Documentation
for
shef_decode_raw, OB5 release
April 20, 2005

1.0 General Information

The primary method of getting data into the RFC Archive database, particularly raw data, is via SHEF messages decoded by the shef_decode_raw application. This program is run continuously in the background by the user *oper*, and is fed SHEF products in parallel with the IHFS database's SHEF decoder on the AWIPS ds system. Additionally, SHEF messages from metar, ldad, and WAN sources are fed into the archive system by placing them in the same queue as the SBN SHEF messages. The application is written in Fortran and esql/C.

1.1 Design Considerations

There were numerous reported problems with the version 1 release of the archive SHEF decoders. After reviewing the problems and possible solutions at the Nov 17-18, 2003 RAXUM team meeting, the team recommended that the archive SHEF decoders be rewritten using the national operational (IHFS) SHEF decoder as the starting point. A natural product of this change would be log output which is more consistent with that produced by the IHFS decoder, a feature which many RFCs desired.

This recommendation was reviewed by OHD management in January 2004. A "re-design" review conference call in early February produced the following decisions:

- there will continue to be two RFC archive SHEF decoders (raw and processed),
- both decoders will use the same parser as the IHFS SHEF decoder,
- the format of the log files (daily and product) were changed to be similar to the log files of the IHFS SHEF decoder, and
- the incoming directory for the shef_decode_raw will remain on the ds and be mounted to the rax, while the shef_decode_processed incoming directory will remain on the rax with no mount back to the ds.

1.2 Enhancements/Bug Fixes/Changes

Build OB5

Documentation
Sections 1.2, 2.1, 3.3, 4.0, 5.0 and 6.0 have been updated. Section 1.3 (*Known Limitations/Bugs)* was eliminated.

Enhancements

- ER-9. Added user controlled posting error/warning messages capability. There are three new apps_defaults tokens: *adb_shef_raw_dupmess*, *adb_shef_raw_locmess*, and *adb_shef_raw_elgmess*.
- Added writing error messages to the log file whenever a query of the archive database fails unexpectedly.
- Added writing error messages to the shef_decode_raw log file when a value to post is outside the time window dictated by the tokens *adb_shef_winpast* and *adb_shef_winfuture*. The data is not posted in this case. This check is not applied to values with a type of 'F' (forecast) or 'C' (contingency). It is also not applied to values with a duration of 'M' (monthly).
- Added writing error messages to the shef_decode_raw log file when a value to post is a forecast (type of 'F') and has a basistime after the validtime. The data is still posted in this case.
- R1-19. The shef_decode_raw program has been enhanced to post data to the pemrsep, peqfsep, and pehfsep tables. For a SHEF record that is to be posted, if the d (duration) is 'M' and the t (type) is 'R', then the record is posted to the pemrsep. If the d is 'Q' and t is 'F', then it is posted to the peqfsep table. If the d is 'H' and the t is 'F', then it is posted to the pehfsep table. (Excludes commentvalue table)
- New apps_defaults token *adb_shef_duplicate_raw*
- R1-45. Updated the SHEFPARM file.

Bug Fixes

- R1-23. For the unkstnvalue table, the SHEF decoder now computes the idur field of a data row correctly. (This bug could not be reproduced locally and we believe it was fixed before this release.)
- R1-24, R1-30. The SHEF decoder now correctly enforces the SHEF revision flag.
- R1-37. If the SHEF record to post is for forecast data (i.e. the t (type) in the pedtsep is 'F'), the decoders no longer check to see if the time of the record to post is within the window specified by the tokens *adb_shef_winfuture* and *adb_shef_winpast*. [HSD Bug r25-60]
- R1-39. Fixed an internal code problem that caused the decoders to crash in specific circumstances after processing only a couple records. This also corrected an unnumbered ADB bug involving a fort.################ file being created in the /rfc_arc/bin directory that should not be created.
- R1-41. Fixed problem with insert/update counts in the summary information.
- R1-42. The SHEF decoder can now overwrite existing values in the database with missing values
- Unnumbered Bug: Fixed the summation in the "Total" field of the log output. Previously, it was the total of ValIns, ValUpd, NoInsRec, and NoUpdRec. Now it is the sum of ValIns and ValUpd, so that it is the total number of values successfully posted to the database, either as an insert or update.
- Unnumbered Bug: The location and ingestfilter counters for the unkstnvalue table were changed in the log file so that they do not count values that were not posted due to the post flag of location being set to 0 or the ingest flag of

ingestfilter being set to 0. Before, these values were included in the counters, even though no data was posted to unkstnvalue.

- Unnumbered Bug. Made the decoders more efficient by removing unneeded "trim" commands used within the SQL statements. Also, by correcting a problem with how the decoders dealt with database records in internal memory, the decoders now perform fewer insert/updates. Thanks to James Paul at ABRFC for identifying the solution to this problem.
- Unnumbered Bug. Corrected a problem involving the datalimits and locdatalimits tables not being used for gross and reasonable range checks. If the locdatalimits table provides limits for the lid and pedtsep of the current SHEF record, those limits are used. Otherwise, if the datalimits table provides limits for the pedtsep, those are used. In either case, if datalimits are available and if either the gross or reasonable range limits are exceeded, the quality code is changed to reflect that.
- Unnumbered Bug. The performance logging feature was changed so that each decoder (raw and processed) uses a separate flag to turn it on. Specifically, the raw decoder uses the apps_defaults token *adb_shef_raw_perflog*, while the processed decoder uses the apps_defaults token *adb_shef_pro_perflog*. If on, the performance log will be provided in a file called shef_perf.log in the logs directory for the decoder involved.

Build OB4

Enhancements

See section 1.1 about the changes.

Bug Fixes

- r1-3 -- It has been reported that the shef_decode_raw program is running very slowly at two sites.
- r1-4 -- The raw decoder stopped working when a large number of metar2shef files (>400) were placed in the ds /data/fxa/ispan/hydro_adbs directory.
- r1-6 -- Both the shef_decode_raw and shef_decode_pro programs end unexpectedly.

Changes

- changes in apps_defaults tokens
- eliminated the use of the nohup command in start script, nohup.out file is replaced with output being redirected into files raw.out and raw.err.
- changed from using the inputparm file to the SHEFPARM file for the definitions of valid SHEF pedrsep codes
- eliminated the cfg file and and command line options feature
- the start and stop scripts were modified

2.0 Configuration Information

2.1 Apps_defaults Tokens

An excerpt from the .Apps_defaults file follows. This list shows the tokens that are used by this SHEF decoder.

```
adb_name       : adb_ob4rha    # archive database name
adb_server     : adbs          # archive server name
adb_dir        : /rfc_arc                  # Base RFC Archive Directory
adb_raw_que    : /rfc_arc_data/q/raw/      # pathname for raw q input directory
adb_bin_dir    : $(adb_dir)/bin            # pathname for the bin directory
adb_cfg_dir    : $(adb_dir)/cfg            # pathname for the config directory
adb_lib_dir    : $(adb_dir)/lib            # pathname for the lib directory
adb_logs_dir   : $(adb_dir)/logs        # pathname for the logs directory
adb_scripts_dir: $(adb_dir)/scripts     # pathname for the scripts directory
adb_shef_winpast   : 10                 # number of days in past to post data
adb_shef_winfuture : 30                 # number of minutes in future to post obs data
shefdecode_rax_userid  : oper                                # controlling UNIX user
adb_shefdecode_input   : $(adb_cfg_dir)/decoders             # RAX SHEF parameter file
                                                             # location
adb_shef_raw_logs_dir  : $(adb_logs_dir)/decoder/raw/logs    # pathname for the
                                                             # daily logs directory
adb_shef_raw_err_dir   : $(adb_logs_dir)/decoder/raw/err     # pathname for the
                                                             # product logs directory
adb_shef_raw_keeperror : IF_ERROR        # keep files (=ALWAYS) or only
                                         # when errors occur (=IF_ERROR)
adb_shef_raw_post_unk  : IDS_AND_DATA    # NONE - do not post to the UnkStnValue table
                                         # IDS_AND_DATA post to the UnkStnValue table
adb_shef_raw_checktab  : ON              # ON checks location and ingestfilter tables
                                         # to see if data should be posted
                                         # OFF does not check location and
                                         # ingestfilter tables before posting
adb_shef_raw_dupmess   : ON              # ON/OFF
adb_shef_raw_locmess   : ON              # ON/OFF
adb_shef_raw_elgmess   : ON              # ON/OFF
adb_shef_duplicate_raw : USE_REVCODE     # ALWAYS_OVERWRITE/USE_REVCODE
adb_shef_raw_perflog   : OFF             # OFF/ON
```

The following tokens are new as of build OB5:

adb_shef_raw_dupmess   : ON   # ON/OFF

If set to 'ON', a message will be written to the log file when a value to be posted would overwrite an existing value in the archive database (i.e., the value is a 'duplicate' – the numerical value may be different than what is in the database, but the pedtsep and time are the same). Messages will only be written if *adb_shef_duplicate_raw* is set to 'USE_REVCODE', the value to post is a 'duplicate' of an existing value, and there was no revision flag in the SHEF message. The message will state that the value was not posted due to its being a duplicate.

adb_shef_raw_locmess   : ON   # ON/OFF

If set to 'ON', a message will be written to the log file when a value to be posted is associated with a location (lid) that cannot be found in the location table of the archive database. The message will state that the value was posted to the unkstnvalue table if *adb_shef_raw_post_unk* is set to 'IDS_AND_DATA', or it will state that the value was discarded if *adb_shef_raw_post_unk* is set to 'NONE'.

```
adb_shef_raw_elgmess       :  ON        #  ON/OFF
```

If set to 'ON', a message will be written to the log file when a value to be posted is associated with a lid and pedtsep that is not found in ingestfilter table. The message will state that the value was posted to the unkstnvalue table if *adb_shef_raw_post_unk* is set to 'IDS_AND_DATA', or it will state that the value was discarded if *adb_shef_raw_post_unk* is set to 'NONE'.

```
adb_shef_duplicate_raw : USE_REVCODE  #ALWAYS_OVERWRITE/USE_REVCODE
```

If the token is not found, it is assumed to be set to 'USE_REVCODE'. When the token is set to 'USE_REVCODE', the raw SHEF decoder will update duplicate data (i.e. a new value to post for which a value is already in the database) only when the SHEF revision flag is set. When the token is set to 'ALWAYS_OVERWRITE', the raw SHEF decoder always updates duplicate data.

```
adb_shef_raw_perflog         : OFF          # OFF/ON
```

If set to 'ON', the performance log will be provided in a file called shef_perf.log in the logs directory for the raw decoder.

2.2 SHEFPARM File

This decoder uses the same SHEFPARM file as the IHFS SHEF decoder. This file is located on the rax in the /rfc_arc/cfg/decoders directory.

2.3 "Housecleaning" Requirements

Ensure that the purge_files script is housecleaning the directories defined by the apps_defaults tokens *adb_shef_raw_err_dir* and *adb_shef_raw_logs_dir*

3.0 User How-To

3.1 Start and Stop Scripts

Start and stop scripts have been provided to the user. These scripts use a similar concept as the start and stop scripts for the IHFS SHEF decoder. These scripts can be found in the directory /rfc_arc/scripts/decoders and are called:

```
start_raw_decoder
stop_raw_decoder
```

3.2 Parsing Errors/Warnings

The parsing portion of the shef_decode_raw program now uses the same parser as the IHFS SHEF decoder. The possible parsing warnings/errors are as follows:

1. not used
2. Two digits are required in date or time group
3. An expected parameter code is missing
4. File read error while accessing data file
5. No dot in column 1 when looking for new message
6. Dot found but not in column 1 of new message
7. Unknown message type, looking for .A, .B, or .E
8. Bad char in message type format (or missing blank delimiter)
9. Last message format was different from this continuation messg
10. Last message was NOT a revision unlike this continuation messg
11. Last message had an error so cannot continue
12. No positional data or no blank before it
13. Bad character in station id
14. Station id has more than 8 characters
15. Bad number in positional data date group
16. Incorrect number in date group
17. Incorrect number in time group
18. Missing blank char in positional data
19. Bad creation date
20. Bad date code letter after the character "D"
21. Unknown data qualifier (need E,F,R,Q,T,S,V or other additions)
22. Unknown data units code (need S or E)
23. Unknown duration code (need Y,M,D,H,N,S,Z and others)
24. Bad 2-digit number following duration code
25. Unknown time interval code (need Y,M,D,H,N,S,E)
26. Bad 2-digit number following time interval code
27. Bad character after "DR" (relative date code)
28. Bad 1- or 2-digit number in relative date code
29. Bad character in parameter code
30. Bad parameter code calls for send code
31. Trace for code other than PP, PC, PY, SD, SF, SW
32. Variable duration not defined
33. Bad character where delimiter is expected
34. Non-existent value for given type and source parameter code
35. ZULU, DR, or DI has send code QY, PY, or HY
36. Forecast data given without creation date
37. No value given after parameter code and before slash or eol
38. Explicit date for codes DRE or DIE is not the end-of-month
39. Year not in good range (1753-2199)
40. Exceeded limit of data items
41. Too many data items for given .B format
42. Not enough data items for given .B format
43. Cannot adjust forecast date to Zulu time
44. Time between 0201 & 0259 on day changing from stnd to daylight
45. No time increment specified (use DI code)
46. No ".END" message for previous ".B" format
47. ID requires 3 to 8 characters
48. For dayl savgs time, check Apr or Oct for 1976 thru 2040 only
49. Bad character in the message
50. Missing parameter code
51. Bad value chars (or missing delimiter), data may be lost

52. Bad chars in data value field
53. "?" not accepted, use "M" (or change program)
54. Parameter code is too long or too short
55. Missing delimiter between data type fields
56. Missing delimiter after data type field
57. Should use "/" instead of blank for delimiter
58. Parm codes PP and PC require decimal value
59. Abort, cannot read "shefparm" file correctly
60. Non-existent value for given duration parameter code
61. Non-existent value for given extremum parameter code
62. Non-existent value for given conversion factor parameter code
63. Non-existent value for given probability parameter code
64. Parameter code too short or field misinterpreted as param-code
65. Comma not allowed in data field, data value is lost
66. Date check for yr-mo-da shows bad date
67. No data on line identified with a message type format
68. An unexpected ".END" message was encountered
69. BUMMER!!! Maximum number of errors reached, abort message
70. Cannot output to binary shefpars file
71. Cannot access "PE conversion factors" from the "shefparm" file
72. Cannot access "send codes" from the "shefparm" file
73. Cannot access "duration codes" from the "shefparm" file
74. Cannot access "type/source codes" from the "shefparm" file
75. Cannot access "extremum codes" from the "shefparm" file
76. Cannot access "probability codes" from the "shefparm" file
77. Cannot read "SHEFPARM" file!!!!!
78. Bad character in data value, value is lost
79. Julian day should be written with 3 digits
80. Too many digits in date group!
81. Too many characters in quotes
82. Data line found before completing .B format line(s)
83. Missing slash delimiter or bad time zone code
84. Too many chars in qualifier code, data value is lost
85. Bad data qualifier, rest of format is lost
86. Retained comment found without a data value, comment is lost
87. Unexpected slash found after parameter code, before data value
88. Cannot access “qualifier codes” from the “shefparm” file
89. not used
90. Unknown error number given

3.3 Posting Warnings/Errors

The Warning/Error messages depend on how some of the apps_defaults tokens are set. Examples of posting error messages that are now available in this release are:

```
LDP1 is not defined in location table; data not posted.

BLDP1 is not defined in location table; data posted to unkstnvalue.

Ignoring duplicate value for HDDN4 - HGIRGZZ for obstime (validtime) 2005-03-28 15:15:00.

SVEV2 - HGIRGZZ not defined in ingestfilter table; data not posted.

SKVP1 - PCIRGZZ not defined in ingestfilter table; data posted to unkstnvalue.

KCDM7 - HGIRZZZ obstime '2005-02-28' > 10 days in the past; data not posted.

KCDM7 - HGIRZZZ obstime '2005-04-30 12:00' > 60 minutes in the future; data not posted.
```

Duplicate, location, ingestfilter and outside time window messages are sent to the individual message files placed in the directory /rfc_arc/log/deccoder/raw/err.

Error messages related to Informix may appear in the raw.out file. This file is located in the directory /rfc_arc/logs/decoder/raw/logs. An example of this type of error is:

```
Mar 31 105 18:29  program:RawQF
    Error -284: Error on reading location table -> 3237
    A subquery has returned not exactly one row.
```

In this case, the station lid 3227 has more than one entry in the location table where the field sed is NULL. To resolve the problem the user needs to verify that the multiple entries all need to exist and if so add sed date to the older entries so only the entry with the most current date in the sbd field has a sed that is NULL.

Other possible messages include not being able to insert a row into a table and not being able to update a row in a table.

4.0 Daily Log File

The shef_decoder_raw program generates a daily log file. The format of this log file is based on the IHFS SHEF decoder's daily log file as much as possible. An excerpt of a daily log file follows.

```
Processing file: RR3CYS.0328.000107; at 2005-03-28 00:01:21
    Header productId: KCYSRR3CYS; timeZ= 2005-03-28 00:00
    LogFile: KCYSRR3CYS.0328.000021
Parsing data.
    Parse errs/warn=   0 /   0
Posting data.
     6 records processed
Total PEDRSEP:      4  ValIns:    4  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PECRSEP:      2  ValIns:    2  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PEDFSEP:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PEDCSEP:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PAIREDV:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PEOOSEP:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PEHFSEP:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PEMRSEP:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PEQFSEP:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total UNKSTNV:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total Outside Window:     0
Net Total:        6
PEDRSEP Unk Location:     0   Unk Ingestfilter:     0
PECRSEP Unk Location:     0   Unk Ingestfilter:     0
PEDFSEP Unk Location:     0   Unk Ingestfilter:     0
PEDCSEP Unk Location:     0   Unk Ingestfilter:     0
PAIREDV Unk Location:     0   Unk Ingestfilter:     0
PEOOSEP Unk Location:     0   Unk Ingestfilter:     0
PEMRSEP Unk Location:     0   Unk Ingestfilter:     0
PEHFSEP Unk Location:     0   Unk Ingestfilter:     0
PEQFSEP Unk Location:     0   Unk Ingestfilter:     0
End time (elapsed parse,post): 2005-03-28 00:01:22 (00:00, 00:01)
----------
```

```
Processing file: RR7RIW.0328.000139; at 2005-03-28 00:01:52
    Header productId: KRIWRR7RIW; timeZ= 2005-03-28 00:01
    LogFile: KRIWRR7RIW.0328.000152
Parsing data.
    Parse errs/warn=   0 /   0
Posting data.
     1 records processed
Total PEDRSEP:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PECRSEP:      1  ValIns:    1  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PEDFSEP:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PEDCSEP:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PAIREDV:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PEOOSEP:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PEHFSEP:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PEMRSEP:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PEQFSEP:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total UNKSTNV:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total Outside Window:     0
Net Total:        1
PEDRSEP Unk Location:     0   Unk Ingestfilter:     0
PECRSEP Unk Location:     0   Unk Ingestfilter:     0
PEDFSEP Unk Location:     0   Unk Ingestfilter:     0
PEDCSEP Unk Location:     0   Unk Ingestfilter:     0
PAIREDV Unk Location:     0   Unk Ingestfilter:     0
PEOOSEP Unk Location:     0   Unk Ingestfilter:     0
PEMRSEP Unk Location:     0   Unk Ingestfilter:     0
PEHFSEP Unk Location:     0   Unk Ingestfilter:     0
PEQFSEP Unk Location:     0   Unk Ingestfilter:     0
End time (elapsed parse,post): 2005-03-28 00:01:52 (00:00, 00:00)
----------
Processing file: RR1MSO.0328.000138; at 2005-03-28 00:01:53
    Header productId: KMSORR1MSO; timeZ= 2005-03-28 00:01
    LogFile: KMSORR1MSO.0328.000153
Parsing data.
    Parse errs/warn=   0 /   0
Posting data.
    10 records processed
Total PEDRSEP:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PECRSEP:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PEDFSEP:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PEDCSEP:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PAIREDV:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PEOOSEP:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PEHFSEP:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PEMRSEP:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PEQFSEP:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total UNKSTNV:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total Outside Window:     0
Net Total:        0
PEDRSEP Unk Location:     0   Unk Ingestfilter:     0
PECRSEP Unk Location:     0   Unk Ingestfilter:     0
PEDFSEP Unk Location:     0   Unk Ingestfilter:     0
PEDCSEP Unk Location:     0   Unk Ingestfilter:     0
PAIREDV Unk Location:     0   Unk Ingestfilter:     0
PEOOSEP Unk Location:     0   Unk Ingestfilter:     0
PEMRSEP Unk Location:     0   Unk Ingestfilter:     0
PEHFSEP Unk Location:     0   Unk Ingestfilter:     0
PEQFSEP Unk Location:     0   Unk Ingestfilter:     0
End time (elapsed parse,post): 2005-03-28 00:01:53 (00:00, 00:00)
----------
```

5.0 Message Error Files

The shef_decoder_raw program generates message error files. The format of these files is based on the IHFS SHEF decoder's message error files as much as possible. An example of this log file is shown below.

```
SRUS55 KRIW 311922
 RR3RIW
 .A CAPW4 0331 Z DH1921/SD 2
 :sbn/krf

    NUMBER OF WARNINGS  ....       0
    NUMBER OF ERRORS  ......       0

    TOTAL NUMBER OF LINES ..       5
    (parsing routines: ob4-r25)
CAPW4 - SDIRZZZ not defined in ingestfilter table; data posted to unkstnvalue.
     1 records processed
Total PEDRSEP:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PECRSEP:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PEDFSEP:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PEDCSEP:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PAIREDV:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PEOOSEP:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PEHFSEP:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PEMRSEP:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PEQFSEP:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total UNKSTNV:      1  ValIns:    1  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total Outside Window:     0
Net Total:        1
PEDRSEP Unk Location:     0   Unk Ingestfilter:     0
PECRSEP Unk Location:     0   Unk Ingestfilter:     1
PEDFSEP Unk Location:     0   Unk Ingestfilter:     0
PEDCSEP Unk Location:     0   Unk Ingestfilter:     0
PAIREDV Unk Location:     0   Unk Ingestfilter:     0
PEOOSEP Unk Location:     0   Unk Ingestfilter:     0
PEMRSEP Unk Location:     0   Unk Ingestfilter:     0
PEHFSEP Unk Location:     0   Unk Ingestfilter:     0
PEQFSEP Unk Location:     0   Unk Ingestfilter:     0
```

6.0 Posting Summary Information

The posting summary information that appears in both the daily log file and the messages error files can be broken into three parts, these are: part 1 - status of posting to each of the various "raw" data value tables, part 2 - misc. totals, and part 3 - general summary information indicating why value was not posted

Part 1

```
Total PEDRSEP:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PECRSEP:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PEDFSEP:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PEDCSEP:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PAIREDV:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PEOOSEP:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PEHFSEP:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PEMRSEP:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total PEQFSEP:      0  ValIns:    0  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
Total UNKSTNV:      1  ValIns:    1  ValUpd:    0  NoInsRec:    0  NoUpdRec:    0
```

Part 2

```
Total Outside Window:     0
Net Total:       65
```

Part 3

```
PEDRSEP Unk Location:     0   Unk Ingestfilter:     0
PECRSEP Unk Location:     0   Unk Ingestfilter:     1
PEDFSEP Unk Location:     0   Unk Ingestfilter:     0
PEDCSEP Unk Location:     0   Unk Ingestfilter:     0
PAIREDV Unk Location:     0   Unk Ingestfilter:     0
PEOOSEP Unk Location:     0   Unk Ingestfilter:     0
PEMRSEP Unk Location:     0   Unk Ingestfilter:     0
PEHFSEP Unk Location:     0   Unk Ingestfilter:     0
PEQFSEP Unk Location:     0   Unk Ingestfilter:     0
```

Part 1

This part currently consists of ten lines, one line for each of the tables the shef_decode_raw program currently can post to. Each row consists of five values.

Column 1 indicates the total number of values inserted and/or updated to this table.
Column 2 indicates the total number of values inserted.
Column 3 indicates the total number of values updated.
Column 4 indicates the total number of records where insert was attempted but failed.
Column 5 indicates the total number of records where update was attempted but failed.
Columns 4 and 5 should always have zero totals; otherwise there is a problem.

Part 2

Row 1 indicates the number of values where the observation time was outside the window defined by the apps_defaults tokens *adb_shef_winpast* & *adb_shef_winfuture.*
Row 2 indicates the total number of values posted for all the tables.

Part 3

Similar to part 1, this part currently consists of nine lines, one line for each of the tables the shef_decode_raw program currently can post to. It does not include information for the unkstnvalue table as the posting to that table is controlled by the apps_defaults token *adb_shef_raw_post_unk*.   Each row consists of two values.

Column 1 indicates the total number of values that could not be posted to that table because the lids were not in the location table.
Column 2 indicates the total number of values that could not be posted to that table because the lid and/or SHEF pedtse code was not in the ingestfilter table.

7.0 Troubleshooting Information

Check the raw.out, raw.err, daily log and message error files. If the user cannot determine the source of the problem by viewing these files, contact the RFC Support Group for assistance.

8.0 Maintenance Information

Originating Programmer/Office: NWS/OHD/HL
Silver Spring, MD

Maintenance programmer/Office: NWS/OHD/HL
Silver Spring, MD

Documentation: Meyer, Juliann
Missouri Basin River Forecast Center
Pleasant Hill, MO

9.0 References

NWS Directive 10-942 Standard Hydrometeorological Exchange Format (SHEF) Manual

RFC Archive DB Team Request for Change to SHEF submitted February 28, 2002.

Website with information on SHEF and the IHFS shefdecoder application
http://www.nws.noaa.gov/os/whfs/shef.shtml