-03.08:23 & resc4.txt

irm resc1.txt
irm resc2.txt
irm resc3.txt
irm resc4.txt

- Create resource tree

iadmin mkresc replResc replication
iadmin addchildtoresc replResc resource1
iadmin addchildtoresc replResc resource2

iadmin mkresc robin roundrobin
iadmin addchildtoresc robin resource3
iadmin addchildtoresc robin resource4

- Check

ilsresc
demoResc:unixfilesystem
iarchive-centosResource:unixfilesystem
replResc:replication
├── resource1:unixfilesystem
└── resource2:unixfilesystem
robin:roundrobin
├── resource3:unixfilesystem
└── resource4:unixfilesystem