

G-1. dcparse (DATACARD to SHEF)

1.0 General Information

1.1 Enhancements/Bug Fixes/Changes

Build OB7.2

This application was recompiled because of the upgrade of the OS in ob7.2.

Build OB6

Changes (version 2.0 3/05)

- Related to ADB Bug 1-50. No longer automatically shifts the DATACARD values forward one day for database storage. Original program made the following assumption for daily data:
 - First value in DATACARD is midnight to midnight local time on day 1, meaning that it ends between 4z and 8z on day 2; this is written to the SHEF file as ending at 12z on day 2.
- Added a command line argument (-shift) to force the 'day shift' for those who want it.
- ADB Bug 1-31. dcparse is no longer case sensitive when it reads the header card information.

1.2 Application Description

The purpose of the dcparse program is to convert DATACARD format into SHEF. The data can then be posted to the archive database via the shefdecoder. This program is written in C.

1.3 Design Considerations

The SHEF output file is written in the .E format. It does not explicitly specify a SHEF quality code, so it will default to Z when posted to the database. Missing data is written as -9999. All flow data (designated in the DATACARD file by units CFSD or CMSD) are converted to KCFS before being written to the SHEF file.

1.4 Application Assumptions

The archive database data tables store all data in Zulu (Z) time, while the DATACARD format generally has the data in local time (it is not explicitly stated within the file). To convert from local time to Z time, dcparse assumes that local time is 4-8 hours different from Z time. The same assumptions are made (in reverse) in the dcextract program,

which pulls data from the database and puts it in datacard format. Here is how the conversion is handled in the program:

- Daily Data
 - The *peDPsep* (daily data table) data slots have an end time of 12z for the given day.
 - First value in DATACARD is written to the SHEF file as ending at 12z on day 1; exception:
 - If the `--shift` command line argument is used the first value is written to the SHEF file as ending at 12z on day 2.
- Six Hourly Data
 - The *peQPsep* (six hourly data table) data slots have ending times of 0z, 6z, 12z, and 18z for the given day.
 - First value in DATACARD is midnight to 6 am local time on day 1, meaning that it ends between 10z and 14z on day 1; this is written in SHEF as ending at 12z on day 1.
- Hourly Data
 - The *peHPsep* (hourly data table) data slots are 0z, 1z, 2z, etc. for the given day.
 - First value in DATACARD is 1 am local time on day 1; in this case the user is asked to input the number of hours local time is offset from Z time so the SHEF can be written correctly. For example, if local time is 6 hours different from Z time, the first value is written in SHEF as 7z on day 1.

2.0 Configuration Information

The program expects the input file to be in the users current working directory and will create the output file in the same place. The output filename will be *uid.lid.shefcode.pid*.

The following apps_defaults tokens are used:

adb_pro_que base directory 'processed' poster

3.0 User How-To

This program can be run either through the *arcmenu -> SHEF encoding menu*, or on the command line by simply typing *dcparse*. The program requires some user input, which can either be included on the command line or input as prompted by the program. The required inputs are as follows:

1. input filename (expected to be in current working directory)
2. location identifier (for SHEF output)
3. parameter code (for SHEF output)

4. number of hours local time is offset from Z time (needed only for hourly data)

There is an optional command line argument that controls the 'day shift' (this must be entered before any other arguments if it is used):

-shift = write DATACARD day 1 to day 2 of SHEF file

Examples of running the program using command line arguments:

dcparse alec2hlf.MAP alec2 ppq5zzz (six-hourly data so no offset)

dcparse gjn.precip gjn pph5zzz 6 (hourly data needs offset)

dcparse -shift alec2.flow alec2 qrd5zzz (daily data with day shift)

If no command line arguments are given, the user will be prompted for the required information.

The program will ask the user whether to copy the SHEF output file to the database processed posting queue directory when it has finished. The user may answer 'yes' to have the file automatically posted to the database or 'no' in order to review the output before posting (the user will need to manually copy the file to the posting queue in this case).

4.0 Troubleshooting Information

The program prints the DATACARD comment and information lines to the screen along with the following parsed values:

- data units
- data interval
- beginning month and year
- ending month and year

Here is a sample of the screen output:

```
$ IDENTIFIER=ALEC2_L DESCRIPTION=ALEC2-LWR-SYNTHETIC
$ PERIOD OF RECORD=10/1948 THRU 9/1997
$ SYMBOL FOR MISSING DATA=-999.00 SYMBOL FOR ACCUMULATED DATA=-998.00
$ TYPE=MAT UNITS=DEGC DIMENSIONS=TEMP DATA TIME INTERVAL= 6 HOURS
$ OUTPUT FORMAT=(3A4,2I2,I4,6F9.3)
DATACARD MAT TEMP DEGC 6 ALEC2_L ALEC2-LWR-SYNTHETIC
  units = DEGC
  data interval is 6
10 1948 9 1997 6 F9.3
  beginning month and year = 10 1948
  ending month and year = 9 1997
```

Once the program starts reading in the lines containing the data values, it expects to find these values between columns 21 and 90 with a maximum of 11 values on one line.

If the user still has problems after checking the input file format, contact the RFC Support Group.