



## **McIDAS-XCD Administrator's Guide**

**Version 2025.1**

# McIDAS-XCD Administrator's Guide

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## Chapter 1

# Introduction to McIDAS-XCD

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The McIDAS-X Conventional data Decoder (McIDAS-XCD) enables workstations running McIDAS-X to directly receive and process data from the NCEP/NWSTG and NCEP/NWSTG2 channels of the National Weather Service NOAAPORT broadcast. All of the operational McIDAS-XCD client commands for accessing conventional data have been removed from the McIDAS-XCD package. These commands have been replaced with ADDE (Abstract Data Distribution Environment) commands distributed with McIDAS-X. See the [McIDAS User's Guide](#) for more information.

This introduction consists of the following topics:

- [Terminology](#)
- [Data receiving and processing](#)
- [McIDAS-XCD Status Display Window](#)

## Terminology

The terms defined below are used throughout this manual.

| Term          | Definition   |
|---------------|--|
| BUFR          | Binary Universal Form for the Representation of meteorological data (the WMO standard format for point data) |
| client        | workstation that requests and receives data from a server workstation  |
| data block    | WMO header description and text data   |
| data monitor  | process that runs one or more decoders   |
| DDS           | Domestic Data Service  |
| decoder       | program that converts raw data into McIDAS data files  |
| GRIB          | GRIdded Binary (the WMO standard format for gridded data); includes GRIB1 and GRIB2                          |
| GRIB1         | GRIB version 1   |
| GRIB2         | GRIB version 2   |
| HRS           | High Resolution data Service   |
| IDS           | International Data Service   |
| ingestor      | program that receives data through a communications port   |
| MySQL/MariaDB | free downloadable database that can be used by McIDAS-XCD and the McIDAS GRIB server                         |
| NEXRAD        | NEXt generation weather RADar  |
| NFS           | Network File System  |
| PPS           | Public Products data Service   |
| server        | workstation that stores and supplies data to client workstations   |

## Data receiving and processing

McIDAS-XCD uses ingestors and data monitors to receive and process asynchronous data from the National Weather Service (NWS) NOAAPORT broadcast. The data arrives via satellite broadcast by either an outside vendor or a dedicated phone line directly from the circuit source.

This section discusses types of:

- [Ingestors](#)
- [Data monitors](#)

# Ingestors

An ingestor is a program that reads data entering the system through a communications port. Ingestors read asynchronous data from conventional data circuits such as DDS, IDS and PPS.

Each circuit has a text formatted configuration file that the ingestor reads to configure the communications port. This configuration file resides in ~oper/mcidas/data and is usually named with the circuit name followed by .CFG, for example, DDS.CFG. It contains information such as baud rate and the number of data bits or stop bits.

McIDAS-XCD supports these types of ingestors:

- [Text ingestors](#)
- [Binary ingestors](#)

## Text ingestors

A text ingestor receives data from the NOAAPORT broadcast in ASCII format. Each incoming circuit has its own text ingestor that writes to a set of raw text files and index files. Index files contain the location information of data in the raw text file.

For example, [Figure 1](#) shows that the text ingestor INGETEXT ingests data from NOAAPORT. Each ingested data block is placed in a circuit-specific raw text file for that day. INGETEXT also files information about the data block into an index file which is used by text applications and decoders for locating data quickly.

The naming convention for the circuit-specific raw text file is *ccyyddd0.XCD*, where *cc* is the first two characters of the circuit name, and *yyddd* is the Julian day. The naming convention of the index file is *hhyyddd.IDX* or *hhhyddd.IDX* where *hh* is a 2-character WMO header, *hhh* is a 3-character AWIPS header and *yyddd* is the Julian day.

While only one text ingestor can write into a text file, any text ingestor can write to any index file. For example, terminal forecasts (FTs) arrive on the DDS and IDS circuits. The actual forecasts are filed in *DDyyddd0.XCD* and *IDyyddd0.XCD*, respectively. However, both ingestors write their directory information into the same index file, *FTyyddd.IDX*. This ensures that applications will work consistently on similar data formats regardless of the data's source.

Index files also store related data that arrives under more than one WMO header. For example, mandatory upper level RAOB reports come in under the headers UJ, US, UK, UL, etc. Rather than having a separate index file for each header, a routing table is created during installation to tell the ingestors where to file the headers from each circuit. For example, the index file for all RAOB WMO headers is *UJyyddd.IDX*. If a WMO header is not forced into a particular index file, it is filed in the *ZZyyddd.IDX* file, which is a miscellaneous index.

## Binary ingestors

The binary data ingestor, INGEBIN, ingests a binary data stream regardless of the data format. INGEBIN writes the data to a circular spool file, HRS.SPL, where it can be processed by a data monitor. The data that INGEBIN ingests includes model output grids in GRIB1 or GRIB2 format, NEXRAD radar data in its native format, and various text products in BUFR format. For further information see Chapter 2, [Configuring the NEXRAD Decoder](#), and [Configuring the GRIB Decoders](#).

Figure 1. Conventional Data Ingesting Flow Diagram

# Data monitors

A data monitor is a process that runs one or more decoders. After the data is stored in the raw text or spool files, data monitors process the raw data into McIDAS files such as surface hourly observations, synoptic reports, upper air reports, and grid files.

The following table lists the supported McIDAS-XCD data monitors.

| Monitor | Index | Data type             | Decoded Data location        | Configuration file |
|---------|-------|-----------------------|------------------------------|--------------------|
| DMBIN   |       | GRIB1, GRIB2 and BUFR | Native GRIB1, GRIB2 and BUFR | GRBFILER.CFG       |
| DMCOND  |       | GRIB2                 | Native GRIB2                 | CONFILER.CFG       |

|        |    |                   |                       |              |
|--------|----|-------------------|-----------------------|--------------|
| DMGRID |    | GRIB1             | Grid files            | GRIBDEC.CFG  |
| DMMISC | FO | NAMMOS            | MD file NAM           | NAMMOS.CFG   |
|        | FO | GFSMOS            | MD file GFS           | GFSMOS.CFG   |
|        | FT | Terminal Forecast | Rapid-Access System   | TERMDEC.CFG  |
|        | SD | MDR               | Grid files            | MDRDEC.CFG   |
|        | TB | TIROS NAV         | SYSNAV1               | TIRDEC.CFG   |
|        | UA | PIREP/AIREP       | MD file PIRP          | PIRPDEC.CFG  |
| DMNEXR |    | Radar products    | Compressed data files | NEXRFILE.CFG |
| DMRAOB | UJ | TEMP/PILOT        | MD file IRAB/IRSG     | IRABDEC.CFG  |
|        | UJ | TEMP SHIP         | MD file ITSHP         | ITSHPDEC.CFG |
| DMSFC  | SA | SAO/METAR         | MD file ISFC          | ISFCDEC.CFG  |
| DMSYN  | SM | SYNOPTIC          | MD file SYN           | SYNDEC.CFG   |
|        | SM | SHIP/DRIBU        | MD file ISHP          | ISHPDEC.CFG  |

To make the data monitors more flexible, each is designed to use a text formatted configuration file similar to those used for circuit configuration. This configuration file contains the .IDX files to search, WMO headers to decode, decoder display number, MD file numbers to store data, etc.

Figure 2 shows an example of the configuration script file for the GFS MOS decoder.

**Figure 2. GFS MOS Configuration File**

```
# GFSMOS.CFG - Configuration file for the GFS MOS decoder # ----- Cross Reference List
(do not change) ----- : FLAGS[01] ERRORFLG : FLAGS[02] IDMONFLG : FLAGS[03]
DISPLAYNUM : FLAGS[04] MDF : FLAGS[05] NROWS : FLAGS[06] NCOLS : FLAGS[07] RAPIDACCESS :
CFLAGS[01] ERRORFILE : CFLAGS[02] OLDIDFILE : CFLAGS[03] NEWIDFILE : CFLAGS[04] IDTABLE :
CFLAGS[05] MASTERFILE : CFLAGS[06] PTRFILE # ----- End Of Cross Reference
List ----- # -----
----- # - You can modify any of the fields below - # -----
----- # decoder description DESCRIPTION="GFSMOS Decoder" # which
indices to search for this decoder INDEX=FO # which specific wmo headers to activate the
decoder for WMO=FOUS FOAK FOPA MINPRD=21 37 20 MAXPRD=26 39 20 # which specific station
origins to activate the decoder for ORIGIN=KWBC KWNO #
===== ERRORFLG=0 # error
output flag set to 1 to activate ERRORFILE=GFSMOS.ERR # error file name IDMONFLG=0 # station
id monitoring activation flag # set to 1 or 3 to monitor new stations # set to 2 or 3 to
monitor old stations OLDIDFILE=OLDGFS.IDM # old station id file used for monitoring
NEWIDFILE=NEWGFS.IDM # new station id file used for monitoring DISPLAYNUM=15 # decoder
number on status display MDF=81 # first real-time md file number to use for decoder NROWS=84
# number of rows to make for md file NCOLS=2000 # number of columns to make for md file
RAPIDACCESS=1 # rapid access system activation flag, used for # MOSRPT command. set to 1 to
activate, 0 to # inactivate IDTABLE=GFSMOS.IDT # ID file to build when creating md file
MASTERFILE=STNDB.CORE # master ID table file to use to build IDTABLE PTRFILE=GFSMOS.RAP #
rapid access pointer file name
```

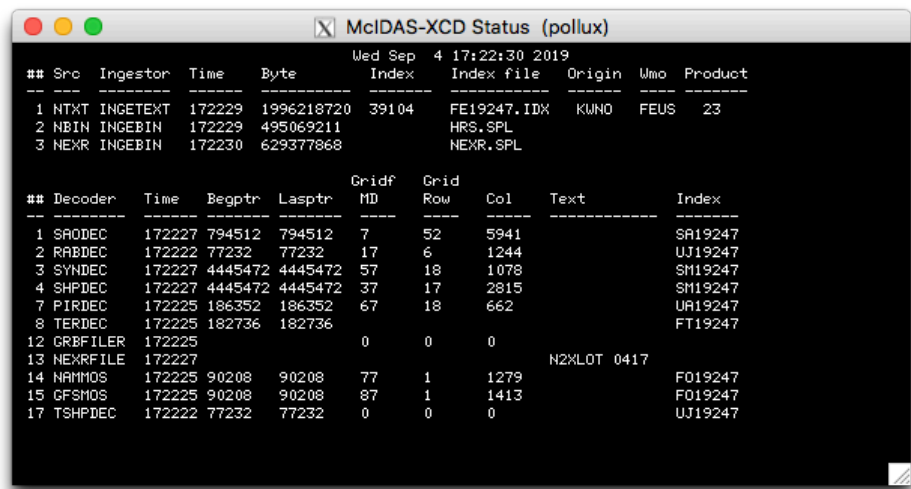
## McIDAS-XCD Status Display Window

The McIDAS-XCD Status Display window lists information about the data that is being processed by the ingestors and data monitors. The Status Display window can be started with the [statdisp](#) command.

A sample Status Display window is shown in Figure 3; the table below it defines each field in the display. The top section of the display shows the status of the ingestors. In the sample display the text ingestor INGETEXT last filed data at byte 1996218720 in the raw text file and last filed data in the index file FE19247.IDX at byte location 39104. The bottom section of the display shows the status of the data monitors. In the sample display the surface observation data monitor SAODEC has decoded data from the raw text file at byte offset 794512. You can tell that SAODEC is up to date because the *Begptr* and *Lasptr* fields are identical. Once SAODEC has read up to byte 794512 it rereads the index file SA19247.IDX to determine if there is more data to be decoded. If no more data is available then the data monitor will wait 30 seconds and then try again. In the

sample display, SAODEC last wrote to MD file MDXX0007 at row 52 and column 5941. If a decoder becomes inactive for any reason, the status line will turn red. This indicates that the administrator should investigate to see if something is wrong.

Figure 3. Sample Status Display Window



The table below defines each field in the Status Display window.

| Field      | Definition   |
|------------|--|
| ##         | ingestor   |
| Src        | circuit receiving the data   |
| Ingestor   | ingestor command name  |
| Time       | time the data was last received  |
| Byte       | last byte number the ingestor wrote  |
| Index      | last directory location the ingestor filed; not used by INGEBIN                                  |
| Index file | index file name last written to; for INGEBIN this field displays the spool name                  |
| Origin     | origin of the last block filed; the value is extracted from the WMO header; not used for INGEBIN |
| Wmo        | product header of the last block filed; not used by INGEBIN                                      |
| Product    | WMO product number of the last block filed; not used by INGEBIN                                  |
|            |  |
| ##         | data monitor number  |
| Decoder    | decoder name   |
| Time       | time data was last processed   |
| Begptr     | current index location being decoded   |
| Lasptr     | last index location decoder processes before checking for more data                              |
| Gridf/MD   | last GRID or MD file the decoder wrote to  |
| Grid/Row   | last GRID number or ROW number written to  |

|       |  |
|-------|--|
| Col   | last MD column number written to                                   |
| Text  | text description of the decoder process                            |
| Index | name of index file used to keep track of data in the raw text file |

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## Chapter 2

# Installing and Configuring McIDAS-XCD

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This chapter consists of the McIDAS-XCD installation and configuration instructions. There are seven separate sections:

- [System Requirements](#)
- [Obtaining McIDAS-XCD 2025.1](#)
- [Installing McIDAS-XCD 2025.1](#)
- [Configuring McIDAS-XCD](#)
- [Starting and Stopping McIDAS-XCD](#)
- [Checking the Filing Status of McIDAS-XCD Data](#)
- [Uninstalling the Previous Version of McIDAS-XCD](#)

Check the system requirements before installing McIDAS-XCD on your workstation. Then use the instructions that follow to obtain, install and configure McIDAS-XCD.

## System Requirements

- The McIDAS-XCD 2025.1 software package was tested on Red Hat Enterprise Linux 8.10 Intel and is supported on RHEL 8.x and 9.x.
- McIDAS-X 2025.1 (released in pair with McIDAS-XCD 2025.1 in December 2025) must be installed in the mcidas account according to the specifications in Chapter 1, *Installing and Configuring McIDAS-X*, in the [McIDAS User's Guide](#). Be sure to include the directory ~mcidas/bin in the environment variable PATH.
- The Unix workstation running the McIDAS-XCD software must have the user account oper. This account must be configured with the appropriate directories, links, and paths to run McIDAS-X. For more information, see the section titled *Configuring a New User Account* in Chapter 1 of the *McIDAS User's Guide*. If you already have an oper account on your workstation and do not want to run the -XCD package under this account, contact the McIDAS Help Desk at (608) 262-2455 or by [e-mail](#).
- The Unix workstation running the McIDAS-XCD software must have the group name mcdata which contains the user oper.
- McIDAS-XCD is designed to process data from the NOAAPORT data stream that is broadcast by the National Weather Service. The standard method for receiving this data stream is through the use of the [LDM software from Unidata](#).

In addition, the workstation must have enough disk space to run the McIDAS-XCD software package and store its data files. The table below lists the approximate disk space requirements per day for each data type decoded with the -XCD package. The space requirements were derived from the NOAAPORT broadcast in December 2025.

| Data type  | Daily space requirements |
|--|--------------------------|
| * ASCII text stream  | 3,500 MB                 |
| * MD files (all types/schemas)   | 200 MB                   |
| All GRIB1 and GRIB2 data   | 560,000 MB               |
| All radar (WSR-88D and TDWR) products and stations   | 60,000 MB                |
| All BUFR data  | 3,400 MB                 |
| * These data are generated by default for first-time installations.<br>The GRIB, GRID and NEXRAD decoders are inactive by default. |                          |
| NOAAPORT approximate total   | 616,000 MB<br>(616 GB)   |

In addition, there is a static requirement of 500 to 1,000 MB for other -XCD files. If enabled, the MySQL/MariaDB database (60 MB) and LDM product queue (default=400 MB) also consume significant disk space. Note: The LDM product queue can be set as large as 4 GB on a 32 bit Enterprise Linux workstation.

Remember that the space requirements above are approximates and are *per day*. If you save multiple days of data you must multiply the figures by the number of days for your disk space requirements.



# Obtaining McIDAS-XCD 2025.1

The McIDAS-XCD 2025.1 package contains the following files.

| File name         | Description   |
|-------------------|---|
| xcd2025.1.sh      | shell script that installs the McIDAS-XCD software          |
| xcd2025.1.tar.Z   | compressed tar file that contains all source and data files |
| xcd_README_2025.1 | lists information to review before installation             |

Complete the instructions below to obtain the McIDAS-XCD 2025.1 installation files from the McIDAS Website.

1. Use your Web browser to download the files listed in the table above. Access the McIDAS Website at <https://www.ssec.wisc.edu/mcidas>, and follow the link for McIDAS-XCD software. Each site has its own login and password for downloading files. Have your site coordinator contact the McIDAS Help Desk if you can't remember yours.
2. Log on to the McIDAS-XCD workstation as user oper and move the downloaded files to the ~oper/mcidas directory.
3. List the files and check the ownership.

Type: `ls -l ~oper/mcidas`

If the -XCD files are owned by user oper, skip steps 4-6 and proceed to the next section, [Installing McIDAS-XCD 2025.1](#).

4. Change the ownership to user oper, if needed. You must have root permission to do this. Switch to user root.

Type: `su root`

5. Change to the ~oper/mcidas directory.

Type: `cd ~oper/mcidas`

6. Run the command below for each of the downloaded -XCD files.

Type: `chown oper file`

## Installing McIDAS-XCD 2025.1

The McIDAS-XCD 2025.1 software installation process makes the directories ~oper/mcidas/xcd2025.1, ~oper/mcidas/xcd2025.1/src and ~oper/mcidas/xcd2025.1/data, places the source and data files in them, and builds the software. When the build is complete, the source, helps, data, and binaries are copied to the directories ~oper/mcidas/src, ~oper/mcidas/help, ~oper/mcidas/data, and ~oper/mcidas/bin, respectively.

This section contains the instructions for installing McIDAS-XCD 2025.1. There are two sets of instructions. The instructions you use depend on whether you are doing an **upgrade** (installing -XCD 2025.1 on a workstation that's running a previous version of -XCD) or an **initial install** (installing the -XCD software for the first time on a workstation).

- Go to [Upgrading to McIDAS-XCD 2025.1](#) if the workstation already has a previous version of McIDAS-XCD installed.
- Go to [Installing McIDAS-XCD 2025.1 for the First Time](#) if you are installing McIDAS-XCD for the first time on the workstation.

## Upgrading to McIDAS-XCD 2025.1

The instructions for upgrading McIDAS-XCD on a workstation that already has a previous version of McIDAS-XCD installed are now entirely on the McIDAS Website (rather than in this manual). Go to the [Download McIDAS-XCD page](#) for the instructions.

## Installing McIDAS-XCD 2025.1 for the First Time

If you are installing McIDAS-XCD on a workstation that already has a previous version of McIDAS-XCD installed, go to the previous section, [Upgrading to McIDAS-XCD 2025.1](#).

Installing McIDAS-XCD for the first time on a workstation consists of the four tasks in this section ([Adding the mcdata Group](#), [Assigning Directory Permissions](#), [Loading the McIDAS-XCD Software](#), [Disabling Binary Logging](#)), followed by additional configuration steps in the section [Configuring McIDAS-XCD](#).

Before proceeding with the instructions below, verify that McIDAS-X 2025.1 has been installed on the workstation. If it hasn't you must do so **before** you install McIDAS-XCD 2025.1.

## Adding the mcdata Group

The workstation running the McIDAS-XCD software must have the group name mcdata which contains the users oper and mcidas. Use this procedure to add the mcdata group, if needed.

1. Log on to the root account.
2. Add the following line to the /etc/group file. Replace *groupid* with a unique group ID number.

|                                      |
|--------------------------------------|
| mcdata:: <i>groupid</i> :oper,mcidas |
|--------------------------------------|

For example: mcdata::23000:oper,mcidas

3. Log out of the root account.

## Assigning Directory Permissions

Use the steps below to assign write privileges to the directory ~mcidas/data.

1. Log on to the workstation as user mcidas and change the group for the ~mcidas/data directory to the group mcdata.  
Type: `chgrp mcdata ~mcidas/data`
2. Change the permissions for the directory ~mcidas/data so only the user mcidas and members of the group mcdata have write permission.  
Type: `chmod 775 ~mcidas/data`
3. Log out of the mcidas account.

## Loading the McIDAS-XCD Software

Complete the steps below to load the McIDAS-XCD software.

1. Logon to the workstation as user oper and change to the ~oper/mcidas directory.  
Type: `cd ~oper/mcidas`
2. Verify that the PATH environment variable contains the ~mcidas/bin and ~oper/mcidas/bin directories, and the operating system-specific modifications listed for the mcidas account in the [McIDAS User's Guide](#).  
Type: `echo $PATH`
3. Verify that the ~oper/mcidas/data directory exists (use command `mkdir ~oper/mcidas/data` to make it if it doesn't) and that the MCPATH environment variable is set and includes the ~oper/mcidas/data, ~oper/mcidas/help, ~mcidas/data, and ~mcidas/help directories.  
Type: `echo $MCPATH`
4. Build and install McIDAS-XCD 2025.1 using the same settings for optional flags -noopt and -mysql as were used to build McIDAS-X 2025.1. You must use the same compilers and optional flag settings for both the McIDAS-X and McIDAS-XCD builds.

Type: `sh ./xcd2025.1.sh flags install all`

where *flags* is zero, one or both of the two optional flags described below.

- The **-noopt** flag is used to build McIDAS-XCD with no optimization. If you don't specify this **-noopt** flag, McIDAS-XCD is built using the default optimization: -O2 for builds with vendor compilers and -O1 for builds with gcc/g77.
- The **-mysql** flag is used to build McIDAS-XCD using the MySQL/MariaDB database libraries. Use this flag if this workstation will be serving real-time GRIB files from the NOAAPORT data stream and you have installed and want to use a MySQL/MariaDB database to make the GRIB data access faster for your McIDAS-X clients/users. If the database is in a non-standard install location, specify the flag as **-mysql=directory**, where *directory* is the root MySQL/MariaDB install directory. Remember, the **-mysql** flag must be specified when building both McIDAS-X and McIDAS-XCD.

This script performs the following steps:

- creates the subdirectories xcd2025.1, xcd2025.1/src, and xcd2025.1/data in the ~oper/mcidas directory
- uncompresses the file xcd2025.1.tar.Z

- compiles the source code and copies the binaries to the directory `~oper/mcidas/bin`; approximately 130 modules are compiled, so this step takes a few minutes to complete; your compiler may generate some warnings while the macro commands are compiling
- copies data files to the `~oper/mcidas/data` and the `~mcidas/data` directories
- copies the help files to the `~oper/mcidas/help` directory

When the script is finished, you will see the message below.

```
McIDAS-XCD package installation is now complete
```

5. Switch to user `mcidas` so you can install the McIDAS-XCD ADDE servers.

Type: `su mcidas`

6. Run the script below to install the new ADDE server executable code in the `mcidas` account.

Type: `sh ./xcd2025.1.sh install addeservers`

7. Exit from user `mcidas`.

Type: `exit`

You should now be logged on as user `oper`.

8. Start a McIDAS-X session.

Type: `mcidas`

9. Determine the full Unix path of the directory in which you want -XCD to write data. The location where you store data is up to you; be sure to take disk space needs into account when making your decision. The data directory needs to exist, and also needs to contain `grib` and `bufr` subdirectories. Once you've determined the path of your data directory, create a McIDAS string named `MCDATA` that contains the full Unix path to the directory. From the McIDAS-X session,

Type: **TE MCDATA "/data\_directory\_path**

For example: **TE MCDATA "/home/oper/xcd\_data**

In order for -XCD to correctly file data in this example, the `/home/oper/xcd_data`, `/home/oper/xcd_data/grib`, and `/home/oper/xcd_data/bufr` directories need to exist. Create the `#MCDATA`, `#MCDATA/grib`, and `#MCDATA/bufr` directories, if necessary.

10. Run the batch file `XCD.BAT` to redirect to data files in `#MCDATA` and to initialize the files `GROUPS.DAT` and `COUNTRY.DAT`.

Type: **BATCH XCD.BAT**

11. Run the batch file `XCDDEC.BAT` to register MD file schemas, create rapid access pointer files, and initialize several data files.

Type: **BATCH XCDDEC.BAT**

## Disabling Binary Logging

The workstation running the McIDAS-XCD software should disable the writing of binary log files associated with the GRIB database. This is needed because MySQL/MariaDB 8.0 and later enable binary logging by default, which fills large amounts of disk (possibly an entire file system) due to it logging millions of *INSERT into file\_list* entries per day. Use this procedure to to disable binary logging.

1. Log on to the root account.
2. Disable the writing of binary log files associated with the database.

Type: `/home/oper/mcidas/bin/gribadmin disablelog`

When the command is finished, you should see a message like that below.

```
/etc/my.cnf.d/disable-log-bin.cnf successfully written!
```

3. Log out of the root account.

Proceed to the next section, [Configuring McIDAS-XCD](#), and complete the configuration instructions for each section.

## Configuring McIDAS-XCD

This section contains the procedures for configuring seven components of McIDAS-XCD.

- [Configuring Data Communications](#)
- [Configuring the Data Monitors](#)
- [Configuring the NEXRAD Decoder](#)
- [Configuring the GRIB Decoders](#)
- [Configuring Data Removal](#)
- [Configuring the Default ADDE Datasets](#)
- [Configuring Additional GRIB2 ADDE Datasets](#)

If you are installing McIDAS-XCD for the first time on a workstation, you must review all the configuration sections and complete the appropriate actions for your workstation's configuration. Once you have completed the configuration, proceed to [Starting and Stopping McIDAS-XCD](#) for instructions on how to start McIDAS-XCD.

If your workstation has been running McIDAS-XCD and you want to modify its configuration, first stop McIDAS-XCD and LDM, go to the corresponding configuration section(s) and complete the actions needed to implement the desired changes, then restart LDM and McIDAS-XCD.

## Configuring Data Communications

The method you use for configuring McIDAS-XCD communications depends on the source of your data. If you use the [NOAAPORT Receive System](#), the LDM is your data source and you must complete the instructions below.

1. From a McIDAS-X session running under the oper account, run the batch file NOAAPORT.BAT to configure WMO header routings for the NTXT circuit.

Type: **BATCH NOAAPORT.BAT**

2. Deactivate the text and binary circuits. This is necessary because the LDM will feed data directly into McIDAS-XCD's text and binary ingestors.

Type: **CIRCUIT SET NTXT INACTIVE**

Type: **CIRCUIT SET NBIN INACTIVE**

3. Edit the configuration files NTXT.CFG and NBIN.CFG in the ~oper/mcidas/data directory. In each file, if it's not already done, comment out the FILE=, PERM=, HOST=, and HOST\_PORT= lines and add the following line.

```
FILE=STDIN
```

4. The lines in your /home/ldm/etc/pqact.conf file for DDS, PPS, IDS, HRS, NNEXRAD, etc., should be piped to either /home/oper/mcidas/bin/ingebin.k or /home/oper/mcidas/bin/ingetext.k, as shown in the example below (use tabs, not spaces, to separate items within the lines).

```
PPS|DDS|IDS ^.* PIPE /home/oper/mcidas/bin/ingetext.k NTXT HDS|NNEXRAD ^.* PIPE  
/home/oper/mcidas/bin/ingebin.k NBIN NGRID ^.* PIPE /home/oper/mcidas/bin/ingebin.k NBIN
```

Note: The LDM must be started/stopped from the **oper** account. Therefore the ~ldm/data directory and the ~ldm/data/ldm.pq file must be writable by user **oper**.

## Configuring the Data Monitors

Each data monitor controls one or more decoders. You can activate or deactivate any data monitor or any decoder by using the DECINFO command. See Chapter 3, [McIDAS-XCD Administrative Commands](#), for more information about DECINFO.

From a McIDAS-X session running under the oper account, list the status of the available data monitors and decoders.

Type: **DECINFO**

The table below lists the default status of data monitors and decoders.

| Data Monitor | Decoder     | MD Files | Status | Description    | Configuration File |
|--------------|-------------|----------|--------|----------------|--------------------|
| DMSFC        | SAODEC      | 1-10     | Active | Surface hourly | ISFCDEC.CFG        |
| DMRAOB       | RABDEC      | 11-30    | Active | Upper air      | IRABDEC.CFG        |
|              | TEMPSHIPDEC | 41-50    | Active | TEMP SHIP      | ITSHPDEC.CFG       |

|        |              |       |          |                |              |
|--------|--------------|-------|----------|----------------|--------------|
| DMSYN  | SYNDEC       | 51-60 | Active   | Synoptic       | SYNDEC.CFG   |
|        | SHPDEC       | 31-40 | Active   | Ship/Buoy      | ISHPDEC.CFG  |
| DMMISC | NAMMOS       | 71-80 | Active   | NAM MOS        | NAMMOS.CFG   |
|        | GFSMOS       | 81-90 | Active   | GFS MOS        | GFSMOS.CFG   |
|        | PIRDEC       | 61-70 | Active   | PIREP/AIREP    | PIRPDEC.CFG  |
|        | TERDEC       |       | Active   | Terminal Fcst  | TERMDEC.CFG  |
|        | TIRDEC       |       | Inactive | TIROS NAV      | TIRDEC.CFG   |
|        | MDRDEC       |       | Inactive | MDR grids      | MDRDEC.CFG   |
| DMGRID | GRIB         |       | Inactive | NCEP GRIDS     | GRIBDEC.CFG  |
| DMNEXR | NEXRFILE     |       | Inactive | Radar products | NEXRFILE.CFG |
| DMBIN  | GRBFILER     |       | Inactive | GRIB & BUFR    | GRBFILER.CFG |
| DMCOND | CONDUITFILER |       | Inactive | GRIB2          | CONFILER.CFG |

## Configuring the NEXRAD Decoder

If you will be decoding radar (formerly NEXRAD; now WSR-88D and TDWR) products you must configure the file NEXRID.CFG (which defines the stations and products that will be decoded by the NEXRFILE decoder, and the amount and location of data to store) and then activate the data monitor.

- Edit the file `~/oper/mcidas/data/NEXRID.CFG` and set the values for the following variables:
  - FILE= and EXCEPT= variables in the STATIONS control line
  - FILE= and EXCEPT= variables in the PRODUCTS control line
  - WSRFILE=, TDWRFILE=and KEEP= variables in the DISPOSE control line
- Activate the NEXRAD data monitor by running the following command in a McIDAS-X session running under the oper account.

Type: **DECINFO SET DMNEXR ACTIVE**

Note: The Unix warning message *component of path does not exist* will normally be displayed by the NEXRAD decoder each time it creates a subdirectory for incoming stations and products. The error message is normal, so can be ignored.

## Creating a Separate Spool File for the NEXRAD Decoder (optional)

This procedure is optional and is available only to sites that receive data via the LDM. The procedure significantly reduces processor usage by creating a separate spool file for NEXRAD data. The gains in efficiency are due to the NEXRAD decoder no longer needing to scan through GRIB data looking for the next NEXRAD product and vice-versa for the GRIB decoder.

Complete the steps below to implement the procedure.

- Run the command below from the McIDAS-X Text and Command window to stop the NEXRAD decoder.

Type: **DECINFO SET DMNEXR INACTIVE**

- Run the command below from the Unix prompt to copy the NBIN circuit configuration file (no changes to the file need be made).

Type: **cp ~/oper/mcidas/data/NBIN.CFG ~/oper/mcidas/data/NEXR.CFG**

- Run the command below from the McIDAS-X Text and Command window to add the new NEXR circuit.

Type: **CIRCUIT ADD NEXR INGESTOR=INGEBIN CONFIG=NEXR.CFG SPOOL=NEXR.SPL "NOAAPORT NWSTG NEXRAD Binary Circuit**

4. Modify the NEXRAD decoder configuration file with the name of the new circuit.

- a. Open the file `~oper/mcidas/data/NEXRFILE.CFG` for editing.
- b. Change the value of `SPLFILE=` to `NEXR.SPL`.
- c. Save and close the file.

5. Run the command below from the McIDAS-X Text and Command window to define the full Unix path of the **NEXR.SPL** file.

Type: **REDIRECT ADD NEXR.SPL "/data\_directory\_path**

For example: **REDIRECT ADD NEXR.SPL "/home/oper/xcd\_data**

6. Modify the LDM configuration so that it pipes NEXRAD data to a second instance of the binary ingestor.

- a. Open the file `~ldm/etc/pqact.conf` for editing.
- b. Create a separate entry in the *Request Entries* section for NEXRAD data and set it to pipe the data to the binary ingestor using the NEXR circuit. If you had a line that contained NNEXRAD as well as other binary feeds such as HRS, remove NNEXRAD from this line. The resulting entry should look like that in the box below.

|   |
|---|
| NNEXRAD ^.* PIPE /home/oper/mcidas/bin/ingebin.k NEXR |
|---|

- c. Save and close the file.

7. Run the command below from the Unix prompt to remove the old pointer file for the NEXRAD decoder.

Type: **rm ~oper/mcidas/data/NEXRFILE.PRO**

8. Run the command below from the Unix prompt to stop and restart the LDM.

Type: **ldmadmin restart**

9. Run the command below from the McIDAS-X Text and Command window to start the NEXRAD decoder.

Type: **DECINFO SET DMNEXR ACTIVE**

You should notice very soon after starting the NEXRAD decoder that there is a third entry in the ingestor section of the [statdisp.display](#). Two instances of the binary ingestor (INGEBIN) will exist. The NEXRAD data should now be written to NEXR.SPL by the binary ingestor using the NEXR circuit.

## Configuring the GRIB Decoders

As noted in [Configuring the Data Monitors](#), the DMGRID, DMBIN and DMCOND data monitors control the GRIBDEC, GRBFILER and CONDUITFILER decoders, respectively. If activated, the data monitors perform the following actions with real-time NCEP GRIB messages.

- The DMGRID data monitor decodes the GRIB1 messages then creates and stores them in McIDAS Grid files.
- The DMBIN data monitor files the GRIB1 and GRIB2 messages into GRIB files of the same format and populates the MySQL/MariaDB database.
- The DMCOND data monitor files the GRIB2 files from the CONDUIT LDM feed into a separate spool file. This optional procedure is useful for sites that receive their data via the LDM and helps ensure that data processing keeps up with the data during high volume periods.

You can activate the data monitors as needed and make their data available to your users in datasets defined in [Configuring the Default ADDE Datasets](#). Keep in mind, however, that SSEC tests and supports real-time -XCD grid datasets only in GRIB format, and that McIDAS Grid files consume much more disk space than GRIB files. See Chapter 5, [Decoding GRIB Messages](#), for more information.

The sections below contain instructions for configuring the data monitors.

### DMGRID Data Monitor for McIDAS Grid Files

If you want to decode the GRIB1 messages into McIDAS Grid files, activate the DMGRID data monitor by running the command below from a McIDAS-X session running under the oper account.

Type: **DECINFO SET DMGRID ACTIVE**

## DMBIN Data Monitor for GRIB1 and GRIB2 Files

If you want to file the GRIB1 and GRIB2 messages into GRIB files of the same format and populate the MySQL/MariaDB database with GRIB1/GRIB2 metadata, use the [gribadmin](#) and [DECINFO](#) commands below.

Create the MySQL/MariaDB database by running the command below from a Unix shell prompt. The command will prompt for a password. Enter the password for the MySQL/MariaDB root user, which was set by the person that installed MySQL/MariaDB.

Type: **gribadmin makedb**

If you have problems running this command, review the *Configuration Sections* section of the gribadmin script. It contains variables that change its behavior. In particular, the mysql\_path and gcc\_lib\_path variables may need to be changed.

Activate the DMBIN data monitor by running the command below from a McIDAS-X session running under the oper account.

Type: **DECINFO SET DMBIN ACTIVE**

## DMCOND Data Monitor for LDM CONDUIT Feed GRIB2 Files (Optional)

If you will be decoding CONDUIT products in a separate spool file, you must activate the data monitor. Otherwise, the CONDUIT data will be filed using the DMBIN data monitor. First, you must recreate the DECINFO.DAT file to add DMCOND to the list of valid data monitors.

1. Run the command below from the McIDAS-X Text and Command window to list the current active/inactive status of each of the data monitors. This information will be used in steps 5 and 6 below.

Type: **DECINFO LIST**

2. Run the command below from the Unix prompt to remove the existing DECINFO.DAT file.

Type: **rm ~oper/mcidas/data/DECINFO.DAT**

3. Run the command below from the McIDAS-X Text and Command window to recreate the DECINFO.DAT file.

Type: **DECINFO**

4. Run the command below from the McIDAS-X Text and Command window to activate the DMCOND data monitor.

Type: **DECINFO SET DMCOND ACTIVE**

5. Run the command below from the McIDAS-X Text and Command window to list the updated active/inactive status of each of the data monitors.

Type: **DECINFO LIST**

6. If the active/inactive status of any of the data monitors is different than it was in step 1 above, use the [DECINFO command](#) (**DECINFO SET monitor action**) to reset them to the proper status.

## Creating a Separate Spool File for the CONDUIT Decoder (Optional)

This procedure is optional and is available only to sites that receive data via the LDM. The procedure increases throughput for GRIB messages by creating a separate spool file for the CONDUIT feed. If you are doing both the CONDUIT and NGRID LDM feeds in the same spool file, the tendency for dropped messages is possible.

Complete the steps below to implement the procedure.

1. Run the command below from the McIDAS-X Text and Command window to stop the DMCOND data monitor.

Type: **DECINFO SET DMCOND INACTIVE**

2. Run the command below from the McIDAS-X Text and Command window to add the new NCON circuit.

Type: **CIRCUIT ADD NCON INGESTOR=INGEBIN CONFIG=CONDUIT.CFG SPOOL=CONDUIT.SPL "NOAAPORT NWSTG CONDUIT Binary Circuit**

3. Run the command below from the McIDAS-X Text and Command window to define the full Unix path of the **CONDUIT.SPL** file.

Type: **REDIRECT ADD CONDUIT.SPL "/data\_directory\_path**

For example: **REDIRECT ADD CONDUIT.SPL "/home/oper/xcd\_data**

4. Modify the LDM configuration so that it pipes CONDUIT data to another instance of the binary ingestor.
  - a. Open the file `~ldm/etc/pqact.conf` for editing.
  - b. Create a separate entry in the *Request Entries* section for CONDUIT data and set it to pipe the data to the binary ingestor using the NCON circuit. First check if there is an entry that contains CONDUIT as well as other binary feeds such as HRS; if there is, remove CONDUIT from that entry. Then add a new entry like that in the box below, replacing its spaces with tabs (a requirement for the pqact.conf file).

|   |
|---|
| CONDUIT ^.* PIPE /home/oper/mcidas/bin/ingebin.k NCON |
|---|

- c. Save and close the file.
5. Run the command below from the Unix prompt to remove the old pointer file for the CONDUIT decoder.

Type: **rm ~oper/mcidas/data/CONDUIT.PRO**

6. Run the command below from the Unix prompt to stop and restart the LDM.

Type: **ldmadmin restart**

7. Run the command below from the McIDAS-X Text and Command window to activate the DMCOND data monitor.

Type: **DECINFO SET DMCOND ACTIVE**

You should notice very soon after starting the CONDUIT decoder that there is another entry in the ingestor section of the [statdisp display](#). Three instances of the binary ingestor (INGEBIN) will exist if you are doing the optional NEXRAD decoder as well. The CONDUIT data should now be written to CONDUIT.SPL by the binary ingestor using the NCON circuit.

## Configuring Data Removal

As new data is decoded and filed by McIDAS-XCD your disk will begin to fill up. Complete the steps below to free up disk space by removing old data and rotating the -XCD log files.

### Removing MD, GRID and Text Files

There are two ways to configure the removal of MD, GRID and text files. If you have a continuous McIDAS session running in the oper account, you may use the McIDAS-X scheduler. If you prefer to configure the data to be removed in the background without a McIDAS session running, you may use the Unix cron command. Command [QRTMDG](#) deletes old MD and grid files generated by the decoders; command [DELWXT](#) deletes old text files generated by the ingestors.

#### Using the McIDAS Scheduler

1. From a McIDAS-X session running under the oper account, verify that there is an active SKED process.

Type: ?

If the resulting list of processes does **not** include a line containing "SKED SKEDFILE", start a SKED process with the command below.

Type: **SKED SKEDFILE**

2. Enter the four commands below in the McIDAS-X local time scheduler to delete old data files. The variable *nn* represents the number of days of data to keep online.

Type: **SKE #Y 00:01:00 999999 24 "QRTMDG MD 1 90 nn DEV=NCN**

Type: **SKE #Y 00:01:00 999999 24 "DELWXT nn DEV=NCN**

Type: **SKE #Y 00:01:00 999999 24 "QRTMDG GRID 50001 100000 nn DEV=NCN**

Type: **SKU ON**

#### Using the Unix cron Command

1. From a shell prompt under the oper account, edit the current cron job list.

Type: **crontab -e**

2. Enter the three commands below on new lines in the editor. The variables *mm* and *hh* represent the minute and hour of the day to run the [QRTMDG](#) and [DELWXT](#) commands. The variable *nn* represents the number of days of data to keep online.



```
Type: mm hh * * * /home/oper/mcidas/bin/qrtdmg.k MD 1 90 nn DEV=NCN
Type: mm hh * * * /home/oper/mcidas/bin/delwxt.k nn DEV=NCN
Type: mm hh * * * /home/oper/mcidas/bin/qrtdmg.k GRID 50001 100000 nn DEV=NCN
```

## Removing GRIB and BUFR Files

1. From a shell prompt under the oper account, edit the current cron job list.

```
Type: crontab -e
```

2. Enter the two commands below on new lines in the editor. The variables *mm* and *hh* represent the minute and hour of the day to run the [xcdscour](#) command. The variable *nn* represents the number of days of data to keep online.

```
Type: mm hh * * * /home/oper/mcidas/bin/xcdscour GRIB nn path_to_grib_files
Type: mm hh * * * /home/oper/mcidas/bin/xcdscour BUFR nn path_to_buf_r_files
```

The xcdscour command deletes old GRIB1, GRIB2 and BUFR files generated by the decoders. If the GRIB decoder is configured to use a MySQL/MariaDB database the corresponding GRIB1 and GRIB2 database entries will be removed.

## Rotating the -XCD Log Files

1. From a shell prompt under the oper account, edit the current cron job list.

```
Type: crontab -e
```

2. Enter the two commands below on new lines in the editor. The first entry runs the [xcdadmin](#) command hourly; the -t option prints the current time, disk usage, and load averages to the xcd.log file. The second entry runs the xcdadmin command once per day; the -r option rotates the log file. See [Using xcdadmin from a Unix Shell Prompt](#) to confirm that you are using the most recent version of xcdadmin.

```
Type: 0 * * * * /home/oper/mcidas/bin/xcdadmin log -t
Type: 0 0 * * * /home/oper/mcidas/bin/xcdadmin log -r
```

## Configuring the Default ADDE Datasets

This section describes how to configure the McIDAS-XCD workstation to serve -XCD data using McIDAS ADDE. McIDAS-X includes ADDE servers to provide users with data that has been decoded and stored by McIDAS-XCD.

1. Log on to the workstation as the user mcadde.
2. Start a McIDAS-X session.

```
Type: mcidas
```

3. Create a McIDAS string named MCDATA that contains the fully expanded path to the directory that you configured -XCD to store data. This is the same directory that you specified in step 9 of [Loading the McIDAS-XCD Software](#).

```
Type: TE MCDATA "/data_directory_path
```

For example: **TE MCDATA "/home/oper/xcd\_data**

In order for -XCD to correctly file data in this example, the /home/oper/xcd\_data, /home/oper/xcd\_data/grib, and /home/oper/xcd\_data/bufr directories need to exist. Create the #MCDATA, #MCDATA/grib, and #MCDATA/bufr directories, if necessary.

4. Create McIDAS strings named WSRDATA and TDWRDATA that contain the fully expanded paths to the directories that you configured -XCD to store WSR-88D and TDWR data. These are the same directories that you specified for the values of WSRFILE= and TDWRFILE=, respectively, in step 1 of [Configuring the NEXRAD Decoder](#).

```
Type: TE WSRDATA "/wsr_data_directory_path
Type: TE TDWRDATA "/tdwr_data_directory_path
```

Example: **TE WSRDATA "/home/oper/xcd\_data/wsr**

Example: **TE TDWRDATA "/home/oper/xcd\_data/tdwr**

5. Run the batch file XCD.BAT to create file redirections and initialize the files GROUPS.DAT and COUNTRY.DAT. Running this batch file may overwrite non-default file redirections that you previously created. Therefore, we recommend that you make a backup copy of the file ~mcadde/mcidas/data/LWPATH.NAM before running the command below.

```
Type: BATCH XCD.BAT
```

6. Run the batch file XCDADDE.BAT to create the real-time ADDE datasets listed in the tables below. Running this batch file creates all of the default datasets for the groups RTGRIDS, RTPSRC, RTWXTEXT, RADAR, TDWR and WSR. It will therefore overwrite any locally-created datasets with names matching those in the batch file. Thus, we recommend that you make a backup copy of the file ~mcadde/mcidas/data/RESOLV.SRV before running the command below.

Type: **BATCH XCDADDE.BAT**

Notes:

- o SSEC tests and supports real-time -XCD grid datasets only in GRIB format. Thus, the default for the RTGRIDS datasets is to contain GRIB1 and GRIB2 files, which are defined in XCDNOAAPORTGRID.BAT. If you want the RTGRIDS datasets to also contain McIDAS GRID files (in addition to GRIB1 and GRIB2) you must activate the GRID data monitor with command **DECINFO SET DMGRID ACTIVE** and create and run a batch file that defines different dataset names for the McIDAS GRID files. The batch file XCDGRID.BAT [last updated April 2012] can be used as a template since it shows the correct format for DSSERVE commands of McIDAS GRID datasets. If you choose to use it as a template, make sure you change the dataset names so that none of them are the same as the existing RTGRIDS datasets. As noted in [Creating McIDAS Grid Files with DMGRID](#), you can only make McIDAS GRID format datasets from GRIB1 messages (not GRIB1 and GRIB2 messages).
- o The command **BATCH XCDCONDUITGRID.BAT**, which is in XCDADDE.BAT but is not run because it is commented out, creates ADDE datasets for the subset of CONDUIT LDM GRIB2 grids that the SSEC Data Center provides for its users. If you want to make those datasets for your users, you can uncomment the line (remove the "REM" at the beginning of the line) in XCDADDE.BAT or run the command (**BATCH XCDCONDUITGRID.BAT**) by hand. If you want to make additional GRIB2 dataset changes (i.e., change or add datasets), see [Configuring Additional GRIB2 ADDE Datasets](#).

The default datasets listed in the five tables below are created by running batch files provided with McIDAS-XCD. They can be created either by running the XCDADDE.BAT batch file or the set of batch files that XCDADDE.BAT runs (XCDRTPT.BAT, XCDRTWX.BAT, XCDRADAR.BAT, XCDTDWR.BAT, XCDWSR.BAT, and XCDNOAAPORTGRID.BAT; XCDCONDUITGRID.BAT is commented out but can be optionally run).

The datasets below are created by the XCDRTPT.BAT batch file (which can be run separately, or as part of XCDADDE.BAT).

| ADDE Dataset Name | Data Type | MD Files | Description                                     |
|-------------------|-----------|----------|---|
| RTPTSRC/SFCHOURLY | POINT     | 1-10     | real-time surface hourly data                   |
| RTPTSRC/UPPERMAND | POINT     | 11-20    | real-time mandatory level RAOB data             |
| RTPTSRC/UPPERSIG  | POINT     | 21-30    | real-time significant level RAOB data           |
| RTPTSRC/SHIPBUOY  | POINT     | 31-40    | real-time ship and buoy surface reports         |
| RTPTSRC/TEMPSHIP  | POINT     | 41-50    | real-time mandatory level TEMP SHIP (RAOB) data |
| RTPTSRC/SYNOPTIC  | POINT     | 51-60    | real-time synoptic data                         |
| RTPTSRC/AIRCRAFT  | POINT     | 61-70    | real-time AIREP and PIREP data                  |
| RTPTSRC/NAMMOS    | POINT     | 71-80    | real-time NAM MOS data                          |
| RTPTSRC/GFSMOS    | POINT     | 81-90    | real-time GFS MOS data                          |

The datasets below are created by the XCDRTWX.BAT batch file (which can be run separately, or as part of XCDADDE.BAT).

| ADDE Dataset Name  | Data Type   | Files | Description                                      |
|--------------------|-------------|-------|--|
| RTWXTEXT/NAMMOS    | TEXT (OBTX) | --    | default dataset name used by the MOSRPT command  |
| RTWXTEXT/GFSMOS    | TEXT (OBTX) | --    | default dataset name used by the MOSRPT command  |
| RTWXTEXT/SFCHOURLY | TEXT (OBTX) | --    | default dataset name used by the SFCRPT command  |
| RTWXTEXT/SYNOPTIC  | TEXT (OBTX) | --    | default dataset name used by the SYNRP command   |
| RTWXTEXT/TERMFCST  | TEXT (OBTX) | --    | default dataset name used by the TAFRPT command  |
| RTWXTEXT/UPPERAIR  | TEXT (OBTX) | --    | default dataset name used by the RAOBRPT command |

The datasets below are created by the XCDRADAR.BAT batch file (which can be run separately, or as part of XCDADDE.BAT).

| ADDE Dataset Name | Data Type | Files | Description  |
|-------------------|-----------|-------|--|
| RADAR/TDWR-BREF1  | IMAGE     | --    | TDWR Base Reflec - tilt 1 (0.1-0.8deg) 48nmi (TZ0)                 |
| RADAR/TDWR-BREF2  | IMAGE     | --    | TDWR Base Reflec - tilt 2 (1.0deg) 48nmi (TZ1)                     |
| RADAR/TDWR-BREF3  | IMAGE     | --    | TDWR Base Reflec - tilt 3 (1.6-3.7deg) 48nmi (TZ2)                 |
| RADAR/TDWR-BVEL1  | IMAGE     | --    | TDWR Base Rad Veloc - tilt 1 (0.1-0.8deg) 48nmi (TV0)              |
| RADAR/TDWR-BVEL2  | IMAGE     | --    | TDWR Base Rad Veloc - tilt 2 (1.0deg) 48nmi (TV1)                  |
| RADAR/TDWR-BVEL3  | IMAGE     | --    | TDWR Base Rad Veloc - tilt 3 (1.6-3.7deg) 48nmi (TV2)              |
| RADAR/TDWR-CREF   | IMAGE     | --    | TDWR Composite Reflectivity - 124nmi (NCR)                         |
| RADAR/TDWR-DHR    | IMAGE     | --    | TDWR Digital Hybrid Scan Reflectivity (DHR)                        |
| RADAR/TDWR-DPA    | IMAGE     | --    | TDWR Digital Precipitation Array (DPA)                             |
| RADAR/TDWR-DSP    | IMAGE     | --    | TDWR Digital Storm Total Precipitation (DSP)                       |
| RADAR/TDWR-LRREF  | IMAGE     | --    | TDWR Long Range Reflectivity - 225nmi (TZL)                        |
| RADAR/TDWR-PCP1   | IMAGE     | --    | TDWR Surface Rainfall - 1 hour running total (N1P)                 |
| RADAR/TDWR-PCPT   | IMAGE     | --    | TDWR Surface Rainfall - storm total (NTP)                          |
| RADAR/TDWR-TOPS   | IMAGE     | --    | TDWR Echo Tops (NET)   |
| RADAR/TDWR-VIL    | IMAGE     | --    | TDWR Vertical Integrated Liquid (NVL)                              |
| RADAR/WSR-BREF    | IMAGE     | --    | WSR Base Reflec - elev angle 0.5 deg - .13 nm X .5 deg (N0B)       |
| RADAR/WSR-BREF1   | IMAGE     | --    | WSR Base Reflec - elev angle -0.2 deg - .13 nm X .5 deg (NXB)      |
| RADAR/WSR-BREF2   | IMAGE     | --    | WSR Base Reflec - elev angle 0-0.2 deg - .13 nm X .5 deg (NYB)     |
| RADAR/WSR-BREF3   | IMAGE     | --    | WSR Base Reflec - elev angle 0.3-0.4 deg - .13 nm X .5 deg (NZB)   |
| RADAR/WSR-BREF4   | IMAGE     | --    | WSR Base Reflec - elev angle 0.5 deg - .13 nm X .5 deg (N0B)       |
| RADAR/WSR-BREF5   | IMAGE     | --    | WSR Base Reflec - elev angle 0.9 deg - .13 nm X .5 deg (NAB)       |
| RADAR/WSR-BREF6   | IMAGE     | --    | WSR Base Reflec - elev angle 1.3-1.5 deg - .13 nm X .5 deg (N1B)   |
| RADAR/WSR-BREF7   | IMAGE     | --    | WSR Base Reflec - elev angle 1.8 deg - .13 nm X .5 deg (NBB)       |
| RADAR/WSR-BREF8   | IMAGE     | --    | WSR Base Reflec - elev angle 2.4-2.5 deg .13 nm X .5 deg (N2B)     |
| RADAR/WSR-BREF9   | IMAGE     | --    | WSR Base Reflec - elev angle 3.1-3.5 deg .13 nm X .5 deg (N3B)     |
| RADAR/WSR-BVEL    | IMAGE     | --    | WSR Base Velocity - elev angle 0.5 deg - .13 nm X .5 deg (N0G)     |
| RADAR/WSR-BVEL1   | IMAGE     | --    | WSR Base Velocity - elev angle -0.2 deg - .13 nm X .5 deg (NXG)    |
| RADAR/WSR-BVEL2   | IMAGE     | --    | WSR Base Velocity - elev angle 0-0.2 deg - .13 nm X .5 deg (NYG)   |
| RADAR/WSR-BVEL3   | IMAGE     | --    | WSR Base Velocity - elev angle 0.3-0.4 deg - .13 nm X .5 deg (NZG) |
| RADAR/WSR-BVEL4   | IMAGE     | --    | WSR Base Velocity - elev angle 0.5 deg - .13 nm X .5 deg (N0G)     |
| RADAR/WSR-BVEL5   | IMAGE     | --    | WSR Base Velocity - elev angle 0.9 deg - .13 nm X .5 deg (NAG)     |

|                 |       |    |   |
|-----------------|-------|----|---|
| RADAR/WSR-BVEL6 | IMAGE | -- | WSR Base Velocity - elev angle 1.3-1.5 deg - .13 nm X .5 deg (N1G)      |
| RADAR/WSR-BVEL7 | IMAGE | -- | WSR Base Velocity - elev angle 1.8 deg - .13 nm X .5 deg (NBU)          |
| RADAR/WSR-BVEL8 | IMAGE | -- | WSR Base Velocity - elev angle 2.4-2.5 deg - .13 nm X .5 deg (N2U)      |
| RADAR/WSR-BVEL9 | IMAGE | -- | WSR Base Velocity - elev angle 3.1-3.5 deg - .13 nm X .5 deg (N3U)      |
| RADAR/WSR-COR   | IMAGE | -- | WSR Correlation Coeff - elev angle 0.5 deg (N0C)                        |
| RADAR/WSR-COR1  | IMAGE | -- | WSR Correlation Coeff - elev angle -0.2 deg (NXC)                       |
| RADAR/WSR-COR2  | IMAGE | -- | WSR Correlation Coeff - elev angle 0-0.2 deg 248 (NYC)                  |
| RADAR/WSR-COR3  | IMAGE | -- | WSR Correlation Coeff - elev angle 0.3-0.4 deg (NZC)                    |
| RADAR/WSR-COR4  | IMAGE | -- | WSR Correlation Coeff - elev angle 0.5 deg (N0C)                        |
| RADAR/WSR-COR5  | IMAGE | -- | WSR Correlation Coeff - elev angle 0.9 deg (NAC)                        |
| RADAR/WSR-COR6  | IMAGE | -- | WSR Correlation Coeff - elev angle 1.3-1.5 deg (N1C)                    |
| RADAR/WSR-COR7  | IMAGE | -- | WSR Correlation Coeff - elev angle 1.8 deg (NBC)                        |
| RADAR/WSR-COR8  | IMAGE | -- | WSR Correlation Coeff - elev angle 2.4-2.5 deg (N2C)                    |
| RADAR/WSR-COR9  | IMAGE | -- | WSR Correlation Coeff - elev angle 3.1-3.5 deg (N3C)                    |
| RADAR/WSR-CREF  | IMAGE | -- | WSR Composite Reflectivity - 124nmi (NCR)                               |
| RADAR/WSR-DAA   | IMAGE | -- | WSR Digital Accumulation Array (DAA)                                    |
| RADAR/WSR-DHR   | IMAGE | -- | WSR Digital Hybrid Scan Reflectivity (DHR)                              |
| RADAR/WSR-DPA   | IMAGE | -- | WSR Digital Precipitation Array (DPA)                                   |
| RADAR/WSR-DREF  | IMAGE | -- | WSR Diff Reflectivity - elev angle 0.5 deg 248 nmi (N0X)                |
| RADAR/WSR-DREF1 | IMAGE | -- | WSR Diff Reflectivity - elev angle -0.2 deg 248 nmi (NXX)               |
| RADAR/WSR-DREF2 | IMAGE | -- | WSR Diff Reflectivity - elev angle 0-0.2 deg 248 nmi (NYX)              |
| RADAR/WSR-DREF3 | IMAGE | -- | WSR Diff Reflectivity - elev angle 0.3-0.4 deg 248 nmi (NZX)            |
| RADAR/WSR-DREF4 | IMAGE | -- | WSR Diff Reflectivity - elev angle 0.5 deg 248 nmi (N0X)                |
| RADAR/WSR-DREF5 | IMAGE | -- | WSR Diff Reflectivity - elev angle 0.9 deg 248 nmi (NAX)                |
| RADAR/WSR-DREF6 | IMAGE | -- | WSR Diff Reflectivity - elev angle 1.3-1.5 deg 248 nmi (N1X)            |
| RADAR/WSR-DREF7 | IMAGE | -- | WSR Diff Reflectivity - elev angle 1.8 deg 248 nmi (NBX)                |
| RADAR/WSR-DREF8 | IMAGE | -- | WSR Diff Reflectivity - elev angle 2.4-2.5 deg 248 nmi (N2X)            |
| RADAR/WSR-DREF9 | IMAGE | -- | WSR Diff Reflectivity - elev angle 3.1-3.5 deg 248 nmi (N3X)            |
| RADAR/WSR-DSP   | IMAGE | -- | WSR Digital Storm Total Precipitation (DSP)                             |
| RADAR/WSR-DTA   | IMAGE | -- | WSR Digital Storm Total Accumulation (DTA)                              |
| RADAR/WSR-DU3   | IMAGE | -- | WSR User-Selectable Accumulation over 3 hours taken hourly (DU3)        |
| RADAR/WSR-DU6   | IMAGE | -- | WSR User-Selectable Accumulation over 24 hours taken at 12Z daily (DU6) |

|  |       |    |  |
|--|-------|----|--|
| RADAR/WSR-DVIL   | IMAGE | -- | WSR Digital Vertical Integrated Liquid (DVL)         |
| RADAR/WSR-ENHTOPS  | IMAGE | -- | WSR Enhanced Echo Tops (EET)                         |
| RADAR/WSR-HHC  | IMAGE | -- | WSR Hybrid Scan Hydrometeor Classification (HHC)     |
| RADAR/WSR-HMC  | IMAGE | -- | WSR Hydrometeor Class - elev angle 0.5 deg (N0H)     |
| RADAR/WSR-HMC1   | IMAGE | -- | WSR Hydrometeor Class - elev angle -0.2 deg (NXH)    |
| RADAR/WSR-HMC2   | IMAGE | -- | WSR Hydrometeor Class - elev angle 0-0.2 deg (NYH)   |
| RADAR/WSR-HMC3   | IMAGE | -- | WSR Hydrometeor Class - elev angle 0.3-0.4 deg (NZH) |
| RADAR/WSR-HMC4   | IMAGE | -- | WSR Hydrometeor Class - elev angle 0.5 deg (N0H)     |
| RADAR/WSR-HMC5   | IMAGE | -- | WSR Hydrometeor Class - elev angle 0.9 deg (NAH)     |
| RADAR/WSR-HMC6   | IMAGE | -- | WSR Hydrometeor Class - elev angle 1.3-1.5 deg (N1H) |
| RADAR/WSR-HMC7   | IMAGE | -- | WSR Hydrometeor Class - elev angle 1.8 deg (NBH)     |
| RADAR/WSR-HMC8   | IMAGE | -- | WSR Hydrometeor Class - elev angle 2.4-2.5 deg (N2H) |
| RADAR/WSR-HMC9   | IMAGE | -- | WSR Hydrometeor Class - elev angle 3.1-3.5 deg (N3H) |
| RADAR/WSR-OHA  | IMAGE | -- | WSR One Hour Accumulation (OHA)                      |
| RADAR/WSR-PCP1   | IMAGE | -- | WSR Surface Rainfall - 1 hour running total (N1P)    |
| RADAR/WSR-PCPT   | IMAGE | -- | WSR Surface Rainfall - storm total (NTP)             |
| RADAR/WSR-SDP  | IMAGE | -- | WSR Spec Diff Phase - elev angle 0.5 deg (N0K)       |
| RADAR/WSR-SDP1   | IMAGE | -- | WSR Spec Diff Phase - elev angle -0.2 deg (NXK)      |
| RADAR/WSR-SDP2   | IMAGE | -- | WSR Spec Diff Phase - elev angle 0-0.2 deg (NYK)     |
| RADAR/WSR-SDP3   | IMAGE | -- | WSR Spec Diff Phase - elev angle 0.3-0.4 deg (NZK)   |
| RADAR/WSR-SDP4   | IMAGE | -- | WSR Spec Diff Phase - elev angle 0.5 deg (N0K)       |
| RADAR/WSR-SDP5   | IMAGE | -- | WSR Spec Diff Phase - elev angle 0.9 deg (NAK)       |
| RADAR/WSR-SDP6   | IMAGE | -- | WSR Spec Diff Phase - elev angle 1.3-1.5 deg (N1K)   |
| RADAR/WSR-SDP7   | IMAGE | -- | WSR Spec Diff Phase - elev angle 1.8 deg (NBK)       |
| RADAR/WSR-SDP8   | IMAGE | -- | WSR Spec Diff Phase - elev angle 2.4-2.5 deg (N2K)   |
| RADAR/WSR-SDP9   | IMAGE | -- | WSR Spec Diff Phase - elev angle 3.1-3.5 deg (N3K)   |
| RADAR/WSR-SRVEL  | IMAGE | -- | WSR Storm-Rel Mean Rad Vel - elev angle 0.5deg (N0S) |
| RADAR/WSR-VIL  | IMAGE | -- | WSR Vertical Integrated Liquid (NVL)                 |
| * The 14 datasets created by the <b>XCDTDWR.BAT</b> file are the same as the RADAR/TDWR-* datasets in the <b>XCDRADAR.BAT</b> table above, except that the <b>XCDTDWR.BAT</b> datasets are named TDWR/* rather than RADAR/TDWR-*.      |       |    |  |
| * Likewise, the 76 datasets created by the <b>XCDWSR.BAT</b> file are the same as the RADAR/WSR-* datasets in the <b>XCDRADAR.BAT</b> table above, except that the <b>XCDWSR.BAT</b> datasets are named WSR/* rather than RADAR/WSR-*. |       |    |  |

The datasets below are among the GRIB1 datasets created by the XCDNOAAPORTGRID.BAT batch file (which can be run separately, or as part of XCDADDE.BAT).

| ADDE Dataset Name   | Data Type | Files | Description   |
|---|-----------|-------|---|
| RTGRIDS/ALL   | GRID      | --    | all GRIB1 model grids decoded by McIDAS-XCD                   |
| RTGRIDS/ALL-GRIB1   | GRID      | --    | all GRIB1 model grids decoded by McIDAS-XCD                   |
| RTGRIDS/AWC-ALL   | GRID      | --    | all National Convective Weather Diagnostic grids              |
| RTGRIDS/AWR-ALL   | GRID      | --    | all Alaska Waters Regional Wave Model grids                   |
| RTGRIDS/ENP-ALL   | GRID      | --    | all Eastern North Pacific Regional Wave Model grids           |
| RTGRIDS/FFG-ALL   | GRID      | --    | all NWS Flash Flood Guidance System grids                     |
| RTGRIDS/GFS-ALL*  | GRID      | --    | all Global Forecast System GRIB1 grids                        |
| RTGRIDS/ICA-ALL*  | GRID      | --    | all Ice Concentration Analysis grids                          |
| RTGRIDS/MDR-ALL   | GRID      | --    | all Manually Digitized Radar grids                            |
| RTGRIDS/NAM-ALL*  | GRID      | --    | all North American Mesoscale model GRIB1 grids                |
| RTGRIDS/NCE-ALL   | GRID      | --    | all NCEP quantitative precipitation forecast grids            |
| RTGRIDS/RAP-ALL*  | GRID      | --    | all Rapid Refresh model GRIB1 grids                           |
| RTGRIDS/UKM-ALL*  | GRID      | --    | all UKMT Coastal Ocean Circulation grids                      |
| RTGRIDS/WHG-ALL   | GRID      | --    | all significant height of wind waves grids                    |
| RTGRIDS/WNA-ALL   | GRID      | --    | all Western North Atlantic Regional Wave Model grids          |
| RTGRIDS/WWF-ALL*  | GRID      | --    | all Global Wind-Wave Forecast grids                           |
| RTGRIDS/OVERFLOW  | GRID      | --    | all miscellaneous grids for which no dataset has been defined |
| * These RTGRIDS datasets also contain subset datasets which make the task of locating and using specific grids easier and more efficient. See the file XCDNOAAPORTGRID.BAT for a complete listing of the RTGRIDS datasets and their contents. |           |       |   |

The datasets below are among the GRIB2 datasets created by the XCDNOAAPORTGRID.BAT batch file (which can be run separately, or as part of XCDADDE.BAT).

| ADDE Dataset Name     | Data Type | Files | Description                                       |
|-----------------------|-----------|-------|---|
| RTGRIDS/ALL-GRIB2     | GRID      | --    | all GRIB2 grids decoded by McIDAS-XCD             |
| RTGRIDS/ETSS-ALL*     | GRID      | --    | all Extratropical Storm Surge GRIB2 grids         |
| RTGRIDS/GFS-ALLGRIB2* | GRID      | --    | all Global Forecast System GRIB2 grids            |
| RTGRIDS/HREF-ALL*     | GRID      | --    | all High Resolution Ensemble Forecast GRIB2 grids |
| RTGRIDS/ICI-ALL*      | GRID      | --    | all Current Icing Potential GRIB2 grids           |
| RTGRIDS/LMP-ALL*      | GRID      | --    | all Local AWIPS MOS Program GRIB2 grids           |
| RTGRIDS/MGWM-ALL*     | GRID      | --    | all Global Multi-Grid Wave Model GRIB2 grids      |
| RTGRIDS/MOS-ALL*      | GRID      | --    | all Model Output Statistics GRIB2 grids           |
| RTGRIDS/NAM-ALLGRIB2* | GRID      | --    | all North American Mesoscale model GRIB2 grids    |

|   |      |    |   |
|---|------|----|---|
| RTGRIDS/NBM-ALL*  | GRID | -- | all National Blended Model GRIB2 grids                          |
| RTGRIDS/NDF-ALL*  | GRID | -- | all National Digital Forecast Database GRIB2 grids              |
| RTGRIDS/NMMB-ALL*   | GRID | -- | all Non-hydrostatic Mesoscale Model GRIB2 grids                 |
| RTGRIDS/PETS-ALL*   | GRID | -- | all Probabilistic Extratropical Storm surge GRIB2 grids         |
| RTGRIDS/PSS-ALL*  | GRID | -- | all Probabilistic Storm Surge GRIB2 grids                       |
| RTGRIDS/RAP-ALLGRIB2*   | GRID | -- | all Rapid Refresh model GRIB2 grids                             |
| RTGRIDS/RTM-ALL*  | GRID | -- | all Real-Time Mesoscale analysis GRIB2 grids                    |
| RTGRIDS/RTOF-ALL*   | GRID | -- | all Real-Time Ocean Forecast system GRIB2 grids                 |
| RTGRIDS/SREF-ALL*   | GRID | -- | all Short Range Ensemble Forecast GRIB2 grids                   |
| RTGRIDS/SST-ALL*  | GRID | -- | all Sea Surface Temperature model GRIB2 grids                   |
| RTGRIDS/URMA-ALL*   | GRID | -- | all Unrestricted Mesoscale Analysis model GRIB2 grids           |
| RTGRIDS/WRFE-ALL*   | GRID | -- | all Eulerian Weather Research and Forecasting model GRIB2 grids |
| RTGRIDS/WRFN-ALL*   | GRID | -- | all Weather Research and Forecasting model GRIB2 grids          |
| * These RTGRIDS datasets also contain subset datasets which make the task of locating and using specific grids easier and more efficient. See the file XCDNOAAPORTGRID.BAT for a complete listing of the RTGRIDS datasets and their contents. |      |    |   |

## Configuring Additional GRIB2 ADDE Datasets

Adding a new GRIB2 dataset that accesses data in the MySQL/MariaDB database is a multi-step process. You must first access the navigation parameters of the GRIB2 file, then add these parameters to the `~mcidas/data/grib2NavLookup.txt` file, use the **DSSERVE** command to add the dataset to your `RESOLV.SRV` file, and then stop and restart McIDAS-XCD for your changes to take effect.

1. From a McIDAS session as user **oper**, run the [GRIB2NAV](#) command to list the navigation parameters of the GRIB2 file.

Type: **GRIB2NAV GRIB2Filename**

where *GRIB2Filename* is the fully qualified path of a valid GRIB2 file on your system.

Example output is:

```
Nav parameters for message 66, field 0 are NAM, 6, -4564482, 2089981, 20318, 950000, 250000, 250000
```

2. If the navigation parameters already exist in the `~mcidas/data/grib2NavLookup.txt` file, then you can either edit the first column to match your new dataset descriptor, leave the dataset as is and do nothing, or change the **DATAFILE=DESCRIPTOR** option of the **DSSERVE** command in step 3 below to match the first column of the navigation entry.

If the navigation parameters do not exist in the `~mcidas/data/grib2NavLookup.txt` file, then you will need to add them by logging in as user **mcidas** and updating the file. The format of this data file is as follows:

Column 1 is the filename prefix for the GRIB2 file created by McIDAS-XCD (12 character maximum). It is best if this is also the dataset descriptor name for the new dataset.

Column 2 is the grid source name (4 character maximum).

Column 3 is the projection type (1 and 4 are Mercator, 2 is Polar Stereographic, 6 is Lambert Conformal).

Columns 4-9 are the navigation parameters calculated by the **GRIB2NAV** command.

From the example above, the new navigation entry you should add to the `~mcidas/data/grib2NavLookup.txt` file would be:

|              |     |   |          |         |       |        |        |        |
|--------------|-----|---|----------|---------|-------|--------|--------|--------|
| NAM-USLCAW20 | NAM | 6 | -4564482 | 2089981 | 20318 | 950000 | 250000 | 250000 |
|--------------|-----|---|----------|---------|-------|--------|--------|--------|

**Note:** If you update the `~mcidas/data/grib2NavLookup.txt` file, make a backup copy of the updated file so you can restore your local changes if the original file is overwritten (e.g., by installing a new version of McIDAS-X).

3. From a McIDAS session in the **mcadde** account, use the **DSSERVE** command to add the dataset to the RESOLV.SRV file.

Type: **DSSERVE ADD SAMPLE/NAM-USLCAW20 GRIB 1 999999 TYPE=GRID RT=Y INFO="" DATABASE=mcrtgrib DATAFILE=DESCRIPTOR GRIBTYPE=2" "NAM - CONUS/LC; AWIPS 20 km**

**DATABASE=mcrtgrib** defines the database where the meta data is stored.

**DATAFILE=DESCRIPTOR** indicates that this dataset will contain only the data files that match the descriptor name (in this case, NAM-USLCAW20\* files). If you have a different name in column 1 of your `~mcidas/data/grib2NavLookup.txt` file, then you can include that name here in place of the word **DESCRIPTOR**.

**GRIBTYPE=2** will only search for GRIB2 data files.

4. Stop and restart McIDAS-XCD for your changes to the `~mcidas/data/grib2NavLookup.txt` file to take effect in filing and in the database. If you need instructions, see the [Starting and Stopping McIDAS-XCD](#) section.

## Starting and Stopping McIDAS-XCD

There are two ways to start and stop running McIDAS-XCD. If you prefer to have a continuous McIDAS session running in the oper account, you may use the McIDAS-XCD [STARTXCD](#) command in your McIDAS-X session. If you prefer to configure McIDAS-XCD without a McIDAS-X session running, you may use the [xcdadmin](#) command from a Unix shell prompt. If your data source is the LDM, you should start LDM before starting McIDAS-XCD, and stop LDM after stopping McIDAS-XCD.

### Using STARTXCD in a McIDAS-X Session

Use the STARTXCD command as described below to start the McIDAS-XCD software. For more information about STARTXCD, see Chapter 3, [McIDAS-XCD Administrative Commands](#).

From a McIDAS-X session running under the oper account, start the McIDAS-XCD software with the command below.

Type: **STARTXCD**

Only **one** STARTXCD command can be run at a time. Do not include the command STARTXCD in your STARTUP.SYS file.

The STARTXCD command runs continuously in your McIDAS-X session, starting and stopping data monitors and ingestors as needed. If a data monitor or ingestor stops, STARTXCD automatically restarts it. If you cancel STARTXCD, also cancel the associated data monitors and ingestors. If you exit McIDAS-X, your decoders and ingestors will stop running.

Use the DECINFO command to activate and deactivate the data monitors. The STARTXCD process (which is continuously running) will check the status of the monitors and start or stop them accordingly.

To activate or deactivate an individual decoder within a data monitor, you must first deactivate the data monitor. Once the data monitor is no longer active, the status of the decoder(s) can be changed using the DECINFO command. Then use DECINFO to reactivate the data monitor using the new settings.

When you need to stop McIDAS-XCD, the best method is to exit the McIDAS-X session and wait for all -XCD related processes to exit.

### Using xcdadmin from a Unix Shell Prompt

From a shell prompt under the oper account, start the McIDAS-XCD software with the xcdadmin command below.

Type: **xcdadmin start**

The xcdadmin start command runs the STARTXCD -XCD command in a mcenv session and behaves exactly as described in the section above, [Using STARTXCD in a McIDAS-X Session](#).

To display the status of the McIDAS-XCD decoders and ingestors in the [McIDAS-XCD Status Display Window](#), use the [statdisp](#) command below.

Type: **xcdadmin statdisp**



When you need to stop McIDAS-XCD, run the command below from a shell prompt under the oper account to stop all -XCD related processes.

Type: `xcdadmin stop`

The `xcdadmin stop` command kills the `startxcd.k` process. It then waits 30 seconds for all of the -XCD data monitors to exit. At the end of the 30 seconds, it kills the remaining data monitors. You should verify that all of the data monitors were stopped, and kill the processes, if necessary.

Type: `ps -ef | grep DM`

Type: `kill -9 process_ID`

## Checking the Filing Status of McIDAS-XCD Data

To check the status of the McIDAS-XCD ingestors and data monitors, use the McIDAS-XCD [statdisp](#) command. To check that grib file information is being filed to the real-time GRIB MySQL/MariaDB database (`mcrtgrib`), use the McIDAS-XCD [gribadmin](#) command.

## Starting the Status Display Window

The Status Display window gives up to the minute data flow information for the McIDAS-XCD ingestors and data monitors. To start the Status Display window use the `statdisp` command as described below. For more information about `statdisp`, see Chapter 3, [McIDAS-XCD Administrative Commands](#).

To display the Status Display window from the McIDAS-X Text and Command Window,

Type: **OS "statdisp &**

To display it from an Unix shell prompt,

Type: `statdisp &`

*Note:* The ampersand (&) runs the `statdisp` process in the background.

## Checking the Real-time GRIB Database

If you are filing GRIB1 and GRIB2 messages into GRIB files of the same format and populating the MySQL/MariaDB database, the `gribadmin` script can list the most recent record filed. For more information about `gribadmin`, see Chapter 3, [McIDAS-XCD Administrative Commands](#).

To list the most recent record filed in the `mcrtgrib` MySQL/MariaDB database from a Unix shell prompt,

Type: `gribadmin latest`

The `modtime` is the last field listed. If the GRIB file information is being filed correctly, this should be today's date and a very recent time.

## Uninstalling the Previous Version of McIDAS-XCD

Use the steps below to uninstall the previous version of McIDAS-XCD from your workstation. The instructions below use 2025.1 as an example of the version being uninstalled. If you are uninstalling a different version, specify it in place of "2025.1" in the instructions below.

1. Open a Unix window and log on to the workstation as user `oper`.

2. Change to the `~oper/mcidas` directory.

Type: `cd ~oper/mcidas`

3. Run the shell script `xcd_init` to initialize the environment variables needed to remove the McIDAS-XCD 2025.1 package.

Type: `./xcd2025.1/xcd_init`

4. Run the shell script `xcd2025.1.sh` option to remove the McIDAS-XCD 2025.1 source files, data files and help files.

Type: `sh ./xcd2025.1.sh uninstall all`

5. Remove the client redirections by entering the command below from the McIDAS-X Text and Command Window.

Type: **BATCH RMXCDDEC.BAT**

6. Switch to user `mcidas`.

Type: su mcidas

7. Run the shell script xcd2025.1.sh option to remove the weather text and observation servers.

Type: sh ./xcd2025.1.sh uninstall addservers

8. Exit from user mcidas.

Type: exit

9. Remove the McIDAS-XCD 2025.1 installation files.

Type: rm xcd2025.1.tar.Z

Type: rm xcd\_README\_2025.1

Type: rm xcd2025.1.sh

---

## Chapter 3

# McIDAS-XCD Administrative Commands

---

This chapter contains command documentation for the system configuration of McIDAS-XCD, including administrative commands for file management and data availability. All of the user commands for accessing conventional data are distributed with McIDAS-X. See the [McIDAS User's Guide](#) for more information.

Only authorized administrative staff should use these commands. To run them, you must be logged on as oper. If the error message "Permission Denied" is displayed, your logon does not correspond to the logon in the installation procedure. See Chapter 2, [Installing and Configuring McIDAS-XCD](#), for more information.

The administrative commands are listed in alphabetical order below with a short description of their function.

|                           |  |
|---------------------------|--|
| <a href="#">BILDTEXT</a>  | builds the rapid access pointer and text files   |
| <a href="#">CHKERR</a>    | lists the output from an error file  |
| <a href="#">CIRCUIT</a>   | data circuit utility   |
| <a href="#">DATACQ</a>    | plots data availability from MD files  |
| <a href="#">DATARECV</a>  | plots MD file data on a multiple-panel display   |
| <a href="#">DECINFO</a>   | decoder utility  |
| <a href="#">DELWXT</a>    | deletes weather text and index files   |
| <a href="#">GRIB2NAV</a>  | lists the navigation parameters necessary for entering new GRIB2 datasets                      |
| <a href="#">IDGROUP</a>   | ID group utility   |
| <a href="#">IDMON</a>     | station ID monitoring utility  |
| <a href="#">NMCAMT</a>    | lists the number of real-time grids received   |
| <a href="#">QRTMDG</a>    | deletes real-time grid or MD files   |
| <a href="#">SIGCO</a>     | significant level upper air storage utility  |
| <a href="#">STARTXCD</a>  | starts the ingestor and decoder programs   |
| <a href="#">STAT</a>      | lists the decoder and ingestor status  |
| <a href="#">SUBGRD</a>    | creates geographic subsectors of Mercator grids  |
| <a href="#">UPDIDS</a>    | updates the station reporting list   |
| <a href="#">WMORTE</a>    | maintains a data routing table of WMO headers  |
| <a href="#">gribadmin</a> | Unix command for managing the MySQL/MariaDB database used by the GRIB server                   |
| <a href="#">statdisp</a>  | Unix command for displaying the status window  |
| <a href="#">xcdadmin</a>  | Unix command for managing the XCD status and the log file                                      |
| <a href="#">xcdscour</a>  | Unix command for deleting real-time GRIB or BUFR files, and their associated database entries. |

---

# BILDTEXT

Builds the rapid access pointer and text files for observational data.

---

## Formats

```
BILDTEXT ADD id pfile
BILDTEXT DEL id pfile
BILDTEXT INIT pfile tfile maxsta maxreps idtype maxobs minhrs nbytes decnam idfile maxtxt [keyword]
BILDTEXT LIST pfile
```

---

## Parameters

- ADD** adds a station to an existing pointer file
  - DEL** deletes a station from an existing pointer file
  - INIT** initializes the *pfile* and deletes the existing *pfile* and *tfile*
  - LIST** lists the configuration of a pointer file
  - id* station ID to add or delete
  - pfile* pointer file name (no default)
  - tfile* text file name (no default)
  - maxsta* maximum number of stations to store
  - maxreps* maximum number of reports to store per observation time per station (default=1)
  - idtype* **C4** 4-character station ID  
**C8** 8-character station ID  
**IDN** station block number
  - maxobs* maximum number of observation periods per station to store online (default=2)
  - minhrs* minimum number of hours between observation blocks (default=1)
  - nbytes* number of bytes necessary to store each line of an observation (default=80)
  - decnam* decoder name for building the initial station ID list (no default)
  - idfile* station ID file to use to build the initial station pointer list (default=STNDB.CORE)
  - maxtxt* maximum number of megabytes to store in a text file (default=32)
- 

## Keyword

**CIR=** list of defined circuits in *idfile* to build the initial station pointer list (default=all)

---

## Remarks

BILDTEXT creates a pointer file and text file for observational data used by rapid access routines.

The INIT option is typically run only once per observation type to initialize the file structure. Running INIT deletes the existing versions of *pfile* and *tfile*. This command is run automatically for SAO, RAOB, SYN, and terminal forecasts when the McIDAS-XCD server software package is installed.

To list the valid circuit and decoder names from which to build your ID tables, type:

## **CIRCUIT LIST**

## **DECINFO LIST**

When a station is added or deleted from a pointer file, the change does not take effect until the data monitor is restarted.

---

### **Examples**

#### **BILDTEXT INIT RAOB.RAP RAOB.RAT 1500 5 IDN 4 3 80 RAOB**

This entry builds the pointer file RAOB.RAP which stores five reports for every 3-hourly observation for up to 1500 stations. Four observation periods are stored online for use with rapid access text applications. The raw text is stored in the file RAOB.RAT. The IDs are stored as station block numbers. The ID list built for the RAOB.RAP file is generated from the same ID list used by the RAOB decoder.

#### **BILDTEXT ADD UES SAOMETAR.RAP**

This entry adds the station UES to the pointer file SAOMETAR.RAP.

#### **BILDTEXT INIT TERMFCST.RAP TERMFCST.RAT 2500 4 C4 6 1 80 TERMFCST X 8**

This entry builds the pointer file TERMFCST.RAP which stores up to four reports per observation time and keeps up to six observation times available. The TERMFCST decoder builds the station list; the maximum size of the text file generated is eight megabytes. The raw text is stored in the file TERMFCST.RAT. The IDs are stored as character IDs.

---

# CHKERR

Lists the output from an error file.

---

## Format

**CHKERR** *file day time [keyword]*

---

## Parameters

*file* file name (no default)

*day* Julian day, YYDDD (no default)

*time* time, HH (no default)

---

## Keyword

**NUM=** number of lines to output (default=20)

---

## Remarks

CHKERR lists the errors generated by a data monitor. User-written data monitors must call the subroutine ERMESS to write a file readable by CHKERR.

You can use CHKERR to isolate system problems such as periodic aborts caused by corrupt pointer files.

When you install the McIDAS-XCD server software, error messaging is not active for decoders. To activate error messaging, edit the .CFG file appropriate for the decoder. SSEC recommends keeping the error messaging inactive unless there is a problem.

---

## Examples

### CHKERR DMSFC.ERR

This entry lists the last 20 lines written to the file DMSFC.ERR.

### CHKERR DMSFC.ERR 93025 NUM=30

This entry lists the 30 lines preceding day 93025 in the file DMSFC.ERR.

---

# CIRCUIT

Data circuit utility.

---

## Formats

**CIRCUIT ADD** *circuit* [*keywords*] "*description*  
**CIRCUIT DEL** *circuit*  
**CIRCUIT EDIT** *circuit* [*keywords*] "*description*  
**CIRCUIT LIST** *circuit*  
**CIRCUIT SET** *circuit* *action*

---

## Parameters

|                     |  |
|---------------------|--|
| <b>ADD</b>          | adds a circuit to the configuration file                               |
| <b>DEL</b>          | deletes a circuit from the configuration file                          |
| <b>EDIT</b>         | edits an existing circuit in the configuration file                    |
| <b>LIST</b>         | lists the specified circuit configuration (default=lists all circuits) |
| <b>SET</b>          | sets circuit processing to active or inactive                          |
| <i>circuit</i>      | circuit name; four characters maximum (no default)                     |
| <i>action</i>       | <b>ACTIVE</b> activates a circuit                                      |
|                     | <b>INACTIVE</b> deactivates a circuit                                  |
| <i>"description</i> | 80-character circuit description                                       |

---

## Keywords

**CONFIG=**        circuit configuration file name

**INGESTOR=**    name of the ingestor to use; for example, **INGETEXT** or **INGEBIN**

**SPOOL=**        spool file name; used for the INGEBIN ingestors

---

## Remarks

CIRCUIT is an operational utility that adds, deletes, edits, activates and deactivates circuits. All other configuration information about the circuit is entered in the circuit's configuration file using a text editor.

If you change any parameters in the configuration file, you must inactivate the circuit for associated ingestors, wait for the circuit to stop, and then activate the circuit for the associated ingestors.

---

## Examples

### CIRCUIT LIST

This entry lists the circuit configurations for all circuits.

**CIRCUIT ADD DDS INGESTOR=INGETEXT CONFIG=DDS.CFG "Domestic Data Service**

This entry adds DDS to the list of circuits. Data from the circuit is processed when the circuit is activated. The configuration file name for this circuit is DDS.CFG.

**CIRCUIT SET DDS ACTIVE**

This entry activates the DDS circuit. The next time the STARTXCD program checks the circuit list, the DDS ingestion is started.

**CIRCUIT EDIT DDS CONFIG=DDS01.CFG**

This entry changes the name of the DDS circuit configuration file to DDS01.CFG.

---



# DATAcq

Plots data availability from MD files.

## Format

**DATAcq** *map mdf time [keywords]*

## Parameters

*map* map for the data plot; use any of the predefined maps used by the MAP command (default=WORLD)

*mdf* MD file number (no default)

*time* time of the data, HH (default=0)

## Keywords

**COL=** *rep miss* reporting and missing data color levels (default=7 5)

**ELE=** *min max* TV element range for the data plot

**GRA=** graphics frame number (default=current)

**LAT=** *min max* latitude range to define the map

**LIN=** *min max* TV line range for the data plot

**LON=** *min max* longitude range to define the map

**MDC=** *min max* column range from the MD file to plot (default=all)

**MDR=** row from the MD file to plot (default=row containing the time determined by the time parameter)

**SIZE=** size of the plot points, in pixels (default=2)

## Remarks

To plot the MD file data availability, the TIME, MOD, LAT and LON keys must be in the following locations in the MD file.

| Key  | Location                      |
|------|-------------------------------|
| TIME | row header                    |
| MOD  | data section                  |
| LAT  | column header or data section |
| LON  | column header or data section |

To draw multiple plots in the same frame, use the McIDAS command PANEL to set up frame panels. Use the global keyword PAN to specify the frame panel where the plot is to be drawn.

## Examples

### DATAcq USA 4 12

This entry plots the data availability over the United States for 12 UTC from MD file 4.

**DATAcq SAT 13 12**

This entry plots the data availability for 12 UTC from MD file 13 over the currently displayed satellite image.

**DATAcq X 33 X PAN=2**

This entry plots the data availability over a world map for 0 UTC from MD file 33. The plot is drawn in panel two of a multipanel frame.

---

# DATAECV

Plots acquired MD file data on a multiple-panel display.

## Format

**DATAECV** *time* [*keywords*]

## Parameter

*time*        valid time (default=current hour)

## Keywords

- DAY=**     Julian day, YYDDD (default=current)
- DEC=**     source decoder for the data: **ISFC**, **IRAB**, **ISHP**, **SYN**, **PIRP** (no default)
- GRA=**     graphics frame number for the plot (default=current)
- MAP=**     map for the data plot (default=world)
- SIZE=**     height of the plotted characters, in pixels (default=2)
- TIME=**     time for the plot (default=current)

## Remarks

DATAECV is a macro that repeatedly calls the command DATAcq to plot acquired MD file data in a multiple-panel display.

The table below lists the default setting for each decoder.

| Decoder | Default plotting time       | MD files | Map   |
|---------|-----------------------------|----------|-------|
| ISFC    | Nearest hour observation    | 1-10     | World |
| IRAB    | Nearest 12-hour observation | 11-20    | World |
| ISHP    | Nearest hour observation    | 31-40    | World |
| SYN     | Nearest 6-hour observation  | 51-60    | World |
| PIRP    | Nearest hour observation    | 61-70    | World |

## Examples

**DATAECV DEC=ISFC SYN**

This entry creates a two-panel global plot of surface hourly and synoptic data received for the current hour and synoptic time.

**DATAECV DEC=ISFC IRAB ISHP SYN PIRP MAP=CA X X USA**

This entry creates a five-panel display and plots the current ISFC data over California, and the SYN data over the United States. It uses the default maps to plot the current data for the IRAB, ISHP and PIRP decoders.

# DECINFO

Decoder utility.

---

## Formats

```
DECINFO ADD monitor [keywords]
DECINFO DEL type process [keywords]
DECINFO EDIT monitor decoder action [keywords] "description
DECINFO LIST monitor decoder
DECINFO SET monitor action
```

---

## Parameters

|                     |   |  |
|---------------------|---|--|
| <b>ADD</b>          | adds data monitors and decoders                       |  |
| <b>DEL</b>          | deletes data monitors and decoders                    |  |
| <b>EDIT</b>         | edits data monitors and decoders                      |  |
| <b>LIST</b>         | lists the current data monitor/decoder configurations |  |
| <b>SET</b>          | activates or deactivates data monitors                |  |
| <i>monitor</i>      | data monitor name                                     |  |
| <i>decoder</i>      | decoder name  |  |
| <i>type</i>         | <b>DM</b>   | deletes a data monitor                 |
|                     | <b>DEC</b>  | deletes a decoder                      |
| <i>process</i>      | data monitor or decoder to delete                     |  |
| <i>action</i>       | <b>ACTIVE</b>   | activates data monitors and decoders   |
|                     | <b>INACTIVE</b>                                       | deactivates data monitors and decoders |
| <i>"description</i> | 32-character description of the decoder               |  |

---

## Keywords

|                |   |   |
|----------------|---|---|
| <b>CONFIG=</b> | configuration file name for the decoder                                 |   |
| <b>DEC=</b>    | decoders to add with the ADD option                                     |   |
| <b>DM=</b>     | data monitor from which the decoder is deleted; use with the DEL option |   |
| <b>FORM=</b>   | <b>ALL</b>  | lists decoder configuration information |

---

## Remarks

DECINFO is an operational utility that adds, deletes, edits, lists, activates and deactivates data monitors and decoders.

If you add, delete, activate or deactivate a decoder, you must restart the decoder's data monitors for the action to take effect.

---

## Examples

## DECINFO LIST

This entry lists all the current data monitor/decoder configurations. If no configuration file exists, one is initialized with the settings in the table in Chapter 2's [Configuring the Data Monitors](#).

## DECINFO ADD LOCAL DEC=FOUS67 TORNADO

This entry adds the decoders FOUS67 and TORNADO to the data monitor LOCAL.

## DECINFO EDIT LOCAL TORNADO ACTIVE CONFIG=TORN.CFG "Tornado Warning Decoder

This entry activates the TORNADO decoder running under the data monitor LOCAL and attaches the label Tornado Warning Decoder. The configuration information for this decoder is in the TORN.CFG file.

## DECINFO EDIT LOCAL FOUS67 ACTIVE "FOUS67 Decoder

This entry activates the FOUS67 decoder running under the data monitor LOCAL and attaches the label FOUS67 Decoder.

## DECINFO EDIT LOCAL FOUS67 CONFIG=FOUS67.CFG

This entry changes the name of the configuration file for the FOUS67 decoder to FOUS67.CFG.

## DECINFO SET LOCAL ACTIVE

This entry activates the data monitor LOCAL. The next time the STARTXCD program checks the data monitor, LOCAL is started.

## DECINFO DEL DEC NGMMOS DM=DMMISC

This entry deletes the decoder NGMMOS from the data monitor DMMISC. To delete the decoder and also remove it from the Decoder section of the [Status Display Window](#), complete the instructions below.

1. Logon to the workstation as user **oper**.
  2. Run command **xcdadmin stop** from the **oper** xterm.
  3. Run command **ldmadmin stop** from the **oper** xterm.
  4. Exit any preexisting Status Display Window by closing the window.
  5. Start a McIDAS-X session as user **oper**.
  6. Run command **LWU DEL DECOSTAT.DAT** from the McIDAS-X session to delete the preexisting file that has the information for the statdisp program.
  7. Run command **DECINFO DEL DEC NGMMOS DM=DMMISC** from the McIDAS-X session to delete the decoder NGMMOS from the data monitor DMMISC. (Note: If you want to make the decoder inactive [rather than delete it entirely] and want it removed from the Status Display Window, run this command instead: **DECINFO EDIT DMMISC NGMMOS INACTIVE**.)
  8. Run command **EXIT** from the McIDAS-X session to end it.
  9. Run command **ldmadmin start** from the **oper** xterm.
  10. Run command **xcdadmin start** from the **oper** xterm.
  11. Run command **xcdadmin statdisp** from the **oper** xterm to open a Status Display Window. Note that NGMMOS is no longer listed in the Decoder section.
-

# DELWXT

Deletes weather text and index files.

---

## Format

**DELWXT** *days* [*keyword*] "*path*"

---

## Parameters

*days*    number of days before today to save text data, maximum of 10 (default=1)

"*path*"    path name to search for data or index files to delete

---

## Keyword

**DAY=**    deletes the specified day's files, YYDDD (no default)

---

## Remarks

DELWXT deletes weather text and index files for a specified number of days. It should run from the system time scheduler once per day. Scheduling DELWXT to run daily frees up a considerable amount of file space by deleting old weather text and index files. At SSEC, DELWXT runs at 00:05 UTC and deletes files older than three days.

To delete a specific day's data, use the keyword DAY.

---

## Examples

**SKE 93003 00:05 999999 24 "DELWXT 3**

This entry schedules DELWXT to run every 24 hours at 00:05 UTC from the system time scheduler. DELWXT saves weather text and index files containing data for the current day plus the three previous days. For more information about command SKE, see the [McIDAS User's Guide](#).

**DELWXT DAY=95017**

This entry deletes the text and index files for 17 January 1995.

---

# GRIB2NAV

Lists the navigation parameters necessary for entering new GRIB2 datasets.

---

## Formats

**GRIB2NAV** *GRIB2Filename*

## Parameters

*GRIB2Filename* fully qualified path of a valid GRIB2 file on your system

---

## Remarks

When adding a new GRIB2 dataset that accesses data in the MySQL/MariaDB database, the dataset's navigation parameters must be added into the `~mcidas/data/grib2NavLookup.txt` file. These navigation parameters can be listed by the **GRIB2NAV** command.

Example output is:

|   |
|---|
| Nav parameters for message 66, field 0 are NAM, 6, -4564482, 2089981, 20318, 950000, 250000, 250000 |
|---|

The fields are defined as follows:

- Field 1 (**NAM** in this example) is the grid source name (4 character maximum)
  - Field 2 (**6** in this example) is the projection type (1 and 4 are Mercator, 2 is Polar Stereographic, 6 is Lambert Conformal)
  - Fields 3-8 (**-4564482, 2089981, 20318, 950000, 250000, 250000** in this example) are the calculated navigation parameters for the grib2 file
- 

## Example

**GRIB2NAV sampleGFS.grb2**

This command lists the navigation parameters of the **sampleGFS.grb2** GRIB2 file, which can then be entered in the `grib2NavLookup.txt` file. See [Configuring Additional GRIB2 ADDE Datasets](#) for more information.

---

# IDGROUP

ID group utility.

---

## Formats

**IDGROUP ADD** *name* [*keywords*]  
**IDGROUP COMP** *name* [*keywords*]  
**IDGROUP DEL** *name* [*keywords*]  
**IDGROUP LIST** *name* [*keywords*]  
**IDGROUP SAVE** *name* [*keywords*]

---

## Parameters

**ADD**     adds stations to an existing group or creates a new group

**COMP**   compresses the file after many groups are altered; deletes groups not marked as permanent

**DEL**     deletes stations from an existing group or deletes an entire group

**LIST**    lists stations in a group or all defined groups

**SAVE**    sets the save flag for a group or country

*name*     name of the group to update; 12 characters maximum (no default)

---

## Keywords

**DEC=**     decoder types; use with the ADD option

**GROUP=**   group containing stations to add to the group specified in the *name* parameter; use with the ADD option

**ID=**        *idl . . idN*                stations to add to or delete from a group

**LAT=**       *min max*                latitude boundaries of a group

**LON=**       *min max*                longitude boundaries of a group

**SAVE=**     **P**                        creates a permanent group

**T**                        creates a temporary group

**TYPE=**     **COUNTRY**               performs an operation on a country

**GROUP**                   performs an operation on a group (default)

---

## Remarks

IDGROUP is a utility for creating and editing groups of stations used with rapid text accessing applications.

You can only delete stations from a group you created.

The LAT and LON keywords are only valid when creating ID groups for the first time.

If the ID or GROUP keyword is not specified with the ADD option, IDGROUP scans the entire station database (STNDB.\* files) to find stations matching either the state or country header. Valid decoder names for the DEC keyword are SAOMETAR, RAOB, FOUS14, SYNOPTIC and TERMFCST.

You can add up to 20 stations at a time using the ADD option with the ID keyword.



IDGROUP appends a zero to all WMO station block numbers with five digits.

---

## Examples

### **IDGROUP ADD NH**

This entry creates the group NH which contains all the stations in New Hampshire.

### **IDGROUP ADD GM TYPE=COUNTRY**

This entry creates the country GM which contains all stations in Gambia.

### **IDGROUP ADD FRED ID=MSN MEM MSP 72645 72532 SEA SAC SFO**

This entry creates a group named FRED containing eight stations.

### **IDGROUP ADD FRED ID=EGLL UUEE 26216 GROUP=NH**

This entry adds stations EGLL, UUEE, 26216 and all the stations in group NH to the group FRED.

### **IDGROUP LIST**

This entry lists all defined groups.

### **IDGROUP LIST FRED**

This entry lists all the stations in the group FRED.

### **IDGROUP DEL FRED ID=UUEE 72645**

This entry deletes Moscow and Green Bay from the group FRED.

### **IDGROUP ADD MIDWESTSFC LAT=35 50 LON=85 100 DEC=SAOMETAR SYNOPTIC**

This entry creates the group named MIDWESTSFC which contains all stations between 35° and 50° N and 85° and 100° W reporting either surface hourly data or synoptic reports.

---

# IDMON

Station ID monitoring utility.

---

## Formats

**IDMON COMP** *file idfile type*  
**IDMON HIST** *file days station*  
**IDMON LIST** *file*

---

## Parameters

**COMP** compares the active reporting stations with the stations being decoded

**HIST** lists the history of a station

**LIST** lists the station data from the old or new station file

*file* file name containing the list of old or new stations

*idfile* file containing the master table of the station in the MD file

*type* data type: **ISFC**, **IRAB** or **SYN**

*days* number of days before today to summarize the station reporting status (default=file creation date)

*station* station ID or WMO header

---

## Remarks

IDMON monitors the status of stations and generates lists to inform operations of new stations and stations that stopped reporting. With this information, operations can remove or add data to the station database (STNDB.CORE).

To activate or deactivate station ID monitoring, edit the appropriate decoder configuration file. Decoders developed at SSEC create two station files: *OLDtype.IDM* and *NEWtype.IDM* where *type* is one of the following data types.

| Data type | Decoder           |
|-----------|-------------------|
| ISFC      | SAO/METAR         |
| IRAB      | upper air         |
| SYN       | synoptic          |
| PIRP      | pilot report      |
| TERM      | terminal forecast |
| GFS       | GFSMOS            |
| NAM       | NAMMOS            |

File *OLDtype.IDM* contains a record of all stations that are reporting data and are included in the master table of stations in the decoder's MD file.

File *NEWtype.IDM* contains all stations reporting data, but are not included in the master table of stations in the decoder's MD file.

To add new stations reporting data or delete stations no longer reporting, use command UPDIDS. SSEC recommends updating station files monthly for locally developed decoders. If you update your own master ID table, please document the changes and notify SSEC.

SSEC sends updated ID files with each McIDAS upgrade.

---

## Examples

**IDMON HIST OLDISFC.IDM 50**

This entry lists the stations filed in OLDISFC.IDM that have reported since station monitoring was activated, but have not reported in 50 days or more.

**IDMON HIST OLDISFC.IDM X MSN**

This entry lists the last date and time data was reported from Madison, Wisconsin, and filed in OLDISFC.IDM.

**IDMON HIST NEWIRAB.IDM**

This entry lists the new RAOB stations that are reporting data but are not currently being filed in the MD file.

**IDMON COMP OLDSYN.IDM SYNDEC.IDT**

This entry lists the old synoptic stations that exist in the column headers of the MD file but have never reported.

**IDMON LIST NEWGFS.IDM**

This entry lists the station location of new stations that did not previously report for the GFSMOS decoder.

---

# NMCAMT

Lists the number of real-time grids received for a specified day.

## Format

NMCAMT [keywords]

## Keywords

- DAY=** Julian day, YYDDD (default=current)
- FORM=** **STD** lists a brief description of the grids; see the Remarks (default)
- ALL** lists detailed information about the grids; see the Remarks
- GRIDF=** grid file numbers to check (default=lists all real-time grid files for the specified day)
- MOD=** **ALL** searches all model types (default)
- ml . . mn* searches for one or more specific models, valid options are:
- GFS** Global Forecast System model grids
- NAM** North American Mesoscale model grids
- NGM** Nested Grid Model grids
- TIME=** **ALL** searches all run times (default)
- tl . . tn* searches the specified range of run times, H, HH:MM or HH:MM:SS

## Remarks

NMCAMT lists both complete and partial real-time grids. A partial grid contains incomplete grid sections. Currently, the GFS model is the only model transmitted in pieces; thus, it is the only model containing partial grids.

Note: The NGM options are still valid in this command even though the NWS terminated the NGM model and its associated products beginning 03 March 2009 (NWS TIN08-90).

The FORM=STD option provides the following information:

- grid file number
- grid number
- parameter
- level
- run time
- forecast time
- model name of partial grids

The screen below shows an example of the FORM=STD output.

```
McDAS0: dcd001 outfile d [T=1]
Grid# Grid Param Level EL Vt dcd
5189 287 0 1000 0 0 STD
5189 287 1 150 0 0 STD
5119 87 80 250 0 0 STD
5129 3 0 1000 0 0 STD
5129 11 0 1000 0 0 STD
5129 11 1 1000 0 0 STD
Total number of grids= 6
Total number of partial grids= 0
Number done
```

The projection of an GFS grid determines how it is sent. Grids that are 145 rows by 289 columns are sent in the following eight sectors:

| Sector | Latitude range | Longitude range |
|--------|----------------|-----------------|
|--------|----------------|-----------------|

|   |          |             |
|---|----------|-------------|
| 1 | 0°N-90°N | 60°E-30°W   |
| 2 | 0°N-90°N | 150°E-60°E  |
| 3 | 0°N-90°N | 120°W-150°E |
| 4 | 0°N-90°N | 30°W-120°W  |
| 5 | 0°S-90°S | 60°E-30°W   |
| 6 | 0°S-90°S | 150°E-60°E  |
| 7 | 0°S-90°S | 120°W-150°E |
| 8 | 0°S-90°S | 30°W-120°W  |

Grids that are 73 rows by 73 columns are sent in the following four sectors:

| Sector | Latitude range | Longitude range |
|--------|----------------|-----------------|
| 1      | 0°N-90°N       | 180°E-0°E       |
| 2      | 0°N-90°N       | 0°W-180°W       |
| 3      | 0°S-90°S       | 180°E-0°E       |
| 4      | 0°S-90°S       | 0°W-180°W       |

If a grid is missing a section, the FORM=ALL option marks the missing section with an asterisk (\*). In the example below, grid 257 in grid file 5109 is missing the fourth section. The Xs indicate that sectors 1-3 and 5-8 were received.

```
Wcd450: ncdk@outfield [~]$
grid# grid Pan # board RT VR Real Time (mm) m ac received section
5109 257 9 0000 0 0 000 21407 145 200 C04011 [xxxxxxxx]
5109 257 9 0000 0 0 000 1221442 145 200 C14011 [xxxxxxxx]
5109 257 9 0000 0 0 000 2001127 145 200 C05025 [xxxxxxxx]
5109 257 9 0000 0 0 000 1251157 145 200 C04011 [x*xxxxxxxx]
5109 257 9 0000 0 0 000 1251157 145 200 C05025 [xxxxxxxx]
total number of grids= 472
total number of partial grids= 5
NMCAMT: done
```

The FORM=ALL option provides the following additional information:

- byte location of the message in the spool file
- the number of rows and columns of the grid
- the time the grid was received

Examples

NMCAMT

This entry lists all the real-time grids that are missing grid sections and the total number of grids received for the current day.

NMCAMT MOD=GFS FORM=ALL TIME=0

This entry lists, in expanded form, all the 0 UTC model run GFS grids.

# QRTMDG

Deletes real-time grid or MD files.

---

## Formats

**QRTMDG GRID** *bfile efile numdays*

**QRTMDG MD** *bfile efile numdays*

---

## Parameters

|                |  |
|----------------|--|
| <b>GRID</b>    | deletes grid files   |
| <b>MD</b>      | deletes MD files   |
| <i>bfile</i>   | beginning file in the range to delete; must end with the number 1                    |
| <i>efile</i>   | ending file in the range to delete; must end with a zero (default= <i>bfile</i> + 9) |
| <i>numdays</i> | number of days of real-time data to store online; the range is 2 to 9 (default=4)    |

---

## Remarks

The QRTMDG command is used to maintain the "cylinders" of real-time MD and grid files. The cylinders are groups of ten files whose file number is based on the last digit of the Julian date. For example, data from day 135 are stored in files 5, 15, 25, etc., and data from day 310 are stored in files 10, 20, 30, etc. Since each cylinder consists of ten files you can keep up to nine days of data online. QRTMDG is used to delete all but the *numdays* most recent files in each cylinder. For example, if you run QRTMDG with a value of 4 in *numdays* on day 135, the real-time files for days 135, 134, 133 and 132 are retained.

SSEC recommends scheduling QRTMDG to run at 00:01 UTC daily to delete the old MD and grid files from your real-time cylinders.

QRTMDG works during the transition to a new year by determining the Julian date of the next day and deleting the files for that day. For example, running QRTMDG on day 002 will delete files 3, 13, 23,... (which contained day 363 data) so they can be written when data for day 003 arrives.

Due to the cylinder structure and day numbering during the transition to a new year (from days ...,364, 365 to 001, 002,...) there are limits to the number of days of data you can keep online between days 365 and 008 because, for example, MD file 4 can store data for day 364 or 004, but not both. During a non-leap year transition (e.g., 2005-2006), the constraints limit you to a maximum of four files on day 004; five files on days 003 and 005; six files on days 002 and 006; seven files on days 001 and 007; and eight files on days 365 and 008. During a leap year transition (e.g., 2008-2009), the constraints limit you to five files on days 003, 004 and 005; six files on days 002 and 006; seven files on days 001 and 007; and eight files on days 366 and 008.

If you store four or less days of data (five or less days during leap year transitions), QRTMDG works as expected because there are no day numbering conflicts. For example, running QRTMDG each day with a *numdays* value of 4 retains surface hourly MD files 5, 4, 3, 2 on day 365; files 1, 5, 4, 3 on day 001; files 2, 1, 5, 4 on day 003, etc.

---

## Example

**SKE 2006129 00:01:00 999999 24 "QRTMDG MD 1 40 4**

This example stores the current day's MD data plus the previous three days for MD files in the range 1 to 40. When this command runs on day 2006307, all MD files in the range 1 to 40 are deleted except: 4, 5, 6, 7, 14, 15, 16, 17, 24, 25, 26, 27, 34, 35, 36 and 37.

---

# SIGCO

Significant level upper air storage utility.

---

## Formats

**SIGCO ADD** *country*

**SIGCO DEL** *country*

**SIGCO LIST** *country*

---

## Parameters

**ADD** adds a country to the list

**DEL** deletes a country from the list

**LIST** lists countries for which significant level upper air data is saved  
(default)

*country* 2-character country code

---

## Remarks

SIGCO specifies the countries for which significant level upper air data is decoded and filed. The list of countries is stored in the file SIGCO.DAT. Changes to the list are implemented when the upper air decoder is restarted. Use the McIDAS-X command CCODE to obtain a list of valid two-letter country codes. See the [McIDAS User's Guide](#) for more information.

---

## Examples

### SIGCO ADD VE

This entry adds Venezuela to the list of countries for which significant level data is saved.

### SIGCO DEL MX

This entry deletes Mexico from the list of countries for which significant level data is saved.

---

# STARTXCD

Starts the ingestor and decoder programs.

---

## Format

STARTXCD *dtime*

---

## Parameter

*dtime*      number of seconds to pause between programs  
              (default=30)

---

## Remarks

STARTXCD is the parent program that automatically starts and stops the McIDAS-XCD ingestors and decoders.

Never have more than one STARTXCD command running at a time.

---



# STAT

Lists McIDAS-XCD decoder and ingestor status.

---

**Format**

STAT *[keyword]*

---

**Keyword**

**TOL=** warning tolerance in minutes; if an ingestor or decoder does not process data within the tolerance, an asterisk (\*) appears next to the time stamp

---

**Remark**

STAT provides a snapshot of the bulletin board status display.

---

# SUBGRD

Creates geographic subsectors of Mercator grids.

---

## Format

**SUBGRD** *sgridf bgrid egrid dgridf [keywords]*

---

## Parameters

- sgridf* source grid file
- bgrid* beginning grid number to subsect (default=1)
- egrid* ending grid number to subsect (default=all)
- dgridf* destination grid file number

---

## Keywords

- LAT=** *slat nlat* destination latitude extents (no default)
  - slat* southern latitude extent
  - nlat* northern latitude extent
- LON=** *elon wlon* destination longitude extents (no default)
  - elon* eastern longitude extent
  - wlon* western longitude extent
- MAX=** maximum number of grids in destination grid file (default=*egrid-bgrid* +1)

---

## Remarks

The command SUBGRD only creates geographic subsectors of Mercator projection grids.

---

## Example

**SUBGRD 1000 1 10 1200 LAT=20 60 LON=40 150**

This entry creates grid subsectors with the geographic domain 20° to 60° North and 40° to 150° West from grids 1 through 10 in grid file 1000. The grid subsectors are stored in grid file 1200, which stores 10 grids maximum.

---

# UPDIDS

Updates the station reporting list for decoders.

---

## Formats

**UPDIDS ACT** *decoder source minnum type [keywords]*  
**UPDIDS INACT** *decoder source cutday type idtable [keywords]*

---

## Parameters

**ACT**      activates decoding for a station list

**INACT**    deactivates decoding for a station list

*decoder*   decoder name

*source*    source ID file written by IDNEW

*minnum*   minimum number of station references needed to activate the decoder

*cutday*    inactivates stations that have not reported in the past number of *cutdays* (default=100 days)

*type*      **CID**                  character ID (default)  
              **IDN**                  station block number

*idtable*   current ID table used for comparison

---

## Keywords

**CIR=**      activates stations for specified circuits (default=**ALL**)

**FILE=**    file name to update (default=**STNDB.CORE**)

---

## Remarks

UPDIDS activates or deactivates decoding for specified stations. Stations must exist in the station dictionary to successfully activate a decoder for a station. The *source* station list used with UPDIDS is generated in the decoders. These file names are stored in the .CFG file associated with each decoder.

---

## Examples

**UPDIDS ACT SAOMETAR NEWISFC.IDM 10 CID**

This entry activates stations that have reported 10 or more times in the file NEWISFC.IDM for the decoder SAOMETAR.

**UPDIDS INACT RAOB OLDIRAB.IDM 50 IDN IRABDEC.IDT**

This entry deactivates stations for the RAOB decoder that have not reported in the last 50 days.

---

# WMORTE

Maintains a data routing table of WMO headers.

---

## Formats

```
WMORTE ADD CIR circuit
WMORTE ADD INDEX index ALIAS=
WMORTE ADD WMO [keywords]
WMORTE DEL CIR circuit
WMORTE DEL INDEX index ALIAS=
WMORTE DEL WMO [keywords]
WMORTE EDIT INDEX index ALIAS=
WMORTE EDIT WMO [keywords]
WMORTE LIST circuit
```

---

## Parameters

|                |  |
|----------------|--|
| <b>ADD</b>     | adds a circuit, index, or WMO header                     |
| <b>DEL</b>     | deletes a circuit, index, or WMO header                  |
| <b>EDIT</b>    | edits an index or WMO header                             |
| <b>LIST</b>    | lists the WMO headers, indices and aliases for a circuit |
| <b>CIR</b>     | circuit  |
| <b>INDEX</b>   | index  |
| <b>WMO</b>     | WMO header specified with keyword HEADER                 |
| <i>circuit</i> | circuit name   |
| <i>index</i>   | 2-character index name                                   |

---

## Keywords

|                 |  |
|-----------------|--|
| <b>ALIAS=</b>   | alias file name used with the <i>index</i> options; eight characters maximum (default= <i>index</i> )  |
| <b>CIRCUIT=</b> | circuit name for adding, editing, and deleting the WMO specification   |
| <b>HEADER=</b>  | WMO headers to add, edit or delete; two characters maximum   |
| <b>INDEX=</b>   | index for adding or editing WMO headers; two characters maximum; you can specify more than one index when adding multiple WMO headers (default=WMO header specified) |

---

## Remarks

WMORTE creates a routing table describing the location of text data. It is created by assigning one or more WMO headers, ingested from each circuit, to an index name. The file that stores the text data is defined by the index name. For example, if the index specified is CS and the date of the data contained in the file is 93002, the file name for the index file is CS93002.IDX.

The WMO headers and index names can only be two characters. If data is ingested with a WMO header that is not on the list of defined headers, the data is filed in the miscellaneous index file ZZ.

Each index file can have an associated alias name. The alias name or index name can then be used by the ADDE weather text server. For example, since data ingested with the WMO header CS is climatological information, you could assign an alias name CLIMATE to the index CS. A user could then specify either CS or CLIMATE when using the WXTLIST command.

You can define a maximum of 32 circuits, 512 indices and 1024 WMO headers using this routing system.

If you alter the contents of a circuit's routing table, other than the alias name, you must restart the circuit to activate the new or updated routing table.

The first time WMORTE is run, it initializes the file IDXALIAS.DAT to a predefined routing table for the DDS, IDS, PPS and Carswell circuits. This must be done before starting the circuits with STARTXCD.

Each WMO header is stored as either a primary or secondary index. Use the command **WMORTE LIST** *circuit* (where *circuit* is a valid circuit name, for example, DDS) to list your system's indexing. Primary indices are listed under the INDEX column; secondary indices are listed under the WMO HEADERS column.

---

## Examples

### **WMORTE LIST DDS**

This entry lists the aliases, indices, and WMO headers for the DDS circuit.

### **WMORTE ADD CIR CDS**

This entry adds the circuit CDS to the defined circuit names.

### **WMORTE ADD INDEX RW ALIAS=RIVER**

This entry adds the index name RW to the list of defined indices and gives it the alias name RIVER.

### **WMORTE ADD WMO HEADER=RR RW CIRCUIT=CDS INDEX=RW RW**

This entry adds the WMO headers RR and RW, which are filed in the index RW to the CDS circuit.

### **WMORTE EDIT INDEX SA ALIAS=SURFACE**

This entry changes the alias name of the index SA to SURFACE.

### **WMORTE DEL CIR CARS**

This entry deletes the circuit CARS from the list of defined circuit names.

### **WMORTE DEL WMO HEADER=WF WU CIRCUIT=IDS DDS**

This entry deletes the WMO headers WF and WU from the IDS and DDS circuits.

### **WMORTE DEL INDEX SM**

This entry deletes the index SM from the routing table.

---

# **gribadmin**

Unix command for managing the MySQL/MariaDB database used by the GRIB server.

---

## **Formats**

```
gribadmin makedb
gribadmin removedb
gribadmin disablelog
gribadmin fields
gribadmin num model
gribadmin latest model
```

---

## **Parameters**

|              |   |
|--------------|---|
| makedb       | makes the database from scratch with the following attributes: <ul style="list-style-type: none"><li>• the database is named mcrtgrib</li><li>• the read-only user is gribread and has no password</li><li>• the read-write user is gribwrite with password gribwrite</li></ul>   |
| removedb     | removes the database completely from MySQL/MariaDB  |
| disablelog   | disables the writing of binary log files associated with the database; this overrides the default in MySQL/MariaDB 8.0 and later, which enable binary logging by default; we recommend disabling the logging because it is not useful and it fills large amounts of disk (possibly an entire file system) due to it logging millions of <i>INSERT into file_list</i> entries per day; this option must be run as <b>root</b> , see the Remarks for instructions |
| fields       | prints the fields in the database and their data types  |
| num          | displays the number of records in the database; if <i>model</i> is not specified then the number of records for each model will be displayed; if <b>total</b> is specified then the total number of records in the database will be displayed   |
| latest       | displays the latest record in the database; if <i>model</i> is not specified then the latest record in the database will be displayed regardless of the model   |
| <i>model</i> | model/source name appearing in the GRIB files   |

---

## **Remarks**

The *Configuration Sections* section of the gribadmin script appears in the box below. It contains variables that change its behavior. These variables must be reviewed before using the script. In particular, the mysql\_path and gcc\_lib\_path variables may need to be changed.

```
#===== # Configuration Section: # # The
variables in this section may need to be modified # to conform to your system. # Database
and user names for MySQL calls database_name="mcrtgrib" database_user="gribread" # Path to
the MySQL executable mysql_path=/usr/local/mysql/bin # Path to gcc shared libraries
gcc_lib_path=/usr/local/lib #=====
```

The makedb and removedb options will prompt for a password. Enter the password for the MySQL/MariaDB root user, which was set by the person that installed MySQL/MariaDB.

The disablelog option disables the writing of binary log files associated with the database. This is needed because MySQL/MariaDB 8.0 and later enable binary logging by default, which fills large amounts of disk (possibly an entire file system) due to it logging millions of *INSERT into file\_list* entries per day. To run the disablelog option, run the command below as **root**:

Type: /home/oper/mcidas/bin/gribadmin disablelog

When the command is finished, you should see a message like that below.

```
/etc/my.cnf.d/disable-log-bin.cnf successfully written!
```

Once its successful completion is verified, exit from **root**.

---

**Examples**

`gribadmin fields`

This entry prints the fields in the database and their data types.

`gribadmin latest GFS`

This entry displays the latest record among GFS GRIB files in the database.

---

# statdisp

Unix command that starts the McIDAS-XCD status display.

---

## Format

statdisp [*flags*]

---

## Flags

|  |  |
|--|--|
| -bg <i>color</i>                           | background color (default=black)                       |
| -display <i>display</i>                    | workstation name and window manager to use for display |
| -fg <i>color</i>                           | foreground color (default=white)                       |
| -font <i>font</i>                          | font size to use (default=6 x 12)                      |
| -geometry+ <i>xoffset</i> + <i>yoffset</i> | position of status window                              |
| -resize                                    | stops automatic window resizing                        |
| -sample <i>seconds</i>                     | screen refresh sampling time (default=5 seconds)       |
| -threshold <i>minutes</i>                  | warning threshold time (default=5 minutes)             |
| -warn <i>color</i>                         | warning color (default=red)                            |

---

## Remarks

This command starts an X window to display the status of McIDAS-XCD decoders and ingestors. Active decoders and ingestors are displayed in the foreground color. Decoders and ingestors that are inactive longer than the warning threshold time are displayed in the warning color. See the [McIDAS-XCD Status Display Window](#) section for more information on the output from statdisp.

To cancel the status display, click on Quit the Window in the Title bar. To display a window in a smaller size than is necessary to view the entire bulletin board, use the -resize option.

To force statdisp to get data from a file other than ~oper/mcidas/data/DECOSTAT.DAT, set the environmental variable XCD\_disp\_file to the fully expanded file name.

To start statdisp from the McIDAS-X command window, precede it with **OS "**. Run it in the background using the **&** (ampersand) shell option.

Use the -geometry option to specify the screen position of the status window. Specify the horizontal and vertical offsets in pixels. Offsets must be preceded by plus signs (+).

---

## Example

```
statdisp -bg white -fg black -warn magenta &
```

This entry starts the status display with a white background, black foreground, and magenta warning messages from the Unix command window. The & (ampersand) shell option runs the command in the background.

---



# xcdadmin

Unix command for managing the XCD status and the log file.

---

## Formats

```
xcdadmin start
xcdadmin stop
xcdadmin status
xcdadmin statdisp
xcdadmin log flag
```

---

## Parameters

|             |   |
|-------------|---|
| start       | starts XCD in a background mcenv session  |
| stop        | kills any background XCD sessions   |
| status      | prints XCD status ( <b>on</b> or <b>off</b> ) as well as useful statistics including XCD version, log file location, data directory, disk space usage, and processor load averages  |
| statdisp    | runs the <i>statdisp</i> program  |
| log         | accesses the log file, performing the action specified in <i>flag</i>   |
| <i>flag</i> | <ul style="list-style-type: none"><li>-f follows the log file (using tail -f)</li><li>-l prints the contents of the XCD log file (default)</li><li>-r rotates the log file, creating a new xcd.log file named xcd.log.<i>mondd_hhmm</i>_GMT</li><li>-t prints the current time, disk usage, and load averages to the log file</li></ul> |

---

## Remarks

The *Configurable Options* section of the xcdadmin script appears in the box below. It contains variables that change its behavior. These variables must be reviewed before using the script. In particular, the xcd\_data\_path variable must be set.

```
#===== # Configurable Options: # # The
variables in this section hold information that is # subject to varying McIDAS-XCD
configurations. Please # check the values of each of these variables and make # any
necessary changes to accommodate your system's # configuration. Note: The value of
'xcd_data_path' # must be modified in order for the xcdadmin script to # work.
xcd_admin="oper" xcd_admin_home="/home/oper" xcd_admin_profile="$xcd_admin_home/.profile" #
The 'xcd_data_path' holds the fully qualified path to # the directory in which XCD data will
be written. This # variable must be changed for the 'xcdadmin' script to # work.
xcd_data_path="Insert path to XCD data directory here" # The 'xcd_log_file' variable holds
the fully qualified path # to the file in which output from 'startxcd' is written. # This
file must be writable by the McIDAS-XCD admin # account. It is advisable to set up a daily
cron job which # calls 'xcdadmin log -r' to rotate the log file. Otherwise # it is possible
for the log file to grow until it fills the # disk. xcd_log_file=$xcd_admin_home/xcd.log #
The 'seconds_to_wait' variable holds the number of # seconds to wait for data monitors to
exit gracefully # before a 'kill' command is used. It is beneficial to # wait for data
monitors to exit on their own accord # because data can be lost if/when 'kill' is used.
seconds_to_wait=30 # The 'statdisp_refresh' variable holds the refresh rate # in seconds for
the statdisp window. statdisp_refresh=5 # Number of old log files to keep on disk. When #
'xcdadmin log -r' is called the name of the current log # file is appended with the current
date and time, e.g. # xcd.log.Apr12_1200_GMT and a new log file 'xcd.log' is # created. Then
the number of old log files is checked # and if it exceeds 'num_logs_to_save' then the older
# log files will be deleted. For example; If you rotate # the logs daily then setting
'num_logs_to_save' to 7 # results in saving one week's worth of log files in # addition to
the current log file on disk. num_logs_to_save=7
#=====
```

---

## Examples

`xcdadmin status`

This entry prints XCD status (**on** or **off**) as well as useful statistics including XCD version, log file location, data directory, disk space usage, and processor load averages.

`xcdadmin log -t`

This entry prints the current time, disk usage, and load averages to the log file.

---

# xcdscour

Unix command for deleting real-time GRIB1, GRIB2, or BUFR files, and their associated database entries.

---

## Formats

**xcdscour GRIB** *numdays*  
**xcdscour BUFR** *numdays*

---

## Parameters

**GRIB**        deletes GRIB1 and GRIB2 files

**BUFR**        deletes BUFR files

*numdays*     number of days of real-time data to store online; the range is 1 to 9 (no default)

---

## Remarks

The xcdscour command is used to maintain the real-time GRIB1, GRIB2, and BUFR files by deleting all but the *numdays* most recent files. If xcdscour is not run, GRIB1, GRIB2, and BUFR data files will not be removed and will continue to accumulate and use disk space.

If the GRIB decoder is configured to use a MySQL/MariaDB database the corresponding entries will be removed and the database will be optimized before the data files are removed.

SSEC recommends scheduling xcdscour to run at a time when the load on the -XCD workstation is low because the MySQL/MariaDB database cleaning and optimizing step can cause data access delays while it is running.

---

## Example

```
5 1 * * * /home/oper/mcidas/bin/xcdscour GRIB 3 /data/grib
```

This entry creates a cron job that, at 1:05 a.m. local machine time, removes any GRIB1 and GRIB2 files in the /data/grib directory from more than three days ago. Data from the current day as well as three full previous days is retained.

---

## Chapter 4

# Troubleshooting

---

This chapter lists problems that may occur with McIDAS-XCD. Under each symptom or error message, possible solutions are given. The problems discussed here are listed below.

- [-XCD is not receiving real-time data - users report no real-time data, or the ingestor status display is red](#)
- [-XCD is not creating McIDAS Grid files](#)
- [-XCD is not writing GRIB files](#)
- [-XCD is not writing to the real-time GRIB MySQL/MariaDB database](#)
- [-XCD data is garbled or missing](#)
- [xcdadmin script is not working](#)
- [-XCD GRIB filing results in duplicates or data is missing](#)
- [directory \\*\\*\\*NEXRAD\\_PATH\\*\\*\\* exists on the workstation](#)

### -XCD is not receiving real-time data - users report no real-time data, or the ingestor status display is red

- Verify with your LDM Administrator that the LDM is ingesting data. Verify that startxcd.k is running under the user oper. If it is not, see [Starting and Stopping McIDAS-XCD](#) for information on starting -XCD. If you are filing GRIB information into a real-time MySQL/MariaDB database, verify with your MySQL/MariaDB Administrator that mysql is running. Contact your System Administrator to add all three of these to your machine's start-up process.
- The file system may be full. You can use the McIDAS-XCD commands [DELWXT](#), [QRTMDG](#), and [xcdscour](#) to delete older text, point, grid, and grib files and to clean the real-time GRIB database. Do not delete any files for the current day. See [Configuring Data Removal](#) for information on configuring cron and the McIDAS-X Scheduler to remove McIDAS-XCD data files.
- If the file system is not full, check the LDM configuration file pqact.conf to make sure it is calling ingebin.k and ingetext.k. If this is OK, check the LDM configuration file ldmd.conf to see that it is making the proper requests.
- Check the /home/oper/xcd.log file for any useful information that may help to resolve the problem.
- Check for an obstruction in the antenna and verify that all receiving hardware is working properly.
- Contact your source provider to see if they are having a problem with the broadcast.
- If running MySQL/MariaDB 8.0 or later, check whether the writing of binary log files associated with the database is disabled. As noted in the [gribadmin](#) command, we recommend disabling it because it is not useful and it fills large amounts of disk (possibly an entire file system) due to it logging millions of *INSERT into file\_list* entries per day.

### -XCD is not creating McIDAS Grid files

The DMGRID GRIB decoder can't file grids if it can't find RTMODELS.CFG, which contains information about real-time grid file locations.

The file RTMODELS.CFG should reside in ~oper/mcidas/data when McIDAS-XCD is installed correctly. Either the decoder can't reach the file or it is missing. If it's missing, recreate the file or copy a new version of the default file from ~oper/mcidas/xcdversion/data/RTMODELS.CFG (where *version* is the version number, e.g., 2025.1).

### -XCD is not writing GRIB files

From a McIDAS-X session running under the oper account, run the REDIRECT LIST command to check for any file redirections.

Type: **REDIRECT LIST**

Look for the \*.gr\* and \*.bu\* directory entries and verify that these directories exist on your workstation. If these directories do not exist, create them. Once this is done, -XCD will automatically start writing GRIB1 and GRIB2 files to this directory, which in turn will allow for data to be written to the database. Then users should be able to access the GRIB data.

### -XCD is not writing to the real-time GRIB MySQL/MariaDB database

From a Unix shell prompt under the oper account, run the gribadmin command to check the most recent record filed in the mcrtgrib database.

Type: **gribadmin latest**

- If MySQL/MariaDB is installed properly and the mcrtgrib database was created, the most recent record filed in the database will be listed. The modtime is the last line of the record. If the GRIB file information is being filed correctly, this should be today's date and a very recent

time.

- If no record is returned, or if the modtime is not recent, this means that the mcrtgrib database exists, but no data is being written to it. Verify with your -X **and** -XCD Administrator that both packages were compiled with the -mysql flag.
- If an error message containing "Can't connect to local MySQL server" is displayed, this means that MySQL/MariaDB is installed on your machine, but that it was not started. Contact your MySQL/MariaDB Administrator to restart MySQL/MariaDB.
- If an error message from gribadmin containing "mysql: not found" is displayed, this means that the gribadmin command can not find the mysql executable. Confirm that mysql is in the PATH of the user oper.
- If an error message from gribadmin containing "Access denied for user '@'localhost' to database 'mcrtgrib'" is displayed, this means that MySQL/MariaDB is running, but the mcrtgrib database was never created. See [Configuring the GRIB Decoders](#) for more information on creating the mcrtgrib database.

## **-XCD data is garbled or missing**

When more than one ingestor is trying to read the same circuit, text data may be missing or text output garbled. If you are decoding grids, grids may be missing.

Only one ingetext.k process should be running for each text circuit, and only one ingebin.k process should be running for each binary circuit (e.g., one ingebin.k process running for GRIB data while another is running for NEXRAD data). Check the number of ingetext.k and ingebin.k processes and -XCD data monitors running. At a Unix shell prompt, as user oper,

Type: **ps -ef | grep DM**

Type: **ps -ef | grep inge**

If there are multiple processes running for one of the circuits or one of the data monitors, stop and restart -XCD and the LDM. Some data may be lost while the processes are stopped.

1. Stop -XCD and kill any remaining data monitors (DM\*), if necessary. At a Unix shell prompt, as user oper,

Type: **xcdadmin stop** (you will need to wait for the data monitors to cleanly exit)

Type: **ps -ef | grep DM**

Type: **kill -9 *process\_id*** (if necessary)

2. Stop the LDM and kill any remaining processes, if necessary. At a Unix shell prompt, as user oper,

Type: **ldmadmin stop** (stops the INGEBIN and INGETEXT processes)

Type: **ps -ef | grep inge**

Type: **kill -9 *process\_id*** (if necessary)

3. Restart the LDM and -XCD by running the two commands below, in order.

Type: **ldmadmin start**

Type: **xcdadmin start**

If this process doesn't work, check for an obstruction in the receiving antenna.

## **xcdadmin script is not working**

- Verify that you are logged in as user oper.
- Run command which xcdadmin to verify the location of the xcdadmin script.
- Verify that the oper account has a .profile file.
- Open the xcdadmin file and verify that its **xcd\_admin\_profile** variable is set to the oper account's .profile file.

## **-XCD GRIB filing results in duplicates or data is missing**

- The volume of data coming over NOAAPORT/LDM has been steadily increasing over the years. If the -XCD site is receiving CONDUIT data, the increase is even more so. Typical average throughput for the NGRID and CONDUIT feeds that provide most of the GRIB data is about 40 G per hour. At peak times, the throughput may be over 100 G per hour. If the LDM product queue (file ldm.pq) size is too small, this could result in quick overwriting of the product queue during peak times. The LDM logic using checksums might determine that the GRIB

message was not already filed, thus resulting in duplicate records in the -XCD database(s). Duplicates from a McIDAS-X GRDLIST command for any GRIB dataset may thus occur.

- The steps to prevent the duplicate problem are as follows:

1. As user oper or ldm, open the /proc/meminfo file. Check the MemTotal and MemAvailable fields. As the ldm.pq file is a memory-mapped file, its size cannot go above the MemAvailable field. For example, if the MemAvailable is about 50 GB, your system should be OK with a 40-45 GB ldm.pq file provided you are aware of other usage on the system.

2. As user oper or ldm, open the /home/ldm/etc/registry.xml file.

- Look for the section like this:

```
<queue>
<path>/data/ldm/ldm.pq</path>
<size>35G</size>
<slots>1000000</slots>
</queue>
```

- Set the size to the determined value from step 1. We recommend 1000000 slots so change this value if it has not been already changed.

3. As user oper or ldm, run the following six commands below, in order, to recreate the ldm.pq file of updated size.

Type: xcdadmin stop

Type: ldmadmin stop

Type: ldmadmin delqueue

Type: ldmadmin mkqueue

Type: ldmadmin start

Type: xcdadmin start

## directory **\*\*\*NEXRAD\_PATH\*\*\*** exists on the workstation

The **\*\*\*NEXRAD\_PATH\*\*\*** directory is created if the NEXRAD data monitor is enabled and the **DIRFILE=** value is not set in the file ~oper/mcidas/data/NEXRID.CFG. See Chapter 2's [Configuring the NEXRAD Decoder](#) section for instructions to set the **DIRFILE=** value and other NEXRAD options.

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## Chapter 5

# Decoding GRIB Messages

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The McIDAS-XCD GRIB decoder converts the binary grid data in the NOAAPORT data stream sent by the National Weather Service (NWS) into McIDAS grid files. The McIDAS-XCD GRBFILER decoder puts this same data into GRIB1 and GRIB2 files referenced by a MySQL/MariaDB database and accessed by the GRIB server. This section describes the steps required to ingest and decode the data stream into McIDAS grid files and/or GRIB files.

- [Processing the GRIB message](#)
- [Converting GRIB codes](#)
- [Creating McIDAS Grid Files with DMGRID](#)
- [Creating GRIB1 and GRIB2 Files with DMBIN](#)

## Processing the GRIB message

When DMGRID data monitor or the DMBIN data monitor successfully reads a complete message, it calls the McIDAS-XCD GRIB decoder. The decoder first decodes the Product Definition Section (PDS) to determine the type of data contained in the message. After processing this section of the message, the decoder has enough information to determine whether to continue processing. The administrators at your site can configure the decoder to process or discard messages based on various criteria.

GRIB1 and GRIB2 messages may be discarded based on several attributes: GRIB1 based on the model (specified as the value stored in byte 6 of the PDS), the model run time, the valid time of the forecast fields, the geographic location the message represents, the level the data represents, and the meteorological parameter; GRIB2 based on the model and domain (specified as the model prefix assigned in file grib2NavLookup.txt), the model run time, and the valid time of the forecast fields.

If disk space is a concern, you can use this discard feature to save only the models and data that you typically use: 500 and 1000 mb height and temperature fields, for example. Several models are sent in more than one projection. If you only need one of them, configure the decoder so the other projections are discarded.

The configuration files where this information is stored are NOGRIB.CFG (for GRIB1 messages) and NOGRIB2.CFG (for GRIB2 messages). These files are read when the data monitor is started. If you change the values in either file, you must restart the data monitor. If the decoder cannot find the files, all messages are decoded. The NOGRIB.CFG file has eleven positions separated by the pipe character (|). Below is a description of each position in NOGRIB.CFG. The format of NOGRIB2.CFG is the same but it has only five positions, so is not described below. See the NOGRIB2.CFG file for its format and an example entry.

### NOGRIB.CFG format

| Position# | Description |
|-----------|-------------|
|-----------|-------------|

|   |  |
|---|--|
| 1 | Model number to discard. If this value is -1, the model number is not used as selection criteria. This is the value stored in byte 6 of the PDS. The commonly used values are listed below. The ~mcidas/data/gbtbpds001.av1 file contains a complete list of the known values. |
|---|--|

| Common values | Description                                  |
|---------------|--|
| 10            | Global Wind Wave Forecast Model              |
| 80            | GFS model, 62-Wave Spectral Model            |
| 81            | GFS model, Spectral Statistics, Aviation Run |
| 83            | NAM model, 80 km                             |
| 84            | NAM model, 12 km                             |
| 86            | MAPS (RUC) model                             |

89 NAM model, 48 km

120 Ice Concentration Analysis

- 2 Beginning of the model run time range to discard. If this value is -1, the model run time is not used as selection criteria. This value is stored in byte 16 of the PDS.
- 3 End of the model run time range to discard.
- 4 Beginning of the model valid time range to discard. If this value is -1, the valid time of the model is not used as selection criteria. This value is stored in bytes 19 and 20 of the PDS.
- 5 End of the model valid time range to discard.
- 6 Beginning of the geographic ID range to discard. If this value is -1, the geographic ID is not used as selection criteria. This value is stored in byte 7 of the PDS. The file ~mcidas/data/gbtbpds001.bv1 contains a list of the IDs and their corresponding geographic coverage and projections.
- 7 End of the geographic ID range to discard.
- 8 Beginning of the pressure level range to discard. If this value is -1, the pressure level is not used as selection criteria.
- 9 End of the pressure level range to discard.
- 10 Beginning of the parameter number range to discard. If this value is -1, the parameter number is not used as selection criteria. This value is stored in byte 9 of the PDS. The file ~mcidas/data/gbtbpds001.2v2 contains a complete list of the known values. Below is a table of commonly used values.

| Common values | Description |
|---------------|-------------|
|---------------|-------------|

|    |                         |
|----|-------------------------|
| 1  | Pressure                |
| 2  | Pressure reduced to MSL |
| 7  | Geopotential Height     |
| 11 | Temperature             |
| 33 | u-component wind        |
| 34 | v-component wind        |
| 52 | Relative Humidity       |

- 11 End of the parameter number range to discard.

## Examples of NOGRIB.CFG entries

The entry below discards all fields of the aviation run (77) from projections 37 through 44. These projections are associated with the high resolution "thinned" grid format.

|  |
|--|
| 77   -1   -1   -1   -1   37   44   -1   -1   -1   -1 |
|--|

The entry below discards relative humidity fields (52) from 500 to 700 millibars for the 12 km NAM (84).

|  |
|--|
| 84   -1   -1   -1   -1   -1   -1   500   700   52   52 |
|--|

The entry below discards any field from a 12 UTC model run with a valid time between 36 and 42 hours, inclusive.

|   |
|---|
| -1   12   12   36   42   -1   -1   -1   -1   -1 |
|---|



## Recommended NOGRIB.CFG entries

SSEC recommends that the following entries be added to your NOGRIB.CFG file.

The entry below is for ICA grids known by Unidata to be incorrectly formatted.

|     |  |    |  |    |  |    |  |    |  |     |  |     |  |    |  |    |  |    |  |    |
|-----|--|----|--|----|--|----|--|----|--|-----|--|-----|--|----|--|----|--|----|--|----|
| 120 |  | -1 |  | -1 |  | -1 |  | -1 |  | 218 |  | 218 |  | -1 |  | -1 |  | -1 |  | -1 |
|-----|--|----|--|----|--|----|--|----|--|-----|--|-----|--|----|--|----|--|----|--|----|

The entry below is for ICA grids known by Unidata to be incorrectly formatted.

|     |  |    |  |    |  |    |  |    |  |     |  |     |  |    |  |    |  |    |  |    |
|-----|--|----|--|----|--|----|--|----|--|-----|--|-----|--|----|--|----|--|----|--|----|
| 120 |  | -1 |  | -1 |  | -1 |  | -1 |  | 242 |  | 242 |  | -1 |  | -1 |  | -1 |  | -1 |
|-----|--|----|--|----|--|----|--|----|--|-----|--|-----|--|----|--|----|--|----|--|----|

The entry below is for WWF grids with bad geographic data.

|    |  |    |  |    |  |    |  |    |  |     |  |     |  |    |  |    |  |    |  |    |
|----|--|----|--|----|--|----|--|----|--|-----|--|-----|--|----|--|----|--|----|--|----|
| 10 |  | -1 |  | -1 |  | -1 |  | -1 |  | 233 |  | 233 |  | -1 |  | -1 |  | -1 |  | -1 |
|----|--|----|--|----|--|----|--|----|--|-----|--|-----|--|----|--|----|--|----|--|----|

## Converting GRIB codes

For users to understand GRIB messages, the decoder must change portions of them into meteorological values. For example, a value of 11 in the ninth byte of the PDS is meaningless until it is converted to temperature in degrees Kelvin. Other attributes that must be converted include the geographic location, the forecast time units, and the generating model name and originating location.

### GRIB1

Currently, five types of ASCII file lookup tables are included with the McIDAS-XCD GRIB1 decoder for this purpose. These files are found in ~mcidas/data and begin with the characters gbtbpds as shown below.

| Attribute           | Section/Byte | Files  |
|---------------------|--------------|--|
| processing center   | PDS/5        | gbtbpds001.0v1   |
| parameter/unit      | PDS/9        | gbtbpds001.2v1, gbtbpds001.2v2, gbtbpds001.2v3, gbtbpds001.2v131                       |
| forecast time       | PDS/18       | gbtbpds001.4v1   |
| model               | PDS/6        | gbtbpds001.av1, gbtbpds001.a34v1, gbtbpds001.a60v1, gbtbpds001.a74v1, gbtbpds001.a98v1 |
| geographic location | PDS/7        | gbtbpds001.bv1, gbtbpds001.b98v1   |

When the decoder finds a value for one of these attributes, it checks the appropriate lookup table for information about the value. If it cannot find the information, the message is discarded.

### GRIB2

Three ASCII file lookup tables are included with the McIDAS-XCD GRIB2 decoder for this purpose. These files are found in ~mcidas/data and begin with the characters grib2 as shown below.

| Attribute           | File                |
|---------------------|---------------------|
| geographic location | grib2NavLookup.txt  |
| parameter/unit      | grib2Parameters.txt |
| model               | grib2NCEPModels.txt |

The McIDAS-XCD [GRIB2NAV](#) command lists McIDAS navigation values that can be added to grib2NavLookup.txt. See [Configuring Additional GRIB2 ADDE Datasets](#) for more information.

## Creating McIDAS Grid Files with DMGRID

When the unpacking process is complete and the entire GRIB message is successfully decoded, the decoder passes the GRIB structures to DMGRID and/or DMBIN to be reformatted for McIDAS. DMGRID, which converts GRIB1 messages to McIDAS grid files, is described below. DMBIN, which files GRIB1 and GRIB2 messages into GRIB files of the same format, is described in the [next section](#).

Once the message is converted to McIDAS format, DMGRID uses the mcertgrdf function to determine the grid file for storing the message. The correct grid file is determined by using stored grid header information, consisting of the model, the runtime of the model, and the forecast time, geographic coverage, and the configuration file RTMODELS.CFG. If the model information is not explicitly described in RTMODELS.CFG, the grid is filed in a scratch grid file. The format of RTMODELS.CFG is described below, and is followed by an example.

Once the correct grid file is determined, DMGRID checks if this grid can be filed as is, or if the grid must be pieced together with a previously filed grid. Piecing together is often necessary because most of the gridded fields that cover the globe are sent in four or eight pieces. When a partial grid is received, DMGRID checks if a similar grid has recently been filed. If so, DMGRID pieces the two fields together, refiling the new grid into the same location. If no match is found, the grid is filed as the first grid of this type.

Finally, DMGRID updates the Status Window, telling the administrator that a new grid has been filed and its location. DMGRID then checks the spool file for new data to process.

## RTMODELS.CFG format

**SCRATCH=** a group of 10 grid files for storing grids based on models not specified in RTMODELS.CFG; if SCRATCH=99000, the range of grid files used is 99001 through 99010 based on the Julian day of the model run time

**model=** *ftype fgridf runint vtint maxvt* **GEO=** *min max*

information for filing a particular *model*, for example, **NAM** or **GFS**

*ftype* filing format for this model

**0** everything from the model is stored in one grid file per model run time; if this value is used, *vtint* and *maxvt* are not necessary

**1** grids are filed based on model run time and valid forecast time

**2** all grids from a model run are filed in the same grid file regardless of run time or forecast time; if this value is used, *runint*, *vtint*, and *maxvt* are not necessary

**3** same as 1 except no grids are assumed beyond the *maxvt* forecast time

*fgridf* first grid file in the range to use for this model

*runint* interval between model run times (hhmmss)

*vtint* forecast period interval to separate forecast grids

*maxvt* maximum forecast time, after which all grids are stored in the same grid file

**GEO=** *min max* range of geographic IDs to store in this grid file range; the file ~mcidas/data/gbtbpds001.bv1 contains a list of the IDs and their corresponding geographic coverage and projections (default=1 255)

**ID=** generating process ID from ~mcidas/data/gbtbpds001.av1

## RTMODELS.CFG defaults

The RTMODELS.CFG file supplied in McIDAS-XCD creates the grid files listed below.

| Grid File   | Model     | Run             | Forecast Range                 | Coverage               |
|-------------|-----------|-----------------|--------------------------------|------------------------|
| 50001-50010 | AWC-ALL   | 00Z - 2359Z     | 00hr                           | All                    |
| 51001-51010 | AWRW-ALL  | 00Z,06Z,12Z,18Z | 00hr <= Forecast Time <= 120hr | All                    |
| 52001-52010 | ECMF-EQME | 00Z,12Z         | 00hr <= Forecast Time <= 144hr | Equatorial, ECMWF 5-8  |
| 52101-52110 | ECMF-GLME | 00Z,12Z         | 00hr <= Forecast Time <= 240hr | Global, ECMWF 1-4,9-12 |
| 52201-52210 | ECMF-NWME | 00Z,12Z         | 00hr                           | All                    |
| 53001-53010 | NAM-AKPS  | 0Z              | 00hr <= Forecast Time <= 60hr  | All                    |

|             |              |                 |                                |                   |
|-------------|--------------|-----------------|--------------------------------|-------------------|
| 53021-53030 | NAM-AKPS     | 12Z             | 00hr <= Forecast Time <= 60hr  | All               |
| 53101-53110 | NAM-USLC     | 0Z              | 00hr <= Forecast Time <= 60hr  | All               |
| 53121-53130 | NAM-USLC     | 12Z             | 00hr <= Forecast Time <= 60hr  | All               |
| 53201-53210 | NAM-USLC2    | 0Z              | 00hr <= Forecast Time <= 60hr  | All               |
| 53211-53220 | NAM-USLC2    | 6Z              | 00hr <= Forecast Time <= 48hr  | All               |
| 53221-53230 | NAM-USLC2    | 12Z             | 00hr <= Forecast Time <= 60hr  | All               |
| 53231-53240 | NAM-USLC2    | 18Z             | 00hr <= Forecast Time <= 48hr  | All               |
| 53301-53310 | NAM-USLCAWI4 | 0Z              | 00hr <= Forecast Time <= 60hr  | All               |
| 53311-53320 | NAM-USLCAWI4 | 6Z              | 00hr <= Forecast Time <= 48hr  | All               |
| 53321-53330 | NAM-USLCAWI4 | 12Z             | 00hr <= Forecast Time <= 60hr  | All               |
| 53331-53340 | NAM-USLCAWI4 | 18Z             | 00hr <= Forecast Time <= 48hr  | All               |
| 53501-53510 | NAM-AKPSAWIP | 0Z              | 00hr <= Forecast Time <= 60hr  | All               |
| 53521-53530 | NAM-AKPSAWIP | 12Z             | 00hr <= Forecast Time <= 60hr  | All               |
| 53601-53610 | NAM-AKPSAWI2 | 0Z              | 00hr <= Forecast Time <= 60hr  | All               |
| 53621-53630 | NAM-AKPSAWI2 | 12Z             | 00hr <= Forecast Time <= 60hr  | All               |
| 54001-54010 | FFG-ALL      | 00Z - 2359Z     | 00hr <= Forecast Time <= 24hr  | All               |
| 55001-55010 | GFS-AKPS     | 00Z             | 00hr <= Forecast Time <= 120hr | All               |
| 55011-55020 | GFS-AKPS     | 06Z             | 00hr <= Forecast Time <= 120hr | All               |
| 55021-55030 | GFS-AKPS     | 12Z             | 00hr <= Forecast Time <= 120hr | All               |
| 55031-55040 | GFS-AKPS     | 18Z             | 00hr <= Forecast Time <= 120hr | All               |
| 55101-55110 | GFS-AKPSLRES | 00Z, 18Z        | 00hr <= Forecast Time <= 240hr | All               |
| 55201-55210 | GFS-AKPSSSIF | 00Z             | 00hr                           | All               |
| 55301-55310 | GFS-GLME     | 00Z             | 00hr <= Forecast Time <= 240hr | Global, GEO 37-44 |
| 55311-55320 | GFS-GLME     | 06Z             | 00hr <= Forecast Time <= 240hr | Global, GEO 37-44 |
| 55321-55330 | GFS-GLME     | 12Z             | 00hr <= Forecast Time <= 240hr | Global, GEO 37-44 |
| 55331-55340 | GFS-GLME     | 18Z             | 00hr <= Forecast Time <= 240hr | Global, GEO 37-44 |
| 55401-55410 | GFS-GLMELRES | 00Z             | 00hr < Forecast Time <= 168hr  | All               |
| 55601-55610 | GFS-NWME62   | 00Z, 12Z        | 00hr < Forecast Time <= 84hr   | All               |
| 55701-55710 | GFS-NWME170  | 00Z             | >= 96hr Forecast Time          | All               |
| 55801-55810 | GFS-HIME     | 00Z,06Z,12Z,18Z | 00hr < Forecast Time <= 120hr  | All               |
| 55901-55910 | GFS-HIMELRES | 00Z             | 00hr < Forecast Time <= 240hr  | All               |
| 56001-56010 | GFS-HIMESSIF | 0Z              | 00hr                           | All               |
| 56101-56110 | GFS-NHPS     | 00Z,06Z,12Z,18Z | 00hr < Forecast Time <= 120hr  | All               |
| 56201-56210 | GFS-NHPSLRES | 00Z             | 00hr < Forecast Time <= 240hr  | All               |
| 56301-56310 | GFS-NHPSSSIF | 00Z             | 00hr                           | All               |
| 56401-56410 | GFS-PRPSLRES | 00Z             | 00hr < Forecast Time <= 240hr  | All               |
| 56501-56510 | GFS-PRPSSSIF | 00Z             | 00hr                           | All               |
| 56601-56610 | GFS-USLC     | 00Z             | 00hr < Forecast Time <= 240hr  | All               |
| 56611-56620 | GFS-USLC     | 06Z             | 00hr < Forecast Time <= 240hr  | All               |
| 56621-56630 | GFS-USLC     | 12Z             | 00hr < Forecast Time <= 240hr  | All               |
| 56631-56640 | GFS-USLC     | 18Z             | 00hr < Forecast Time <= 240hr  | All               |
| 56701-56710 | GFS-USPS     | 00Z             | 00hr < Forecast Time <= 120hr  | All               |
| 56711-56720 | GFS-USPS     | 06Z             | 00hr < Forecast Time <= 120hr  | All               |
| 56721-56730 | GFS-USPS     | 12Z             | 00hr < Forecast Time <= 120hr  | All               |
| 56731-56740 | GFS-USPS     | 18Z             | 00hr < Forecast Time <= 120hr  | All               |

|             |                  |                   |                                    |     |
|-------------|------------------|-------------------|------------------------------------|-----|
| 56801-56810 | GFS-USPSLRES     | 00Z               | 00hr < Forecast Time <= 240hr      | All |
| 56901-56910 | GFS-USPSSIF      | 00Z               | 00hr                               | All |
| 57001-57010 | GFS-USPS2        | 00Z               | 00hr < Forecast Time <= 120h       | All |
| 57011-57020 | GFS-USPS2        | 06Z               | 00hr < Forecast Time <= 120h       | All |
| 57021-57030 | GFS-USPS2        | 12Z               | 00hr < Forecast Time <= 120h       | All |
| 57031-57040 | GFS-USPS2        | 18Z               | 00hr < Forecast Time <= 120h       | All |
| 59001-59010 | ICA-GLME         | 00Z               | 00hr                               | All |
| 59101-59110 | ICA-NHPS         | 00Z               | 00hr                               | All |
| 59201-59210 | ICA-NWME         | 00Z               | 00hr                               | All |
| 60001-60010 | ICN-ALL          | Every hour        | 00hr,01hr,02hr,03hr,06hr,09hr,12hr | All |
| 62001-62010 | NAH-ALL          | 00Z,06Z,12Z,18Z   | 00hr < Forecast Time <= 72h        | All |
| 63001-63010 | NCE-ALL          | 00Z,06Z,12Z,18Z   | 00hr < Forecast Time <= 72h        | All |
| 65101-65110 | NGM-AKPS         | 00Z,12Z           | 00hr < Forecast Time <= 48h        | All |
| 65201-65210 | NGM-USLC         | 00Z,12Z           | 00hr < Forecast Time <= 48h        | All |
| 65301-65310 | NGM-USPS         | 00Z,12Z           | 00hr < Forecast Time <= 48h        | All |
| 65401-65410 | NGM-USPS2        | 00Z,12Z           | 00hr < Forecast Time <= 48h        | All |
| 66001-66010 | RCM-ALL          | 00Z - 2359Z       | 00hr                               | All |
| 67001-67010 | RFC-ALL          | 00Z,06Z,12Z,18Z   | 00hr < Forecast Time <= 72h        | All |
| 68001-68010 | MAPS (RUC-USLC)  | 00Z=<Run Time<03Z | 00hr,03hr,06hr,09hr,12hr           | All |
| 68011-68020 | MAPS (RUC-USLC)  | 03Z<=Run Time<06Z | 00hr,03hr,06hr,09hr,12hr           | All |
| 68021-68030 | MAPS (RUC-USLC)  | 06Z<=Run Time<09Z | 00hr,03hr,06hr,09hr,12hr           | All |
| 68031-68040 | MAPS (RUC-USLC)  | 09Z<=Run Time<12Z | 00hr,03hr,06hr,09hr,12hr           | All |
| 68041-68050 | MAPS (RUC-USLC)  | 12Z<=Run Time<15Z | 00hr,03hr,06hr,09hr,12hr           | All |
| 68051-68060 | MAPS (RUC-USLC)  | 15Z<=Run Time<18Z | 00hr,03hr,06hr,09hr,12hr           | All |
| 68061-68070 | MAPS (RUC-USLC)  | 18Z<=Run Time<21Z | 00hr,03hr,06hr,09hr,12hr           | All |
| 68071-68080 | MAPS (RUC-USLC)  | 21Z<=Run Time<00Z | 00hr,03hr,06hr,09hr,12hr           | All |
| 68101-68110 | MAPS (RUC-USLC2) | 00Z=<Run Time<03Z | 00hr through 09hr,12hr             | All |
| 68111-68120 | MAPS (RUC-USLC2) | 03Z<=Run Time<06Z | 00hr through 09hr,12hr             | All |
| 68121-68130 | MAPS (RUC-USLC2) | 06Z<=Run Time<09Z | 00hr through 09hr,12hr             | All |
| 68131-68140 | MAPS (RUC-USLC2) | 09Z<=Run Time<12Z | 00hr through 09hr,12hr             | All |
| 68141-68150 | MAPS (RUC-USLC2) | 12Z<=Run Time<15Z | 00hr through 09hr,12hr             | All |
| 68151-68160 | MAPS (RUC-USLC2) | 15Z<=Run Time<18Z | 00hr through 09hr,12hr             | All |
| 68161-68170 | MAPS (RUC-USLC2) | 18Z<=Run Time<21Z | 00hr through 09hr,12hr             | All |
| 68171-68180 | MAPS (RUC-USLC2) | 21Z<=Run Time<00Z | 00hr through 09hr,12hr             | All |
| 68201-68210 | MAPS (RUC-USPS)  | 00Z=<Run Time<03Z | 00hr,03hr,06hr,09hr,12hr           | All |
| 68211-68220 | MAPS (RUC-USPS)  | 03Z<=Run Time<06Z | 00hr,03hr,06hr,09hr,12hr           | All |
| 68221-68230 | MAPS (RUC-USPS)  | 06Z<=Run Time<09Z | 00hr,03hr,06hr,09hr,12hr           | All |
| 68231-68240 | MAPS (RUC-USPS)  | 09Z<=Run Time<12Z | 00hr,03hr,06hr,09hr,12hr           | All |
| 68241-68250 | MAPS (RUC-USPS)  | 12Z<=Run Time<15Z | 00hr,03hr,06hr,09hr,12hr           | All |
| 68251-68260 | MAPS (RUC-USPS)  | 15Z<=Run Time<18Z | 00hr,03hr,06hr,09hr,12hr           | All |
| 68261-68270 | MAPS (RUC-USPS)  | 18Z<=Run Time<21Z | 00hr,03hr,06hr,09hr,12hr           | All |
| 68271-68280 | MAPS (RUC-USPS)  | 21Z<=Run Time<00Z | 00hr,03hr,06hr,09hr,12hr           | All |
| 69001-69010 | MDR-ALL          | -----             | All Observational Hours            | All |
| 72001-72010 | NPH-ALL          | 00Z,06Z,12Z,18Z   | 00hr < Forecast Time <= 72h        | All |
| 75001-75010 | SST-GLME         | 00Z               | 00hr                               | All |
| 75101-75110 | SST-GLME2        | 00Z               | 00hr                               | All |
| 75201-75210 | SST-GLMETHIN     | 00Z               | 00hr                               | All |
| 76001-76010 | UKM-GLME         | 00Z,12Z           | 00hr < Forecast Time <= 120h       | All |

|             |              |                 |                                    |     |
|-------------|--------------|-----------------|------------------------------------|-----|
| 76101-76110 | UKM-GLMETHIN | 00Z,06Z,12Z,18Z | 00hr < Forecast Time <= 72h        | All |
| 77001-77010 | WHG-ALL      | 00Z,12Z         | All Forecast Hours out to 60 hours | All |
| 78001-78010 | WNA-ALL      | 00Z,06Z,12Z,18Z | 00hr < Forecast Time <= 120h       | All |
| 79101-79110 | WWF-GLMETHIN | 00Z,12Z         | 12hr,24hr,48hr,72hr                | All |

## Creating GRIB1 and GRIB2 Files with DMBIN

When the unpacking process is complete and the entire GRIB message is successfully decoded, the decoder passes the GRIB structures to DMBIN, which stores metadata about the GRIB messages in the MySQL/MariaDB database. DMBIN also writes raw GRIB1, GRIB2, and BUFR data to files to which the database points. DMBIN does not use the RTMODELS.CFG file.

Once the correct GRIB1 or GRIB2 file is determined, DMBIN files the metadata in the database as is. It is up to the GRIB server to determine if the grid must be pieced together with other corresponding grids of the same field, time, etc. Piecing together is often necessary because most of the gridded fields that cover the globe are sent in four or eight pieces, as in the GFS-GLME dataset.