

# 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-centos
<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-httpplib2
```

```
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 gsixtp://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 gsixtp://alice-centos/aliceZone/home/alice/
```

## **Upon restart**

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