Lazzara

DDE

(Distributed Data Environment)

Demonstration Manual

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This is a demonstration package of the DDE software that uses clients and servers in a distributed data environment. McIDAS-OS2 and McIDAS-X workstations are the clients using McIDAS-X and McIDAS-MVS servers.

This package is only intended to demonstrate the functionality, performance and utility of the DDE concepts. All aspects of this implementation, such as user interface, data model, API, etc., are subject to change based on user feedback and our evaluation. The next step is to reevaluate DDE at all levels and reimplement it for integration into core McIDAS taking into consideration factors intentionally or unintentionally ignored in this demonstration implementation, e.g. better client routing table administration tools.

The McIDAS Distributed Data Environment (DDE) is not related in any way to the OS/2 Dynamic Data Exchange (also known as DDE), which allows applications running in separate sessions or Windows to exchange data either automatically or manually through the clipboard.

The set of DDE applications in this package and its use is identical for McIDAS-OS2 and McIDAS-X clients. The applications perform a subset of the current McIDAS-MVS, -OS2 and -X functions. A fully implemented DDE package would contain a more comprehensive set of applications, handle multiple data formats and be portable to a non-McIDAS environment.

This preliminary manual provides:

- an introduction to the DDE
- DDE installation instructions
- a Getting Started section
- documentation for the DDE commands
- remote server management information
- DDE uninstall instructions

Introduction to the DDE

As more of the McIDAS-MVS applications are ported to the McIDAS-X and McIDAS-OS2 packages, McIDAS-X and -OS2 workstations will use the McIDAS-MVS system primarily as a data server. Under the current implementation without DDE, McIDAS-X and -OS2 workstations can only connect to a single server, which must be a McIDAS-MVS system. The DDE allows McIDAS-X and -OS2 workstations to act as clients which efficiently access data from multiple McIDAS-MVS and McIDAS-X servers.

This introduction provides an overview of the DDE system, including:

- definitions of commonly used terms
- an explanation of client and server responsibilities
- the scheme used for data naming
- information about look-up tables

Terminology

The terms below are used throughout this manual. Note that since a workstation can store and display data, it can act as a server and a client.

Term	Definition
Client	workstation receiving and displaying the data
Server	machine storing and supplying the data
File number	number used to reference an area, grid or MD file (the standard McIDAS numbering system)
Type	data type; either area, grid, MD, navigation or text
Data Set	collection of one or more files of a common type; for example, one data set may consist of areas 101 to 104, another data set may consist of MD files 1 to 10
Name	name used to reference a data set; for example, the data set of SSEC's McIDAS-MVS areas 105 to 108 was given the name GOES-VIS-4K to indicate that this data set contains the 4 km resolution GOES visible areas
Group	name used to reference a collection of named data sets

Clients and Servers

DDE distributes data using networked servers and clients. Servers store data and pass it to the client. Clients request and receive data, and run applications on the data such as displaying imagery, or plotting and contouring data.

Each McIDAS-OS2 workstation and each account running McIDAS-X act as both a client and a local server. The client can request data from either its local server or from a remote server which is either a McIDAS-MVS mainframe configured as a server or a McIDAS-X workstation account configured as a remote server. Remote servers are discussed in *Appendix A*.

Clients and servers communicate via the TCP/IP communications protocol. The Internet also uses TCP/IP, although access to the Internet is not a requirement for DDE.

Data Naming Scheme

Currently, all McIDAS area, grid and MD file data is referenced by file numbers. If you don't know the file numbers, finding data can be difficult. The DDE uses groups and names that map to data sets, which are collections of one or more data files of the same type. If the names and groups chosen follow a logical convention, it's easy to locate the data. All DDE applications allow use of both file numbers and DDE data set names for referencing data.

Since each server has a unique IP address, servers can assign their own names to their data sets without regard to names on other servers. Once the client selects a particular server via its IP address, data must be requested via a name agreed upon by both the client and server prior to the request. This data-to-name and name-to-data mapping function is accomplished by separate look-up tables on the client and server.

The naming scheme for a data set consists of three parts:

* type
* group
* name

See Figure 1 on the opposite page. The *type* is the top tier in the hierarchal naming scheme. It uses AREA, GRID or MD to indicate that the data set consists of area, grid or MD files, respectively.

The *group* is immediately below the top tier in the hierarchal naming scheme. Group labels under the same type must be unique. The group tier in Figure 1 has three groups labeled RT. However, RT is used only once under each type.

Names are the bottom tier in the hierarchal naming scheme. Names are not data files; they contain pointers to data sets. Names under the same group must be unique. Identical names under different groups can point to the same or different data sets.
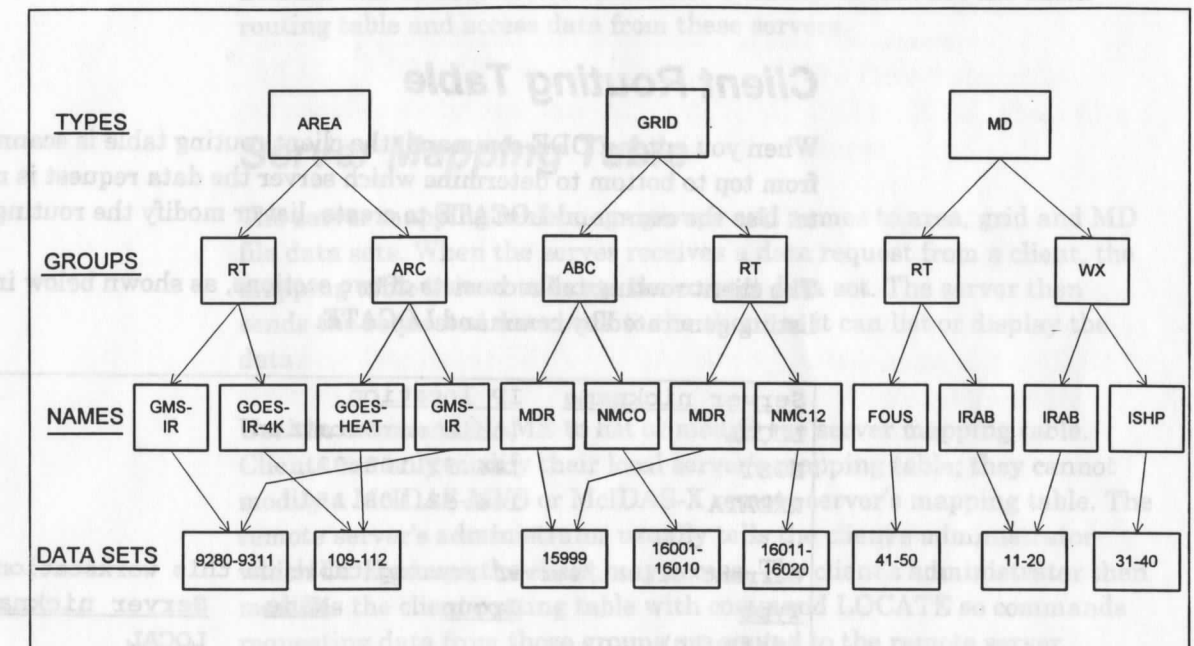
Figure 1. Data Naming Scheme

Since each DDE command that accesses data works only with a single type, you don't have to specify the type in the command entry. For example, the command AREAV does not have a parameter or keyword for type because it limits its search to data sets of type AREA. The command:

AREAV GOES-IR-4K 1 EC STL GROUP=RT

displays the most recent area in the data set named GOES-IR-4K in the group RT on frame 1, centered on St. Louis, Missouri.

You can still use the traditional McIDAS file numbering scheme in your command entries, if you prefer. Each DDE client's routing table contains a default server, usually the local server. If you request data files by file numbers instead of name and group, the default server is automatically targeted for the transfer. However, using file numbers restricts you to your default server; using names allows access to any server.

Client and Server Look-up Tables

Each DDE command starts a transaction where the client requests data from the local or remote server. Both the client and server must recognize the name and group specified in the command in their respective look-up tables. On the client, this table is called the *routing table* as it determines which server to route the data request to. On the server, this table is called the *mapping table* since it maps the group and name to the area, grid or MD file data set.

Client Routing Table

When you enter a DDE command, the client routing table is scanned from top to bottom to determine which server the data request is routed to. Use the command LOCATE to create, list or modify the routing table.

The client routing table consists of two sections, as shown below in a listing generated by command LOCATE.

Server nickname	IP location
LOCAL	(this workstation)
HOST	144.92.108.32
WXDATA	144.92.108.151

Current client/server routing table on this workstation.

Type	Group	Name	Server nickname
(default)			LOCAL
AREA	BLIZZARD		WXDATA
AREA	RT		HOST
GRID	BLIZZARD		WXDATA
GRID	RT		HOST
MD	RT		HOST
MD	RTBAK		WXDATA
NAV			HOST
TEXT			HOST

The top section lists the server alias or nickname and the IP address of each server the client is set up to request data from.

The second section lists the groups and names for each data type, and which server the client's command is routed to when it requests data of that type, group and name. If the table entry's type, group and server fields each have a value, but the name field is blank, all names in the specified group are accessible to the client. For example, the table above shows that all DDE commands requesting data of type MD and group RT are routed to the server with the nickname HOST; requests for data of type MD and group RTBAK are routed to the server named WXDATA.

If a table lists a server, but no type, group or name, the server is the default, which means it receives all requests specifying either a file number or a group not found in the routing table. In the table above, LOCAL is the default server. There can only be one default server.

The DDE installation procedure uses the text file LOCATE.BAT to initialize the client routing table to access real-time data from SSEC's McIDAS-MVS server, and history and real-time data from SSEC's McIDAS-X remote server wxdata. It also sets the local server as the default. The *Getting Started* section has examples that list the client routing table and access data from these servers.

Server Mapping Table

The server mapping table maps groups and names to area, grid and MD file data sets. When the server receives a data request from a client, the mapping table is read to locate the correct data set. The server then sends the requested data back to the client so it can list or display the data.

Use the command NAME to list or modify the server mapping table. Clients can only modify their local server's mapping table; they cannot modify a McIDAS-MVS or McIDAS-X remote server's mapping table. The remote server's administrator usually tells the client's administrator which DDE groups the client may access. The client's administrator then modifies the client routing table with command LOCATE so commands requesting data from those groups are routed to the remote server.

To use the NAME command to create named data sets on the local server, see the "Creating the Server Mapping Table" section in *Appendix A*. If the client routing table already has the local server as the default, no additional modifications are needed to access the local server's data. If the client routing table specifies a different server as the default, you must modify the table to allow access to the local server's named data.

McIDAS-OS2 DDE Installation

The McIDAS-OS2 DDE installation process places the DDE executable code into the directory \MCIDAS\CODE, the helps into the directory \MCIDAS\HELP, and an uninstall script into the directory \MCIDAS\TOOLS. The previous version of DDE (10/93) placed its executable code into the directory \MCIDAS\USER\CODE. These files are deleted during this version's installation process.

The text files LOCATE.BAT and NAME.BAT are installed in the directory \MCIDAS\DATA. The LOCATE.BAT file is used by the BATCH command to initialize the workstation's client routing table to access real-time data from SSEC's McIDAS-MVS system, and history and real-time data from SSEC's McIDAS-X workstation *wxdata*. NAME.BAT provides examples of the NAME command which manages the server mapping table. Any local copy of LOCATE.BAT or NAME.BAT in \MCIDAS\DATA is overwritten during the installation process.

Check the system requirements below before installing the McIDAS-OS2 DDE demonstration software package on your workstation. Then use the instructions that follow to install the DDE package.

System Requirements

- The McIDAS-OS2 DDE demonstration software package runs under McIDAS-OS2 version 5.9, and requires TCP/IP. SSEC has tested the software using OS/2 versions 2.0 and 2.1, and TCP/IP versions 1.2.1 and 2.0.
- Approximately 3 MB of free disk space is required to install and store this software.

McIDAS-OS2 DDE Installation Procedure

Use the instructions below to retrieve the software from SSEC and install the DDE demonstration package for McIDAS-OS2. Enter the commands exactly as shown. When you type a command, press **Enter** to run it.

1. Exit your McIDAS-OS2 session, open an OS/2 Full Screen session, and insert a blank, formatted diskette into drive A.

2. Begin the ftp session to SSEC's workstation ftp.ssec.wisc.edu to retrieve the DDE installation files.

   Type: **ftp ftp.ssec.wisc.edu**

   or

   ftp 144.92.108.61

3. Enter the ftp login provided in the cover letter.

4. Enter the ftp login password provided in the cover letter.

5. Change to the os2 directory.

   Type: **cd os2**

6. Change the local directory to A: to copy the files to the diskette.

   Type: **lcd a:**

7. Specify a binary data transfer.

   Type: **bin**

8. Disable interactive prompting for multiple file transfers.

   Type: **prompt**

9. Transfer the DDE installation files.

   Type: **mget ***

10. End the ftp session.

    Type: **bye**

---

11. Run the command below to install the DDE package. Insert the drive letter for the \MCIDAS\DATA directory (C, D or E) in place of the *drive* parameter; do not include a colon (:).

    Type: **A:INSTALL** *drive*

12. Remove the diskette from drive A and boot your workstation, remembering to properly Shutdown OS/2.

13. Bring up McIDAS-OS2 and initialize the client routing table.

    Type: **BATCH "LOCATE.BAT**

This completes the McIDAS-OS2 DDE installation.

> *To install the DDE package on another workstation, exit McIDAS-OS2 on the workstation, open an OS/2 Full Screen session, insert the diskette with the installation files in drive A, and follow steps 11 - 13 above.*
>
> *To remove the DDE package from your workstation, see Appendix B.*

System Requirements

McIDAS-X DDE Installation

The McIDAS-X DDE installation process makes the directory ~mcidas/dde, places the source files in it, and builds the software. When the build is complete, the source, data and binaries are copied to the directories ~mcidas/src, ~mcidas/data and ~mcidas/bin, respectively, to allow all McIDAS-X users on the workstation access to the DDE software.

The text files LOCATE.BAT and NAME.BAT are installed in the directory ~mcidas/data. The LOCATE.BAT file is used by the BATCH command to initialize each account's client routing table to access real-time data from SSEC's McIDAS-MVS system, and history and real-time data from SSEC's McIDAS-X workstation *wxdata*. NAME.BAT provides examples of the NAME command which manages the server mapping table. Any local copy of LOCATE.BAT or NAME.BAT in ~mcidas/data is overwritten during the installation process.

Check the system requirements below before installing the McIDAS-X DDE demonstration software package on your workstation. Then use the instructions that follow to install the DDE package.

System Requirements

- The McIDAS-X DDE demonstration software package runs on IBM RISC System/6000, SGI Personal Iris, Sun SPARCstation or HP 9000 workstations running McIDAS-X version 1.9. McIDAS-X must be installed in the *mcidas* account according to the specifications in the *Installation Procedure* section of the McIDAS-X Users Guide.

- Approximately 15 MB of free disk space is required to install and store this software.

- Each user testing this software must have a separate account on the workstation configured with the appropriate directories, links and PATH to run McIDAS-X. This information is discussed in the *Suggested Configuration for Multi-User Systems* section of the McIDAS-X Users Guide.

McIDAS-X DDE Installation Procedure

Use the instructions below to retrieve the software from SSEC and install the DDE demonstration package for McIDAS-X. Enter the commands exactly as shown. When you type a command, press **Enter** to run it.

1. Open a Unix window and log on to the workstation as user *mcidas*.

2. Change to the directory ~mcidas.

   Type: **cd ~mcidas**

3. Begin the ftp session to SSEC's workstation ftp.ssec.wisc.edu to retrieve the DDE installation files.

   Type: **ftp ftp.ssec.wisc.edu**

   or

   ftp 144.92.108.61

4. Enter the ftp login provided in the cover letter.

5. Enter the ftp login password provided in the cover letter.

6. Change to the x directory.

   Type: **cd x**

7. Specify a binary data transfer.

   Type: **bin**

8. Disable interactive prompting for multiple file transfers.

   Type: **prompt**

9. Transfer the DDE installation files.

   Type: **mget ***

   The following files are transferred to your workstation.

File name	Description
dde.tar.Z	compressed tar file containing all source and data files
dde.sh	shell script for installing or removing the DDE package
ddeinet.sh	shell script for configuring an account as a DDE remote server

10. End the ftp session.

    Type: **bye**

11. Run the shell script *dde.sh* to install the DDE package.

    Type: **sh ./dde.sh install**

    This script may take a few minutes to complete, as about 100 modules are compiled.

12. Direct all users who will use the DDE software to start a McIDAS-X session and initialize their client routing table. When entering the command below, replace the string *path* with the fully expanded path of the ~mcidas/data directory.

    Type: **BATCH "***path***/LOCATE.BAT**

    For example: **BATCH "/home/mcidas/data/LOCATE.BAT**

This completes the McIDAS-X DDE installation.

To configure an account as a DDE remote server so McIDAS-X and McIDAS-OS2 clients can access data from the account, see Appendix A.

To remove the DDE package from your workstation, see Appendix B.

Getting Started

The exercise below introduces you to DDE concepts such as names, groups, clients and servers. When you type a command, press **Enter** to run it. For more information about the commands, see the *DDE Commands* section that follows and the online helps.

1. Log on to the workstation only.

   Type: **LOGON** *initials project* **X WS**

2. List the client routing table initialized with LOCATE.BAT.

   Type: **LOCATE**

   The following listing is displayed.

Server nickname	IP location
LOCAL	(this workstation)
HOST	144.92.108.32
WXDATA	144.92.108.151

   Current client/server routing table on this workstation.

Type	Group	Name	Server nickname
(default)			LOCAL
AREA	BLIZZARD		WXDATA
AREA	RT		HOST
GRID	BLIZZARD		WXDATA
GRID	RT		HOST
MD	RT		HOST
MD	RTBAK		WXDATA
NAV			HOST
TEXT			HOST

Note that HOST is aliased to the IP address of SSEC's McIDAS-MVS and WXDATA is aliased to the IP address of SSEC's McIDAS-X workstation *wxdata* which is configured as a remote server. All data types with the group RT are mapped to HOST; all area and grid files with group BLIZZARD and MD files with group RTBAK are mapped to WXDATA. Having LOCAL set as the default for all types maps the file numbers for all area, grid and MD files to this workstation.

3. On McIDAS-OS2 workstations only, press the **5** key on the numeric keypad. The CPU usage statistics are directed to the bottom of this text window each time a DDE program is run. This information is useful for compiling CPU consumption statistics. It is not available in McIDAS-X.

4. List the named data sets for group RT, which is the current default set by command POINTER.

Type: **NAMEL**

The following listing is displayed. This data is located on the server at 144.92.108.32 which has the alias HOST. SSEC Operations names the real-time data sets and uses group RT for them.

```
Listing for names of TYPE:AREA in GROUP:RT
From server at:144.92.108.32
Name        Range       Comment
GMS         9260 9311   "GMS (VIS & IR) FROM AUSTRALIA
GMS-IR      9280 9311   "GMS IR FROM AUSTRALIA
GMS-VIS     9260 9273   "GMS VIS FROM AUSTRALIA
GOES        101  136    "RT GOES (ALL INCLUSIVE)
GOES-DS-8K  131  136    "GOES DWELL SOUND (8KM)
GOES-IR-4K  109  112    "GOES IR GLOBE (4KM)
GOES-MSI-8K 121  128    "GOES MSI GLOBE (8KM)
GOES-VIS-1K 101  104    "GOES VIS (1KM)
GOES-VIS-4K 105  108    "GOES VIS GLOBE (4KM)
M3-IR       305  312    "MET-3(ATLANTIC DATA COVERAGE)IR GLOBES(5KM)
M3-VIS      301  304    "MET-3(ATLANTIC DATA COVERAGE)VIS GLOBES(5KM)
M3-WV       313  318    "MET-3(ATLANTIC DATA COVERAGE)WV GLOBES(5KM)
M4-IR       345  352    "MET-5 IR GLOBES (5KM)
M4-IR-B     363  364    "MET-5 IR B SECTOR (5KM)
M4-VIS      341  344    "MET-5 VIS GLOBES (5KM)
M4-VIS-B    361  362    "MET-5 VIS B SECTOR (2.5KM)
M4-WV       353  358    "MET-5 WV GLOBES (5KM)
M4-WV-B     365  366    "MET-5 WV B SECTOR (5KM)
M5-IR       345  352    "MET-5 IR
M5-VIS      341  344    "MET-5 VIS
M5-WV       353  358    "MET-5 WV
N11-GAC     810  829    "NOAA-11 GAC IMAGES
N11-HRPT    715  719    "NOAA-11 HRPT IMAGES
N11-TIP     740  759    "NOAA-11 TIP DATA
N12-GAC     770  789    "NOAA-12 GAC IMAGES
N12-HRPT    710  714    "NOAA-12 HRPT IMAGES
N12-TIP     720  739    "NOAA-12 TIP DATA

Listing for names of TYPE:MD in GROUP:RT
From server at:144.92.108.32
Name        Range       Comment
FOUS14      41   50     "NGM MOS FORECASTS
IRAB        11   20     "RAOB MANDATORIES

continued on the next page
```

```
continued from the previous page
IRSG        21   30     "RAOB SIGNIFICANTS
ISFC        1    10     "SURFACE HOURLIES
ISHP        31   40     "SHIP/BUOY OBSERVATIONS
SYN         51   60     "SURFACE SYNOPTICS

Listing for names of TYPE:GRID in GROUP:RT
From server at:144.92.108.32
Name        Range        Comment
MDR         15999        "MDR DATA
NMC0        16001 16010  "RT NMC GRIDS, 0 UTC RUN
NMC12       16011 16020  "RT NMC GRIDS, 12 UTC RUN
```

5. List the named data sets of type MD for group RTBAK.

Type: **NAMEL MD RTBAK**

The following listing is displayed. This data is located on the server at 144.92.108.151, which has the alias WXDATA.

```
Listing for names of TYPE:MD in GROUP:RTBAK
From server at:144.92.108.151

Name        Range       Comment
FOUS14      41   50     "NGM MOS FORECASTS
IRAB        11   20     "RAOB MANDATORIES
IRSG        21   30     "RAOB SIGNIFICANTS
ISFC        1    10     "SURFACE HOURLIES
ISHP        31   40     "SHIP/BUOY OBSERVATIONS
PIRP        61   70     "PILOT AND AIRCRAFT REPORTS
SYN         51   60     "SURFACE SYNOPTICS
```

6. List the named data sets of type AREA for group BLIZZARD, which is also on SSEC's server WXDATA.

Type: **NAMEL AREA BLIZZARD**

The following listing is displayed.

```
Listing for names of TYPE:AREA in GROUP:BLIZZARD
From server at:144.92.108.151

Name        Range       Comment
IR          7004 7006   "GOES 4 km Infrared Data (93072)
VIS         7001 7003   "GOES 4 km Visible Data (93072)
```

7. List the named data sets of type GRID for group BLIZZARD, which is also on SSEC's server WXDATA.

Type: **NAMEL GRID BLIZZARD**

The following listing is displayed.

```
Listing for names of TYPE:GRID in GROUP:BLIZZARD
From server at:144.92.108.151


Name    Range         Comment
NGM     7001  7001     "NGM 12 UTC Forecast Grids (93072)
```

8. Check the default names and groups initialized with the McIDAS batch file LOCATE.BAT.

Type: **POINTER**

The following listing is displayed. Note that the default group for all data types is RT.

```
Current DDE default settings
Type    Group    Name
AREA    RT       GOES-IR-4K
GRID    RT       NMC0
MD      RT       ISFC
```

9. Set the default name for the area data to M4-IR.

Type: **POINTER SET AREA M4-IR**

10. List the area directories for the default name and group.

Type: **AREAL**

A listing similar to the following is displayed. The *pos* value is the relative position number in the data set which is used when viewing and transferring area data.

```
Area directory listing for:RT M4-IR
pos  ss  yyddd   hhmmss  lcor ecor lr er zr lsiz esiz z    bands
  1  56  94060   103000   1    1   2  2  1 2500 2500 1 .....8.....
  2  56  94060   113000   1    1   2  2  1 2500 2500 1 .....8.....
  3  56  94060   120000   1    1   2  2  1 2500 2500 1 .....8.....
  4  56  94060   123000   1    1   2  2  1 2500 2500 1 .....8.....
  5  56  94060   130000   1    1   2  2  1 2500 2500 1 .....8.....
  6  56  94060   140000   1    1   2  2  1 2500 2500 1 .....8.....
  7  56  94060   143000   1    1   2  2  1 2500 2500 1 .....8.....
  8  56  94060   150000   1    1   2  2  1 2500 2500 1 .....8.....
```

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11. Set the default name for the area data to GOES-IR-4K.

Type: **POINTER SET AREA GOES-IR-4K**

12. List the area directories for the default name and group.

Type: **AREAL**

A listing similar to the following is displayed.

```
Area directory listing for:RT GOES-IR-4K
pos  ss  yyddd   hhmmss  lcor ecor lr er zr lsiz esiz z    bands
  1  33  94060   143100   407  10  4  4  1 2804 3800 2 .....8.....
  2  33  94060   150100   407  10  4  4  1 2804 3800 2 .....8.....
  3  33  94060   153100   407  10  4  4  1 2804 3800 2 .....8.....
  4  33  94060   140100   407  10  4  4  1 2804 3800 2 .....8.....
```

13. Display the most recent GOES IR image in group RT on frame 1 centered on Hutchinson, Kansas. The NAMEL listing in step 4 shows the data set name is GOES-IR-4K. Since the default group is RT, you don't need to specify a group with keyword GROUP.

Type: **AREAV GOES-IR-4K 1 EC HUT -2**

If you were loading images from the listing in step 12, the 15:31 UTC image would be loaded on frame 1. To load the 14:31 UTC image on frame 2, use keyword POS and enter the command below.

Type: **AREAV GOES-IR-4K 2 EC HUT -2 POS=1**

14. Draw a map on the satellite image displayed on frame 1.

Type: **SF 1; MAP H**

15. Plot Fahrenheit temperatures from the surface and ship MD files in group RT. The NAMEL listing in step 4 shows the data set names for surface and ship MD files are ISFC and ISHP respectively. Since the default group is RT, you don't need to specify a group with keyword GROUP.

Type: **SFCP T SAT MDF=ISFC ISHP UNIT=A**

16. List all 500 mb height grids from the MRF 0 UTC run. The POINTER listing in step 8 shows the default grid file name is NMC0 and the default group is RT.

Type: **GRIDL SEARCH=Z 500 X MRF 0**

17. Erase the graphics, then contour the 48-hour forecast for 500 mb heights from the 0 UTC run of the MRF over the North Pole.

    Type: **EG; GRIDC X 60 DEF LAT=30 30 LON=-45 135 PRO=CONF SEARCH=Z 500 48 MRF 0**

18. Set the default name and group for area data to VIS and BLIZZARD respectively.

    Type: **POINTER SET AREA VIS GROUP=BLIZZARD**

19. Set the default name and group for grid file data to NGM and BLIZZARD respectively.

    Type: **POINTER SET GRID NGM GROUP=BLIZZARD**

20. Display the most recent image in the data set VIS in group BLIZZARD on frame 3, centered on Knoxville, Tennessee. Since you already set VIS and BLIZZARD as the default name and group for area data, you don't need to specify them in the command.

    Type: **AREAV X 3 EC TYS**

21. Draw a map on the satellite image displayed on frame 3.

    Type: **SF 3; MAP VH 2**

22. Contour the 12-hour forecast for sea level pressure from the 12 UTC run of the NGM on the satellite image using the data set NGM in group BLIZZARD. Since you already set NGM and BLIZZARD as the default name and group for grid file data, you don't need to specify them in the command.

    Type: **GRIDC X 4 SAT SEARCH=P MSL 12 NGM COLOR=3**

23. Display the most recent image in the data set GMS-IR in group RT on frame 4 centered on 25° South and 135° East. You must specify the name GMS-IR and group RT as they are not the current defaults.

    Type: **AREAV GMS-IR 4 EC -25 -135 2 GROUP=RT**

24. Draw a map on the satellite image displayed on frame 4.

    Type: **SF 4; MAP X X LALO**

25. Plot the 0 UTC Celsius temperatures on the satellite image using the data in the real-time synoptic MD file in group RTBAK. You must specify the name SYN and group RTBAK as they are not the current defaults.

    Type: **SFCP T SAT 0 UNIT=M MDF=SYN GROUP=RTBAK**

26. Set the default name and group for area data to their original settings, GOES-IR-4K and RT, respectively.

    Type: **POINTER SET AREA GOES-IR-4K GROUP=RT**

27. Set the default name and group for grid file data to their original settings, NMC0 and RT, respectively.

    Type: **POINTER SET GRID NMC0 GROUP=RT**

Command	Description	Functional Equivalent	Page
AREAG	gets areas from server to client	SE.NA.L. SEP	6-3
AREAL	lists area directories	LA	6-5
AREAV	views areas	OF DSS	6-7
BRITL	lists brightness values for a pixel	O	6-10
FRAMEL	lists one or more frame directories	LF C	6-11
GRIDC	contour gridded data	IGTV	6-12
GRIDG	gets grids from server to client	SENGRD	6-15
GRIDL	lists grids in the grid file	TELLDG	6-17
LOCATE	manages the client routing table		6-18
MDG	gets MD files from server to client	SENMD	6-20
MDKEYL	lists values in the MD file	MDL	6-22
NAME	maps data sets to a name		6-24
NAMEL	lists named data sets		6-26
ORENT	displays POES orbit tracks	MAPORB	6-27
POINTER	sets default groups and names		6-28
SFCG	contours surface data	SC, SFIPG	6-29
SFCL	lists surface data	SL	6-31
SFCP	plots surface data	SF, SFIPG	6-33
THERMD	displays thermodynamic diagram	SKEWT	6-35
UPPERG	contours upper air data	UG	6-38
UPPERL	lists upper air data	UL	6-40
UPPERP	plots upper air data	UP	6-41
WXTEXT	lists text data	WXITXT	6-43

DDE Commands

A set of commonly used McIDAS commands was chosen for this demonstration. Command names were changed to avoid confusion with other core McIDAS routines. Listed below in alphabetical order are the commands, their functions and corresponding core McIDAS commands, if applicable. The naming convention for many of the commands defines the data type and adds a suffix to indicate the action taken on the data, e.g. G means get, L means list, V means view, C means contour and P means plot.

Command	Description	Functional Equivalent	Page
AREAG	gets areas from server to client	SENAA, SEP	6-2
AREAL	lists area directories	LA	6-5
AREAV	views areas	DF, SEQ	6-7
BRITL	lists brightness values for a pixel	D	6-10
FRAMEL	lists one or more frame directories	LF, C	6-11
GRIDC	contours gridded data	IGTV	6-12
GRIDG	gets grids from server to client	SENGRD	6-15
GRIDL	lists grids in the grid file	IGG LIST	6-17
LOCATE	manages the client routing table		6-18
MDG	gets MD files from server to client	SENMD2	6-20
MDKEYL	lists values in the MD file	MDL	6-22
NAME	maps data sets to a name		6-24
NAMEL	lists named data sets		6-26
ORBIT	displays POES orbit tracks	MAPORB	6-27
POINTER	sets default groups and names		6-28
SFCC	contours surface data	SC, SHIPC	6-29
SFCL	lists surface data	SL	6-32
SFCP	plots surface data	SP, SHIPP	6-33
THERMD	displays thermodynamic diagram	SKEWT	6-36
UPPERC	contours upper air data	UC	6-38
UPPERL	lists upper air data	UL	6-40
UPPERP	plots upper air data	UP	6-42
WXTEXT	lists text data	FASTXT	6-44

The format of the DDE commands is not identical to the equivalent McIDAS commands. See the command documentation that follows and the online helps for parameter and keyword information.

AREAG

Transfers area data from a server to a client.

Formats

AREAG *sarea darea frame locate y-coord x-coord mag line ele*
[*keywords*]

AREAG *sarea darea frame locate station mag line ele* [*keywords*]

Parameters

sarea   source DDE data set name or area file number (default=current data set or area file set by command POINTER)

darea   destination area number, or the position number in the destination data set specified in keyword OUT

frame   image frame number to display data (default=0, does not display *darea*)

locate   coordinate type used to load images: EC, IC, AU, etc.

y-coord   y-coordinate (default=first line)

x-coord   x-coordinate (default=first element)

station   station ID, e.g. MSN, EGLL, 2C2; must be preceded by EU or EC

mag   image blowdown factor; must be a negative number (default=retains *sarea* resolution)

line   number of lines in *darea* (default=480)

ele   number of elements in *darea* (default=640)

Keywords

ASIZE=   ALL   transfers the entire area, including all bands

BAND=   band number to transfer (default=8 for GOES-IR, 4 for POES)
   ALL   transfers all bands; do not use with STYPE=VISR

CYCLE=   *num inc*   places the selected area into a circular queue of destination areas beginning with *darea*, consisting of *num* number of areas; if you are loading images, the destination frame is determined by placing the selected area into a circular queue of frames beginning with *frame*, consisting of *num* number of frames (default *num*=0, meaning no queue; default *inc* =1:00, meaning a 1-hour increment when *num* is not equal to zero)

EMAG=   element blowdown factor; must be a negative number (default=retains *sarea* resolution)

GRAY=   YES   displays a gray wedge
   NO   does not display a gray wedge (default)

GROUP=   group containing the DDE data set in which *sarea* resides (default=current group set by command POINTER)

LMAG=   line blowdown factor; must be a negative number (default=retains *sarea* resolution)

OUT=   *group name*   destination area's group and DDE data set; used only to copy area data from one DDE data set to another

POS=   relative position in the source data set; a positive number represents the relative numeric position in the loop; zero or a negative number represents the relative position in time, with zero being most recent (default=0)

RTIME=   *bmin emin*   overrides keyword TIME with the current hour plus *bmin* minutes through the current hour plus *emin* minutes

STYPE=   VISR   reduces 2-byte data to 1-byte

TIME=   *btim etim*   limits the loop search to a specified time range

Remarks

If an AREAG entry requests GOES area data from a McIDAS-MVS server while it is being received, the data is relayed to the client as each line is ingested. Other commands requesting area data from remote servers will not run until the AREAG command is finished.

Command AREAG is most useful when used with the scheduler to transfer and load the most recent area satellite data from a server.

Keywords TIME and RTIME identify an area to send. They allow you to specify a time range that must be met for the area transfer and load to occur. This is especially useful for choosing an area when new areas are received frequently, such as GOES images during a RISOP schedule. These keywords also allow you to spread out the scheduled area copies so scheduler activity is more evenly distributed throughout the hour.

Keyword CYCLE is most useful when used with the scheduler to copy the most recent server area to another loop of areas, usually on the client. The beginning area in the loop is specified with *darea*; the number of areas in the loop is specified with keyword CYCLE.

When using the keyword CYCLE, the following formula determines which area in the loop the most recent server area is copied to:

$$(\text{modulus } (time/inc, num)) + darea$$

where *time* is the image time of the selected area, *inc* and *num* are the values specified in keyword CYCLE, and *darea* is the value specified in the *darea* positional parameter.

For example, if the command:

AREAG GOES-IR-4K 1 0 EC DCA CYCLE=5 1:00

is scheduled to run once an hour, the 13:00 UTC area in GOES-IR-4K is copied to area 4, since *time* = 13.0, *inc* = 1.0, *num* = 5 and *darea* = 1 (13.0÷1.0 = 13; 13÷5 = 2 with a remainder of 3; 3 + 1 = 4). The 14:00 UTC area is copied to area 5; the 15:00 UTC area is copied to area 1, etc.

If a similar AREAG command is scheduled to run every half-hour, but **CYCLE=6 00:30** and *darea* is 11, the 20:00 UTC area in GOES-IR-4K is copied to area 15, since *time* = 20.0, *inc* = 0.5, *num* = 6 and *darea* = 11 (20.0÷.5 = 40; 40÷6 = 6 with a remainder of 4; 4 + 11 = 15). The 20:30 UTC area is copied to area 16; the 21:00 UTC area is copied to area 11, etc.

Examples

AREAG GOES-VIS-1K 1 5 EC STL CYCLE=10 00:30 RTIME=30 35
This entry searches areas in the data set GOES-VIS-1K for an area with an image time falling between 30 and 35 minutes after the current hour. The first area matching these criteria is sent to the next available area in the area range 1 to 10 that follows the 30-minute image time increment set with keyword CYCLE. The image is displayed on frame 5, centered on St. Louis, Missouri.

AREAG GOES-IR-4K 11 1 EC 25 75
This entry transfers the most recent data from the data set GOES-IR-4K to area 11 on the client. The image is displayed on frame 1, centered on 25° N, 75° W.

AREAG HUGO 100 POS=4 ASIZE=ALL
This entry transfers the fourth area in the data set HUGO to area 100 on the client.

AREAL

Lists area data directories.

Formats   **AREAL** *barea earea [keywords]*
               AREAL *name bpos epos [keywords]*

Parameters   *barea*   beginning area directory to list

               earea   ending area directory to list

               name   DDE data set name (default=current set by command POINTER)

               bpos   beginning position number of the data on the server

               epos   ending position number of the data on the server

Keywords   **DAY=**   lists the areas for the specified year and day, YYDDD

               FORM=   **ALL**   lists the entire area directory
                          AUDIT lists the entire area directory and its audit trail
                          EXP   lists an expanded area directory, two lines

               GROUP=   group containing the DDE data set (default=current group set by command POINTER)

               SS=   lists the areas for the specified sensor source

               TIME=   lists the areas for the specified time

Remarks   If you use *barea* and *earea*, AREAL lists the areas on the default path set by command LOCATE.

               Parameters *bpos* and *epos* represent the relative position of the named data on the server; if you list 100 or fewer areas, they may be omitted.

Examples

AREAL
This entry lists the directories for the default group and name set by command POINTER.

AREAL 101 105
This entry lists the areas between 101 and 105 on the default path.

AREAL GOES-VIS-1K
This entry lists the areas in the GOES-VIS-1K data set.

AREAL GMS-IR 3
This entry lists the third area in the GMS-IR data set.

AREAL HUGO-RADAR GROUP=RADAR-ARCHIVE
This entry lists the areas in the HUGO-RADAR data set in the RADAR-ARCHIVE group.

AREAV

Displays area data from a server to a local frame.

Formats

AREAV *area frame locate y-coord x-coord mag repeat [keywords]*
AREAV *area frame locate station mag repeat [keywords]*

Parameters

area	DDE data set name or area file number (default=current data set or area file set with command POINTER)	
frame	image frame number to display data	
locate	coordinate type used to load images: EC, IC, AU, etc.	
y-coord	y-coordinate (default=first line)	
x-coord	x-coordinate (default=first element)	
station	station ID, e.g. MSN, EGLL, 2C2; must be preceded by EU or EC	
mag	blowup or blowdown factor of the image (default=1)	
repeat	number of consecutive frames loaded from consecutive areas (default=1)	

Keywords

BAND=		band number to display (default=8 for GOES-IR, 4 for POES)
CYCLE=	*num inc*	displays the selected area in a circular queue of frames beginning with *frame*, consisting of *num* number of frames (default *num*=0, meaning no queue; default *inc* =1:00, meaning a 1-hour increment when *num* is not equal to zero)
EMAG=		element blowup or blowdown (default=1)
EU=		name of the enhancement to apply to the image
GRAY=	YES	displays a gray wedge
	NO	does not display a gray wedge (default)
GROUP=		group containing the DDE data set (default=current group set by command POINTER)
INC=	*ainc finc*	area and frame increments for repeat parameters

LEVELS= *level brange erange*

sets the VGA gray levels for image and graphics enhancements

    level   gray shade levels used for an image; the range is 1 to 255 (default=13, where 13 levels are used for image levels and 3 for graphics; 14 levels for radar images with no stretch table)

    brange   beginning of the gray range to change; the range is 0 to 255 (default=20 for no stretch of a satellite image; 0 for stretch of a satellite image or no stretch of a radar image)

    erange   end of the gray range to change; the range is 0 to 255 (default=250 for no stretch of a satellite image; 255 for stretch of a satellite image or no stretch of a radar image)

LMAG=   line blowup or blowdown (default=1)

POS=   relative position in a data set; a positive number represents the relative numeric position in the loop; zero or a negative number represents the relative position in time, zero being the most recent (default=0)

RTIME= *bmin emin*   overrides keyword TIME with the current hour plus *bmin* minutes through the current hour plus *emin* minutes

SF=   YES   automatically sets the current image frame after load; VGA and X Window System displays only

        NO   does not display the frame (default)

SU=   name of the stretch table to apply to the image; the table must reside on the same server as the *area*

TIME= *btim etim*   limits the area selected for display to the specified time range, HH:MM:SS (default=most recent)

Remarks

If an AREAV entry requests GOES area data from a McIDAS-MVS server while it is being received, the data is relayed to the client as each line is ingested. To view the current status of the image load, refresh the image window on VGA and X Window System displays by raising the window. Other commands requesting area data from remote servers will not run until the AREAV command is finished.

Keyword CYCLE is most useful when used with the scheduler to display the most recent image in a loop of frames. The beginning frame in the loop is specified with the *frame* parameter; the number of frames in the loop is specified with keyword CYCLE.

When using the keyword CYCLE, the following formula determines which frame in the loop is selected to display the image.

$$(modulus\ (time/inc, num)) + frame$$

where *time* is the image time of the selected area, *inc* and *num* are the values specified in keyword CYCLE, and *frame* is the value specified in the *frame* positional parameter.

For example, if the command:

AREAV GOES-IR-4K 1 EC DCA CYCLE=5 1:00

is scheduled to run once an hour, the 13:00 UTC image is displayed on frame 4, since *time* = 13.0, *inc* = 1.0, *num* = 5 and *frame* = 1 (13.0÷1.0 = 13; 13÷5 = 2 with a remainder of 3; 3 + 1 = 4). The 14:00 UTC image is displayed on frame 5; the 15:00 UTC image is displayed on frame 1, etc.

If a similar AREAV command is scheduled to run every half-hour, but **CYCLE=6 00:30** and *frame* is 11, the 20:00 UTC image is displayed on frame 15, since *time* = 20.0, *inc* = 0.5, *num* = 6 and *frame* = 11 (20.0÷0.5 = 40; 40÷6 = 6 with a remainder of 4; 4 + 11 = 15). The 20:30 UTC image is displayed on frame 16; the 21:00 UTC image is displayed on frame 11, etc.

Examples

AREAV 1 1
This entry displays area 1 from the default path on frame 1 of your workstation.

AREAV GOES-VIS-1K 1 EC MSN
This entry displays the most recent area in the data set named GOES-VIS-1K on frame 1. The image is centered on Madison, Wisconsin.

AREAV HUGO 10 POS=4
This entry displays the fourth area in the data set named HUGO on frame 10.

BRITL

Lists the brightness values at the cursor center.

Remarks   The BRITL command lists:

- image coordinates
- raw digital and brightness values
- the image date, time and sensor source
- the group and name from which the data came

FRAMEL

Lists image frame directory information.

Format   **FRAMEL** *bframe eframe*

Parameters   *bframe*   beginning image frame number to list (default=current)

                  eframe   ending image frame number to list (default=*bframe*)

Example   **FRAMEL**
                  This entry lists the frame directory of the current frame.

GRIDC

Draws contours and streamlines from grids.

Format

GRIDC *grid cint map [keywords]* "*text*

Parameters

grid   grid number to contour; ignored if keyword SEARCH is used

cint   contour interval (default=2)

map
DEF	define your own boundaries with the LAT and LON keywords
MID	map of the midwest US
NA	map of North America
SAT	satellite projection (default)
USA	map of the US
WORL	map of the world
	State Post Office abbreviation
	(default=grid extents)

"*text*   title for the contour; overrides the default label; the double quote is mandatory

Keywords

CMAP=   graphics color level for the map (default=1)

COLOR=   graphics color level for the contours; use positive numbers for solid, negative numbers for dashed (default=2)

DASH=
ALL	dash all contours
NEG	dash negative contours only
POS	dash positive contours only

DAY=   year and day, YYDDD

ELE=   *min max*   graphics TV element bounds

GRA=   graphics frame number for display (default=current)

GRIDF=   DDE data set name or grid file number (default=current data set or grid file set by command POINTER)

GROUP=   group containing the DDE data set (default=current group set by command POINTER)

IMA=   image frame number for navigation (default=current)

LAT=   *min max*   latitude bounds for the display; overrides the *map* parameter

LIN=   *min max*   graphics TV line bounds

LINT=   contour label interval (default=1)

LON=   *min max*   longitude bounds for the display; overrides the *map* parameter

LSIZE=   size of the contour labels, in pixels (default=8)

MAG=   power of 10 to multiply grid points by (default=0)

PAN=   graphics frame panel number; the range is 0 to 4 (default=0, full screen)

PRO=
CONF	polar stereographic or Lambert conformal projection
MERC	Mercator projection
	(default=value set in SYSKEY word 899)

SCALE=   map scale for CONF projections (default=no scale)

SEARCH=   *parm lev vt src time*
	search conditions for selecting a grid; see the Remarks
parm	parameter
lev	level
vt	valid time
src	grid source
time	time

SF=
YES	displays the frame after contouring; VGA and X Window System displays only
NO	does not display the frame (default)

SLAT=   *lat1 lat2*   standard latitudes for CONF projections (default=60)

SLON=   standard longitude for CONF projections (default=computed)

TEXT=
YES	plots the grid text label (default)
NO	does not plot

UNIT=   contour units; depends on the contoured parameter

V=   grid number of the v-component; used for drawing streamlines (default=u-grid + 1)

Remarks	If you use the keyword SEARCH, the *grid* parameter is ignored. Contours are drawn for the first grid matching the search conditions. Specify an X for each term in keyword SEARCH that should not be part of the search conditions. All other terms specified must exactly match the value in the grid header. Use command GRIDL to list grid header information.

Examples

GRIDC 100 5

This entry contours grid 100 from the current grid file on the default server. The contour interval is 5.

GRIDC X 4 MID SEARCH=P MSL 0 NGM 12 GRIDF=NMC0

This entry contours the sea level pressure analysis from the 12 UTC NGM run over the Midwest. The grid is in the data set named NMC0.

GRIDC X 60 DEF LAT=-40 -40 LON=-90 90 SLAT=-40
   SEARCH=Z 500 0 MRF 0 GRIDF=NMC0 PRO=CONF

This entry contours 500 mb heights over the South Pole. The data is from the initialization grid of the MRF.

GRIDG

Transfers grids from a server to a client.

Formats	GRIDG *sgridf bgrid maxgrd dgridf dgrid* [keywords]
	GRIDG *sgridf bgrid* **ALL** *dgridf dgrid*

Parameters	*sgridf*	source DDE data set name or grid file number (default=current data set or grid file set by command POINTER)
	bgrid	beginning grid number to transfer; ignored if keyword SEARCH is used
	maxgrd	maximum number of grids to transfer (default=1)
	ALL	transfers all grids after *bgrid* or all of those matching the conditions specified in keyword SEARCH
	dgridf	destination grid file number; always numeric; resides locally (default=current grid file set with the command **IGU SET**)
	dgrid	beginning grid number to place grids in the destination grid file (default=first available)

Keywords	DAY=	year and day, YYDDD
	GROUP=	group containing the DDE data set (default=current group set by command POINTER)
	SEARCH=	*parm lev vt src time* search conditions to select grids to transfer; see the Remarks

		parm	parameter
		lev	level
		vt	valid time
		src	grid source
		time	time

Remarks

If you use the keyword SEARCH, the *bgrid* parameter is ignored and those grids matching the search conditions are transferred. If you specify a value for *maxgrd*, the first *maxgrd* number of grids matching the search conditions is transferred. If you specify ALL, all grids matching the search conditions are transferred. Specify an X for each term in keyword SEARCH that should not be part of the search conditions. All other terms specified must exactly match the values in the grid header. Use command GRIDL to list grid header information.

Examples

GRIDG MDR 5 ALL 999 1
This entry transfers all but grids 1 through 4 from the data set MDR to client grid file 999, beginning with grid number 1.

GRIDG NMC0 X ALL 4 SEARCH=X 500 X MRF 0
This entry transfers all 0 UTC MRF 500 mb grids from the data set NMC0 to client grid file 4, beginning at the first available grid.

GRIDG NMC 56 1 2 10
This entry transfers grid number 56 from the data set NMC to grid 10 of grid file 2 on the client.

GRIDL

Lists grid information.

Format

GRIDL *bgrid egrid [keywords]*

Parameters

bgrid	beginning grid number to list (default=1)
egrid	ending grid number to list (default=last grid in the file)

Keywords

DAY=   year and day, YYDDD

GRIDF=   DDE data set name or grid file number (default=current data set or grid file set by command POINTER)

GROUP=   group containing the DDE data set (default=current group set by command POINTER)

SEARCH= *parm lev vt src time*
    search conditions to list specific grids; see the Remarks

parm	parameter
lev	level
vt	valid time
src	grid source
time	time

Remarks

If you use the keyword SEARCH, the grids between *bgrid* and *egrid* that match the search conditions are listed. Specify an X for each term in keyword SEARCH that should not be part of the search conditions. All other terms specified must exactly match the values in the grid header.

Examples

GRIDL
This entry lists all the grids in the default grid file set by command POINTER.

GRIDL 1 10
This entry lists the first 10 grids for the default grid file set by command POINTER.

GRIDL SEARCH=Z 500 X MRF 0 GRIDF=NMC0
This entry lists all 500 mb height grids from the 0 UTC run of the MRF.

LOCATE

Manages the client routing table.

Formats   LOCATE DELETE *data group name*
                     LOCATE *alias* "*address*
                     LOCATE *alias data group name*

Parameters   DELETE   deletes the specified entry

                     data   data type: AREA, GRID, MD, NAV, TEXT

                     group   name of the group containing the DDE data set

                     name   name of the DDE data set

                     alias   name for referencing the McIDAS-MVS or McIDAS-X
                                     DDE server

                     "*address*   IP address for the alias; the double quote is mandatory

Remarks   LOCATE manages the client routing table created to link DDE data sets
                     to the IP address of a server. Each IP address is assigned an alias name.
                     The alias LOCAL is defined as the IP address of your workstation.

                     Each DDE command specifies one or more name and group pairs, or
                     area, grid or MD file numbers. When a DDE command is entered, the
                     client routing table is scanned from top to bottom to locate the server or
                     servers that will receive the data request. When a server receives the
                     data request, it scans its own mapping table which is generated and
                     maintained by command NAME. If the name and/or group is not found in
                     the server's mapping table, the DDE command fails.

                     To use standard file numbers instead of (or in addition to) groups and
                     names on a server, specify only the *alias* parameter in command
                     LOCATE. The server is known as the default server. If you enter a
                     command that specifies either a file number or a group that is not found
                     in the client routing table, the data request is routed to the default
                     server. There can be only one default server.

                     Use the DELETE parameter to remove an entry. Other forms of
                     DELETE (i.e. DEL, DELE, etc.) are interpreted as alias names.

Route the NAV and TEXT data types to a McIDAS-MVS DDE server
only. Do not give them a name or group assignment. The NAV data type
is used with command ORBIT only; the TEXT data type is used with
command WXTEXT only.

To access all data sets in a group on a server, specify only the *alias*, *data*
and *group* parameters. For example, **LOCATE MYSERVER AREA
MYDATA** allows you to access all data sets of data type AREA in group
MYDATA on server MYSERVER. To find the names, file ranges and
comments of those data sets, use: **NAMEL AREA MYDATA**.

See Also   For more information, see commands NAME, NAMEL and POINTER.

Examples   **LOCATE**
                     This entry lists the routing table for your workstation.

                     LOCATE LOCAL
                     This entry sets up your workstation as the default server. The IP address
                     for the alias LOCAL is automatically set to the IP address of your
                     workstation. If you enter a DDE command that specifies a name and
                     group pair, or area, grid or MD file number that doesn't exist in the client
                     routing table, the data request is routed to the default server.

                     LOCATE SSEC_MVS "123.456.789.012
                     This entry creates the alias name SSEC_MVS for the IP address
                     123.456.789.012.

                     LOCATE SSEC_MVS "MVS.SSEC.MSN.UW
                     This entry also creates the alias name SSEC_MVS but uses another form
                     of the IP address.

                     LOCATE SSEC_MVS GRID RT
                     This entry links the grid files in group RT to the IP address associated
                     with the alias name SSEC_MVS.

                     LOCATE SSEC_MVS AREA HUGO
                     This entry links the areas in group HUGO to the IP address associated
                     with the alias name SSEC_MVS.

                     LOCATE DELETE AREA HUGO
                     This entry deletes the client routing table entry for the areas in group
                     HUGO.

MDG

Transfers one or more rows of MD file data to a client.

Format   MDG *sfile dfile drow [keywords]*

Parameters *sfile*   source DDE data set name or MD file number

                dfile   destination MD file number on the client

                drow   destination row in the client MD file (default=first available)

Keywords   DAY=   year and day, YYDDD

                GROUP=   group containing the DDE data set (default=current group set
                         by command POINTER)

                NEW=   YES   creates a new MD file skeleton; deletes the contents of
                             the existing local MD file
                             (default=append to the existing file)

                SROW=   row in the source file to get data from; all data in this row is
                         transferred; do not use other search conditions

                schema keyword= low high   range of the schema keyword to search;
                                              only use MD file row header keywords

Remarks   The source MD file must reside on a McIDAS-MVS DDE server. You can't
                use command MDG to transfer MD file data from a McIDAS-X DDE
                server.

                MDG always sends the data to the client, even if file numbers are
                mapped to another server.

                The *drow* parameter replaces data in a row which already exists;
                otherwise MDG puts the data in the next available row. Use the search
                conditions to get multiple rows of data. Only use keys from the MD file
                row header as search conditions, e.g. TYPE=0 TIME=12 14.

Examples   **MDG ISFC 4 TIME=0 12**
                This entry transfers surface MD file data from the data set ISFC to client
                MD file 4 beginning at the first available row. Only rows containing data
                from 0 to 12 UTC are transferred.

                MDG ISFC 4 TIME=0 12 TYPE=0
                This entry also transfers surface MD file data from 0 to 12 UTC, but
                excludes special observations.

                MDG IRAB 14 TIME=12
                This entry transfers mandatory level MD file data from the data set
                IRAB into the first available row in client MD file 14. Only rows
                containing data from 12 UTC are transferred.

MDKEYL

Lists MD file data.

Formats
    MDKEYL *file nmatch [keywords]*

    MDKEYL *file* **ALL** *[keywords]*

Parameters

file	DDE data set name or MD file number (default=current data set name or MD file set by command POINTER)
nmatch	number of matches to list (default=1)
ALL	lists all matches of the search conditions

Keywords

FORMAT=	changes the output format for the keys; see the Remarks
GROUP=	group containing the DDE data set (default=current group set by command POINTER)
KEYS=	keys to list from the MD file; only the keys residing in the MD file's schema are valid
UNIT=	units corresponding to each key selected with keyword KEYS (default=units of the keys for the schema)
schema keyword= low high	range of the schema keyword to search

Remarks

Keyword FORMAT creates formatted output based on the FORTRAN designators for data output. To specify a format for MD file keys, use a designator and number, e.g. I4, A3, F10.1. Valid designators are:

- A - character
- I - integer
- F - floating point
- E - exponential

Use a single X to hold the position of a key without changing its format. Use a number preceding an X to specify spaces between key formats.

Examples

    MDKEYL IRAB

This entry lists the first record of the IRAB MD file.

    MDKEYL ISHP ALL LAT=23 32 LON=75 98 TIME=0 KEYS=IDA IDB T STI WXP UNIT=X X F F

This entry lists all records in the ISHP MD file in the region 23° N to 32° N and 75° W to 98° W at 00 UTC. The list includes the station ID, temperature in degrees Fahrenheit, sea surface temperature in degrees Fahrenheit and present weather.

    MDKEYL 4 2 ST=WI TIME=5 KEYS=ID T TD PSL UNIT=X F F FORMAT=A3 2X I3 2X I3 2X F6.1

This entry lists the first 2 records in MD file 4 from 5 UTC in Wisconsin. The list includes the station ID, temperature and dew point temperature in Fahrenheit, and sea level pressure. The list prints three ASCII characters for the station, three integer characters for the temperature and dewpoint temperature, and reserves six spaces for the sea level pressure. Each field is separated by two spaces.

NAME

Manages named data sets on the local server.

Formats

NAME MAKE *data group name bfile efile* "*text*
NAME DEL *data group name*
NAME LIST *data group name*

Parameters

MAKE — creates DDE data sets

DEL — deletes DDE data sets

LIST — lists DDE data sets

data — data type: AREA, GRID, MD

group — name of the group containing the DDE data set; cannot be entirely numeric; up to 8 characters for McIDAS-MVS servers or 12 characters for McIDAS-X servers

name — name of the DDE data set; cannot be entirely numeric; up to 12 characters for both McIDAS-MVS and McIDAS-X servers

bfile — beginning file number assigned to the named data set

efile — ending file number assigned to the named data set (default=*bfile*)

"*text* — identification text for the named data set; 38 characters maximum

Remarks

The NAME command maintains your local server's mapping table, which assigns groups and names to blocks of area, grid or MD files in your local data directory. For a McIDAS-OS2 session, the local data directory is \MCIDAS\DATA; for a McIDAS-X session, it is $HOME/mcidas/data.

You can use the same group and/or name for each data type. For example, the SSEC McIDAS-MVS server uses the group RT for all real-time area, grid and MD files.

You can't use DDE commands to access data in the server mapping table unless the client routing table has an entry that links that data's name and/or group to the server. See the LOCATE command for more information.

DDE commands that access grid or MD files assume that if there is more than one file in the data set, the last digit of the day specified in the command matches the last digit of the grid or MD file number in the data set. For example, if your data set has more than one grid or MD file, the file containing data for day 94008 (or 94018, 94028, etc.) must end with the number 8.

If you prefer to use standard file numbers instead of (or in addition to) groups and names to access local data, use the LOCATE command to assign LOCAL as the default server. Then, when you specify an area, grid or MD file number in a DDE command, your local data directory is searched for the data.

See Also

For more information, see commands LOCATE, NAMEL and POINTER.

Examples

NAME MAKE AREA RT GOES-VIS-1K 101 104
"Real-Time GOES vis (1km)
This entry identifies areas 101 to 104 as the named data set GOES-VIS-1K which is assigned to group RT.

NAME MAKE AREA RT GMS-IR 9280 9311
"GMS IR (from Australia)
This entry identifies areas 9280 to 9311 as the named data set GMS-IR which is assigned to group RT.

NAME MAKE MD RT ISFC 1 10 "Surface data (ISFC schema)
This entry identifies MD files 1 to 10 as the named data set ISFC which is assigned to group RT.

NAME MAKE AREA USER JDOE 11000 11015 "John Doe's Areas
This entry identifies areas 11000 to 11015 as the named data set JDOE which is assigned to group USER.

NAME MAKE MD USER JDOE 11000 11010 "John Doe's MDs
This entry identifies MD files 11000 to 11010 as the named data set JDOE which is assigned to group USER.

NAMEL

Lists the data sets on a server that the client is routed to.

Format   NAMEL *data group*

Parameters   *data*   data type: ALL, AREA, GRID, MD (default=ALL)

                      group   name of the group containing the DDE data set
                                  (default=current group set by command POINTER)

Remarks   NAMEL scans the client routing table, which is managed by command
                      LOCATE, to find the server with the data type and group matching those
                      specified in the command. If no match is found, the default server is
                      selected. It lists the named data sets on the server with that data type
                      and group. The list include the IP address, data set names, file numbers
                      mapped to the data sets, and comments.

                      If the client routing table has an entry with a name and data type and
                      group, NAMEL can't list the data set, as it matches only client routing
                      table entries that have a data type and group without a name. For
                      example, if you run the LOCATE command and it shows a client routing
                      table entry with data type AREA, group MYDATA and name EUROPE,
                      you can't find the data set with the entry: NAMEL AREA MYDATA.

See Also   For more information, see commands LOCATE, NAME and POINTER.

Examples   NAMEL
                      This entry lists all the data sets for the default group set by command
                      POINTER

                      NAMEL AREA RT
                      This entry lists the area data sets in group RT.

                      NAMEL AREA USER
                      This entry lists the area data sets in group USER.

                      NAMEL ALL RT
                      This entry lists all the data sets in group RT.

                      NAMEL GRID
                      This entry lists the grid file data sets in the default group set by
                      command POINTER.

ORBIT

Plots polar orbital tracks on a Mercator map.

Format   ORBIT *ss date ulat ulon llat llon* LALO *laloc [keywords]*

Parameters   *ss*   sensor source number of the POES satellite

                      date   year and day of the orbital tracks, YYDDD (default=current)

                      ulat   upper-left latitude

                      ulon   upper-left longitude

                      llat   lower-right latitude

                      llon   lower-right longitude

                      LALO   draws latitude and longitude lines with the map
                                 (default=does not draw lines)

                      laloc   graphics color level of the latitude/longitude lines (default=3)

Keywords   COLOR=   graphics color level of the map (default=1)

                      GRA=   graphics frame number for display (default=current)

                      INT=   *lat lon* intervals for latitude and longitude lines
                                        (default=computed)

                      LINEC=   graphics color level of the orbit tracks (default=2)

Remarks   Command ORBIT only works when NAV data is routed to a McIDAS-
                      MVS DDE server with command LOCATE.

                      When specifying latitude and longitude, positive numbers are degrees
                      North and West, respectively; negative numbers are degrees South and
                      East, respectively.

Example   ORBIT 61 93232 50 130 20 60 LALO
                      This entry plots the orbit paths of NOAA-11 for day 93232. The upper-left
                      corner of the plot is located at 50° N, 130° W; the lower-right corner is
                      located at 20° N, 60° W.

POINTER

Lists or sets the defaults for DDE data sets.

Formats	**POINTER CLEAR** *data*
	POINTER LIST
	POINTER SET *data name [keyword]*

Parameters

CLEAR	removes the default settings for names and groups
LIST	lists the default names and groups for DDE data sets (default)
SET	sets the default names and groups for DDE data sets
data	data type: ALL, AREA, GRID, MD (default=ALL)
name	DDE data set name or file number (default=no change)

Keyword

GROUP=	sets the default group containing the DDE data set (default=no change)

Remarks

POINTER sets the default names and groups used by all DDE programs. For example, the entry **POINTER SET AREA GMS-VIS GROUP=RT** sets the default group to RT and default name to GMS-VIS for data type AREA. To list that data set, simply type **AREAL** without any parameters or keywords.

If *name* is a number, POINTER's default group setting is ignored by other applications since only named data sets use groups.

See Also

Use command NAMEL to list the current groups and names the client is routed to. Also see commands LOCATE and NAME.

Examples

POINTER
This entry lists the current defaults for names and groups.

POINTER SET ALL GROUP=RT
This entry sets RT as the default group name for all data types.

POINTER SET MD 4
This entry sets MD file 4 as the default MD file.

SFCC

Contours data from surface MD files.

Formats	**SFCC** *parm map time [keywords]* "*text*
	SFCC *p1-p2 map t1-t2 [keywords]* "*text*

Parameters

parm		all valid MD file keys and THA, THAE, MIX, STR, VOR, ADV and DVG
map	**DEF**	define your own boundaries with the LAT and LON keywords
	MID	map of the midwest US
	NA	map of North America
	SAT	satellite projection (default)
	USA	map of the US
	WORL	map of the world
	State Post Office abbreviation	
time		observation time, HH (default=current)
p1-p2		parameter differences to contour
t1-t2		time differences to contour
"*text*		title of the contour; overrides the default label

Keywords

CINT=	contour interval (default=*parm* dependent)
COLOR=	graphics color level (default=2)
DAY=	year and day, YYDDD; use YYDDD-YYDDD for day differences (default=current)
GRA=	graphics frame number for display (default=current)
GRIDF=	local grid file number to use (default=grid file set by command IGU SET)
GROUP=	one or more groups containing the DDE data set (default=current group set by command POINTER)
IMA=	image frame number for navigation (default=current)

LAT=   *min max*   latitude bounds for display; overrides the *map* parameter

LON=   *min max*   longitude bounds for display; overrides the *map* parameter

LSIZE=   size of the contour labels, in pixels (default=depends on frame size)

MDF=   one or more DDE data set names or MD file numbers (default=current data set or MD file set with command POINTER)

PAN=   graphics frame panel number; the range is 0 to 4 (default=0, full screen)

PRO=   CONF   polar stereographic or Lambert conformal projection
        MERC   Mercator projection
        (default=value set in SYSKEY word 899)

SCALE=   map scale for CONF projections (default=no scale)

SLAT=   *lat1 lat2*   standard latitudes for CONF projections (default=60 60)

SLON=   standard longitude for CONF projections (default=computed)

UNIT=   A   plots data in American units
         M   plots data in metric units
         (default=value set in SYSKEY word 900)

Remarks

If the data set chosen for keyword MDF contains more than one MD file, the MD file is selected based on the last digit of the Julian day.

To use multiple surface MD files of different schemas for contouring, specify more than one data set name or MD file number in keyword MDF. When using multiple MD files, you must have a corresponding number of GROUP identifiers unless all the MD files are in the same group. See the examples.

Parameter advection or divergence is done by appending ADV or DVG respectively, e.g. TADV or SPDDVG.

Examples

SFCC T USA 12 MDF=ISFC GROUP=RT PRO=CONF UNIT=A
This entry contours 12 UTC temperatures in Fahrenheit for the current day. The data is found in data set ISFC from group RT. The analysis covers the Unites States in a conformal projection.

SFCC TD MID 15 MDF=104 DAY=93242 UNIT=A
This entry contours 15 UTC dew point temperatures in Fahrenheit over the Midwest.

SFCC T DEF 12 LAT=-55 0 LON=-165 -105 MDF=ISFC SYN ISHP GROUP=RT WXDATA WXDATA
This entry contours 12 UTC temperatures for the current day using surface hourly, synoptic and ship MD file data from groups RT and WXDATA.

SFCL

Lists data from a surface MD file.

Format	**SFCL** *station btime etime [keywords]*	
Parameters	*station*	one or more 3- or 4-character station IDs or one state Post Office abbreviation
	btime	beginning observation time, HH (default=current)
	etime	ending observation time, HH (default=*btime*)
Keywords	**CO=**	2-letter country code; overrides the *station* parameter
	DAY=	year and day, YYDDD (default=current)
	GROUP=	group containing the DDE data set (default=current group set with command POINTER)
	MDF=	DDE data set name or MD file number (default=ISFC)
	UNIT=	A plots data in American units M plots data in metric units (default=value set in SYSKEY word 900)
	schema keyword= low high	range of the schema keyword to search
Remarks	SFCL works only with ISFC schema MD files.	
Example	**SFCL MIA 0 23 MDF=ISFC GROUP=RT** This entry lists all MIA surface observations for the current day. The data is retrieved from data set ISFC contained in group RT.	

SFCP

Plots data from surface MD files.

Formats	**SFCP** *parm map time [keywords]* "*text*"		
	SFCP *p1-p2 map t1-t2 [keywords]* "*text*"		
Parameters	*parm*	all valid MD file keys, and PLOT, WX, WXS, WNF, WIN, THA, THAE and MIX	
	map	**DEF**	define your own boundaries with the LAT and LON keywords
		MID	map of the midwest US
		NA	map of North America
		SAT	satellite projection (default)
		USA	map of the US
		WORL	map of the world
		State Post Office abbreviation	
	time	observation time, HH (default=current)	
	p1-p2	parameter differences to plot	
	t1-t2	time differences to plot	
	"*text*"	title for the plot; overrides the default label	
Keywords	**COLOR=**	graphics color level (default=3)	
	DAY=	year and day, YYDDD; use YYDDD-YYDDD for day differences (default=current)	
	DECLUT=YES	declutters the plot (default)	
	NO	does not declutter the plot	
	GRA=	graphics frame number for display (default=current)	
	GROUP=	one or more groups containing the DDE data set (default=current group set by command POINTER)	
	IMA=	image frame number for navigation (default=current)	
	LAT=	*min max*	latitude bounds for display; overrides the *map* parameter

LON=   *min max*   longitude bounds for display; overrides the *map*
                          parameter

MDF=   one or more DDE data set names or MD file numbers
                          (default=current data set name or MD file set by command
                          POINTER)

OFFSET=   *lin ele*   TV line and element offset from the center plot
                          position; minus (-) for up and left, plus (+) for
                          down and right (default=0 0)

PAN=   graphics frame panel number; the range is 0 to 4
                          (default=0, full screen)

PRO=   CONF   polar stereographic or Lambert conformal
                          projection
            MERC   Mercator projection
                          (default=value set in SYSKEY word 899)

SCALE=   map scale for CONF projections (default=no scale)

SIZE=   size of the plotted characters, in pixels (default=8)

SLAT=   *lat1 lat2*   standard latitudes for CONF projections
                          (default=60 60)

SLON=   standard longitude for CONF projections (default=computed)

UNIT=   A   plots data in American units
            M   plots data in metric units
                (default=value set in SYSKEY word 900)

Remarks   The PLOT parameter overrides the SIZE, COLOR and OFFSET
                keywords.

                If the data set chosen for keyword MDF contains more than one MD file,
                the MD file is selected based on the last digit of the Julian day.

                To use multiple surface MD files of different schemas for plotting, specify
                more than one data set name or MD file number in keyword MDF. When
                using multiple MD files, you must have a corresponding number of
                GROUP identifiers unless all the MD files are in the same group.

Examples   **SFCP T USA 12 MDF=ISFC GROUP=RT PRO=CONF UNIT=A**
                This entry plots 12 UTC temperatures in Fahrenheit for the current day.
                The data is found in data set ISFC in group RT. The analysis covers the
                Unites States in a conformal projection.

                SFCP T DEF 18 MDF=ISFC ISHP SYN LAT=-40 -40
                LON=-90 90 PRO=CONF SLAT=-40 UNIT=A GROUP=RT
                This entry plots 18 UTC temperatures for the current day. The data is
                from three MD files in the named data sets, ISFC, ISHP and SYN. The
                analysis covers from the South Pole to a latitude of 40° South.

                SFCP T MID UNIT=A COLOR=5; SFCP TD MID UNIT=A
                COLOR=4 OFFSET=9 1
                This entry plots current temperatures and dew point temperatures in
                Fahrenheit over the Midwest. Temperatures are plotted in graphics color
                level 5; dew point temperatures are plotted 9 lines down and 1 element to
                the right of the temperatures, in graphics color level 4.

THERMD

Plots upper air data on a skew T thermodynamic diagram.

Formats **THERMD** *station time [keywords]*
             THERMD OUTL *[keywords]*

Parameters *station* 5-digit station identification number, or a sequence number in a satellite retrieval file

             time observation time, HH (default=closest RAOB time; 0 or 12)

             OUTL displays a skew T diagram without sounding

Keywords **COLOR=** graphics color level (default=3)

             DAY= year and day, YYDDD (default=current)

             GRA= graphics frame number (default=current)

             GROUP= group containing the DDE data set (default=current group set by command POINTER)

             INIT= YES initializes graphics colors (default)
                        NO does not initialize graphics colors

             MDF= DDE data set name or MD file number of the mandatory level data (default=IRAB)

             MIX= YES provides mixing ratio lines (default)
                       NO omits mixing ratio lines

             OLAY= YES 1 overlays the existing plot; draws a new sounding in graphics color level 3
                        YES 2 overlays the existing plot; draws a new sounding in graphics color level 2
                        NO does not overlay the existing plot; erases the graphics first (default)

             PTOP= top pressure on the diagram; rounds to the nearest 50 mb (default=100)

             RANGE= *min max* Celsius temperature range on the diagram (default=-90 40)

             SIG= DDE data set name or MD file number of the significant level data (default=IRSG)

             TYPE= VAS uses a VAS-created MD file

             UNIT= FT plots the height, in feet, on the left axis
                        M plots the height, in meters, on the left axis
                        MB plots the pressure, in millibars, on the left axis (default)

             VDEV= YES displays an error message if the sounding is unavailable
                        NO does not display an error message (default)

Examples **THERMD 72645 12**
This entry plots upper air data from Green Bay, Wisconsin, for 12 UTC of the current day, using the data set IRAB in the group set by command POINTER.

             THERMD 72747 0 MDF=9014 SIG=9024 DAY=92024
This entry plots upper air data from International Falls, Minnesota, for 00 UTC of day 92024. The data is located on the default server in MD files 9014 and 9024, which contain mandatory level and significant level data, respectively.

             THERMD 47778 12 MDF=MDMAN SIG=MDSIG GROUP=ASIA
This entry plots upper air data from Shionomiski, Japan, for 12 UTC of the current day. The data is located in the group ASIA in MD files MDMAN and MDSIG, which contain mandatory level and significant level data, respectively.

UPPERC

Contours data from an upper air MD file.

Formats

UPPERC *parm level map time [keywords]* "*text*
UPPERC *p1-p2 l1-l2 map t1-t2 [keywords]* "*text*

Parameters

parm	all valid MD file keys, and THA, THAE and MIX
level	SFC, 1000, 925, 850, 700, 500, 400, 300, 250, 200, 150, 100, TRO1, TRO2 or MAXW

map		
	DEF	define your own boundaries with the LAT and LON keywords
	MID	map of the midwest US
	NA	map of North America
	SAT	satellite projection (default)
	USA	map of the US
	WORL	map of the world
	State Post Office abbreviation	

time	observation time, HH (default=closest RAOB time; 0 or 12)
p1-p2	parameter differences to contour
l1-l2	level differences to contour
t1-t2	time differences to contour
"text	title for the contour; overrides the default label

Keywords

CINT=	contour interval (default=parameter dependent)
COLOR=	graphics color level (default=2)
DAY=	year and day, YYDDD; use YYDDD-YYDDD for day differences (default=current)
GRA=	graphics frame number for display (default=current)
GROUP=	group containing the DDE data set (default=current group set by command POINTER)
IMA=	image frame number for navigation (default=current)

LAT=	*min max*	latitude bounds for display; overrides the *map* parameter
LON=	*min max*	longitude bounds for display; overrides the *map* parameter
LSIZE=		size of the contour labels, in pixels (default=7)
MDF=		DDE data set name or MD file number (default=IRAB)
PAN=		graphics frame panel number; the range is 0 to 4 (default=0, full screen)
PRO=	**CONF**	polar stereographic or Lambert conformal projection
	MERC	Mercator projection (default=value set in SYSKEY word 899)
UNIT=	**A**	plots data in American units
	M	plots data in metric units (default)

Remarks

If the data set chosen for keyword MDF contains more than one MD file, the MD file is selected based on the last digit of the Julian day.

Parameter advection or divergence is done by appending ADV or DVG, respectively, e.g. TADV or SPDDVG.

Examples

UPPERC Z 500 USA 12

This entry contours 12 UTC 500 mb heights over the United States, using the default name and group set by command POINTER.

UPPERC Z-Z 500-500 DEF 0-12 LAT=20 20 LON=-90 90 PRO=CONF

This entry contours 500 mb height differences between 0 and 12 UTC. The analysis covers from the North Pole to a latitude of 20° North.

UPPERL

Lists data from upper air MD files.

Formats

UPPERL ANL *station time [keywords]*
UPPERL LIST *station time [keywords]*
UPPERL MAND *station time [keywords]*

Parameters

ANL	lists the station's stability indices
LIST	lists mandatory and significant level data
MAND	lists mandatory level data only
station	5-digit station ID number
time	observation time, HH (default=closest RAOB time; 0 or 12)

Keywords

DAY= year and day, YYDDD (default=current)

GROUP= group containing the DDE data set (default=current group set by command POINTER)

MDF= DDE data set name or MD file number of the mandatory level data (default=IRAB)

OPT=
0   mandatory levels with parcel analysis; no interpolation
1   significant temperature and mandatory levels; no parcel analysis
3   mandatory, significant temperature and significant wind levels; recomputes heights; computes wind pressure; no parcel analysis
5   significant temperature and mandatory levels; interpolates wind at significant temperature levels; no parcel analysis
7   mandatory, significant temperature and significant wind levels; recomputes heights; fully interpolates for missing data; computes parcel analysis (default)

PTEMP=
YES   computes potential temperature and mixing ratio at each level
NO   does not compute (default)

SIG= DDE data set name or MD file number of the significant level data (default=IRSG)

ZMAX= lists only the data levels less than or equal to ZMAX; height is in meters (default=all levels)

Remarks

Precipitable water is listed in millimeters.

Examples

UPPERL LIST 72645 12

This entry lists the mandatory and significant level data from Green Bay, Wisconsin, for 12 UTC of the current day, using the data set IRAB in the group set by command POINTER.

UPPERL LIST 85469 0 MDF=MDMAN SIG=MDSIG GROUP=WXDATA OPT=3

This entry lists the mandatory and significant level data from Easter Island for 00 UTC of the current day. The data is located in the group WXDATA in MD files MDMAN and MDSIG, which contain the mandatory level and significant level data respectively.

UPPERP

Plots data from upper air MD files.

Formats	**UPPERP** *parm level map time [keywords]* "*text*
	UPPERP *p1-p2 l1-l2 map t1-t2 [keywords]* "*text*

Parameters

parm   all valid MD file keys, and PLOT, WNF, WIN, THA, THAE and MIX

level   SFC, 1000, 925, 850, 700, 500, 400, 300, 250, 200, 150, 100, TRO1, TRO2 or MAXW

map

DEF	define your own boundaries with the LAT and LON keywords
MID	map of the midwest US
NA	map of North America
SAT	satellite projection (default)
USA	map of the US
WORL	map of the world
	State Post Office abbreviation

time   observation time, HH (default=closest RAOB time; 0 or 12)

p1-p2   parameter differences to plot

l1-l2   level differences to plot

t1-t2   time differences to plot

"*text*   title for the plot; overrides the default label

Keywords

COLOR=	graphics color level (default=3)
DAY=	year and Julian day, YYDDD; use YYDDD-YYDDD for day differences (default=current)
GRA=	graphics frame number for display (default=current)
GROUP=	group containing the DDE data set (default=current group name set by command POINTER)
IMA=	image frame number for navigation (default=current)
LAT=	*min max* latitude bounds for display; overrides the *map* parameter

LON=	*min max* longitude bounds for display; overrides the *map* parameter
MDF=	DDE data set name or MD file number (default=IRAB)
PAN=	graphics frame panel number; the range is 0 to 4 (default=0, full screen)
PRO=	**CONF** polar stereographic or Lambert conformal projection
	MERC Mercator projection (default=value set in SYSKEY word 899)
SIZE=	size of the plotted characters, in pixels (default=8)
UNIT=	**A** plots data in American units
	M plots data in metric units (default)

Remarks   The PLOT option makes repeated calls which may require more time to complete.

Examples

UPPERP Z 500 USA 12

This entry plots 12 UTC 500 mb heights over the United States using the default name and group set by command POINTER.

**UPPERP Z-Z 500-500 DEF 12 LAT=20 20 LON=-90 90
PRO=CONF DAY=94045-94044**

This entry plots the 24-hour 500 mb height change from 12 UTC on day 94044 to 12 UTC on day 94045. The analysis covers from the North Pole to a latitude of 20° North.

WXTEXT

Displays the text of conventional data products.

Formats

WXTEXT LIST
WXTEXT *natprod [keyword]*
WXTEXT *locprod id [keyword]*
WXTEXT *timprod id dtime [keyword]*

Parameters

LIST   lists the available products, AFOS headers and alias names

natprod   3-character AFOS header or alias name for any of these national products: EON, EPD, ERD, HMD, HSD, NWX, PMD, PWO, SWO

locprod   3-character AFOS header or alias name for any of these local, state or regional products: CLI, TWO, LFP, RER, RNS, RWS, SFD, SFP, SPS, STO, SVS, SWR, SWS, ZFP

timprod   3-character AFOS header or alias name for any of these time-dependent products: ADM, FFW, FLW, LSR, SCC, SVR, TOR

id   station ID or 2-letter state Post Office abbreviation (default=differs between *locprod* and *timprod*; see the Remarks)

dtime   number of hours back from the current time to search (default=1)

Keyword

NUM=   number of matches to find; not valid with *timprod*

Remarks

Command WXTEXT only works when TEXT data is routed to a McIDAS-MVS DDE server with command LOCATE.

If no ID is specified with *locprod*, WXTEXT matches on the most recent report. If no ID is specified with *timprod*, WXTEXT lists all reports in *dtime*.

Examples

WXTEXT LFP MKE
This entry lists the local forecast product for Milwaukee, Wisconsin.

WXTEXT LOCAL MKE
This entry also lists the local forecast product for Milwaukee.

WXTEXT CLI MIA
This entry lists the climatological summary for Miami, Florida.

WXTEXT CLIMATE MIA
This entry also lists the climatological summary for Miami.

Appendix A
Managing a Remote Server

This appendix defines the term *remote server* and describes how to configure the workstation's remote server account so McIDAS-OS2 and McIDAS-X DDE clients can access data from it. It also provides instructions for acquiring data for the remote server account, using the NAME command to set up the remote server account's mapping table, updating client routing tables to access the server data and removing the remote server account configuration changes.

Defining a Remote Server

Each McIDAS-OS2 workstation and each account running McIDAS-X act as both a client and a local server. When a DDE command is routed to a local server, it searches for data in the local data directory or another directory specified with the REDIRECT command. The local data directory for McIDAS-OS2 is \MCIDAS\DATA; for McIDAS-X, it is $HOME/mcidas/data.

McIDAS-OS2 and McIDAS-X clients can also access data from *remote servers* which can be any of the following:

- a different account on the same McIDAS-X workstation configured as a remote server
- an account on another McIDAS-X workstation configured as a remote server
- a McIDAS-MVS mainframe configured as a server

McIDAS-OS2 workstations can't be used as remote servers.

The difference between a local server and a remote server on a McIDAS-X workstation is that the data for a local server is available only to the McIDAS-X sessions started under that account name. Data in a remote server account is accessible to all other McIDAS-OS2 and -X DDE clients.

Each McIDAS-X workstation can have only _one_ remote server account.

Configuring a Remote Server Account

Before you can configure a remote server account on your Unix workstation, you must select a name for the account. Consider the following guidelines.

- Don't use the *mcidas* account as the remote server account, as it should be used only to install McIDAS-X and other SSEC-supplied software packages that run under it.

- Although you can test DDE client commands from the remote server account, SSEC recommends you use other accounts for this purpose and dedicate the remote server account to acquiring data for DDE clients and other McIDAS administrative purposes.

- The McIDAS-XCD server package, which ingests and decodes conventional data, provides excellent data for testing the DDE package. The -XCD server package also requires an account, usually named *oper*, for administrative purposes. If you plan to install the -XCD server package, SSEC recommends you use the name *oper* for the DDE remote server account so that administrative functions for both packages can be maintained in one account.

Whether you use an already existing account or have your Unix system administrator create a new one, it must be configured with the appropriate directories, links and PATH to run McIDAS-X. This information is discussed in the *Suggested Configuration for Multi-User Systems* section of the McIDAS-X Users Guide.

Once the remote server account is configured to run McIDAS-X, use the steps below to run the shell script *ddeinet.sh* provided in the DDE package. This script makes the configuration changes that allow the account to act as a remote server. Since the script can be run only by user *root*, your Unix system administrator should perform these steps. Enter the commands exactly as shown and press **Enter** to run them.

1. Verify that the McIDAS-X DDE software is installed on the workstation.

2. Open a Unix window and log on to the workstation as user *root*.

3. Change to the home directory for user *mcidas*.

   Type: **cd ~mcidas**

4. Verify that the DDE remote server shell script is present in the current directory.

   Type: **ls -l ddeinet.sh**

5. Run the shell script to configure the remote server account. If you use an account other than *oper*, insert that name in place of *oper* in the command below.

   Type: **sh ./ddeinet.sh install oper**

   This script modifies the configuration files for the Internet services daemon (inetd) to make it aware of the DDE service, forces inetd to reread its configuration files, and attempts to verify that inetd is listening for DDE requests from McIDAS-OS2 and McIDAS-X DDE clients.

Acquiring Data for the Remote Server Account

When the remote server account is configured, McIDAS-OS2 and McIDAS-X DDE clients can request data from the remote server. When a client requests data from any McIDAS-X local or remote server, the default is to search the server account's mcidas/data directory. However, you can use one of these techniques to make data in other directories accessible to clients:

- create symbolic or hard links to the data from the server account's mcidas/data directory

- use the McIDAS command REDIRECT to add a path redirection to the data's directory

- NFS mount a remote directory and create links or use the REDIRECT command to add a path redirection to the remote directory

If you use REDIRECT, it must be run on a McIDAS-X session started from the remote server account. The examples below make areas 50 to 59, MD files 1 to 99 and grid files 400 to 499 in the directory /home/alldata accessible to DDE clients.

REDIRECT ADD AREA005* "/home/alldata
REDIRECT ADD MDXX00* "/home/alldata
REDIRECT ADD GRID04* "/home/alldata

You can start a McIDAS-X session, run your REDIRECT commands and then exit the session. The client requests will recognize the REDIRECT entries even if the remote server's McIDAS-X session is not running.

Creating the Server Mapping Table

The server mapping table maps groups and names to area, grid and MD file data sets so clients can access them. When the server receives a data request from a client, the mapping table is read to locate the correct data set.

Use the NAME command to create and manage the server mapping table. NAME assigns the group and name to a data set consisting of one or more area, grid or MD files. You can also add a text description of up to 38 characters. For example, this NAME command assigns the name SAOMET and group WEATHER to MD files 1 to 10:

NAME MAKE MD WEATHER SAOMET 1 10 "SAO/METAR Data

You can use the same group and/or name with each data type. Data sets of related area, grid and MD files are usually assigned to the same group. For example, SSEC Operations selected the group RT for all real-time area, grid and MD files on their McIDAS-MVS server. SSEC's McIDAS-X remote server named *wxdata* also stores real-time MD files. SSEC Operations uses the same names for those data sets, but selected the group RTBAK so clients can access the data on the McIDAS-MVS server by specifying group RT and the data on the server *wxdata* by specifying group RTBAK. The server *wxdata* also contains the group BLIZZARD which has history area and grid file data sets from the 13 March 1993 East Coast winter storm.

The NAME commands that set up the mapping table for the server *wxdata* are in the file NAME.BAT which is placed in the directory ~mcidas/data during installation. The file is for reference only; you don't need to run those commands.

Although the number of files in a data set is not restricted, you should limit grid and MD file data sets to ten or less files. If more than one file is assigned to a grid or MD file data set, the last digit of each file in the data set must match the last digit of the day of its data. For example, if your data set has more than one grid or MD file, the file containing data for day 94008 (or 94018, 94028, etc.) must end with the number 8. This convention does not apply to data sets of areas or a single grid or MD file as the files in these types of data sets may contain data for any day.

You can start a McIDAS-X session, run your NAME commands and then exit the session. The client requests will recognize the NAME entries even if the remote server's McIDAS-X session is not running.

Updating Client Routing Tables

Each DDE command entered on a client checks the client routing table to determine which server its data request will go to. Thus, if you add a new remote server, you must use the LOCATE command to update the routing table on each client that will use that server's data. Use one of these methods to update the routing tables.

- Start a McIDAS session on each McIDAS-X client account and McIDAS-OS2 workstation, and run the LOCATE commands.

- Place the LOCATE commands in a text file that each client can access, then start a McIDAS session on each client and use the text file with the BATCH command to run the LOCATE commands.

SSEC recommends that your LOCATE command entries contain only the remote server's alias name, data type and group as it makes all names in the group accessible to the client. Also, you won't need to change the client routing table each time a name is added, deleted or changed within the group. To see some sample LOCATE commands for setting up a client routing table, see the file LOCATE.BAT in the directory ~mcidas/data.

SSEC has made simplifying the central administration of large numbers of client routing tables a high priority for future implementations.

Removing Remote Server Account Configuration Changes

Before you can take the remote server off your workstation, make a different account the remote server, or remove the entire DDE package, you must remove the remote server account configuration changes using the same shell script, *ddeinet.sh*, that you used to configure the account as a remote server. Since the script can be run only by user *root*, your Unix system administrator must perform the steps below. Enter the commands exactly as shown and press **Enter** to run them.

1. Open a Unix window and log on to the workstation as user *root*.

2. Change to the home directory for user *mcidas*.

    Type: **cd ~mcidas**

3. Verify that the DDE remote server shell script is present in the current directory.

    Type: **ls -l ddeinet.sh**

4. Run the shell script to remove the configuration changes made to the remote server account. If you use an account other than *oper*, insert that name in the command below.

    Type: **sh ./ddeinet.sh uninstall oper**

    The script removes the modifications to the configuration files for inetd that the install option previously made, forces inetd to reread its configuration files, and attempts to verify that inetd is no longer listening for DDE requests from McIDAS-OS2 and McIDAS-X DDE clients.

To make another account the remote server account, see the
<u>*Configuring a Remote Server Account*</u> *procedure on page A-2.*

To remove the entire DDE package from the workstation, see Appendix B.

Appendix B
Removing the DDE Package

This appendix provides instructions for removing the DDE software package from McIDAS-X and McIDAS-OS2 workstations.

Removing the McIDAS-X DDE Software

Use the steps below to remove the McIDAS-X DDE software package from your workstation. Enter the commands exactly as shown. When you type a command, press **Enter** to run it.

> *If one of the workstation's accounts is configured as a remote server, you must remove that account's configuration changes before proceeding with the steps below. See the Removing Remote Server Account Configuration Changes procedure in Appendix A.*

1. Open a Unix window and log on to the workstation as user *mcidas*.

2. Change to the directory ~mcidas.

   Type: **cd ~mcidas**

3. Run the shell script *dde.sh* to remove the DDE package.

   Type: **sh ./dde.sh uninstall**

   This command removes the DDE files from the ~mcidas/src, ~mcidas/data, ~mcidas/bin and ~mcidas/dde directories. Then it removes the directory ~mcidas/dde. The only remaining DDE files are dde.tar.Z, dde.sh and ddeinet.sh in the ~mcidas directory. To completely remove the DDE package, delete these three files. However, if you leave the files, you can reinstall the DDE package later by running step 11 in the *McIDAS-X DDE Installation Procedure* section.

Removing the McIDAS-OS2 DDE Software

Use the steps below to remove the McIDAS-OS2 DDE software package from your workstation. Enter the commands exactly as shown. When you type a command, press **Enter** to run it.

1. Open an OS/2 Full Screen session.

2. Change to the directory \MCIDAS\TOOLS.

   Type: **CD \MCIDAS\TOOLS**

3. Run the command file REMOVDDE.CMD to remove the DDE package. Insert the drive letter for the \MCIDAS\DATA directory (C, D or E) in place of the *drive* parameter; do not include a colon (:).

   Type: **REMOVDDE** *drive*

   This command deletes the DDE files from the \MCIDAS\CODE, \MCIDAS\HELP and MCIDAS\DATA directories.

4. Delete the command file REMOVDDE.CMD.

   Type: **DEL REMOVDDE.CMD**