

Replacement -XCD Demonstration

McIDAS Users Group Meeting

September 17, 2019

Replacement -XCD requires the following:

1. Linux (RHEL 7), CentOS 7
2. Docker (most recent version)
3. docker-compose (sudo curl -L "https://github.com/docker/compose/releases/download/1.24.1/docker-compose-\$(uname -s)-\$(uname -m)" -o /usr/local/bin/docker-compose)
4. Unidata LDM or LDM container (<https://github.com/Unidata/ldm-docker>)

Any user on a machine can do the following as long as they are a part of the docker group (/etc/group)

McIDAS-XCD Container Installation

We use the docker save command to create a tarball of our xcddecoders image:
docker save -o ~/Docker_Images/xcddecoders.tar xcddecoders

The xcddecoders.tar file will be downloadable from the McIDAS-XCD webpage. Once downloaded, you can do the following on your -XCD machine:

docker load -i ~/Docker_Images/xcddecoders.tar

We can see the list of images with
docker images

Before starting the -XCD containers, we need to specify a couple of directories:

1. HOST_DATA_DIR – where you want -XCD to put your data (e.g. /data)
2. LDM_CONFIG_DIR – directory location on the local machine of site-specific LDM configuration files (default /home/ldm/etc)
 - ldmd.conf and registry.xml
 - -XCD containers require specific pqact.conf entries to work

Set the above with the export command

e.g. export HOST_DATA_DIR=/data
export LDM_CONFIG_DIR=/home/ldm/xcdconfig

With docker-compose installed and a downloaded file docker-compose.yml, we then can simply do

docker-compose up

This starts up the Unidata LDM container with site-specific configuration files as well as the xcddecoders container that includes the xcdtext, xcdgrib, and, in the future, xcdbufr containers.

You can see the running containers on the local machine with:

docker ps

Associated with each container is a container ID.

To access a current running container, we can do:

docker exec -it <CONTAINER ID> bash

Or

docker exec -it ldm bash

docker exec -it xcdtext bash

docker exec -it xcdgrib bash

We can check on things being filed using the HOST_DATA_DIR value

ls -lart /data/xcd

should show something like:

```
drwxrwsrwx+ 4 dockmap dockmap 4096 Jul 26 22:04 texttemp
drwxrwxr-x 10 root dockmap 4096 Aug 12 19:16 ..
drwxrwsrwx+ 5 dockmap dockmap 4096 Aug 26 15:21 incoming
drwxrwsrwx+ 12 dockmap dockmap 4096 Sep 9 16:05 .
drwxrwsrwx+ 47 101000 dockmap 4096 Sep 9 16:45 tdwr
drwxrwsrwx+ 161 101000 dockmap 4096 Sep 10 14:50 wsr
drwxrwsrwx+ 21 101000 dockmap 4096 Sep 15 23:38 gribdatabase
drwxrwsrwx+ 13 dockmap dockmap 4096 Sep 16 00:00 textarchive
drwxrwsrwx+ 15 101000 dockmap 4096 Sep 16 00:13 gribarchive
drwxrwsrwx+ 16 dockmap dockmap 4096 Sep 16 00:39 textdatabase
drwxrwsrwx+ 2 dockmap dockmap 151552 Sep 16 01:20 incoming_text
```

You can check /data/logs for log information from the containers on the local machine.

To stop the running containers, we can either Ctrl+C or type:

docker-compose down

To stop individual containers:

```
docker stop <xcdtext CONTAINER ID> <xcdgrib CONTAINER ID> <ldm  
CONTAINER ID>
```

```
docker stop xcdtext xcdgrib ldm
```

McIDAS-XCD Servers Installation

Note that this is not finished yet.

For a Linux installation of McIDAS-X, this will be in

/home/mcidas/mcidas<Year and Version>/xcd

e.g. /home/mcidas/mcidas2019.1/xcd

McIDAS-X will first need to be made with the `-sqlite` flag

```
sh ./mcidas2019.1.sh -sqlite make
```

```
sh ./mcidas2019.1.sh install
```

To install the servers, you will need to do:

```
sh ./mcidas2019.1.sh -sqlite make xcd
```

```
sh ./mcidas2019.1.sh install xcd
```

This will copy the `-XCD` server binaries to /home/mcidas/bin.

New servers:

ptdb*, gribdb*, wtxdbgserv, obtdbgserv

Note: the old servers are not going away and can coexist on a replacement `-XCD` machine

md*, grib*, wtxgserv, obtgserv

You will also need to update the RESOLV.SRC entries in the mcadde account.

As user mcadde, using HOST_DATA_DIR set when starting the `-XCD` containers:

```
te.k MCDATA "${HOST_DATA_DIR}
```

```
batch.k XCDADDE.BAT
```

XCDADDE.BAT will be provided with the replacement `-XCD` release.