VM Batch Facility

User's Guide

Version 2 Release 2

IBM

VM Batch Facility

User's Guide

Version 2 Release 2

┌─ **Note!** ───┐

Before using this information and the product it supports, read the information in "Notices" on page v.

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Third Edition (July 1999)

This edition applies to Version 2, Release 2, Modification 0 of IBM® Batch Facility (product number 5684-137) and to all subsequent releases and modifications until otherwise indicated in new editions.

This edition replaces SC24-5574-01.

Contents

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Preface

What Is the VM Batch Facility?

It is a batch processing licensed program. The VM Batch Facility executes jobs (VM/ESA REXX/VM execs) for you, allowing you to continue to use your terminal while the job is being done. The VM Batch Facility can format and print reports, run programs, and do any other task that can be performed from an exec.

This Book Explains How To

- Send jobs to the VM Batch Facility for batch processing.

- Find out the status of jobs.

- Cancel jobs.

- Use other VM Batch Facility commands that help you prepare jobs and submit them for processing.

Who Should Use This Book

This book is for anyone who wants to use the VM Batch Facility for batch processing. This book does not explain how to install, customize, operate, or administer the VM Batch Facility.

Other Publications

The VM Batch Facility *Installation, Customization, and Administration* book, SC24-5573-02, is a guide for administrators of the VM Batch Facility.

The VM Batch Facility *General Information* book, GC24-5572-01, and the *Licensed Program Specifications*, GC24-5571-01, provide planning information and an overview of the VM Batch Facility.

The VM Batch Facility binder label (SX66-0206) identifies the VM Batch Facility books, if you are storing them in a VM ring binder (SX24-5129) or similar binder.

All publications, as well as the label and binder, can be ordered with a single Bill of Forms, SBOF-0252.

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Summary of Changes

This section lists the changes to VM Batch Facility in Version 2 Release 2.

1. **Job spawning**

   Selected VM Batch Facility commands, including BATCH SUBMIT can be issued from within a VM Batch Facility job.

2. **Specification of storage requirements for jobs**

   You can request a particular virtual storage size for a job, subject to any limits defined for the job class.

3. **Administrator form of STATUS command made available to all users**

   A form of the BATCH STATUS command is available whereby you may review the status of other jobs in the system, in addition to your own jobs.

4. **Scheduling of recurring jobs**

   You can submit jobs for periodic execution, without resubmitting the jobs on each occasion.

5. **Submission of jobs while in an XEDIT session**

   You can submit an usaved file of an XEDIT session or any CMS file for execution while in an XEDIT session.

6. **CONSOLE option for SUBMIT command**

   You can request at the time of submission that no console be spooled from your VM Batch Facility job.

7. **WAIT option for SUBMIT Command**

   You can request the synchronous submission of a job.

8. **Rationalization of return codes and severity codes**

   The conventions for return codes from the VM Batch Facility commands, and the severity codes for messages, have been established and are now documented.

9. The prompt request (++) has been removed for the BATCH SUBMIT and BATCH CHJOB commands.

Chapter 1. Introduction

This chapter explains:

- What the VM Batch Facility is
- How it can help you with your work
- How it works, an overview.

What Is the VM Batch Facility and How Can It Help You

Have you ever had to sit around at your terminal, waiting for the system to finish processing a job? You have lots of work to do, but as long as the system is formatting your report or assembling your program or doing whatever other job you have given it, you cannot use the system.

The VM Batch Facility is a program that can take over both short and long processing jobs for you. Instead of doing a job at your terminal, you put the commands that have to be issued to do the job into a CMS exec. Then you send the exec to the VM Batch Facility, which runs the exec and does the job. You are free to continue working at your terminal or Remote Job Entry (RJE) workstation while the VM Batch Facility does the job.

Among the features of the VM Batch Facility are the following:

- There are few restrictions on the types of jobs you can give to the VM Batch Facility. The execs you send to it can be very simple; see the starter exec shown in "Writing a General Purpose Job Exec" on page 141.

- You can control when and how your jobs are done. You can, for example, tell the VM Batch Facility to run a job at night, when computer costs may be lower. And there are other commands that let you find out the status of a job, change the way it is to be run, or cancel it.

- You can use the VM Batch Facility with commands or with panels.

Here are two samples to show how the VM Batch Facility could work for you:

Example 1: Mary has a long report to format and print. To save the 20 minutes it would take to format the report, she sends the job to the VM Batch Facility. It formats the report and sends it to the printer. Meanwhile, Mary has been able to keep working at her terminal.

Example 2: Gene has a truckload scheduling program to run. He wants to run it overnight to take advantage of lower computer rates, so he sends the job to the VM Batch Facility, specifying when the job should start. The VM Batch Facility runs the job and has the output for him in the morning.

Overview: How the VM Batch Facility Works

The process starts when you submit a job to the VM Batch Facility.

When you use the Submit panel or the BATCH SUBMIT command, your job is sent to the VM Batch Facility monitor virtual machine that controls the VM Batch Facility.

When you submit a job, you can use job control options to control how your job is to be run. Job control options let you specify, among others, the following:

- Date and time period during which your job should start
- Limits on the resources the job can use while running
- Whether a console log should be generated from your job
- Whether your job is conditional on successful execution of another job, for example, job chaining.

You can also let the VM Batch Facility set the necessary job control options for you. The job class to which you submit your job has default values for several of the job control options. Job classes are effectively types of jobs that the VM Batch Facility can accept. Every job must belong to a job class. The VM Batch Facility also sets other options for you automatically, if you do not specify them when you submit your job.

You can submit jobs for execution while in an XEDIT session. You can submit the file being edited in an XEDIT session, the previously saved version of the current file, or any CMS file.

The monitor virtual machine receives your job and holds it until it can start.

In the monitor virtual machine, your job waits its turn to run. It will be eligible to run when its start date and start time arrive.

A task virtual machine runs your job.

The VM Batch Facility uses other virtual machines, called task machines, to run jobs. When a task machine becomes available, the VM Batch Facility finds the next job that can run in the machine. Task machines accept jobs only from the job classes assigned to them.

To be ready to run in a task machine, your job's start date and start time must have arrived. (For an urgent job, you can also have a VM Batch Facility administrator or authorized user start the job for you, even if its start time has not arrived.)

The monitor machine periodically checks your job while it runs.

As your job runs, the monitor machine checks on the status of the job. If your job exceeds the resource limits in effect for it, the monitor machine can cancel the job. Resource limits include limits on the amount of computer time a job can use and on the numbers of print and punch records it can produce. The limits may be specified by you or by the job class to which you assigned the job.

If your job stops running for some reason, the monitor machine detects that it has stalled. If a stalled job does not restart, it is automatically canceled. Your installation determines how long a job can remain stalled before it is canceled.

If your installation uses the VM Batch Facility Load Level Scheduler (LLS), your jobs may be automatically suspended if the system becomes overloaded, and resumed when the load falls.

Your commands can retrieve the status of a job, change how and when it is to run, and cancel a job.

While your job is being processed by the VM Batch Facility, you can use VM

Batch Facility commands to check the status of your job; change job control options such as the job's start time; find out the status of task machines; review the job control options defined for each job class; or cancel one or more of your jobs.

When your job is completed, the task machine logs off and is ready for another job.

Before logging off, the task machine performs security procedures to ensure that other jobs cannot get access to the data and other resources that your job was using. The task machine's 191 minidisk is erased and cleaned, spool files that have not been closed and sent are erased, and links to minidisks are detached.

When your job ends, you can also receive a "console log file" in your reader. The log file contains all of the messages that you would have seen at your terminal if you had run the job exec yourself.

How to Read the Syntax Diagrams

Throughout this document, command syntax is described using the structure defined below.

- **Flow:**

  Read the syntax diagrams from left to right, from top to bottom, following the path of the line. The following are symbols used in the syntax diagrams:

  ►►—— Indicates the beginning of a syntax diagram.

  ——► Indicates that the syntax diagram continues on the next line.

  ►—— Indicates that a syntax diagram continues from the previous line.

  ——►◄ Indicates the end of a syntax diagram.

- **Abbreviations:**

  Uppercase letters denote the shortest acceptable abbreviation. If an item appears entirely in uppercase letters, it cannot be abbreviated. You can type the item in uppercase letters, lowercase letters, or any combination.

  In this example, you can enter KEYWO, KEYWOR, or KEYWORD in any combination of uppercase and lowercase letters.

  ►►—KEYWOrd—►◄

- **Symbols:**

  You must code the following symbols exactly as they appear in the syntax diagram.

  - *   Asterisk
  - :   Colon
  - ,   Comma
  - =   Equal Sign
  - -   Hyphen
  - ()   Parentheses
  - .   Period

- **Variables:**

  Highlighted lowercase items (*like this*) denote variables. In this example, *var_name* represents a variable you must specify when you code the KEYWORD command.

```
►►──KEYWOrd──var_name──►◄
```
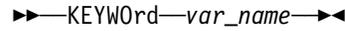
- **Repetition:**
  An arrow returning to the left means that the item can be repeated.

```
        ┌──────────┐
►►──────▼─repeat───┴──►◄
```
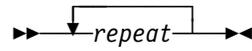
  A character within the arrow means you must separate repeated items with that character.

```
        ┌──,───────┐
►►──────▼─repeat───┴──►◄
```
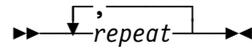
  A footnote (1) by the arrow references a limit that tells how many times the item can be repeated.

```
        ┌──────────┐
►►──────▼─repeat───┴──(1)──►◄
```

  Note:
  1 Specify *repeat* up to 5 times.

- **Required Choices:**
  When two or more items are in a stack and one of them is on the line, you *must* specify one item. In this example, you must choose A, B, or C.

```
►►──┬──A──┬──►◄
    ├──B──┤
    └──C──┘
```
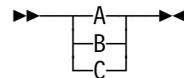
- **Optional Choice:**
  When an item is below the line, the item is optional. In this example, you can choose A or nothing at all.

```
►►──┬─────┬──►◄
    └──A──┘
```

  When two or more items are in a stack below the line, all of them are optional.
  In this example, you can choose A, B, C, or nothing at all.

```
►►──┬─────┬──►◄
    ├──A──┤
    ├──B──┤
    └──C──┘
```
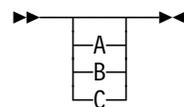
- **Defaults:**
  Defaults are above the line. The system uses the default unless you override it. You can override the default by coding an option from the stack below the line. In this example, A is the default. You can override A by choosing B or C.

```
    ┌──A──┐
►►──┼─────┼──►◄
    ├──B──┤
    └──C──┘
```
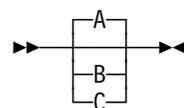
- **Repeatable Choices:**

A stack of items followed by an arrow returning to the left means that you can select more than one item or, in some cases, repeat a single item. In this example, you can choose any combination of A, B, or C.

```
        ┌──────┐
►►──┬───┬─A─┬───┬──►◄
    │   ├─B─┤   │
    │   └─C─┘
```
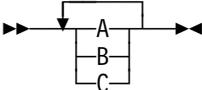
- **Syntax Fragments:**
  Some diagrams, because of their length, must fragment the syntax. The fragment name appears between vertical bars in the diagram. The expanded fragment appears in the diagram after a heading with the same fragment name. In this example, the fragment is named "A Fragment."

```
►►──┤ A Fragment ├──►◄
```

A Fragment:

```
     ┌─A─┐
├────┼─B─┼────┤
     └─C─┘
```

Syntax Diagrams
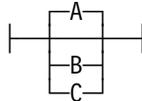
Chapter 2. Tutorial: Learning How to Use the VM Batch Facility

There are two steps to putting the VM Batch Facility to work for you:

1. Write a VM/ESA* REXX/VM exec that tells the VM Batch Facility what you would like it to do.

An exec is a short program, written in the CMS System Product Interpreter computer language, which you may know as the REXX language.

```
/* Job Exec */
command1
command2
exit
```
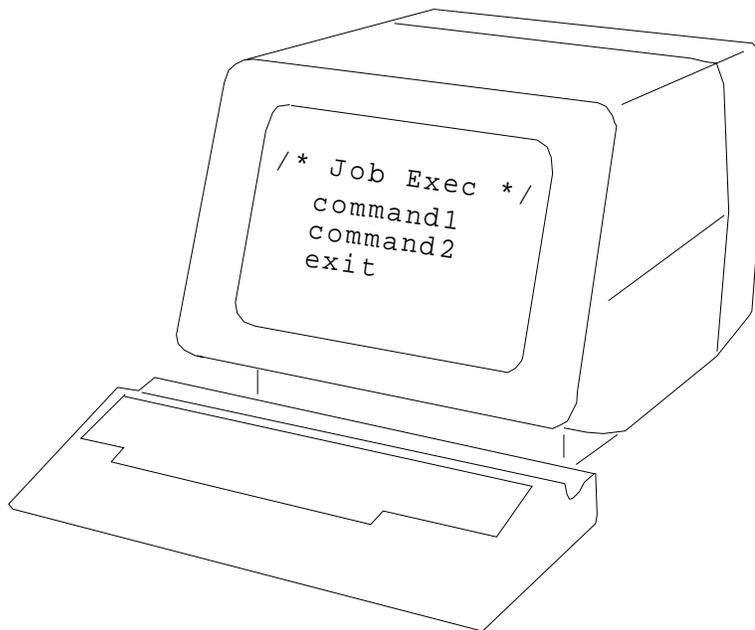
2. Tell the VM Batch Facility to run the exec and do the job you have given it.

Use the Submit panel or the BATCH SUBMIT command to send your job exec to the VM Batch Facility and have the exec run.

```
Submit job
```

7
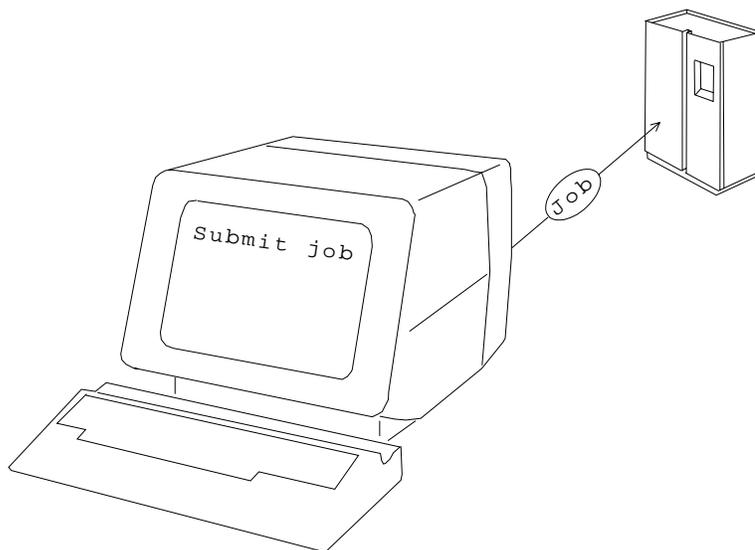
Tutorial

This tutorial shows how to write a job exec and have it performed by the VM Batch Facility. The tutorial starts with a brief demonstration and also includes:

1. Instructions for writing a general-purpose job exec.

2. An introduction to using the job control options of the Submit panel and BATCH SUBMIT command. Job control options give you control over how the VM Batch Facility runs a job that you submit. The tutorial shows how to specify:

    - The name, or job ID, that should be given to the job.
    - When and on what date the job should start.

3. An introduction to the other VM Batch Facility panels (or commands) that you can use to control your jobs.

Trying Out the VM Batch Facility

What is it that makes the VM Batch Facility such a useful tool? It is the fact that the VM Batch Facility can perform jobs for you using its own virtual machines. Using the VM Batch Facility is like being logged on to three or four user IDs at the same time; you can do more than one task at a time and get a lot more done.

Follow the instructions in the box below to get a quick demonstration of the VM Batch Facility. The job exec used in the demonstration is not very complicated; it just sends you a message from the VM Batch Facility virtual machine on which it runs. But you can easily write job execs that will perform long and difficult jobs for you.

Trying Out the VM Batch Facility

To start, enter this short exec into a file on your user ID. Name the file "runjob exec." This exec sends the message "Your job has run!!" to you.

```
/* Sample Job Exec                   */
parse arg . job_owner_userid .
'CP MSG' job_owner_userid,
   'Your job has run!!'
exit
```

- If you want to use the panels:
    1. Start the panels, if you have not already done so, by entering this command:

       ```
       batch menu
       ```

       or by starting the VM Batch Facility from one of your system's menu panels.
    2. On the User Tasks Menu panel, enter "1" then press Enter to select the Submit option.
    3. Send the sample exec to the VM Batch Facility by entering the file ID of the exec on the panel:

       ```
       Filename: runjob
       Filetype: exec
       Filemode: a
       ```

- If you want to use the BATCH SUBMIT command, enter this command on the command line of your terminal.

  ```
  batch submit runjob exec a
  ```

Tutorial

Whether you use the panel or the command, you will see a series of messages after you press ENTER:

- First, this message tells you that RUNJOB EXEC has been sent to the VM Batch Facility:

  ```
  DGREXE119I JOB '10135209' SUBMITTED TO 'BATCH' AT 'NODE'
  ```

  The number in the message is the identification number that the VM Batch Facility has assigned to RUNJOB EXEC. It is the time when the VM Batch Facility received the job, 10:13:52.09 in the morning, in this example. We will refer to the identification number as the "jobid" from here on.

- Soon after you see the acknowledgement message, you may see a message telling you that your job has been received, if your administrator has configured the facility to issue such a message.

- The VM Batch Facility may let you know that your job is being started, if your administrator has configured the facility to issue such a message.

  It will be followed by the message that the exec sends to you:

  ```
  YOUR JOB HAS RUN!!
  ```

Do not erase RUNJOB EXEC. You can use it again later in this tutorial for trying out the job control options of the Submit panel and the BATCH SUBMIT command.

For information on writing a general purpose job exec, see Appendix A, "Preparing an Exec" on page 137.

How to Submit Jobs and Control How and When They Run

It is easy to send a job exec to the VM Batch Facility and have the job run. If you are using the VM Batch Facility Submit panel, just enter the name of the job exec and press ENTER:

```
┌─ Submit Panel ─────────────────────────────────────────────────────┐
│                                                                     │
│  Filename: runjob                                                   │
│  Filetype: exec                                                     │
│  Filemode: a                                                        │
│                                                                     │
└─────────────────────────────────────────────────────────────────────┘
```

If you are using the BATCH SUBMIT command, just enter this command on the command line of your terminal, and press ENTER:

```
┌─ BATCH SUBMIT Command ─────────────────────────────────────────────┐
│                                                                     │
│  BATCH SUBMIT runjob exec                                           │
│                                                                     │
└─────────────────────────────────────────────────────────────────────┘
```

(The file type and file mode are always optional. The VM Batch Facility assumes that the job file is an exec on one of the minidisks linked to your user ID if you do not enter a file type and file mode.)

If you enter only a file name, your job will run under job control restrictions defined by the VM Batch Facility. However, you can also use the Submit panel or the BATCH SUBMIT command to control how your job is run. The next few pages demonstrate how to use the "job control options" of the Submit panel and the BATCH SUBMIT command to:

- Assign a job ID of your own choosing to a job.

- Specify a "start time window" for a job–the period of time during which the job should be started.

- Specify a future date on which your job should be started.

These are only some of the ways in which you can control how your jobs are performed. See "Submit Panel: Having the VM Batch Facility Run a Job for You" on page 78 for more complete information on using job control options If you are using the VM Batch Facility panels. See "BATCH SUBMIT: Having Your Jobs Run" on page 34 for more complete information on using job control options if you are using the VM Batch Facility with commands.

Assigning a Job ID to Your Job

The VM Batch Facility does not use the file name of your job exec to refer to your job, once you have submitted it. Instead it uses a name, assigned by you or by the VM Batch Facility, called a **job ID**.

Left to itself, the VM Batch Facility assigns a numeric job ID to your job, the time when you submitted the job. (If you are at a Remote Job Entry (RJE) workstation, it is the time when the job was received.)

For example, if you submit a job at 3:15 and 22.35 seconds in the afternoon, the job ID would be 15152235. Numeric job IDs may be hard to remember, so you may wish to give your own, easier-to-remember job IDs to your jobs.

To assign a job ID to a job, use:

The **job ID** field of the Submit panel; or

the **ID** option of the BATCH SUBMIT command.

Trying it out

Here is how to assign "MESSAGE" as the job ID of the RUNJOB EXEC, using the Submit panel:

First, enter the name of the job exec:

```
Filename: runjob
Filetype: exec
Filemode: a
```

(In this example, we are using the file name of the sample exec shown on page 9. You can substitute an exec of your own if you wish.)

Then, enter the job ID in the job ID field:

```
Job Id: message
```

Finally, press ENTER to submit the job. The VM Batch Facility will respond with this message:

```
DGREXE119I
JOB 'MESSAGE' SUBMITTED TO 'BATCH' AT 'NODE'
```

The only restrictions on job IDs are:

1. They cannot be more than eight characters long.
2. They can have only letters and numbers in them. (If you are submitting a job from a card reader or Remote Job Entry workstation, you can also use the special characters allowed for CMS file IDs. The job ID has to comply with the requirements for CMS file IDs.)
3. They must be single words, with no imbedded blanks.

To assign "MESSAGE" as the job ID of your job using the BATCH SUBMIT command, enter the following command:

```
batch submit runjob (id message
```

Specifying When Your Job Should Start

Usually, the VM Batch Facility runs your jobs as soon as it can after you submit them. (Your installation can change the way the VM Batch Facility is set up, so this statement may not always be true.) But you can also tell the VM Batch Facility not to run your job until the time that you specify.

You tell the VM Batch Facility when to run a job by specifying a **start time window**. A start time window is simply the period of time during which the VM Batch Facility is allowed to start a job.

Here is how a start time window works: *Mike is submitting a job that should be run at night. So he specifies a start time window of "2200" (10 p.m.) and "0500" (5 a.m.). The VM Batch Facility holds the job until the start time window opens at 10 p.m. that night. If the job has not started by 5 a.m., it will be held until 10 p.m. on the following night.*

You can also use the start time window to specify that a job should be started any time after a certain hour. Here is an example: *Cliff wants to have a job start any time after 10 p.m. He specifies a start time window of "2200" and "open". The job will be eligible to start any time after 10 p.m. that night.*

To specify a start time window, use:

The **Start Window Open** and **Start Window Close** fields on the Submit panel; or

The **WBEGIN** and **WEND** options of the BATCH SUBMIT command.

Trying it out

Here is how to have the RUNJOB EXEC started approximately 5 minutes from now, using the Submit panel:

First, enter the name of the exec:

```
Filename: runjob
Filetype: exec
Filemode: a
```

Then enter the open and close times for the start time window. For the Start Window Open time, enter the time 5 minutes from now. For the Start Window Close time, enter the time 15 minutes from now. For example, if the time is now 3:10 in the afternoon, enter:

```
Start Window Open : 1515
Start Window Close: 1525
```

Notice that the VM Batch Facility reads time in 24-hour notation. Using this notation, 3:15 p.m. is "1515", and 3:25 p.m. is "1525". The notation starts from 0000 and goes up to 2400, and it always uses four numbers, without a colon in the middle. For example, 12 midnight is "0000" or "2400"; 11 a.m. is "1100"; 9:15 p.m. is "2115".

When you press ENTER, you will submit the RUNJOB EXEC with a 10-minute start time window, from 3:15 to 3:25 p.m. in the example. In about 5 minutes, the job will run and you will see the "Your job has run!!" message at your terminal.

If the VM Batch Facility cannot start your job by 3:25 because of its work load, you will not see the message until tomorrow afternoon at 3:15.

If you want to define the same start time window using the BATCH SUBMIT command, enter:

```
batch submit runjob (wbegin 1515 wend 1525
```

Having Your Job Started on a Future Date

If you submit a job without entering the date on which the job should run, the VM Batch Facility assumes that the job should run today, when the start time window of the job opens.

But let's say you want to submit 12 jobs, one to run each month for a year. You can have the VM Batch Facility hold the jobs until the start of each month by specifying the correct **start date** for each job.

You can also have a job held indefinitely without being started, until you release it. Just specify **HOLD** as the date on which a job should be started. The VM Batch Facility will hold the job until you change the start date.

To specify a start date, use:

The **Start Date** field of the Submit panel; or

the **DATE** option of the BATCH SUBMIT command.

Trying it out

Here is how to have the RUNJOB EXEC run tomorrow between 3:15 and 3:25 in the afternoon, using the Submit panel:

First, enter the name of the exec:

```
Filename: runjob
Filetype: exec
Filemode: a
```

Then enter start window open and start window close times as you did in the previous example:

```
Start Window Open : 1515
Start Window Close: 1525
```

Then enter tomorrow's date in the Start Date field. For example, if today is August 2, 1993, enter:

```
Start Date: 8/3/93
```

Notice that the date is entered in this format: mm/dd/yy. It can also be entered in these formats: dd.mm.yy, mm/dd/ccyy and dd.mm.ccyy. When submitted as a 2 digit year, the date will be converted to a 4 digit year using a window of 1990-2089. This means that all 2 digit years between 00 and 89 will be interpreted as 2000-2089 and years between 90 and 99 will be interpreted as 1990-1999.

The job will become eligible to start tomorrow, the 3rd, when its start time window opens at 3:15 p.m.

Here is how to submit RUNJOB EXEC with the same start date and start time, using the BATCH SUBMIT command. Enter:

```
batch submit runjob exec
   (date 8/3/93 wbegin 1515 wend 1525
```

(Remember to enter the BATCH SUBMIT command on a single command line–it should not be broken, as it is in this example.)

Using the Other VM Batch Facility Functions

After you have submitted a job, there are other panels and commands that you can use to control the job.

The Cancel panel and the BATCH CANCEL command

Cancel lets you get rid of a job that you have submitted, even if it has already started to run. Do you have to make one more change in that report you submitted for formatting and printing? Just cancel the job and submit the job exec again to format and print the new version of the report.

For help in using the Cancel panel, see page 84. For help in using the BATCH CANCEL command, see page 20.

The Chjob panel and the BATCH CHJOB command

What do you do if you have submitted a job and you want to change when it should run? Or if you want to change some of the other job control options that govern how the job will run?

The Chjob panel and the BATCH CHJOB command let you change the job control options of a job that you have submitted. You can switch the job to a different job class, change the resource limits or start time window of a job, or make other changes in how the job is to run.

For help in using the Chjob panel, see page 81. For help in using the BATCH CHJOB command, see page 23.

The BATCH JOBSTEP command

BATCH JOBSTEP is a command for advanced users of the VM Batch Facility. It is a command that you include in job execs. When the BATCH JOBSTEP command is executed, it sends the job step you put in the command to the VM Batch Facility. The VM Batch Facility records the job step as the current "Step" of the job in the job status message.

You can use the BATCH JOBSTEP command to have a job become eligible to start while the job to which it is chained is still running. And you can use it to restart a job that was interrupted by a system shutdown at the last BATCH JOBSTEP command that was executed, rather than from the beginning.

For help in using the BATCH JOBSTEP command, see page 148.

The Password panel and the BATCH PASSWORD command

You can submit jobs to the VM Batch Facility that are to be run on your own user ID, when you are logged off. If you change your logon password, how do you give the new password to the VM Batch Facility for use with these *autolog* jobs?

The Password panel and the BATCH PASSWORD command assign a new password to all "CLASS AUTOLOG" jobs that you have submitted from your user ID.

For help in using the Password panel, see page 82. For help in using the BATCH PASSWORD command, see page 26.

The Query panel and the BATCH QUERY command

What job classes are available? Which task virtual machines can accept and run jobs belonging to the job class that you are planning to use?

The Query panel and BATCH QUERY command enable you to review VM Batch Facility job classes. Job classes identify the types of jobs that the VM Batch Facility can accept. They have default and maximum values for certain job control options, which apply to jobs belonging to each class. Task machines are the virtual machines that the VM Batch Facility uses to run jobs.

For help in using the Query panel, see page 83. For help in using the BATCH QUERY command, see page 27.

The Status panel and the BATCH STATUS command

Is your job still queued and waiting to run? What is the start time window of the job, and what resource usage limits are in effect for it? Has it started to run?

The Status panel and the BATCH STATUS command get all of this information for one or more of the jobs that you have submitted.

For help in using the Status panel, see page 80. For help in using the BATCH STATUS command, see page 30.

Chapter 3. Using VM Batch Facility Commands to Execute Jobs

To find out which VM Batch Facility command to use for a specific task, see Table 1.

To get information on a command, enter BATCH ? or HELP BATCH. Help information will be displayed at your terminal. You will also find the command description in this chapter. The commands are arranged alphabetically by command name.

To get information on reading railroad track diagrams, refer to "How to Read the Syntax Diagrams" on page 3.

Table 1. Matching Batch Processing Tasks with VM Batch Facility Commands

To do this:	Use this command:	For more information:
Have your job run on a different facility.	BATCH ADDRESS	See page 19.
Cancel one or more of your jobs.	BATCH CANCEL	See page 20.
Change how and when a job is to be performed after you have sent it to the VM Batch Facility.	BATCH CHJOB	See page 23.
Have your job report its progress to the VM Batch Facility.	BATCH JOBSTEP	See page 148.
Change the password that the VM Batch Facility will use to execute CLASS AUTOLOG jobs on your user ID.	BATCH PASSWORD	See page 26.
Review the VM Batch Facility job classes.	BATCH QUERY CLASS	See page 27.
Review the available recurrence patterns.	BATCH QUERY REPEATS	See page 27.
Review the VM Batch Facility task virtual machines.	BATCH QUERY TASK	See page 27.
Find out the status of your jobs.	BATCH STATUS	See page 30.
Send a job to the VM Batch Facility and have the job executed.	BATCH SUBMIT	See page 34.
Control how and when a job is executed.	BATCH SUBMIT command options	See page 39.

Note: If you are using the VM Batch Facility from a Remote Job Entry (RJE) workstation, see Chapter 6, "Using the VM Batch Facility with the Direct or RJE Interface" on page 87 for information on using VM Batch Facility commands.

VM Batch Facility Command Return Codes

The return codes from all VM Batch Facility commands use the following convention:

Return Code	Meaning
0	Command has been issued successfully.
4	Command has been issued, but there were complications; check for other messages.
8	Command failed due to parameter error.
12	Command not recognized or not permitted.
16	Command failed due to environmental error.

Note: The return codes to VM Batch Facility commands only indicate the success of sending the command to the monitor. They give no indication of the monitor's response to the command. The exception to this is the synchronous form of the BATCH SUBMIT command. See page 70 for details of the return code from a synchronous submission. See page 153 for a discussion of synchronous submission.

BATCH ADDRESS: Changing Destination of Commands

Use the BATCH ADDRESS command to review or alter the destination for VM Batch Facility commands. Once a destination is set, all subsequent commands and job submissions are directed to that destination until the destination is explicitly altered or reset.

Note: Submission of batch jobs to another VM Batch Facility is subject to installation defined controls at the receiving VM Batch Facility facility.

```
┌─ Format ──────────────────────────────────────────────────────────┐
│                                                                    │
│  ►►──BATCH──ADdress──┬──────────────────────────────┬──►◄          │
│                      │  ┌─monid─┐      ┌─nodeid─┐    │              │
│                      ├──┴───────┴──AT──┴───*────┴──┤                │
│                      └─RESET──────────────────────┘                │
│                                                                    │
└────────────────────────────────────────────────────────────────────┘
```
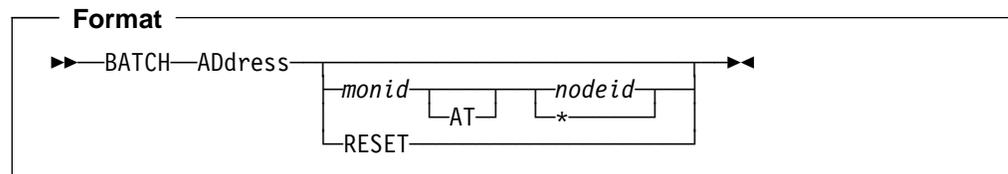
No option

No option displays the current destination.

monid

This is the user ID of the VM Batch Facility monitor machine.

nodeid

This is the RSCS identifier of the node on which the VM Batch Facility monitor runs. An asterisk (*) selects the current node.

Reset

Set the destination to the default for your installation.

Usage Notes

1. **As a spawned command:** BATCH ADDRESS can be issued from within a VM BATCH Facility job.

2. **Storage of** *monid* **and** *nodeid* **values:** The values for *monid* and *nodeid* are stored in the CMS file named "LASTING GLOBALV" on your A-disk. These values remain across CMS sessions unless altered or "Reset".

3. **Available VM Batch Facilities:** Your system administrator can advise you as to the IDs of VM Batch Facilities available to you.

4. **Class AUTOLOG jobs** may not be submitted to remote VM Batch Facilities.

5. **BATCH JOBSTEP commands:** You do not need to set a destination for BATCH JOBSTEP commands. These are automatically directed to a job's controlling monitor regardless of the current destination.

BATCH CANCEL: Canceling Your Jobs

Use the BATCH CANCEL command to cancel one or more of the jobs you have submitted to the VM Batch Facility.

The effect of a BATCH CANCEL command on a job depends on the state of the job.

- If a job that is targeted by a BATCH CANCEL command does not recur:
  - If the job is running then the job is stopped. Unless the CONSOLE option for the job was specified as NO, then you will receive the console log for the job up to that point. The processing that was specified by the ERROR job control option for the job then commences. On completion of the ERROR processing the job is discarded. (See page 53 for more information on ERROR processing.)
  - If the job has not yet run, then it is discarded immediately.
- If a job that is targeted by the BATCH CANCEL command recurs, then the cancel command can be used in two different ways. If the FLUSH option is not specified, then the cancellation only targets a running instance of the job. If the FLUSH option is specified, then the cancellation targets the entire institution of the job; that is, any current instance and all future occurrences. So we may talk of cancelling a single instance of a recurring job, or of flushing the entire job.
  - If the job is running then the job is stopped and ERROR processing proceeds as for a non-recurring job. On completion of the ERROR processing, the job is discarded only if it was flushed; otherwise it is scheduled to run again, either according to its recurrence pattern, or by having its chain condition re-imposed.
  - If the job is not running and was flushed, then the job is discarded immediately; otherwise the cancellation is ignored for the job.

Note: BATCH CANCEL cannot be used to stop ERROR job control option processing that is being done for a canceled job. Have a VM Batch Facility authorized user enter the BATCH FORCE command to stop ERROR option processing.

```
┌─── Format ──────────────────────────────────────────────────────┐
│                                                                   │
│                            ┌─ALL─────┐                            │
│   ►►──BATCH──CANCEL─────────┼─────────┤──jobid──┬──────────────┬─►◄ │
│                            │  └─JOB─┘ │         └─(──FLUSH──┬─┬┘    │
│                            ├─QUEUED───┤                    └─)┘     │
│                            └─RUNNING──┘                             │
│                                                                   │
└───────────────────────────────────────────────────────────────────┘
```
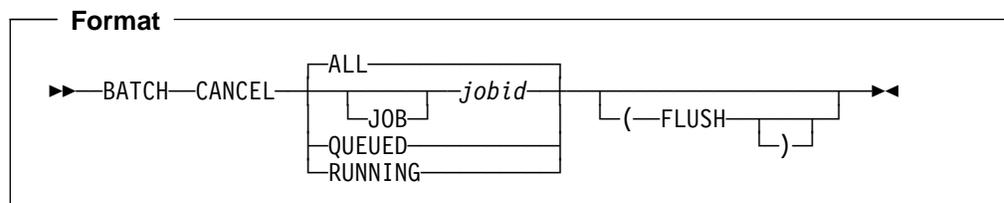
[JOB] *jobid*

>   To cancel just one job, enter the job ID of the job. If you are not sure of the job ID, enter:

>   `batch status all`

>   **Caution:** Be sure to precede the job ID with the keyword "JOB" if the job's name is "ALL" , "QUEUED" , "RUNNING" or "JOB". Otherwise, the VM Batch Facility will interpret the job ID as a BATCH CANCEL command option and will execute it.

ALL

Use this option to cancel all jobs that you have submitted to the VM Batch Facility that are running or waiting to run.

QUEUED

Use this option to cancel all jobs you have submitted that have not started.

RUNNING

This option cancels all your jobs currently running or suspended while running. Queued jobs waiting to run are not affected.

FLUSH

Enter this option to cancel any executing instance and all future occurrences of recurring jobs. If not specified, then only executing instances of recurring jobs will be cancelled.

Usage Notes

1. **Jobs affected by this command:** This command only affects jobs that have been accepted by the VM Batch Facility monitor machine. Jobs that are submitted to, but not accepted by the VM Batch Facility are not affected by this command.

2. **As a spawned command:** BATCH CANCEL can be issued from within a VM Batch Facility job.

3. **Confirmation Message:** For each job that is cancelled as a result of the command, you will receive a message indicating that the cancellation process has been initiated. If the job was not running, the message also means that the cancellation is complete; but if the job was running then cancellation completes only when the actions that were specified for the ERROR option on the job submission have been performed. Until then, jobs from the same user with the same job ID will be rejected as duplicates. The time taken to complete the cancellation process is dependent upon the nature of the processing invoked for the ERROR option. An ERROR specification of NODUMP significantly reduces the duration of cancel processing.

4. **Finding out how far a canceled job has run:** If the job ran with the CONSOLE job control option not set to NO, then you may examine the console log from the job that was sent to you when the job was cancelled. The console log is a list of all of the messages you would have seen at your terminal if you had run the job exec yourself. It can help you determine how far the job had run when it was canceled.

   If your job logged its progress with BATCH JOBSTEP commands, then issue the BATCH STATUS command to find out the last jobstep that it issued.

5. **If a VM Batch Facility authorized user cancels your job:** VM Batch Facility authorized users (administrators) can cancel jobs belonging to any user, not just their own. If an administrator cancels one of your jobs, the VM Batch Facility will send you a message telling you the job has been canceled.

6. **Cancellation of chained jobs:** Unless it has already started to run, a chained job is canceled if the job to which it is chained is canceled. If a job is flushed, all jobs chained to it are also flushed. However, chained jobs that are running will be allowed to complete. See "Coordinating Job Execution by Chaining Jobs Together" on page 44 if you want more information on chained jobs.

Examples

To cancel these jobs:

1. Jobs that you own and that are currently being run.
2. Jobs that you own and that have been suspended by a VM Batch Facility authorized user while they were running.

Enter:

```
batch cancel running
```

To cancel a job that you have named SOMENAME, enter:

```
batch cancel somename
```

"SOMENAME" will be canceled and discarded. If the job was running when it was canceled, the VM Batch Facility will perform any ERROR option processing specified for the job.

BATCH CHJOB: Changing Job Control Options

Sometimes, you may want to change how and when a job will run after you have sent it to the VM Batch Facility. Use the BATCH CHJOB command to change the job control options that govern how your job will run.

```
┌─ Format ──────────────────────────────────────────────────────────────┐
│                                                                        │
│  ►►──BATCH CHJob──jobid──(──(1)──┤ Options ├──────────────────────►◄    │
│                                   └─)─┘                                 │
│                                                                        │
│  Options:                                                              │
│                                                                        │
│  ├──┬──────────────────────┬──┬─────────────────────┬─────────────►   │
│     └─ACcount──account──────┘  └─ALtid──altuserid────┘                 │
│                                                                        │
│  ►──┬──────────────────────────────────────────────────────┬──┬────────────────┬─► │
│     └─CHain──┬──┬─userid─┬──┬─.nodeid─┬──.jobid──┬──────────┬─┘  └─CLass──classid─┘  │
│             │  └─*──────┘  └─.*──────┘           └─.jobstep─┘  │                     │
│             └─No──────────────────────────────────────────────┘                     │
│                                                                        │
│  ►──┬──────────────────────┬──┬─────────────────────────┬──┬─────────────────────┬─►│
│     └─CONSole──┬─Yes───┬────┘  └─DAte──┬─dd.mm.yy───┬────┘  └─ERror──┬─filename─┬──┘  │
│                ├─No────┤               ├─dd.mm.ccyy─┤                ├─DUmp─────┤     │
│                ├─Rc────┤               ├─mm/dd/yy───┤                └─NODump───┘     │
│                └─Debug─┘               ├─mm/dd/ccyy─┤                                 │
│                                        ├─HOLD───────┤                                 │
│                                        └─OPEN───────┘                                 │
│                                                                        │
│  ►──┬──────┬──┬───────────────────────┬──┬──────────────────────┬──┬──────┬─►│
│     ├─LLS──┤  └─PArms(2)──┬─(──▼─parms──)─┬─┘  └─PASSword──password─┘  └─PJ──n─┘   │
│     └─NOLLS┘              └─()─┘                                        │
│                                                                        │
│  ►──┬───────────────────┬──┬────────────────────┬──┬──────────────────────┬─►│
│     └─PRint──┬─pppp─┬────┘  └─PUnch──┬─uuuu─┬────┘  └─REPeat──┬─ffffffff─┬──┘  │
│              └─NONE──┘               └─NONE──┘                ├─HOLD─────┤     │
│                                                              ├─NOHOLD───┤     │
│                                                              ├─NEVER────┤     │
│                                                              └─KEEP─────┘     │
│                                                                        │
│  ►──┬──────────────────┬──┬──────────────────────┬──┬─────────────────────┬─►│
│     └─REstart──┬─Yes─┬──┘  └─SEconds──┬─ssssssss─┬─┘  └─STORage──┬─kkkkkkkK─┬─┘│
│                └─No──┘                └─NONE──────┘              ├─kkkkkkk──┤  │
│                                                                 └─mmmmM────┘  │
│                                                                        │
│  ►──┬──────────────┬──┬──────────────────┬──────────────────────────┤  │
│     └─WBegin──hhmm──┘  └─WEnd──┬─hhmm─┬──┘                             │
│                               └─OPEN──┘                                │
│                                                                        │
│  Notes:                                                                │
│  1  You can enter options in any order after the open parenthesis.     │
│  2  Parameters inside the parentheses including blanks, cannot exceed  │
│     a total of 18 characters in length.                                │
│                                                                        │
└────────────────────────────────────────────────────────────────────────┘
```

jobid
: Enter the job ID whose control options you want to change.

: If you are not sure of the job ID, use the BATCH STATUS command to review your jobs.

options
: Enter the job control options that you would like to change. The options for BATCH CHJOB are described in Chapter 4, "Using the Job Control Options of the SUBMIT and CHJOB Commands" on page 39.

: The following table suggests ways to use the BATCH CHJOB command options.

BATCH CHJOB Command

Table 2. Changing Job Execution with the BATCH CHJOB Command.

To make this change:	Use this option:	When changes permitted:*	For more information:
Charge a different account number.	ACcount	Only before a job starts running.	See page 40.
Run job under a different alternate user ID.	ALtid	Only before a job starts running.	See page 41.
Make job start dependent on the status of another job, or change or cancel an existing job chain.	CHain	Only before a job starts running.	See page 44.
Assign the job to a different class.	CLass	Only before a job starts running.	See page 47.
Change the disposition of a job's console log.	CONSole	Only before a job starts running.	See page 52.
Change the start date.	DAte	Only before a job starts running.	See page 71.
Place a job on indefinite hold.	DAte	Only before a job starts running.	See page 71.
Remove start date restrictions.	DAte	Any time after you submit a job.	See page 71.
Change the action to take if a job is canceled.	ERror	Any time before a job ends.	See page 53.
Subject job to LLS activity (if permitted).	LLS	Any time after the job is submitted.	See page 57.
Do not subject job to LLS activity (if permitted).	NOLLS	Any time after the job is submitted.	See page 57.
Change or cancel the parameters to be passed to a job.	PArms	Only before a job starts running.	See page 58.
Change the logon password of a CLASS AUTOLOG job.	PASSword	Only before a job starts running.	See page 59.
Change job priority relative to your other queued jobs.	PJ	Only before a job starts running.	See page 61.
Change the recurrence pattern for a job.	REPeat	At any time.	See page 62.
Specify whether a job should be restarted if it is interrupted by a system shutdown.	REstart	Any time before a job ends.	See page 65.
Change resource use limits.	SEconds PRint PUnch	Any time before a job ends.	See page 67.
Change the virtual storage size of a job.	STORage	Only before a job starts running.	See page 69.
Change the start time window, the period of time during which a job may start.	WBEGIN WEND	Only before a job starts running.	See page 71.

Note: * Recurring jobs may be changed at any time. If an instance of the job is running when the CHJOB is issued, this column provides an indication of whether the change will apply to the currently running instance, or whether it will only take effect the next time the job runs.

Usage Notes

1. **As a spawned command:** BATCH CHJOB can be issued from within a VM Batch Facility job.

2. **Option values:** The values of the job options and parameters must **not** contain non-displayable characters (e.g., x'00', x'15', etc...). Any non-displayable characters present will be translated to spaces (x'40').

3. **Options unchanged:** Options that you do not use in the BATCH CHJOB command stay set to their current values.

4. **Changing Job Class:** If you change the job class, the default LLS, WBEGIN, WEND, SECONDS, PRINT, PUNCH and STORAGE values of the job class are put into effect for your job. To prevent these options from being changed, specify values for them when you change the job class.

5. **Class Autolog Jobs:** The BATCH CHJOB command cannot be used to change the job class of a CLASS AUTOLOG job or to switch a non-AUTOLOG job to class AUTOLOG. In such a case, cancel the job and resubmit it with the new class.

6. **Changing to Recurring Jobs:** The BATCH CHJOB command cannot be used to change a non-recurring job to a reucrring job.

7. **Jobs affected by this command:** This command only affects jobs that have been accepted by the VM Batch Facility monitor machine. Jobs that are submitted to, but not accepted by the VM Batch Facility are not affected by this command.

8. **Options not applicable:** The following BATCH SUBMIT options are not applicable to BATCH CHJOB:

   - APPEND option
   - ID option
   - WAIT option

BATCH PASSWORD: Changing CLASS AUTOLOG Passwords

Use the BATCH PASSWORD command to change the logon passwords of CLASS AUTOLOG jobs. The command changes the passwords of all CLASS AUTOLOG jobs that you have submitted from your user ID that are still waiting to be started.

If your VM Batch Facility is configured to ignore passwords for class AUTOLOG jobs, this command will be rejected.

```
┌─ Format 1 ──────────────────────────────────────────────────────┐
│  ►►──BATCH─PASSword──►◄                                           │
└──────────────────────────────────────────────────────────────────┘
```

```
┌─ Format 2 ──────────────────────────────────────────────────────┐
│  ►►──BATCH──PASSword──password──►◄                                │
└──────────────────────────────────────────────────────────────────┘
```

Use format 1 to prevent your password appearing on the terminal as you type it. The VM Batch Facility will prompt you for the password without displaying it.

Use format 2 to include your password on the command line, where it may be visible.

password
> Enter the logon password that is to be provided to all CLASS AUTOLOG jobs that have been submitted from your user ID.

Usage Notes

1. **Negating a password:** If you are using a system that does not need a password for autologging your user ID, enter *NOPASS* to negate a password that you previously supplied.

2. **Password security:** The VM Batch Facility stores your password in encrypted form so that it is not available to any other users of your system.

3. **Background information on CLASS AUTOLOG jobs:** Jobs belonging to CLASS AUTOLOG are run on your own user ID when you are logged off. For more information, see "Having the VM Batch Facility Perform a Job on Your Own Virtual Machine" on page 49.

4. **When changes are permitted:** The password for a class AUTOLOG job can only be changed before the job starts running.

```
┌─ Example ───────────────────────────────────────────────────────┐
│                                                                  │
│  If you have changed the logon password of your user ID to "newpass", entering │
│  this command would reset the passwords associated with all your CLASS │
│  AUTOLOG jobs to the new password:                               │
│                                                                  │
│  batch password newpass                                          │
│                                                                  │
└──────────────────────────────────────────────────────────────────┘
```

BATCH QUERY: Reviewing Available Resources

Use the BATCH QUERY command to review the usage configuration of a VM Batch Facility monitor. The following information is available:

1. Job classes defined for a monitor.

   Every VM Batch Facility job is assigned to a job class and runs under the controls defined for the class. Controls exist to limit the system resources that a job may use and times of day when jobs may run. Use the BATCH QUERY CLASS command to find out which classes have been defined for a monitor, and the controls that are in place for each class. You may then make an informed decision when selecting a class for your job to run under. Use the CLASS option of the BATCH SUBMIT or BATCH CHJOB commands to assign a class to a job. If you do not specify a class, the VM Batch Facility will assign your job to class A.

2. Task machines defined for a monitor.

   Every VM Batch Facility job that is not assigned to class AUTOLOG runs on a virtual machine managed by the VM Batch Facility monitor, called a task machine. The availability of task machines is subject to site defined controls, and also varies with the load and job mix on the monitor. Use the BATCH QUERY TASK command to find out which task machines have been defined for a monitor, the controls that are in place for them, and their current availability. Although you cannot direct the Facility to run your job on a particular task machine, knowledge of task availability will influence your choice of a suitable class for your job. This is because each task machine may have been configured to only run jobs for selected classes, and at selected times.
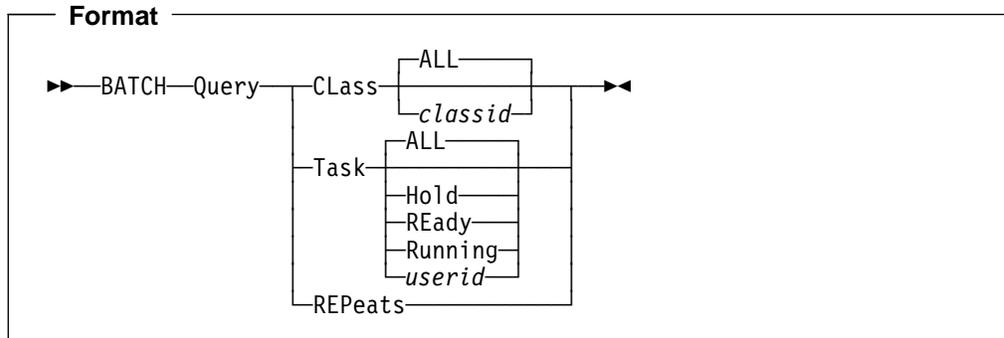
   If you select a class for your job that has no task machines defined for it, or there is no overlap between your job start window and a task start window, then your job may be held indefinitely without running. You should resolve such a condition by issuing a BATCH CHJOB command to change the class that you have assigned to the job, or to change the job's start time window.

3. Recurrence patterns defined for a monitor.

   Your installation may have been configured to allow jobs to be repeated automatically without the need to resubmit them each time. The regularity with which jobs may repeat is defined by recurrence patterns. Use the BATCH QUERY REPEATS command to find out which recurrence patterns have been defined for a monitor.

The response to a BATCH QUERY command will be displayed as messages at your terminal. For an explanation of the job class message (DGRCMD028I), see page 106. For an explanation of the task machine message (DGRCMD016I), see page 103. The response to the BATCH QUERY REPEATS command is provided by your installation. It is not documented in the VM Batch Facility manuals.

BATCH QUERY Command

```
┌─ Format ──────────────────────────────────────────────────┐
│                        ┌─ALL─────┐                        │
│  ▶▶─BATCH─Query─┬─CLass─┼─────────┼────────┬─▶◀           │
│                 │       └─classid─┘        │              │
│                 │       ┌─ALL─────┐        │              │
│                 ├─Task──┼─────────┼────────┤              │
│                 │       ├─Hold────┤        │              │
│                 │       ├─REady───┤        │              │
│                 │       ├─Running─┤        │              │
│                 │       └─userid──┘        │              │
│                 └─REPeats───────────────────┘              │
└────────────────────────────────────────────────────────────┘
```

CLass ALL

Use this option to display the definitions of all job classes defined for the VM Batch Facility. "ALL" is the default if you enter BATCH QUERY CLASS without specifying a value.

CLass *classid*

Enter the name of a particular class to display the definition of that class alone.

Task ALL

Enter ALL to review all VM Batch Facility task virtual machines. ALL is the default if you enter BATCH QUERY TASK without specifying an option.

Task Hold

Enter HOLD to find out which task machines have been temporarily prevented from starting jobs by a VM Batch Facility authorized user. A task machine that is in HOLD status cannot execute any jobs until it is restarted by an authorized user.

Task REady

Enter READY to display information on:

- Task machines that are available for running jobs but which are not busy right now. These task machines will have "READY" as their current status–the first word shown after the "Status" heading.

- Task machines that are waiting for their start time windows to open. These task machines can be used to run jobs if a VM Batch Facility authorized user specifically starts jobs in them. The messages for these task machines will have "WINDOW NOT OPEN" as the current status–the first word after the "Status" heading.

Task Running

Use this option to get information on task machines that are currently executing jobs. You will also see information on running task machines that have been temporarily suspended by an authorized user. And you will see information on task machines that are carrying out ERROR job control option processing for canceled jobs.

Task *userid*

Enter the user ID of a task machine to get status information on that machine alone.

REPeats

Use this option to find out which recurrence patterns are available for repeating jobs.

> **Examples**
>
> Use this command to review the job classes that are available to you:
>
> ```
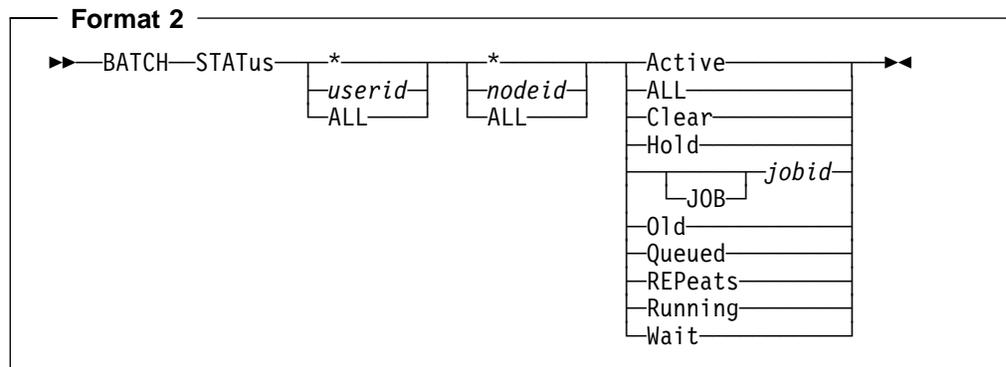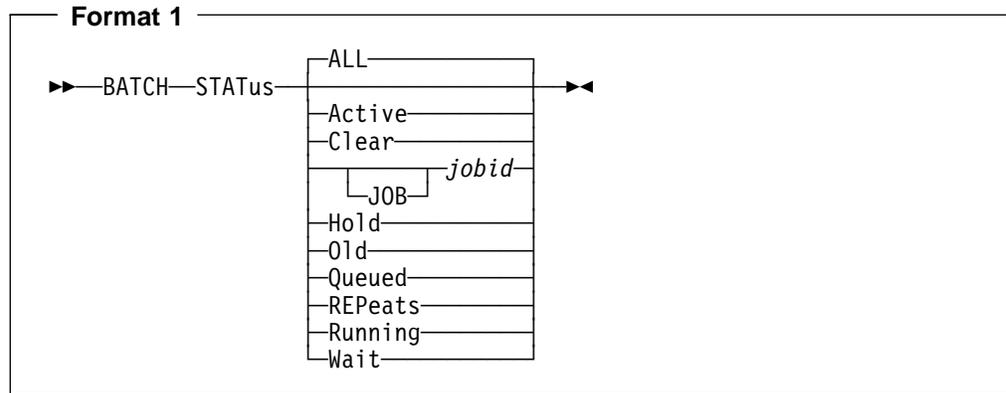> batch query class all
> ```
>
> Use this command to review the task machines that are ready to run jobs:
>
> ```
> batch query task ready
> ```

BATCH STATUS: Finding Out the Status of Your Jobs

Use the BATCH STATUS command to find out about the progress of jobs that you have submitted to the VM Batch Facility

You may also query the status of jobs submitted by other users.

```
┌─ Format 1 ─────────────────────────────────────────────────────┐
│                    ┌─ALL──────┐                                 │
│ ►►──BATCH──STATus──┼──────────┼──►◄                             │
│                    ├─Active───┤                                 │
│                    ├─Clear────┤                                 │
│                    │      ┌─jobid─┐                             │
│                    │   └─JOB─┘                                  │
│                    ├─Hold─────┤                                 │
│                    ├─Old──────┤                                 │
│                    ├─Queued───┤                                 │
│                    ├─REPeats──┤                                 │
│                    ├─Running──┤                                 │
│                    └─Wait─────┘                                 │
└─────────────────────────────────────────────────────────────────┘
```

```
┌─ Format 2 ─────────────────────────────────────────────────────┐
│                    ┌─*──────┐ ┌─*──────┐ ┌─Active───┐           │
│ ►►──BATCH──STATus──┼────────┼─┼────────┼─┼──────────┼──►◄       │
│                    ├─userid─┤ ├─nodeid─┤ ├─ALL──────┤           │
│                    └─ALL────┘ └─ALL────┘ ├─Clear────┤           │
│                                          ├─Hold─────┤           │
│                                          │     ┌─jobid─┐        │
│                                          │  └─JOB─┘              │
│                                          ├─Old──────┤           │
│                                          ├─Queued───┤           │
│                                          ├─REPeats──┤           │
│                                          ├─Running──┤           │
│                                          └─Wait─────┘           │
└─────────────────────────────────────────────────────────────────┘
```

Use Format 1 when reviewing the status of your own jobs.

Use format 2 when you wish to review the status of jobs that you did not submit.

userid nodeid

When reviewing the status of your own jobs you need not specify these parameters (use format 1).

If you wish to review the status of jobs that you did not submit you must identify the job owner by entering values for BOTH *userid* and *nodeid*.

userid may be specified as an asterisk (*) to refer to your own user ID. It may be specified as ALL to refer to all users on the specified node.

nodeid may be specified as an asterisk (*) to refer to the node that you are logged on to. It may be specified as ALL to refer to all nodes.

Active

Use this option to display the status of queued and running jobs:

- Queued–waiting to run.
- Currently being run.
- Currently being run, but temporarily suspended.
- Currently being cancelled.

ALL

Use this option to display the status of all jobs. The status messages will include status of completed jobs if job owners have not already asked for the status of those jobs.

ALL is the default if you enter BATCH STATUS without any option.

Clear

Use this option to clear information on jobs that you have submitted and that have been completed or canceled.

Only an administrator may clear jobs submitted by other users.

[JOB] *jobid*

To display the status of a particular job, enter the job ID of the job. This option is valid only when neither *userid* nor *nodeid* has been specified as ALL.

You must precede the job ID with JOB if the job ID matches any BATCH STATUS command option or abbreviation:

ACTIVE
ALL
CLEAR
HOLD
JOB
OLD
QUEUED
REPEATS
RUNNING
WAIT

Hold

Use this option to find out about jobs that cannot be started. The command returns information on jobs that:

- Are in HOLD status because no task machine has a start window that is compatible with the job's start window and class.

- Had DATE HOLD specified as a job control option.

- Have been held by an administrator issuing the HOLD command.

- Have had their recurrence suspended by a CHJOB command with the REPEAT option specified as HOLD (although an instance of the job may be running).

- Have been held by an installation exit issuing the HOLD command.

- Are awaiting synchronization.

Old

Use this option to display information on non recurring jobs that have completed or canceled, and on recurring jobs that have been flushed.

Queued

Use this option to display status information for all jobs that are waiting to run. You will receive information for jobs that are:

- Ready to run (their start dates and start times have arrived).
- Chained to other jobs.
- Waiting for a future start time or start date.

REPeats

Use this option to review active recurring jobs. FLUSHed jobs are inactive and therefore not reported.

Running

Use this option to display the status for jobs that:

- Are currently being executed, or
- Have been temporarily suspended by a VM Batch Facility authorized user with the BATCH SUSPEND command, or by the Load Level Scheduler.
- Have been canceled and for which Error job control option processing is being done.

Wait

Use this option to find out about jobs awaiting synchronization.

Usage Notes

1. **Jobs affected by this command:** This command only affects jobs that have been accepted by the VM Batch Facility monitor machine. Jobs that are submitted to, but not accepted by the VM Batch Facility are not affected by this command.

2. **Messages:** Status information will be returned to you as one or more messages appearing at your terminal. For an explanation of the message, see page 108.

3. **Status records for completed jobs:** The VM Batch Facility keeps status records for completed non recurring jobs and flushed recurring jobs until the final job status has been reported to the job owner; that is, until the owner has issued a BATCH STATUS command after the job has completed (or has been flushed). However, if the Facility runs out of job control blocks (which contain the status information) it will reallocate the block belonging to the oldest completed job to an incoming job, even though the completion status of the old job has not been reported to its owner.

4. **Recurring jobs:** If a recurring job is running, or ready to run, or has been held, then the STATUS response shows the execution or queue status of the current instance of the job; otherwise it shows the completion status of the last executed instance (if any).

5. **Displaying more detailed status on running jobs:** You can enhance status message information on running jobs by using the BATCH JOBSTEP command in your execs. When the VM Batch Facility reaches a BATCH JOBSTEP command in a job exec, it records the text you included in the BATCH JOBSTEP command as the current "step" of the job. Checking the "Step:" item in the status message tells you which BATCH JOBSTEP command was last executed, and how much of your exec has been run. See "BATCH JOBSTEP: Updating the Current Job Step from Your Exec" on page 148 for more information on using the BATCH JOBSTEP command.

┌─ **Examples** ───┐

Use this command to find out which of your jobs are currently being executed
and whether any of your jobs have been suspended:

```
batch status running
```

Use this command to find out the current status of your job that has the job ID
"myid":

```
batch status myid
```

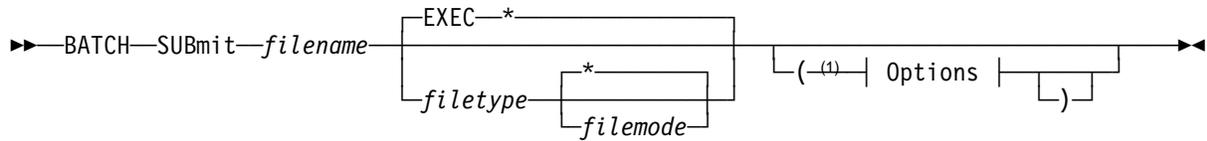Use this command to review all active jobs belonging to user STEVE.

```
batch status steve * active
```

This example assumes STEVE is on the node from which the command is
issued.

└───┘

BATCH SUBMIT: Having Your Jobs Run

Use the BATCH SUBMIT command to send a job to the VM Batch Facility and have the job run.

Format-1 For Non-class AUTOLOG Jobs

```
►►──BATCH──SUBmit──filename──┬─EXEC──*─────────────────────┬──────┬─(──(1)──┤ Options ├──┬────►◄
                             │                              │      │                   │ │
                             └─filetype──┬─*──────────┬─────┘      └─────────────────┘─┘
                                         └─filemode───┘                           )
```

Options:

```
├──┬──────────────────────┬──┬───────────────────┬─────────────────────────────────────────────►
   └─ACcount──account──────┘  └─ALtid──altuserid──┘   ┌──────,──────┐       (2)
                                                   ┌─APpend──(──▼──fn──ft──fm──┴─────)─┐
                                                   └───────────────────────────────────┘
```

```
►──┬─CHain──No─────────────────────────────────────────────────┬──┬─Class──A──────────┬──►
   │                                                            │  │                   │
   └─CHain──┬─userid─┬──┬─.nodeid─┬──.jobid──┬──────────┬───────┘  └─CLass──classid─────┘
            └─*──────┘  └─.*──────┘          └─.jobstep─┘
```

```
►──┬─CONSole──Yes──────────┬──┬─DAte──OPEN──────────┬──┬─ERror──DUmp──────────┬──►
   │                       │  │                     │  │                      │
   └─CONSole──┬─No────┬────┘  └─DAte──┬─dd.mm.yy───┬─┘  └─ERror──┬─filename─┬──┘
             ├─Rc────┤              ├─dd.mm.ccyy─┤             └─NODump───┘
             └─Debug─┘              ├─mm/dd/yy───┤
                                    ├─mm/dd/ccyy─┤
                                    └─HOLD───────┘
```

```
►──┬──────────────┬──┬─LLS───┬──┬───────────────────────────┬──┬──────────────────────┬──►
   └─ID──jobid─────┘  └─NOLLS─┘  │                   (3)     │  └─PASSword──password────┘
                                 ├─PArms──(──▼──parms──┴─)───┤
                                 └─PArms──( )────────────────┘
```

```
►──┬─PJ──9─────────┬──┬───────────────┬──┬──────────────┬──┬─REPeat──NEVER──────────┬──►
   │               │  │               │  │              │  │                        │
   └─PJ──n─────────┘  └─PRint──┬─pppp─┬─┘  └─PUnch──┬─uuuu─┬─┘  └─REPeat──┬─ffffffff─┬──┘
                               └─NONE─┘             └─NONE─┘             └─KEEP─────┘
```

```
►──┬─REstart──Yes──┬──┬───────────────────┬──┬─────────────────────────────┬──►
   │               │  │                   │  │                             │
   └─REstart──No───┘  └─SEconds──┬─ssssssss─┬─┘  └─STORage──┬─kkkkkkkK───┬──┘
                                 └─NONE─────┘             ├─kkkkkkk────┤
                                                          └─mmmmM──────┘
```

```
►──┬──────────────┬──┬────────────────┬──┬─WEnd──┬─hhmm─┬──┬───────────────────────┤
   └─WAIT──mmm─────┘  └─WBegin──hhmm───┘  │       └─OPEN─┘  │
                                         └──────────────────┘
```

Notes:

[1] You can enter options in any order after the open parenthesis.

[2] You can list a maximum of nine files separated by commas.

[3] Parameters inside the parentheses including blanks must not exceed 18 characters in length.

Format-2 For Class AUTOLOG Jobs

```
►►──BATCH──SUBmit────────────────────────────────────(──┤ Options ├──(1)──────►◄
               └─filename─┬─EXEC──*──────────────────┬─     └─)─┘
                         └─filetype─┬─*────────┬─────┘
                                   └─filemode─┘
```

Options:

```
├──Class──AUTOLOG─────────────────────────────────────────────────────►
           └─ACcount──account─┘

    ┌─CHain──No──────────────────────────────────────────┐
►───┤                                                      ├──────────►
    └─CHain─┬─userid─┬─┬─.nodeid─┬─.jobid─────────────────┘
            └─*──────┘ └─.*──────┘      └─.jobstep─┘

    ┌─DAte──OPEN───────────────────┐
►───┤                               ├──────────────────────────────────►
    └─DAte─┬─dd.mm.yy─┬─┘  └─ID──jobid─┘  └─PArms─┬─(──▼─parms─┬──(2)─)─┬─┘
           ├─mm/dd/yy─┤                           └─( )──────────────┘
           └─HOLD─────┘

►───┬─────────────────────┬─┬───────────┬─┬──────────────┬─┬─WEnd─┬─hhmm─┬─┤
    └─PASSword──password─┘ └─WAIT──mmm─┘ └─WBegin──hhmm─┘         └─OPEN─┘
```

Notes:

[1] You can enter options in any order after the open parenthesis.

[2] Parameters inside the parentheses including blanks must not exceed 18 characters in length.
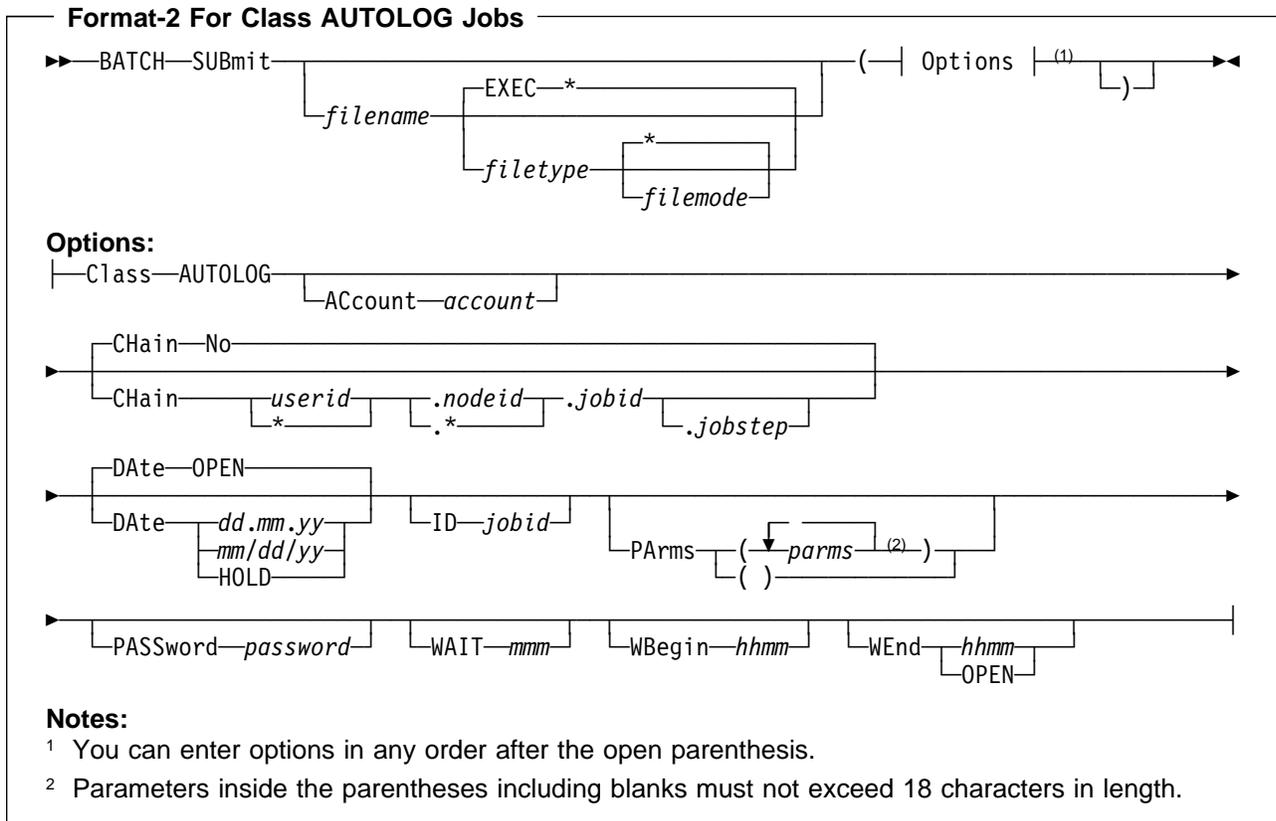
filename
> Enter the file name of the job exec you would like to run.

filetype
> Enter the file type of your job exec. The default is 'EXEC' if no file type and file mode are entered.

filemode
> Enter the file mode of your job exec. The default is an asterisk (*) if no file mode is entered.

options
> Enter the job control options applicable to your job. Table 3 suggests ways to use the job control options and tells you where to find more information on each option.

Table 3 (Page 1 of 2). Using BATCH SUBMIT Command Options

To do this:	Use this option:	For more Information:
Charge a job to a system account number.	ACcount	See page 40.
Have your job run under a specific alternate user ID.	ALtid	See page 41.
Have data files or other files needed by your job appended to the job exec.	APpend	See page 42.
Coordinate execution of two or more jobs ("chain" jobs together).	CHain	See page 44.
Have a job performed on your user ID while you are not logged on.	CLass PASSword	See page 49. See page 59.

Table 3 (Page 2 of 2). Using BATCH SUBMIT Command Options

To do this:	Use this option:	For more Information:
Assign a job to a particular job class.	CLass	See page 47.
Specify console log disposition.	CONSole	See page 52.
Have a job held without being started until you release it.	DAte	See page 71.
Specify the action to take if your job is canceled.	ERror	See page 53.
Give a name to a job (assign a job ID to it).	ID	See page 56.
Subject your job to LLS activity (if override permitted).	LLS	See page 57.
Disable LLS activity for your job (if override permitted).	NOLLS	See page 57.
Have parameters passed to a job.	PArms	See page 58.
Assign a priority to this job relative to your other jobs.	PJ	See page 61.
Specify a recurrence pattern.	REPeat	See page 62.
Have a job restarted or not restarted if it is interrupted by a system shutdown.	REstart	See page 65.
Put limits on the computer time a job can use and/or the size of the spool files it can generate.	SEconds PRint PUnch	See page 67.
Specify the virtual storage of a job.	STORage	See page 69.
Specify synchronous submission of a job.	WAIT	See page 70.
Specify when a job should start running.	WBegin WEnd DAte	See page 71.

Usage Notes

1. **As a spawned command:** BATCH SUBMIT can be issued from within a VM Batch Facility job.

2. **Option values:** The values of the job options and parameters must **not** contain non-displayable characters (e.g. x'00', x'15' etc...). Any non-displayable characters present will be translated to spaces (x'40').

3. **No options:** You do not have to specify any options. Those options not specified acquire default values when available.

Submission of Jobs in XEDIT Sessions

You can submit job execs for execution by the VM Batch Facility directly from within an XEDIT session by using the SUBMIT XEDIT macro. That is, you do not necessarily need to file the job to disk and then issue the BATCH SUBMIT command.

The SUBMIT macro may be invoked from the XEDIT command line. It may be used in two forms:

1. **Submit the current XEDIT file**

```
┌── Format--1 ──────────────────────────────────────────────────┐
│                                                                │
│  ►►──SUBMIT──(──┤ Options ├──┬────┬──►◄                         │
│                              └─)──┘                            │
│                                                                │
└────────────────────────────────────────────────────────────────┘
```

In this form, the job exec being edited is submitted to the VM Batch Facility in its current XEDIT state. The *options* are the same options that would be used for the BATCH SUBMIT command.

2. **Submit a CMS file**

```
┌── Format-2 ───────────────────────────────────────────────────────────┐
│                         ┌─EXEC──*─────────────┐                        │
│  ►►──SUBMIT──filename──┬─────────────────────┬──┬──────────────────┬──►◄│
│                        │          ┌─*──────┐ │  └─(─(1)─┤ Options ├─┬──┬─┘│
│                        └─filetype─┴────────┴─┘                    └─)─┘  │
│                                   └─filemode─┘                          │
│                                                                        │
│  **Note:**                                                             │
│  ¹ You can enter options in any order after the open parenthesis.      │
└────────────────────────────────────────────────────────────────────────┘
```

In this form, the job exec specified by *filename filetype filemode* is submitted. If the job exec specified is the one that is being edited, then it is submitted as it existed when it was last saved. The *options* are the same specifications that would be used for the BATCH SUBMIT command.

When only a *filename* is entered, *filetype* defaults to 'EXEC' and *filemode* defaults to an asterisk (*).

Usage Note

You can set 'SUB' as a synonym for SUBMIT by including the following in your PROFILE XEDIT:

```
SET SYNONYM SUBMIT 3 SUBMIT
```

BATCH SUBMIT Command

Chapter 4. Using the Job Control Options of the SUBMIT and CHJOB Commands

Use the job control options of the SUBMIT and CHJOB commands to control the execution environment of your jobs.

You do not have to specify any options when submitting a job. Default options are applied as follows:

- The defaults provided by the VM Batch Facility are those documented in the description of each option that follows.

- Your installation provides default values for a job's start window, resource limits, LLS subjection and virtual storage requirements; according to the class under which the job is submitted.

  You can find out the values of the class defined defaults by issuing the BATCH QUERY CLASS command.

- Your installation may also override the default values provided by the VM Batch Facility by using the user interface installation exit of the VM Batch Facility.

You specify at least one option to be changed when using the CHJOB command. The options that you specify replace the current options for the job. Options that you do not specify remain unchanged. The exception to this is when you change a job's class. All default options for the new class will be imposed on the job, unless the CHJOB command also includes overrides of these class defaults.

Charging a Job to a Particular Account

Use the ACCOUNT option to assign the cost of a job to a system account.

```
┌─ Format ─────────────────────────────────────────────────────────────┐
│                                                                       │
│  ├──ACcount──account────────────────────────────────────────────┤    │
│                                                                       │
└───────────────────────────────────────────────────────────────────────┘
```

account
> Enter the system account number to which the cost of running this job should
> be charged. The account number can be from one to eight characters long.
> The account number will not be checked for validity.

Usage Notes

1. **BATCH SUBMIT command default:** If you do not use the ACCOUNT option,
   the job will be charged to the VM Batch Facility. Your VM system will collect
   computer usage data on the task virtual machine in which the job is run.

2. **When changes are permitted:** This option can be changed only before a job
   starts running. For recurring jobs, this option can be changed anytime. If an
   instance of the recurring job is running, the change takes effect the next time
   the job runs.

3. **Only valid for CLASS AUTOLOG jobs on VM/ESA systems with the ESA
   feature:** You can use the ACCOUNT option if you are submitting a CLASS
   AUTOLOG job on a system with the ESA feature. However, ensure that the
   ACCOUNT number is one that has been defined in the CP Directory for your
   virtual machine.

4. **ACCOUNT option ignored:** The VM Batch Facility uses the ACCOUNT option
   only if your installation is using VM Batch Facility accounting facilities.
   Otherwise, the ACCOUNT option is ignored.

```
┌─ Example ────────────────────────────────────────────────────────────┐
│                                                                       │
│  This command would charge the processing cost of CHARGEIT EXEC to the │
│  PROJECT1 account:                                                     │
│                                                                       │
│  batch submit chargeit exec a (account project1                       │
│                                                                       │
└───────────────────────────────────────────────────────────────────────┘
```

Specify an Alternate User ID

Use this option to request that your job is run under a specific alternate user ID.

If you are submitting a job to a remote VM Batch Facility, or you want a job to run under an alternate user ID other than your own, use this option to request the alternate user ID.

Format

```
├──ALTid──altuserid──────────────────────────────────────────────────┤
```
---

altuserid
> Enter the alternate user ID under which you want to run your job. *altuserid* has to be a valid user ID and you need access rights to it.

Example

To run the job SWITCH under the user ID GEOFF, enter the following command:

```
batch submit switch (altid geoff
```

Usage Notes

1. **BATCH SUBMIT command default:** If you do not use the ALTID option, the requested alternate user ID is set to your own user ID.

2. **When changes are permitted:** This option can be changed only before a job starts running. For recurring jobs, this option can be changed anytime. If an instance of the recurring job is running, the change takes effect the next time the job runs.

3. **Acceptance of the alternate user ID:** This is subject to installation defined controls at the receiving VM Batch Facility.

4. **Class Autolog Jobs:** Use of ALTID option is not valid for CLASS AULTOLOG jobs.

Having Necessary Files Appended to Your Job Exec

The VM Batch Facility can add files needed by your job, such as data files or an error recovery exec, to the end of your job exec. All the necessary files go to the VM Batch Facility as one job file. When the job starts, the VM Batch Facility separates the files so that the job can run correctly.

Use the APPEND option to tell the VM Batch Facility which files it should add to the end of the job exec that you are submitting.

```
┌─ Format ─────────────────────────────────────────────────────┐
│                         ┌─────,────┐                          │
│   ├──APpend──(──────▼──fn──ft──fm──┘──(1)──)──────────────┤   │
│   Note:                                                       │
│   ¹ You can list a maximum of nine files, separated by commas.│
└───────────────────────────────────────────────────────────────┘
```

(*fn ft fm,....*)
: p.Enter the file name, file type, and file mode of each file to be appended to the job exec file. : p.Put the list of files in parentheses with a comma separating each file. Blank spaces following the commas are optional; you can leave them out to save space on the command line.

You can list a maximum of nine files in the APPEND option. However, by listing a special type of file, called an APNDLIST file, you can have as many files appended to the job exec as you wish. The VM Batch Facility recognizes the APNDLIST file type and appends all of the files listed in the APNDLIST file to the job exec.

Usage Notes

1. **BATCH SUBMIT command default:** If you do not use the APPEND option, the VM Batch Facility assumes there are no files to be appended to the job exec.

2. **Not available on a BATCH CHJOB command:** This option cannot be changed by the CHJOB command.

3. **Not available when using the Direct or RJE Interface:** This option is not valid for the Direct or RJE interface.

4. **Using file type APNDLIST files:**

   When you prepare an APNDLIST file:

   a. Choose any file name you wish.
   b. Use "APNDLIST" as the file type of the file.
   c. List each file (file name, file type, and file mode) to be appended on a separate line in the APNDLIST file. Be sure that all file names appear within the first 72 columns of each line. You can list as many files as you wish.
   d. Enter the file ID in exactly the way it appears if you display the file ID with the CMS FILELIST command. Usually, the file ID should be in capital letters to match the FILELIST format.

You may also use the CMS command LISTFILE with the EXEC option, to create the APNDLIST file. No modification is required to such files apart from ensuring that the file type is APNDLIST.

e. Include blank lines and comment lines (starting with an asterisk (*) in column one, the start of the line) if you wish to.

f. **Class Autolog Jobs:** Use of APPEND option is not valid for CLASS AULTOLOG jobs.

Be sure to list the APNDLIST file in the APPEND option when you submit your job. The APNDLIST file can be listed anywhere in the sequence of files you identify with the APPEND option. And you can list more than one APNDLIST file, and any combination of APNDLIST files and ordinary files.

Examples

This command tells the VM Batch Facility to append two files to the end of HASDATA EXEC:

```
batch submit hasdata exec a (append (data1 file a, data2 file a)
```

When it starts HASDATA, the VM Batch Facility separates DATA1 FILE and DATA2 FILE from the job exec.

The following command tells the VM Batch Facility that there are files to be appended to HASDATA EXEC and that the file names are listed in an APNDLIST file.

```
batch submit hasdata exec a (append (datafile apndlist a)
```

In this example, the APNDLIST file might look like this if you edit it using XEDIT:

```
* * * START OF FILE * * *
* This is the APNDLIST file for
* my HASDATA job.
*
DATA1 FILE A
DATA2 FILE A
* * * END OF FILE * * *
```

Coordinating Job Execution by Chaining Jobs Together

Use the CHAIN option to delay the start of a job until another job has reached a specified point in its execution. "Chaining" jobs lets you coordinate the execution of two or more jobs that depend on one another in some way.

```
┌─ Format ──────────────────────────────────────────────────────┐
│                                                                │
│  ├──CHain──┬─────────┬──┬─────────┬──.jobid────────────────┤   │
│            │─userid──│  │─.nodeid─│         ┌─.jobstep─┐        │
│            │─*───────│  │─.*──────│         └──────────┘        │
│            └─No──────┘                                          │
│                                                                │
└────────────────────────────────────────────────────────────────┘
```
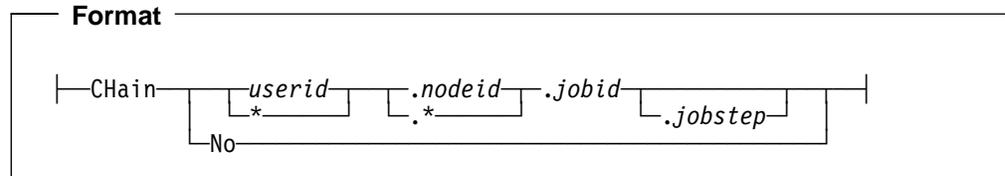
userid
> To chain your job to a job that was submitted by someone else, enter in the user ID of the job submittor. You can specify an asterisk (*) to refer to your own user ID, if you submitted the job.

nodeid
> Enter the node ID from which the job was submitted. You can specify an asterisk (*) to refer to the node that you are logged on to.

jobid
> Enter the job ID to which you want to chain your job.
>
> If the job belongs to you, you can verify the job ID by entering:
>
> `batch status all`
>
> If the job belongs to another user, you can verify the job ID by entering
>
> `batch status userid nodeid ALL`

jobstep
> Optionally, you can specify the step in processing that has to be completed before your job can start. Entering a job step lets your job become eligible to start while the other job is still running, rather than after the other job has been completed.
>
> If you specify a job step, it should match the text in a BATCH JOBSTEP command in the other job. When the BATCH JOBSTEP command is executed, the VM Batch Facility stores the BATCH JOBSTEP text as the most recent step of the job. The VM Batch Facility compares the job step you specify with each new job step of the other job to determine whether your job has become eligible to start. Lowercase and uppercase letters are treated the same when job steps are compared. Any lowercase letters in the job steps in the CHAIN option and the job step specified by a BATCH JOBSTEP, are translated into uppercase letters.
>
> See "BATCH JOBSTEP: Updating the Current Job Step from Your Exec" on page 148 for more information on the BATCH JOBSTEP command.
>
> If you leave *jobstep* blank, your job will not start until the job identified in *job ID* has been completed successfully.
>
> If a *jobstep* is specified in the chain condition, and the 'chained-to' job ends without issuing the specified (or a higher value) JOBSTEP command, then the dependent job will be cancelled.

No
> Use this form on a BATCH CHJob command to remove an existing chain condition on the job.

Implicitly Recurring Jobs

If you chain a job to another that recurs, then the chained job automatically acquires an implicit recurrence. When it ends it will not be discarded by the VM Batch Facility; rather it will be requeued with its original chain condition re-imposed. So when the job that it was chained to recurs, the chained job will recur as well.

When an implicitly recurring job is requeued, all the job control options that were in effect for the job at the time it completed are preserved, and applied for the next run. This means that a recurring job's original job control options persist for the successive generations of the job, except changes made by subsequent BATCH CHJOB commands which then persist.

You can only make a job recur implicitly by specifying the CHAIN option on the BATCH SUBMIT command. You cannot change a non-recurring job into a recurring one by changing its CHAIN option using the BATCH CHJOB command.

You can change an implicitly recurring job to a non-recurring job by breaking the chain relation that is causing the implicit recurrence. If you need to remove the job entirely, then issue the BATCH CANCEL command with the FLUSH option.

You may suspend recurrence of an implicitly recurring job by issuing a BATCH CHJOB command with the REPEAT HOLD option. No following instance of the job will occur, nor will its chain condition be satisfied, while its recurrence is suspended. You may resume recurrence of an implicitly recurring job by issuing a BATCH CHJOB command with the REPEAT NOHOLD option. When recurrence is resumed, the job will not necessarily start immediately, since the chain condition would not have been satisfied while recurrence was suspended.

Usage Notes

1. **BATCH SUBMIT command default:** If you do not use the CHAIN option, your job will not be chained to any other job.

2. **When changes are permitted:** This option can be changed only before a job starts running. For recurring jobs, this option can be changed anytime. If an instance of the recurring job is running, the change takes effect the next time the job runs.

3. **Cancellation of chained jobs:** Unless it has already started to run, a chained job is canceled if the job to which it is chained is canceled. If a job is flushed, all jobs chained to that job are also flushed. However, chained jobs that are running will be allowed to complete.

4. **Chaining to CLASS AUTOLOG jobs:** The VM Batch Facility rejects jobs that are to be chained to a CLASS AUTOLOG job. Because CLASS AUTOLOG jobs are not monitored while they are running, jobs cannot be chained to them.

5. **Chaining recurring jobs:** You cannot chain an explicitly recurring job to any other. An explicitly recurring job is one that recurs in its own right, rather than by virtue of being chained to a recurring job. Similarly, a job that is chained to another job cannot be made to recur explicitly.

> **Examples**
>
> This command tells the VM Batch Facility not to start JOBA EXEC until user MEG's job JOBB has been successfully completed (you are logged on to the node that was used to submit the job):
>
> ```
> batch submit joba exec a (chain meg.*.jobb
> ```
>
> This command tells the VM Batch Facility not to start JOBA EXEC until the "batch jobstep ready" command in your JOBB has been executed (you are logged on to the node that was used to submit the job):
>
> ```
> batch submit joba exec a (chain *.*.jobb.ready
> ```
>
> If JOBA is to start correctly, JOBB must include the BATCH JOBSTEP command below:
>
> ```
> 'batch jobstep ready'
> ```
>
> If the BATCH JOBSTEP command were left out, JOBA EXEC will not become eligible to start.

Assigning a Job to a Job Class

Use the CLASS option to assign a job to a particular job class. Job classes identify the types of jobs that the VM Batch Facility can accept.

You may wish to assign a job to a particular class for either of these reasons, among others:

1. Avoid Specifying job control options. You might, for example, assign a job to a class that runs only at night to save specifying start window times for the job.
2. Having your job make use of special resources. Your organization may define job classes for types of jobs that require special processing. There may be a job class, for example, that has a defined minimum and maximum virtual storage that suit the storage requirement of your job.

```
┌─── Format ──────────────────────────────────────────────┐
│                                                          │
│  ├──CLass──classid───────────────────────────────────┤   │
│                                                          │
└──────────────────────────────────────────────────────────┘
```

classid

Enter the name of the job class to which you want to assign your job.

To review the job classes available to you, enter this command:

```
batch query class all
```

Usage Notes

1. **BATCH SUBMIT command default:** If you do not use the CLASS option, the VM Batch Facility will assign the job to class A.

2. **When changes are permitted:** This option can be changed only before a job starts running. For recurring jobs, this option can be changed anytime. If an instance of the recurring job is running, the change takes effect the next time the job runs.

3. **Matching the CLASS option with other options:** Job classes set default and maximum values for several of the job control options that are available with the BATCH SUBMIT command:

   • Job classes specify default values for the LLS, PRINT, PUNCH, SECONDS, STORAGE, WBEGIN, and WEND job control options. These default values apply to your job if you do not specify values for the options yourself.

     Here is an example. Let's say a job class has WBEGIN and WEND times of 0900 and 1500. Those start window times will apply to your job if you assign it to that job class and do not specify times of your own.

   • Job classes specify maximum values for the PRINT, PUNCH and SECONDS options. If you specify higher values for your job, the VM Batch Facility resets the values to the job class maximums. For example, if you specify a SECONDS value of 2000 and the job class to which you assign the job has a maximum value of 1900, SECONDS is changed to 1900. You will receive a message notifying you if any value you specify is reset to a class maximum.

4. **Virtual storage requirements:** Does your job require a minimum amount of virtual storage space in order to run correctly? You can request for a particular virtual storage size that your job requires using the STORAGE option of the BATCH SUBMIT command. The storage amount must be within the minimum and maximum amount of virtual storage defined for the job class. Enter this command to check the virtual storage requirement defined for each job class:

```
batch query class all
```

The VM Batch Facility will display the definitions of all job classes. See page 106 for an explanation of the job class definition message, DGRCMD028I. An asterisk (*) tells you that the storage amount is the task machine's storage specified in the VM Directory.

5. **CLASS options set when job received:** Job class job control options apply to a job only when it is received or when it is switched to a different job class (with the BATCH CHJOB command). Changes made to a job class do not apply to jobs that have already been received.

6. **CLASS overrides when a job is changed:** If a job is submitted with options that override the job class defaults, the overrides are lost when the job class is changed using CHJOB. The defaults for the new job class take effect if new overrides are not specified in the CHJOB command.

Examples

This command would assign BIG EXEC to the job class named "large":

```
batch submit big exec a (class large
```

Because the command does not use the LLS, PRINT, PUNCH, SECONDS, STORAGE, WBEGIN, or WEND options, the default values for these options of CLASS LARGE would apply to the job.

This command assigns BIG EXEC to CLASS LARGE, but overrides the default values of the job class:

```
batch submit big exec a (class large wbegin 1700 wend 0730
  seconds 10000 print 500 punch 500 stor 4m
```

Having the VM Batch Facility Perform a Job on Your Own Virtual Machine

By assigning a job to the AUTOLOG job class, you can have a job run on your own user ID.

Format

```
├──CLass──AUTOLOG───────────────────────────────────────────────┤
```

AUTOLOG
　　Enter "AUTOLOG" as the job class, to have a job run on your virtual machine.

To have the VM Batch Facility start a job on your user ID, specify the filename of the job exec on the BATCH SUBMIT command. The VM Batch Facility will log on your user ID, run your PROFILE EXEC, and start the job that you specified. The job exec must be on a minidisk accessed by your user ID after your PROFILE EXEC has run, or the job cannot be started.

To have the VM Batch Facility log on your user ID without starting a job, do not specify a filename in the BATCH SUBMIT command. The VM Batch Facility will log on your virtual machine but will not start any job on your user ID. You can use this option to have your PROFILE EXEC do any tasks that you would like to have performed.

Note: Be sure that your PROFILE EXEC does not put your user ID into any full screen mode program from which your job or PROFILE EXEC commands cannot be executed.

Usage Notes

1. **Passwords:** The VM Batch Facility may need the logon password of your user ID in order to run a CLASS AUTOLOG job.

   - If it has been configured to insist on passwords for class AUTOLOG jobs, then you will be prompted to enter a password. Your password will not be displayed as you enter it. Alternatively, you may provide a password on the command line by using the PASSWORD job control option. Display of the password is not suppressed when using the PASSWORD option.

     You may not enter a null password, nor '*NOPASS*'.

   - If it has been configured to discard passwords for class AUTOLOG jobs, then you will not be prompted to enter a password; and if you specify one using the PASSWORD job control option, it will be ignored.

   - If it has been configured to neither insist on passwords nor to discard them, then you will be prompted to enter a password, or you may supply one using the PASSWORD option.

     You may enter a null password, or '*NOPASS*', if your system does not require passwords for autologging.

2. **Passing parameters to a CLASS AUTOLOG job:** If you do not specify a job exec name when you submit a CLASS AUTOLOG job, PARMS option parameters are presented only at the first console read; they are not passed to your PROFILE EXEC when your user ID is logged on. To read in PARMS

option parameters, a REXX PULL command or equivalent console reading command must be issued from your user ID.

If you do specify a job file name, parameters are passed to the job when it is started, as documented in "VM Batch Facility Interface to Job Execs" on page 138.

3. **Job can be started only if you are logged off:** Use the WBEGIN and WEND options to have a CLASS AUTOLOG job started when you are logged off from your user ID. Be sure to actually log off; a CLASS AUTOLOG job cannot be started if you are only disconnected from your user ID.

   If you are logged on when a CLASS AUTOLOG job is being started, the VM Batch Facility will send you a message saying that it is trying to start the job. It will try to start the job again once a minute, and will send you a message every 5 minutes.

   If you receive a message saying that a CLASS AUTOLOG job is starting, you can:

   • Log off. You do not have to rush to log off. The VM Batch Facility will keep trying to start the job until it starts, its start time window closes or is changed, or it is canceled.

   • Use the BATCH CHJOB command to specify a different start time window for the job. The WBEGIN and WEND options of BATCH CHJOB tell the VM Batch Facility when it should start the job.

   • Cancel the CLASS AUTOLOG job.

4. **Changing a password:** If you change your logon password you may use the BATCH PASSWORD command to change the password provided to all your class AUTOLOG jobs.

   Alternatively, you may use the BATCH CHJOB command with the PASSWORD option to change the password provided to a single CLASS AUTOLOG job. However, display of the password is not suppressed when using the PASSWORD option.

5. **CLASS cannot be changed:** The BATCH CHJOB command cannot be used to change the job class of a CLASS AUTOLOG job. To change the class, cancel the CLASS AUTOLOG job and resubmit it, specifying the new job class.

   The BATCH CHJOB command also cannot switch a job to CLASS AUTOLOG. To change a job to CLASS AUTOLOG, cancel the job and resubmit it.

6. **The filename specification cannot be changed:** When a CLASS AUTOLOG job is submitted, the FILENAME specifies the job exec to be started, or its absence specifies no job exec. This specification cannot be changed with a BATCH CHJOB command. To change it, cancel the job and resubmit it with the new FILENAME.

7. **VM Batch Facility commands:** CLASS AUTOLOG jobs can issue VM Batch Facility commands except for the BATCH JOBSTEP command.

8. **CLASS AUTOLOG jobs not monitored:** The VM Batch Facility does not oversee a CLASS AUTOLOG job once the job starts to run.

   Stalled CLASS AUTOLOG jobs will not be detected, resource usage limits will not apply to the job and VM Batch Facility commands, such as BATCH CANCEL, do not apply to the job.

To stop a running CLASS AUTOLOG job, log on to your user ID.

9. **Some other job control options cannot be used:** The following job control options cannot be specified for a CLASS AUTOLOG job:

   - ACCOUNT–CLASS AUTOLOG jobs are charged to your system account number. (Exception: a user on a VM/ESA system with the ESA feature can specify an account number that is valid for his or her own user ID.)

   - ALTID–an alternate user ID is not set for CLASS AUTOLOG jobs.

   - APPEND–files cannot be appended to a CLASS AUTOLOG job.

   - CONSOLE–the VM Batch Facility does not control the console of a CLASS AUTOLOG job.

   - ERROR–the VM Batch Facility does not record the final status of a CLASS AUTOLOG job and cannot take any action specified with the ERROR option.

   - LLS–the VM Batch Facility does not subject CLASS AUTOLOG jobs to Load Level Scheduling.

   - PJ–CLASS AUTOLOG jobs that you submit are started in first-in, first-out (FIFO) order, within any start time limitations. The PJ option cannot be used to raise the priority of a CLASS AUTOLOG job.

   - PRINT, PUNCH, SECONDS– the VM Batch Facility does not check on the resources used by a CLASS AUTOLOG job.

   - REPEAT–CLASS AUTOLOG jobs cannot be recurring.

   - RESTART–the VM Batch Facility cannot restart a CLASS AUTOLOG job that is interrupted by a system shutdown.

   - STORAGE–the VM Batch Facility does not alter the storage of a user virtual machine.

10. **Jobs cannot be chained to CLASS AUTOLOG jobs:** Jobs that are to be chained to a CLASS AUTOLOG job are rejected.

11. **RJE work stations and remote nodes:** CLASS AUTOLOG jobs may not be submitted from RJE work stations or from remote nodes. If such a job is received by the VM Batch Facility monitor, it will be rejected.

Examples

Use the following command to run ONMYID EXEC on your user ID. The WBEGIN and WEND options specify a start time window from 12 a.m. to 5 a.m., so that the job does not start while you are logged on. Have the VM Batch Facility prompt you for a password if one may be required:

```
batch submit onmyid (class autolog wbegin 0000 wend 0500
```

The following command would log on your user ID but would not start a job. Your PROFILE EXEC would have to issue the commands necessary to perform the job you want to do. Include your logon password.

```
batch submit (class autolog wbegin 0000 wend 0500 password sesame
```

Specifying the Disposition of a Job's Console Log

Use the CONSOLE option to specify how the VM Batch Facility should dispose of your job's console log when the job ends.

```
┌─ Format ──────────────────────────────────────────────────────────────┐
│                                                                        │
│  ├──CONSole──┬─Yes───┬────────────────────────────────────────────┤    │
│             ├─No────┤                                             │    │
│             ├─Rc────┤                                             │    │
│             └─Debug─┘                                             │    │
│                                                                        │
└────────────────────────────────────────────────────────────────────────┘
```

Yes
> Enter 'Yes' to have the job's console log sent to your virtual reader.

No
> Enter 'No' to have the log purged when the job ends.

Rc
> Enter 'Rc' to purge the job console log only on a final job return code of zero.

Debug
> This option is provided only for product maintenance purposes. It produces a detailed trace of the VM Batch Facility task machine interface that will not be of any use to the general user.

Usage Notes

1. **BATCH SUBMIT command default:** If you do not use the CONSOLE option, VM Batch Facility automatically sets it to 'Yes'

2. **When changes are permitted:** This option can be changed only before a job starts running. For recurring jobs, this option can be changed anytime. If an instance of the recurring job is running, the change takes effect the next time the job runs.

Specifying the Action to Take if Your Job Is Canceled

Use the ERROR option to specify what the VM Batch Facility should do if your job is canceled while it is running. You can have:

1. No action taken:

   You will receive only the console log file of the canceled job, (if the option CONSole No has not been specified). That file will show all messages that would have been displayed at your terminal if you had run the job yourself.

2. All files on the task machine 191 minidisk sent to you:

   In addition to the console log, the VM Batch Facility will send you all files on the 191 minidisk of the task machine that was running the canceled job. The files are sent to you with the CMS DISK DUMP command. Together with the console log file, the 191 minidisk files can help you determine how far your exec ran.

3. Another exec run after your exec is canceled:

   The VM Batch Facility starts the exec you specify in the task machine in which your canceled job was running. The exec could be used to perform error recovery in the event your job is canceled.

```
┌─ Format ──────────────────────────────────────────────────┐
│                                                            │
│  ├──ERror──┬──DUmp──────┬──────────────────────────────┤   │
│            ├──NODump────┤                                   │
│            └──filename──┘                                   │
│                                                            │
└────────────────────────────────────────────────────────────┘
```
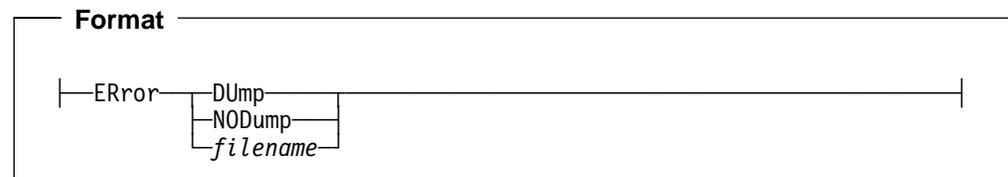
DUmp
"DUMP" tells the VM Batch Facility to DISK DUMP all files on the task machine 191 minidisk to you if your job is canceled.

NODump
Enter "NODUMP" to have no action taken if your job is canceled. The VM Batch Facility will automatically send you the console log file produced by your job while it was running, unless the job has been submitted with the CONSOLE NO option. No other action will be taken.

filename
Enter the file name of the exec that should be run if your job is canceled. The exec you specify with the ERROR option must be either:

- Appended to your job exec.
- Stored on a minidisk that is always accessible to any task machine that may run your job.

Otherwise, the VM Batch Facility will not be able to find the exec.

If your job is canceled, the VM Batch Facility will:

1. Log off the task machine in which the job was running. Logging off the task machine detaches all minidisk links set up by your job while it was running.
2. Log on the task machine again and start the exec you specified with the ERROR option. The ERROR exec runs with the same PRINT, PUNCH, and SECONDS limits, and with the same virtual storage that the canceled job

had. For example, if the original SECONDS limit for the canceled job was "500", the SECONDS limit for the ERROR exec will also be "500".

The 191 minidisk of the task machine will be just as it was when the job was canceled.

When the ERROR exec has finished running, you will receive a separate job console log recording any console messages issued by the ERROR exec, unless the job has been submitted with the CONSOLE NO option.

Usage Notes

1. **BATCH SUBMIT command default:** If you do not use the ERROR option, VM Batch Facility automatically sets it to 'DUMP'.

2. **When changes are permitted:** This option can be changed any time before a job ends. For recurring jobs, this option can be changed anytime. If an instance of the recurring job is running, the change takes effect on the currently running instance and remains in effect for subsequent occurrences.

3. **Fast Cancellation:** An ERROR specification of NODUMP provides significantly faster termination of a job at cancellation time.

4. **Not executed after a BATCH FORCE or BATCH STOP JOBS command:** The ERROR option will be ignored if a job has been canceled because of a BATCH FORCE or BATCH STOP JOBS command entered by an administrator.

5. **ERROR option accounting:** A separate accounting record is made for ERROR option processing, if the VM Batch Facility job accounting exit has been activated.

6. **Reasons for cancellation:** A running job may be canceled for any of these reasons:

   - The job was canceled with the BATCH CANCEL command or the BATCH FORCE or BATCH STOP JOBS commands.

   - The job exceeded the PRINT, PUNCH, or SECONDS limits that were in effect for it, and the DGRIDO exit requested that the job be canceled.

   - The job stalled and was canceled by the VM Batch Facility or by the VM system. The VM Batch Facility considers a job to be stalled if it does not use any computer time nor perform any I/O during a given period of time. For example, a job that stops running because of an error in the job exec is a stalled job. If a stalled job does not start running again, the VM Batch Facility calls the DGRIDO exit. The default action is to cancel the job.

   - The job was interrupted by a system shutdown and the RESTART NO job control option was in effect for it.

   A job can also be canceled before it begins to run, by the VM Batch Facility job screening exit.

7. **Class Autolog Jobs:** Use of ERROR option is not valid for CLASS AULTOLOG jobs.

8. **Sample exec:** See Appendix A, "Preparing an Exec" on page 137 for a sample error recovery exec.

> ┌─ **Example** ───┐
>
> This command tells the VM Batch Facility to run the RECOVERY EXEC if the
> BUGGY EXEC is canceled:
>
> ```
> batch submit buggy exec a (error recovery
> ```
>
> The RECOVERY EXEC must either have been appended to BUGGY EXEC or
> be located on a minidisk that will always be linked by any task machine that
> may run BUGGY EXEC. Otherwise, the VM Batch Facility will not be able to
> find RECOVERY EXEC and will not be able to start it.
>
> └───┘

Giving a Name to a Job

Use the ID option to give a name (job ID) of your own to a job. A job ID is the name by which the VM Batch Facility identifies a job. (The VM Batch Facility does not use the file name of your job exec to identify the job.)

You will see the job ID in messages that the VM Batch Facility sends you about a job. And you will need to use the job ID to direct commands only to a particular job.

```
┌─ Format ─────────────────────────────────────────────────────────────────┐
│                                                                           │
│  ├──ID──jobid───────────────────────────────────────────────────────┤    │
│                                                                           │
└───────────────────────────────────────────────────────────────────────────┘
```

jobid

Enter the job ID you want to give to a job. The job ID:

- Can be from 1 to 8 characters long
- Can have only the letters of the alphabet and/or the numbers 0-9
- Cannot have embedded blanks.

Usage Notes

1. **BATCH SUBMIT command default:** If you do not use the ID option, the VM Batch Facility uses the time of day when the job was submitted as the job ID. (If you use the direct interface, the default job ID is the time when the job was received.) The default time of day job ID will be in this format: "hhmmssff"–hours, minutes, seconds, fractions of a second down to one hundredths of one seconds– using 24-hour time notation.

2. **Not available on a BATCH CHJOB command:** This option cannot be changed by the CHJOB command.

3. **Not available when using the Direct or RJE Interface:** This option is not valid for the Direct or RJE interface.

4. **Job ID is not case sensitive:** The VM Batch Facility translates alphanumeric job IDs to uppercase letters, so job IDs 'MYJOB' and 'myjob' are equivalent.

```
┌─ Example ────────────────────────────────────────────────────────────────┐
│                                                                           │
│  To assign "myjob" as the job ID of NOJOBID EXEC, enter this command:     │
│                                                                           │
│  batch submit nojobid exec a (id myjob                                    │
│                                                                           │
│  The VM Batch Facility responds with this message:                        │
│                                                                           │
│  DGREXE119I JOB 'MYJOB' SUBMITTED TO 'BATCH' AT 'NODE'                     │
│                                                                           │
│  Any other messages about the job would refer to it as "MYJOB". And you   │
│  would use "MYJOB" to refer to your job when you asked for job status or used │
│  other VM Batch Facility commands.                                        │
│                                                                           │
│  If you did not use the ID option, NOJOBID EXEC would have a job ID in the │
│  format "hhmmssff", for example "07301599" or "22001078."                 │
│                                                                           │
└───────────────────────────────────────────────────────────────────────────┘
```

Override the Default LLS Subjection

Use the LLS and NOLLS options to override the default LLS subjection of your job.

The Load Level Scheduler (LLS) automatically controls the resources the VM Batch Facility is using.

The default value for a job's subjection to LLS is defined for the job class you are using. To override the default setting, enter LLS to subject the job to LLS control, or enter NOLLS to execute the job independent from LLS.

```
┌─ Format ──────────────────────────────────────────────────────────────────
│
│      ├──┬─LLS──┬──────────────────────────────────────────────────────────┤
│         └─NOLLS─┘
│
└─────────────────────────────────────────────────────────────────────────
```
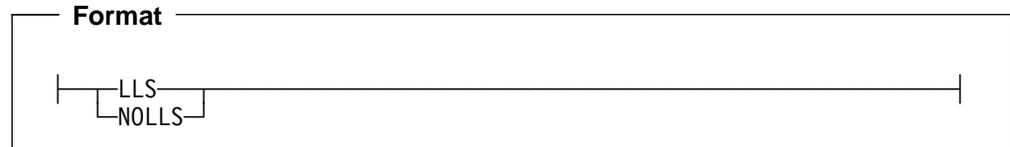
LLS
   Specify LLS to subject your job to LLS activity.

NOLLS
   Specify NOLLS to submit your job without subjection to LLS activity.

Usage Notes

 1. **Overriding the default LLS setting** is possible only if the job class used, gives you the authority to do so. If you specify an override without job class authorization, the CHJOB command is rejected.

 2. **When changes are permitted:** This option can be changed any time after the job is submitted. For recurring jobs, this option can be changed anytime. If an instance of the recurring job is running, the change takes effect on the currently running instance, and remains in effect for subsequent occurrences.

 3. **Changing Class:** If a CHJOB command is issued to change the class of a job, then any previous LLS setting is lost, and the job acquires the default value of the new class. Use the LLS/NOLLS options in the CHJOB command to restore the previous LLS setting.

 4. **Class Autolog Jobs:** Use of LLS and NOLLS options are not valid for CLASS AUTOLOG jobs.

```
┌─ Example ──────────────────────────────────────────────────────────────────
│
│  To have your job VERYBIG EXEC subjected to LLS activity, enter the
│  command:
│
│  batch submit verybig exec a (lls
│
│  To submit the same job not subject to LLS activity, enter:
│
│  batch submit verybig exec a (nolls
│
│  If the job class you specified does not allow you to override the default LLS
│  subjection, the following message is displayed:
│
│  DGRRDR511E Job userid nodeid jobid rejected. LLS override is invalid
│
└─────────────────────────────────────────────────────────────────────────
```

Passing Parameters to a Job

Use the PARMS option to have the VM Batch Facility give parameters to a job exec when the job starts running.

```
┌─ Format ────────────────────────────────────────────────────────────┐
│                                                                      │
│                    ┌─────────┐                                       │
│   ├──PArms────(──▼──parm──┘──(1)──)──────────────────────────────────┤│
│                                                                      │
│   Note:                                                              │
│   ¹  Parameters inside the parenthesis including blanks must not exceed 18 │
│      characters in length.                                           │
│                                                                      │
└──────────────────────────────────────────────────────────────────────┘
```

(*parm*)

Enter the parameters your job exec will need. The parameters:

- Can be up to a total of 18 characters long.
- Must have parentheses around them. (The parentheses do not count toward the 18 character limit.)
- Cannot have any parentheses embedded in them.
- Are given to your job exactly as you entered them in. (Exception: The parentheses and any leading and trailing blanks are stripped off before the parameters are given to your job.)

If your job needs more than 18 characters of parameters, you can modify the job exec to pass parameters to itself. See Appendix A, "Preparing an Exec" on page   137 for a sample exec that stacks parameters for itself.

()

Use this form in a BATCH CHJOB command to cancel previously specified parameters and have no parameters passed to the job.

Usage Notes

1. **BATCH SUBMIT command default:** If you do not use the PARMS option, the VM Batch Facility assumes there are no user-specified parameters to pass to the job.

2. **When changes are permitted:** This option can be changed only before a job starts running. For recurring jobs, this option can be changed anytime. If an instance of the recurring job is running, the change takes effect the next time the job runs.

3. **Passing parameters to a CLASS AUTOLOG job:** If you do not specify a job exec file name when you submit a CLASS AUTOLOG job, PARMS option parameters are presented only at the first console read; they are not passed to your PROFILE EXEC when your user ID is logged on. To read in PARMS option parameters, a REXX PULL command or equivalent console reading command must be issued from your user ID.

Entering Your Logon Password for a CLASS AUTOLOG Job

Use the PASSWORD option to include your logon password on the BATCH SUBMIT or BATCH CHJOB command line. Your logon password is required **only** for CLASS AUTOLOG jobs.

Since the PASSWORD option is specified on the command line, your password will be visible on your terminal. Alternative methods of providing a password are available:

- When submitting a CLASS AUTOLOG job, omit the PASSWORD option. The VM Batch Facility will then prompt you for your password and will not display it.

- When changing the password of a CLASS AUTOLOG job, use the BATCH PASSWORD command rather than the BATCH CHJOB command. However, BATCH PASSWORD will change the password for *all* your CLASS AUTOLOG jobs. See "BATCH PASSWORD: Changing CLASS AUTOLOG Passwords" on page 26 for more information.

A password is not always required for CLASS AUTOLOG jobs:

- If the VM Batch Facility has been configured to insist on passwords for class AUTOLOG jobs, then a password is required. You may not enter '*NOPASS*' as your password.

- If it has been configured to discard passwords for class AUTOLOG jobs, then you need not provide a password. If you specify one it will be ignored.

- If it has been configured to neither insist on passwords nor to discard them, then you may enter '*NOPASS*' if your system does not require passwords for autologging.

```
┌─ Format ──────────────────────────────────────────────────────┐
│                                                                │
│  ├──PASSword──password─────────────────────────────────────┤   │
│                                                                │
└────────────────────────────────────────────────────────────────┘
```

password
    Enter the logon password to be associated with the CLASS AUTOLOG job.

Usage Notes

1. **Changing your password:** If you change your logon password, you should change the passwords of all your CLASS AUTOLOG jobs that are waiting to run.

    To change the passwords for all of your CLASS AUTOLOG jobs, use the BATCH PASSWORD command. See "BATCH PASSWORD: Changing CLASS AUTOLOG Passwords" on page 26 for more information on the command.

2. **When changes are permitted:** This option can be changed only before a job starts running.

3. **Negating a password:** If you are using a system that does not need a password for autologging your user ID, enter "*NOPASS*" to negate a password that you previously supplied.

4. **Password encryption:** To ensure that no other users can get access to your password, it is held in encrypted form by the VM Batch Facility.

┌─ **Example** ───┐

To include your logon password in the command submitting a CLASS AUTOLOG job, enter this command:

```
batch submit auto exec a (class autolog password sesame
```

└───┘

Assigning a Priority to a Job

Use the PJ option to raise the priority of a job, relative to other jobs that you have submitted that can be run on the same task machines. Within any start time limitations, giving a high priority to a job will cause it to be started earlier. The high priority job will have precedence on the next available task machine over other jobs that you own.

```
┌─ Format ─────────────────────────────────────────────────────────┐
│                                                                   │
│  ├──PJ──┬──9──┬──────────────────────────────────────────────┤   │
│         └──n──┘                                                    │
│                                                                   │
└───────────────────────────────────────────────────────────────────┘
```

n

Enter a number–"*n*"—from 0 to 9, where 0 is the highest priority and 9 is the lowest priority.

To break a tie–when two jobs have the same priority, start time, and all other factors are equal–the VM Batch Facility uses the times when the jobs were submitted. The job that was submitted first will be started first.

Note that in the case of a recurring job, this is the time when the job was last scheduled rather than when it was originally submitted.

Usage Notes

1. **BATCH SUBMIT command default:** If you do not use the PJ option, the VM Batch Facility assigns a priority of "9" to your job.

2. **When changes are permitted:** This option can be changed only before a job starts running. For recurring jobs, this option can be changed anytime. If an instance of the recurring job is running, the change takes effect the next time the job runs.

3. **Changing priority relative to jobs belonging to other users:** The PJ option changes the priority of a job only relative to other jobs that you own. However, a VM Batch Facility administrator can raise the priority of your job relative to all other jobs that can run on the same task machines as your job.

4. **Running urgent jobs right away:** Changing the priority of a job does not affect the start time limitations on the job. If you want to have a job run right away, without regard to any start time limitations, contact a VM Batch Facility authorized user or administrator. An authorized user can use the BATCH START command to override start time limitations and run your job.

5. **Class Autolog Jobs:** Use of PJ option is not valid for CLASS AUTOLOG jobs.

```
┌─ Example ────────────────────────────────────────────────────────┐
│                                                                   │
│  This command:                                                    │
│                                                                   │
│  batch submit highpri exec a (class z pj 0                        │
│                                                                   │
│  would start HIGHPRI EXEC before any other job that you own that  │
│  can run on the same task machine as HIGHPRI and has lower        │
│  priority than HIGHPRI.                                           │
│                                                                   │
└───────────────────────────────────────────────────────────────────┘
```

Having Your Jobs Repeat Automatically.

Use this option to manage the recurrence of a job. You can:

- Specify the pattern that controls the recurrence of a job

  When you specify the REPEAT option on a BATCH SUBMIT command the VM Batch Facility will not discard your job when it ends. Rather, the job will be rescheduled to run again at a date and time that is determined according to the recurrence pattern that you name. For example, assume that your installation provides a recurrence pattern named 'DAILY' to allow jobs to repeat every day. If you submitted a job and specified the pattern 'DAILY' as the REPEAT option, then on completion, your job would be rescheduled to run again the following day. This would continue indefinitely until you removed the attribute of recurrence from the job.

  To find out which recurrence patterns are available at your installation, issue the BATCH QUERY REPEATS command. If no pattern is available that suits your purpose, you should approach your installation's VM Batch Facility administrator to provide one.

- Change a job's recurrence pattern

- Suspend or resume recurrence of a job

- Remove the attribute of recurrence from a job

```
┌─ Format ─────────────────────────────────────────────────────────────┐
│                                                                        │
│  ├──REPeat──┬─ffffffff─┬──────────────────────────────────────────┤   │
│             ├─HOLD─────┤                                                │
│             ├─NOHOLD───┤                                                │
│             ├─NEVER────┤                                                │
│             └─KEEP─────┘                                                │
│                                                                        │
└────────────────────────────────────────────────────────────────────────┘
```
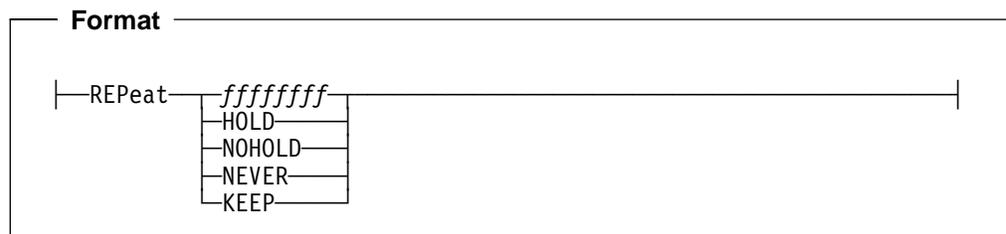
ffffffff

Use this option on a BATCH SUBMIT command to make a job repeat, and to specify the recurrence pattern to be used in scheduling all subsequent runs of the job.

Use this option on a BATCH CHJOB command to change the recurrence pattern that is used when scheduling subsequent runs of the job. The change will take effect the next time the job is rescheduled.

Issue the BATCH QUERY REPEATS command to find out which recurrence patterns are available to you.

When you use this option to make a job repeat, the job recurs *explicitly*. A job can also be made to repeat *implicitly* by chaining it to an existing recurring job. An explicitly recurring job has a direct association with a particular recurrence pattern, while an implicitly recurring job inherits its recurrence through a chain.

HOLD

Use HOLD on a BATCH CHJOB command to suspend a job's recurrence. This does not alter a job's recurrence pattern; in fact the job continues to be rescheduled according to its recurrence pattern, but the job will not actually run again until its recurrence is resumed. When recurrence is resumed, the job will not necessarily start immediately, since the job may have been rescheduled in

the meantime. A job that has its recurrence suspended will have the suspension removed if its recurrence pattern is ever changed.

HOLD may also be used to suspend recurrence of an implicitly recurring job. As for an explicitly recurring job, the next and subsequent runs of an implicitly recurring job will be prevented while recurrence is suspended, but while explicitly recurring jobs continue to be rescheduled while suspended, an implicitly recurring job's chain condition will not be satisfied while its recurrence is suspended.

HOLD may not be used on a BATCH SUBMIT command.

NOHOLD

Use NOHOLD on a BATCH CHJOB command to restore a job's recurrence. The job will become eligible to run as soon as its scheduling criteria have been satisfied.

NOHOLD may also be used to resume recurrence of an implicitly recurring job.

NOHOLD may not be used on a BATCH SUBMIT command.

NEVER

Enter NEVER to specify that the job does not recur explicitly.

Use NEVER on a BATCH CHJOB command to remove the attribute of recurrence from an explicitly recurring job. If the job is not running, then the job will not recur after its next run, but there will be a next run. If an instance of the job is currently running, the job will not recur after the current run. If you need to remove the job entirely, then issue the BATCH CANCEL command with the FLUSH option.

If you wish to remove the attribute of recurrence from an implicitly recurring job, then you should remove the chain condition on the job that has caused its implicit recurrence.

KEEP

Enter KEEP to specify that a job repeats explicitly, but not automatically. When a job with a recurrence pattern of KEEP ends, it is not discarded, but it is also not rescheduled. The job is requeued as if the DATE HOLD option had been set. It may be manually rescheduled by issuing a BATCH CHJOB command using the DATE option.

The KEEP pattern is universally available at all installations.

Usage Notes

1. **BATCH SUBMIT command default:** If you do not use the REPEAT option, the VM Batch Facility sets it to 'NEVER'.

2. **When changes are permitted:** This option can be changed any time before a job is flushed by a BATCH CANCEL command.

3. **Changes to non-recurring jobs:** You cannot use the REPEAT option with the BATCH CHJOB command to change a non-recurring job into a recurring job.

4. **Chaining recurring jobs:**

   • Explicitly recurring jobs cannot be chained to any other job.

   • Existing non-recurring jobs cannot be chained to recurring jobs.

- When a job is submitted that is chained to a recurring job, it recurs implicitly. That is, it will repeat each time that the job it is chained to repeats.

- Chained jobs cannot be made to recur explicitly.

5. **CLASS AUTOLOG jobs:** Use of the REPEAT option is not permitted for CLASS AUTOLOG jobs.

6. **Preservation of job control options:** When a job is requeued for its next run, all the job control options (except DATE) that were in effect for the job at the time it completed are preserved, and applied for the next run. This means that a job's original job control options persist for the successive generations of the job, except changes made by subsequent BATCH CHJOB commands, which then persist.

   So, for example, if you want your job to run at a particular time of day on each instance, you should specify the time using the WBEGIN and WEND job control options when you submit the job.

7. **The first run:** The recurrence pattern only has an effect on the second and subsequent runs of a job. The date and time of the first run depend on the start window that you have defined (or let default) for the job using the DATE, WBEGIN and WEND job control options.

8. **Manual override:** The date and time of an occurrence of an explicitly recurring job may be changed by manually issuing a BATCH CHJOB command using the DATE, WBEGIN and WEND job control options as necessary. This may be done at any time before the job is flushed, but is only meaningful when the job is not actually running.

Automatically Restarting a Job after a VM System Shutdown

Use the RESTART option to have your job restarted if it is interrupted by a system shutdown while it is running.

```
┌── Format ──────────────────────────────────────────────────────────┐
│                                                                     │
│   ├──REstart──┬─Yes─┬──────────────────────────────────────────┤    │
│               └─No──┘                                               │
│                                                                     │
└─────────────────────────────────────────────────────────────────────┘
```

Yes

Enter YES to have your job restarted if it is interrupted by a system shutdown or IPL while it is running.

The VM Batch Facility will restart the job from the beginning. Note that the files on the task machine 191 minidisk will be in exactly the state they were in when the job was interrupted.

If you wish, you can add statements to your exec to have it restart itself from the last BATCH JOBSTEP command that was executed. A sample exec that can restart itself from its last job step is shown in "Restarting a Job from the Last BATCH JOBSTEP Command" on page 144. For help in using the BATCH JOBSTEP command, see "BATCH JOBSTEP: Updating the Current Job Step from Your Exec" on page 148.

No

Entering NO tells the VM Batch Facility not to restart a job that is interrupted by a system shutdown or IPL. The job will be considered canceled if it is interrupted.

If you specify RESTART NO, the ERROR job control option processing specified for the job will be done when the VM Batch Facility is restarted.

Usage Notes

1. **BATCH SUBMIT command default:** If you do not use the RESTART option, VM Batch Facility automatically sets it to 'YES'.

2. **When changes are permitted:** This option can be changed any time before a job ends. For recurring jobs, this option can be changed anytime. If an instance of the recurring job is running, the change takes effect on the currently running instance and remains in effect for subsequent occurrences.

3. **Jobs not restarted after BATCH STOP JOBS:** The RESTART option is ignored if a job is interrupted by the BATCH STOP JOBS command. BATCH STOP JOBS is an authorized command which shuts down the VM Batch Facility.

Example

To have INTRUPTD EXEC restarted in the event of a system shutdown, enter this command:

```
batch submit intruptd exec a (restart yes
```

The VM Batch Facility will restart the job from the beginning. The files on the task machine 191 minidisk will be in the same state they were in when the job was interrupted.

By including BATCH JOBSTEP commands in INTRUPTD EXEC, together with some additional code, you can have the exec restart itself from the last BATCH JOBSTEP command that was executed. See Appendix A, "Preparing an Exec" on page 137 and "BATCH JOBSTEP: Updating the Current Job Step from Your Exec" on page 148 for more information.

Limiting the System Resources Used by a Job

Use the PRINT, PUNCH, and SECONDS options to override the class defaults and to limit the:

- Amount of computer time used by a job
- Total number of output records sent to the virtual printer by a job
- Total amount of output records sent to the virtual punch by a job.

If your job exceeds any of the limits you specify, the job problem exit is called. The default action of the exit is to cancel the job.

```
┌─ Format ──────────────────────────────────────────────────────────────┐
│                                                                        │
│ ├──PRint──┬─pppp─┬──PUnch──┬─uuuu─┬──SEconds──┬─sssssss─┬──────────┤    │
│           └─NONE─┘         └─NONE─┘           └─NONE────┘           │
│                                                                        │
└────────────────────────────────────────────────────────────────────────┘
```

pppp or **NONE**

Use this option to limit the number of virtual printer records that your job can produce. Virtual printer records are output records that your job sends out through the virtual printer of its task machine. On VM/ESA systems with the ESA feature, this includes messages sent to the virtual console.

The number you enter can be from 0 to 9999. The number is in **thousands** of records. For example, PR 1 limits printed output to 1000 records. Do not enter any commas in the number.

Enter PRINT NONE to have your job executed without virtual printer record limitation.

uuuu or **NONE**

Use this option to limit the number of virtual punch records that your job can produce. Virtual punch records are output records that your job sends out through the virtual punch of its task machine.

The number you enter can be from 0 to 9999. The number is in **thousands** of records. For example, PU 1 limits punched output to 1000 records. Do not enter any commas in the number.

Enter PUNCH NONE to have your job executed without virtual punch record limitation.

sssssss or **NONE**

Use this option to limit the number of seconds of CPU time that your job can use. CPU time–or computer time—is the amount of time that the processing unit of your system spends on a job.

The number you enter can be from 1 to 99999999 seconds. Do not enter any commas in the number.

Enter SECONDS NONE to have your job executed without CPU time limitation.

Usage Notes

1. **BATCH SUBMIT command default:** If you do not specify values for PRINT, PUNCH and SECONDS, they will be set according to the default values defined for the job class of your job.

2. **When changes are permitted:** These options can be changed any time before a job ends. For recurring jobs, this option can be changed anytime. If an instance of the recurring job is running, the change takes effect on the currently running instance and remains in effect for subsequent occurrences.

3. **Relation to job class maximum limits:** The PRINT,PUNCH and SECONDS limits you specify must not exceed the maximum limits defined for the job class to which you assign the job. If you specify higher limits, the VM Batch Facility will reset them to the job class limits. For example, if you specify a PRINT limit of 9999 and the job class limit is 9990, the job's print limit will be reset to 9990. You will receive a message alerting you if any of the limits you specify are changed.

   To check on the limits defined for VM Batch Facility job classes, enter this command:

   ```
   batch query class all
   ```

   The VM Batch Facility will display the definitions of its job classes.

4. **Restrictions on the use of NONE for any system resource:** A specification of NONE for any system resource limit will only be honored if the job class permits it. Otherwise the CLASS maximum will be used.

5. **PRINT records and job console messages on VM/ESA systems with the ESA Feature:** On VM/ESA systems with the ESA feature, any console messages produced by your job as it runs are counted as print records that the job is producing. (Console messages are the messages that you would see at your terminal if you ran the job exec yourself).

   This can be important if your job produces a large number of console messages, even if it does not produce any printed output at all (for example, a large SQL application). In a case like this, be sure to set a PRINT limit according to the number of console messages you are expecting.

6. **Changing Class:** If a CHJOB command is issued to change the class of a job, then any previous values for the PRINT, PUNCH and SECONDS options are lost, and the job acquires the default values of the new class. Use the PRINT, PUNCH and SECONDS options in the CHJOB command to restore the previous values.

7. **Restrictions on administrators:** VM Batch Facility administrators may change the limits imposed for a job regardless of the job's CLASS definition.

Example

What happens if your job has an error in it that causes it to keep running without ending? You can use the SECONDS option to prevent a job from running in an "endless loop".

Entering this command tells the VM Batch Facility to cancel your job if it uses more than 1000 seconds of computer time:

```
batch submit endless exec a (seconds 1000
```

Specifying the Virtual Storage for a Job

Use the STORAGE option to request a particular virtual storage size for a job.

```
┌─── Format ──────────────────────────────────────────────────┐
│                                                              │
│  ├──STORage──┬─kkkkkkkK─┬──────────────────────────────────┤ │
│             ├─kkkkkkk──┤                                    │
│             └─mmmmM────┘                                    │
│                                                              │
└──────────────────────────────────────────────────────────────┘
```
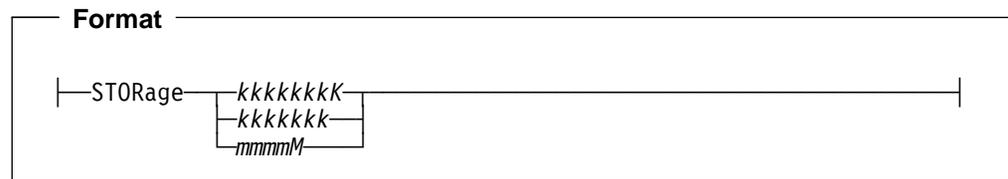
kkkkkkkK or ***mmmmM***
   Specify the virtual storage size that your job requires. Storage values can be
   entered in kilobytes by specifying 'K' as the terminating character, or in
   megabytes by specifying 'M'. 'K' is assumed if no terminating character is
   specified.

Usage Notes

 1. **BATCH SUBMIT command default:** If you do not use the STORAGE option,
    the default virtual storage size for the job class applies.

 2. **When changes are permitted:** This option can be changed only before a job
    starts running. For recurring jobs, this option can be changed anytime. If an
    instance of the recurring job is running, the change takes effect the next time
    the job runs.

 3. **Relation to job class range:** The virtual storage you specify must be within
    the minimum and maximum values defined for the job class to which you
    assign the job.

    To check on the ranges defined for VM Batch Facility job classes, enter this
    command:

    ```
    batch query class all
    ```

    The VM Batch Facility will display the definitions of its job classes.

 4. **Changing Class:** If a CHJOB command is issued to change the class of a job,
    then any previous STORAGE value is lost, and the job acquires the default
    value of the new class. Use the STORAGE option in the CHJOB command to
    restore the previous storage value.

 5. **Valid storage values:** The smallest virtual storage that can be assigned to a
    job is 2048 kilobytes or 2 megabytes. On VM/ESA ESA Feature, the largest
    virtual storage that can be assigned to a job is 2096128 kilobytes or 2047
    megabytes. On VM/ESA 370 Feature, the largest virtual storage that can be
    assigned to a job is 16384 kilobytes or 16 megabytes.

Specifying Synchronous Submission

Use the WAIT option to specify that the submit command executes synchronously. That is, the process within the submittor's virtual machine completes only after the job has definitely been accepted or rejected by the target monitor, rather than after the dispatch of the job to the monitor. This option may be used to ensure that subsequent commands find the submitted job.

See page 153 for a discussion on command synchronization.

```
┌─ Format ──────────────────────────────────────────────────────────────┐
│                                                                        │
│  ├──WAIT──mmm─────────────────────────────────────────────────────┤    │
│                                                                        │
└────────────────────────────────────────────────────────────────────────┘
```

mmm
> Specify the timeout value to limit the length of the wait. The time can take a value between 1 and 999 minutes.

Usage Notes

1. **BATCH SUBMIT command default:** If you do not use the WAIT option, VM Batch Facility assumes that the job submission is not synchronous.

2. **Not available on a BATCH CHJOB command:** This option cannot be changed by the CHJOB command.

3. **Not available when using the Direct or RJE Interface:** This option is not valid for the Direct or RJE interface.

4. **Return code from the synchronized SUBMIT command:** The following return codes are presented, reflecting the result of the submission.

   - 0 - the job has been accepted
   - 4 - the job has been accepted, but installation limits have been imposed
   - 8 - the job has been rejected by the target monitor, or was not submitted at all, due to parameter errors
   - 16 - the submission process timed out, or failed due to environmental errors or external interruptions.

   A return code of 4 or less indicates that the job has been accepted by the monitor, so subsequent commands directed at the job, such as BATCH CHJOB or BATCH CANCEL, will definitely find their target.

5. **Wait time:** The wait time is the maximum time the machine issuing the BATCH SUBMIT command will wait for a response from the monitor after successfully sending the job. It does not include the time required to send the job to the addressed monitor.

Controlling When a Job Starts

Use the DATE, WBEGIN, and WEND options to control when your job becomes eligible to start and run.

Use DATE to specify the earliest date on which your job is to become eligible to run. It will run either on this date or on any following date, during the window defined by WBEGIN and WEND. You can also use the DATE option to have the VM Batch Facility hold your job indefinitely, until you specify an earliest start date.

Use WBEGIN and WEND to define a start time window.

A start window is a period of time every day during which your job becomes eligible to run. If your job is submitted outside the window, the VM Batch Facility will hold your job until the window opens. It then becomes eligible to run until the window closes again. These times are the WBEGIN and WEND times.

'Outside the window' means:

- If WBEGIN is before WEND, that is, the window does not 'wrap-around' midnight, then 'outside the window' means before WBEGIN or after WEND.
- If WBEGIN is after WEND, that is, the window 'wraps-around' midnight, then 'outside the window' means before WBEGIN and after WEND.

'Inside the window' means:

- If WBEGIN is before WEND, that is, the window does not 'wrap-around' midnight, then 'inside the window' means after WBEGIN and before WEND.
- If WBEGIN is after WEND, that is, the window 'wraps-around' midnight, then 'inside the window' means any time after WBEGIN or any time before WEND, since the window extends from WBEGIN until midnight and from midnight until WEND.

Use the following diagram to compare the difference between a 'wrap-around' window and a 'normal' window.

```
'batch submit windowa exec a ( wbegin 2200 wend 0500'
'batch submit windowb exec a ( wbegin 0700 wend 1800'

                day 1        0000           day 2

0000<-A->0500               2200<-A->0500              2200<-A->0000

        0700<-B->1800               0700<-B->1800
```

Window A is effectively two 'logical' windows each day, from 0000 to 0500 and from 2200 to 0000, that is, from midnight to WEND and from WBEGIN to midnight. Window A is a 'wrap-around' window, because WBEGIN is after WEND.

Window B is only one 'logical' window each day, from 0700 to 1800, that is, from WBEGIN to WEND. Window B is not a 'wrap-around' window, because WBEGIN is before WEND.

```
┌─ Format ──────────────────────────────────────────────────────────┐
│                                                                    │
│  ├──DAte──┬─dd.mm.yy────┬──WBegin──hhmm──WEnd──┬─hhmm─┬──┤          │
│          ├─dd.mm.ccyy──┤                       └─OPEN─┘             │
│          ├─mm/dd/yy────┤                                            │
│          ├─mm/dd/ccyy──┤                                            │
│          ├─HOLD────────┤                                            │
│          └─OPEN────────┘                                            │
│                                                                    │
└────────────────────────────────────────────────────────────────────┘
```
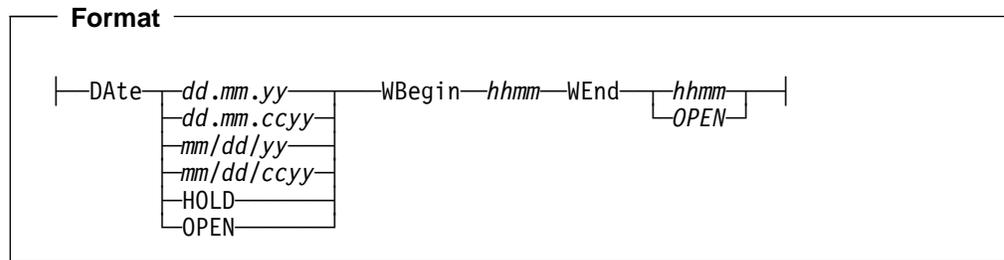
dd/mm/yy , **dd/mm/ccyy** , **mm.dd.yy** , **mm.dd.ccyy** , **HOLD** or **OPEN**
Use this option to either:

- Specify a date, on or after which the job may be started.
- Have this job held without starting until you specify a start date.
- Remove a prior date restriction on a job.

To have the job started on or after a particular date, enter the date in one of these formats:

mm/dd/yy   The month, day, and year on which the job becomes eligible to start, separated by slashes. Example: Enter "1/26/94" to have your job started on January 26, 1994. Note that a 2 digit year will be converted to a 4 digit year using 1990-2089 as the base. That is 00-89 will be converted to 2000-2089 and 90-99 will be converted to 1990-1999.

mm/dd/ccyy The month, day, and year on which the job becomes eligible to start, separated by slashes. Example: Enter "1/26/1994" to have your job started on January 26, 1994.

dd.mm.yy   The day, month, and year on which the job becomes eligible to start, separated by periods. Example: Enter "19.9.94" to have your job started on September 19, 1994. Note that a 2 digit year will be converted to a 4 digit year using 1990-2089 as the base. That is 00-89 will be converted to 2000-2089 and 90-99 will be converted to 1990-1999.

dd.mm.ccyy The day, month, and year on which the job becomes eligible to start, separated by periods. Example: Enter "19.9.1994" to have your job started on September 19, 1994.

To have the job held without starting, enter "HOLD". The VM Batch Facility will store your job without starting it. To take the job out of DATE HOLD, use the BATCH CHJOB command to specify a date on or after which your job will become eligible to start. The job will become eligible to start on the date you specify.

To remove start date restrictions, enter "OPEN". The VM Batch Facility schedules an immediate run of a recurring job subject to the window being open, installation exit veto and resource availability.

hhmm or **OPEN**
For WBEGIN, type in the time of day that the window should open. For WEND, type in the time of day that the window should close, or type in "OPEN" to have your job started at any time after WBEGIN.

Using OPEN for WEND is a special case that causes the VM Batch Facility to hold your job until the WBEGIN time arrives and then makes it eligible to run at any time thereafter. This is unconditional and the job could run at any time of

WBEGIN WEND DATE Options

the day or night once the WBEGIN time has passed (on the specified date, of course). If a job with a WEND of OPEN is submitted after the WBEGIN time has passed, it is eligible to run immediately.

If you type in times, the times:

- Must be in 24-hour notation. For example, type in "0900" for 9:00 am, "1315" for 1:15 pm, "2359" for 11:59 pm.
- Must be in "hhmm" format. For "hh" type the hour. For "mm" type the minutes after the hour. Be sure that the times you type are all four digits long: type in "0900" for 9:00 am, not "9" or "900".
- Must not include colons or other non-numeric characters.

Start time window example: To have your job started during the overnight window, type in:

```
batch submit job exec a ( wbegin 2200 wend 0500
```

The VM Batch Facility would hold your job until 10:00 pm, providing the current time is after 5:00 am. If the submission was before 5:00 am, the job would be eligible to be run immediately, since the overnight window would still be open. If the VM Batch Facility were unable to start the job before 5:00 am, it would hold it until 10:00 p.m. and the job would then become eligible to run, and remain so until 5:00 a.m. the following day. If still unable to run the job, the VM Batch Facility would again hold the job until the window reopened at 10:00 p.m. that evening.

The times you type in affect only when your job can start. Once it has started it keeps running even if the WEND time arrives.

Usage Notes

1. **BATCH SUBMIT command default:** If you do not use the DATE option, it is set to today's date. Your job would become eligible to start as soon as its start window opens, or immediately, if the window is currently open.

   If you do not use the WBEGIN and/or WEND options, the default window for the job class will apply to the job.

2. **When changes are permitted:** This option can be changed only before a job starts running. For recurring jobs, this option can be changed anytime. If an instance of the recurring job is running, the change takes effect the next time the job runs.

3. **Task machines start windows:** Be aware that the task machines at your installation have been defined with their own start windows, and which classes they may run jobs for. If you specify a start window for a job that does not match the start window of any task machine available to run jobs of the class you are using, then your job will be put in HOLD and will not run.

   You may review the start windows of the task machines at your installation by issuing the BATCH QUERY TASK command.

4. **When the job actually runs:** Use of the DATE, WBEGIN and WEND options specify when the job becomes eligible to run, and not necessarily when it will run. This is because the resources required to run the job may not be available at the time it becomes eligible (for example a particular task machine required is currently occupied), or because an administration constraint has been imposed on the job (for example if it has been held by a VM Batch Facility

Chapter 4. Using the Job Control Options of the SUBMIT and CHJOB Commands **73**

administrator). If the start window should close before the required resource becomes available or before the constraint is removed, then the job losses its eligibility. It must wait until the start window re-opens, once more competing for the required resource, and eventually running.

Examples

By using both the WBEGIN and WEND options, you can specify a **start time window**. Your job is eligible to start only during that start time window.

This command tells the VM Batch Facility to run HICPU EXEC during the night, when computer charges may be lower:

```
batch submit hicpu exec a (wbegin 2200 wend 0700
```

The start time window of HICPU EXEC opens at 10:00 p.m. (2200 hours) and closes at 7:00 a.m. (0700 hours, in 24-hour time notation).

Note that if this command was entered before 7:00 am, the EXEC would be eligible to be run immediately, as the start time window is already open. The same is true after 10:00 pm.

By adding the DATE option to the command shown above, you could specify that the job is not to be started before a particular date. Since the window 'wraps-around' midnight, the job would become eligible immediately after midnight on the day specified:

```
 batch submit hicpu exec a ( wbegin 2200 wend 0700 date 31.5.94
```

Or you could have HICPU EXEC held until you release it:

```
batch submit hicpu exec a (wbegin 2200 wend 0700 date hold
```

Chapter 5. Using the VM Batch Facility with Panels

This chapter describes how to use the VM Batch Facility panels.

Starting the VM Batch Facility Panels

From a set of panels provided with your VM system: Return to the Primary Options Menu of the panels. Find the system menu panel that lists the VM Batch Facility, and select the VM Batch Facility option.

From the VM command line: Enter "BATCH MENU". In a few moments, the VM Batch Facility User Tasks Menu panel will be displayed.

You will receive a message if the Interactive System Productivity Facility (ISPF) is not available to display the panels.

Getting help with the panels: There is information on filling out each VM Batch Facility panel in this chapter. Just leaf through the chapter until you see a picture of the panel you are working with.

You can also get online help information for each panel. Just press the HELP PF key of the panel you are working with.

If you would like more information about working with panels, turn to Appendix C, "General Information on VM Batch Facility Panels" on page 157. You will see explanations of the two types of panels–menu panels and data entry panels—as well as explanations of the PF keys available on the panels.

User Tasks Panel: Selecting the Task You Want to Do

This panel lists all of the tasks that you can perform using the VM Batch Facility panels. It is the first panel you will see when you start using the panels.

```
Menu                   VM Batch Facility User Tasks Menu
────────────────────────────────────────────────────────────────────────────

Type the number or letter of the task you want to do; then press ENTER.

        1 Submit       - Have the VM Batch Facility run a job for you
        2 Status       - Find out the status of your jobs
        3 Chjob        - Change job control options after submitting a job
        4 Password     - Change password for CLASS AUTOLOG jobs
        5 Query        - Review task machines, job classes and recurrence patterns
        6 Cancel       - Cancel one or more of your jobs
        7 Address      - Review or change destination of VM Batch commands

        I ISPF options    - Set default ISPF terminal and user options
        T Tutorial        - Display information about the VM Batch Facility
        X Exit            - Leave the VM Batch Facility


Selection ===>

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────────────────────────────────────────────────────────────────────────────

PF 1=HELP      2=SPLIT      3=END       4=RETURN    5=        6=
PF 7=          8=           9=          10=         11=       12=CURSOR
```

Figure 1. User Tasks Menu Panel: Selecting the Task You Want to Do.

The menu consists of a number of options. To select an option, enter the character for it in the "Selection ===>" field. For example, enter "3" to select "Chjob". The following options are available on this panel:

1 Submit   Enter "1" to have the VM Batch Facility run a job for you. When you press ENTER, you will see the panel shown on page 78.

2 Status   Enter "2" to find out the status of one or more of your jobs. When you press ENTER, you will see the panel shown on page 80.

3 Chjob   Enter "3" to change the job control options you specified when you submitted a job. When you press ENTER, you will see the panel shown on page 81.

4 Password

Enter "4" to change the logon password required for Class AUTOLOG jobs that you have submitted. When you press ENTER, you will see the panel shown on page 82.

5 Query   Enter "5" to review:

- The status of one or more VM Batch Facility task machines.

- The definitions of one or more VM Batch Facility job classes.

- The available recurrence patterns for your VM Batch Facility jobs.

When you press ENTER, you will see the panel shown on page 83.

6 Cancel   Enter "6" to cancel one or more of your jobs. When you press ENTER, you will see the panel shown on page 84.

7 Address   Enter "7" to review or change the destination of the VM Batch Facility commands entered by you. When you press ENTER, you will see the panel shown on page 85.

I ISPF options

Enter "I" to use the ISPF Parameter Options panel. ISPF, the Interactive System Productivity Facility, manages the VM Batch Facility panels. From the ISPF Options panel, you can:

- Review and change the terminal characteristics that ISPF is using to communicate with your terminal.
- Review and change the way that ISPF will use the console log file and other records that it keeps when you use these panels.
- Review and change the commands assigned to your PF keys when you use these panels.
- Review and change the way your screen is arranged when you use these panels.
- Review and change the format of the records that are in the ISPF list file.

For more information on using the ISPF Parameter Options panel, see the ISPF library, or use the help information that ISPF can display when you use the panel. The panel is not shown in this book.

T Tutorial   Enter "T" to use the VM Batch Facility tutorial. The tutorial gives an introduction to the VM Batch Facility and explains how to perform the first six tasks listed on the User Tasks Menu.

When you press ENTER, you will see a menu panel listing the information available in the tutorial. The tutorial panels are not shown in this book.

X Exit   Enter "X" to leave the VM Batch Facility.

Submit Panel: Having the VM Batch Facility Run a Job for You

Use this panel to submit a job to the VM Batch Facility and have it run.

The only required field is *filename*. *Filetype* defaults to 'EXEC' and *filemode* defaults to asterisk (*). When you press ENTER, your job will be sent to the VM Batch Facility.

```
 Submit                 Submit a Job and Have It Run
 ───────────────────────────────────────────────────────────────────────
 Type in Job Exec name; fill in options; then press ENTER.

   File Name of Job Exec : Filename :  _____
                           Filetype :  _____
                           Filemode :  __

   Optional fields:
       Job Class ....... :  _____      CPU Seconds  :  _____
       Account ......... :  _____      Print Records:  ___
       Job ID .......... :  _____      Punch Records:  ___
       Password ........ :                Job Priority :  _
       Start Window Open :  ____          Restart .... :  __
       Start Window Close:  ____          Error ...... :  _____
       Start Date ...... :  _____     Append Files :  __
       Job Parameters .. :  _____
       Chain to Job .... :  _____
       Alternate Userid. :  _____       LLS Override ..... :  _____
       Virtual Storage.. :  _____       Console Spooling . :  _____
       Repeat .......... :  _____

 ====>


 ───────────────────────────────────────────────────────────────────────

 PF 1=HELP      2=SPLIT      3=END       4=RETURN     5=          6=
 PF 7=          8=           9=          10=          11=         12=CURSOR
```

Figure 2. Submit Panel: Having the VM Batch Facility Run a Job for You.

For the description of the options, refer to Chapter 4, "Using the Job Control Options of the SUBMIT and CHJOB Commands" on page 39.

Append Files Panel: Listing Files to Append

This panel will be displayed for you automatically if you enter "YES" in the Append File field on the Submit panel. Use the panel to list the files that you want to append to your job exec.

When you have finished listing the files to be appended, press ENTER. Your job, together with the appended files, will be sent to the VM Batch Facility.

```
 Submit                            Append Files


   Type in the names of up to nine files that are to be appended to the
   job file.    Then press ENTER to submit the job.


                          Append file 1 :  _____
                          Append file 2 :  _____
                          Append file 3 :  _____
                          Append file 4 :  _____
                          Append file 5 :  _____
                          Append file 6 :  _____
                          Append file 7 :  _____
                          Append file 8 :  _____
                          Append file 9 :  _____


 ====>



 PF 1=HELP       2=SPLIT      3=END       4=RETURN     5=            6=
 PF 7=           8=           9=          10=          11=           12=CURSOR
```

Figure 3. Append Files Panel: Identifying Files Appended to a Job.

Refer to "Having Necessary Files Appended to Your Job Exec" on page 42 for the details of this option.

Status Panel: Review the Status of Your Jobs

Use this panel to check on the progress of jobs that you have submitted to the VM
Batch Facility. The VM Batch Facility will return a status message for each job for
which you request information. For an explanation of the message, see page 108.

```
 Status                        Review Job Status
 _____

 Type in a number and a jobid (for option 2 only); then press ENTER.

        User ID = *_____      Node ID = *_____


      1  All       - All of your jobs
      2  Job       - The job you identify   Job ID :  _____
      3  Active    - Jobs that are queued or running
      4  Hold      - Jobs that are in HOLD status
      5  Old       - Jobs that have been completed or canceled
      6  Queued    - Jobs that are queued
      7  Running   - Jobs that are running
      8  Clear     - Clear completed jobs
      9  Wait      - Jobs that are awaiting synchronization
     10  Repeats   - Jobs that are active recurring

 Press CLEAR or ENTER to see messages.

 Selection ====>

 _____

 PF 1=HELP      2=SPLIT      3=END       4=RETURN    5=          6=
 PF 7=          8=           9=          10=         11=         12=CURSOR
```

Figure 4. Status Panel: Finding Out How Far Your Jobs Have Progressed.

For the description of the options, refer to "BATCH STATUS: Finding Out the
Status of Your Jobs" on page 30.

Chjob Panel: Changing Job Control Options

Use this panel to change the job control options for a job after you have submitted
it. Job control options tell the VM Batch Facility when and how to run a job. Job
control options are set by you with the Submit or Chjob panel, and/or by the job
class to which you assign a job.

```
 Chjob                  Change Job Control Options


 Identify the job by typing in its jobid; fill in the options you want
 to change; and press ENTER.

 Job ID :  _____

 Optional fields:
  Job Class ....... :   _____        CPU Seconds ..... :   _____
  Account ......... :   _____        Print Records ... :   ____
  Job Priority .... :   _               Punch Records ... :   ____
  Start Window Open :   ____            Restart ......... :   __
  Start Window Close:   ____            Error ........... :   _____
  Start Date ...... :   _____        Password ........ :   _____
  Job Parameters .. :   _____
  Chain to Job .... :   _____
  Alternate Userid. :   _____        LLS Override .... :   _____
  Virtual Storage.. :   _____        Console Spooling .:   _____
  Repeat .......... :   _____

 ====>



 PF 1=HELP      2=SPLIT     3=END       4=RETURN    5=          6=
 PF 7=          8=          9=          10=         11=         12=CURSOR
```

Figure 5. Chjob Panel: Changing Job Control Options after You Submit a Job.

For the description of the options, refer to Chapter 4, "Using the Job Control
Options of the SUBMIT and CHJOB Commands" on page 39.

Password Panel: Change the Password for All Class AUTOLOG Jobs

Use this panel to change the logon password required for class AUTOLOG jobs.
The panel changes the password for all class AUTOLOG jobs that you have
submitted from the user ID you are logged on with.

```
Password              Change Password for CLASS AUTOLOG Jobs


Type in your logon password; then press ENTER.

        Log On Password:










====>



PF 1=HELP        2=SPLIT      3=END        4=RETURN     5=           6=
PF 7=            8=           9=           10=          11=          12=CURSOR
```

Figure 6. Password Panel: Changing the Password for CLASS AUTOLOG Jobs.

For the description of the options, refer to "BATCH PASSWORD: Changing
CLASS AUTOLOG Passwords" on page 26.

Query Panel: Review Task Machines, Job Classes and recurrence Patterns

Use this panel to review VM Batch Facility task machines, job classes, and recurrence patterns. Task machines are the virtual machines that the VM Batch Facility uses to perform jobs. Job classes identify the different types of jobs that the VM Batch Facility can accept.

Information on task machines and job classes will be returned to you as messages displayed at your terminal. For an explanation of the task machine message, see page 103 (message DGRCMD016I). For an explanation of the job class message, see page 106 (message DGRCMD028I).

```
Query              Review Task Machines and Job Classes


Type in a number and any other required information; then press ENTER.

Review task machine status:
    1  All       - All task machines
    2  Task      - The task machine you identify
       Task Machine Userid :  _____
    3  Hold      - Task machines in HOLD status
    4  Ready     - Task machines waiting for jobs
    5  Running   - Task machines that are running jobs

Review job class definitions:
    6  All       - All job classes
    7  Class     - The job class you identify
       Job Class ID :  _____

Review recurrence patterns:
    8  Repeats   - All recurrence patterns

Press CLEAR or ENTER to see messages.

Selection ====>



PF 1=HELP       2=SPLIT      3=END       4=RETURN     5=           6=
PF 7=           8=           9=          10=          11=          12=CURSOR
```

Figure 7. Query Panel: Reviewing Task Machines and Job Classes.

For the description of the options, refer to "BATCH QUERY: Reviewing Available Resources" on page 27.

Cancel Panel: Canceling Your Jobs

Use this panel to cancel jobs that you have submitted to the VM Batch Facility.
Canceling a job discards it, stopping it if it has started to run.

After you press ENTER, you will be asked to confirm that you want to cancel jobs.
If you press ENTER again, the VM Batch Facility will perform the command.
Pressing the PF 3 key will let you leave without canceling any jobs.

```
 Cancel                         Cancel Jobs
 ─────────────────────────────────────────────────────────────────────

 Type in a number and a jobid (for option 2 only); then press ENTER.

     1  All       - Cancel all of your jobs
     2  Job       - Cancel the job you identify
        Job ID :  _____
     3  Queued    - Cancel all of your queued jobs
     4  Running   - Cancel all of your running jobs

       Options: (select by entering 's')

          Flush _  - Flush recurring jobs




 Selection ====>
 ─────────────────────────────────────────────────────────────────────
 PF 1=HELP        2=SPLIT      3=END        4=RETURN     5=           6=
 PF 7=            8=           9=           10=          11=          12=CURSOR
```

Figure 8. Cancel Panel: Canceling Your Jobs.

For the description of the options, refer to "BATCH CANCEL: Canceling Your
Jobs" on page 20.

Address Panel: Change Destination of VM Batch Commands

Use this panel to review or change the destination for the VM Batch Facility commands entered by you. Once the destination address is changed, all subsequent commands are sent to the new address.

```
┌─────────────────────────────────────────────────────────────────────────┐
│                                                                           │
│  Address             Command Destination                                  │
│  ───────────────────────────────────────────────────────────────────     │
│                                                                           │
│                                                                           │
│      1  Display    - Show the current Command Destination                 │
│                                                                           │
│      2  Change     - Change the Destination to:                           │
│                                 Monitor :  _____                        │
│                                 at Node :  _____                        │
│                                                                           │
│      3  Reset      - Reset the Destination to the default                 │
│                                                                           │
│                                                                           │
│                                                                           │
│  Selection ====>                                                          │
│  ───────────────────────────────────────────────────────────────────     │
│                                                                           │
│  PF 1=HELP      2=SPLIT     3=END      4=RETURN    5=          6=          │
│  PF 7=          8=          9=         10=         11=         12=CURSOR   │
│                                                                           │
└─────────────────────────────────────────────────────────────────────────┘
```

Figure 9. Address Panel: Destination of VM Batch Commands.

For the description of the options, refer to "BATCH ADDRESS: Changing Destination of Commands" on page 19.

Address Panel

Chapter 6. Using the VM Batch Facility with the Direct or RJE Interface

You can send jobs to the VM Batch Facility from remote workstations that are supported by the Remote Spooling Communications Subsystem (RSCS) using the Remote Job Entry (RJE) communication protocol.

These jobs are sent directly to a VM Batch monitor without passing through the Facility front end process, BATCH EXEC. Each job (or command) consists of a single file, prepared to contain all required commands, options and information required for the execution of the job or command. The file is then delivered to the VM Batch monitor's virtual reader as a PUNCH spool file.

This direct interface may also be used by non RJE devices. These may be local or remote terminals that choose not to use the panel or command interfaces; or do not have these interfaces available, such as users running under an operating system other than VM. Whatever the device, it must deliver a PUNCH type spool file to the monitor's virtual reader for each command to be processed.

Restrictions on the Use of the Direct or RJE Interface

Use of the direct or RJE interface is subject to a number of restrictions and additional requirements, and generally differs significantly from the command interface.

- The VM Batch Facility commands that may be issued by way of the direct interface are restricted to:

    SUBMIT Submit a job to a VM Batch Facility for execution.

    CHJOB Change the job control options of a job that you have already submitted.

    STATUS Display the status of a job you have sent to a VM Batch Facility.

    CANCEL Cancel a job you have sent to a VM Batch Facility.

- Since commands and jobs are not passing through the normal validation, formatting and delivery provided by the front end process:

    - Job and command files must be in card image format.
    - Each job or command file must contain one and only one command, and that command must be the first record of the file.
    - Commands must be coded in the format required by this interface. Note that they are not preceded with "BATCH" as would be done when using the command interface.
    - All commands and options must:

        - Be entered in uppercase letters.

        - Be completely spelled out (no abbreviations).

        - Not contain any non-displayable characters (e.g. x'00', x'15', etc.).

        - Each be on a separate card.

    - The job submittor must provide the mechanism for delivering job and command files to the required VM Batch monitor.

- Some other items to keep in mind when using this interface are:

  – If you are submitting a job from a real RJE device or to a VM Batch Facility monitor on a node other than your own:

    - The target monitor must have been configured to accept jobs and commands from remote nodes. This is done by appropriate modification of the monitor's user exits.

    - Similarly, the target monitor must have been configured to confirm or provide an alternate user ID for remote jobs to run under.

    - Class AUTOLOG jobs will not be accepted.

  – You may change, cancel and query only those jobs that have been submitted from your device or user ID. That is, authorized commands are not available and you only have access to your own jobs.

  – Some features normally provided by the front end process are not available. These are the menu panel interface and help.

  – There are no separate user IDs on a real RJE device. All jobs submitted from a real RJE device are owned by that device. This can have serious implications when using commands like CANCEL ALL. However, you may freely use the "*RJE" indicator to generate spool file messages if you are only simulating RJE.

- The direct or RJE interface cannot be used to issue VM Batch Facility commands from within VM Batch Facility jobs.

Delivering Job and Command Files to a VM Batch Monitor

For a VM Batch Facility to process your job or command file it must be delivered
from your job entry device to the Facility's monitor.

The method that you choose for delivering files to a VM Batch monitor depends on
the environment from which you are sending them. It is beyond the scope of this
book to describe all possible environments, but some environments and
suggestions are described below.

Delivery by a Real RJE Device

Depending on the nature of your workstation, it is likely that you will need to
transmit RSCS ID or SIGNON cards in front of your job or command file, in order to
target the required VM Batch monitor. Please check with your system support
personnel, or the RSCS publications, if in doubt.

Delivery by a Local VM User ID

If your user ID is on the same node as the target VM Batch monitor, enter the
following commands to deliver your prepared job or command file:

```
cp spool pun batmon
punch filename exec a
```

Where *batmon* is the user ID of the target VM Batch monitor, and '*filename* exec a'
identifies the job or command file to be delivered.

Delivery by a Remote VM User ID

If your user ID is on a different node than the target VM Batch monitor, enter the
following commands to deliver your prepared job file:

```
cp spool pun rscsid
cp tag dev pun batnode batmon
punch filename exec a
```

Where:

rscsid   is the user ID of the RSCS virtual machine on your node

batnode   is the node ID of the target VM Batch monitor

batmon   is the user ID of the VM Batch monitor

filename exec a
         identifies the job file to be delivered

Preparing a Job File for Submission

A job file contains three sections. These are:

- SUBMIT command card

- Job control options

- Appended job exec, data and program files.

```
┌──── Example of a job file ──────────────────────────────────────────────┐
│ SUBMIT    JOBNAME   *RJE                                                 │
│ SECONDS   *                                                             │
│ PRINT     *                                                             │
│ PUNCH     *                                                             │
│ CLASS     A                                                             │
│ WBEGIN    *                                                             │
│ WEND      *                                                             │
│ DATE      12/03/94                                                      │
│ RESTART   YES                                                           │
│ ERROR     NODUMP                                                        │
│ CHAIN     *                                                             │
│ PJ        9                                                             │
│ ALTID     RJEUSER                                                       │
│ CONSOLE   RC                                                            │
│ REPEAT    *                                                             │
│ *END.OF.JOB.PARAMETERS                                                  │
│ :READ SAMPLE EXEC A                                                     │
│ /*                      Sample Job exec                    */           │
│                                                                         │
│ 'EXEC BATCH JOBSTEP START'                                              │
│                                                                         │
│ 'EXECIO * DISKR EMPNAMES LIST A (FIFO'                                  │
│                                                                         │
│ numque = queued()                                                       │
│ do while numque > 0                                                     │
│   pull lname fname salary date_of_hire                                  │
│   numque = numque - 1                                                   │
│   If salary > 400 then say lname fname                                  │
│ end                                                                     │
│                                                                         │
│ 'EXEC BATCH JOBSTEP END'                                                │
│                                                                         │
│ exit                                                                    │
│ :READ EMPNAMES LIST  A                                                  │
│ FOSTERS     BRUCE      331      09/03/84                                │
│ PEACOCK     GEOFF      325      10/11/86                                │
│ EASTWOOD    CLIFF      422      10/25/86                                │
│ DY          CONCHITA   343      05/30/89                                │
│ PULLAN      STEVE      407      11/01/87                                │
│ WILLIAMS    CHRIS      354      03/05/90                                │
│ FRASER      LINDSAY    321      03/19/90                                │
│ ABRAMOWITZ  MICHAEL    410      11/01/87                                │
│ GIGNAC      TOM        354      03/05/90                                │
│ SIMPSON     MEG        321      03/19/90                                │
│                                                                         │
└─────────────────────────────────────────────────────────────────────────┘
```

Figure 10. Example of a job file

The SUBMIT Command Card : p.Contains the SUBMIT command. The card's
format is as follows:

- SUBMIT starting anywhere on the card. However, the command and all
  of its operands must be completed before column 72.
- At least one space.

- The job ID, or name, you are assigning to the job. The name can be from one to eight characters long, and can have numbers (0-9) and/or letters (A-Z) in it. : p.The job ID is optional; If you do not specify it, the receiving VM Batch monitor will create one for you. However, if you later need to use any other commands (such as CANCEL) against the job, you will need to supply the job ID in order to identify it.
- At least one space.
- The RJE indicator.

    This indicator is optional. If specified, it must have the value "*RJE". It specifies that you are a real RJE device, or that you wish to be treated as a real RJE device; that is, you wish the monitor to communicate with you via spool files rather than messages.

    You must specify this indicator if you are a real RJE device, otherwise your job may not run and informational messages from the monitor may not be delivered.

The Job Control Option Cards

Table 4 on page 93 suggests ways of using the job control options.

For a detailed explanation of the use of each option, see Chapter 4, "Using the Job Control Options of the SUBMIT and CHJOB Commands" on page 39.

Unlike the SUBMIT command, the job ID is not an option but is specified on the SUBMIT command card, as illustrated in the example.

The APPEND option is not valid for the direct or RJE interface. You may achieve the equivalent by including APPEND files in your job file, as illustrated in the example.

Separate cards are required for each option and its values.

The job control option cards must be terminated by an *END.OF.JOB.PARAMETERS card.

Options and their values must be separated by at least one blank.

If you do not create a card for an option, it will take a default value if one is available. The absence of an ACCOUNT card will be interpreted as no account number for this job. The absence of a PARMS card will be interpreted as no parameters are to be passed to this job. The absence of an ALTID card will be interpreted as requesting that the alternate user ID be set to the user ID from which the job was submitted.

You may explicitly select a default by using an asterisk (*) in place of the value. ACCOUNT, ALTID and PARMS do not have a default. An asterisk (*) will be considered as an account number, alternate userid or parameter, respectively.

An option can start anywhere on a card, but the option value must be completed before column 72. However, there are exceptions to this rule. The PARMS parameters must start in column 10 and end by column 27; the *END.OF.JOB.PARAMETERS card must start in column 1.

Do not use parentheses to mark the beginning and end of the parameters.

If you enter a start DATE, the date must be eight or ten characters long, as in: 01/26/93, 01/26/1993, 26.01.93 or 26.01.1993.

The WAIT option is not available using the direct interface.

When a card that is not recognized as a job control option is encountered before the *END.OF.JOB.PARAMETERS card, the card is ignored by the receiving monitor.

The Job Exec and other Appended Material

Appended material is included in the job file as punched card images or disk dump card images.

In the example in Figure 10 on page 91, they are in punched format as indicated by the :READ card.

The job exec must be the first to be appended.

You can append as many files as you wish following the job exec.

The following table suggests ways to use the job control options.

Table 4. Using the Job Control Options

To do this:	Use this option:	For more Information:
Charge a job to a system account number.	ACcount	See page 40.
Have your job run under a specific alternate user ID.	ALtid	See page 41.
Coordinate execution of two or more jobs ("chain" jobs together).	CHain	See page 44.
Have a job performed on your user ID while you are not logged on.	CLass PASSword	See page 49. See page 59.
Assign a job to a particular job class.	CLass	See page 47.
Specify console log disposition.	CONSole	See page 52.
Have a job held without being started until you release it.	DAte	See page 71.
Specify the action to take if your job is canceled.	ERror	See page 53.
Subject your job to LLS activity (if override permitted).	LLS	See page 57.
Disable LLS activity for your job (if override permitted).	NOLLS	See page 57.
Have parameters passed to a job.	PArms	See page 58.
Assign a priority to this job relative to your other jobs.	PJ	See page 61.
Specify a recurrence pattern	REPeat	See page 62.
Have a job restarted or not restarted if it is interrupted by a system shutdown.	REstart	See page 65.
Put limits on the computer time a job can use and/or the size of the spool files it can generate.	SEconds PRint PUnch	See page 67.
Specify the virtual storage of a job	STORage	See page 69.
Specify when a job should start running.	WBegin WEnd DAte	See page 71.

Usage Note

1. **Option values:** The values of the job options and parameters must **not** contain non-displayable characters (e.g. x'00', x'15' etc...). Any non-displayable characters present will be translated to spaces (x'40').

2. **Option names replaced:** The CPU, PRIORITY and WINDOW options that were available with previous releases are still supported. These have been replaced with SECONDS, PJ, WBEGIN and WEND to make them consistent with the command interface.

Preparing a CHJOB Command File

A CHJOB command file contains two sections. These are:

- CHJOB command card

- Job control options.

> **Sample CHJOB Command File**
>
> ```
> CHJOB    JOBNAME  *RJE
> DATE     08/21/94
> *END.OF.JOB.PARAMETERS
> ```

The CHJOB Command Card : p.Contains the CHJOB command. The card's format is as follows:

- CHJOB starting anywhere on the card. However, the command and all of its operands must be completed before column 72.

- At least one space.

- The job ID of the job to be changed. : p.The job ID is mandatory to identify the job.

- At least one space.

- The RJE indicator.

  This indicator is optional. If specified, it must have the value *RJE. It specifies that you are a real RJE device, or that you wish to be treated as a real RJE device; that is, you wish the monitor to communicate with you by way of spool files rather than messages.

  You must specify this indicator if you are a real RJE device, otherwise the job you are trying to change may not be located, and informational messages from the monitor may not be delivered.

The Job Control Option Cards

Table 5 on page 96 suggests ways to use the job control options.

For a detailed explanation of the use of each option, see Chapter 4, "Using the Job Control Options of the SUBMIT and CHJOB Commands" on page 39.

Separate cards are required for each option and its values.

The job control option cards must be terminated by an *END.OF.JOB.PARAMETERS card.

Options and their values must be separated by at least one blank.

The absence of an options card means no change. An asterisk (*) following the option keyword means no option change. There are three exceptions; the ACCOUNT, ALTID and PARMS options. An asterisk (*) on these cards will be accepted as the value for the option.

When a card that is not recognized as a job control option is encountered before the *END.OF.JOB.PARAMETERS card, the card is ignored by the receiving monitor.

An option can start anywhere on a card, but the option value must be completed before column 72. However, there are exceptions to this rule. The

PARMS parameters must start in column 10 and end in or before column 27; the *END.OF.JOB.PARAMETERS card must start in column 1.

Do not use parentheses to mark the beginning and end of the parameters.

If you enter a start DATE, the date must be eight or ten characters long, as in: 01/26/93, 01/26/1993, 26.01.93 or 26.01.1993, or an asterisk (*).

Table 5 (Page 1 of 2). Changing Job Execution with the CHJOB Command File.

To make this change:	Use this option:	When changes permitted:*	For more information:
Charge a different account number.	ACcount	Only before a job starts running.	See page 40.
Run job under a different alternate user ID.	ALtid	Only before a job starts running.	See page 41.
Make job start dependent on the status of another job, or change or cancel an existing job chain.	CHain	Only before a job starts running.	See page 44.
Assign the job to a different class.	CLass	Only before a job starts running.	See page 47.
Change the disposition of a job's console log.	CONSole	Only before a job starts running.	See page 52.
Change the start date.	DAte	Only before a job starts running.	See page 71.
Place a job on indefinite hold.	DAte	Only before a job starts running.	See page 71.
Remove start date restrictions.	DAte	Any time after you submit a job.	See page 71.
Change the action to take if a job is canceled.	ERror	Any time before a job ends.	See page 53.
Subject job to LLS activity (if permitted).	LLS	Any time after the job is submitted.	See page 57.
Do not subject job to LLS activity (if permitted).	NOLLS	Any time after the job is submitted.	See page 57.
Change or cancel the parameters to be passed to a job.	PArms	Only before a job starts running.	See page 58.
Change the logon password of a CLASS AUTOLOG job.	PASSword	Only before a job starts running.	See page 59.
Change job priority relative to your other queued jobs.	PJ	Only before a job starts running.	See page 61.
Change the recurrence pattern for a job.	REPeat	At any time.	See page 62.
Specify whether a job should be restarted if it is interrupted by a system shutdown.	REstart	Any time before a job ends.	See page 65.
Change resource use limits.	SEconds PRint PUnch	Any time before a job ends.	See page 67.
Change the virtual storage size of a job	STORage	Only before a job starts running.	See page 69.

Table 5 (Page 2 of 2). Changing Job Execution with the CHJOB Command File.

To make this change:	Use this option:	When changes permitted:*	For more information:
Change the start time window, the period of time during which a job may start.	WBEGIN WEND	Only before a job starts running.	See page 71.

Note: * Recurring jobs may be changed at any time. If an instance of the job is running when the CHJOB is issued, this column provides an indication of whether the change will apply to the currently running instance, or whether it will only take effect the next time the job runs.

Usage Notes

1. **Option values:** The values of the job options and parameters must **not** contain non-displayable characters (e.g. x'00', x'15' etc...). Any non-displayable characters present will be translated to spaces (x'40').

2. **Options unchanged:** Options that you do not use with CHJOB stay set to their current values.

3. **Changing Job Class:** If you change the job class, the default LLS, WBEGIN, WEND, SECONDS, PRINT, PUNCH and STORAGE values of the job class are put into effect for your job. To prevent these options from being changed, specify values for them when you change the job class.

4. **Jobs affected by this command:** This command only affects jobs that have been accepted by the VM Batch Facility monitor machine. Jobs that are submitted to, but not accepted by the VM Batch Facility are not affected by this command.

5. **Changing to Recurring Jobs:** The CHJOB command cannot be used to change a non-recurring job to a reucrring job.

6. **Option names replaced:** The CPU, PRIORITY and WINDOW options that were available with previous releases are still supported. These have been replaced with SECONDS, PJ, WBEGIN and WEND to make them consistent with the command interface.

Preparing a STATUS or CANCEL Command File

STATUS and CANCEL command files contain only the command itself.

The STATUS and CANCEL commands have the same card format. All entries must be in uppercase.

STATUS *OPTION* *RJE*

CANCEL *OPTION* *RJE*

OPTION

- **The STATUS options are as follows:**

    ACTIVE
    ALL
    CLEAR
    REPEATS
    HOLD
    [JOB] *JOBID*
    OLD
    QUEUED
    RUNNING

    The default option for the STATUS command when you use the direct interface is ALL.

    You cannot query the status of jobs owned by other users when you use the direct interface.

- **The CANCEL options are as follows:**

    [JOB] *JOBID*
    ALL
    QUEUED
    RUNNING

    There is no default option for the CANCEL command.

    Note: To cancel all future occurrences of a recurring job, use the FLUSH option modifier. This can be appended at the end of any of the above options, for example:

    ```
    CANCEL jobid (FLUSH
    ```

    See "BATCH STATUS: Finding Out the Status of Your Jobs" on page 30 and "BATCH CANCEL: Canceling Your Jobs" on page 20 for descriptions of the options from which you can select.

*RJE This is the RJE indicator. It is optional; if specified, it must have the value *RJE. It specifies that you are a real RJE device, or that you wish to be treated as a real RJE device; that is, you wish the monitor to communicate with you by way of spool files rather than messages.

You must specify this indicator if you are a real RJE device, otherwise the job you are trying to report on or cancel may not be located, and informational messages from the monitor may not be delivered.

Note: Because all jobs submitted by a real RJE device are owned by that device, use of an option such as ALL will cause all jobs submitted from the device to be reported (or canceled!).

Jobs affected by this command: This command only affects jobs that have been accepted by the VM Batch Facility monitor machine. Jobs that are submitted to, but not accepted by the VM Batch Facility are not affected by this command.

RJE Interface

Chapter 7. Messages

All messages issued by the VM Batch Facility have a 10-character identifier that contains the following:

- The first three characters are always DGR, the VM Batch Facility subsystem prefix.

- The fourth through sixth characters identify the VM Batch Facility component issuing the message.

- The seventh through ninth characters are the message number.

- The tenth character is a code for the severity of the condition the message is reporting.

The messages in this section are arranged in two groups:

- Messages with numbers less than 500 are listed in the first group, and arranged in sequence of component ID and message number.

- Messages with numbers of 500 and greater are common to more than one VM Batch Facility component. These messages are listed in the section "Messages Numbered 500 and Higher" on page 125, and are arranged in message number sequence.

VM Batch Facility Severity Codes

The severity codes for all VM Batch Facility messages use the following convention:

Severity Code Meaning

I   No error. This is an informational message only.

W   Indefinite error. A condition has arisen which may or may not constitute an error.

E   Definite error. A function did not complete.

Messages Numbered Less Than 500

The messages in this section are uniquely identified by the combination of a three character code for the VM Batch Facility component issuing the message, and message number. Look up the message using the component code and message number together – the fourth through ninth characters if the message ID.

DGRBAT001E You do not have access to the ISPF facility. If ISPF is installed on your system, link and access the ISPF product minidisk and then retry BATCH MENU. If ISPF is not installed on your system, then you must use the VM Batch Facility command interface for VM Batch Facility functions.

Explanation: You entered BATCH MENU to start the VM Batch Facility panels. The VM Batch Facility was unable to present the panels because your user ID does not have access to the minidisks on which the Interactive System Productivity Facility (ISPF) is stored.

VM Batch Facility Action: The VM Batch Facility was unable to start its panel interface for you. It is ready for another command.

User Response: If you can, enter the necessary LINK and ACCESS commands to get access to ISPF. Otherwise, contact your system administrator for help.

You can continue to make use of the VM Batch Facility by entering VM Batch Facility commands.

DGRBAT5nn

User Response: See "Messages Numbered 500 and Higher" on page 125.

DGRCMD001E Not permitted to use VM Batch Facility authorized user commands

Explanation: You entered a VM Batch Facility authorized user command, but you have not been identified as an authorized user. If you are not an authorized user, you can use only the SUBMIT, PASSWORD, QUERY, and JOBSTEP commands, and the nonprivileged forms of the CHJOB, STATUS, and CANCEL commands.

VM Batch Facility Action: Command not performed. The VM Batch Facility is ready for another command.

User Response: Refer to Chapter 3, "Using VM Batch Facility Commands to Execute Jobs" on page 17 for descriptions of the commands you can use.

DGRCMD002E You entered an unknown VM Batch Facility command

Explanation: You entered a command that the VM Batch Facility has not recognized.

VM Batch Facility Action: Command not performed. The VM Batch Facility is ready for another command.

User Response: Check to see that you used the correct command and that you spelled it right. Enter the command again if you were mistaken.

DGRCMD003E You entered an incorrect option in a VM Batch Facility command

Explanation: You entered a VM Batch Facility command that included one or more incorrect options. The problem may be that the option was misspelled, was abbreviated incorrectly, does not belong with the command, or was entered with an invalid value following it.

VM Batch Facility Action: Command not performed. The VM Batch Facility is ready for another command.

User Response: Check the command format and reenter the command. To get help with VM Batch Facility command formats at your terminal, enter HELP BATCH.

DGRCMD004E Job *userid nodeid jobid* **not found**

Explanation: You entered a VM Batch Facility command specifying the job named in the message. However, the program could not find the job. The problem has occurred for one of these reasons:

1. The program has finished or canceled the job, and the job owner has already seen the final status of the job. The program erases status records after the job owner has seen the job's final status.

2. The job ID or user ID was misspelled or incorrect.

3. The job has not been submitted to the VM Batch Facility.

4. The VM Batch Facility has had to reuse the control block that recorded information about this job. The program reuses job control blocks of completed jobs if it runs out of space for new jobs.

VM Batch Facility Action: Command not performed. The VM Batch Facility is ready for another command.

User Response: Check the job ID you used and enter the command again if it was incorrect. Enter this command to check the job IDs of all jobs that you have sent to the VM Batch Facility: BATCH STATUS ALL. If you are a VM Batch Facility authorized user, enter this command to check the names of jobs belonging to a particular user: BATCH STATUS *userid nodeid* ALL.

Otherwise, check with the job owner to see if the job has been submitted and completed.

DGRCMD005E Task machine *userid* **not found**

Explanation: You entered a command specifying a task machine user ID. However, the VM Batch Facility could not find the task machine. The problem has occurred for one of these reasons:

1. The user ID of the task machine was misspelled or incorrect.

2. The task virtual machine has not been identified to the VM Batch Facility. Task machines must be identified with TASK keyword entries in the CONTROL FILE.

VM Batch Facility Action: Command not performed. The VM Batch Facility is ready for another command.

User Response: Enter the command BATCH QUERY TASK ALL to review the task machines defined to the VM Batch Facility. If the task machine is listed, enter your command again. If not, check with the VM Batch Facility administrator to see if the machine should be a task virtual machine.

DGRCMD016I Task: *userid* **Classes:** *classid(s)* **Window:** *hhmm–hhmm*
           Status: *current status pending status*
           Active job: *userid nodeid jobid*

Explanation: Acknowledges the following:

• BATCH QUERY TASK

Each message shows the status of one task machine. The table below explains the meaning of each part of the message:

This part of the message:	tells you this:
Task: *userid*	The user ID of the task machine described in the message.
Classes: *classid(s)*	The job class(es) the task machine can accept. The task machine can only run jobs that belong to one of the job classes listed in this part of the message.
	If the job class list starts with a period, then each letter or number in the list is a separate type 1 job class classid.
	If the list does not start with a period, then Classes shows the classid(s) of type 2 job classes that are accepted by the task machine. For example, if you see "Classes: large" in the message, that means that the task machine can run jobs that have been assigned to any of these job classes: LA, LAR, LARG, and LARGE. Task machines can accept jobs from any class whose class ID is included in the Classes: value, reading from the left of the value.
Window: *hhmm–hhmm*	The start time window of the task machine. The task machine is available for starting jobs only between the times shown after Window. If the times are 0000 and 2400, then the task machine is available for starting jobs 24 hours a day.

This part of the message:	tells you this:
Status: *current status pending status*	The current status and pending status of the task machine.
	The current status is the condition of the task machine right now. The pending status is the condition that is about to take over in the task machine. For example, after a BATCH DRAIN command, the status may be RUNNING HOLD. That means that the task machine is running a job right now, but will be put into HOLD status as soon as the job is over.
	The current and pending status may be:
	• **Deleted**–the task machine's TASK entry has been deleted from the CONTROL FILE. Jobs can no longer be started on the task machine.
	• **Hold**–the task machine is unavailable for running jobs as a result of a BATCH DRAIN or BATCH FORCE HOLD command from an authorized user. The task machine must be made available with the BATCH START command before it can be used to run jobs again.
	• **Offline**–the task machine is unusable. The VM Batch Facility was unable to AUTOLOG the task machine to run a job.
	• **Purging job**–the task machine is being AUTOLOGged to do ERROR option processing for a canceled job.
	• **Ready**–the task machine is ready to run a job.
	• **Running**–the task machine is running a job.
	• **Suspended**–the job that was running has been temporarily halted with the BATCH SUSPEND command.
	• **Task logging off**–the task machine has finished a job and is logging off.
	• **To be restarted**–the task machine is being restarted by the VM Batch Facility to run a job that was interrupted by a system shutdown.
	• **Wait for JOBEND**–the task machine has logged off after its job was canceled and is about to be AUTOLOGged again to perform ERROR option processing. The VM Batch Facility is waiting for all processing to be completed.
	• **Window not open**–the task machine cannot start jobs right now. The current time does not fall within the start time window defined for the task machine in its TASK keyword entry.
Active job: *userid nodeid jobid*	Which job is currently being run by the task machine. The line will appear only when a job is running.

VM Batch Facility Action: Command completed. The VM Batch Facility is ready for another command.

User Response: None is required.

Note that the format of this message is slightly different when issued by a monitor on a remote node. However, the content is the same.

DGRCMD017I *END OF STATUS

Explanation: You entered one of the forms of the BATCH STATUS command and have received status messages on one or more jobs. This message marks the end of the job status messages sent in response to your command. The message may be useful to you if you use a programmable operator or other application and would like to trap job status messages.

VM Batch Facility Action: Command completed. The VM Batch Facility is ready for another command.

User Response: None is required.

DGRCMD018E No jobid entered

Explanation: You entered the BATCH STATUS JOB command, but there was no job ID following JOB.

VM Batch Facility Action: Command not performed. The VM Batch Facility is ready for another command.

User Response: To get information on a specific job, reenter the command, specifying the job ID of the job on which you want information. Use the JOB option of the BATCH STATUS command only if the job ID is the same as one of the BATCH STATUS command options or abbreviations.

DGRCMD019E No password entered

Explanation: You entered the BATCH PASSWORD command but did not supply your logon password in the command.

VM Batch Facility Action: Command not performed. The VM Batch Facility is ready for another command.

User Response: Enter the command again, specifying your logon password. The command will associate the new password with all of the CLASS AUTOLOG jobs that you have submitted from this user ID.

DGRCMD020E Password rejected - CLASS AUTOLOG job not found

Explanation: You entered the BATCH PASSWORD command, but you do not have any CLASS AUTOLOG jobs in the VM Batch Facility. The problem may be that:

1. Your CLASS AUTOLOG jobs have been completed or canceled.

2. You entered the command from a user ID other than the one you were on when you submitted a CLASS AUTOLOG job or jobs. The program keeps track of jobs by user ID.

3. You have not submitted any CLASS AUTOLOG jobs.

VM Batch Facility Action: Command not performed. The VM Batch Facility is ready for another command.

User Response: Check to be sure that you entered the command from the user ID you were on when you submitted your CLASS AUTOLOG jobs. Enter the command again from the correct user ID if necessary.

Otherwise, no action is required since your CLASS AUTOLOG jobs have been completed or canceled.

DGRCMD021I Password received

Explanation: Acknowledges the BATCH PASSWORD command you entered. The VM Batch Facility has stored the new password you supplied in the command for use in running all CLASS AUTOLOG jobs that you submitted from this user ID.

VM Batch Facility Action: Command completed. The VM Batch Facility is ready for another command.

User Response: None is required.

DGRCMD024I No VM Batch Facility task machines defined

Explanation: You entered a BATCH QUERY TASK ALL command to review VM Batch Facility task machines. However, no task virtual machines have been defined to the VM Batch Facility. Task machines are virtual machines used by the program to run jobs.

VM Batch Facility Action: Command completed. The VM Batch Facility is ready for another command.

User Response: Contact the VM Batch Facility administrator to find out whether task machines should be defined.

DGRCMD025I No VM Batch Facility task machines are running

Explanation: You entered the BATCH QUERY TASK RUNNING command to review running task machines. No task machines are running jobs at this time.

VM Batch Facility Action: Command completed. The VM Batch Facility is ready for another command.

User Response: None is required.

DGRCMD026I No VM Batch Facility task machines are ready

Explanation: You entered the BATCH QUERY TASK READY command to review task machines that are waiting for jobs but do not have jobs to run or that are waiting for their start time windows to open. No task machines are in this condition at this time.

VM Batch Facility Action: Command completed. The VM Batch Facility is ready for another command.

User Response: None is required.

DGRCMD027I No VM Batch Facility task machines are in hold

Explanation: You entered the BATCH QUERY TASK HOLD command to review task machines that are in HOLD status because of a BATCH DRAIN or BATCH FORCE HOLD command. No task machines are in HOLD status at this time.

VM Batch Facility Action: Command completed. The VM Batch Facility is ready for another command.

User Response: None is required.

DGRCMD028I Class: *classid* **Window:** *hhmm–hhmm*
Virtual Storage: *ddddddd*K/*nnnnnnn*K/*mmmmmmm*K
Seconds: *ssssssss/ssssssss* **Print:** *pppp*K/*pppp*K **Punch:** *pppp*K/*pppp*K
Minimum Stall Delay: *cmsd* **Maximum Stall Warnings:** *cmsw*
LLS subject: *llss* **LLS overrides:** *llso*
Jobs queued = *nnnn*, **Jobs running =** *nnnn*

Explanation: The response to a BATCH QUERY CLASS command. Each message shows the definition of one job class. The table below explains the meaning of each part of the message:

This part of the message:	tells you this:
Class: *classid*	This shows you the class ID (or name) of the job class described in the message.
Window: *hhmm–hhmm*	This is the start time window defined for the job class. The job class start window provides default start window times for jobs assigned to the class. If a job owner does not use the Start Window Open or Start Window Close fields (WBEGIN or WEND options), then the appropriate job class time(s) apply to the job.

This part of the message:	tells you this:
Virtual Storage: *dddddddd*K/*nnnnnnn*K/ *mmmmmmm*K	This shows the amount of virtual storage available by default (*dddddddd*K), and the minimum (*nnnnnnn*K) and maximum (*mmmmmmm*K) values that can be assigned to a job of this class. If the size is specified in Megabytes, the terminating character shown is 'M' rather than 'K'.
	If the default value is shown as an asterisk (*), this means that jobs of this class run with the CP directory value of virtual storage in the allocated task machine.
	If the amount shown for minimum and maximum storage is an asterisk (*) this means that jobs of this class are not permitted to request storage amount other than the class default.
Seconds: *ssssssss/ssssssss*	This shows the default limit and maximum limit on the number of CPU seconds that a job can use. The default limit is the first number; the maximum is the second.
	If a job is submitted without a value in the CPU Seconds field (SECONDS option), the job will be subject to the default job class limit.
	If a job is submitted with a CPU Seconds or SECONDS value that is higher than the class maximum, the value will be reset to the class maximum.
	-/NONE is reported for jobs with no limit.
	If a job exceeds the limit that applies to it, it may be canceled.
Print: *pppp*K/*pppp*K	This shows the default limit and maximum limit on the records that a job can send to the virtual printer of a task machine. The default limit is the first number; the maximum is the second.
	If a job is submitted without a value in the Print Records field (PRINT option), the job will be subject to the default job class limit.
	If a job is submitted with a Print Records or PRINT value that is higher than the class maximum, the value will be reset to the class maximum.
	-/NONE is reported for jobs with no limit.
	If a job exceeds the limit that applies to it, it may be canceled.
Punch: *pppp*K/*pppp*K	This shows the default limit and maximum limit on the records that a job can send to the virtual punch of a task machine. The default limit is the first number; the maximum is the second.
	If a job is submitted without a value in the Punch Records field (PUNCH option), the job will be subject to the default job class limit.
	If a job is submitted with a Punch Records or PUNCH value that is higher than the class maximum, the value will be reset to the class maximum.
	-/NONE is reported for jobs with no limit.
	If a job exceeds the limit that applies to it, it may be canceled.
Minimum Stall Delay: *cmsd*, Maximum Stall Warnings: *cmsw*	This shows the values of MINIMUM-STALL-DELAY and MAXIMUM-STALL-WARNINGS that are in effect for jobs in the class.
LLS subject: *llss*, LLS overrides: *llso*	This shows the default LLS subjection of jobs in the class, and whether the default subjection may be overriden.
Jobs queued = *nnnn*, Jobs running = *nnnn*	This line tells you how many jobs are queued and waiting to run in the job class, and how many jobs of the class are being run.

VM Batch Facility Action: Command completed. The VM Batch Facility is ready for another command.

User Response: None is required.

Note that the format of this message is slightly different when issued by a monitor on a remote node. However, the content is the same.

DGRCMD029E Job class *classid* **not defined**

Explanation: You entered the BATCH QUERY CLASS *classid* command. However, the class that you identified has not been defined to the VM Batch Facility.

The problem may have occurred for either of these reasons:

1. The class ID was misspelled or incorrect in the command.

2. The class has not been defined to the VM Batch Facility.

VM Batch Facility Action: Command completed. The VM Batch Facility is ready for other commands.

User Response: Correct the command and reenter it if the class ID was in error. Otherwise, enter this command to review all job classes defined to the VM Batch Facility: BATCH QUERY CLASS ALL. If the class you specified is not listed, it is not defined to the program and is not an existing job class.

DGRCMD034I *userid nodeid jobid*
        Status: *mm/dd/ccyy hh:mm:ss status*
        Class: *classid* **Schedule:** *mm/dd/ccyy hhmm-hhmm* **Step:** *jobstep*
        Seconds: *ssssssss/ssssssss*, **Print:** *pppp*K/*pppp*K, **Punch:** *pppp*K/*pppp*K
        Virtual Storage: *sssssss*K
        Queue position is *n* **within job class** *classid*
        Chained to: *userid nodeid jobid jobstep*
        Job running in task machine *taskid*
        Started: *mm/dd/ccyy hh:mm:ss*
        Recurrence pattern: *ffffffff* **[(HOLD)]**
        Recurrence is set by chain. [(HOLD)]
        Occurrence count: *nnnnn*
        Duplicate jobs have been rejected

Explanation: The response to a BATCH STATUS command. It may also appear in some other circumstances, as when you submit a job that has the same job ID as a completed job. The VM Batch Facility will display the status of the completed job before erasing its records to make way for the new job.

The message only contains those lines that are appropriate for the job. For example, only the job identification and the reportable status are displayed for jobs that have been rejected.

If a recurring job is running, or ready to run, or has been held, then the message reports the execution or queue status of the current instance. Otherwise, the message reports the completion status of the last executed instance (if any).

Each message shows the status of one job. The table below explains the meaning of each part of the message.

This part of the message:	tells you this:
userid	The user ID from which the job was submitted.
nodeid	The node ID from which the job was submitted.
jobid	The job ID of the job–the name that has been given to the job.
	The job ID may be the time of day when the job was submitted, as in 12023522. (The time is shown in hours, minutes, seconds format.)
	Or it may be a name assigned to the job by the job owner.
	To direct commands specifically to a job, the command must include the job ID of the job. And the VM Batch Facility refers to a job by its job ID in any messages it sends about the job.

This part of the message:	tells you this:
Status: *mm/dd/ccyy hh:mm:ss status*	The current status of the job. The date (*mm/dd/ccyy*) and time (*hh:mm:ss*) show when the job reached its current status. For RUNNING jobs, the date and time shown indicate when the jobs were last seen to be running. (Note that the date may also appear in dd.mm.ccyy format.)
	The words after the date and time indicate the current condition of the job. The status may be:
	• **Admin-held**–the job has been withheld from execution by command from a VM Batch Facility administrator.
	• **Autologged**–this CLASS AUTOLOG job has been started. The job is no longer under the control of the VM Batch Facility.
	• **Canceled**–the job has been discarded and will not run. The status will also tell you why or by whom the job was canceled.
	• **Completed**–the job has been completed.
	• **Exit-held**–the job has been withheld from execution by command from a VM Batch Facility exit.
	• **Hold**–the job cannot run because there is no task machine configured to accept it.
	• **Forced by** *userid*–the job has been canceled by a BATCH FORCE command from a VM Batch Facility authorized user.
	• **Logged or forced off**–the job has been canceled by the VM system or by a LOGOFF command in the job exec.
	• **Queued**–the job is waiting to run.
	• **Restarted**–the job has been restarted. The job had been interrupted by a system shutdown while it was running.
	• **Running**–the job is currently being performed.
	• **Skipped**–the job was not run at the time scheduled because it was held due to a **REPEAT HOLD** or a **DATE HOLD**.
	• **Stalled mm:ss**–the job has been stalled for the indicated duration.
	• **Started**–the task machine has been logged on to run a job.
	• **Suspended**–the job has been temporarily halted by a VM Batch Facility authorized user, or by the Load Level Scheduler.
	• **Rejected**–the reason for rejection is included in the message. Only the first two message lines are shown for rejected jobs.
	• **Awaiting synchronization**–the WAIT option was specified and synchronization of the submission has not yet completed.
	• **Flushed**–the recurring job has been flushed and will not recur. The status will also tell you by whom the job was flushed.
	• **Synchronization timed out**–a synchronous submission was abandoned or timed out.
	• **Prevented**–an occurrence of a recurring job has been prevented from running by the DGRECUR exit not confirming its start.
Class: *classid*	The job class to which the job has been assigned.
Schedule: *mm/dd/ccyy hhmm-hhmm*	The start date and start time window defined for the job.
	The job is eligible to start on the date shown in the message. (Note that the date may also appear in dd.mm.ccyy format.) It can be started only between the first and second times shown after the start date. (These two times define the start time window of the job. The first time is the Start Window Open or WBEGIN time. The second time is the Start Window Close or WEND time.)
	If HOLD appears instead of a date, the job is to be held until the job owner specifies a start date for it.
	If OPEN appears instead of the start window close time, the job can be started anytime after the start window open time.
Step: *jobstep*	The text of the last BATCH JOBSTEP command that was executed by the job. There will not be any *jobstep* if the job has not started or has not executed any BATCH JOBSTEP commands.

This part of the message:	tells you this:
Seconds: *sssssssss/sssssssss*	The first *sssssssss* shows how many seconds of CPU time the job has used.
	The second *sssssssss* shows the limit on CPU seconds that applies to this job. The job may be canceled if the number of seconds it has used exceeds this limit.
	-/NONE is reported for jobs with no limit.
Print: *ppppK/ppppK*	The first *pppp* shows many thousands of records the job has sent to the virtual printer.
	The second *pppp* shows the limit on print records that applies to this job. The job may be canceled if the number of records that it has produced, in thousands, exceeds this limit.
	-/NONE is reported for jobs with no limit.
Punch: *ppppK/ppppK*	The first *pppp* shows how many thousands of records the job has sent to the virtual punch.
	The second *pppp* shows the limit on punch records that applies to this job. The job may be canceled if the number of records that it has produced, in thousands, exceeds this limit.
	-/NONE is reported for jobs with no limit.
Virtual Storage: *sssssss*K	This shows the amount of virtual storage allocated to your job, either by default or as you specified with the STORAGE option on the SUBMIT or CHJOB command.
	If the value is in megabytes the last character will be 'M' instead of 'K'. If shown as an asterisk (*), the TASK machine default has been used.
Queue position is *n* within job class *classid*	This line appears when a job is ready to run, and shows how many jobs are in line in front of this job. A job is the next job to run when the queue position is 1.
	The line will appear only when the start date of the job has arrived and its start time window has opened.
Chained to: *userid nodeid jobid jobstep*	This line appears only for jobs that have been chained to other jobs. A chained job cannot start until the job to which it is chained has reached a specified point in its execution. The user ID, node ID, job ID and jobstep in the message identify the job to which this job is chained. The line will not appear if a chained job has already started to run.
Job running in task machine *userid*	This line shows you which task machine is running the job. The line will appear in the message only when a job is running.
Started: *mm/dd/ccyy hh:mm:ss*	This shows when the job started running.
Recurrence pattern: *ffffffff* [(HOLD)]	This shows the recurrence pattern defined for the job if the job recurs explicitly. The presence of (HOLD) indicates that recurrence of the job has been suspended.
Recurrence pattern is set by chain. [(HOLD)]	This indicates a job that recurs implicitly. The presence of (HOLD) indicates that recurrence of the job has been suspended.
Occurrence count: *nnnnn*	This shows the number of times the job has started.
Duplicate jobs have been rejected	This indicates that at least one job with the same ID was submitted by the same user while the job was active, and was rejected for that reason.

VM Batch Facility Action: Command completed. The VM Batch Facility is ready for another command.

User Response: None is required.

Note that the format of this message is slightly different when issued by a monitor on a remote node. However, the content is the same.

DGRCMD040W Invalid return code from DGRUJB user exit, rc = *rc*

Explanation: The VM Batch Facility has received an invalid return code from the job screening exit, DGRUJB EXEC. Only the return codes documented in the prolog of DGRUJB EXEC and in the *VM Batch Facility Installation, Customization, and Administration* manual can be accepted by the VM Batch Facility.

VM Batch Facility Action: The VM Batch Facility has ignored the invalid return code. The job that was being processed will not be affected by the return code. It will be processed in normal fashion.

User Response: Contact your VM Batch Facility Administrator.

DGRCMD066I No jobs found

Explanation: Acknowledges a BATCH STATUS command and indicates that:

- The VM Batch Facility does not have any jobs belonging to you, if you entered the BATCH STATUS ALL command.

- Or, there are no jobs in the VM Batch Facility, if you entered another form of the BATCH STATUS command.

VM Batch Facility Action: The command has been performed. The VM Batch Facility is ready for another command.

User Response: None is required.

DGRCMD067I No *option* **jobs found**

Explanation: Acknowledges a BATCH STATUS command. The VM Batch Facility has searched its status records, but did not find any jobs matching the BATCH STATUS option you specified in the command. For example, if you enter BATCH STATUS QUEUED and receive this message, then none of your jobs is waiting to run.

VM Batch Facility Action: The command has been performed. The VM Batch Facility is ready for another command.

User Response: None is required.

DGRCMD070I *nnn* **jobs cleared**

Explanation: This message appears as a response to a BATCH STATUS command with the CLEAR option.

VM Batch Facility Action: The command has been performed. The VM Batch Facility is ready for another command.

User Response: None is required.

DGRCMD5nn

User Response: See "Messages Numbered 500 and Higher" on page 125.

DGREXE101E You used too many options in your command; *option* **is extraneous**

Explanation: You used too many options in the VM Batch Facility command that you entered. The message shows which option could not be used.

VM Batch Facility Action: The command has not been carried out. The VM Batch Facility is ready for another command.

User Response: Check the command format or enter the command name followed by a question mark. Then enter the command again.

DGREXE103E Value *value* **given for option** *option* **must be** *type*

Explanation: One of the values you specified in the command you entered was invalid because it was the wrong type of value. The problem may have been, for example, that you entered letters for an option that requires a numeric value. The message indicates what type of value must be entered for the option.

VM Batch Facility Action: The command has not been carried out. The VM Batch Facility is ready for another command.

User Response: Check the command format or enter the command name followed by a question mark. Then enter the command again.

DGREXE104E Required value *value* **missing for** *command* **command**

Explanation: One of these problems was found in the command that you just entered:

- A required option was missing from the command.
- No value was specified for one of the options that you used and a value is required.

VM Batch Facility Action: The command has not been carried out. The VM Batch Facility is ready for another command.

User Response: Check the command format or enter the command name followed by a question mark. Then enter the command again.

DGREXE105E You must specify a *jobid* **before optional parameters**

Explanation: There was an error in the format of the BATCH CHJOB command that you just entered. The command format must be:

```
batch chjob jobid (options
```

with the job ID of the job to be changed coming before any options.

VM Batch Facility Action: The command has not been carried out. The VM Batch Facility is ready for another command.

User Response: Check the command format or enter the command name followed by a question mark. Then enter the command again.

DGREXE107E There were invalid option(s) in the *command* **command**

Explanation: The VM Batch Facility did not recognize one or more of the options that you used in the command named in the message.

VM Batch Facility Action: The command has not been carried out. The VM Batch Facility is ready for another command.

User Response: Check the command format or enter the command name followed by a question mark. Then enter the command again.

DGREXE108E [command/option**] [**option/value**] is missing or invalid**

Explanation: There was an error in the BATCH SUBMIT or BATCH CHJOB command that you entered. The message shows which command, option, and/or value was incorrect or missing.

VM Batch Facility Action: The command has not been carried out. The VM Batch Facility is ready for another command.

User Response: Check the command format or enter the command name followed by a question mark. Then enter the command again.

DGREXE109E *value* **must be no greater than** *n* **characters long**

Explanation: A value in the command you just entered was too long. A user ID, for example, can only be up to eight characters long.

VM Batch Facility Action: The command has not been carried out. The VM Batch Facility is ready for another command.

User Response: Check the command format or enter the command name followed by a question mark. Then enter the command again.

DGREXE110E Maximum number of append files is nine

Explanation: The VM Batch Facility is able to work with up to nine files listed in the APPEND option of the BATCH SUBMIT command. The command you entered listed more than nine files for the VM Batch Facility to append.

VM Batch Facility Action: The command has not been carried out. The VM Batch Facility is ready for another command.

User Response: List some or all of the files to be appended in an APNDLIST file. You can use an APNDLIST file to list as many files to append as you would like. For more information on using APNDLIST files, see "BATCH SUBMIT: Having Your Jobs Run" on page 34, or type in BATCH SUBMIT ? for online help.

DGREXE111E The value of *command/option* **must be in the range from** *n1* **to** *n2*

Explanation: The value that you entered for the command or option named in the message was too large or too small.

VM Batch Facility Action: The command has not been carried out. The VM Batch Facility is ready for another command.

User Response: Enter the command again, using a value that is within the range shown in the message. For more help with the command, type in the command name followed by a question mark or see Chapter 3, "Using VM Batch Facility Commands to Execute Jobs" on page 17.

DGREXE112E [*option/value***] specified with [***command/option***] is invalid**

Explanation: One of these problems has been found in the BATCH SUBMIT, BATCH CHJOB, or BATCH PASSWORD command you entered:

1. The VM Batch Facility did not recognize one of the SUBMIT or CHJOB options or values that you entered in the command.
2. You used the REPEAT option with a CLASS AUTOLOG job.
3. You used the APPEND option with a CLASS AUTOLOG job.
4. You specified NOLOG as the password in a BATCH PASSWORD command or in the PASSWORD option of BATCH SUBMIT or BATCH CHJOB. The VM system does not allow NOLOG as a password.
5. You specified a file name and file type on a BATCH CHJOB command. The BATCH CHJOB command must specify the job ID of a job, not the file name or file type.
6. There was no left parenthesis before the options in a BATCH CHJOB command. Job control options must be preceded by a left parenthesis, as in: "batch chjob myjob (print 50 punch 50 ...". If this problem has occurred, the VM Batch Facility will interpret the first option in the command as a file type, and the message will indicate that the file type that you specified is not valid.

The option or value that must be changed is shown in the message.

VM Batch Facility Action: The command has not been carried out. The VM Batch Facility is ready for another command.

User Response: Check the command format in Chapter 3, "Using VM Batch Facility Commands to Execute Jobs" on page 17 or enter the command name followed by a question mark. Correct the command and enter it again.

DGREXE113E *filename* **is not present on any of your accessed disks**

Explanation: The VM Batch Facility could not find the file named in the message on any of the minidisks available to your user ID.

VM Batch Facility Action: The command has not been carried out. The VM Batch Facility is ready for another command.

User Response: If the file name in the message is DGRUVM, contact the VM Batch Facility administrator for help in getting access to the minidisk on which the file is stored.

Otherwise, ensure that you have access to the minidisk on which the file is located and enter the command again.

DGREXE115E [Filename/Filetype/Filemode] of appended file *fn ft fm* **is invalid, must be no more than** *n* **characters**

Explanation: The file name, file type, or file mode of the file named in the message is too long. The file is a file that you listed with the APPEND option of the BATCH SUBMIT command or Submit panel.

VM Batch Facility Action: The command has not been carried out. The VM Batch Facility is ready for another command.

User Response: Enter the command again. Be sure that the file name is entered correctly.

DGREXE118E A job exec filename is required for class other than AUTOLOG

Explanation: You entered a BATCH SUBMIT command but did not include the file name of the job exec that is to be submitted. A job exec name must be specified in the command unless the job is being submitted to the AUTOLOG job class.

VM Batch Facility Action: The command has not been carried out. The VM Batch Facility is ready for another command.

User Response: Enter the command again. Include the file name of the job exec that is to be run or specify AUTOLOG as the value of the CLASS option.

DGREXE119I Job *jobid* **submitted to** *monitor* **at** *node*

Explanation: Acknowledges that you have submitted a job to the VM Batch Facility. The message shows the job ID, or job name, that has been assigned to the job; and the name of the monitor and node to which the job was submitted.

Make a note of the job ID for future reference. You will need to use the job ID if you wish to address VM Batch Facility commands to this job alone. Also, the VM Batch Facility will reference the job ID in any messages it sends you about the job.

VM Batch Facility Action: The VM Batch Facility has carried out your BATCH SUBMIT command. It is ready for another command.

User Response: None is required.

DGREXE120I You are now addressing Monitor *monitor* **at node** *node*

Explanation: This message is issued in response to a BATCH ADDRESS command. It identifies the VM Batch monitor (and its location) that your VM Batch jobs and commands will be submitted to.

VM Batch Facility Action: Until the BATCH ADDRESS command is entered again, all VM BATCH jobs and commands will be directed to the monitor identified in the message

User Response: None is required.

DGREXE121E The SYSTEM NETID is not available for node identification

Explanation: Your jobs and commands have been directed to a monitor at a remote node. The identification of the RSCS virtual machine on your own node must be available in order for communication to take place; but this identification has not been found on your system, or is invalid.

VM Batch Facility Action: No commands are passed to remote monitors when no local RSCS virtual machine identification is available.

User Response: Correct or create the SYSTEM NETID file.

DGREXE122E The RSCS virtual machine *rscsid* **is not logged on**

Explanation: You are addressing your jobs and commands to a VM Batch Facility on a remote node, but the RSCS virtual machine is not logged on.

VM Batch Facility Action: No remote VM Batch Facilities are available to you until the RSCS virtual machine is logged on.

User Response: Confirm that your addressing of a remote VM Batch Facility is correct. If not, change your destination VM Batch Facility using the BATCH ADDRESS command. Otherwise contact your system support personnel to ensure that the RSCS virtual machine is correctly identified in the SYSTEM NETID file, and that the virtual machine is logged on.

DGREXE123E The VM Batch monitor *monitorid* **is not available**

Explanation: You are addressing your jobs and commands to a VM Batch Facility monitor on this node that is not logged on.

VM Batch Facility Action: This VM Batch Facility is not available to you until the monitor virtual machine is logged on.

User Response: Confirm that your addressing of this VM Batch Facility monitor is correct. If not, change your destination VM Batch Facility using the BATCH ADDRESS command. Otherwise contact your system support personnel to ensure that the VM Batch Facility monitor virtual machine is correctly identified in the VMBATCH DEFAULTS file, and that the virtual machine is logged on.

DGREXE124E The password could not be read due to a *macro* **error**

Explanation: While prompting for the user's password during the submission of a CLASS AUTOLOG job, DGRIPW MODULE has detected an unrecoverable error executing the CMS *macro* function.

VM Batch Facility Action: The submission of the CLASS AUTOLOG job is canceled.

User Response: Re-IPL CMS in your virtual machine and submit the CLASS AUTOLOG job again. If problems persist, contact your VM Batch Facility Administrator.

DGREXE5nn

User Response: See "Messages Numbered 500 and Higher" on page 125.

DGRMAI006W VM Batch Facility job *userid nodeid jobid* **is stalled**

Explanation: A problem may have occurred with the job shown in the message. The job was started but apparently has stopped running and may be stalled. The job may have stalled because an error in the job exec has stopped it from running. Or the job may have stalled temporarily because the system work load is high, for example.

VM Batch Facility Action: The task machine running the stalled job is logged on but execution of the job apparently has stopped. If the job does not restart within the time and stall warning limits set by your installation, the DGRIDO exit will be called. The default action by this exit is to have the job canceled.

User Response: Take any of these actions:

1. Let the situation be resolved by the DGRIDO exit. If it is set up to cancel the job, this will occur automatically if the job has not restarted within a few minutes.

2. Cancel the job yourself. Canceling the job will cause the VM Batch Facility to discard it right away.

Before submitting the job again, check to see that it does not use prohibited commands. Refer to Appendix A, "Preparing an Exec" on page 137 for information on commands that cannot be issued from job execs.

DGRMAI007W Job *userid nodeid jobid* **canceled by break in job chain**

Explanation: The job named in this message has been canceled for one of these reasons:

- The job to which this job was chained has been canceled.
- The job to which this job was chained ended before reaching the jobstep specified in the CHAIN option for this job.

A chained job is one whose eligibility to start depends on the progress of another job. Job chaining is set up with the CHAIN option of the BATCH SUBMIT and BATCH CHJOB commands.

VM Batch Facility Action: The VM Batch Facility has canceled the job named in the message.

User Response: None is required. If you wish to resubmit the chained jobs, first determine why the first job in the chain was canceled. The console log produced by the canceled job may help you to determine why the job was canceled. The console log file is sent to the owner of the job when the job is canceled.

After you have corrected the problem with the first job, resubmit the jobs, specifying the job chaining that you require.

DGRMAI018W Error routine canceled for job *userid nodeid jobid*

Explanation: Processing of the ERROR job control option for the specified job has been terminated. ERROR option processing is done when a job has been canceled.

The ERROR option processing has been canceled for one of these reasons:

- ERROR option processing exceeded the Print Records (PRINT), Punch Records (PUNCH), or CPU Seconds (SECONDS) limit in effect for it.
- ERROR option processing stalled and was canceled.
- Another event occurred to cause ERROR option processing to be canceled. For example, an ERROR option exec is canceled if it executes a LOGOFF command.

VM Batch Facility Action: Both the original job and ERROR option processing have been stopped. The VM Batch Facility will send the ERROR option console log to you.

User Response: None is required.

DGRMAI5nn

User Response: See "Messages Numbered 500 and Higher" on page 125.

DGRRDR002E Job/Chjob *userid nodeid jobid* **rejected, invalid option:** *option*

Explanation: The VM Batch Facility is responding to a BATCH SUBMIT or BATCH CHJOB command you entered. The program has rejected the command because one or more of the command options or panel fields you used was incorrect.

VM Batch Facility Action: The VM Batch Facility has not carried out the command. It is ready for another command.

User Response: Consult Chapter 3, "Using VM Batch Facility Commands to Execute Jobs"

on page 17, or Chapter 5, "Using the VM Batch Facility with Panels" on page 75. Correct the error in the command or panel input and enter the command again.

If you entered the command yourself, the problem may be that you misspelled an option or entered an incorrect value with the option.

If you entered the command from a panel, the problem is with one of the values you entered on the panel.

DGRRDR009E Not permitted to use VM Batch Facility authorized user commands

Explanation: You entered a VM Batch Facility authorized user command, but you have not been identified as an authorized user. If you are not an authorized user, you can use only the SUBMIT, CHJOB, PASSWORD, QUERY, and JOBSTEP commands, and the nonprivileged forms of the CHJOB, STATUS, and CANCEL commands.

VM Batch Facility Action: Command not performed. The VM Batch Facility is ready for another command.

User Response: Refer to Chapter 3, "Using VM Batch Facility Commands to Execute Jobs" on page 17 for descriptions of the commands you can use.

DGRRDR010I Job *userid nodeid jobid* **not found**

Explanation: The VM Batch Facility has received a BATCH CHJOB command, but could not find the job that was to have been changed. The job may have already been completed or canceled.

This message may also be issued in response to a job submission when no job EXEC was included in the job deck.

This message is sent to the command issuer and to the monitor machine's console for recording in the console message log file.

VM Batch Facility Action: The VM Batch Facility has ignored the command and is continuing to operate.

User Response: None is required.

DGRRDR014I Command JOBSTEP *option* **for job** *userid nodeid jobid*

Explanation: Records the reception of a BATCH JOBSTEP command from a task machine. The message is sent only to the monitor machine's console for recording in the console message log file.

VM Batch Facility Action: The VM Batch Facility is continuing to operate.

User Response: None is required.

DGRRDR015I Command JOBEND *jobend status* **for job** *userid nodeid jobid*

Explanation: Records the reception of a JOBEND message from a task machine. JOBEND indicates that the job running in the task machine has completed or canceled.

The message is sent only to the monitor machine's console for recording in the console message log file.

VM Batch Facility Action: The VM Batch Facility is continuing to operate.

User Response: None is required.

DGRRDR017E Job *userid nodeid jobid* **rejected: duplicate jobid**

Explanation: The job identified in the message has been rejected because another of your jobs that is currently in process has the same job ID.

VM Batch Facility Action: The VM Batch Facility is ready for another command.

User Response: Submit the job again, specifying a different job ID for the job.

DGRRDR021W CPU seconds limit too high, changed to job class maximum

Explanation: The CPU Seconds (SECONDS job control option) limit you specified for the job you just submitted exceeded the job class limit on CPU seconds. Jobs are not allowed to exceed the class limit, and the Seconds limit on your job has been reset to the maximum value defined for the job class.

VM Batch Facility Action: The VM Batch Facility has accepted your job and has changed the CPU Seconds limit for the job.

User Response: To review the CPU seconds limit of the job class to which your job belongs, use the Query panel or enter the BATCH QUERY CLASS command. If you did not specify a job class when you submitted your job, it has been assigned to job class A.

If the CPU Seconds limit of the job class is not high enough, use the Chjob panel or BATCH CHJOB command to switch your job to a job class that has an adequate limit.

DGRRDR022W Print records limit too high, changed to job class maximum

Explanation: The Print Records (PRINT job control option) limit you specified in a BATCH SUBMIT or BATCH CHJOB command exceeded the job class limit on Print Records. Jobs cannot exceed the class limit, and the Print limit on your job has been reset to the maximum value defined for the job class.

VM Batch Facility Action: The VM Batch Facility has accepted your job and has changed the Print Records limit for the job.

User Response: To review the Print Records limit of the job class to which your job belongs, use the Query panel or enter the BATCH QUERY CLASS command. If you did not specify a job class when you submitted your job, it has been assigned to job class A.

If the Print Records limit of the job class is not high enough, use the Chjob panel or BATCH CHJOB command to switch your job to a job class that has an adequate limit.

DGRRDR023W Punch records limit too high, changed to job class maximum

Explanation: The Punch Records (PUNCH job control option) limit you specified for a BATCH SUBMIT or BATCH CHJOB command exceeded the job class limit on Punch Records. Jobs cannot exceed the class limit, and the Punch limit on your job has been reset to the maximum value defined for the job class.

VM Batch Facility Action: The VM Batch Facility has accepted your job and has changed the Punch Records limit for the job.

User Response: To review the Punch Records limit of the job class to which your job belongs, use the Query panel or enter the BATCH QUERY CLASS command. If you did not specify a job class when you submitted your job, it has been assigned to job class A.

If the Punch Records limit of the job class is not high enough, use the Chjob panel or BATCH CHJOB command to switch your job to a job class that has an adequate limit.

DGRRDR026E Job/Chjob *userid nodeid jobid* **rejected; cannot be chained to itself**

Explanation: Your job or CHJOB command has been rejected because the Chain to Job field or CHAIN option attempted to chain the job to itself. Jobs can be chained only to other jobs.

VM Batch Facility Action: The VM Batch Facility is ready for another command.

User Response: Resubmit the job or enter the CHJOB command again. Change the job chaining so that the start of the job depends on the progress of another job.

DGRRDR027E Job/Chjob *userid nodeid jobid* **rejected; could not be chained**

Explanation: Your job or CHJOB command has been rejected; the VM Batch Facility could not carry out the job chaining that you specified for the job.

The job chaining could not be satisfied for one of these reasons:

1. The other job may already have been completed or canceled or had its final status record erased.
2. The other job may not have been submitted yet.
3. The other job may have been a CLASS AUTOLOG job. Jobs cannot be chained to CLASS AUTOLOG jobs.

VM Batch Facility Action: The VM Batch Facility is ready for another command.

User Response: Resubmit the job or enter the CHJOB command again. Check that you have correctly identified the job to which you want to chain this job.

You can review the job IDs of your own jobs with the BATCH STATUS command. To review jobs belonging to other users, issue the authorized user BATCH STATUS *userid* ALL command, or have a VM Batch Facility authorized user help you.

DGRRDR028E Job/Chjob *userid nodeid jobid* **rejected; job class not defined**

Explanation: Your job or CHJOB command has been rejected because the job class to which you assigned the job is not known to the VM Batch Facility.

VM Batch Facility Action: The VM Batch Facility is ready for another command.

User Response: Submit the job again, or reenter the CHJOB command. Check that you spelled the job class name correctly. You can review the VM Batch Facility job classes by using the Query panel or by entering the BATCH QUERY CLASS command.

If the job class is missing and you believe that it should be defined, contact the VM Batch Facility administrator.

DGRRDR029E Job *userid nodeid jobid* **rejected by user exit DGRUJB**

Explanation: The job you submitted has been rejected because the job screening exit would not allow the VM Batch Facility to accept the job. The job screening exit (DGRUJB EXEC) can be changed to reject or accept jobs based on your installation's own criteria. When the program is first installed, the job screening exit automatically rejects all jobs sent from Remote Job Entry (RJE) workstations.

VM Batch Facility Action: The VM Batch Facility is ready for another command.

User Response: Contact the VM Batch Facility administrator to determine why your job was not allowed to run.

DGRRDR030E Job *userid nodeid jobid* **rejected; exceeds user job limit**

Explanation: The job you submitted has been rejected because the number of jobs you own that are queued and/or running has reached the limit set by your installation.

VM Batch Facility Action: The VM Batch Facility is ready for another command.

User Response: Submit the job again as soon as one of your other jobs has been canceled or completed. Contact the VM Batch Facility administrator if you believe that the limit on the number of jobs each user can have queued and/or running at one time should be raised.

DGRRDR031E Command *command* **rejected by user exit DGRUCD**

Explanation: The command you entered has been rejected because the command screening exit would not allow the VM Batch Facility to perform the command.

The command screening exit (DGRUCD EXEC) can be changed to reject or accept commands based on your installation's own criteria. Note that when the program is first installed, the command screening exit automatically rejects all jobs and commands sent from Remote Job Entry (RJE) workstations.

VM Batch Facility Action: The VM Batch Facility is ready for another command.

User Response: Contact the VM Batch Facility administrator to determine why your command was rejected.

DGRRDR036E Chjob *userid nodeid jobid* **rejected; job not queued**

Explanation: The BATCH CHJOB command you entered has been rejected for these reasons:

1. The job has already started to run, and one or more of the job control options you used cannot be changed once the job has started to run.
2. The job has completed.

VM Batch Facility Action: The command has not been carried out. The VM Batch Facility is ready for another command.

User Response: Enter the command again, using only options that are valid after a job has started running.

DGRRDR037E CHJOB for *userid nodeid jobid* **rejected by user exit DGRUJB**

Explanation: The VM Batch Facility has rejected the CHJOB command issued for the job named in the message. The command was rejected because the exit, DGRUJB, instructed the VM Batch Facility to do so by setting a return code.

VM Batch Facility Action: The job remains unchanged. The VM Batch Facility is ready for another command.

User Response: Check with your VM Batch Facility administrator as to the reason for the exit, DGRUJB, rejecting your command.

DGRRDR5nn

User Response: See "Messages Numbered 500 and Higher" on page 125.

DGRTAS5nn

User Response: See "Messages Numbered 500 and Higher" on page 125.

DGRTSK5nn

User Response: See "Messages Numbered 500 and Higher" on page 125.

DGRUVM002E Unable to read file *filename***, FSREAD rc =** *rc*

Explanation: The VM Batch Facility was unable to read an APNDLIST file that you specified for the job that you just submitted. The FSREAD macro issued by the VM Batch Facility failed with the return code shown in the message.

VM Batch Facility Action: Your job has not been submitted. The VM Batch Facility is ready for another command.

User Response: Have the VM Batch Facility administrator or system administrator help you with this problem.

If you are the administrator, refer to the description of the FSREAD macro in your VM system library. Correct the problem indicated by the return code and submit the job again.

DGRUVM003E Invalid filename in file *filename*

Explanation: The VM Batch Facility was unable to find one of the files that you listed in the APNDLIST file named in the message. The problem may be that:

 1. The file name was wrong, or the file is not located on the minidisk you specified.

 2. The file name was not shown in exactly the same way in the APNDLIST file as it is recorded on the minidisk on which it is stored.

VM Batch Facility Action: Your job has not been submitted. The VM Batch Facility is ready for another command.

User Response: Check to be sure that the file is located on the minidisk you specified in the APNDLIST file. Also, use the FILELIST command to check the name of the file and see whether it is shown in capitals or in mixed case letters. The file name must be listed in the APNDLIST file in the same way as it appears in the filelist.

Then correct the APNDLIST file and submit the job again.

DGRUVM004E File *filename* **not found, FSSTATE rc =** *rc*

Explanation: The VM Batch Facility was unable to find the job file you submitted or one of the files you listed in an APNDLIST file. The job file or missing APNDLIST file is named in the message. The FSSTATE command issued by the program to find the file failed with the return code shown in the message.

VM Batch Facility Action: Your job has not been submitted. The VM Batch Facility is ready for another command.

User Response: Have the VM Batch Facility administrator or system administrator help you with this problem.

If you are the administrator, refer to the description of the FSSTATE macro in your VM system library. Correct the problem indicated by the return code and submit the job again.

DGRUVM005E Error appending file *filename***, CMS DISK DUMP rc =** *rc*

Explanation: The VM Batch Facility was unable to append a job file or APNDLIST file that you have submitted. The file that could not be appended is named in the message.

The DISK DUMP command issued by the program to read the file failed with the return code shown in the message.

VM Batch Facility Action: Your job has not been submitted. The VM Batch Facility is ready for another command.

User Response: Have the VM Batch Facility administrator or system administrator help you with this problem.

If you are the administrator, refer to the description of the DISK DUMP command in your VM system library. Correct the problem indicated by the return code and submit the job again.

DGRUVM006E Parameter(s) missing or invalid

Explanation: The VM Batch Facility received an invalid command from a task machine or job owner. One or more of the options of the command are not known to the program.

VM Batch Facility Action: The VM Batch Facility has not carried out the command. It is continuing to operate.

User Response: If you find this message in the console log file generated by one of your jobs, check the BATCH JOBSTEP commands in your job to be sure that they are correct.

DGRUVM010I Sending JOBEND to monitor machine via spool file

Explanation: A task machine was unable to establish an IUCV connection to the monitor virtual machine after finishing a job. The task machine is sending the JOBEND message to the monitor machine by spool file instead of via IUCV.

The problem probably has occurred for one of these reasons:

1. The VM Batch Facility control program is not running in the monitor machine.

2. The BATCH monitor machine is not logged on.

This message is sent to the monitor machine and is recorded in the console log file, if console message spooling has been activated.

VM Batch Facility Action: An IUCV problem or a problem with the VM Batch Facility may exist. If the VM Batch Facility control program is running, the program will execute the JOBEND command and normal job completion processing will take place. If it is not running, job completion processing will take place, if possible, when the VM Batch Facility is restarted. Accounting data for the job may be incomplete.

User Response: None is required.

DGRUVM011E Error on CMSIUCV HNDIUCV macro, rc = *rc*,

Explanation: The CMSIUCV HNDIUCV macro failed with the return code shown in the message. The VM Batch Facility was using the macro to establish an IUCV connection between a user's virtual machine or a task machine and the monitor virtual machine.

This message appears at one of these locations:

- In the console log file generated by the task machine that was running the job. The console log file is sent to the job owner.
- At the terminal of a user.

VM Batch Facility Action: No IUCV connection could be established between a task virtual machine or user's virtual machine and the monitor machine. The VM Batch Facility may not be running.

User Response: Have the VM Batch Facility administrator or system administrator help you with this problem.

If you are the VM Batch Facility administrator, look up the return code shown in the message in the description of the CMSIUCV macro named in the message. The macro is described in your VM system library. Correct the problem indicated by the return code.

DGRUVM012I Unable to transmit IUCV command to *userid*, SEND IPRCODE = *code*

Explanation: The IUCV SEND macro failed with the IPRCODE shown in the message when it was issued by the monitor machine.

This message appears at one of these locations:

- In the console log file generated by the task machine that was running the job. The console log file is sent to the job owner.
- At the terminal of a user.

VM Batch Facility Action: The VM Batch Facility is continuing to operate. It has purged the job file or command that it was trying to send when the failure occurred.

User Response: Have the VM Batch Facility administrator or system administrator help you with this problem.

DGRUVM015E Unable to get IUCV connection to monitor machine, CMSIUCV CONNECT rc = *rc*

Explanation: The CMSIUCV CONNECT macro failed with the return code shown in the message. The VM Batch Facility was using the CONNECT macro to get a CMSIUCV connection between a task machine or job owner's machine and the monitor virtual machine. A likely cause of the problem is that the VM Batch Facility control program, in the monitor machine, is not running.

This message appears either:

- In the console log file generated by a task machine that has issued a BATCH JOBSTEP command or a JOBEND message to the monitor machine. (The console log file is sent to the job owner.)
- At the terminal of a user.

VM Batch Facility Action: The VM Batch Facility control program may have stopped running.

User Response: Have the VM Batch Facility administrator or system administrator help you with this problem. A likely cause of the problem is that the control program in the monitor machine has stopped running.

DGRUVM016E Commands not allowed from monitor machine

Explanation: The VM Batch Facility cannot execute VM Batch Facility commands that are issued from the monitor machine.

VM Batch Facility Action: The command has not been carried out.

User Response: Log on to another user ID to issue the VM Batch Facility command you wanted to use. The VM Batch Facility control program cannot accept commands that are issued from the virtual machine in which it is running.

DGRUVM018E Invalid append file specified

Explanation: An append file in the BATCH SUBMIT command that you entered had an invalid file ID. The problem may have been that the file name, file type, and/or file mode were too long or too short.

VM Batch Facility Action: The command has not been carried out. The VM Batch Facility is ready for another command.

User Response: Check the file IDs of appended files and enter the command again.

DGRUVM019E Punch *cuu* **does not exist and cannot be defined, DEFINE rc =** *rc*

Explanation: The following problems have occurred:

1. The VM Batch Facility found that no punch was defined at address 00D in a job owner's virtual machine; and

2. The VM Batch Facility was not able to define a punch at address 00D using the CP DEFINE command. The command failed with the return code shown in the message.

The VM Batch Facility requires a punch at address 00D in a user's virtual machine in order to send BATCH SUBMIT and BATCH CHJOB commands to the monitor virtual machine.

VM Batch Facility Action: The command has not been sent to the VM Batch Facility.

User Response: Look up the return code shown in the message in the description of the CP DEFINE command. The description appears in your VM system library.

When you have corrected the problem, enter the command again.

DGRUVM020I Received unexpected IUCV interrupt, type = *type*

Explanation: The DGRUVM module of the VM Batch Facility received an IUCV interrupt that it did not recognize. The type of interrupt is shown in the message.

VM Batch Facility Action: The VM Batch Facility is continuing to operate. The command that was being transmitted has not been discarded. DGRUVM module will continue to try to pass the command to the VM Batch Facility monitor machine for execution.

User Response: None is required.

DGRUVM021E SMSG to *rscsid* **failed, rc =** *rc*

Explanation: When sending commands to a remote monitor, the command is communicated using SMSG to the RSCS virtual machine on your node. This message indicates a failure of the SMSG command.

VM Batch Facility Action: The command has not been communicated to the monitor you are addressing.

User Response: Check that your SYSTEM NETID file correctly identifies the name of the RSCS virtual machine on your system.

DGRUVM5nn

User Response: See "Messages Numbered 500 and Higher" on page 125.

DGRVMC008W The VM Batch Facility is trying to start job *jobid* **on your user ID. Please log off or change the start time of the job**

Explanation: The VM Batch Facility is trying to start a job that you submitted to run under the AUTOLOG job class. AUTOLOG jobs are run on the virtual machine of the person who submitted the job. The job can be started only if you are not logged on to your user ID (virtual machine).

VM Batch Facility Action: The VM Batch Facility will try to start the job again once a minute and will send you this message every 5 minutes until the job is started, changed, or canceled. The program will not automatically cancel the job.

User Response: If you would like to have the class AUTOLOG job run at this time, you should log off so that the job can be started.

You can also take one of these actions:

- Use the BATCH CHJOB command or the Chjob panel to set a new start window open time for the job. Specify a Start Window Open or WBEGIN time after the time you plan to log off. The VM Batch Facility will hold the AUTOLOG job until then.

- Cancel the job and submit it again later.

DGRVMC009E Job *userid nodeid jobid* **canceled: invalid logon password provided**

Explanation: The VM Batch Facility was unable to start the CLASS AUTOLOG job named in the message. The job could not be started because the logon password associated with the job was incorrect. The program could not log on your virtual machine to run the job.

VM Batch Facility Action: The job named in the message has been canceled.

User Response: Submit the job again. Be sure that you specify the correct logon password for the user ID from which you are submitting the job. Use the PASSWORD option or panel field to specify the password.

If you have submitted other CLASS AUTOLOG jobs that have not run yet, you can update the passwords of those jobs with the BATCH PASSWORD command or Password panel, or with the BATCH CHJOB command or Chjob panel.

DGRVMC011E Job *userid nodeid jobid* **canceled: error on AUTOLOG command, rc =** *rc*

Explanation: The VM Batch Facility was unable to start the CLASS AUTOLOG job named in the message. The AUTOLOG command that the program issued failed with the return code shown in the message. The message is sent to the monitor machine's console for recording in the console message log file.

VM Batch Facility Action: The job named in the message has been canceled.

User Response: Look up the return code shown in the message in the description of the AUTOLOG command. The command is described in your VM system library. Correct the problem and have the job owner submit the job again.

DGRVMC013E Job *userid nodeid jobid* **canceled: invalid account number**

Explanation: The account number specified for the job named in the message was invalid. The VM Batch Facility has canceled the job.

VM Batch Facility Action: The VM Batch Facility has canceled the job named in the message.

User Response: Check to be sure that you used an account number that you are permitted to use and that you have entered the number correctly. Then submit the job again.

DGRVMC5nn

User Response: See "Messages Numbered 500 and Higher".

Messages Numbered 500 and Higher

The messages in this section are common to more than one VM Batch Facility component, and are identified by a unique number of 500 or greater. Look up the message using the message number – the seventh through ninth characters of the message ID.

505I   **Job** *userid nodeid jobid* **not subject to LLS**

Explanation: This message is issued in response to a BATCH RESUME command or a BATCH CHJOB command that specified the option NOLLS, indicating that the job is now no longer subject to Load Level Scheduling.

VM Batch Facility Action: This job is no longer a candidate for suspension by the LLS when system contention occurs.

User Response: None.

506I   **Job** *userid nodeid jobid* **subject to LLS**

Explanation: This message is issued in response to a BATCH CHJOB command that specified the option LLS; indicating that the job is now subject to Load Level Scheduling.

VM Batch Facility Action: This job is now a candidate for suspension by the LLS when system contention occurs.

User Response: None.

511E   **Job** *userid nodeid jobid* **rejected; LLS override is invalid**

Explanation: The job has been rejected by the VM Batch Facility because an override of the default job subjection to LLS for the job's class was specified, and the Class definition does not permit the requested override.

VM Batch Facility Action: The job is not accepted to the Facility.

User Response: Either remove the override request from the BATCH SUBMIT command, or submit the job to a class that permits the required LLS subjection.

512E   **Chjob** *userid nodeid jobid* **rejected; LLS override is invalid**

Explanation: A CHJOB command has been rejected because an override of the default job subjection to LLS for the job's class was specified, and the Class definition does not permit the requested override.

VM Batch Facility Action: The job is not changed.

User Response: An unauthorized user may not override a job's LLS subjection if the job's Class does not permit it.

An authorized administrator may unconditionally change a job's subjection to LLS activity by issuing the CHJOB command.

530I   **Job** *userid nodeid jobid* **will be resumed**

Explanation: This message is issued in response to a CHJOB command that changed a job from subject to independent of LLS when the job had already been suspended for contention.

VM Batch Facility Action: The job will be resumed when the monitor performs its check of LLS activity.

User Response: None.

535E   **Job** *userid nodeid jobid* **not queued; Command** *command* **ignored**

Explanation: A command has been issued against a job that requires that the job be queued (as opposed to running or completed) for successful execution of the command.

VM Batch Facility Action: The command is ignored.

User Response: Ensure that the correct command is being issued.

538I   ***END OF QUERY**

Explanation: This message terminates a group of messages that comprise the response to a BATCH QUERY command.

VM Batch Facility Action: None.

User Response: None.

541I   **Job** *userid nodeid jobid* **canceled. [Job will recur]**

Explanation: This message confirms the cancellation of a job. The job will recur if the canceled job was a recurring job instance and the job was not FLUSHed.

VM Batch Facility Action: Cancellation of the job has been initiated. If the job was not running, then this message also means that the cancellation is complete. For running jobs, cancellation is complete only when the processing specified for the ERROR option of the job has also completed; however, ERROR processing is not performed after a BATCH STOP JOBS command.

User Response: If no accompanying message explains the reason for the cancellation, then issue the BATCH STATUS command for more detail.

542W   **Job** *userid nodeid jobid* **canceled by exit** *exit* **[Job will recur.]**

Explanation: This message confirms the cancellation of a job, when the cause of cancellation is a specific (as opposed to default) request by an exit. The job will recur if the canceled job was a recurring job instance and the job was not FLUSHed.

VM Batch Facility Action: The job has been canceled.

User Response: Contact your VM Batch administrator to find out why the exit canceled the job.

544E   **Command** *command* **is not permitted within a job**

Explanation: A VM Batch Facility command has been issued from within a VM Batch Facility job, but is not permitted in this environment.

VM Batch Facility Action: The command is ignored. A return code of 12 is passed to the invoking job EXEC.

User Response: Correct the job that issued the command.

545E   **Usage of** *command* **is incorrect from within a job**

Explanation: A VM Batch Facility command that is permitted from within a VM Batch Facility job has been issued, but does not conform to the restrictions imposed on the command when issued from within a job.

VM Batch Facility Action: The command is ignored. A return code of 8 is passed to the invoking job EXEC.

User Response: Correct the job that issued the command.

546E   **Job/Chjob** *userid nodeid jobid* **rejected; The valid storage range for class**
            classid **is** *minstor* **to** *maxstor*

Explanation: The job or command has been rejected by the VM Batch Facility because an override of the default virtual storage allocation for the job's class was specified, and the class definition does not permit the requested storage value.

VM Batch Facility Action: The job or command is rejected.

User Response: Ensure that the storage value is within the bounds available to the job class, or submit the job under a different class with adequate storage bounds.

551I   **AUTOLOG passwords are discarded**
551E   **AUTOLOG passwords are discarded**

Explanation: The VMBATCH DEFAULTS file contains the statement AUTOPASS = NO, requesting that the VM Batch Facility monitor not use any supplied passwords whenever a CP AUTOLOG command is issued.

VM Batch Facility Action: At monitor initialization time, this is an informative message only; monitor processing continues. On receipt of a class AUTOLOG job that has supplied a password, the password has been discarded but the job is accepted. In response to a BATCH PASSWORD command, the command is rejected.

User Response: Submit all class AUTOLOG jobs in accordance with your installation's requirements for passwords. Do not use the BATCH PASSWORD command if it is not appropriate at your installation.

552I   AUTOLOG passwords are required
552E   AUTOLOG passwords are required

Explanation: The VMBATCH DEFAULTS file contains the statement AUTOPASS = YES, requesting that the VM Batch Facility monitor insist on passwords being supplied whenever a CP AUTOLOG command is to be issued.

VM Batch Facility Action: At monitor initialization time, this is an informative message only; monitor processing continues.

When issued in response to a BATCH PASSWORD command, it means that a password of *NOPASS* was specified on the command. This is not acceptable to the monitor, so the command is rejected.

User Response: If this message was received in response to a BATCH PASSWORD command, then notify your VM Batch Facility administrator that your VMBATCH DEFAULTS file does not match that of the monitor you are addressing.

553W   Invalid VMBATCH DEFAULTS file record ignored

Explanation: The VMBATCH DEFAULTS file contains an invalid statement. The invalid statement follows this message.

VM Batch Facility Action: The record is ignored.

User Response: Have a VM Batch Facility administrator correct the VMBATCH DEFAULTS file.

554E   Job *userid nodeid jobid* **rejected; no logon password was provided**

Explanation: The Facility has been configured to insist that logon passwords are provided for class AUTOLOG jobs, and no logon password has been supplied for this class AUTOLOG job.

VM Batch Facility Action: The job is rejected.

User Response: Resubmit the job with a valid password.

555I   *Modname* Version *ver.rel*, Service Level *nnn*

Explanation: This is the version, release, and service level associated with the executable component *modname*.

VM Batch Facility Action: None required.

User Response: None.

556W   LOCJCL card truncated

Explanation: The DGREVR user interface installation exit has provided an installation defined job control (LOCJCL) card to be submitted with your job, and the card text is too long.

VM Batch Facility Action: The job is submitted, but the text of the offending LOCJCL card has been truncated to 73 characters. A return code of 4 is passed to the invoker.

User Response: A VM Batch Facility administrator must correct the user interface installation exit to comply with the documented requirements for LOCJCL cards.

557W **Extraneous LOCJCL cards were discarded**

Explanation: The DGREVR user interface installation exit has provided more than three installation defined job control (LOCJCL) cards to be submitted with your job.

VM Batch Facility Action: The job is submitted, but only three LOCJCL cards have been included in the job deck. The others have been discarded. A return code of 4 is passed to the invoker.

User Response: A VM Batch Facility administrator must correct the user interface installation exit to comply with the documented requirements for LOCJCL cards.

558E **Job/Chjob** *userid nodeid jobid* **rejected; recurrence pattern** *recurrence* **not accepted**

Explanation: The SUBMIT or CHJOB command has been rejected by the VM Batch Facility because the value specified for the REPEAT option was not accepted by the recurrence installation exit, DGRECUR EXEC.

VM Batch Facility Action: The job or command is rejected.

User Response: Ensure that the value supplied for the REPEAT option is available at your installation. Issue BATCH QUERY REPEATS to learn what recurrence options are available at your installation, or consult your VM Batch Facility administrator.

559I **Job** *userid nodeid jobid* **flushed; job will not recur**

Explanation: A recurring job has been canceled and the FLUSH option was specified on the CANCEL command. Any executing instance of the job has been canceled, and the job was not re-queued to run again.

VM Batch Facility Action: The job has been discarded.

User Response: None.

560E **Chjob** *userid nodeid jobid* **rejected; REPEAT option cannot be specified for chained jobs**

Explanation: The CHJOB command has been rejected by the VM Batch Facility because a REPEAT option was specified on the command, and the job is chained to another. Chained jobs acquire an implicit recurrence when chained to a recurring job, but may not have an explicit recurrence set.

VM Batch Facility Action: The command is rejected.

User Response: Re-issue the command without specifying the REPEAT option. Alternatively, if an explicit recurrence is required for the job, then cancel the job and re-submit it with the REPEAT option.

561W **Recurring job** *userid nodeid jobid* **has not been rescheduled; job is held**

Explanation: The recurrence exit DGRECUR EXEC has not queued any command in response to a call from the monitor requesting rescheduling of the job.

VM Batch Facility Action: The job is re-queued with DATE HOLD.

User Response: Ensure that the recurrence exit is behaving properly in that it should respond to a call with action = 'NEXT' with an internal CHJOB command to set the date and time of the next occurrence of the job. You may set the next occurrence manually by issuing a CHJOB command directed at the job, specifying the DATE and WBEGIN options.

563E   **Chjob** *userid nodeid jobid* **rejected; CHAIN option cannot be used on explicitly recurring jobs**

Explanation: The CHJOB command has been rejected by the VM Batch Facility because a CHAIN option was specified in the command and the job is explicitly recurring.

VM Batch Facility Action: The command is rejected.

User Response: Re-issue the command without specifying a CHAIN option. Alternatively, if chaining is required for the job, then issue a CHJOB command with REPEAT NEVER to negate its explicit recurrence, and then chain it.

564E   **Job/Chjob** *userid nodeid jobid* **rejected; insufficient space on the** *monitor* **193 minidisk**

Explanation: A recurring job has been submitted and the job has been rejected by the VM Batch Facility because there is no room for the monitor to store the job on its 193 disk. Recurring jobs must be stored on disk for reasons of system integrity.

VM Batch Facility Action: The job is rejected.

User Response: Approach your Facility administrator to provide sufficient disk storage to allow your recurring job to be saved. The job may of course be submitted in the meantime without recurrence, that is, with a REPEAT value of 'NEVER'.

565E   **Temporary file failure;** *reason*

Explanation: The VM Batch Facility SUBMIT XEDIT macro has not submitted the job to the VM Batch Facility because the temporary file needed to hold the job during the submission process could not be created; *reason* indicates the nature of the difficulty.

VM Batch Facility Action: The job is not submitted. The SUBMIT XEDIT macro returns a code of 16.

User Response: Correct the situation indicated by *reason* and then re-issue the SUBMIT XEDIT macro.

566W   **Job** *userid nodeid jobid* **held; no task machine can run the job**

Explanation: The job has been held by the VM Batch Facility because no task machine can run the job. This may be for one of the following reasons:

1. There are no task machines that can run jobs of the specified class.

2. There are no task machines with a window that is compatible with the job start window that was specified by the WBEGIN and WEND options of the SUBMIT or CHJOB command.

VM Batch Facility Action: The job is held.

User Response: If you did not intend the job to be held, issue a CHJOB command to alter the job's class and/or start window so that it is compatible with a suitable task machine. The class and window settings for the task machines may be obtained using the BATCH QUERY TASK command.

This message may also arise when a VM Batch Facility has been reconfigured and an existing viable job now finds itself without a suitable task machine. In this case you should discuss any possible problems with your VM Batch Facility administrator.

567W   **Job** *userid nodeid jobid* **flushed by chain**

Explanation: The identified job was chained to a recurring job, and that parent job was flushed; so it has also been flushed.

VM Batch Facility Action: The job has been discarded.

User Response: None.

571E **Please set MSG ON before using BATCH LEVEL**

Explanation: In response to a BATCH LEVEL command, the user's virtual machine MSG setting was found to be OFF. For the results of the BATCH LEVEL command to be returned to the user's virtual console, the CP SET MSG ON command must be executed.

VM Batch Facility Action: The command terminates with return code 16.

User Response: Issue the CP SET MSG ON command before executing BATCH LEVEL.

572W **A password is required. Enter the required password or press Enter to cancel**

Explanation: The VM Batch Facility has been configured to insist on a password being supplied when a class AUTOLOG job is submitted, and a null response was received in reply to the prompt for the password.

VM Batch Facility Action: The Facility prompts for the password a second time; if the response is again null then the job is not submitted.

User Response: Enter the password to have the job submitted, or just hit the Enter key to cancel.

573W **Occurrence of job** *userid nodeid jobid* **prevented by exit DGRECUR**

Explanation: An instance of a recurring job was selected for dispatch, but a call to the recurrence exit DGRECUR EXEC resulted in a return code requesting that the job not run at this time. The exit should issue a command to schedule the job's next occurrence.

VM Batch Facility Action: The job is not run. It is re-queued with DATE HOLD, unless rescheduled otherwise by the exit.

User Response: Ensure that the recurrence exit is behaving properly in that having prevented the job from running at its scheduled time, it has also issued an internal CHJOB command to schedule the date and time of its next occurrence. You may set the next occurrence manually by issuing a CHJOB command directed at the job, specifying the DATE and WBEGIN options.

574E **Job** *userid nodeid jobid* **not canceled; job will recur**

Explanation: This message is issued in response to a CANCEL command targeting a recurring job, and no FLUSH option was specified. No instance of the job was running, so the CANCEL command has had no effect.

VM Batch Facility Action: The job will be dispatched at its scheduled time.

User Response: None. If it was your desire to cancel the recurring job in a way that it would not be rescheduled, then re-issue the CANCEL command and specify the FLUSH option.

576E **Synchronous submission did not complete**

Explanation: A job has been submitted with the WAIT option, and the submission did not complete.

This may be because the submission timed out, or was stopped by a terminal interrupt, or there was a transmission failure between the submitting virtual machine and the monitor.

VM Batch Facility Action: The submission is abandoned. The job will not run.

User Response: If this was not the result of an intentional termination of the submission, then it is most likely due to a submission timeout. If possible, correct the condition that has prevented timely delivery of the job. For example, if it was caused by the submission of a job to a VM Batch Facility monitor that is not running, then arrange for the monitor to be started before trying again.

Alternatively, if the cause of the timeout is beyond your control, for example when there are excessive network delays, you may consider increasing the value of the timeout that you have specified in the WAIT option.

The VM Batch Facility will attempt to delete the job. If the deletion is not successful, the job will lie dormant in the job queue without ever running. The response to a STATUS command on such a job would be 'Awaiting synchronization'. You should delete the job by a CANCEL command, since its presence in the queue will prevent the acceptance of a subsequent job with the same job id.

580E   Job *userid nodeid jobid* **rejected; no user block space available**

Explanation: A job was submitted and the target VM Batch Facility monitor did not have a control block available to allocate to the job.

VM Batch Facility Action: The job is rejected.

User Response: Notify your Facility administrator, who is able to allocate more resources to the monitor. In the meantime the situation may only be temporary; resubmit the job when the load on the facility has eased.

Administrators should note that the number of user blocks is controlled by the parameter MAXIMUM-USERS in the Control File.

581E   Job *userid nodeid jobid* **rejected; no job block space available**

Explanation: A job was submitted and the target VM Batch Facility monitor did not have a control block available to allocate to the job.

VM Batch Facility Action: The job is rejected.

User Response: Notify your Facility administrator, who is able to allocate more resources to the monitor. In the meantime the situation may only be temporary; resubmit the job when the load on the facility has eased.

Administrators should note that the number of user blocks is controlled by the parameter MAXIMUM-JOBS in the Control File.

583E   Spawned command rejected; target job *userid nodeid jobid* **was not spawned**

Explanation: A VM Batch Facility command that is permitted from within a VM Batch Facility job has been issued, but its target is a job that was not spawned. It is a restriction that commands issued from within a job may only act on jobs that were submitted from within a job.

VM Batch Facility Action: The command is ignored.

User Response: Correct the job that issued the command.

584E   Command verb *DGRINTxx* **reserved for IBM use**

Explanation: You have issued a VM Batch Facility command that is reserved for internal product use. Such commands are distinguished by a verb that begins with the string 'DGRINT'.

VM Batch Facility Action: The command is not transmitted to a VM Batch Facility monitor.

User Response: Ensure that any installation defined command verbs do not conflict with VM Batch Facility internal command verbs.

585E   Invalid use of command *command*

Explanation: The VM Batch Facility has detected an inappropriate use of a valid VM Batch Facility command. This situation may arise if a VM Batch Facility job attempts to issue commands other than those permitted to a task machine, a JOBSTEP command is issued by a normal user or required parameters were missing from a command issued via the RJE interface.

VM Batch Facility Action: The VM Batch Facility has ignored the command and is continuing to operate.

User Response: Make sure that commands are issued with the correct syntax and from the correct environment.

587E   VM Batch Facility message repository not found

Explanation: The VM Batch Facility requires that its message repository (filename DGRUME) be available.

VM Batch Facility Action: If issued as a result of a VM Batch Facility command, then the command has not been executed. If issued in response to an attempted startup of the VM Batch Facility, then the Facility has not started.

User Response: Contact your VM Batch Facility administrator to have the VM Batch Facility message repository made available.

588E   VM Batch Facility component *modname* **not found**

Explanation: In order to perform a required function, a necessary VM Batch Facility component *modname* was not available and the function failed.

VM Batch Facility Action: The VM Batch Facility command was not performed.

This message may also be issued by the Facility at monitor startup, in which case the monitor has failed to start.

User Response: Ensure that the required component is available on an accessed disk and re-issue the command.

589W   This is the VM Batch Facility task machine interface

Explanation: This message is issued by the VM Batch Facility task machine interface program when that program is invoked on a non-disconnected virtual machine.

VM Batch Facility Action: The task machine interface has terminated without performing any function.

User Response: Do not invoke the VM Batch Facility task machine interface in a virtual machine that is not a VM Batch Facility task machine. Insistence may result in the erasure all files on the 191 minidisk of the virtual machine on which it is running. If this message appears on the console of a bona fide task machine, then for the task machine to operate properly, it must run disconnected and not have any secondary consoles defined for it in the CP directory.

590I

Explanation: This is an internal product synchronization message. It may appear after a synchronous submission of a job with the WAIT option has timed out.

VM Batch Facility Action: None.

User Response: Please ignore the message.

591I   **Monitor message code** *mcode* **accompanied return code** *rc* **on the synchronous submission of job** *userid nodeid jobid*

Explanation: The synchronous submission of a job with the WAIT option from within a VM Batch Facility job has resulted in a non zero return code *rcode* from the target VM Batch Facility monitor. The message that the monitor issued directly to the job owner describing the cause of the non zero return code may be identified by *mcode*.

VM Batch Facility Action: The job has been processed according to the notified message code.

User Response: This message is issued to assist with any problems that may arise with a synchronous submission from a VM Batch Facility task machine in case the original message that it identifies is not able to reach the job owner. Any remedial action is indicated by the the original message.

592E   **Return code** *rc* **from** *service* **at offset** *offset* **into** *csect*

Explanation: This message documents the receipt of an unexpected return code from the named CP or CMS system service.

VM Batch Facility Action: Resulting action may be notified in a subsequent message or deduced from the return code of the VM Batch Facility function.

User Response: Correct the condition causing the failure of the system service.

595E   **Chjob** *userid nodeid jobid* **rejected; job does not recur**

Explanation: This message is issued in response to a BATCH CHJOB command, when the command specified a repeat pattern of HOLD or NOHOLD (indicating a request to suspend or resume recurrence), and the job does not recur.

VM Batch Facility Action: The command is ignored.

User Response: If you wish to hold a non recurring job then issue the BATCH CHJOB command specifying DATE HOLD.

596E   **Job/Chjob** *userid nodeid jobid* **rejected; Storage overrides for class** *classid* **are not permitted**

Explanation: The job or command has been rejected by the VM Batch Facility because an override of the default virtual storage allocation for the job's class was specified, and the class definition does not permit an override.

VM Batch Facility Action: The job or command is rejected.

User Response: If you are happy with the virtual storage available to the job class then do not override it, or submit the job under a different class with adequate storage bounds.

597E   **Chjob** *userid nodeid jobid* **rejected; job cannot be made to recur**

Explanation: This message is issued in response to a BATCH CHJOB command that would result in a non-recurring job being changed into a recurring job, and the VM Batch Facility cannot do this. This will happen if the CHJOB command explicitly specified the REPEAT option, or because it specified a chain condition where the chained-to job is recurring.

VM Batch Facility Action: The command is rejected.

User Response: If you wish the job to become recurring you will need to cancel it and then re-submit it as a recurring job.

599I   **Job** *userid nodeid jobid* **recurs implicitly**

Explanation: This message is issued in response to a BATCH SUBMIT command that results in the job being marked as implicitly recurring because it has been chained to job that is recurring, either explicitly or implicitly.

VM Batch Facility Action: The job is accepted.

User Response: If you do not wish the job to recur you may issuue a BATCH CHJOB command to remove the job's chain condition, or to chain it to a job that does not recur.

600E   **You may not direct VM Batch commands to your own virtual machine**

Explanation: This message is issued in response to a VM Batch Facility command directed at the virtual machine from which it was issued; or in response to a BATCH ADDRESS command directing following VM Batch commands to the virtual machine at which it was issued.

VM Batch Facility Action: The command is rejected.

User Response: Direct your VM Batch commands to a bona fide VM Batch Facility monitor.

601I   **Job** *userid nodeid jobid* **will not recur; it is chained to a job that no longer recurs**

Explanation: This message identifies a job that has changed from an implicitly recurring job to one that does not recur, because the job that it is chained to is no longer a recurring job. Either the job at the head of the chain has been changed to not recur, or the chain has been altered so that the job now at its head is not a recurring job.

VM Batch Facility Action: The job will be dispatched according to the normal Facility rules, but it will be discarded when it completes.

User Response: If you do not want the job to run, issue the BATCH CANCEL command.

Appendix A. Preparing an Exec

To have the VM Batch Facility execute a job for you, you send it a "job exec". A job exec is a VM System Product Interpreter (REXX) exec that contains all of the commands needed to perform the job.

This section explains how to prepare job execs, including:

1. Where to learn about execs if you are not familiar with them.
2. What job execs can and cannot do.
3. Useful techniques.
4. Description of the VM Batch Facility interface to job execs.
5. Writing a general purpose job exec.
6. Sample execs for common processing tasks.

Where to Learn More about CMS REXX Execs

Job execs have to be written in the REXX exec language. If you want to learn about REXX, see:

* The *VM/ESA REXX/VM User's Guide* for a tutorial approach to learning REXX.

* The *VM/ESA REXX/VM Reference* if you want to refresh your memory of REXX commands and built-in functions.

If you want help in writing execs, you may be able to save time by seeing whether your organization has standard job execs already prepared. Additionally, application programs can easily be set up to prepare job execs and submit them to the VM Batch Facility for you. Check with your VM Batch Facility or system administrator to see if these aids are available.

What Job Execs Can and Cannot Do

REXX commands and functions
A job exec can use any REXX command or function.

CP/CMS commands
A job exec can issue any CP or CMS command that does not reset or otherwise disrupt the exec environment in the task virtual machine in which the job is running. Some of the commands that you should not put in a job exec are: DEFINE STORAGE; IPL; and LOGOFF. Also, job execs should not issue the SET SMSG OFF command. SET SMSG OFF can interfere with the operation of the VM Batch Facility.

VM Batch Facility Commands
The following VM Batch Facility commands can be issued from within a VM Batch Facility job.

* BATCH ADDRESS
* BATCH CANCEL
* BATCH CHJOB
* BATCH JOBSTEP
* BATCH SUBMIT

Refer to the discussion on "Job Spawning" on page 152 for details.

Calls to application programs or modules

A job exec can call and run any module or application program that can run in a CMS REXX environment. If the program requires input, your job exec must provide it. Do not have a job exec invoke any full screen application unless the application can be invoked without stopping the exec from running.

Useful Techniques

Pre- and Post-processors

Do your jobs usually begin with a set of standard commands for setting up the proper environment in the VM Batch Facility task machine? Do they end with standard commands that you use for cleaning up?

If so, you can put these commands in separate execs that can be shared by your jobs. Instead of entering the same commands in each job exec, you can have job execs call these pre- and post-processor files. The APPEND option of the BATCH SUBMIT command lets you submit pre- and post-processor execs with a job file.

A pre-processor exec can serve as a PROFILE EXEC for the task machine that runs the job, issuing CP LINK and CMS ACCESS commands.

BATCH SUBMIT Command Execs

If you frequently submit one or a few standard jobs, you may wish to set up submit execs to issue the BATCH SUBMIT command for you. Using a submit exec can save you typing out all of the options required for a job, as in this sample:

```
/* Submit the weekly payroll program job */
'batch submit wklypay exec a (id payroll wbegin 0900 wend 1430'
exit
```

To submit the weekly payroll program, you only have to run the sample exec. It issues the BATCH SUBMIT command.

VM Batch Facility Interface to Job Execs

The VM Batch Facility passes parameters to a job exec when the exec is started.

For a CLASS AUTOLOG job, the only parameters passed are the 'user_parms' (from the BATCH SUBMIT and BATCH CHJOB commands). The 'user_parms' are passed to the job exec or, if the job owner did not specify a job exec filename, at the first console read.

For all non-CLASS AUTOLOG jobs, additional VM Batch Facility supplied parameters are passed to the job exec.

The VM Batch Facility parameters can be ignored by the job exec without any adverse effects. To accept the parameters and enable a job to make use of them, include the commands in the following box at the start of your job exec:

┌─ **Required Code for Reading Parameters** ──────────────────────┐

```
parse arg job_status job_owner_userid user_jobid
 last_jobstep rscs_machine  rscs_nodeid batch_monitor
 user_parms

parse value user_parms with filename filetype filemode
```

The first line reads in the eight parameters that the VM Batch Facility passes to each job. The parameters you specified are contained in the "user_parms" parameter. Be sure to enter all of the names of the parameters on one line in your job execs; the line should not be broken, as it is in this example. You can substitute your own, shorter names for the parameters if you wish.

The second line reads the parameters in "user_parms". In this example, we are assuming that the parameters are a file name, file type, and file mode.

To pass the name of file INPUT DATA A to your job, enter this command:

```
batch submit chngfile exec a (parms (input data a)
```

The VM Batch Facility would pass "input data a" to your job as the "user_parms" parameter when the job starts.

└──┘

The contents of the parameters are shown in the following table. The eighth parameter contains any parameters specified by the job owner with the PARMS option of the BATCH SUBMIT and BATCH CHJOB commands or the Submit and Chjob panels.

The following table shows the name, length, and contents of the eight parameters passed to job execs. The parameters are passed to a job exec in the sequence shown.

Table 6. VM Batch Facility Interface to Job Execs

Parameter label:	Length:	Contents:
job_status	8 bytes	Two different types of information can be passed in this parameter: START–indicates job is being started for the first time. RESTART–indicates job is being restarted. Job was interrupted by a system shutdown while running and RESTART YES option was in effect.
job_owner_userid	8 bytes	This parameter passes the user ID from which a job was submitted.
user_jobid	8 bytes	This parameter passes the job ID assigned to a job. For an explanation of job IDs, see Chapter 2, "Tutorial: Learning How to Use the VM Batch Facility" on page 7 or "Giving a Name to a Job" on page 56.
last_jobstep	8 bytes	This parameter passes the last jobstep text recorded for a job. The jobstep text can be used to restart an interrupted job from the last BATCH JOBSTEP command that was issued, rather than from the beginning. See "BATCH JOBSTEP: Updating the Current Job Step from Your Exec" on page 148 and "Restarting a Job from the Last BATCH JOBSTEP Command" on page 144. (The initial value of this parameter, when a job is being started, is X'FFFFFFFFFFFFFFFF', that is, eight unprintable hexadecimal characters with the value of X'FF'.)
rscs_machine	8 bytes	Two types of information can be contained in this parameter: "*HOSTVM*"–indicates that a job was submitted from the local VM system. user ID of the Remote Spooling Communication Subsystem Networking (RSCS) service machine–indicates that a job was sent from an RJE workstation. The user ID, in conjunction with the RSCS nodeid parameter, can be used to spool messages or output to RSCS for transmission to a job's submitter.
rscs_nodeid	8 bytes	This parameter specifies the RSCS node ID of the system from which the job was submitted. The RSCS node ID, in conjunction with the RSCS machine parameter, can be used to have RSCS transmit messages or output back to a job's submitter.
batch_monitor	8 bytes	Contains the user ID of the monitor virtual machine of the VM Batch Facility.
user_parms	18 bytes	Contains up to 18 characters of user-specified parameters. The parameters are passed to the job exactly as they were specified by the job owner, with the exception that leading and trailing blanks are stripped off.

Writing a General Purpose Job Exec

The following box shows a general purpose job exec that can be modified to do many different tasks, such as scripting and printing a file or running a program and printing the output.

To get the exec ready to run, enter it in as a file on your user ID.   Choose any file name you wish, but use EXEC as the file type of the file, as in:

```
myjob exec
```

General Purpose Job Exec

```
/* General purpose job exec          */
/* Part 1: Getting your userid from      */
/* the VM Batch Facility.            */

parse arg . job_owner_userid . . . . . .

/* Part 2: Setting up an environment  for */
/* the job that's similar to your userid. */

/* Modify the following statements to add links to any other */
/* minidisks that will be needed by your job.            */
'CP LINK' job_owner_userid '191 291 RR PASS= readpassword'
if rc = 0 then 'CP MSG' job_owner_userid 'Read link made.'
else do
  'CP MSG' job_owner_userid 'Cannot link to your A disk.'
  'CP MSG' job_owner_userid 'Contact your VM Batch Facility',
  ' Administrator.'
   exit 8
end
'ACCESS 291 Q'

/* change the following commands so that the job's output is */
/* sent to the printer or other device that you want to use  */
'CP TAG DEV PRT PRINTID'
'CP SPOOL PRINT DIST dist_code'

/* Part 3: Issue the commands that do     */
/* the job.                          */

/* substitute here the commands needed to do your job       */
'RUN PROGRAMA'
'PRINT output file'

if rc = 0 then 'CP MSG' job_owner_userid 'Job complete.'
else do
   'CP MSG' job_owner_userid 'Job not successful.'
   exit 8
end
exit 0
```

The exec has three parts:

1. It accepts information that the VM Batch Facility gives to it–your user ID, in this case.
2. It sets up the environment in which your commands can be performed. That is, the exec gets permission to copy any files it needs from the minidisks that you have access to from your user ID. It also identifies the printer to which the output from your job will be sent.

3. It issues the commands that are needed to do the job–the same commands that you would enter to do the job from your own terminal.

You do not have to type in the comment lines in the exec, except for the very first one. Comment lines are the lines that begin with "/*" and end with "*/".

Sample Execs

Storing Output Files Securely

The VM Batch Facility uses DIAGNOSE X'D4' to assign an alternate user ID to a task machine. This is usually the job owner's user ID. Any spool files generated by the job belong to the alternate user ID, not to the task machine. Spool files cannot be obtained by a subsequent job submitted by another user running in the same task machine.

However, when the VM Batch Facility is running in an environment where DIAGNOSE X'D4' has been disabled, or where a DIAGNOSE X'D4' has not been issued against a task machine, due to a requested alternate user ID not being confirmed when such confirmation was required, jobs can potentially obtain spool files created by previous jobs running in the same task machine, via the CP TRANSFER command. When no alternate user ID has been set for a task machine, spool files belong to the task machine itself.

In such cases, consider having your jobs store their output on a minidisk that is linked to your user ID, rather than spooling the output to a printer or other device.

This sample exec stores output files on a minidisk that belongs to the job owner. To make using the exec more convenient, you may wish to have a minidisk added to your user ID to which you do not have write access. A job exec will always be able to obtain write access to that minidisk even if you are logged on.

If you use this exec as it is shown below, be sure that it runs only when you are logged off; otherwise, it will not be able to get WRITE access to your A-disk. Also, if the Resource Access Control Facility (RACF) is in use in your system, be sure VM Batch Facility has been authorized to use your user ID as an alternate user ID for VM Batch Facility task machines.

```
/* Safe Storage Exec */
/* Get your userid from the VM Batch Facility */

parse arg . job_owner_userid . . . . . .


/* Do a link to your A-disk. */

 x = DIAG(08,'LINK' job_owner_userid '191 291 MR PASS=multipassword')

 'ACCESS 291 Q'

/* In this example, format a file using SCRIPT, */
/* putting the output on your A-disk.           */

 'SCRIPT MYFILE SCRIPT Q (FILE ($MYFILE SCRIPT Q)'

 exit 0;
```

Figure 11. Sample Exec: Storing Output Securely.

Restarting a Job from the Last BATCH JOBSTEP Command

This sample exec shows how to write a job exec that restarts automatically from the last BATCH JOBSTEP command that was executed, if the job exec is interrupted by a system shutdown while it is running.

The sample exec assembles a file and creates a module. The same code structure can be applied to performing any other type of job, as well.

This sample exec stores output files on a minidisk that belongs to the job owner. To make using the exec more convenient, you may wish to have a minidisk added to your user ID to which you do not have write access. A job exec will always be able to obtain write access to that minidisk even if you are logged on.

If you use this exec as it is shown below, be sure that it runs only when you are logged off; otherwise, it will not be able to get WRITE access to your A-disk. Also, if the Resource Access Control Facility (RACF) is in use in your system, be sure the VM Batch Facility has been authorized to use your user ID as an alternate user ID for the VM Batch Facility task machines.

```
/* Sample exec that is able to restart from the  */
/* last BATCH JOBSTEP command, in the event the  */
/* exec is interrupted by a system shutdown and */
/* is then restarted.                         */

/* Get parameters from the VM Batch Facility. */

 parse arg job_status job_owner_userid . last_jobstep . . . .

/* Do a link to your A-disk */

 x = DIAG(08,'LINK' job_owner_userid '191 291 MR PASS=multipassword')

'ACCESS 300 C'


/* If job is a restart job, start at the last recorded jobstep*/

if job_status = 'RESTART' & last_jobstep = 'B' then
   call B;
else do
   call A;
   call B;
end;

exit 0;
A:
   'BATCH JOBSTEP A'

/* In this example, assemble TEST5 ASSEMBLE. */

   'ASSEMBLE TEST5'

return;

B:
    'BATCH JOBSTEP B'

    /* Create module */

    'LOAD TEST5'
    'GENMOD MYMODULE MODULE C'

return;
```

Figure 12. Sample Exec: Restarting from the Last BATCH JOBSTEP Command.

Error Recovery Exec

The sample exec below shows how a simple ERROR option exec might work. This exec:

- Sends a message to the job owner if the job is canceled.

- Returns certain files from the task machine's 191 minidisk to the job owner, using the DISK DUMP command.

- Returns any spool files that have not been closed or processed to the job owner.

```
/* Sample exec for use with the ERROR job control option */
/* The exec uses the DISK DUMP command to return certain */
/* files on the task machine 191 minidisk to you.       */

/* Replace "youruserid" with your own userid.           */

/* job error exec */

'CP MSG YOURUSERID Job failed!!!'

/* Return task machine 191 minidisk MODULES */
'CP SPOOL PUNCH TO YOURUSERID'
'LISTFILE * MODULE A (EXEC ARGS'
'CMS DISK DUMP'

/* Transfer reader, printer, and punch files back to job owner */
'CP TRANSFER R ALL TO YOURUSERID'
'CP TRANSFER PR ALL TO YOURUSERID'
'CP TRANSFER PU ALL TO YOURUSERID'

exit 0;
```

Figure 13. Sample Exec: Exec for Use with the ERROR Job Control Option.

Passing More Than 18 Characters of Parameters to a Job

The BATCH SUBMIT command can pass only 18 characters of user parameters to a job. This exec shows you how to avoid this limitation.

```
STEP 1 :  Write an exec such as the following...

/* Sample exec for passing more than 18 characters of parameter */
/* data to your job exec.  The sample creates a skeleton job    */
/* exec which reads the parameter values that you enter and     */
/* then passes them to the job that is submitted from the exec. */

/* SUBMIT EXEC--reads the parameters to pass to your job. */
 arg usercmd

/* Save the user parameters in a file to pass */
/* to the VM Batch Facility.                  */
 push usercmd
 'EXECIO 1 DISKW BATCHJOB COMMAND A3 (FINIS'

/* Pass the file containing the user parameters as a file */
/* appended to the job exec.                              */
 'BATCH SUBMIT JOB EXEC A ( APPEND(BATCHJOB COMMAND A3)',
                          ' PARMS (BATCHJOB COMMAND)'

STEP 2 :  Write a job exec such as the following to read from the file
containing the user command...

/* JOB EXEC */
parse arg . userid . . . . . user_parms

/* read from the file containing the user's parameters */
 'EXECIO 1 DISKR' user_parms
 pull userparms

/* After all processing has been done, leave. */
 exit 0;
```

Figure 14. Sample Exec: Passing More Than 18 Characters of Parameters to a Job.

BATCH JOBSTEP: Updating the Current Job Step from Your Exec

BATCH JOBSTEP commands are commands that can be issued only by a job exec that is being run. By including BATCH JOBSTEP commands in your job execs, you can:

1. Enhance the information in status messages on jobs that are running.

    BATCH JOBSTEP commands update the job step of a running job when they are executed. The current job step of a job is one of the items of information included in VM Batch Facility job status messages. Job step information lets you find out how far a job exec has run.

2. Have interrupted jobs restart from the last BATCH JOBSTEP command that was executed.

    The RESTART YES option restarts a job from the beginning if the job is interrupted by a system shutdown. If you add BATCH JOBSTEP commands and the sample exec code shown earlier to your job exec, you can have a restarted job resume execution from the last BATCH JOBSTEP command that was executed.

3. "Chain" a job to a job step in a job.

    The CHAIN job control option lets you specify that a chained job is eligible to start when the job to which it is chained reaches a particular job step. Otherwise, a chained job can start only when the job to which it is chained has completed.

Format

```
►►──BATCH──Jobstep──yourtext──►◄
```
---

yourtext
Enter a job step message from 1 to 8 characters long. It can include any numbers and letters that you wish to use. It cannot have any blank spaces in it.

When the BATCH JOBSTEP command is executed in the job exec, the text you specified will be recorded as the current job step of the job. The job step is shown after the "Step" heading in the job status message. "Step" is blank if no BATCH JOBSTEP commands have been executed.

Usage Notes

1. **CLASS AUTOLOG jobs:** BATCH JOBSTEP commands cannot be issued from CLASS AUTOLOG jobs. CLASS AUTOLOG jobs are jobs that are run on your own user ID.

2. **Using BATCH JOBSTEP commands with chained jobs:** If other jobs may be chained to a job step of a job of yours, be sure that the numeric value of the BATCH JOBSTEP texts in the job rises from one BATCH JOBSTEP to the next. If the value of the job step texts, in EBCDIC terms, does not rise from one job step to the next, a chained job may become eligible to start too early.

    To determine whether a chained job can start, the VM Batch Facility compares the job step specified for the chained job with the current job step of your job. It uses the EBCDIC values of the job steps to make the comparison. The chained job becomes eligible to start if the job step specified in the CHAIN

option is less than or equal to the current job step of your job, in terms of EBCDIC value.

You do not have to worry about finding out the values of letters and numbers in the EBCDIC code that your system uses to store them. Just follow these rules when you put BATCH JOBSTEP commands in your jobs:

a. Use only a single BATCH JOBSTEP command, if possible, in jobs to which other jobs will be chained.
b. Keep job step texts simple and use a standard format throughout a job, as in BATCH JOBSTEP POINTA, BATCH JOBSTEP POINTB, and so on.
c. Keep the sequence of values of EBCDIC code in mind.

The numeric values of letters and numbers in EBCDIC code are arranged in this way:

- "A" has the lowest value, rising to "Z".

- "0" has a higher value than "Z", rising to "9", which has the highest EBCDIC value of the numbers and letters that can be used in a BATCH JOBSTEP command.

You can use lowercase and uppercase letters interchangeably in job steps. Lowercase letters are translated to uppercase and will have the same value in job steps as uppercase letters.

Examples

In the sample exec below, the BATCH JOBSTEP commands update the job step after each program has been executed. When the job is being run, you could check on the current job step of the job by entering the BATCH STATUS command.

```
/* Sample exec--status messages      */
/* enhanced by BATCH JOBSTEP commands */
'programa'
'batch jobstep adone'
'programb'
'batch jobstep bdone'
exit 0
```

Another job could be chained to the job steps in this sample. The following command would make CHAINJOB EXEC eligible to start when the sample job exec (named "sample" for simplicity) executes the BATCH STATUS ADONE command:

```
batch submit chainjob exec (chain *.*.sample.adone
```
---

3. **Checking the Return Code:** Execs that use BATCH JOBSTEP should check the return code each time the command is issued. A nonzero return code indicates that the command was not completed successfully. Job chaining could give unpredictable results, and job restart may not operate as expected.

4. **JOBSTEP Reserved symbol:** An asterisk (*) is reserved and is used in status messages to indicate that there has been no jobstep executed yet for the job.

5. **JOBSTEP and the BATCH ADDRESS command:** It is not necessary to direct BATCH JOBSTEP commands to a monitor. They are automatically directed to the monitor that owns the task machine in which the job is running. The BATCH ADDRESS command may be freely used to direct other VM Batch Facility commands without influencing the direction of JOBSTEPS.

Appendix B. Using VM Batch Facility Commands in Execs

When using VM Batch Facility commands in execs, you should give consideration to the following:

- Any VM Batch Facility command can be issued from within an exec. However only a subset of the commands may be issued from within an exec that is submitted for execution as a job by the VM Batch Facility See the discussion on "Job Spawning" on page 152.

- Use the return codes from the commands to determine their success or otherwise. These are described in "VM Batch Facility Command Return Codes" on page 18.

- The processing of VM Batch Facility commands is asynchronous. While the processing of a command in the issuing virtual machine is complete as soon as the command has been dispatched to the monitor, it may take some time before the monitor receives the command and is able to action it.

  This means that the return code from a VM Batch Facility command does not necessarily indicate the completion status of the command, nor does it indicate that the action requested by the command has completed; it only provides the result of the dispatch of the command.

  The implications of command synchronization within execs are discussed in "Command Synchronization" on page 153.

- The BATCH ADDRESS command is used to specify which VM Batch Facility monitor is the destination of any following VM Batch Facility commands. Once set, the destination remains in force until respecified, and it is preserved across logon sessions. This is achieved by storing the destination information in the LASTING GLOBALV file provided by CMS. Each time the BATCH ADDRESS command is issued to change the command destination, a record is added to the LASTING GLOBALV file.

  When the BATCH ADDRESS command is issued repeatedly within a single logon session, it may happen that the increasing size of the LASTING GLOBALV file becomes difficult to manage.

  In such a situation, if there is no need to preserve the destination address across logon sessions, the CMS global variables that hold the destination address may be directly set in storage. In this way, a destination address is set for subsequent VM Batch Facility commands within the current logon session, and the LASTING GLOBALV file is not appended to.

  Setting a VM Batch Facility address directly

  ```
  GLOBALV SELECT VMBATCH SET BATMON monitor

  GLOBALV SELECT VMBATCH SET BATNODE node
  ```

  where

  > *monitor* is the name of the destination monitor user ID

  > *node* is the node on which the destination monitor runs

Job Spawning

You may use the BATCH SUBMIT command within a VM Batch Facility job exec to create new jobs on your behalf. A job submitted from within a job is termed a 'spawned' job.

You may also use the following commands within a VM Batch Facility job exec to control jobs that have been spawned on your behalf:

1. BATCH ADDRESS - to specify the monitor that is the target of your commands.

2. BATCH CHJOB - to change a job that has been accepted.

   Only the general user format of this command as described in the User's Guide may be used.

3. BATCH CANCEL - to cancel a job that has been accepted.

   Only the general user format of this command as described in the User's Guide may be used. In addition, only the job specific format may be used, whereby the id of the job to be cancelled is explicitly given (so only one job may be cancelled with each command).

Apart from BATCH JOBSTEP, no other VM Batch Facility commands may be issued from within a job.

A command issued from within a job is termed a 'spawned' command.

Spawned jobs and commands differ from non-spawned jobs and commands in the following ways:

1. Ownership is inherited from the spawning job.

   A spawned job (or command) assumes the user ID and Node ID of the owner of the spawning job. This means that a job spawned by a job that you submitted is treated as if you had submitted it directly. All subsequent processing that is user related, such as message processing and job accounting, is performed on your behalf. In particular, any messages that are generated by a monitor that are pertinent to a spawned command are sent directly to you, and not to the VM Batch Facility task machine in which your spawning job is (or was) running.

2. You may only spawn commands that target jobs that you have spawned.

3. Non-spawned commands may target spawned jobs.

4. The alternate user ID that was requested (explicitly or by default) for the spawning job becomes the requested alternate user ID of the spawned job. This is so even when the spawning job does not actually run under that alternate user Id. The requested alternate user ID for the spawned job may be overridden by including an ALTID option on the SUBMIT command that spawns the job.

   Confirmation of the alternate user ID for a spawned job at the target monitor is performed as for any other job.

The use of spawned commands is subject to the following restrictions:

1. The VM Batch Facility monitor that is the target of spawned commands must have been configured to accept them.

2. Spawned jobs may not be defined to have class AUTOLOG.

3. The Direct or RJE interface may not be used within VM Batch Facility jobs to spawn commands.

4. Spawned commands may only be issued from within a job submitted to a VM Batch Facility Version 2 Release 2 (or later) monitor, and may only be directed at a VM Batch Facility Version 2 Release 2 (or later) monitor.

It is recommended that you give consideration to using synchronous job submission when spawning jobs.

Example:

```
/* This job exec submits two jobs. It ensures that either both jobs  */
/* are run or no jobs are run. It also ensures that the jobs are     */
/* run under the same monitor that this job is running under, rather */
/* than any installation defined default monitor.                    */

parse arg . owner . . . node monitor .

'BATCH ADDRESS' monitor '*'                    /* Address this monitor */

/* Submit JOB1 exec (which is assumed to be accessible) specifying   */
/* a synchronous submission with a timeout of 2 minutes.             */
/* Specify DATE HOLD to prevent the job running immediately.         */

'BATCH SUBMIT JOB1 (ID JOB1 WAIT 2 DATE HOLD'
if rc > 4 then exit rc                 /* Exit if JOB1 not accepted */

'BATCH SUBMIT JOB2 (ID JOB2 WAIT 2 DATE HOLD'
rcs = rc
if rcs > 4 then do                 /* If JOB2 not accepted then... */
        'BATCH CANCEL JOB1'        /* cancel JOB1 and exit.        */
        exit rcs
        end

/* At this point both jobs have been accepted. Let them run:       */
'BATCH CHJOB JOB1 (DATE OPEN'
'BATCH CHJOB JOB2 (DATE OPEN'

exit 0
```

Command Synchronization

You will note that VM Batch Facility commands that target a job are only effective against jobs that have already been received and accepted by a VM Batch Facility monitor. This is because the processing of VM Batch Facility commands is asynchronous.

There are separate stages in the processing of a VM Batch Facility command.

1. The user interface (BATCH EXEC) executes in your virtual machine to issue the command. It is the result of this process that is indicated in the return code from the command.

2. The command is delivered to the target VM Batch Facility monitor, the time taken may depend on network performance.

3. The command is accepted (or rejected) by the monitor, and a message may be returned to you in acknowledgement. The command is queued for execution.

4. The command is executed. This in itself may take place in discrete stages, with dependencies on asynchronous system services. On completion, a message may be sent to you indicating the final result of the command.

When the issuing of a command completes in your virtual machine, a return code is provided representing the result of the dispatch process; it may yet take some time before the monitor receives the command and performs the required action. The length of the delay depends on factors such as job size, and system and network loads. On a well balanced local system this may be negligible (perhaps a second or two), but on a heavily loaded distributed network it could even be hours.

When multiple VM Batch Facility commands are being issued and delay factors are significant, the situation can arise where commands are being actioned by a monitor in a sequence different to that in which they were issued. For example, a command to cancel a job may arrive at the monitor before the job has been received. The CANCEL command is rejected indicating that no such job was found, and a little later the job runs.

When VM Batch Facility commands are issued interactively the asynchronous effects are seldom apparent, but when they are issued from within execs in quick succession the effects become noticeable.

Synchronous Job Submission

The VM Batch Facility provides the capability for a BATCH SUBMIT command to execute synchronously. That is, the processing of a SUBMIT command in your virtual machine completes only when the monitor has definitely accepted (or rejected) the job (although the job has yet to run). The return code from a synchronous BATCH SUBMIT indicates the success of the entire job submission, not only the dispatch of the job to the monitor.

When a job has been submitted synchronously (and successfully), subsequent commands that target the job may be issued knowing that the job will be found.

Synchronous job submission is specified by the WAIT option on the BATCH SUBMIT command. The WAIT option also specifies a time limit to the process. See the description of the BATCH SUBMIT command for usage details.

Note that unlike a regular job submission, the target monitor must be running for a synchronous submission to complete successfully.

A synchronous submission may be manually cancelled by entering a terminal interrupt.

When a synchronous submission fails due to a timeout or a system outage the VM Batch Facility ensures that any partially submitted job will not run. However, it is not able to ensure that the job will be discarded. It may happen that such a job will lie dormant in the target monitor's job queue without ever running. The response to a STATUS command for the job would be 'Awaiting synchronization'. A job awaiting synchronization may be the subject of VM Batch Facility commands like CHJOB and CANCEL. The job should be canceled by issuing a CANCEL command, since its presence in the job queue will prevent the acceptance of a subsequent job with the same job ID. A synchronous submission failure due to

timeout or a system outage may indicate a situation from which a programmed application may not recover adequately; it should invoke a call for manual intervention. A job awaiting synchronization may be forcibly started by a VM Batch Facility administrator using the BATCH START command.

The cost of using synchronous submission is that the submitting virtual machine is tied up until the submission completes. If the submission was done from within a job exec and is slow to complete, the VM Batch Facility monitor controlling the submitting job may mark it as stalled.

An additional benefit in using synchronous submission is provided when spawning jobs from within a VM Batch Facility job. Since all messages regarding a spawned job are sent directly to the job owner, there would be no evidence on the spawning job's console log if the spawned job is rejected. However, if the spawning submission is synchronous, message DGRUVM591 on the spawning job's console log may indicate the reason for rejection.

Synchronous submission may only be specified when addressing a VM Batch Facility Version 2 Release 2 (or later) monitor. Synchronous submission is not available using the Direct or RJE interface, or the VM Batch Facility panel interface.

Cancel Processing

When a VM Batch Facility job is cancelled the monitor performs the error processing that was specified for the job using the ERROR option of the SUBMIT command. If the ERROR option was not specified as NODUMP, then this processing involves at least logging on the task machine, and performing the required recovery chores.

In such a case, there may be a significant delay between the time that the monitor acknowledges receipt of a BATCH CANCEL command, and the time that all error processing for the job is complete. It is not until all error processing is complete that the monitor considers a cancelled job to be over, and will accept another job from the same submittor with the same job ID.

To avoid excessive asynchronous effects when issuing a BATCH CANCEL command, it is recommended that jobs be submitted with the ERROR option specified as NODUMP whenever possible. This significantly reduces the number of asynchronous processes required to completely cancel a job. On a well balanced local system the time required to completely effect a NODUMP cancellation would be in the order of one to five seconds.

Use the synchronous form of the BATCH SUBMIT to ensure that a duplicate job is not rejected after a cancellation, as in the following example:

```
/* Assume that this code is part of an exec that earlier submitted   */
/* a job with ID 'JOB3'; and some condition has arisen requiring      */
/* that the job be cancelled and resubmitted. Assume too, that the    */
/* job was submitted synchronously with ERROR NODUMP, so ensuring     */
/* that a subsequent CANCEL command will be quick and effective.      */

'BATCH CANCEL JOB3'                                 /* Cancel the job */
rcs = rc
if rcs > 4 then do                         /* Just being careful..... */
   say ' The VM BATCH user interface has disappeared!'
   exit rcs
   end

'CP SLEEP 3 SEC'                     /* Allow the cancel to complete */

/* Now resubmit the job synchronously until the return code from      */
/* the submit indicates that the job has been accepted. Allow some    */
/* time between any submission failures for the cancel to complete.   */
sent = 0
do i = 1 to 5 until sent
   'BATCH SUBMIT JOB3 (ID JOB3 WAIT 1 ERROR NODUMP'
   rcs = rc
   select
      when rcs < 8 then sent = 1                     /* Submit was ok */
      when rcs = 8 then                    /* If Submit was rejected... */
         'CP SLEEP 3 SEC'                  /* ... cancel is still going */
      otherwise do
         say 'I think the network is down'      /* This is serious. */
         leave
         end
      end
   end

if ¬sent then say 'HELP!'
exit 0
```

Appendix C. General Information on VM Batch Facility Panels

This Appendix gives an overview of the features common to VM Batch Facility panels.

Menu Panels and Data Panels

You will be using two types of VM Batch Facility panels.

Menu panels, like the User Tasks panel, ask you to choose a task for the VM Batch Facility to perform. To choose a task:

1. Enter the number of the task after `Selection ====>` on the panel.
2. Press ENTER. If the VM Batch Facility needs information from you to perform the task you have selected, it will show you a data entry panel or display a message. Otherwise, it will perform the task you have selected.

Note that some menu panels, the Status and Query panels, may ask you to enter some information as well.

Data entry panels, like the Submit panel, ask you to enter information that is needed for doing the task you have selected. You will be entering information in "fields", the underscored lines ("_____") that follow colons on the panel.

To use these panels:

1. Fill in any required fields that are shown on the panel.

2. Fill in any of the optional fields you want to use. The help information available at your terminal and the descriptions in this manual can help you to decide when to use the optional fields.

   You can enter alphabetic values in capital and/or small letters.

3. Press ENTER. If the VM Batch Facility needs more information, it will show you another data entry panel or display a message at your terminal. Otherwise, it will perform the task you have selected.

Online Help Available at Your Terminal

If you are not sure how to use a panel, press the HELP PF key. In a few moments, you will be shown one or more panels of information on how to use the panel and fill out the fields on the panel.

Bibliography

This bibliography lists the publications that provide information about your VM/ESA system. The VM/ESA library includes VM/ESA base publications, publications for additional facilities included with VM/ESA, and publications for VM/ESA optional features.

VM/ESA publications may be available as Adobe Portable Document Format (PDF) files, IBM BookManager® files, or printed books. For abstracts of VM/ESA publications and other library-related information, including current editions and available publication formats, see *VM/ESA: General Information*.

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Note: CP and CMS control block information is not
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the IBM VM operating system home page
(http://www.ibm.com/s390/vm).

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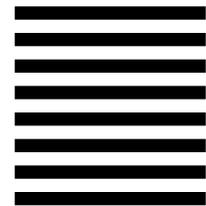
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