Release Project Leader Menu (PLMENU)

DIGITAL CONFIDENTIAL

ABSTRACT

A menu of tools to perform masterpack operations needed by the VMS Release project leader.

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Preface

PLMENU

The release project leader menu provides an interface to perform functions which manipulate the VDE VMS Source Control (VSC) Database and it's underlying CMS libraries. The operations available from the menu are usually performed by a release project leader or by a builder. Most of the menu functions require special VDE privileges not available to the general VMS developer. The primary purpose of the menu is to provide a convenient means for the release project leader to maintain the integrity between the VMS source control environment and the VMS system building environment.

The VSC tool is used for source control of VMS versions. VSC uses a RDB database to track reservations, replacements and other updates to a VMS version. VSC uses CMS libraries to store the actual source code changes for a version. Presently, there are over two hundrec CMS libraries maintained on the masterpack. Each CMS library contains CMS classes which mirror a VSC stream stored in the RDB database. Maintenance of the CMS classes requires much overhead in terms of I/O and processing time. Due to this overhead, the CMS classes are not completely maintained by VSC. † VSC will not update CMS classes on many version-wide operations such as stream creation, stream population and stream renaming. The project leader menu provides a convenient means to perform CMS commands on the many CMS libraries to mirror the VSC command. Failure to successfully perform the CMS commands can cause problems between source control and system building.

VMS system building requires a CMS class representing the target version to build. Typically a build stream is created from a snapshot of a development stream. The build stream is used as the target version of a system build. Creating a build stream currently requires over eleven thousand RDB table updates and over eleven thousand corresponding CMS insert generation commands in the VMS masterpack CMS libraries. In addition, the CMS class must be created in all applicable CMS libraries before performing the insert generations. The project leader menu provides a method to create, populate and rename build streams.

UPDATE: CMS Classes are optional for streams created after January 1993

VMS development projects can now chose not to maintain CMS classes for their build streams. The VMS build procedures and the Project Leader Menu tools have been modified to fetch all generations of the VMS source code using the VDE database alone. The behaviour of the build, and of the tools, is determined by the value of a logical, VDE$FETCH_METHOD. If VDE$FETCH_METHOD is "VDE", then the tools and the build procedures will maintain only the VDE library with the build stream generations.

† VSC does not even require the use of CMS classes, however the VMS system building tools use CMS classes.

It is important to define the VDE$FETCH_METHOD logical in the LOGIN.COM file for the account that will be creating, populating, renaming and building streams. The logical must be defined for the batch jobs submitted by the PLMENU tools and the logical must be defined for the VMS build batch jobs.

Stream creation, population and renaming is significantly faster for streams that do not maintain CMS classes in all the VMS facility libraries. For example, to create a build class for the CORAL(V6.1) stream, takes about 6 hours with the CMS classes and about 40 minutes without the CMS classes. Stream population times are also drastically reduced. The source fetching during the build is also more efficient(faster) using the VDE subprocess to fetch the sources rather than image activating CMS to perform each fetch operation.

1 INTRODUCTION

Why should you use the project leader menu?

Below as reasons why you should use the menu for masterpack operations:

1 The menu provides a means to perform operations that cannot be completely executed using VSC alone or CMS alone. Some operations, such as renaming a stream, require execution of a VSC MODIFY STREAM /NAME command and execution of a CMS MODIFY CLASS/NAME command for every CMS library.

2 Consistency between the VSC stream and the underlying CMS class is better maintained using the project leader menu.

3 The menu tools provide increased performance over VSC for stream-wide operations.

4 The menu provides safeguards against initiating operations that would lock out other update usage on the masterpack during regular working hours.

5 Use of the menu provides for a consistent stream naming convention across VMS versions.

6 Free disk space on the VMS masterpack is a valuable commodity. The CMS history produced by the project leader tools is tagged with a special string to allow purging the CMS history without losing valuable historic events in the library.

The project leader menu consists of ten options. Masterpack operations should be performed on the STAR VMS production cluster. Following is an example of how to invoke the menu on the STAR cluster:

```
$
$@VMSCMS$:PLMENU

VAX/VMS Project Leader Menu (PLMENU) Version X-6

Enter ? or "HELP" at any prompt to obtain help
Enter <Ctrl>Z, "Quit" or "Exit" to exit immediately

     Choose an action from the list below:

          (1) Create a new build stream
          (2) Populate a build stream
          (3) Rename a stream
          (4) Set/Show PLMENU logicals
          (5) Create a baselevel stream from a build stream
          (6) Compare VDE to CMS for a stream
          (7) Create a New Facility
          (8) Populate a Stream in Selected Facilities
          (9) Compare Two CMS Streams
         (10) Archive/Obsolete a Facility

What action do you want to perform? (1-10,EXIT,HELP):
```

Each action available from the menu is described in detail in this document.

2 PLMENU Common Prompts and Features

This section describes prompts which are common to most of the PLMENU options. The logical names referenced in this section can be assigned values with the Set/Show PLMENU logicals option of the menu.

The project leader menu functions are performed by batch jobs which are submitted for you by the menu. Batch jobs are used because the functions of the menu take minutes or hours to complete. There are five questions which are asked by all the menu options to control the batch job attributes.

Common Prompts

There are five prompts common to the PLMENU functions.

- **Product Root [VMS$]**: The product root defines the VDE database and the CMS libraries that are to be processed. The product root will default to VMS$. You can override this default value by defining the logical name PLMENU$DEFAULT_PRODUCT to another value. The valid product roots available are TOOLS$, VMS$ and VMSTEST$.
- **Queue to submit job [SYS$LOBUILD]**: You must give a queue in which to run the batch job. The batch queue will default to SYS$LOBUILD. You can override the queue default value by defining the logical name PLMENU$DEFAULT_BATCH_QUEUE to another value. Note that using the SYS$LOBUILD and SYS$BUILD queues requires you to hold the SYSTEM_BUILDER process rights identifier.
- **Directory for log and work files? [default]**: This prompt defines where the log file produced by the submitted batch job will be located. Some of the menu options, like populate a build stream, produce work files. The work files produced by a submitted job will be located in this directory. The directory will default to your current default directory. You can override the directory default by defining the logical name PLMENU$DEFAULT_DIRECTORY to another value.
- **Time to submit job? [default]**: The batch job will be submitted to begin execution at the time specified by the answer to this prompt. The default value to this prompt varies depending on what menu option you are performing. The default submission time for a new stream create is usually midnight(it's the current time if you are working on weekends or between midnight and 3:00AM on weekdays). The default submit time for a VDE/CMS stream comparison is "NOW" (submit the job immediately).
- **Do you wish to proceed? [default]**: Each option displays a summary of the job to be submitted and asks for your confirmation to proceed.

Prompt features

Below is a summary of special strings and input recognized by the project leader menu prompts.

Table 2–1 Special input recognized by PLMENU

Prompt Input	Action
Ctrl Y, Ctrl Z, "EXIT", "QUIT"	Terminate current option
"Back", "Prev"	Return to the previous prompt
"HELP", "?"	Display help

3 Creating a New Build Stream

Creating a new stream is one of the most expensive operations performed on the VMS master pack. Over 11,000 RDB updates and 11,000 CMS updates are needed to create the new stream. Due to this overhead, it is undesirable to create a new build stream during working hours. The create stream option of the menu prompts you for all the information necessary to successfully create a build stream in the VSC database and the masterpack CMS libraries.

This option of the menu should always be used to create new build streams, regardless of whether CMS classes are maintained or are not maintained for the build stream. The create build stream option avoids locking up the VDE database by breaking the create stream into two separate transactions. To create a stream in the VDE database only, remember to have the logical VDE$FETCH_METHOD define to "VDE" before invoking the menu. NOTE: A CMS class is still created in the VMS$:[SYS.CMS] library because of the system base level updating procedures.

The VDE CREATE STREAM command executes as a single transaction. If the VDE CREATE STREAM command is used to create AND POPULATE a new stream, the transaction creating the stream locks out all other write access to much of the VDE database. This lockout would be from 30 to 40 minutes for the current development stream size(V6.0 & CORAL).

The create stream option uses the VDE CREATE STREAM command with the /NOGENERATIONS qualifier. This qualifier tells VDE to not insert any of the generations from the parent stream into the newly created stream. This transaction takes about 1 minute. The VDE POPULATE STREAM command is then used to insert the parent stream module generations into the new stream. The POPULATE STREAM command uses many transactions to insert small sets of generations into the new stream. The small transactions allow other write access users to update the database while the populate is in progress. For more information on the VDE CREATE STREAM command, consult the VDE reference manual.

Required Privileges

The create build stream option requires that the user hold the VDE privileges **CRESTRM and PERFREP** and the process rights identifiers **VMS_ENABLE_CMS and VMS_SOURCE**. If the user does not hold these privileges, the submitted batch job will fail.

3.1 Invoking the create build stream procedure

To create a new build stream, select option one from the main menu. The create build stream command procedure executes.

```
What action do you want to perform? (1-6,EXIT,HELP): 1

Create Build Stream Version X-1

Enter ? or "HELP" at any prompt to obtain help
Prompt default values (if any) appear in brackets []
Enter <Ctrl Z>, "Quit" or "Exit" to exit immediately

 Product Root [VMS$]:
```

Enter the product root. See Chapter 2 for a definition of product root.

The next prompt asks you for the parent stream of the build stream. The parent stream is the stream for which the build stream is to be a snapshot. The parent stream module generations are used to populate the new build stream. The build stream will be marked as a descendent of the parent stream. The parent defaults to the value of logical name PLMENU$DEFAULT_SOURCE_STREAM. In the example below, the user enters stream V5.5 to create a new build stream for version V5.5.

```
Parent stream for new build stream [V5.4]: V5.5
```

After you enter the parent stream you will be asked to supply the new build stream name. It is a convention in VMS that the build stream name begin with the development stream name followed by the string "_BLD" and a suffix. Please try to adhere to this convention. In the example below, the new stream is named "V5.5_BLD_Z". You can define the logical PLMENU$DEFAULT_TARGET_STREAM to suppy a default value to this prompt.

```
 Enter the new build stream name [V5.5_BLD0]: V5.5_BLD_Z
```

The create stream procedure now asks for a remark string to be associated with the new build stream. This remark string is used for the CMS classes and the VDE stream remark. This remark is displayed by a VSC show stream or CMS show class command. Enter a remark string (no quotes) if you do not like the default remark.

```
Remark string for V5.5_BLD_Z [Build stream for V5.5]:
```

You are now asked for the work directory into which to place the log file and work files produced by the procedure. The submitted job name is formatted as CREATE_'new_build_stream_name'. In our example the job name is CREATE_V55_BLD_Z. Periods are removed from the build stream string in the job name.

```
 Directory for log files [WORK212:[SWEENEY.SCRATCH]]: sys$scratch
```

Enter the batch queue to submit the creation job at the next prompt.

```
 Queue to submit create job [CLUSTER_LONGBATCH]:
```

The procedure prompts you for the time to begin the create job. On weekdays, you are warned of possible masterpack disk contentions if you choose a time between 3:00AM and 11:59PM. You may submit the job at the entered time if you answer affirmatively to the "Do you want to submit the job anyway?" question.

```
 Time to begin create job? [TOMORROW]: NOW

Due to lock conflicts and disk contention on the master pack, this job should
be submitted after 12:00AM and before 3:00AM on working days.  It is strongly
advised to avoid creating a stream during regular working hours.

 Do you want to submit the job anyway? [N]:BACK

 Time to begin create job? [TOMORROW]: TOMORROW+01:00
```

You are asked to confirm your input and submit the batch job.

```
 You are attempting to create a new build stream, V5.5_BLD_Z for
 development stream V5.5.

 Do you wish to proceed? [Yes]:
Validating stream V5.5 in VDE...
Validating stream V5.5_BLD_Z in VDE...
Job CREATE_V55_BLD_Z (queue CLUSTER_LONGBATCH, entry 633) holding until  10-APR-1992 01:00
```

3.2 Create Stream Processing

The batch job submitted by the create stream procedure performs the following steps to create a build stream:

I Creates a CMS build class for all facilities which contain the parent class and which are not marked archived or marked no propagation.

II Checks if there is a facility whose name matches the parent stream name. If a match is found, the CMS build class is created in the matched facility even if the facility is marked no propagation.

III Creates an empty (no module generations) build stream in the VDE database.

IV Populates the build stream from the parent stream module generations. The population method used is identical to the stream population processing described in Chapter 4.

3.3 Suggestions for creating new build streams

- It's a good idea to plan ahead and create build streams before you actually need them, but don't create more than you need!
- Please coordinate your stream creations with other VMS development projects so that your stream creation does not interfere with a system build or with other stream creations.
- It is not useful to attempt to create more than one build stream at the same time because there will be many conflicts on the masterpack. If you need to create multiple streams it is suggested that you space the submit times by at least four hours.
- If the create a stream batch job fails, the recovery steps vary depending upon where the job failed.
  - If the job fails before the VDE stream is created, rerun the create a stream procedure from the menu and use the same input. The

restarted batch job may give you warnings that the CMS class already exists in some facilities.

- If the batch job fails after the VDE stream is created, use the populate stream option of the menu to populate your new stream from the parent stream.
- If your job fails due to a privilege problem, you need your VMS or VDE user profile changed to include all the privileges and identifiers noted in the beginning of this chapter.

4 Populating a build Stream

Stream population refers to producing a snapshot of a stream at some point in time. VMS build streams are populated from a VMS development stream and then used as input to a system build. The overhead of populating a build stream varies depending upon how "close" the target build stream module generations are to the development stream module generations. If there are only a few differences between the target build stream and the development stream, then a populate can be completed in a matter of minutes. If the two streams diverge significantly, then the populate stream overhead degenerates close to the create stream overhead. The populate stream option of the menu prompts you for all the information necessary to successfully populate a stream in the VSC database and in the masterpack CMS libraries.

The populate build stream option of the project leader menu is updated to process build streams which do not maintain CMS classes. The option's current behaviour to populate build streams maintained in both VDE and CMS is retained. The value of the logical VDE$FETCH_METHOD determines how the build stream will be populated.

The VDE$FETCH_METHOD logical is used by the menu option AND by the batch stream submitted to determine how to populate the stream. If the VDE$FETCH_METHOD logical value is VDE, the stream is populated in the VDE database only. If the VDE$FETCH_METHOD logical value is not VDE or undefined, the job tries to populate the stream in VDE and CMS. If the VDE$FETCH_METHOD logical is set to VDE, there is no time warnings for when a VDE only stream populate should run. If CMS classes are to be populated, the option will warn the user about populating the stream during normal working hours.

If your build streams do not maintain CMS classes, you may choose to use the VDE POPULATE STREAM command directly from VSC to populate you build stream. The POPULATE STREAM command requires the user hold the VDE privilege PERFREP. The VDE FROZEN privilege must also be held by the user if the build stream state is frozen. See the VDE reference manual for a description of the POPULATE STREAM command. The file VMSCMS$:POPSTRM.COM contains the populate stream command used to currently populate build streams. The command format is:

```
$ VDE SET PRIV FROZEN;POPULATE STREAM/FROM='parent_stream' 'target_stream'
```

which could be used in VSC as:

```
VSC>SET PRIV FROZEN
VSC>POPULATE STREAM/FROM='parent_stream' 'target_stream'
```

Required Privileges

The populate build stream option requires that the user hold the VDE privileges **FROZEN and PERFREP** and the process rights identifiers **VMS_ENABLE_CMS and VMS_SOURCE**. If the user does not hold these privileges, the submitted batch job will fail.

4.1 Invoking the populate stream procedure

To populate a stream, select option two from the main menu. The populate stream command procedure executes.

```
What action do you want to perform? (1-6,EXIT,HELP): 2

Populate Stream Version X-1

Enter ? or "HELP" at any prompt to obtain help
Prompt default values (if any) appear in brackets []
Enter <Ctrl Z>, "Quit" or "Exit" to exit immediately

 Product Root [VMS$]:
```

Enter the product root. See Chapter 2 for a definition of product root.

Next you are asked for the source stream for the population. The source stream is the stream to populate from, or, if you like, the stream to copy. Usually the source stream is a VMS development stream, but this is not a requirement. The source stream is similar to the parent stream of the create stream option. The source stream defaults to the value of logical name PLMENU$DEFAULT_SOURCE_STREAM.

```
Source Stream [V5.4]: V5.5
```

Upon entering the source stream you will be asked for the target stream to populate. This is usually a build stream for a development project. The target stream must have the VDE stream population attribute set for this procedure to work. The target stream defaults to the value of logical name PLMENU$DEFAULT_TARGET_STREAM.

```
Target Stream: V5.5_BLD_Z
```

The populate stream job now prompts you for the queue to submit the populate jobs.

```
Queue to submit populate jobs [CLUSTER_LONGBATCH]:
```

You are now asked for the work directory into which to place the log file and work files produced by the procedure. The submitted job name is formatted as 'target_stream_name'_POP. In our example the job name is V55_BLD_Z_POP.

```
Directory for logs and work files [WORK212:[SWEENEY.SCRATCH]]:
```

The procedure prompts you for the time to begin the populate job. On weekdays, you are warned of possible masterpack disk contentions if you choose a time between 5:00AM and 6:00PM. You may submit the job at the entered time if you answer affirmatively to the "Do you still want to submit the job at the entered time? [N]:" question.

```
Time to begin submission of populate jobs? [ 9-APR-1992 18:00:00]: NOW

Due to locking contention on the master pack, this job should be submitted
after 6:00PM and before 5:00AM on weekdays.  It is advised to avoid
submitting populations during regular working hours unless you are sure
the source stream and the target stream are almost identical.

 Do you still want to submit the job at the entered time? [N]: YES
```

You are finally asked to confirm your population request.

```
 Populate stream V5.5_BLD_Z from stream V5.5? [Y]:
Validating stream V5.5 in VDE...
Validating stream V5.5_BLD_Z in VDE...
Job V55_BLD_Z_POP (queue CLUSTER_LONGBATCH, entry 633) started on queue CLUSTER_LONGBATCH
```

4.2 Populate Stream Processing

The populate stream batch job maintains a status file to indicate the current state of the stream population. Any warnings or errors encountered during the population are marked in this file. A population status is mailed to the user upon completion of the populate job. The populate batch job processing is summarized as follows:

I The target VDE stream is populated from the source VDE stream. The population is broken down into many small RDB transactions to avoiding locking out other update usage on the masterpack. If any error is detected at this point the batch job will terminate.

II The procedure submits a batch job to perform the CMS insert generation commands for every non-archived facility which allows change propagation.

III Each CMS insert generation procedure checks if the source stream exists in the facility CMS library. If the source stream does not exist, a warning message will be output in the log file and into the procedure status file. If the source stream exists, the target stream is populated from the source. †

IV The procedure waits for the hundreds of CMS insert generation batch jobs to complete. When all jobs are complete the status file is checked for errors. The user who submitted the job will receive a mail message indicating the status of the population.

4.3 Suggestions for populating build streams

- **NEVER DELETE AN EXECUTING CMS POPULATE JOB FROM THE QUEUE.** An improper termination of a CMS insert generation command can corrupt a CMS library so, please don't delete the CMS population jobs. A future version of CMS is supposed to correct this problem. If you need to stop CMS population jobs from processing, the jobs can be stopped by defining the logical name FAC$ABORT_POPLIBS in the system logical name table on all relevant nodes. The FAC$ABORT_POPLIBS logical stops ALL populate jobs from

† The target class will be created in the CMS library if it does not already exist.

processing. After your jobs have stopped, be sure to deassign this logical to allow future populations to run successfully.

- If the stream you are populating is very different from the source stream, please don't submit the populate during "regular" working hours.
- Don't panic if you receive warning messages in the population status. There may be facilities for future VMS releases that are not applicable to your development stream.
- If you are going to do a build with the target stream, it's not wise to allow changes to the source stream during the population. If you allow replacements into the development stream during the population, the VDE representation of the build stream will differ from the CMS representation of the build stream. This could be a source of confusion after the build. Remember, it is the CMS representation of the stream that is used to build VMS.
- If your populate stream job fails, rerun the populate stream using the same input.

5 Renaming a Stream

Renaming a stream requires updating the VDE stream name and the CMS facility class names. Rename stream processing can be performed during normal working hours because it does not lock up the VDE database or CMS libraries for prolonged periods of time.

The rename stream option of the project leader menu is updated to process streams which do not maintain CMS classes as well as streams that do maintain CMS classes. The option determines whether CMS classes are maintained for the stream by the value of the logical VDE$FETCH_METHOD. The VDE$FETCH_METHOD logical is used by the menu option AND by the batch stream submitted to determine how to rename the stream. If the VDE$FETCH_METHOD logical value is VDE, the stream is renamed in the VDE database and the VMS$ SYS facility only. If the VDE$FETCH_METHOD logical value is not VDE or undefined, the job tries to rename the stream in VDE and all product CMS libraries.

If your build streams do not maintain CMS classes, you can use the VDE MODIFY STREAM/NAME= command directly from VSC to rename your stream. The MODIFY STREAM command requires the user hold the VDE privilege MODSTRM. See the VDE reference manual for a description of the MODIFY STREAM command. Remeber if you are modifying a VMS stream, you will still need to rename the CMS class in the SYS facility because the CMS class still needs to be maintained for the system baselevel procedures. However, if you do not plan to use the stream for building in the future, you may omit the CMS rename. The file VMSCMS$:RENSTRM.COM contains the MODIFY STREAM command used to currently rename streams. The command format is:

```
$  VDE Set priv MODSTRM; Modify stream'remark_qual'/name='new_name' 'stream_name'
```

which could be used in VSC as:

```
VSC>SET PRIV MODSTRM
VSC>modify stream/remark="BLADE Baselevel X999"/name=BLADE_X999_BLDN BLADE_BLD_N
```

DON'T FORGET THIS WHEN RENAMING A VMS STREAM.

```
$ Set command VMSCMS$:FACRENAME
$! facrename will prompt you for the stream to rename and the new name if you
$! omit the parameter values
$ facrename/log=all/remark="BLADE Baselevel X999" VMS$:[SYS.cms]  BLADE_BLD_N BLADE
```

Required Privileges

The rename stream option requires that the user hold the VDE privilege **MODSTRM** and the process rights identifiers **VMS_ENABLE_CMS and VMS_SOURCE**. If the user does not hold these privileges, the submitted batch job will fail.

5.1 Invoking the rename stream procedure

To rename a stream, select option three from the main menu. The rename stream command procedure executes.

```
What action do you want to perform? (1-6,EXIT,HELP): 3

Rename Stream Version X-1

Enter ? at any prompt to obtain help
Prompt default values (if any) appear in brackets []
Enter <Ctrl Z>, "Quit" or "Exit" to exit immediately

 Product Root [VMS$]:
```

Enter the product root. See Chapter 2 for a definition of product root.

The next prompt asks you for the stream you want to rename. This prompt defaults to the value of logical name PLMENU$DEFAULT_SOURCE_STREAM.

```
 Stream to rename [V5.4]: V5.5_BLD_Z
```

You are asked to supply a new name for the stream. This prompt defaults to the value of logical name PLMENU$DEFAULT_TARGET_STREAM.

```
 New Stream Name [V5.5_BLD_10]:
```

You can now enter a new remark string to be associated with the renamed stream. The stream's current remark string is retained if you do not enter a value to this prompt.

```
 New remark string for stream V5.5_BLD_10 [Use current remark]:
```

Enter the work directory where you want the rename stream log file to reside.

```
Directory for log file [WORK212:[SWEENEY.SCRATCH]]:
```

Enter the queue in which to run the rename stream batch job.

```
Queue to submit rename job [CLUSTER_LONGBATCH]:
```

You are asked to confirm your input and proceed with the stream rename.

```
 If you proceed you will rename stream V5.5_BLD_Z to V5.5_BLD_10.
 Do you wish to proceed? [Yes]:
Validating stream V5.5_BLD_Z in VDE...
Validating stream V5.5_BLD_10 in VDE...
Job RENAME_V55_BLD_Z (queue CLUSTER_LONGBATCH, entry 633) started on queue CLUSTER_LONGBATCH
```

5.2 Rename Stream Processing

The processing steps of the rename stream batch job are:

I The old CMS class name in all non-archived, propagating facility libraries is modified to the new stream name. A new stream remark is attached to the class if the user supplied a new remark.

II After all the CMS library classes are renamed, the VDE stream is modified to the new stream name and new stream remark.

5.3 Suggestions for renaming streams

- If a rename stream job fails, it is sufficient to restart the job assuming the failure was not due to a privilege violation.
- Try to retain a consistent naming convention when renaming streams. This will provide for easier interpretation of what a stream represents after you've gone on to other things.
- Make sure you read the confirmation prompt to insure you are renaming the correct stream. You don't want to rename a VMS version development stream!

6 Creating a Baselevel Stream from a Build Stream

The create baselevel stream function is another way to rename a stream. This option is available as a convenience to maintain consistent stream naming conventions. A baselevel is a milestone in the development cycle that should be preserved for future reference. The baselevel stream is associated with a baselevel result disk which is the output from the stream system build. An important difference between creating a baselevel and renaming a stream is that creating a baselevel modifies the new stream to prevent future populations of the new stream. Creating a baselevel "freezes" the stream.†

Required Privileges

The create baselevel stream option requires that the user hold the VDE privilege **CRESTRM and MODSTRM** and the process rights identifiers **VMS_ENABLE_CMS and VMS_SOURCE**. If the user does not hold these privileges, the submitted batch job will fail.

6.1 Invoking the create baselevel stream procedure

To create a baselevel stream, select option five from the main menu. The create baselevel stream command procedure executes.

```
What action do you want to perform? (1-6,EXIT,HELP): 5

Create Baselevel Stream Version X-1

Enter ? or "Help" at any prompt to obtain help
Prompt default values (if any) appear in brackets []
Enter <Ctrl Z>, "Quit" or "Exit" to exit immediately

 Product Root [VMS$]:
```

Enter the product root. See Chapter 2 for a definition of product root.

The next prompt asks you for the build stream you want to rename. This prompt defaults to the value of logical name PLMENU$DEFAULT_SOURCE_STREAM.

```
 Build stream to rename: V5.5_BLD_Z
```

After you input the stream to rename you are asked for the system baselevel number associated with the result disk for the build stream.

```
 Result disk baselevel number: X999
```

The next prompt encountered is used to indicate if this baselevel is an internal field test(IFT) version or external field test (EFT) version. If this baselevel is not an IFT or EFT version enter "other" to this prompt.

```
 Baselevel type (EFT, IFT or OTHER) [OTHER]: EFT
```

† Strictly speaking the stream is not frozen because the VDE INSERT GENERATION command can be used to update the baselevel stream, but the populate stream command and the reserve/replace commands are disabled for the baselevel stream.

You are asked if you wish to append a suffix to the baselevel stream name.

```
Suffix to append to stream V5.5_X999_EFT [NONE]:_BLD_Z
```

You can now enter a remark string to be associated with the baselevel.

```
 Remark string for V5.5_X999_EFT_BLD_Z [V5.5 EFT baselevel X999]:
```

Enter the work directory where you want the rename log file to reside.

```
Directory for log file [WORK212:[SWEENEY.SCRATCH]]:
```

Enter the queue in which to run the rename stream batch job.

```
Queue to submit rename job [CLUSTER_LONGBATCH]:
```

You are asked to confirm your input and proceed with the stream renaming.

```
 If you proceed you will rename stream V5.5_BLD_Z to V5.5_X999_EFT_BLD_Z.
 Stream V5.5_X999_EFT_BLD_Z will be frozen and cannot be populated
 from the populate stream option of the menu.

 Do you wish to proceed? [Yes]:
Validating stream V5.5_BLD_Z in VDE...
Validating stream V5.5_X999_EFT_BLD_Z in VDE...
%VDE-I-STRMMOD, information for stream V5.5_BLD_Z modified in the database
%VDE-I-COMMIT, database transaction has successfully committed
Job RENAME_V55_BLD_Z (queue CLUSTER_LONGBATCH, entry 329) started on CLUSTER_LONGBATCH
```

6.2 Create Baselevel Stream Processing

The create baselevel stream procedure modifies the build stream to disallow the population of the VDE stream. The procedure then submits the same rename stream batch procedure as used in the rename stream option. The rename stream batch job first modifies all the CMS facility class names to the new stream name. After the CMS library classes are renamed, the VDE stream name is modified.

6.3 Suggestions for Creating Baselevel Streams

- If a rename stream job fails it is sufficient to restart the job assuming it did not fail for a privilege violation.
- This option is available to retain a consistent naming convention across development streams. If you prefer to use the rename stream option please try to adhere to the naming convention used in this procedure.
- Make sure you read the confirmation prompt to insure you are renaming the correct stream. You don’t want to rename a VMS version development stream!

7 Comparing VDE to CMS

This options allows you to check the consistency of a stream representation between VDE and CMS. The module generations in the VDE database are compared to the module generations in the CMS library.

Required Privileges

The process rights identifiers **(VMS_SOURCE or VMS_SOURCE_ READ) and VMS_ENABLE_CMS** are required.

7.1 Invoking the compare stream procedure

The VDE to CMS comparison utility is invoked by selecting option 6 from the project leader main menu.

```
What action do you want to perform? (1-6,EXIT,HELP): 6

Compare Stream Version X-1

Enter ? or "HELP" at any prompt to obtain help
Prompt default values (if any) appear in brackets []
Enter <Ctrl Z>, "Quit" or "Exit" to exit immediately

 Product Root [VMS$]:
```

Enter the product root. See Chapter 2 for a definition of the product root.

The next prompt asks you for the stream you want to compare. This prompt defaults to the value of logical name PLMENU$DEFAULT_ SOURCE_STREAM.

```
 Stream to compare [V5.4]:
```

Enter the work directory where you want the utility's file(s) to reside.

```
Directory for log files [WORK212:[SWEENEY.SCRATCH]]:
```

Enter the queue in which to run the compare stream batch job.

```
Queue to submit compare job [CLUSTER_LONGBATCH]:
```

Indicate if you want the report of stream differences to be displayed in the log file (default) or written to a separate report file. If you do not give a directory specification to the file name, the report will be located in the work directory. The default file type is .LIS.

```
Report file name ? [LOG]: TEST
```

Enter the facility to process. By default, the procedure submitted will compare VDE to CMS for all non-archived facilities in the product root. Archived facilities are skipped by the procedure. Facilities marked no propagation are compared by this procedure. You may enter a full facility name or a partial facility name with wildcards. For example you may enter SYS* to process all facilities beginning with SYS.

```
Facility to process [ALL]:  SYS*
```

The procedure prompts you for the time to begin the compare job. This option is a read only function so there is no warning notice on any entered time.

```
Time to submit compare job? [NOW]:+00:01
```

You are asked to confirm your comparison request.

```
 If you proceed you will submit a job to compare stream V5.4 for all
 facilities matching the file specification VMS$:[SYS*.CMS].
 Differences in the stream will be reported to file
 WORK212:[SWEENEY.SCRATCH]TEST.LIS;

 Do you wish to proceed? [Yes]:
Validating stream V5.4 in VDE...
Job V54_COMPARE (queue CLUSTER_LONGBATCH, entry 526) holding until 13-APR-1992 09:17
```

7.2 Compare Stream Processing

The compare stream utility compares the stream for each facility matching the entered specification. For each facility, a message is displayed to the log file indicating whether the VDE stream and the CMS class differed or matched. Differences are reported to the location specified in the report file prompt.

7.3 Suggestions for Comparing Streams

- There are some known differences between CMS and VDE that can be ignored. These differences are:

  1 BASE_LEVEL.MAR in facility SYS. This module is updated in CMS only by the system building tools.

  2 Facilities AAA_VDE_TEST and YELLOW_TEST are testing facilities for the tools group. Any differences encountered in these facilities may be ignored.

- A difference between VDE and CMS may be the result of a rolled back VDE transaction. The difference is self-correcting once the transaction is run successfully.

- As mentioned in the populate stream section, if you allow changes to a source stream during a population, you may encounter differences in the target stream after the population. This is due to the fact that the CMS populations take place after the VDE stream is populated.

8 Creating a New Facility

When you need to create a new facility on the masterpack, you can use this option to create the facility. This option creates the new facility in the VDE database and creates the facility CMS library. The utility creates three modules in the facility which are template files to be used for system building. The utility also sets up no propagation facilities in the most efficient manner.

The facility is created interactively. There is no batch procedure submitted by this option.

Required Privileges

The VDE privilege **CREFAC** is required to run this option. The process rights identifiers **VMS_SOURCE and VMS_ENABLE_CMS** are required.

8.1 Invoking the create facility procedure

To run the create facility procedure, choose option seven from the project leader main menu.

```
What action do you want to perform? (1-7,EXIT,HELP): 7

Create Facility Version X-1

Enter ? or "HELP" at any prompt to obtain help
Prompt default values (if any) appear in brackets []
Enter <Ctrl>Z, "Quit" or "Exit" to exit immediately

 Product Root [TOOLS$]:
```

Enter the product root. See Chapter 2 for a definition of the product root.

A stream needs to be defined for the facility. The stream should be the first development stream in which you expect the components of this facility to ship. For example, if you are creating a facility to hold the update files for version V5.5, you would enter V5.5 to this prompt.

```
 Facility begins with what development stream? [MAIN]:
```

Enter the new facility name. The product root is checked to see if a CMS library for this facility already exists. If a CMS library is found you will receive an error.

```
 Facility Name?: VIC
 %CREFAC-E-ALREXISTS, facility VIC CMS library already exists!
  Facility Name?: wrench
```

Enter a remark for the new facility. This remark is displayed by the VDE show facility command.

```
 Remark string for wrench [wrench FACILITY]: Wrench test facility
```

If the facility will accept change propagation enter yes to the next prompt. If you are creating a facility to hold update files for a particular release you should answer no to this question.

```
 Will facility wrench accept module change propagation? [YES]:
```

You are asked to confirm your input to proceed and create the facility.

```
 If you proceed you will create facility wrench in root TOOLS$.
 Stream MAIN will be populated with three system build template files.
 The facility is created by this procedure.  No batch job is submitted.

    Do you wish to proceed? [Yes]:yes
Validating stream MAIN in VDE...
%CREFAC-I-CREATING, Creating facility wrench...
%CREFAC-S-CREATED, facility wrench created
```

8.2 Create Facility Processing

The create facility processing is broken down as follows:

- The VDE facility and CMS library are created using the VDE create facility command.
- If the new facility is a no propagation facility, the file VMSCMS$NO_PROPAGATE.FLAG is created in the facility directory.
- Three modules are created in the facility. These three files are templates you edit to perform a facility build. The three files are:
  1. 'facility name'BLD.COM - This file contains a template of a command procedure to perform all the steps of a VMS system build. In the example used in this chapter the file name is WRENCHBLD.COM.
  2. 'facility name'ASM.DAT - This is a specially formatted data file that is used to contain information on which files to compile or assemble in the facility. In the example used in this chapter, the file name is WRENCHASM.DAT.
  3. 'facility name'LNK.COM - This is a command file where all link commands needed to build the facility should be located.
- The CMS group BUILD is created. The three build files created above are inserted into the build group.

8.3 Suggestions for Creating Facilities

- Be sure the propagation attribute for the facility is set correctly. Unnecessarily propagating changes in a facility is expensive.
- Remember, facilities used for holding a release's update files are nopropagate facilities.
- If the create facility procedure is abnormally terminated, it may require manual intervention to correctly cleanup the facility.

9 Populating a Stream in Selected Facilities

This option is virtually identical to the populate stream option. While the populate stream option populates the stream in all CMS libraries, this option only populates the facility CMS libraries which are specified in a data file, or in a user entered list. The populate facilities utility gives you the flexibility to populate both the CMS libraries and VDE database, the CMS libraries only, or, the VDE database only. The prompts are identical to the populate stream option except there are three additional questions. This option is useful when you know only a few facilities have changed since the previous population. It is important to realize that, if you populate the VDE stream, the population covers **ALL facilities**. The list of facilities to populate is used for controlling the CMS library populations and is ignored by the VDE population.

Required Privileges

The populate selected facilities option requires that the user hold the VDE privileges **FROZEN and PERFREP** and the process rights identifiers **VMS_ENABLE_CMS and VMS_SOURCE**. If the user does not hold these privileges, the submitted batch job will fail.

9.1 Invoking the populate facilities procedure

To populate a stream in selected facilities, use option eight from the main menu. The populate facilities command procedure executes.

```
 What action do you want to perform? (1-6,EXIT,HELP): 8

Populate Facilities Version X-1

Enter ? or "HELP" at any prompt to obtain help
Prompt default values (if any) appear in brackets []
Enter <Ctrl>Z, "Quit" or "Exit" to exit immediately

 Product Root [VMS$]:
```

Enter the product root. See Chapter 2 for a definition of product root.

Next you are asked for the source stream for the population. The source stream is the stream to populate from, or, if you like, the stream for which to create a snapshot. Usually the source stream is a VMS development stream but this is not a requirement. The source stream is similar to the parent stream of the create stream option. The source stream defaults to the value of logical name PLMENU$DEFAULT_SOURCE_STREAM.

```
Source Stream [V5.4]: V5.5
```

Upon entering the source stream you will be asked for the target stream to populate. This is usually a build stream for a development project. The target stream must have the VDE stream population attribute set for this procedure to work. The target stream defaults to the value of logical name PLMENU$DEFAULT_TARGET_STREAM.

Populating a Stream in Selected Facilities

```
 Target Stream: V5.5_BLD_Z
```

The next question is used to determine if you want to interactively enter a list of facilities to process. If you answer affirmatively to this question, you are prompted for a list of facilities. If you answer "N"o to this question, you are asked to supply a file listing the facilities to process.

```
 Do you want to enter the facilities to process? [Y]: help

     Answer "Y"es if you want to interactively enter the facilities to process.
     If you answer no, you will be expected to supply the name of a file
     which lists the facilities to process.  Enter BACK or PREV to return to
     the target stream prompt.

     Do you want to enter the facilities to process? [Y]:<RET>
```

Enter the list of facilities to populate.

```
 Enter a list of facilities delimited by commas(,)(256 character maximum) Hit <RET> to finish
: help

    Enter a list of facility names delimited by commas "," or enter one facility
    name.  Enter BACK or PREV to return to the facility input prompt.

 Enter a list of facilities delimited by commas(,)(256 character maximum) Hit <RET> to finish
 : sys,sysloa,driver,starlet<RET>
```

If you did not indicate you wanted to enter a list of facilities, you are asked for the location of a file that lists the facilities to process. The file must be a text file with one facility name per record. For example, the file below is used to process facilities DRIVER, SYS and SYSLOA.

```
$ type work$:[Sweeney.tools]facs.dat
 SYS
 SYSLOA
 DRIVER
$
```

Enter the facility list file specification. Your default directory is searched for the file if you omit the directory from the file specification.

```
 Facility List File: work$:[Sweeney.tools]facs.dat
```

The next prompt is used to indicate how the VDE database and CMS libraries are to be populated. If you want to populate the stream in both the VDE database and the CMS libraries enter "BOTH" to this prompt. If you want to update the VDE database only, enter "VDE" to this prompt. If you want to populate only the facility "CMS" libraries, enter CMS.

```
 Populate CMS, VDE or BOTH [BOTH]: BOTH
```

The populate stream job now prompts you for the queue to submit the populate jobs.

```
Queue to submit populate jobs [CLUSTER_LONGBATCH]
```

You are now asked for the work directory into which to place the log file and work files produced by the procedure. The submitted job name is formatted as 'target_stream_name'_POP. In our example the job name is V55_BLD_Z_POP.

```
 Directory for logs and work files [WORK212:[SWEENEY.SCRATCH]]:
```

The procedure prompts you for the time to begin the populate job. On weekdays, you are warned of possible masterpack disk contentions if you choose a time between 5:00AM and 5:00PM. You may submit the job at the entered time if you answer affirmatively to the "Do you still want to submit the job at the entered time? [N]:" question.

```
Time to begin submission of populate jobs? [ 9-APR-1992 17:00:00]: NOW

Due to locking contention on the master pack, this job should be submitted
after 5:00PM and before 5:00AM on weekdays.  It is advised to avoid
submitting populations during regular working hours unless you are sure
the source stream and the target stream are almost identical.

 Do you still want to submit the job at the entered time? [N]: YES
```

You are asked to confirm your population request.

```
 If you proceed you will populate stream V5.5_BLD_Z from stream
 V5.5 for the facilities listed in work$:[Sweeney.tools]facs.dat.

 Do you wish to proceed? [Y]:
Validating stream V5.5 in VDE...
Validating stream V5.5_BLD_Z in VDE...
Job V55_BLD_Z_POP (queue CLUSTER_LONGBATCH, entry 633) started on queue CLUSTER_LONGBATCH
```

9.2 Populate Facilities Processing

The populate stream batch job maintains a status file to indicate the current state of the stream population. Any warnings or errors encountered during the population are marked in this file. A population status is mailed to the user upon completion of the populate job. The populate batch job processing is summarized as follows:

I The target VDE stream is populated from the source VDE stream. The population is broken down into many small RDB transactions to avoiding locking out other update usage on the masterpack. If any error is detected at this point, the batch job will terminate. The stream is populated for ALL facilities due to the current implementation of the VDE POPULATE STREAM command.

II The procedure submits a batch job to perform the CMS insert generation commands for every non-archived facility which is in the facility list file. You are not allowed to populate archived facilities.

III Each CMS insert generation procedure checks if the source stream exists in the facility CMS library. If the source stream does not exist a warning message will be output in the log file and into the procedure status file. If the source stream exists, the target stream is populated from the source. †

IV The procedure waits for the CMS insert generation batch jobs to complete. When all jobs are complete the status file is checked for errors. The user who submitted the job will receive a mail message indicating the status of the population.

† The target class will be created in the CMS library if it does not already exist.

9.3 Suggestions for populating facilities

- **NEVER DELETE AN EXECUTING CMS POPULATE JOB FROM THE QUEUE.** An improper termination of a CMS insert generation command can corrupt a CMS library so, please don't delete the CMS population jobs. A future version of CMS is supposed to correct this problem. If you need to stop CMS population jobs from processing the jobs can be stopped by defining the logical name FAC$ABORT_POPLIBS in the system logical name table on all relevant nodes. The FAC$ABORT_POPLIBS logical stops ALL populate jobs from processing. After your jobs have stopped be sure to deassign this logical to allow future populations to run successfully.
- If the stream you are populating is very different from the source stream please don't submit the populate during "regular" working hours.
- Don't panic if you receive warning messages in the population status. There may be facilities for future VMS releases that are not applicable to your development stream.
- If you are going to do a build with the target stream, it's not wise to allow changes to the development stream during the population. If you allow replacements into the development stream during the population, the VDE representation of the build stream will differ from the CMS representation of the build stream. This could be a source of confusion after the build. Remember, it is the CMS representation of the stream that is used to build VMS.
- If your populate stream job fails, rerun the populate stream using the same input.
- If you fail to populate a facility in which the source stream has changed since the previous population of the target stream, you will cause the VDE stream representation to differ from the CMS representation for the facility.

10 Comparing Two CMS Classes

It is often useful to compare the contents of two streams (CMS Classes). For instance, you may need to identify which modules have changed between one stable build stream and a subsequent unstable build stream. You can use the compare CMS class option of the menu to compare two CMS classes for one or more facilities (CMS libraries). The utility allows you to submit multiple batch jobs to produce reports of class differences.

The VDE database stream generations are not compared by this option. If you want to compare the VDE generations you can use the VDE SHOW GENERATION command with the /IF_DIFFERENT qualifier. See the "VDE Reference Manual" for a description of the SHOW GENERATION command. The Compare CMS class utility and the VDE command should give you the same result. If the VDE difference is not the same as the output produced by this option, then you have uncovered a difference between VDE and CMS for one or both of the streams.

Required Privileges

You need the process rights identifiers **VMS_ENABLE_CMS** and **(VMS_SOURCE_READ or VMS_SOURCE)**.

10.1 Invoking the Compare Class Option

To compare two CMS classes, select option nine from the main menu. The compare class command procedure executes.

```
 What action do you want to perform? (1-6,EXIT,HELP): 9

Difference Stream Version X-1

Enter ? or "HELP" at any prompt to obtain help
Prompt default values (if any) appear in brackets []
Enter <Ctrl>Z, "Quit" or "Exit" to exit immediately

 Product Root [VMS$]: VMS
```

Enter the product root. See Chapter 2 for a definition of product root.

You are asked to supply one of the streams to compare. There is no validation performed on the entered stream.

```
 First Stream [V5.5]: V5.5
```

Enter the second stream to for the comparison. No validation is performed.

```
 Second Stream [V5.5_BUILD]: V5.5_BUILD
```

Enter the batch queue in which to run the difference jobs.

```
 Queue to submit difference job(s) [CLUSTER_LONGBATCH]:
```

Enter a directory for the log file produced by this option. This directory specification is also the default directory specification for any report file produced.

```
 Directory for logs and work files [WORK212:[SWEENEY.SCRATCH]]:
```

Optionally enter a file name to contain a report of the differences between the two streams. By default the differences will be reported in the log file. The file type defaults to ".LIS" and the default directory is the work directory entered at the previous prompt.

```
 Report file name ? [LOG]: bs.lis
```

Enter the facility specifications to process. You may enter wildcards in the facility name. In the example below, the streams will be compared in all facilities which begin with the letter "B".

```
 Facility to process [ALL]: B*

 If you proceed you will submit a job to difference stream V5.5
 to stream V5.5_BUILD for all facilities matching the specification
 VMS$:[B*.CMS].  Differences will be reported in
 file WORK212:[SWEENEY.SCRATCH]BS.LIS;.

 Do you wish to proceed? [Yes]: yes
Job BS (queue CLUSTER_LONGBATCH, entry 1483) started on GALAXY_LONGBATCH
```

You are asked if you wish to process any more facilities. If you answer affirmatively to the prompt, you are asked for a new report file name and a facility specification to process. A batch job is submitted for each facility specification entered. The procedure terminates when you enter "NO" to this prompt.

```
 Do you want to process any more facilities? [Yes]:
 Report file name ? [BS.LIS]: cs
 Facility to process [ALL]: c*

 If you proceed you will submit a job to difference stream V5.5
 to stream V5.5_BUILD for all facilities matching the specification
 VMS$:[C*.CMS].  Differences will be reported in
 file WORK212:[SWEENEY.SCRATCH]CS.LIS;.

 Do you wish to proceed? [Yes]:
Job CS (queue CLUSTER_LONGBATCH, entry 1484) started on DELPHI_LONGBATCH

 Do you want to process any more facilities? [Yes]: no
```

10.2 Compare Class Processing

For each facility specification entered, a batch job is submitted to produce a report of differences between the two streams. The batch job displays a message for each facility processed. A sample session and the log file produced by the session's input follows.

```
Difference Stream Version X-1

Enter ? or "HELP" at any prompt to obtain help
Prompt default values (if any) appear in brackets []
Enter <Ctrl>Z, "Quit" or "Exit" to exit immediately

 Product Root [VMS$]:
 First Stream [V5.5]:
 Second Stream [V5.5_BUILD]: AMBER
 Queue to submit difference job(s) [CLUSTER_LONGBATCH]:
 Directory for logs and work files [WORK212:[SWEENEY.SCRATCH]]:
 Report file name ? [LOG]:
 Facility to process [ALL]: H*

 If you proceed you will submit a job to difference stream V5.5
 to stream AMBER for all facilities matching the specification
 VMS$:[H*.CMS].  Differences will be reported in
 the log file.

 Do you wish to proceed? [Yes]:
Job V55_AMBER_DIFF (queue CLUSTER_LONGBATCH, entry 591) started on GALAXY_LONGBATCH

$ type WORK212:[SWEENEY.SCRATCH]V55_AMBER_DIFF.log

   "SYS$NODE" = "GALAXY::" (LNM$SYSTEM_TABLE)
%FAC-I-PROC, Processing library VMS$:[HELP.CMS]
                  Library: VMS$:[HELP.CMS]
           Base class: V5.5    Target class: AMBER

  Element name         V5.5         AMBER
-------------------------------------------------------------
  ACCOUNTIN.HLP        2            3
  LEXICAL.HLP          6            7
  SET.HLP              12           14
  SHOW.HLP             9            10
  START.HLP            6            7
  STOP.HLP             6            9
  V55_NEWFEATURES.HLP  2            3

%FAC-I-PROC, Processing library VMS$:[HLD.CMS]
  TEST  job terminated at 29-APR-1992 09:01:45.67
  Accounting information:
  Buffered I/O count:             139         Peak working set size:    4178
  Direct I/O count:                77         Peak page file size:     11696
  Page faults:                   5831         Mounted volumes:             0
  Charged CPU time:           0 00:00:03.34   Elapsed time:     0 00:00:13.16
```

10.3 Suggestions for Comparing Classes

This option uses the masterpack CMS libraries in readonly mode so there are no restrictions in the use of the utility.

11 Archiving or Obsoleting a Facility

The need to archive or obsolete an entire facility occasionally arises. Most commonly, a facility used for holding the update files for a particular VMS release is archived after the release ships.

Obsoleting a facility refers to deactivating a facility beginning at a particular stream. The deactivation is achieved by removing all of the facility's module generations for a specific stream and all of the generations of the stream's successors. For example, assume facility DECW$LIBS is active in stream AMBER and obsolete in stream BLADE. Suppose both streams are still open for source code changes and BLADE is a successor of AMBER . The BLADE stream does not want the four hundred modules in the facility to be used when creating new build streams and populating existing build streams, but, the AMBER stream needs the four hundred module generations. The BLADE release project leader can obsolete the facility and remove the four hundred module generations from the VDE stream and CMS library. Obsoleting the facility will mean faster, more efficient stream populations for the BLADE project. The AMBER project is unaffected by this action.

Archiving a facility obsoletes the facility beginning at a particular stream, and sets a flag to prevent further stream creations and stream populations for **ALL** streams in the facility.† If the facility to archive spans multiple releases, it is important that the facility not be archived until all mainline streams in which the facility is active are closed.

Required Privileges

The archive facility option requires that the user hold the VDE privilege **PERFREP** and the process rights identifiers **VMS_ENABLE_CMS and VMS_SOURCE**. If the user does not hold these privileges, the submitted batch job will fail.

11.1 Invoking the Archive Facility Procedure

To archive or obsolete a facility, select option ten from the main menu. The archive facility command procedure executes.

```
What action do you want to perform? (1-10,EXIT,HELP): 10

Archive/Obsolete A Facility Version X-1

Enter ? or "HELP" at any prompt to obtain help
Prompt default values (if any) appear in brackets []
Enter <Ctrl>Z, "Quit" or "Exit" to exit immediately

 Product Root [VMS$]:
```

Enter the product root. See Chapter 2 for a definition of product root.

† This restriction is overridden when you use the populate selected facilities menu option. VMS remedial streams need to use archived facilities.

You are asked for the facility to archive or obsolete. The procedure validates the existence of the facility. The procedure issues a warning message if the VMSCMS$ARCHIVED_FACILITY.FLAG file is found in the facility masterpack directory. This flag indicates that the facility was archived in the past. You are allowed to continue even if the VMSCMS$ARCHIVED_FACILITY file is found.

```
  Facility To Obsolete?: DECW$LIBS
```

Now indicate if you want the facility to be archived or to be obsolete. Your entry must be substring of "ARCHIVED" or "OBSOLETE".

```
Archive or Obsolete DECW$LIBS? [OBSOLETE]: Ob
```

The next prompt asks you for the stream where the facility is obsolete. The facility should not be active for the stream entered. All module generations for the entered stream and all of it's successor streams are removed from the VDE database stream and the facility CMS class.

```
Stream at which to OBSOLETE the facility? [AMBER]: BLADE
```

Enter the batch queue in which to submit the obsolete facility job.

```
 Queue to submit obsolete batch job [CLUSTER_LONGBATCH]:
```

Enter the directory for the log file produced by the batch job.

```
 Directory for logs and work files [WORK9:[SYSBLDTEST.JUNK]]:
```

At the next prompt, indicate the time to begin execution of the obsolete a facility batch job. The entry defaults to execute the job immediately. If the facility you are archiving or obsoleting contains many modules, it is advisable to defer processing until after "normal" working hours.

```
 Time to begin obsolete facility job? [NOW]:
```

Confirm your input to submit the batch job.

```
Do you wish to proceed? [Yes]:
Job Obsolete_decw$libs (queue CLUSTER_LONGBATCH, entry 808) started on GALAXY_LONGBATCH
```

11.2 Archive/Obsolete Facility Processing

The processing performed by the obsolete a facility batch job is summarized as follows:

I If the ARCHIVE option was selected by the user, the file VMSCMS$ARCHIVED_FACILITY.FLAG is created in the facility directory. For the DECW$LIBS facility in the VMS product, the file would be located in directory VMS$:[DECW$LIBS].

II The procedure determines all of the streams for which the facility is obsolete. The result is the stream entered by the user and all successor streams in the VDE database.

III For each stream determined in the previous step, all module generations in the facility that are members of the stream are removed from the stream via a VDE REMOVE GENERATION command.

IV For each stream, the associated CMS class is deleted from the facility CMS library.

11.3 Suggestions for Archiving and Obsoleting Facilities

- Remember, only use the ARCHIVE option when the facility is inactive for all, non-remedial development streams. All mainline streams for which the facility was active should be closed.
- Try to execute the obsolete facility batch job after hours. The batch job executes a VDE REMOVE GENERATION command for each module/stream combination determined to be obsolete in the facility. For instance, suppose the facility contains one hundred modules and the streams AMBER and BLADE each contain generations for all one hundred modules. Suppose BLADE is a successor stream to AMBER. Obsoleting the facility at AMBER requires two hundred remove generation transactions. Obsoleting the facility at BLADE requires one hundred remove generation transactions.
- If you are archiving a facility which holds one release's update files, make sure you enter the release's successor stream to the stream prompt. For example, to archive the AMBER facility you would enter BLADE to the stream prompt.

A Future Menu Options

Below is a list of options that will be added to the project leader menu in the future.

1 Prepare a result disk for a system build

2 Start a system build

3 Check system build results

4 Reserve a baselevel number for a future build

5 Permanently close a stream against changes

6 Perform a stream's replacements

If you have any comments, gripes, or suggestions regarding the project leader menu or this documentation, please contact Dave Sweeney (STAR::SWEENEY).