StorageTek
Expert Performance Reporter

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MONTAPE/MONREPT Utility Guide

Version 6.1

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StorageTek Expert Performance Reporter, MONTAPE/MONREPT Utility Guide

Part Number 312632401

Revision History

EC Number	Date	Revision	Description
132453	May, 2006	A	This document applies to ExPR Release 6.1.
	June, 2010	AB	Rebranding.
	August 2011	AC	Updated support URLs and added a notification that the ExPR PC Component is now in sustain support only and will not have further engineering changes. The ExPR PC Component was effectively replaced by the ExPR Web-based GUI in ExPR Release 6.1.

Contents

Preface

This book describes Oracle's StorageTek Expert Performance Reporter's Tape Mount Monitor MONTAPE data collector utility and MONREPT reporting program. This manual serves as a reference guide for customers who use MONTAPE and MONREPT to monitor and report on tape management systems.

Related Documentation

The following list contains the names and order numbers of publications that provide additional information about ExPR.

Function	Title	Part Number
	Introduction to ExPR	312631901
Administrator	ExPR Installation, Configuration and Administration Guide	312632001
User	ExPR Mainframe User's Guide	312632101
User	ExPR Client User's Guide	312632201
Administrator	ExPR Messages Guide	312632301

The ExPR documentation is available online at:

http://docs.sun.com/app/docs/prod/stortek.expr

Documentation, Support and Training

Function	URL
Web Site	**http://www.oracle.com/index.html**
Documentation	http://www.oracle.com/technetwork/indexes/documentation
Downloads	**http://www.oracle.com/technetwork/indexes/downloads/index.html**
Support	**http://www.oracle.com/us/sun/index.htm**
Training	**http://www.oracle.com/global/us/education/sun_select_country.html**
Online Account	**https://reg.sun.com/register**

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Chapter 1: Introduction

Overview

MONTAPE is a monitor program that runs in the customer's system and monitors tape drive status. It should be run on every CPU doing tape mounts. MONTAPE determines tape drive status by looking at the allocated and mount pending bits in the UCB (unit control block). By design, MONTAPE looks at the tape UCBs at a frequency determined by the SCANINTERVAL parameter and writes one record for each drive allocation (approximately one per mount).

One of the output files produced from the run is a data set named &USERID.MONREPT.PCTOOLS.FILE which can be down-loaded to a floppy and used with ASAP II to produce various graphs and charts for the analyzed data.

What is Measured by MONTAPE

MONTAPE looks at the mount pending bit (UCBMOUNT of UCBDMCT) to determine whether there is an outstanding mount. There are two situations when the mount pending bit is on, and yet it is physically impossible to mount a tape:

- The first situation is when a multi-volume input is being processed. The system issues a keep message for the current mount, and then immediately issues the mount for the next volume. The mount pending bit is on (but the rewind bit is off) and MONTAPE starts clocking the mount pending time even through the previous volume is still rewinding.

- The second situation is when a job step ends and the tape begins rewinding. However, before the tape unloads, the drive is allocated to another job step that requires a tape mount. Again, the mount pending bit is on, but the first tape is still in the drive. MONREPT detects the multi-volume input condition and flags the mount pending time with an asterisk (*); however, there is currently no way to tell how much of the mount pending time should be attributed to the previous tape's rewind time.

MONTAPE also looks at the CMB (channel measurement block) to obtain connect, pend, and disconnect times for each volume allocation. Additionally, program wait with outstanding tape I/O is collected.

MONTAPE versus HSC

MONTAPE and SLUADMIN report different mount pending times for the same mount. The mount pending time that MONTAPE collects corresponds to the difference in time that the mount message appears on the operator's console and the time that the drive becomes ready. The HSC, on the other hand, doesn't start clocking the mount pending time until the LMU actually receives the mount request. When multi-volume inputs occur, the dismount is handled completely before the mount request is issued to the LMU.

However, if the LMU is busy, mount requests to the LSM could be delayed. And, the busier the LSM is with mount/dismount or enter/eject activity, the longer the mount pending times are in both MONTAPE and the HSC Activities Report. You might get a closer comparison between MONTAPE and HSC if you compare MONTAPE's average mount pending time with the sum of the dismount average and mount average displayed on the HSC Activities Report.

Following is a time line that illustrates the difference in mount times reported by MONTAPE and SLUADMIN:

```
                                              Time-stamp
                                                 - Process/delay
        ----                                  Host WTO for mount message
         |                                       - Dismount processing
         |                                       - HSC queuing
         |            ----                    LMU Server acceptance
         |             |                         - LMU busy
MONTAPE               |                         - LSM not ready (busy robot)
mount time     SLUADMIN                       LMU acceptance
         |      mount time                       - Interface overhead
         |             |        <>11 sec         - LMU execution time
         |             |                         - Interface overhead
        ----          ----                     LMU complete
```
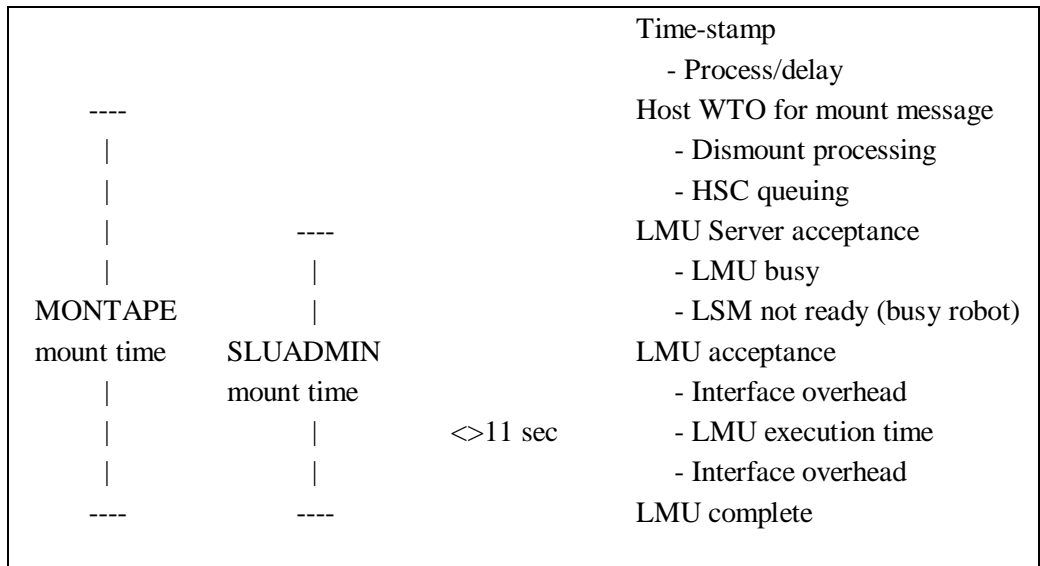
Chapter 2: Running MONTAPE and MONREPT

Overview

This chapter describes steps you must take to successfully run MONTAPE and MONREPT, including customization of the MONTAPE and MONREPT sample datasets.

Prerequisite Installation

This product requires that MONTAPE is installed in your ExPR environment. Refer to *ExPR Installation and Configuration Guide (ICAG)* under task 7, *Install MONTAPE*. This task installs the MONTAPE started task or batch job to allow the collection of data, and the MONTAPE reporting batch job to report on the collected data.

Running MONTAPE

Member MONTAPE in the ExPR sample dataset provides sample JCL to run MONTAPE. This sample must be modified before it will run successfully. The following changes are needed.

- Provide a valid jobcard. Note that the MONTAPE sample is provide as a batch job but can be changed into a started task if you prefer to run it this way.

- If the MONTAPE output is to be directed to a dataset, provide the name of the output dataset. If you wish to keep an accumulation file of the MONTAPE output, the first step in the job needs to be un-commented after the first run of MONTAPE.

While the control statements provided in the sample JCL will work as is, some customization might be needed. The following details changes that can be made.

- If the MONTAPE output is to be directed to SMF, then the MONRECNUM control statement needs to be uncommented and a suitable value for the SMF number supplied. If you wish to direct the output to an SMF subtype, the subtype number as well as the SMF number must be supplied. In this case, the output dataset detailed above does not need to be supplied.

- If you want the times recorded in the collection records to be adjusted to match another system's time-zone, uncomment the TIMESYNC control statement and enter the required offset.

- If the UCB scan interval is to be changed, uncomment the SCANINTERVAL control statement and enter the required interval.

- MONTAPE will start collecting data either immediately after it starts (the default) or at a specified time and date if the STIME and SDATE control statements are provided.

- MONTAPE will stop collecting data either by the operator issuing the MVS STOP command against the job or at a specified time and date if the ETIME and EDATE control statements are provided.

Note: Details of the control statements listed above can be found in Chapter 3: *MONTAPE Control Statements*.

MONTAPE Operator Commands

While MONTAPE is running, the current number of records collected can be displayed by issuing the MONTRECS operator command:

F jobname,MONTRECS

Running MONREPT

Member MONREPT in the ExPR sample dataset provides sample JCL to run MONREPT. This sample must be modified before it will run successfully. The following changes are needed.

- Provide a valid jobcard.

- Provide the sort sequence. Valid values are CUA for sorting by device address, TIME for sorting by date and time and JOB for sorting by jobname.

- Provide the high-level qualifier for the local datasets used by MONREPT.

- Provide space allocation values. These are required for the sort space and local datasets used by MONREPT.

- Provide the name of the input dataset(s). These can be either sequential or SMF datasets. The SMF datasets are those created by the IFASMFDP program, i.e., MONREPT can read VS type datasets. There are separate DDNAMEs for each type of input dataset so both can be specified at the same time if necessary. Each DDNAME accepts concatenated datasets.

Changes may also need to be made to the MONREPT control statements found in the SYSIN DD for the MONSORT step. These statements are passed to subsequent steps within the job so all statements used by the MONREPT process need to be defined in the

one place. Any statements not used by a particular program are ignored. These ignored statements are marked in the control statement listing in the SYSBR000 output.

Details of the control statements are documented in Chapter 3: *MONTAPE Control Statements*. The minimum recommended change is to add a report title value for the CONFIG control statement.

Chapter 3: MONTAPE Control Statements

Overview

The programs that run during MONTAPE and MONREPT execution accept parameters from a file having the SYSIN *ddname* with the assumption that their record length is 80 bytes and that their record format is fixed. Only columns 1 through 72 of a control statement are examined. Any characters in columns 73 through 80 are ignored.

Valid Keyword/Value Units

The control statement format consists of a series of keyword/value units separated by one or more spaces and/or commas. A keyword/value unit can begin on any column from 1 to 72, but must end on or before column 72. A keyword/value unit must be entirely contained on one card and cannot be continued onto the next card.

A keyword/value unit consists of a keyword, perhaps (depending on the keyword) followed by a value. When there is a value, it must be separated by at least one space and/or equal sign (=) from the preceding keyword. The characters which are recognized as delimiting the end of the value are the space and the right parenthesis, except in the special case of the CONFIG keyword.

For any keyword, column 73 is also recognized as delimiting the value.
An asterisk (*) in column 1 causes the entire control statement to be treated as comments.
An asterisk followed by a blank causes the rest of the control statement to be treated as comments.

Control Statement Descriptions

MONTAPE and MONREPT control statements are listed below in alphabetical order.

ACSDRIVE=

{*device_address*[,*nnn*][,*device_type*]}

Description
The ACSDRIVE control statement is used by MONREPT to flag the 3480 or 3490 type drives attached to an ACS as a different device type. The drives will be reported as 348R or 349R device types. You can use any number of ACSDRIVE control statements to define the environment. Any address not matching an ACSDRIVE will be treated as manual unless it matches an RMT*n*DRIVE address.

Parameter

device_address specifies a three or four hexadecimal digit device address. An *
can also be used in any digit place as a wildcard. The * will only match for that
one digit.

nnn identifies the LSM to which the drives are attached. Reporting will be by
LSM ID if this parameter is used.

device_type specifies the device type of the device(s). Valid values are TL for
Timberline, RW for Redwood, VTD for virtual and MAG for Magstar.

CONFIG=

{*60_character_report_title*}
{<u>S T O R A G E T E K</u>}

Description

The CONFIG control statement is used by MONREPT to specify a 60-character
title for all of its reports.

DETAIL=

{<u>N</u>}
{A}
{M}
{*nn*}

Description

The DETAIL control statement is used by MONREPT to specify the type of
detail to be reported.

Parameters

<u>N</u>, the default, requests no detail be produced.

A requests the reporting of all allocation activity. Each volume allocation
produces a detail line.

M requests that only those allocations having mounts pending be reported.

nn requests that only those mount pending times of *nn* or more seconds be
reported. One line is produced for each mount meeting the *nn* requirement.

DO3420ONLY

Description

The DO3420ONLY control statement is used by MONREPT to report 9 track
tape activity only. If you specify neither DO3420ONLY nor DOCARTONLY,
then all tape activity is reported.

DOCARTONLY

Description

The DOCARTONLY control statement is used by MONREPT to report cartridge tape activity only. If you specify neither DO3420ONLY nor DOCARTONLY, then all tape activity is reported.

EDATE=

{[*yy*]*yyddd*}
{*mm*/*dd*/[*yy*]*yy*}
{*mon*/*dd*/[*yy*]*yy*}
{*dd*/*mon*/[*yy*]*yy*}
{TODAY[+*nnn*]}
{TODAY[-*nnn*]}
{9999365}

Description

The EDATE control statement is used by both MONTAPE and MONREPT. MONTAPE uses the statement to tell the monitor what date to stop monitoring. MONREPT uses the statement to select records that were created on or before this date.

In MONTAPE, the SDATE/STIME and EDATE/ETIME control statements are optional. For MONREPT, they should be used only if you want to report on a subset of the data collected by MONTAPE. By default, all records passed into the job stream are reported. This information is available as soon as the job begins.

Parameters

The values for *yyyy*, *yy*, *mm*, and *dd* are numeric, with the following additional points:

- Add leading zeros where necessary to make up the field to the correct length.

- When a two-digit year is specified, the century is worked out as: If yy >= 50, then 1900 is assumed, otherwise 2000 is assumed.

- When the TODAY format is used, the maximum value of *nnn* is 630.

mon is alphabetic (for example, "JAN" for January).

ETIME=

{*hh.mm.ss.th*}
{*+hh.mm.ss.th*}
{<u>23.59.59.99</u>}

Description
The ETIME control statement is used by both MONTAPE and MONREPT. MONTAPE uses the statement to tell the monitor what time to stop monitoring on the specified EDATE. MONREPT uses the statement to select records created on or before this time on the EDATE for reporting.

In MONTAPE and MONREPT, the SDATE/STIME and EDATE/ETIME control statements are optional and should be used only if you want to report on a sub-set of the data collected by MONTAPE. By default, all records passed into the job stream are reported. This information is available as soon as the job begins.

Parameters
hh.mm.ss.th specifies the hour, minute, second, tenth and hundredth of a second to stop monitoring or record selection on the specified EDATE. (In MONTAPE, you can use this parameter without specifying an EDATE, which causes the monitor to end at the next occurrence of the specified time.)

+hh.mm.ss.th specifies the number of hours, minutes, seconds, tenths and hundredths of a second that will be added to the current time to give the ending time on the specified EDATE. If the value specified would cause the time to wrap, i.e. to go over 24 hours, then the value specified by EDATE will be adjusted accordingly. This means that if you use this format of the ETIME control statement, you should put the EDATE control statement before the ETIME one. The maximum value that can be specified is 99.59.59.99.

Note: *mm*, *ss* and *th* are optional; only the hour is required.

EXCJOB=

{*job_name*}

Description
The EXCJOB control statement is used by MONREPT to exclude specific jobs from reporting. Any number of EXCJOB statements can be used. Note that EXCJOB is mutually exclusive with INCJOB.

Parameters

job_name specifies a one to eight character name of the job whose mounts are to be excluded from the report output. An * can be used as the last character of the job name as a wildcard.

EXCUNIT=

{*device_address*}

Description
The EXCUNIT control statement is used by MONREPT to exclude specific control unit addresses from reporting. Any number of EXCUNIT statements can be used. Note that EXCUNIT is mutually exclusive with INCUNIT.

Parameters
device_address specifies a three or four hexadecimal digit address for a device whose mounts are to be excluded from the report output. An * can also be used in any digit place as a wildcard. The * will only match for that one digit.

EXCVOL=

{*volser*}

Description
The EXCVOL control statement is used by MONREPT to exclude specific volumes from reporting. Any number of EXCVOL statements can be used. Note that EXCVOL is mutually exclusive with INCVOL.

Parameters
volser specifies a one to six character volume name whose mounts are to be excluded from the report output. An * can be used as the last character of the volume name as a wildcard.

HISTOGRAM=

{Y}
{<u>N</u>}
{*nn*}

Description
The HISTOGRAM control statement is used by MONREPT to control the printing of the histogram.

Parameters
Y requests a complete histogram for each INCR.

<u>N</u>, the default, suppresses the histogram.

nn is a number of tape drives. Only those histogram entries using *nn* or more tape drives are reported.

HOURLYRPT=

{Y}
{<u>N</u>}

Description

The HOURLYRPT control statement determines whether MONREPT will produce mount reports by the hour of the day.

Parameters

Y requests hourly mounts report.

<u>N</u>, the default, suppresses the hourly mounts report.

INCJOB=

{*job_name*}

Description

The INCJOB control statement is used by MONREPT to limit reporting to those jobs matching the supplied job name. Any number of INCJOB statements can be used. Note that INCJOB is mutually exclusive with EXCJOB.

Parameters

job_name specify a one to eight character name of the job whose mounts are to be included in the report output. An * can be used as the last character of the job name as a wildcard.

INCR=

{*nn*}
{<u>05</u>}

Description

The INCR control statement is used by MONREPT to determine the reporting increment for the histogram. Values are accumulated as if a "snap-shot" was taken every *nn* minutes beginning at the SDATE/STIME value.

INCUNIT=

{*device_address*}

Description

The INCUNIT control statement is used by MONREPT to include only specific device addresses for reporting. Any number of INCUNIT statements can be used. Note that INCUNIT is mutually exclusive with EXCUNIT.

Parameters

device_address specifies a three or four digit hexadecimal address for a device whose mounts are to be included in the report output. An * can also be used in any digit place as a wildcard. The * will only match for that one digit.

INCVOL=

{*volser*}

Description

The INCVOL control statement is used by MONREPT to include specific volumes for reporting. Any number of INCVOL statements can be used. Note that INCVOL is mutually exclusive with EXCVOL.

Parameters

volser specifies a one to six character volume name whose mounts are to be included in the report output. An * can be used as the last character of the volume name as a wildcard.

LINES=

{*nn*}
{<u>55</u>}

Description

The LINES control statement is used by MONREPT to specify the maximum number of detail lines to appear on a report page.

MANDRIVE=

{*device_address*[,*device_type*]}

Description

The MANDRIVE control statement is used by MONREPT to flag manual drive addresses. Any address not matching will be treated as an ACS address unless it matches an RMT*n*DRIVE address.

Parameter

device_address specifies a three or four hexadecimal digit device address. An * can also be used in any digit place as a wildcard. The * will only match for that one digit.

device_type specifies the device type of the device(s). Valid values are TL for Timberline, RW for Redwood, VTD for virtual and MAG for Magstar.

MAN*n*DRIVE=

{*device_address*[,*device_type*]}

Description

The MAN*n*DRIVE control statement allows you to define manual addresses at remote locations.

Parameter

n is a number from 1 to 3.

device_address specifies a three or four hexadecimal digit device address. An *
can also be used in any digit place as a wildcard. The * will only match for that
one digit.

device_type specifies the device type of the device(s). Valid values are TL for
Timberline, RW for Redwood, VTD for virtual and MAG for Magstar.

MAXDR=

{*nn*}
{<u>99</u>}

Description
The MAXDR control statement is used by MONREPT to specify an arbitrary
maximum number of open data sets to be used for histogram reporting. Each
open data set (up to *nn* data sets) is represented on the histogram as an asterisk
(*). Each asterisk represents the number of open data sets at that interval. If
there are more open data sets than the specified *nn* value, all asterisks greater than
n are changed to a dash (-) as an eye catcher value.

Parameter
nn is a maximum number of open data sets to be used for histogram reporting.

MODE=

{SIMULATE}

Description
The MODE control statement is used by MONREPT to request an estimation of
the amount of time that could be saved if data sets were accessed on a
TimberLine device.

MONRECNUM=

{*nnn*[,*subtype*]}

Description
The MONRECNUM control statement specifies the SMF number to be used by
MONTAPE/MONREPT when data is collected via the SMF archive files, instead
of a sequential disk file.

Parameter
nnn is an unused user SMF number, usually between 200 and 255.

subtype specifies the SMF subtype number to use within the SMF records written
by MONTAPE.

RMT*n*DRIVE=

{*device_address*[,*device_type*]}

Description
The RMT*n*DRIVE control statement is used by MONREPT to define robotic addresses at remote locations.

Parameter
n is a number from 1 to 3.

device_address specifies a three or four hexadecimal digit device address. An * can also be used in any digit place as a wildcard. The * will only match for that one digit.

device_type specifies the device type of the device(s). Valid values are TL for Timberline, RW for Redwood, VTD for virtual and MAG for Magstar.

SAVEPCT=

{*pp*%,*cc*%,*dd*%}
{60%,60%,60%}

Description
The SAVEPCT control statement tells MONREPT what percent of the current pend, connect, and disconnect times should be treated as saved when doing a TimberLine savings simulation.

Parameters
pp% is the percent of current pend time to treat as saved.

cc% is the percent of current connect time to treat as saved.

dd% is the percent of current disconnect time to treat as saved.

Note: No savings is calculated for DISC time on remote drives.

Definitions
Pend time is the time accumulated because of device busy, control unit busy, or busy paths.

Connect time is the time to transfer the data blocks to the tape control unit.

Disconnect time is the unproductive time for tasks like rewind, buffer full on write, buffer empty on read, and channel adapter not being serviced. It can also be the result of transmitting data to a remote tape drive.

SCANINTERVAL=

{*nnn*}
{250}

Description
The SCANINTERVAL control statement specifies how frequently MONTAPE examines the TAPE UCBs for mount activity.

Parameters
nnn is the interval, in milliseconds, between scans of the TAPE UCBs. The maximum value allowed is 999999. Note that the smaller the value, the more accurate the mount details but also the more CPU MONTAPE will use.

SDATE=

{[*yy*]*yyddd*}
{*mm*/*dd*/[*yy*]*yy*}
{*mon*/*dd*/[*yy*]*yy*}
{*dd*/*mon*/[*yy*]*yy*}
{TODAY[+*nnn*]}
{TODAY[-*nnn*]}
{9999365}

Description
The SDATE control statement is used by both MONTAPE and MONREPT. MONTAPE uses the statement to tell the monitor what date to start monitoring. MONREPT uses the statement to select records that were created on or after this date.

In MONTAPE and MONREPT, the SDATE/STIME and EDATE/ETIME control statements are optional. For MONREPT, they should be used only if you want to report on a sub-set of the data collected by MONTAPE. By default, all records passed into the job stream are reported. This information is available as soon as the job begins.

Note that if SDATE and/or STIME is specified, then EDATE and/or ETIME must be specified, as MONTAPE and MONREPT will only allow an interval of 1500 days between the start and end dates if the start date is specified.

Parameters
The values for *yyyy, yy*, *mm*, and *dd* are numeric, with the following additional points:

- Add leading zeros where necessary to make up the field to the correct length.

- When a two-digit year is specified, the century is worked out as: If yy >= 50, then 1900 is assumed, otherwise 2000 is assumed.

- When the TODAY format is used, the maximum value of *nnn* is 630.

mon is alphabetic, for example, "JAN" for January.

SHIFT*n*=

{*hh.mm,hh.mm*[,PRINT][,NOPRINT]}

Description

The SHIFT*n* control statement is used by MONREPT to specify the starting and ending times for each shift. The end of one shift must match the beginning of the next shift. If you want the first two shifts only, specify the ending time of shift 2 as both the beginning and ending times of shift 3.

Parameters

n is the number of the shift: 1, 2, or 3.

hh.mm,hh.mm are the starting and ending times for each shift.

PRINT requests the printing of the DRIVEPLOT distribution reports for each individual shift.

NOPRINT suppresses the printing of the DRIVEPLOT distribution reports for each individual shift.

STIME=

{*hh.m.ss.th*}
{*+hh.mm.ss.th*}
{<u>00.00.00.00</u>}

Description

The STIME control statement is used by both MONTAPE and MONREPT. MONTAPE uses the statement to tell the monitor what time to start monitoring on the specified SDATE. MONREPT uses the statement to select records created on or after this time on the SDATE for reporting.

In MONTAPE and MONREPT, the SDATE/STIME and EDATE/ETIME control statements are optional. For MONREPT they should be used only if you want to report on a sub-set of the data collected by MONTAPE. By default, all records passed into the job stream are reported. This information is available as soon as the job begins.

Note that if SDATE and/or STIME is specified, then EDATE and/or ETIME must be specified as MONTAPE and MONREPT will only allow an interval of 1500 days between the start and end dates if the start date is specified.

Parameters

hh.mm.ss.th specifies the hour, minute, second, tenths and hundredth of a second to start monitoring or record selection on the specified SDATE. (In MONTAPE, you can use this parameter without specifying an SDATE, which causes the monitor to start at the next occurrence of the specified time.)

+*hh.mm.ss.th* specifies the number of hours, minutes, seconds, tenths and hundredths of a second that will be added to the current time to give the starting time on the specified SDATE. If the value specified would cause the time to wrap, i.e., to go over 24 hours, then the value specified by SDATE will be adjusted accordingly. This means that if you use this format of the STIME control statement, you should put the SDATE control statement before the STIME one. The maximum value that can be specified is 99.59.59.99.

TIMESYNC=

{+*hh.ss*}
{-*hh.ss*}

Description
The TIMESYNC control statement is used to adjust the reported times of one or more host images if they are running in different time zones and sharing tape drives.

Parameters
hh.ss specifies the amount of time to add or subtract from the recorded times before they are reported. If specified, *hh* is the only required value, *ss* is optional.

Chapter 4: MONREPT Reports

Overview

This chapter contains report samples and field descriptions for the reports produced by the MONREPT reporting program.

Tape Drive Mount Distribution (MONR043)

```
(C) COPYRIGHT    * * * * *    S T O R A G E    T E C H N O L O G Y    C O R P O R A T I O N    * * * * *
MONR043                              TAPE DRIVE MOUNT DISTRIBUTION          VER  6.02                                PAGE 001
FIRST ALLOCATION = 05.312 AT 14.03.14        PUT THE INSTALLATION NAME HERE               MONITOR END = 05.313 AT 07.03.13
START REPORTING = 85.001 AT 00.00.00                                                      END REPORTING = 05.313 AT 07.03.13
     MOUNT        NUM        ACCUM               NUM         ACCUM             TOTAL             ACCUM
    PENDING     SPECIFIC   SPECIFIC     %      SCRATCH     SCRATCH      %      MOUNTS    MOUNTS           %
    >10 MIN        8          8        1.7        2           2        0.2       10        10          0.7
    >8-10 MIN      2         10        2.1                    2                  2         12          0.8
    >6-8 MIN       4         14        3.0        6           8        0.8       10        22          1.6
    >5-6 MIN       1         15        3.2        2          10        1.1       3         25          1.8
    >4-5 MIN                                      2          12        1.3       2         27          1.9
    >3-4 MIN                                      4          16        1.7       4         31          2.2
    151-180 SEC    1         16        3.5        4          20        2.2       5         36          2.6
    121-150 SEC    6         22        4.8        5          25        2.7       11        47          3.4
    106-120 SEC                                   4          29        3.2       4         51          3.7
    91-105 SEC     1         23        5.0        11         40        4.4       12        63          4.6
    76-90 SEC      3         26        5.6        10         50        5.5       13        76          5.6
    61-75 SEC      7         33        7.2        17         67        7.4       24        100         7.3
    46-60 SEC      18        51        11.1       58        125        13.9      76        176         12.9
    31-45 SEC      48        99        21.6       123       248        27.6      171       347         25.6
    16-30 SEC      170       269       58.8       379       627        69.8      549       896         66.1
    11-15 SEC      169       438       95.8       259       886        98.6      428      1,324        97.7
    6-10 SEC       16        454       99.3       11        897        99.8      27       1,351        99.7
    1- 5 SEC       3         457       100.0      1         898        100.0     4        1,355        100.0

(C) COPYRIGHT    * * * * *    S T O R A G E    T E C H N O L O G Y    C O R P O R A T I O N    * * * * *
MONR043                              TAPE DRIVE MOUNT DISTRIBUTION          VER  6.02                                PAGE 002
FIRST ALLOCATION = 05.312 AT 14.03.14        PUT THE INSTALLATION NAME HERE               MONITOR END = 05.313 AT 07.03.13
START REPORTING = 85.001 AT 00.00.00                                                      END REPORTING = 05.313 AT 07.03.13
     MOUNT        NUM        ACCUM               NUM         ACCUM             TOTAL             ACCUM
    PENDING     SPECIFIC   SPECIFIC     %      SCRATCH     SCRATCH      %      MOUNTS    MOUNTS           %
    1- 5 SEC       3          3        0.6        1           1        0.1       4         4           0.2
    6-10 SEC       16        19        4.1        11         12        1.3       27        31          2.2
    11-15 SEC      169       188       41.1       259        271       30.1      428       459         33.8
    16-30 SEC      170       358       78.3       379        650       72.3      549      1,008        74.3
    31-45 SEC      48        406       88.8       123        773       86.0      171      1,179        87.0
    46-60 SEC      18        424       92.7       58         831       92.5      76       1,255        92.6
    61-75 SEC      7         431       94.3       17         848       94.4      24       1,279        94.3
    76-90 SEC      3         434       94.9       10         858       95.5      13       1,292        95.3
    91-105 SEC     1         435       95.1       11         869       96.7      12       1,304        96.2
    106-120 SEC                                   4          873       97.2      4        1,308        96.5
    121-150 SEC    6         441       96.4       5          878       97.7      11       1,319        97.3
    151-180 SEC    1         442       96.7       4          882       98.2      5        1,324        97.7
    >3-4 MIN                                      4          886       98.6      4        1,328        98.0
    >4-5 MIN                                      2          888       98.8      2        1,330        98.1
    >5-6 MIN       1         443       96.9       2          890       99.1      3        1,333        98.3
    >6-8 MIN       4         447       97.8       6          896       99.7      10       1,343        99.1
    >8-10 MIN      2         449       98.2                   896                2        1,345        99.2
    >10 MIN        8         457       100.0      2          898       100.0     10       1,355        100.0
```

The Tape Drive Mount Distribution report describes the mount pending times for all mounts regardless of device type.

MOUNT PENDING
The distribution range being reported.

NUM SPECIFIC

The number of specific mounts that were satisfied in this range of time values.

ACCUM SPECIFIC

The accumulated number of specific mounts that were satisfied in up to and including this range of time values.

ACCUM %

The accumulated percent of specific mounts that were satisfied in up to and including this range of time values.

NUM SCRATCH

The number of scratch mounts that were satisfied in this range of time values.

ACCUM SCRATCH

The accumulated number of scratch mounts that were satisfied in up to and including this range of time values.

ACCUM %

The accumulated percent of scratch mounts that were satisfied in up to and including this range of time values.

TOTAL MOUNTS

The total number of mounts that were satisfied in this range of time values.

ACCUM MOUNTS

The accumulated number of total mounts that were satisfied in up to and including this range of time values.

ACCUM %

The accumulated percent of total mounts that were satisfied in up to and including this range of time values.

Tape Drive Mount Statistics (MONR044)

```
(C) COPYRIGHT     * * * * *    S T O R A G E    T E C H N O L O G Y    C O R P O R A T I O N    * * * * *
MONR044                               TAPE DRIVE MOUNT STATISTICS              VER 6.02                              PAGE 002
CUA  ALLOC   ALLOC   MOUNT                                         M   UCB   DRIVE  MOUNT   PEND    CONN    DISC   WAIT  BUSY  SAVE
ADDR  DATE    TIME  REQUEST  SID JOBNAME  STEPNAME PROCSTEP VOLSER T   SIO   ALLOC  PEND    TIME    TIME    TIME   W/IO  PCT   W/TL
                                                                      - - -    S    E   C    O    N   D  S - - -           SECS
2A3 05.313 00:29:28 00:32:06 MVSA TLTMS280 ACSLABEL         105310 V   16    188   28D   .00     .02    .00           2.0       4
2A3 05.313 00:32:36 00:39:01 MVSA TLTMS280 ACSLABEL         133050 V   15    417   29D   .61     .02    .06          23.5       5
2A3 05.313          00:40:20 MVSA BSMVIN00 BSMVIN00 S030    126263 P  4653   604    83  16.54   49.22   53.09   103  22.8      67
2A3 05.313          00:54:22 MVSA MV1SIFT0 S020     SAS     126263 V  2661   103    19   3.85   46.13   12.26    62  74.1      42
2A3   HOUR    4 MOUNTS     4 ALLOCATIONS    AVG ALLOC TIME=    328 SEC     MPEND=    2:39  AVG MPEND=     40 SAVED HMS= PARALLEL ?
2A3 05.313          01:02:05 MVSA IDLP1A10 S010            115290 V   46    104    45   .07     .06    2.64     2   4.7      27
2A3 05.313          01:03:49 MVSA IDLP1A10 S010            126433 V   20     44    40   .02     .39    1.62     2  51.0       5
2A3 05.313 01:04:39 01:04:40 MVSA IDLP1A40 IDLP1A40 S020   126816 V  549     70    44  1.43    9.67    9.28    20  81.5      20
2A3 05.313          01:06:22 MVSA IDSP1D00 IDSP1D00 STEP010 126816 V 1292    47    19  1.47   10.46   12.00    23  85.5      21
2A3 05.313 01:07:51 01:08:09 MVSA MKIBKP00 BACKUP    DMS   128112 P  346     80   23D  3.86    3.12   14.10    21  54.0      15
2A3 05.313          01:10:45 MVSA IDJP1A20 S010            105045 V   56     80    41   .01     .05    1.44     1   3.8      29
2A3 05.313 01:12:05 01:12:06 MVSA IDJP1A20 S010            105256 V   60    103    63   .05   26.92    2.03    29  74.4      26
2A3 05.313 01:13:48 01:13:49 MVSA IDJP1A20 S010            122837 V   66     97    53   .02   30.48    1.64    32  74.7      27
2A3 05.313 01:15:25 01:15:26 MVSA IDJP1A20 S010            131582 V   56    100    65   .02   23.69    1.84    25  75.2      23
2A3 05.313 01:17:05 01:17:06 MVSA IDJP1A20 S010            127388 V   59     77    40   .03   25.89    1.71    27  76.8      23
2A3 05.313          01:21:54 MVSA MV6BKP10 BKUP900  MICS   129726 V  317    194    92  5.43    1.31   22.31    27  28.4      19
2A3 05.313          01:45:29 MVSA JZWCOA00 JZWCOA00 S030   123139 P   50     43    22  4.02     .08   13.14    16  82.2      12
2A3 05.313          01:56:29 MVSA MKNPB330 MKNPB330 S050   125168 P   68     48    20  4.20     .21   14.76    19  68.5      15
2A3 05.313          01:57:39 MVSA RMSIRSM0 RMSIRSM0 S010   102818 P  453    217    42   .52   50.62   21.43    64  41.4      41
2A3   HOUR   14 MOUNTS    14 ALLOCATIONS    AVG ALLOC TIME=     93 SEC     MPEND=   10:09  AVG MPEND=     44 SAVED HMS= PARALLEL ?
2A3 05.313          02:01:18 MVSA RMSIRSM0 RMSIRSM0 S020   126352 P  297    447    84  3.13  163.74  106.65   273  75.3     174
2A3 05.313          02:09:23 MVSA RMTIRSM0 RMTIRSM0 S030   120309 P  163    247    28  4.35   73.19   97.55   172  79.9     106
2A3 05.313 02:14:33 02:14:51 MVSA FFPBKP30 S010    DMS     120911 P 1514    305   19D  1.96   15.62   49.14    66  24.9      42
2A3 05.313          02:30:16 MVSA MKRPR810 MKRPR810 S010   123819 P  366    601   357   .50  204.24   16.28   216  90.5     131
2A3 05.313 02:41:38 02:41:43 MVSA FFPBKP40 S010    DMS     113276 P 14015   408   54D 37.86  146.22   89.67   236  78.4     150
2A3 05.313 02:50:24 02:50:32 MVSA RMJGL680 S020    DMS     131772 P  5996   162   21D 17.55   62.57   30.86   106  83.4      69
2A3 05.313          02:58:42 MVSA MKTORDX0 MKTORDX0 S050   105382 P   53     67    24   .18   16.69   10.20    27  62.9      19
2A3   HOUR    7 MOUNTS     7 ALLOCATIONS    AVG ALLOC TIME=    320 SEC     MPEND=    9:47  AVG MPEND=     84 SAVED HMS= PARALLEL ?
2A3 05.313 03:00:42 03:00:49 MVSA FFPBKP50 S010    DMS     111660 P 28211   411   20D  5.46  290.78   16.04   272  81.3     165
2A3 05.313          03:13:21 MVSA DEODSAV0 S020            125718 V   39     52    19   .03     .04    1.53     1   4.8      21
2A3 05.313          03:16:21 MVSA IDSP3D00 IDSP3D00 S010   110756 V 1159     40    20  2.31    9.17    4.97    16  82.3      16
2A3 05.313 03:26:21 03:26:22 MVSA MKRPR810 MKRPR810 S030   113307 P  397    657   434   .20  199.32    9.73   203  94.2     124
2A3 05.313 03:37:19          MVSA MKRPR810 MKRPR810 S040   113307 V 11193   419         56.77  211.62  125.92  394  94.1     252
2A3 05.313 03:44:20          MVSA MKRPR810 MKRPR810 S050          V    3      6         .00     .00    .00           .0       0
2A3 05.313 03:47:09 03:47:30 MVSA RMERPT10 RMERPT10 S020   113707 V  7685   469   21D 25.54  174.14   58.80   248  60.5     155
2A3 05.313 03:55:00          MVSA RMERPT10 RMERPT10 S030   113707 V  201    713         .01     .06    1.53     1    .2     175
2A3   HOUR    5 MOUNTS     8 ALLOCATIONS    AVG ALLOC TIME=    346 SEC     MPEND=    8:34  AVG MPEND=    103 SAVED HMS= PARALLEL ?
2A3 05.313 04:06:54          MVSA RMERPT10 RMERPT10 S040          V    3    413         .00     .00    .00           .0       0
2A3 05.313 04:13:48          MVSA RMERPT10 RMERPT10 S050          V    3    322         .00     .00    .00           .0       0
2A3 05.313 04:19:12 04:26:05 MVSA RMERPT10 RMERPT10 S060   123225 P  534    618   18D   .22  163.90   11.77   173  94.0     106
     BLANK ALLOCATION TIME MEANS SAME AS MOUNT REQUEST TIME.  A 'D' AFTER MPEND INDICATES DEFERRED MOUNTING WAS SEEN.
     MT=MOUNT TYPE. V=VOLSER MOUNT REQUEST, P=PRIVATE (SCRATCH) MOUNT REQUEST.  VALUES ARE REPORTED IN SECONDS (OR HH:MM:SS).
     AN * AFTER MOUNT PENDING INDICATES THAT THE PREVIOUS VOLUMES REWIND TIME IS INCLUDED IN THIS VOLUMES MOUNT PENDING TIME.
  ***NOTE: SAVE W/TL BASED ON ASSUMED % REDUCTION OF PEND, CONN, AND DISC TIMES.  VALUES USED FOR THIS RUN WERE (80%,60%,60%).
     THE OVER-ALL HARDWARE SAVINGS PERCENT IS APPLIED TO THE WAIT W/IO VALUE TO GET THE ACTUAL JOB ELAPSED TIME SAVINGS.
```

The Tape Drive Mount Statistics report is the detail report of mount activity. It is in user-requested sequence and shows all of the detail records that met the requirements specified with the DETAIL control statement.

CUA ADDR

The device address where the allocation occurred. If the MONREPT sort sequence is not JOB, the column heading will have the CUA value replaced by the device type that is being reported on this page (i.e., 3420, 3480, 348R, 348S, 3490, 349S, 349R, or LSM ID).

ALLOC DATE

The date on which allocation occurred.

ALLOC TIME

The time at which allocation occurred. This field will be blank if it is equal to the mount request time. A difference in the values between allocation time and mount request time could indicate DEFER mounting or allocation recovery where "HOLD" was specified.

MOUNT REQUEST

The time at which the mount message was issued.

Note: The word "PARTIAL" on a detail line means that the monitor either started or stopped during this allocation and did not record the entire volume allocation.

SID

System ID that the mount occurred on.

DEVT

The device type of the assigned unit. Current values could include 3420, 3480, 348S (3480 in ACL mode), 348R (3480 attached to ACS), 3490, 349S (3490 in ACL mode), and 349R (3490 attached to ACS). The same device address could appear in both 3480/348S or 3490/349S indicating that the drive was used in both ACL mode and manual mode. This column header appears instead of SID if the MONREPT sort sequence is JOB.

JOBNAME

The jobname of the job that caused the allocation.

STEPNAME

The stepname within the job that caused the allocation.

PROCSTEP

The stepname that executed a PROC within the job that caused the allocation.

VOLSER

The volume serial number that was requested for a specific mount or the serial number of the volume that was mounted as the result of a scratch request.

M T

Mount type. "V" is a specific volume request and "P" is a private or scratch mount request.

UCB SIO

The SIO (Start IO) count extracted from the UCB indicating the number of SIOs that were done to the volume during the monitor interval.

DRIVE ALLOC

The number of seconds that the volume was allocated to this drive during the monitor interval.

MOUNT PEND

The number of seconds that the mount request was outstanding.

PEND TIME

Device pend time in seconds as obtained from the CMB. Pend time represents time waiting to connect to control unit or channel.

CONN TIME

Device connect time in seconds as obtained from the Channel Measurement Block (CMB). Connect time represents data transfer time.

DISC TIME

Device disconnect time in seconds as obtained from the CMB. Disconnect time represents tape positioning operations like FSF (forward space file) or search. It could also be from transmitting data to a remote drive.

IDLE TIME

A calculated value (reported only if MODE=SIMULATE was not used) representing the number of seconds that the tape drive was not being mounted or attempting to transfer data.

WAIT W/IO

The number of seconds that the program was in a wait state while there was an outstanding I/O on the tape drive.

BUSY PCT

Calculated percent of time that the device was trying to transfer data.

BUSY = (PEND + CONN + DISC) / (ALLOC - MPEND)

SAVE W/TL

Calculated number of seconds that could be saved if processed on a TimberLine device. The SAVEPCT values are applied to PEND, CONN, and DISC. The total drive savings percent is then applied to the WAIT W/IO value to determine potential program savings. If the program is not waiting for tape I/O, a faster drive will not make the job run any faster.

Note: The word "PARALLEL" on a total line when using MODE=SIMULATE means that the sum of all tape PEND, CONN, and DISC for the step is greater than the step's elapsed time. This could only happen if there was parallel processing. Therefore, we can not accurately calculate saving with TimberLine.

Tape Drive Allocation without Mount (MONR046)

```
(C) COPYRIGHT    * * * * *   S T O R A G E   T E C H N O L O G Y   C O R P O R A T I O N   * * * * *
MONR046                      TAPE DRIVE ALLOCATION WITHOUT MOUNT   VER 6.02                    PAGE 001
CUA  ALLOC   ALLOC   MOUNT                                         M  UCB  DRIVE  MOUNT  PEND  CONN  DISC  WAIT  BUSY  SAVE
ADDR DATE    TIME    REQUEST  SID JOBNAME  STEPNAME PROCSTEP VOLSER T  SIO  ALLOC  PEND   TIME  TIME  TIME  W/IO  PCT   W/TL
                                                                      - - - -     S  E   C   O   N   D   S   - - -       SECS
2A3 05.313 03:44:20           MVSA MKRPR810 MKRPR810 S050            V   3     6          .00   .00   .00        .0      0
2A3 05.313 04:06:54           MVSA RMERPT10 RMERPT10 S040            V   3   413          .00   .00   .00        .0      0
2A3 05.313 04:13:48           MVSA RMERPT10 RMERPT10 S050            V   3   322          .00   .00   .00        .0      0
2A5 05.313 03:07:20           MVSA MKRPR810 MKRPR810 S020            P   3   712          .00   .00   .00        .0      0
2A8 05.313 04:41:16           MVSA RMERPT10 RMERPT10 S090            V   3   367          .00   .00   .00        .0      0
2A9 05.313 03:26:21           MVSA MKRPR810 MKRPR810 S030            P   3   657          .00   .00   .00        .0      0
2A9 05.313 03:44:20           MVSA MKRPR810 MKRPR810 S050            V   3     6          .00   .00   .00        .0      0
2AA 05.313 02:30:16           MVSA MKRPR810 MKRPR810 S010            P   3   601          .00   .00   .00        .0      0
2AA 05.313 02:50:24           MVSA DEODSAV0 S020            125718   V   3   580          .00   .00   .00        .0      0
2AA 05.313 03:44:20           MVSA MKRPR810 MKRPR810 S050            V   3     6          .00   .00   .00        .0      0
2AA 05.313 04:29:31           MVSA RMERPT10 RMERPT10 S070            V   3   323          .00   .00   .00        .0      0
2B0 05.312 19:32:46           MVSA OVARCHD0 S240     DMS             P   3   216          .00   .00   .00        .0      0
2B3 05.312 17:38:13           MVSA MAINT14T S010     ARCHIVE         P   3     7          .00   .00   .00        .0      0
2B3 05.312 17:59:41           MVSA OVARCHD0 S130     DMS             P   3   164          .00   .00   .00        .0      0
2B3 05.312 18:02:32           MVSA OVARCHD0 S140     DMS             P   3   219          .00   .00   .00        .0      0
2B3 05.312 23:34:53           MVSA IDJP2D10 S030                     V   4     1          .00   .00   .00        .0      0
2B6 05.312 14:51:08           MVSA T620250I PYADJ000 S020   124453   V   4    23          .00   .00   .00        .0      0
2B6 05.312 19:24:37           MVSA OVARCHD0 S220     DMS             P   3   247          .00   .00   .00        .0      0
2B7 05.312 15:42:44           MVSA SSNCM330 DMS      DMS             P   3     9          .00   .00   .00        .0      0
2B7 05.312 18:00:38           MVSA RMNRPT00 RMN95100 S000            V   2     1          .00   .00   .00        .0      0
2B7 05.312 21:08:40           MVSA IDLT1D10 S020                     V   2     1          .00   .00   .00        .0      0
2B7 05.312 22:23:50           MVSA RMETXM20 RMETXM20 S999            V   3     6          .00   .00   .00        .0      0
2B7 05.312 22:40:07           MVSA TADLY500 TADLY500 S998   127836   V   2     1          .00   .00   .00        .0      0
2B8 05.312 14:06:37           MVSA SSNCM370 DMS      DMS             P   3    12          .00   .00   .00        .0      0
2B8 05.312 17:31:24           MVSA OVARCHD0 S020     DMS             P   3   152          .00   .00   .00        .0      0
2B8 05.312 17:34:01           MVSA OVARCHD0 S030     DMS             P   3   126          .00   .00   .00        .0      0
2B9 05.312 19:28:49           MVSA OVARCHD0 S230     DMS             P   3   232          .00   .00   .00        .0      0
2BA 05.312 19:36:28           MVSA OVARCHD0 S250     DMS             P   3   168          .00   .00   .00        .0      0
2BA 05.312 19:47:55           MVSA FF204010 FF204010 S140            V   3    25          .00   .00   .00        .0      0
2BB 05.312 18:48:41           MVSA RMECXTR0 RMECXTR0 S050            V   3     1          .00   .00   .00        .0      0
2BB 05.312 22:23:50           MVSA RMETXM20 RMETXM20 S999            V   3     6          .00   .00   .00        .0      0
2D6 05.312 20:01:35           MVSA CZBKPDB0 DMS      DMS             P   2   184          .00   .00   .00        .0      0
2DA 05.312 15:42:44           MVSA SSNCM330 DMS      DMS             P   2     9          .00   .00   .00        .0      0
2DB 05.312 14:06:37           MVSA SSNCM370 DMS      DMS             P   2    12          .00   .00   .00        .0      0
2E0 05.312 17:43:33           MVSA RMNRPT00 RMN95100 S000            V   3     1          .00   .00   .00        .0      0
2E0 05.313 00:11:10           MVSA RMIEXT00 RMIEXT00 S020            V   3    41          .00   .00   .00        .0      0
2E1 05.312 17:40:10           MVSA OVARCHD0 S050     DMS             P   3   125          .00   .00   .00        .0      0
2E1 05.312 17:53:51           MVSA OVARCHD0 S100     DMS             P   3   105          .00   .00   .00        .0      0
2E1 05.312 17:55:41           MVSA OVARCHD0 S110     DMS             P   3   118          .00   .00   .00        .0      0
2E1 05.312 17:57:43           MVSA OVARCHD0 S120     DMS             P   3   113          .00   .00   .00        .0      0
2E1 05.312 18:06:17           MVSA OVARCHD0 S150     DMS             P   3   217          .00   .00   .00        .0      0
2E1 05.312 20:01:35           MVSA CZBKPDB0 DMS      DMS             P   3   184          .00   .00   .00        .0      0
2E2 05.312 17:52:08           MVSA OVARCHD0 S090     DMS             P   3    99          .00   .00   .00        .0      0
2E2 05.312 18:48:41           MVSA RMECXTR0 RMECXTR0 S050            V   3     1          .00   .00   .00        .0      0
2E5 05.312 22:39:12           MVSA IDJQ3D10 S020                     V   2     1          .00   .00   .00        .0      0
```

The Tape Drive Allocation without Mount report is the detail report of mount activity that was never opened by the application program. It is in sequence by device type and shows all of the detail records that did not have mount pending. The report is only produced if DETAIL=M is requested since these records would already be in the report produced by DETAIL=A.

The field descriptions for the Tape Drive Allocation without Mount report are the same as those for the Tape Drive Mount Statistics report, and are listed on the previous three pages.

Tape Drive Allocation Summary of MONR044 Detail (MONR047)

```
(C) COPYRIGHT     * * * * *    S T O R A G E     T E C H N O L O G Y     C O R P O R A T I O N     * * * * *
MONR047                                            TAPE DRIVE ALLOCATION SUMMARY OF MONR044 DETAIL       VER 6.02                              PAGE 002
FIRST ALLOCATION = 05.312 AT 14.03.14                        PUT THE INSTALLATION NAME HERE                       MONITOR END = 05.313 AT 07.03.13
 START REPORTING = 85.001 AT 00.00.00                                                                            END REPORTING = 05.313 AT 07.03.13

DEVT     NUM     %TIME_ALLOC          1    1    2    2    3    3    4    4    5    5    6    6    7    7    8    8    9    9    0
ADDR     ALC     IN_RPT_INTVL    1...5....0....5....0....5....0....5....0....5....0....5....0....5....0....5....0....5....0
2A3      47        20.6          AAAAAAAAAAAAAAAAAAAAA
2A5      26        17.8          AAAAAAAAAAAAAAAAAA
2A6      17        13.5          AAAAAAAAAAAAAA
2A7      24        14.3          AAAAAAAAAAAAAA
2A8      30        23.4          AAAAAAAAAAAAAAAAAAAAAAAA
2A9      31        22.8          AAAAAAAAAAAAAAAAAAAAAAA
2AA      33        23.7          AAAAAAAAAAAAAAAAAAAAAAAA
2AB      18        26.0          AAAAAAAAAAAAAAAAAAAAAAAAAAA
2B0      42        19.4          AAAAAAAAAAAAAAAAAAAA
2B1      37        19.9          AAAAAAAAAAAAAAAAAAAA
2B3      48        27.1          AAAAAAAAAAAAAAAAAAAAAAAAAAAA
2B4      53        39.1          AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
2B5      60        37.8          AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
2B6      62        34.4          AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
2B7      86        25.9          AAAAAAAAAAAAAAAAAAAAAAAAAA
2B8      31        17.9          AAAAAAAAAAAAAAAAAA
2B9      35        19.9          AAAAAAAAAAAAAAAAAAAA
2BA      36        29.9          AAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
2BB      30        23.5          AAAAAAAAAAAAAAAAAAAAAAAA
                P=PEND%, C=CONN%, D=DISC%, A=ALOC%
```

The Tape Drive Allocation Summary of MONR044 Detail report shows the percent of time during the monitored interval that the drive was allocated. This report is only produced if the sort sequence specified in the MONREPT job is CUA.

DEVT ADDR

The column heading will have the DEVT value replaced by the device type that is being reported on this page (i.e., 3420, 3480, 348R, 348S, 3490, 349S, 349R, or LSM ID). The data in this column will be the address of the device being reported.

NUM ALC

The number of different allocations that were seen on this device.

%TIME_ALLOC IN_RPT_INTVL

The percent of the reporting interval time that the drive was allocated.

1...5..

The bar graph representation of the percent of the interval time that the drive was allocated.

Tape Drive Mount Summary (MONR045)

DEVT ADDR	MOUNT DATE/HR	HH.MM - HH.MM NUM SPCFC	AVG MPND	NUM SCRTCH	AVG MPND	HH.MM - HH.MM NUM SPCFC	AVG MPND	NUM SCRTCH	AVG MPND	HH.MM - HH.MM NUM SPCFC	AVG MPND	NUM SCRTCH	AVG MPND	00.00 - 24.00 NUM SPCFC	AVG MPND	NUM SCRTCH	AVG MPND	MOUNT DATE
2A3	05.313/00									3	25	1	83	3	25	1	83	05.313
2A3	05.313/01									9	46	5	40	9	46	5	40	05.313
2A3	05.313/02											7	84			7	84	05.313
2A3	05.313/03									2	20	3	158	2	20	3	158	05.313
2A3	05.313/04											2	20			2	20	05.313
2A3	05.313/05											5	44			5	44	05.313
2A3	05.313/06											2	20			2	20	05.313
2A3	TOTAL									14	38	25	66	14	38	25	66	TOTAL
2A5	05.313/00											1	19			1	19	05.313
2A5	05.313/01											2	42			2	42	05.313
2A5	05.313/02									6	49	4	27	6	49	4	27	05.313
2A5	05.313/03											3	33			3	33	05.313
2A5	05.313/04											3	30			3	30	05.313
2A5	05.313/05											2	59			2	59	05.313
2A5	05.313/06									3	28			3	28			05.313
2A5	TOTAL									9	42	15	34	9	42	15	34	TOTAL
2A6	05.313/00											1	21			1	21	05.313
2A6	05.313/01									1	22			1	22			05.313
2A6	05.313/02									3	30	1	30	3	30	1	30	05.313
2A6	05.313/03											4	38			4	38	05.313
2A6	05.313/04											3	32			3	32	05.313
2A6	05.313/05									3	39	1	30	3	39	1	30	05.313
2A6	TOTAL									7	33	10	33	7	33	10	33	TOTAL
2A7	05.313/00									3	28	2	47	3	28	2	47	05.313
2A7	05.313/01									1	1218			1	1218			05.313
2A7	05.313/02											1	23			1	23	05.313
2A7	05.313/03											2	65			2	65	05.313
2A7	05.313/04											3	44			3	44	05.313
2A7	05.313/05									8	33			8	33			05.313
2A7	05.313/06									3	24	1	33	3	24	1	33	05.313
2A7	TOTAL									15	109	9	46	15	109	9	46	TOTAL
2A8	05.313/00											1	22			1	22	05.313
2A8	05.313/01											2	53			2	53	05.313
2A8	05.313/02											4	65			4	65	05.313
2A8	05.313/03											5	30			5	30	05.313
2A8	05.313/04											3	33			3	33	05.313
2A8	05.313/05											6	44			6	44	05.313
2A8	05.313/06											3	24			3	24	05.313
2A8	TOTAL											24	40			24	40	TOTAL
2A9	05.313/00									1	463	2	40	1	463	2	40	05.313
2A9	05.313/01											2	40			2	40	05.313
2A9	05.313/02											4	38			4	38	05.313
2A9	05.313/03									3	27	2	28	3	27	2	28	05.313

MONR045 — TAPE DRIVE MOUNT SUMMARY — VER 6.02 — PAGE 002

The Tape Drive Mount Summary report shows the number of specific and scratch mounts by shift, and the average mount pending for each drive address. This report is only produced if the sort sequence specified in the MONREPT job is CUA or TIME.

DEVT ADDR

The column heading will have the DEVT value replaced by the device type that is being reported on this page (i.e., 3420, 3480, 348R, 348S, 3490, 349S, 349R, or LSM ID). The data in this column will be the address of the device being reported.

MOUNT DATE

The date on which the reported activity occurred.

HH.MM - HH.MM

The shift start and end times as defined in the SHIFT*n* control statement or the default times.

NUM SPCFC

The number of specific mounts that occurred for this drive/date.

AVG MPND

The average mount pending for this drive/date/category.

NUM SCRTCH

The number of scratch mounts that occurred for this drive/date.

AVG MPND

The average mount pending for this drive/date/category.

Mount Requests by Hour of the Day

```
(C) COPYRIGHT     * * * * *   S T O R A G E     T E C H N O L O G Y     C O R P O R A T I O N     * * * * *
HRLYRPT                            ROBOTIC MOUNT REQUESTS BY HOUR OF DAY        VER 6.02                                  PAGE 001
  MOUNT                             PUT THE INSTALLATION NAME HERE                                                         MOUNT
   DATE   00  01  02  03  04  05  06  07  08  09  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24 TOTAL    MAX   DAY
08NOV05                                                         21  36  16  68  50  61  35  80  43  30       440     80 TUESDA
 05.312                                                          5%  8%  4% 15% 11% 14%  8% 18% 10%  7%              HRLY%
   INPUT                                                         10  31   8  28   6  14  18  16  12  14       157     31 HOUR 15
  OUTPUT                                                         11   5   8  40  44  47  17  64  31  16       283     64 HOUR 21
09NOV05   41  33  40  33  30  42  16   4                                                                     239     42 WEDNES
 05.313   17% 14% 17% 14% 13% 18%  7%  2%                                                                            HRLY%
   INPUT  17  15  10   8      11   6   4                                                                      71     17 HOUR 00
  OUTPUT  24  18  30  25  30  31  10                                                                         168     31 HOUR 05

(C) COPYRIGHT     * * * * *   S T O R A G E     T E C H N O L O G Y     C O R P O R A T I O N     * * * * *
HRLYRPT                            ROBOTIC MOUNT REQUESTS BY HOUR OF DAY        VER 6.02                                  PAGE 002
  MOUNT                             PUT THE INSTALLATION NAME HERE                                                         MOUNT
   DATE   00  01  02  03  04  05  06  07  08  09  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24 TOTAL    MAX   DAY
WEEKDAY                                                                                                              FRIDAY
 TOTALS                                                                                                              HRLY%
   INPUT                                                                                                             HOUR
  OUTPUT                                                                                                             HOUR
WEEKDAY                                                                                                              SATURD
 TOTALS                                                                                                              HRLY%
   INPUT                                                                                                             HOUR
  OUTPUT                                                                                                             HOUR
WEEKDAY                                                                                                              SUNDAY
 TOTALS                                                                                                              HRLY%
   INPUT                                                                                                             HOUR
  OUTPUT                                                                                                             HOUR
WEEKDAY                                                                                                              MONDAY
 TOTALS                                                                                                              HRLY%
   INPUT                                                                                                             HOUR
  OUTPUT                                                                                                             HOUR
WEEKDAY                                                          21  36  16  68  50  61  35  80  43  30       440     80 TUESDA
 TOTALS                                                           5%  8%  4% 15% 11% 14%  8% 18% 10%  7%              HRLY%
   INPUT                                                         10  31   8  28   6  14  18  16  12  14       157     31 HOUR 15
  OUTPUT                                                         11   5   8  40  44  47  17  64  31  16       283     64 HOUR 21
WEEKDAY   41  33  40  33  30  42  16   4                                                                     239     42 WEDNES
 TOTALS   17% 14% 17% 14% 13% 18%  7%  2%                                                                            HRLY%
   INPUT  17  15  10   8      11   6   4                                                                      71     17 HOUR 00
  OUTPUT  24  18  30  25  30  31  10                                                                         168     31 HOUR 05
WEEKDAY                                                                                                              THURSD
 TOTALS                                                                                                              HRLY%
   INPUT                                                                                                             HOUR
  OUTPUT                                                                                                             HOUR
WEEKDAY   41  33  40  33  30  42  16   4                         21  36  16  68  50  61  35  80  43  30       679     80 TOTAL
 TOTALS    6%  5%  6%  5%  4%  6%  2%  1%                         3%  5%  2% 10%  7%  9%  5% 12%  6%  4%              HRLY%
   INPUT  17  15  10   8      11   6   4                         10  31   8  28   6  14  18  16  12  14       228     31 HOUR 15
  OUTPUT  24  18  30  25  30  31  10                             11   5   8  40  44  47  17  64  31  16       451     64 HOUR 21

(C) COPYRIGHT     * * * * *   S T O R A G E     T E C H N O L O G Y     C O R P O R A T I O N     * * * * *
HRLYRPT                            DISTRIBUTION OF MOUNTS BY HOUR OF DAY        VER 6.02                                  PAGE 003
MOUNT RATE       NUMBER OF HOURS
   RANGE      WITH THIS MOUNT RATE        ACCUM %
   0-   0              30                   62.5%
   1-  25               4                   70.8%
  26-  50              11                   93.7%
  51-  75               2                   97.9%
  76- 100               1                  100.0%
```

On the Mount Requests by Hour of Day report, the hourly numbers are printed so that the column headings are shifted one position to the right. This is so the hourly numbers can be interpreted as occurring between the hours of *n* and *n+1*. Each day shows hourly totals, which are then separated into specific and scratch mounts per hour. The individual

hours'percent of the total days activity is also shown. Totals for the day are given, and the one hour during the day that had the peak activity is also reported.

After the individual days are reported, there is a page of WEEKDAY totals followed by a page of WEEKDAY averages in the same format as the daily pages. There is also a distribution page that shows the number of hours that had a given mount rate.

This report is only produced if HOURLYRPT=YES is specified in the MONREPT control statements.

DRIVEPLOT Histogram

```
DATE: 05.314 (C) COPYRIGHT  S T O R A G E  T E C H N O L O G Y  T A P E  D R I V E  U S A G E  A N A L Y S I S          PAGE  17
                                           PUT THE INSTALLATION NAME HERE
DRIVEPLOT 3490                        H I S T O G R A M       LOCAL ACS ACTIVITY                          VERSION 6.02
  DATE  HHMM ALOC    OVR    1...5...10...15...20...25...30...35...40...45...50...55...60...65...70...75...80...85...90...95..100
 05313  0220   9          *********
 05313  0221   6          ******
 05313  0222   6          ******
 05313  0223   6          ******
 05313  0224   6          ******
 05313  0225   6          ******
 05313  0226   6          ******
 05313  0227   4          ****
 05313  0228   4          ****
 05313  0229   4          ****
 05313  0230   3          ***
 05313  0231   6          ******
 05313  0232   6          ******
 05313  0233   5          *****
 05313  0234   6          ******
 05313  0235   6          ******
 05313  0236   5          *****
 05313  0237   5          *****
 05313  0238   5          *****
 05313  0239   6          ******
 05313  0240   7          *******
 05313  0241   5          *****
 05313  0242   7          *******
 05313  0243   7          *******
 05313  0244   6          ******
 05313  0245   6          ******
 05313  0246   6          ******
 05313  0247   6          ******
 05313  0248   8          ********
 05313  0249   5          *****
 05313  0250   5          *****
 05313  0251   7          *******
 05313  0252   7          *******
 05313  0253   7          *******
 05313  0254   6          ******
 05313  0255   5          *****
 05313  0256   5          *****
 05313  0257   5          *****
 05313  0258   4          ****
 05313  0259   5          *****
 05313  0300   4          ****
 05313  0301   4          ****
 05313  0302   4          ****
 05313  0303   4          ****
 05313  0304   4          ****
 05313  0305   4          ****
                          * = OPEN TAPE FILES     - = DRIVES OVER MAX VALUE SPECIFIED IN CONTROL CARDS
```

The Histogram report shows the number of allocated tape data sets at user-defined reporting intervals (INCR=*nn*). The report shows the number allocated at exactly that interval, *not* the maximum number that were allocated during the period between intervals. This report is only produced if HISTOGRAM=YES is specified in the MONREPT control statements.

DATE HHMM
The date and time of the reported interval.

ALOC
>The number of allocated tape data sets as calculated from analyzing the time stamps of the MONTAPE records.

OVR
>The number of allocated data sets that exceeds the MAXDR=*nn* control statement value. The MAXDR value is user defined and is not necessarily equal to the number of drives available.

1...5..
>Each asterisk represents the number of allocated data sets at that interval. If there are more allocated data sets than the MAXDR=*n* value, all asterisks greater than *n* are changed to "-" (dash) as an eye catcher value.

DRIVEPLOT Distribution

```
DATE: 05.314 (C) COPYRIGHT  S T O R A G E   T E C H N O L O G Y   T A P E   D R I V E   U S A G E   A N A L Y S I S          PAGE   1
                                      PUT THE INSTALLATION NAME HERE
DRIVEPLOT 3490                24HOUR            DISTRIBUTION REPORT    LOCAL ACS ACTIVITY              VERSION 6.02
             NUMBER OF
   DRIVES    INCR= OCCURANCES    PERCENT      CUM %          (N)
     0             50              4.9         4.9            0
     1            126             12.3        17.2            1
     2            115             11.2        28.5            2
     3            145             14.2        42.7            3
     4            111             10.8        53.6            4
     5            103             10.0        63.7            5
     6             88              8.6        72.3            6
     7             82              8.0        80.3            7
     8             67              6.5        86.9            8
     9             76              7.4        94.4            9
    10             39              3.8        98.2           10
    11             17              1.6        99.9           11
    12              1               .0       100.0           12
IF MORE DRIVES ARE REPORTED THAN ARE PHYSICALLY
AVAILABLE, THEN EITHER MODE=ALLOCTIME WAS USED
OR SOME SMF 04 RECORDS DOING DYNAMIC ALLOCATION
NEED TO BE REMOVED USING EXCPGM= CONTROL CARDS
OR TOD CLOCKS ARE OFF IN MULTI-HOST ENVIRONMENT.
```

The Distribution report shows a distribution of the number of drives used by allocated data sets and for how many intervals that number was in use. This report is available on a shift basis if the PRINT option is used on the corresponding SHIFT control statement.

DRIVES
>This field represents the number of drives allocated to tape data sets.

NUMBER SAMPLES
>The number of intervals that had this number of drives allocated.

PERCENT
>The percent of the total intervals that this allocated number represents.

CUM %
>The cumulative percent of intervals using the number of drives. For a given line on the report, *nn*% of the time *n* or fewer drives were allocated.

DRIVEPLOT Summary

```
DATE: 05.314 (C) COPYRIGHT  S T O R A G E  T E C H N O L O G Y  T A P E  D R I V E  U S A G E  A N A L Y S I S        PAGE    1
                                        PUT THE INSTALLATION NAME HERE
DRIVEPLOT 3490                          S U M M A R Y         LOCAL ACS ACTIVITY                      VERSION 6.02
*****************************************        *       ALLOC INTVL         ALLOCATIONS      ACCUM_____%
*                                       *
*    START DATE-TIME...05.312-14:04     *         >0-2 MINS                336        336      45.0
*                                       *
*    END   DATE-TIME...05.313-07:03     *         >2-5 MINS                166        502      67.2
*                                       *
*    SAMPLE INTERVAL (MIN) .......1      *         >5-10 MINS               126        628      84.1
*                                       *
*    NUMBER OF SAMPLES........1020       *        >10-15 MINS                37        665      89.1
*                                       *
*         SHIFT STATISTICS               *        >15-20 MINS                29        694      93.0
*                                       *
*    08:00 - 16:00 AVG...........2       *        >20-30 MINS                33        727      97.4
*                                       *
*    08:00 - 16:00 AVG(NO 0.......2      *        >30-45 MINS                11        738      98.9
*                                       *
*    08:00 - 16:00 MAX...........5       *        >45-60 MINS                 6        744      99.7
*                                       *
*    16:00 - 00:00 AVG...........4       *         >1-2  HRS                  2        746     100.0
*                                       *
*    16:00 - 00:00 AVG(NO 0.......5      *         >2-4  HRS
*                                       *
*    16:00 - 00:00 MAX..........11       *         >4-8  HRS
*                                       *
*    00:00 - 08:00 AVG...........4       *          >8   HRS
*                                       *
*    00:00 - 08:00 AVG(NO 0.......5      *
*                                       *
*    00:00 - 08:00 MAX..........12       *
*                                       *
*****************************************
```

The Summary report is two reports in one. The left side, within the box of asterisks, gives an average and maximum number of drives used for the three shift periods defined. The right side gives a distribution of the allocated interval for each volume access.

Left side explanations:

HH:MM - HH:MM AVG
>   The average number of drives in use during this shift interval.

HH:MM - HH:MM AVG(NO 0
>   The average number of drives in use during this shift without those intervals using no drives averaged in. For example, only those intervals actually using drives are used to compute the average.

HH:MM - HH:MM MAX
>   The maximum number of drives in use during this shift.

Right side explanations:

ALLOC INTVL
>   The arbitrary interval values chosen for the distribution.

ALLOCATIONS
>   The number of allocations to volumes whose allocated interval falls into this range.

ACCUM_____%

The cumulative number and percent of accesses that were for allocation intervals less than or equal to this range.

DRIVEPLOT Mounts by Address

```
DATE: 05.314 (C) COPYRIGHT  S T O R A G E  T E C H N O L O G Y  T A P E  D R I V E  U S A G E  A N A L Y S I S              PAGE  2
                                         PUT THE INSTALLATION NAME HERE
DRIVEPLOT 3490                            MOUNTS BY ADDRESS      LOCAL ACS ACTIVITY                          VERSION 6.02
    CUA  MOUNTS     CUA  MOUNTS     CUA  MOUNTS     CUA  MOUNTS     CUA  MOUNTS     CUA  MOUNTS     CUA  MOUNTS     CUA  MOUNTS
    2AA     26      2AB     16      2A3     39      2A5     24      2A6     17      2A7     24      2A8     24      2A9     26
    2BA     34      2BB     27      2B0     39      2B1     37      2B3     44      2B4     52      2B5     54      2B6     58
    2B7     73      2B8     27      2B9     34
            19   ADDRESSES SEEN
```

The Mounts by Address report shows the number of mounts that were done to each of the different addresses seen. Up to eight addresses and counts are reported on each line.

Control Card Edit Report

```
(C) COPYRIGHT  2006       * *     S T O R A G E     T E C H N O L O G Y     C O R P O R A T I O N     * *    ALL RIGHTS RESERVED
SYBR000    VERSION = 6.02             CONTROL CARD EDIT REPORT                              11/10/05  13:33:08     PAGE 1

----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8
* AN ASTERISK AS A KEYWORD COMMENTS THE REST OF THE RECORD            01450099
CONFIG = PUT THE INSTALLATION NAME HERE                               01460099
*   SDATE/EDATE VALUES ARE ONLY NEEDED IF YOU WISH TO REPORT ON A     01470099
*    SUB-SET OF THE MONITORED DATA                                    01480099
*SDATE=YYDDD                * REPORTING START DATE                    01490099
*STIME=HH.MM.SS             * REPORTING START TIME                    01500099
*EDATE=YYDDD                * REPORTING END DATE                      01510099
*ETIME=HH.MM.SS             * REPORTING END TIME                      01520099
*   THE SDATE/EDATE RANGE IS LIMITED TO 200 DAYS                      01530099
*                                                                     01540099
*MONRECNUM=NNN       SMF RECORD NUMBER, IF READING FROM SMF FILE      01550099
*                                                                     01560099
MANDRIVE=2C*          * IDENTIFY MANUAL ADDRESSES                     01561099 * CC NOT USED BY CALLING PROGRAM
MANDRIVE=2AC          * IDENTIFY MANUAL ADDRESSES                     01561199 * CC NOT USED BY CALLING PROGRAM
MANDRIVE=2AD          * IDENTIFY MANUAL ADDRESSES                     01562099 * CC NOT USED BY CALLING PROGRAM
ACSDRIVE=2A*          * IDENTIFY ACS DRIVE ADDRESSES                  01570099 * CC NOT USED BY CALLING PROGRAM
ACSDRIVE=2B*          * IDENTIFY ACS DRIVE ADDRESSES                  01580099 * CC NOT USED BY CALLING PROGRAM
RMT1DRIVE=2D*         * IDENTIFY REMOTE ROBOTIC ADDRESSES             01590099 * CC NOT USED BY CALLING PROGRAM
RMT1DRIVE=2E*         * IDENTIFY REMOTE ROBOTIC ADDRESSES             01600099 * CC NOT USED BY CALLING PROGRAM
*MANDRIVE=49*          * IDENTIFY MANUAL ADDRESSES                    01610099
*RMT1DRIVE=62*         * IDENTIFY REMOTE ROBOTIC ADDRESSES            01620099
*MAN1DRIVE=62*         * IDENTIFY REMOTE MANUAL ADDRESSES             01630099
*ACSDRIVE=28*,NNN      * ALSO IDENTIFY LSM ID FOR SEPARATE REPORTING  01640099
*                      *  NNN VALUES CAN BE IN THE RANGE OF 0-127     01650099
*     WHEN REPORTING, THE DRIVES WILL BE SEPARATED BY DEVICE TYPE.    01660099
*       348R/349R ARE ROBOTIC                                         01670099
*       3481/3491 ARE ROBOTIC IN REMOTE1                              01680099
*       3482/3492 ARE ROBOTIC IN REMOTE2                              01690099
*       3483/3493 ARE ROBOTIC IN REMOTE3                              01700099
*       3480/3490 ARE MANUAL                                          01710099
*       348A/349A ARE MANUAL AT REMOTE1                               01720099
*       348B/349B ARE MANUAL AT REMOTE2                               01730099
*       348C/349C ARE MANUAL AT REMOTE3                               01740099
*       S480/S490 ARE MANUAL WITH SCRATCH LOADERS                     01750099
*       S48A/S49A ARE MANUAL WITH SCRATCH LOADERS AT REMOTE1          01760099
*       S48B/S49B ARE MANUAL WITH SCRATCH LOADERS AT REMOTE2          01770099
*       S48C/S49C ARE MANUAL WITH SCRATCH LOADERS AT REMOTE3          01780099
*************************************************************** 01790099
*DOCARTONLY                * REPORT ONLY CARTRIDGE ACTIVITY           01800099
*DO3420ONLY                * REPORT ONLY 3420 ACTIVITY                01810099
DETAIL=A                 * N, M, A, OR NNN                            01820099
*                    A=ALL ALLOCATIONS (MOST ACCURATE FOR MONR047)    01830099
*                    N=NONE, M=MOUNTS ONLY                            01840099
*                    =NNN REPORTS MOUNTS REQUIRING >NNN SECS.         01850099
HOURLYRPT=YES        (DEFAULT IS NO) SHOW MOUNTS BY HOUR OF THE DAY   01860099 * CC NOT USED BY CALLING PROGRAM
*                    MBALSO OPTION IS NOT AVAILABLE HERE              01870099
*INCJOB=STCFE*             * REPORT ONLY CERTAIN JOBS                 01880099
*EXCJOB=MIM*               * EXCLUDE CERTAIN JOBS FROM REPORTING      01890099
*INCVOL=W01234             * INCLUDE CERTAIN VOLUMES ONLY             01900099
*EXCVOL=X*                 * EXCLUDE CERTAIN VOLUMES ONLY             01910099
*INCUNIT=14*               * REPORT CERTAIN ADDRESSES                 01920099
*EXCUNIT=14*               * EXCLUDE CERTAIN ADDRESSES FROM REPORTING 01930099
```

```
(C) COPYRIGHT  2005      * *    S T O R A G E   T E C H N O L O G Y   C O R P O R A T I O N   * *   ALL RIGHTS RESERVED
SYBR000   VERSION = 6.02         CONTROL CARD EDIT REPORT                          11/10/05  13:33:08    PAGE 2

----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8
*LINES=55              *  LINES PER PAGE OF REPORT OUTPUT        01940099
*MAXDR=16          * IF OVER MAX DRIVES REPORT AS "-" ON HISTOGRAM  01950099
INCR=01            * HISTOGRAM REPORTING INTERVAL MINUTES (MAXIMUM 15) 01960099 * CC NOT USED BY CALLING PROGRAM
*  INCR REPORTING IS A SNAPSHOT, NOT MAX DURING LAST INTERVAL SO =1 01970099
*  WILL GIVE THE MOST ACCURATE REPORTING, BUT USE TWICE AS MUCH  01980099
*  REGION SIZE AS INCR=2.  CPU CYCLES ARE MINIMAL WITH EITHER VALUE. 01990099
HISTOGRAM=YES       * YES, NO, OR A NUMBER FOR HISTOGRAM REPORTING 02000099 * CC NOT USED BY CALLING PROGRAM
                    * HISTOGRAM=NUMBER WILL REPORT ANY HISTOGRAM ... 02010099
                    *  ... INCR USING THAT NUMBER OR MORE DRIVES  02020099
*      HISTOGRAM PRODUCES ONE LINE FOR EACH "INCR" ON EACH DAY   02030099
SHIFT1=(08.00,16.00,NOPRINT)                                    02040099
            * SHIFT1 SUMMARY (START TM,END TM,DISTRIBUTION OPTION) 02050099
SHIFT2=(16.00,00.00,NOPRINT)                                    02060099
            * SHIFT2 SUMMARY (START TM,END TM,DISTRIBUTION OPTION) 02070099
SHIFT3=(00.00,08.00,NOPRINT)                                    02080099
            * SHIFT3 SUMMARY (START TM,END TM,DISTRIBUTION OPTION) 02090099
*  THE END TIME OF SHIFT1 MUST BE EQUAL TO THE START TIME OF SHIFT2 02100099
*  THE END TIME OF SHIFT2 MUST BE EQUAL TO THE START TIME OF SHIFT3 02110099
*  THE END TIME OF SHIFT3 MUST BE EQUAL TO THE START TIME OF SHIFT1 02120099
*                                                               02130099
*************************************************************** 02140099
*                                                               02150099
*   MONREPT HAS THE ABILITY TO SIMULATE THE POTENTIAL SAVINGS THAT 02160099
*   COULD BE OBTAINED BY PROCESSING TAPE DATA SETS ON TIMBERLINE 02170099
*   DEVICES RATHER THAN 3490 DEVICE TYPES.  MONTAPE HAS KEPT TRACK 02180099
*   OF THE AMOUNT OF WAIT TIME A PROGRAM HAD WHILE IT WAS DOING TAPE 02190099
*   I/O.  MONREPT WILL CALCULATE THE HARDWARE SAVINGS BASED ON THE 02200099
*   VALUES YOU SUPPLY FOR SAVEPCT.  IT WILL THEN APPLY THAT OVER-ALL 02210099
*   PERCENT SAVED TO THE 'WAIT W/IO' VALUE TO DETERMINE THE JOB SAVINGS 02220099
*   THAT COULD BE SEEN.  JOBS THAT DO NOT WAIT FOR THE TAPE I/O WILL 02230099
*   NOT SHOW AS GREAT A SAVINGS AS THOSE THAT DO WAIT FOR TAPE I/O. 02240099
*   IF THERE ARE ANY REMOTE DRIVES, USE THE RMTNDRIVE CONTROL CARD TO 02250099
*   DEFINE THEIR ADDRESSES SINCE THE DISCONNECT SAVINGS WOULD NOT 02260099
*   APPLY TO THEM.                                              02270099
*                                                               02280099
*   YOU CAN PRODUCE THE SIMULATION REPORTING BY ACTIVATING THE CONTROL 02290099
*   CARDS BELOW:                                                02300099
*INCJOB=JOBNAME     (OPTIONAL) SELECT ONLY SOME JOBS            02310099
MODE=SIMULATE                                                   02320099 * CC NOT USED BY CALLING PROGRAM
SAVEPCT=80,60,60       % SAVED OF PEND,CONN,DISC FOR EACH VOLUME ACCESS 02330099 * CC NOT USED BY CALLING PROGRAM
*                                                               02340099
STC0000I - ONLY THE FOLLOWING CONTROL CARDS, IF PRESENT, WILL BE USED BY THE CALLING PROGRAM, MONREPT
CONFIG, SDATE, STIME, EDATE, ETIME, DOCARTONLY, DO3420ONLY, DETAIL, SAVEPCT, MODE, SHIFT1, SHIFT2, SHIFT3, LINES
```

Chapter 5: Messages

Overview

This chapter lists the messages that may be generated by the control statement parser in MONTAPE and MONREPT, along with an explanation of probable causes, and recommended actions. If the parser error is something that means MONTAPE or MONREPT cannot proceed, then they will terminate with a User 0001 ABEND.

MONTAPE and MONREPT Messages

Message ID	Description
STC0000I	STC0000I - ONLY THE FOLLOWING CONTROL CARDS, IF PRESENT WILL BE USED BY THE CALLING PROGRAM This message lists those MONTAPE/MONREPT control statements that the program uses. Any control cards not used by the program are marked as such.
STC0001I	STC0001I - UNKNOWN KEYWORD IN COLUMN ___ The control statement or value in the specified column in the line above the message is invalid or unknown. Enter a valid control statement or value as per the documentation and re-run the job.
STC0002I	STC0002I - NO VALUE IN COLUMN ___ The control statement in the line above the message expects a value but none has been supplied. Supply a valid value as per the documentation and re-run the job.
STC0003I	STC0003I - LENGTH OF VALUE IS WRONG IN COLUMN ___ The value in the specified column in the line above the message has the wrong length. Supply a value of the correct length as per the documentation and re-run the job.

Message ID	Description
STC0004I	STC0004I - ETIME CHANGED TO 00.00, EDATE INCREMENTED The value on the ETIME control statement was specified as 24.00.00.00. The ETIME value has been changed to 00.00 and the value in EDATE has been incremented by 1 day unless EDATE was not specified in which case ETIME is set to zero and EDATE is set to the next day.
STC0006I	STC0006I - ONE OR MORE EDIT ERRORS DETECTED There were errors in the control statements supplied to MONTAPE or MONREPT. The job is terminated with a user 0001 abend. Look for previous messages detailing the errors, correct the errors and re-run the job.
STC0025I	STC0025I - KEYWORD VALUE IS INVALID IN COLUMN ___ The value in the specified column in the line above the message is invalid. This can occur for one of several reasons including:- • A non-numeric value appearing where a numeric value is expected. • The value is not in the required format, e.g. dates must have a forward slash (/) separating the individual date values. • The value specified isn't in the valid range, e.g. a value of 0 when 0 is not valid for the control statement. • The value does not match one of a list of valid values, e.g. HISTOGRAM=YES/NO. Supply a valid value as per the documentation and re-run the job.
STC0037I	STC0037I - >1500 DAYS NOT ALLOWED The number of days difference between the SDATE and EDATE values exceeds 1500. This can happen if either an SDATE or STIME value is specified or no ETIME and EDATE values are specified. If EDATE is specified, then change the value so that it is less than 1500 days after the value specified for SDATE. If SDATE or STIME are specified and EDATE is not, specify an EDATE value that is not greater than 1500 days after the SDATE value.

Message ID	Description
STC0070I	STC0070I - DUPLICATE KEYWORD IN COLUMN ___ The control statement in the specified column in the line above the message is mutually exclusive with another control statement. Currently this can only occur if you specify both DOCARTONLY and DO3420ONLY. Remove one of the two DO control statements and re-run the job.
STC0076I	STC0076I - STIME KEYWORD WAS RECEIVED WITHOUT SDATE KEYWORD In MONREPT, the STIME control statement was specified without the SDATE control statement. STIME without SDATE is only valid under MONTAPE. Either remove the STIME control statement or add the SDATE control statement with a valid value then re-run the job.
STC0076I	STC0076I - ETIME KEYWORD WAS RECEIVED WITHOUT EDATE KEYWORD In MONREPT, the ETIME control statement was specified without the EDATE control statement. ETIME without EDATE is only valid under MONTAPE. Either remove the ETIME control statement or add the EDATE control statement with a valid value then re-run the job.
STC0095I	STC0095I - SHIFT VALUES ARE INCORRECT The values specified by the SHIFTn control statements do not cover the full 24 hours in a day. The shift ending value in any SHIFTn control statement must match the shift starting value in another SHIFTn control statement. Correct the SHIFTn control statement(s) in error and re-run the job.
STC0096I	STC0096I - EDATE/ETIME NOT GREATER THAN SDATE/STIME The date/time specified by the EDATE and/or ETIME control statements, is not chronologically after the date/time specified by the SDATE and/or STIME control statements. Change the SDATE/STIME or EDATE/ETIME control statements such that the end date is after the start date and re-run the job.
STC0103I	STC0103I - SAME INC/EXC CANNOT BE USED TOGETHER When using the various include and exclude control statement, i.e. INCJOB, EXCJOB, INCUNIT, EXCUNIT, INCVOL and EXCVOL, you cannot specify both the INC and EXC versions in the same job. Remove either the INCnnn or EXCnnn control statements and re-run the job.

Message ID	Description
STC0104I	STC0104I - NO CONTROL CARDS. CHECK THE STEPNAME ON THE SYSIN DD * CARD. MONTAPE and MONREPT expect at least one control statement in the SYSIN DD. If no control statements are needed, then enter a comment line and re-run the job.

Appendix A: Record Layouts

The ExPR SAMPLIB MONREC member contains the following Assembler DSECT to enable customers to write their own reporting programs.

```
         MACRO
         MONREC
MONREC   DSECT
MONADATE DS    PL4   ALLOC DATE IN THE FORM OF 00YYDDDF
MONATIME DS    F     ALLOC TIME IN HUNDREDTHS OF SECONDS
*                                  HHMMSSTH
MONMDATE DS    PL4   MOUNT DATE IN THE FORM 00YYDDDF
MONMTIME DS    F     MOUNT TIME IN HUNDREDTHS OF SECONDS
*                                  HHMMSSTH
MONSID   DS    CL4                 SMCA SYSTEM ID
MONSTPNM DS    CL8                 STEPNAME FROM CSCB
*                                  OR NO-NAME
MONJOBNM DS    CL8                 JOBNAME FROM CSCB
*                                  OR NO-NAME
MONASID  DS    XL2                 JES JOB NUMBER
*
MONNAME  DC    X'000000'   CUA/DEVICE NAME FROM UCBNAME FIELD
MONCLC1  EQU   *-MONSID            SID,STEP,JOB,ASID,INTV,CUA
MONVOLI  DS    CL6                 VOLUME SERIAL NUMBER FROM
*                                  UCBVOLI FIELD
MONCLC2  EQU   *-MONJOBNM          JOB,ASID,INTV,CUA,VOLSER
MONFLAGL EQU   *-MONREC             DISPLACEMENT FOR MONFLAG
MONFLAG  DC    X'00'               FLAG BYTE
MONSPEC  EQU   X'80'               SPECIFIC VOLUME
MONTERM  EQU   X'40'               WRITTEN AT TERMINATION
MONSTRT  EQU   X'20'               ALREADY MOUNTED AT START
MONRWD   EQU   X'10'               MOUNT TIME INCLUDES REWIND
MONMULT  EQU   X'08'               MULTIPLE STEPS COMBINED
MONRMF   EQU   X'04'               RMF STATS INCLUDED
MONCBSY  EQU   X'02'               CONTROL UNIT BUSY AVAILABLE
MONTOT   EQU   X'01'               MINUTE TOTAL RECORD
*
MONSIOH  DS    XL2       *** Unused (formerly MONSIO) ***
*
MONTYP   DC    XL1'00'    BYTE +3 FROM UCBTYP FIELD
*                         X'03'=3420, X'80'=3480, X'81'=3490
*  CALCULATED 'OR' VALUE:  X'40'=TL, X'20'=RW, X'10'=VT, X'08'=MG
MONACS   DC    XL1'00'    ACS, ACL, OR MANUAL TYPE INDICATOR
*                         =A IF ACL USED
*    CALCULATED VALUES:   0=MAN0, A=MAN1, B=MAN2, C=MAN3
```

```
*                                R=LOCL, 1=RMT1, 2=RMT2, 3=RMT3
MONLSM   DC    XL1'00'     LSM ID FROM ACSDRIVE CC IF USED
*                               X'80' SET IF USED
*
MONCUA1  DC    XL1'00'     HIGH ORDER OF 4 DIGIT CUA
MONREW   DC    XL2'00'     NUMBER OF SAMPLES TAPE REWINDING
*
MONRDATE DS    PL4      LAST MPEND DATE IN THE FORM OF YYDDDF
MONRTIME DS    XL4'00'  LAST MPEND TIME IN HUNDREDTHS OF SEC
*                                HHMMSSTH
MONPRST  DS    CL8                PROC STEPNAME
MONWDATE DS    PL4       REC WRITE DATE IN THE FORM OF YYDDDF
MONWTIME DS    F         REC WRITE TIME IN HUNDREDTHS OF SEC
*                                HHMMSSTH
MONCMB   DS    0CL20       CHANNEL MEASUREMENT BLOCK DATA (MON)
MONSSCHC DS    H           # SCAN INTERVALS WAITING WITH I/O ACTIVE
MONSAMPC DS    H           # SSCH INSTRUCTIONS WITH DATA
MONCONNT DS    F           TOTAL CONNECT TIME
MONPENDT DS    F           TOTAL PENDING TIME
MONDISCT DS    F           TOTAL DISCONNECT TIME
MONBUSYT DS    F           TOTAL CU BUSY TIME
*
MONSIO   DC    F'0'        SIO COUNT FROM UCB
MONCXMBR DC    F'0'        # Bytes read/4K
MONCXMBW DC    F'0'        # Bytes written/4K
MONINTVL DS    F           UCB scan loop interval in
*                           milliseconds.  If zero, then use
*                           the default of 250.
         DS    3F          *** RESERVED ***
MONEND   EQU   *-MONREC
         MEND
```

```
*                     MONREPT BINARY FILE DSECT
*
* HEADER RECORD
PCHDR     DS    CL8      "MONREPT "
HDRVSN    DS    CL8      "PCY.MM "   VERSION (TOOLS TAPE) IDENTIFIER
HDRFILL   DS    CL48     PAD TO 64 BYTES.
*
* FIRST DATA RECORD
*
MNT1ID    DS    CL8      "MNTSPFC "
MNTF01N   DS    CL3      >10 MIN.        SPECIFIC
MNTF02N   DS    CL3      >8-10 MIN.      SPECIFIC
MNTF03N   DS    CL3      >6-8 MIN.       SPECIFIC
MNTF04N   DS    CL3      >5-6 MIN.       SPECIFIC
MNTF05N   DS    CL3      >4-5 MIN.       SPECIFIC
MNTF06N   DS    CL3      >3-4 MIN.       SPECIFIC
MNTF07N   DS    CL3      >151-180 SEC. SPECIFIC
MNTF08N   DS    CL3      >121-150 SEC. SPECIFIC
MNTF09N   DS    CL3      >106-120 SEC. SPECIFIC
MNTF10N   DS    CL3      >91-105 SEC.  SPECIFIC
MNTF11N   DS    CL3      >76-90 SEC.   SPECIFIC
MNTF12N   DS    CL3      >61-75 SEC.   SPECIFIC
MNTF13N   DS    CL3      >46-60 SEC.   SPECIFIC
MNTF14N   DS    CL3      >31-45 SEC.   SPECIFIC
MNTF15N   DS    CL3      >16-30 SEC.   SPECIFIC
MNTF16N   DS    CL3      >11-15 SEC.   SPECIFIC
MNTF17N   DS    CL3      >6-10 SEC.    SPECIFIC
MNTF18N   DS    CL3      >1-5 SEC.     SPECIFIC
          DS    1F       FILL TO 64 BYTES.
*
* SECOND DATA RECORD
*
MNT2ID    DS    CL8      "MNTSCRCH" (SAME AS ABOVE ON PURPOSE.)
MNTF01S   DS    CL3      >10 MIN.        SCRATCH
MNTF02S   DS    CL3      >8-10 MIN.      SCRATCH
MNTF03S   DS    CL3      >6-8 MIN.       SCRATCH
MNTF04S   DS    CL3      >5-6 MIN.       SCRATCH
MNTF05S   DS    CL3      >4-5 MIN.       SCRATCH
MNTF06S   DS    CL3      >3-4 MIN.       SCRATCH
MNTF07S   DS    CL3      >151-180 SEC.   SCRATCH
MNTF08S   DS    CL3      >121-150 SEC.   SCRATCH
MNTF09S   DS    CL3      >106-120 SEC.   SCRATCH
MNTF10S   DS    CL3      >91-105 SEC.    SCRATCH
MNTF11S   DS    CL3      >76-90 SEC.     SCRATCH
MNTF12S   DS    CL3      >61-75 SEC.     SCRATCH
MNTF13S   DS    CL3      >46-60 SEC.     SCRATCH
MNTF14S   DS    CL3      >31-45 SEC.     SCRATCH
MNTF15S   DS    CL3      >16-30 SEC.     SCRATCH
MNTF16S   DS    CL3      >11-15 SEC.     SCRATCH
MNTF17S   DS    CL3      >6-10 SEC.      SCRATCH
MNTF18S   DS    CL3      >1-5 SEC.       SCRATCH
          DS    1F       FILL TO 64 BYTES.
*
* THIRD DATA RECORD TYPE (FOR EACH DEVICE TYPE)
*
MNT3ID    DS    CL8      "SHIFTAVG" (SAME AS ABOVE ON PURPOSE.)
```

```
MNT3TYP  DS   CL4     DEVICE TYPE
MNTF01AV DS   AL4     SHIFT1 NUM SPECIFIC
MNTF02AV DS   H              AVG MPEND
MNTF03AV DS   AL4            NUM SCRATCH
MNTF04AV DS   H              AVG MPEND
MNTF05AV DS   AL4     SHIFT2 NUM SPECIFIC
MNTF06AV DS   H              AVG MPEND
MNTF07AV DS   AL4            NUM SCRATCH
MNTF08AV DS   H              AVG MPEND
MNTF09AV DS   AL4     SHIFT3 NUM SPECIFIC
MNTF10AV DS   H              AVG MPEND
MNTF11AV DS   AL4            NUM SCRATCH
MNTF12AV DS   H              AVG MPEND
MNTF13AV DS   AL4     24 HR  NUM SPECIFIC
MNTF14AV DS   H              AVG MPEND
MNTF15AV DS   AL4            NUM SCRATCH
MNTF16AV DS   H              AVG MPEND
         DS   1F      FILL TO 64 BYTES.
```

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