

VI.5.4-XDAT INFORMIX SHEF DATA UTILITY PROGRAM (XDAT)

Purpose

XDAT is a graphical program used to display, insert, edit, save and print Standard Hydrologic Exchange Format (SHEF) data from the Informix hydro database.

Main Features

XDAT allows users to:

- o query the Informix database
 - enter the location identifier (ID) as a text string, get a list of IDs by state or enter a substring to match the ID's name
 - select from a list of SHEF Physical Element (PE) types or enter another
 - choose the dates to search for the selected ID and PE
- o edit data
 - edit displayed data to missing, zero or a new value
- o insert data
 - insert data into the Informix database by choosing an ID, PE type, SHEF type-source and duration codes and observation time
- o use utilities
 - search for locations above flood stage (FS)
 - view 24 hour 12Z PP data
 - view 24 hour PC precipitation accumulations
 - view user-defined durations for PC accumulations
 - set up groups of IDs
 - view the contents of:
 - o unknown station IDs
 - o rejected data
 - o sites turned off
 - save data to a file
 - print data

Program Description

Figure 1 shows the main window with PP data displayed. The window label has the version of XDAT the user is running (e.g. xdat 1.2) and the Informix database being used (e.g. hd2_0ofstest@ONLINE).

XDAT retrieves and writes data using an ID, PE, starting and ending date for the data.

ID

There are two options for entering the location ID:

- To display a list of IDs, select the **List IDs** button. This

brings up a second window (Figure 2a) where either a state is selected from the scroll-down list which will display all the location IDs for that state (Figure 2b) or a string is entered to be matched in the location ID's name. For example, in Figure 2c, 4 IDs that contained the string 'PEC' were found.

- Enter the ID as a text string into the box under 'Enter ID'. The data are returned using the **Search** button and displayed in the display area.

PE

The PE type is selected from those listed in the box 'Select PE' or entered as a text string in the box under 'Enter PE'.

Date

The starting date is set by selecting a date in box under 'Starting Date' and ending date is set by selecting a date in box under 'Ending Date'.

Display/Editing Options

After selecting an appropriate ID, PE and Date, the user can choose from a variety of options contained in the buttons at the top of the main window.

Data in the display window can be edited using the **Edit Data** button. The steps for editing data are:

- highlight the entire row or rows of the data in the display area
- select the **Edit Data** button in the main window that displays the Edit Data window
- enter the new value in the Edit Data window; the Edit Data window displays the current value (if more than one row is selected only the current value for the first row is displayed) and allows the user to set the new value to zero, missing or a different value and post the new values to the database using the **Post Data** button

A history of edited data are displayed in the display area using the **Rejected Data** button (Figure 3).

Program outputbadobs (see Section VI.5.4-XDAT-UTIL) can be used to access the Informix database and creates an ASCII SHEF encoded file of all of the data in the rejected data table.

New data is added to the Informix database using the **Insert Data** button in the main window. Selecting this button displays a window labeled Insert Data where the ID and PE are automatically inserted if they have already been specified. The additional information needed is the SHEF parameter code, the new data value and the observation time for the new data. A list of possible SHEF parameter codes based on the given ID and PE of the data. The parameter code is selected by clicking on it's value. The new data value is then typed into the box marked Enter Value and the time of day associated with the data is

selected using the slider bars. After providing all the input, the data is inserted to the Informix database using the **Post to DB** button.

Other Options

The **Sites Above Flood Stage** button displays all the locations where the discharge height is above flood stage. How far back to searches the Informix database is determined by the `xdat_flood_hours` `apps_defaults` token (maximum is 99). This option compares the observed discharge data in the Informix database against the flood stage in the `riverstat` table. If the `riverstat` table has no data, the program `ofstofs` (see Section VI.5.4-XDAT-UTIL) can be used to get the flood stage, flow for flood stage and warning stage from the OFS Forecast Component Data Base and write them to the Informix `riverstat` table.

The **Group Data** button uses the start and end date to retrieve the data for a group of IDs. Selecting this button displays a window that shows the group names found in the file 'groups' that is located in the directory specified by the `xdat_groups_dir` `apps_defaults` token. After selecting a group name from the scroll-down list (e.g. `towns_nc`), the group directory is searched for a file of the same name (e.g. 'towns_nc'). Data is displayed for the specified IDs and PE types in the display area.

The **Unknown Sites** button lists all the station IDs or IDs and values the Informix database received data from but did not recognize. The results from selecting this button are displayed in the display area, using the `xdat_post_unk` `apps_defaults` token that determines the format of the displayed information (ID or ID and value).

The **Sites Turned Off** button displays all stations with a zero in it's location field.

The **Precipitation Data** button displays PC and PP physical element type data. Selecting this button displays the Precipitation Data window. The 24 Hour (12Z) PP and PC data are displayed in the display area using the **24 Hour COOP Precipitation** and the **24 Hour (12Z) PC Precipitation** buttons respectively. Any other accumulation data is retrieved after selecting a duration and end time with the slider bars and selecting the **Display Precipitation Accumulation** button.

Output Options

The **Print Data** button executes the UNIX `lp` command and prints the displayed data to the network printer.

The **Save Data** button displays a dialog box for choosing where to save a copy of any displayed data.

Apps_defaults Tokens

XDAT uses `apps_defaults` tokens to set execution options and path

names. A description of the tokens is in I.2-UNIX-XDAT.

Figure 1. Main Window With PP Data Displayed

Program xdat (Version: 5.1.1R18) (db_name=hd5_11ofstest@ONLINE)

List IDs Search Sites Above Flood Stage Unknown Sites Print Data

Enter ID Insert Data Precipitation Data Rejected Data Save Data

Edit Data Group Data Sites Turned Off Quit

Select PE

- ◆ HG
- ◆ HP
- ◆ HT
- ◆ QT
- ◆ PC
- ◆ PP
- ◆ TA

Enter PE

Starting Date

1993-04-02
1993-04-01
1993-03-31

Ending Date

1993-04-02
1993-04-01
1993-03-31

24 Hour Precipitation Ending at 1993-04-02 12Z

ID	PE	DUR	TS	E	OBSTIME	PRODUCT	VALUE
HGLSE	PP	2001	RZ	Z	1993-04-02 12:00:00		10.28
EMPSW	PP	5004	RZ	Z	1993-04-02 12:00:00		9.87
SMTSE	PP	2001	RZ	Z	1993-04-02 12:00:00		9.64
CLRWE	PP	2001	RZ	Z	1993-04-02 12:00:00		8.63
LAUSE	PP	2001	RZ	Z	1993-04-02 12:00:00		8.51
ROSSE	PP	2001	RZ	Z	1993-04-02 12:00:00		7.30
SELWE	PP	2001	RZ	Z	1993-04-02 12:00:00		6.29
HTCSW	PP	2001	RZ	Z	1993-04-02 12:00:00		5.99
ROCSE	PP	2001	RZ	Z	1993-04-02 12:00:00		5.92
MISWE	PP	5004	RZ	Z	1993-04-02 12:00:00		5.91
DURSE	PP	2001	RZ	Z	1993-04-02 12:00:00		5.83
BMDWE	PP	2001	RZ	Z	1993-04-02 12:00:00		5.41
HERWEG	PP	2001	RZ	Z	1993-04-02 12:00:00		5.11
FTWNE	PP	5004	RZ	Z	1993-04-02 12:00:00		5.08
HERWE	PP	2001	RZ	Z	1993-04-02 12:00:00		5.07
MPV	PP	2001	RZ	Z	1993-04-02 12:00:00		4.70
ECMSE	PP	2001	RZ	Z	1993-04-02 12:00:00		4.49
WINNE	PP	2001	RZ	Z	1993-04-02 12:00:00		4.13
TSVNE	PP	2001	RZ	Z	1993-04-02 12:00:00		4.00
BRANE	PP	2001	RZ	Z	1993-04-02 12:00:00		3.90
WARNE	PP	2001	RZ	Z	1993-04-02 12:00:00		3.86
WODNE	PP	2001	RZ	Z	1993-04-02 12:00:00		3.40
WYS	PP	2001	RZ	Z	1993-04-02 12:00:00		3.30
MIASW	PP	2001	RZ	Z	1993-04-02 12:00:00		3.27
NEWNE	PP	2001	RZ	Z	1993-04-02 12:00:00		3.20
GDCSW	PP	2001	RZ	Z	1993-04-02 12:00:00		3.13
BLASE	PP	2001	RZ	Z	1993-04-02 12:00:00		3.07
BEANC	PP	2001	RZ	Z	1993-04-02 12:00:00		3.06
RUTNE	PP	2001	RZ	Z	1993-04-02 12:00:00		3.05
FEDSE	PP	2001	RZ	Z	1993-04-02 12:00:00		2.95
KINNE	PP	2001	RZ	Z	1993-04-02 12:00:00		2.65
OILNE	PP	2001	RZ	Z	1993-04-02 12:00:00		2.61

Figure 2a. Site List Window

Figure 2b. Query by State

Figure 2c. Query by String

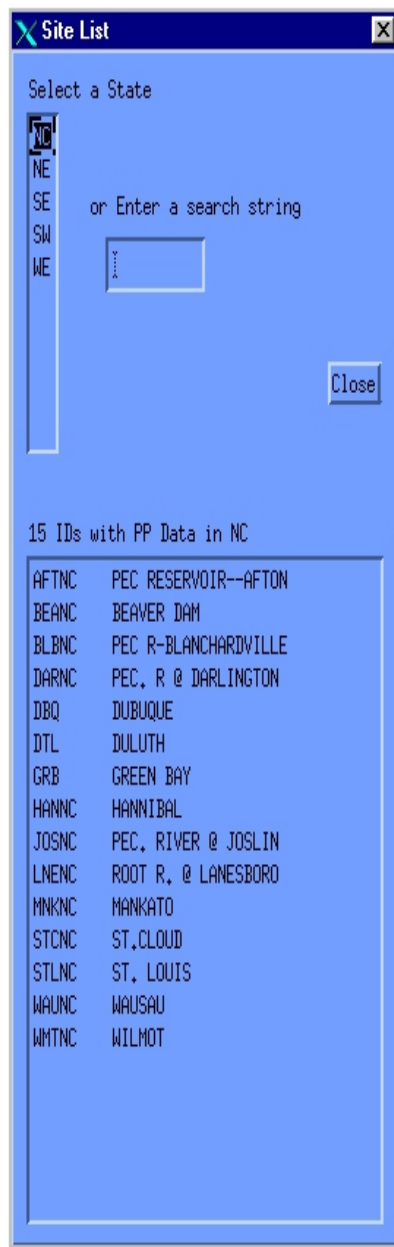
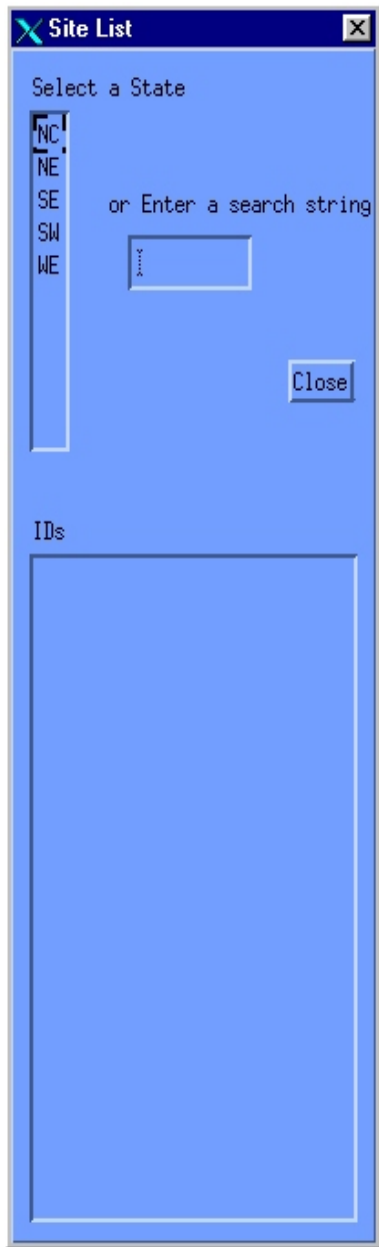


Figure 3. Display of Rejected Data

Program xdat (Version: 5.1.1R18) (db_name=hd5_11ofstest@ONLINE)

Select PE

- HG
- HP
- HT
- QT
- PC
- PP
- TA

Enter PE

Starting Date

1993-04-02
1993-04-01
1993-03-31

Ending Date

1993-04-02
1993-04-01
1993-03-31

REJECTED PP DATA									
ID	PE	DUR	TS	E	OBSTIME	POSTING TIME	VALUE		
CLRWE	PP	2001	RZ	Z	1993-04-02 12:00:00	2001-02-06 19:17:24	8.63		
EMPSW	PP	5004	RZ	Z	1993-04-02 12:00:00	2001-02-06 19:17:24	9.87		
HGLSE	PP	2001	RZ	Z	1993-04-02 12:00:00	2001-02-06 19:17:24	10.28		
SMTSE	PP	2001	RZ	Z	1993-04-02 12:00:00	2001-02-06 19:17:24	9.64		