

Automated Tape Allocation Manager  
for z/OS and OS/390



# User's Guide

*Version 1 Release 1*





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for z/OS and OS/390



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*Version 1 Release 1*

**Note!**

Before using this information and the product it supports, be sure to read the general information under notices.

**Sixth Edition (May 2003)**

This edition applies to Version 1, Release 1 of IBM Automated Tape Allocation Manager for z/OS and OS/390 (product number 5697-H62) and to all subsequent releases and modifications until otherwise indicated in new editions.

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## About this book

This book describes how to use Automated Tape Allocation Manager for z/OS and OS/390 to maximize usage of costly tape units across images to minimize wait time and maximize availability. The book contains detailed information, such as field descriptions, sample JCL, and line commands, to help the user of Automated Tape Allocation Manager to fully benefit from the use of this product.

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### Who should read this book

The *Automated Tape Allocation Manager User's Guide* is intended for systems programmers and administrators who understand the issues relating to sharing system resources and offline storage. The authors of this book assume that the readers are data processing professionals familiar with MVS and its conventions.

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### Conventions and terminology used in this book

In this book, Automated Tape Allocation Manager for z/OS and OS/390 is referred to as "Automated Tape Allocation Manager" or simply as "ATAM" where the context makes the meaning clear. Other conventions include:

- **Monospaced font** - Identifies example code and line commands
- **Bold font** - Identifies the names of fields

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### How this book is organized

This book is divided into the following chapters:

- Chapter 1, *Automated Tape Allocation Manager*, provides a general description of how ATAM can benefit your organization.
- Chapter 2, *Configuring Automated Tape Allocation Manager*, walks through all of the steps that must be performed to customize ATAM for your environment.
- Chapter 3, *Current Allocation Status*, explains how to use the Current Status option to check the level of activity of your tape drives.
- Chapter 4, *Activity Reporting*, describes the reports you can use to monitor tape drive activities.
- *Appendices*. There are several appendices that provide supplemental material for migrating from CA-MIA to ATAM, using operator commands, creating the PARMLIB, VTS load balancing, VOLSER-to-unit preferencing, LRU device selection, and error messages.





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## Summary of Changes

Changes made for this edition of the book include:

- *Migration from CA-MIA to ATAM.* A new appendix has been added to provide instructions on how to migrate from Unicenter® CA-MIA™ Tape Sharing for z/OS to IBM Automated Tape Allocation Manager for z/OS and OS/390. For details, read Appendix A, "Migrating from Unicenter CA-MIA Tape Sharing to IBM Automated Tape Allocation Manager," on page 29.

**Note:** For easier reading, Unicenter CA-MIA Tape Sharing for z/OS will be referred to as simply "CA-MIA" throughout this book, and IBM Automated Tape Allocation Manager for z/OS and OS/390 will be referred to as "ATAM".

- *LRU Device Selection.* ATAM now uses a process referred to as *Least Recently Used device selection* to select the tape unit to be varied online. Essentially, the tape unit that has been dormant the longest will be the first that ATAM will attempt to use. This ensures that all available tape units are used for requests, not just a few.

Least Recently Used (LRU) device selection operates by tracking the date and time that each tape unit under the control of ATAM was utilized, meaning:

- the last date and time the tape device was successfully varied online
- the last date and time the tape device was varied offline
- the last date and time a failure occurred when attempting to vary the tape device online.

By tracking all of these events, the ATAM started task can sort this date and time information to determine which tape unit to vary online when a request for a tape unit is received. The tape unit that has been dormant the longest will be the first unit that ATAM will try to use. If it is not available, ATAM will attempt to use the next one in the sorted list, and so on.

- *PARMLIB member.* The ATAM PARMLIB member allows you to create a script of valid ATAM commands that can be executed each time you start the ATAM started task. This enables you to customize ATAM to fit your particular tape unit environment. Refer to Appendix C, "ATAM PARMLIB Member," on page 37 for details.
- *VTS load balancing.* With ATAM's VTS load balancing feature, all of the VTS libraries are used, not just the last library. This is accomplished through ATAM's STORCLAS ACS exit that uses a unique storage class name for each VTS library. Refer to Appendix D, "VTS load balancing exit," on page 39 for details.
- *New message command.* The "R=" command enables you to specify a message that ATAM is to automatically respond to and the reply that is to be issued, without specifying an offset number. Refer to Appendix B, "Operator Commands," on page 33 for details.
- *Volser-to-unit preferencing.* Now you can restrict one or more series of VOLSER ID's to a specific set of tape units. Refer to Appendix E, "Volser-to-Unit Preferencing Exit," on page 43 for details.



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## Chapter 1. Introducing Automated Tape Allocation Manager

Getting the most out of your investment in tape drives is important to every MVS shop. You want your equipment to be up and running 24 x 7, and you want the most productive use of your drives. What you do not want is a backlog of job requests while waiting for tape drives that are sitting idle simply because they have not been freed for use. Also you do not want your drives sitting idle while owned by one MVS image when, at the same time, a job waits on another image.

ATAM solves these problems and more by handling tape unit allocations across multiple MVS images. It does so in direct response to actual user and job requests. ATAM continually checks the tape units which it has been configured to manage, and looks for opportunities to vary offline those units that are no longer in use. By doing this, ATAM frees the devices for use as new requests come in for tape units. ATAM also works the request side of tape management by instantly responding to requests for tape unit allocations without any required operator intervention.

ATAM is completely flexible and can fit any MVS environment. ATAM automatically identifies which version of JES is installed, JES2 or JES3. ATAM does not attempt to manage any tape drives that are JES3-controlled. Tuning and configuration parameters can be established that fit your environment. They can also be dynamically changed to accommodate changes in work load and priorities without any need to undergo an outage in the product's operation. A complete set of ISPF-based panels is provided that enables you to easily establish your ATAM configuration. These panels include online help to ease the setup procedure.

From a reporting standpoint, ATAM also provides many advantages. Available reports include:

- All recorded tape unit activity
- Tape activity by job and step
- Usage by tape unit
- A record of failed automatic allocations

These reports can be tailored by the use of common commands, such as SORT, FIND, and PRINT.

In addition to detailed reporting, you also have the ability, through the ISPF interface, to quickly and easily access the state of your tape units and ATAM. The Current Status display provides you a quick and easy way to see what is in use, what is idle, and how it is being used.

With the detailed reports, as well as the ability to easily look at your current status, you have the information you need to assess if your tape units are being fully utilized. The detailed reports can tell you when a tape drive was allocated to a job and if the job had to wait for a drive. With this detail, you can not only respond to your customers quickly, but you can also see bottlenecks and configure accordingly.

The bottom line is that ATAM streamlines and automates your tape unit management, and reduces or eliminates the need for operator intervention in tape unit allocation. It optimizes the availability of your hardware and promotes efficiency. It does not force a method for "doing business" on you, but rather is flexible enough to tailor to meet your specific requirements. Most of all, it shortens the return on investment (ROI) in your hardware.



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## Chapter 2. Configuring Automated Tape Allocation Manager

ATAM is a product that performs its tasks at the system level. Like any other product that operates at this level, care must be taken when installing and configuring the product. Failure to follow the instructions outlined in the product documentation can result in a negative impact on your system. Before attempting to install and operate ATAM, please follow these simple steps:

1. Check the ATAM web page:  
<http://www.ibm.com/software/stormgmt/ataam/>  
Follow the [Library] link to download the latest copy of the ATAM product documentation.
2. Check PSP buckets for the latest product maintenance. Apply PTFs as indicated.
3. Follow installation steps carefully and accurately. If you are migrating from CA-MIA to ATAM, be sure to read Appendix A, "Migrating from Unicenter CA-MIA Tape Sharing to IBM Automated Tape Allocation Manager," on page 29.

Follow the installation instructions in the Program Directory. Once you have installed ATAM, you must customize it before you can use it.

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### Customization summary

After you install ATAM, you must tailor some files for your system. The following steps configure your system.

Step	Description	Reference
1	Check the microcode level and authority requirements for the load library.	"Step 1: Check requirements" on page 4
2	Create the VSAM control file.	"Step 2: Create the VSAM control file" on page 4
3	Create the log file.	"Step 3: Create the log file" on page 5
4	Customize and initiate the started task JCL.	"Step 4: Customize and initiate the started task JCL" on page 5
5	Run the CLIST to go to the main menu.	"Step 5: Access Automated Tape Allocation Manager" on page 6
6	Specify each MVS system and libraries.	"Step 6: Configure MVS system parameters" on page 8"
7	Specify parameters for each MVS system.	"Step 7: Configure Automated Tape Allocation Manager" on page 10
8	Stop and restart the started task.	"Step 8: Stop and restart the started task" on page 11

---

# Customizing Automated Tape Allocation Manager

After you install ATAM, follow these steps to tailor some of the files for your system.

## Step 1: Check requirements

Before using ATAM, check to ensure that the following requirements have been met:

- The load library containing ATAM must be APF authorized.
- If you are using the Virtual Tape Server (VTS) make sure your microcode level is current. If you have a problem using VTS with ATAM, it may be due to an older level of microcode. Contact IBM for information on the current microcode level.
- Make sure the devices you want ATAM to manage are **not** defined as autoswitchable. ATAM manages tape devices that are assign capable, such as 3480's or later, but will ignore any devices that are configured as autoswitchable.

Contact your systems administrator if you encounter difficulties starting ATAM.

## Step 2: Create the VSAM control file

You must create a VSAM control file for each MVS image where ATAM will be running. The control file holds the configuration information for ATAM. To create a VSAM control file, edit member ATHCNTFL in your SATHSAMP library and submit it. This JCL creates the configuration VSAM file. The sample JCL and instructions for changing it are shown below:

```
//STEP1 EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=*
//SYSOUT DD SYSOUT=*
//SYSUT1 DD *
DUMMY RECORD TO SATISFY VSAM REQUIREMENT FOR A NON-EMPTY INITIAL FILE.
/*
//SYSIN DD *
DELETE 'ATH.V1R1.CONTROL'

SET MAXCC = 0

DEFINE CLUSTER -
( NAME ('ATH.V1R1.CONTROL') -
CYLINDERS (1 1) -
SHAREOPTIONS (2 3) -
INDEXED -
RECORDSIZE (1024 1024) -
KEYS (32 0) -
REUSE ) -
DATA ( NAME ('ATH.V1R1.CONTROL.DATA')) -
INDEX ( NAME ('ATH.V1R1.CONTROL.INDEX'))

REPRO INFILE(SYSUT1) OUTDATASET('ATH.V1R1.CONTROL') REUSE
```

JCL Portion	Modification
NAME	Change the highlevel qualifier in the CONTROL data set name to meet your site's standards. In the example, the data set name is ATH.V1R1.CONTROL, where ATH.V1R1 is the highlevel qualifier.

JCL Portion	Modification
DATA	Change the highlevel qualifier in the DATA data set name to meet your site's standards. In the example, the data set name is ATH.V1R1.CONTROL.DATA, where ATH.V1R1 is the highlevel qualifier.
INDEX	Change the highlevel qualifier in the INDEX data set name to meet your site's standards. In the example, the data set name is ATH.V1R1.CONTROL.INDEX, where ATH.V1R1 is the highlevel qualifier.
OUTDATASET	Use the same highlevel qualifier and data set name that you entered for the NAME line. In the example, the data set name is ATH.V1R1.CONTROL, where ATH.V1R1 is the highlevel qualifier.

**Note:** If ATAM is controlling tape drives that are shared among multiple MVS systems, control files and log files can be placed on a common DASD that is shared among all of the systems that use the tape drives. The only criteria is that there must be an ATAM started task for each MVS image (OS/390 or z/OS).

### Step 3: Create the log file

A log file is required for ATAM. The JCL for generating the log file is in member ATHLOGF in the SATHSAMP library. The sample JCL and instructions for changing it are shown below:

```
//LOGF EXEC PGM=IEFBR14
//LOGFILE DD DSN=ATH.V1R1.LOGFILE,DISP=(NEW,CATLG,DELETE),RECFM=FB,
// UNIT=SYSDA,LRECL=260,BLKSIZE=27820,SPACE=(27820,(200,50))
```

JCL Portion	Modification
LOGFILE DD DSN	Type the data set name of the log file, changing the highlevel qualifier to meet your site's naming standards. In the sample JCL, the data set name is ATH.V1R1.LOGFILE, where ATH.V1R1 is the highlevel qualifier.
UNIT	Type the unit name. In the example, the unit is SYSDA.

### Step 4: Customize and initiate the started task JCL

The sample JCL procedure for the started task is in the highlevel.SATHSAMP library, member name ATHPROC. Edit this member and add it to MVS for started tasks initiation. The default procedure name is ATHPROC. The sample JCL is shown below:

```
//ATAM EXEC PGM=ATH#MAIN,TIME=1440
//STEPLIB DD DSN=ATH.V1R1.SATHLOAD,DISP=SHR
//LOGFILE DD DSN=ATH.V1R1.LOGFILE,DISP=SHR
//ATHPARMS DD DSN=ATH.V1R1.CONTROL,DISP=SHR
```

You must customize the sample JCL to work in your environment. It is important to ensure that the dataset names in the CLIST match the ones used in the JCL for the started task. The changes you must make to the sample JCL are:

JCL Portion	Modification
STEPLIB DD	Type the data set name of the installed load library for ATAM. If you do not specify a load library, the default is SATHLOAD. In the sample JCL, the data set name is ATH.V1R1.SATHLOAD.
LOGFILE DD	Type the data set name of the log file. In the sample JCL, the data set name is ATH.V1R1.LOGFILE.
ATHPARMS DD	Type the data set name of the ATPARMS. In the sample JCL, the data set name is ATH.V1R1.CONTROL.

When you are finished with customizing the JCL for the started task, you are ready to configure ATAM for its first use as described in the following sections.

**Note:** Do not attempt to start the started task until you have completed the configuration process, including specifying an Exit Library, or the started task will fail.

## Step 5: Access Automated Tape Allocation Manager

To access ATAM, run the CLIST. However, you must first tailor the two CLISTs found in the SATHSAMP library, which are ATH and ATHCLIST, to work in your environment. The sample CLIST is shown below along with instructions on how to change it.

The sample CLIST in the ATH member of SATHSAMP is the following:

```
PROC 0 CLISTLIB(ATH.V1R1.SATHSAMP)

CONTROL NOMSG
FREE FILE(ATHCLIST)
CONTROL MSG

ALLOC FILE(ATHCLIST) DATASET('&CLISTLIB') SHR REU

ALTLIB ACTIVATE APPLICATION(CLIST) FILE(ATHCLIST)

ISPEXEC SELECT CMD(ATHCLIST) NEWAPPL(ATH) PASSLIB

ALTLIB DEACTIVATE APPLICATION(CLIST)
FREE FILE(ATHCLIST)
```

CLIST Line	Modification
PROC 0 CLISTLIB()	Type the high level qualifier of your installed ATAM libraries, followed by the name of the sample library. In the sample CLIST, the PROC line is:  PROC 0 CLISTLIB(ATH.V1R1.SATHSAMP)  In this example, ATH.V1R1 is the highlevel qualifier and SATHSAMP is the sample library.  <b>Note:</b> The dataset names in the CLIST must match the ones used in the JCL for the started task.



The second sample CLIST, ATHCLIST, is shown below:

```

PROC 0 PRDLIB(ATH.V1R1)

CONTROL NOMSG
FREE FILE(ATHPARMS)
FREE FILE(LOGFILE)
CONTROL MSG

ISPEXEC LIBDEF ISPMLIB DATASET ID('&PRDLIB..SATHMENU') COND STACK
ISPEXEC LIBDEF ISPPLIB DATASET ID('&PRDLIB..SATHPENU') COND STACK
ISPEXEC LIBDEF ISPLLIB DATASET ID('&PRDLIB..SATHLOAD') COND STACK
ALLOC FILE(ATHPARMS) DA('ATH.V1R1.CONTROL') SHR REUSE
ALLOC FILE(LOGFILE) DA('ATH.V1R1.LOGFILE') SHR REUSE

ATH$MAIN

```

You must customize the sample CLIST to work in your environment. It is important to ensure that the dataset names in the CLIST match the ones used in the JCL for the started task. The changes you must make are:

CLIST Line	Modification
PROC 0 PRDLIB	Type the high level qualifier in between the parentheses. The sample CLIST uses ATH.V1R1 for the highlevel qualifier.
ATHPARMS	Type the data set name of the VSAM control file in between the parentheses. In the sample CLIST, the line containing the ATPARMS data set is ALLOC FILE(ATHPARMS) DA(ATH.V1R1.CONTROL), where ATH.V1R1 is the highlevel qualifier.
LOGFILE	Type the data set name of the log file in between the parentheses. In the sample CLIST, the line containing the LOGFILE data set is ALLOC FILE(LOGFILE) DA(ATH.V1R1.LOGFILE), where ATH.V1R1 is the highlevel qualifier.

When you are done modifying the ATHCLIST member, copy this member to your system CLIST library.

When you run the CLIST, the ATAM main menu appears. The main menu is shown below:

```

ATH$MAIN ----- Automated Tape Allocation Manager for z/OS and OS/390 -----
Option ==> _____

      1 Current Status                               User ID: myuserid
      2 Activity Reporting                           Date...: 2001/12/14
      S Setup and Configuration                       Release: V1R1

      A About Automated Tape Allocation Manager
      X Exit Automated Tape Allocation Manager

```

## Step 6: Configure MVS system parameters

The first time you run ATAM, you must set some general MVS configuration options, then provide specific parameters for each MVS image on which ATAM will operate. These configuration settings control the way that ATAM runs and how it varies tape devices on and offline. You can control your tape allocation activity, tailoring your methods to meet your specific needs.

To configure general MVS options, follow these steps:

1. Type **S** and press Enter to access the ATAM Setup screen.

```

-----ATAM Setup-----
Command ==>

Control Dataset Name ==> ATP.SAMPLE.CONTROL

MVS Info:
MVS System ID      ==> ABCD      (1-4 Character System ID)

Valid command selection values are:
1: MVS Specific Information
2: ATAM Configuration Parameters
  
```

2. Type an **MVS System ID** as described below:

Field	Description
Control Dataset Name	(Display only) This is the name of the control data set that was established at installation. You cannot change this field.
MVS System ID	Type the one- to four-character ID of the MVS system on which you want to perform tape allocation activities.

### Command line values

Type a valid code in the Command line to display one of the lower level screens. Valid values are:

Value	Description
1	Type 1 to enter information specific to a particular MVS system, including the load library information.
2	Type 2 to enter information for tape allocation processing, such as the amount of time or the number of times to perform activities.

## MVS specific information

To update information for a specific MVS system, type **1** in the Command line on the ATAM Setup screen and press Enter. The Update Parameters for MVS System *ssid* screen appears.

```
----- Update Parameters for MVS System ABCD -----  
  
Command ==>  
  
Enter or Update Specific MVS Parameters :  
  
ATAM Parameter Member ==>  
Exit Load Library ==>
```

Enter the following MVS system parameters:

Parameter	Description
ATAM Parameter Member	Type the one- to eight-character name of the PARMLIB member that contains optional startup commands for ATAM. You must provide a name in this field even if the member does not exist. If a member does exist, it must be located in a data set available to the current PARMLIB concatenation. <b>Note:</b> For more information on the PARMLIB member, refer to Appendix C, "ATAM PARMLIB Member," on page 37
EXIT Load Library	Type the data set name of the load library that contains the ATAM exit. This is usually the same load library that is used in the STEPLIB DD in the started task JCL for ATAM. The default name for the EXIT Load Library field is SATHLOAD. In the sample JCL for the started task, member ATHPROC, the STEPLIB DD data set name is highlevel.SATHLOAD.

**Note:** You must specify an EXIT load library and press Enter to update the control file *before* you start the started task. Otherwise, the started task will fail to start.

Press Enter, then PF3 to exit this screen and return to the ATAM Setup screen.

## Step 7: Configure Automated Tape Allocation Manager

To enter parameters for ATAM, type **2** in the Command line on the ATAM Setup screen and press Enter. The ATAM Configuration screen appears.

```

ATHPNL2  V1R1 ----- ATAM Configuration ----- 2002/07/17 15:05:14.90

Option ==> _____

MVS ID: RS01
-----
Operational Mode: 1 1) Active 2) Passive
-----

Offline Unit Polling Interval..... 030 Seconds
Online Unit Polling Interval..... 005 Seconds
Online Unit Iteration Count..... 005 Iterations
Reconfiguration Termination Limit..... 015 Dynamic Changes
Vary Online Wait Time..... 030 Seconds
Vary Online Maximum Attempts..... 0020 Attempts

Surround WTOR Responses in Quotes..... (Y or N)

Press ENTER to save, END to exit.

```

This screen allows you to tailor the process for allocating tape drives. There are several options you can specify to customize how tape drives are varied online or offline.

### Operational parameter

The **Operational Mode** field allows you to set the method for allocation that you want ATAM to perform. Select one of the following modes:

Operational Mode	Description
Active	Type 1 to indicate that you want ATAM to automatically vary tape drives online in response to demands for tape drive units.
Passive	Type 2 to indicate that you want ATAM to continually check for drives that are not being used and return them to "free" status (selectable and unallocated). In passive mode, ATAM will not attempt to vary a tape unit online.

### ATAM configuration parameters

The ATAM configuration parameters are described below. The first time you use this screen, the default values appear in the fields.

Parameter	Description
Offline Unit Polling Interval	Enter a number between 001 and 999 to indicate the number of seconds to wait between attempts to see if a device is available to be varied offline or is still offline. The default is 30 seconds.

Parameter	Description
Online Unit Polling Interval	Enter a number between 000 and 999 to indicate the number of seconds to wait between attempts to vary an online device to offline. The default is 5 seconds.
Online Unit Iteration Count	Enter a number between 0000 and 9999 to indicate the number of times to attempt to see if a device can be varied offline. The default is 5 iterations. <b>Note:</b> It is recommended that you do not type a value of 0 for this parameter, but instead, code the value that fits your environment. If you type a 0 value in this field, ATAM will continue to attempt to find a device until it succeeds or until the started task is ended.
Reconfiguration Termination Limit	Enter a number between 001 and 999 to indicate the number of times that ATAM will tolerate dynamic IOCF reconfigurations before terminating the started task. The purpose of this limit is to conserve ECSA memory. The default limit is 15 dynamic changes.
Vary Online Wait Time	Enter a number between 000 and 999 to indicate the number of seconds that ATAM must wait between attempts to find an available tape unit, and then vary the device online. The default is 30 seconds.
Vary Online Maximum Attempts	Enter a number between 0000 and 9999 to indicate the maximum number of times that ATAM will attempt to find an available device for a job, and then vary the device online for that job. The default is 20 attempts. <b>Note:</b> It is recommended that you do not type a value of 0 for this parameter, but instead, code the value that fits your environment. If you type a 0 value in this field, ATAM will continue to attempt to find a device until it succeeds or until the started task is ended.
Surround WTOR Responses in Quotes	Type Y to display quote marks (") around write-to-operator messages. Otherwise, type N. The default is Y, surround responses with quotes.

Press Enter, then PF3 to exit this screen and return to the ATAM Setup screen.

If you want to return to the default settings for ATAM, type the DEFAULT, or DEF, command in the Option line. This returns the settings for the ATAM Configuration screen to their defaults.

### Additional MVS Images

If you want to run ATAM on additional MVS images, you must specify customization information for each MVS image. To do this, repeat the customization process for each MVS image, starting with "Step 6: Configure MVS system parameters" on page 8 and continuing onto "Step 7: Configure Automated Tape Allocation Manager" on page 10. When you have finished customizing all the MVS images on which you want to use ATAM, go to "Step 8: Stop and restart the started task"

## Step 8: Stop and restart the started task

Once you have set your configuration parameters on the ATAM Configuration screen, you must stop and restart the started task for those settings to take effect.

To stop the started task, issue the following MVS Stop command:

```
P ATH
```

This command assumes that you kept the name of the started task as provided in the sample JCL. If you changed the name of the started task, you must use that name in the MVS Stop command to stop the task.

**Notes:**

1. If you decide not to stop the started task, the new configuration settings will take effect the next time the started task is stopped and started.
2. Avoid using the MVS FORCE command to terminate ATAM. Unpredictable results may occur otherwise, including the termination of active MVS systems.

To restart the started task, issue the following MVS Start command:

```
S ATH
```

**Notes:**

1. If the started task fails to start, check to ensure that you specified an EXIT load library on the MVS Parameters screen (option S.1 from the ATAM main menu), then press Enter to update the control file. The started task requires the name of the EXIT load library.
2. The same control file is used for both the ISPF started task and the ATAM started task.

## **How the started task works with Automated Tape Allocation Manager**

ATAM requires a started task component that runs in its own address space. The started task establishes and provides the operating environment required by ATAM.

**Note:** If this started task is not available, there will be no automatic allocation of tape units.

The started task does not cause activity to occur or undesirable resource use. Once active, it services requests from users of ATAM. The majority of its activity is spent waiting for requests of this nature.

## **IPLs and the automatic started task**

You should set up the ATAM started task to start automatically when MVS is IPLed. You can do this by adding the appropriate command to the COMMAND member within SYS1.PARMLIB. You may need to consult your MVS support personnel to use this automatic startup.

**Note:** You need one ATAM started task for each MVS image that is sharing tape devices.

---

## Chapter 3. Current Allocation Status

After you have set the configuration options for your MVS systems, and stopped and restarted the started task, use the **Current Status** option to verify that ATAM is working as you configured it. The **Current Status** option helps you determine the level of activity that is related to your tape drives, such as:

- the number of tape drives that are varied offline, ready for use
- the number of tape drives that are varied online, but not allocated
- the number of tape drives that are online and allocated
- the current status of each tape drive in your environment.

---

### Accessing the Current Status screen

To access the Current Status screen, type **1** in the Option line of the ATAM main menu and press Enter. The Current Status screen appears, as shown in the following example:

```
Row 1 of 6 ----- Current Status ----- 2001/12/14 08:04:45
Option ==>                                SCROLL ==> PAGE

          ATH Service Task: ATH          Current Status: ACTIVE

          Task Started: 12/14/01          5:25:19
-----
UNITS: Discovered:      38  Selectable:    6  Online:      0
      Allocated:        0   Pending:      0
-----
USAGE:      Allocation Failures:    0  Forced Waits:    0
      Successful Allocations:      1
-----
----- Selectable Units -----
Cmd  Unit  Selectable  Online  Allocated  Pending  Allocations
-   -   -   -   -   -   -
-   0650   Y         N         N         N         0
-   0651   Y         N         N         N         0
-   0652   Y         N         N         N         0
-   0653   Y         N         N         N         0
-   0660   Y         N         N         N         0
-   0690   Y         N         N         N         1
***** Bottom of Data *****

Valid Line Commands: (A-Allocations)
```

To refresh the current status display, simply press Enter. ATAM will obtain the current data available and display it.

**Note:** Do not type a line command (Cmd column) or a command in the Option line before pressing Enter to refresh the data. Otherwise, ATAM will process the command instead of refreshing the data display.

## Display fields

The information on this screen is for display only.

Field	Description
ATH Service Task	The name of the started task used by ATAM for processing.
Current Status	Indicates the status of the started task: <ul style="list-style-type: none"><li>• Active - the started task is running.</li><li>• Inactive - the started task is not running.</li></ul>
Task Started	Indicates the date and time that the started task was initialized. The format for the date is MM/DD/YY and the format for the time is HH:MM:SS.
Units Discovered	Indicates the number of tape units that are actually defined to this MVS system.
Units Selectable:	Indicates the number of tape units that are available for use.
Units Online	Indicates the number of tape units that are currently assigned to a job.
Units Allocated	Indicates the number of tape units that are currently allocated.
Units Pending	Indicates the number of tape units that are allocated for a job, but are not online.
Allocation Failures	Indicates the number of events for which a tape unit could not be automatically allocated.
Forced Waits	Indicates the number of times a tape request was forced to wait for an available tape unit.
Successful Allocations	Indicates the number of events that were successfully allocated.
Unit	Indicates the name of the tape drive.
Selectable	Indicates whether this specific tape drive is currently available for selection.
Online	Indicates whether this specific tape unit is currently online.
Allocated	Indicates whether this specific tape unit is currently allocated to an MVS image.
Pending	Indicates whether this tape unit is pending, but not online.
Allocations	Indicates the number of times this specific tape unit was successfully allocated on this MVS image.



## Line command

There is only one valid line command for the Current Status screen:

Line Command	Description
A	Allocation - This provides a display-only screen where you can view the allocation activity for this specific tape unit. For descriptions of the fields on the Allocation Activity screen, refer to "Reviewing allocation activity" on page 16

## Optional commands

In addition to the A line command, there are commands you can enter in the Option line of the Current Status screen to find a string, sort the data, and print the current display. Each of these commands is described below.

### FIND

Syntax:

FIND *string* or *F string*

Find the first occurrence of the specified string in the scrollable area of the display.

Example:

FIND 652

In the example above, the FIND command will look for the text "652" in the scrollable area of the screen. If it finds this text, for example, if "652" is the name of one of your tape units, the FIND command will place the line containing that text at the top of the scrollable area.

### SORT

Syntax:

SORT UNIT|SELECT|ONLINE|ALLOCATED|PENDING|ALLOCS

Sort the rows in the scrollable area by the specified column. The sort keywords are listed in the same order as the columns on the report.

Example:

SORT UNIT

In the example above, the SORT command will sort the lines in the scrollable area based on the ID in the UNIT column.

### PRINT

Syntax:

PRINT

Print the information in the scrollable area of the screen.

Example:

PRINT

## Reviewing allocation activity

When you type **A** next to a specific tape unit on the Current Status screen and press Enter, the Allocation Activity screen is displayed. This screen contains display-only information about the allocations made to the tape unit you selected on the Current Status screen. The Allocation Activity screen is shown next.

```

Row 1 of 6 ----- Allocation Activity ----- 2001/12/14 09:11:16
Option ==>                                     SCROLL ==> PAGE

-----
Unit  Date      Time      Event      Job Name  Job Step  DDNAME  DSN
0690 12/12/01   4:00:10  ALLOCATE   DAILY001  STEP1    TAPE    DAILY.BKUP
0690 12/13/01   4:00:03  ALLOCATE   DAILY001  STEP1    TAPE    DAILY.BKUP
0690 12/14/01   4:00:04  ALLOCATE   WEEKLY04  STEP1    TAPE    WEEKL.BKUP
0690 12/07/01   4:00:04  ALLOCATE   WEEKLY04  STEP1    TAPE    WEEKL.BKUP
0690 12/08/01   4:00:04  ALLOCATE   DAILY001  STEP1    TAPE    DAILY.BKUP
0690 12/09/01   4:00:05  ALLOCATE   WEEKLY03  STEP1    TAPE    WEEKL.BKUP
***** Bottom of Data *****

```

## Display fields

The columns on the Allocation Activity screen contain information that is for display only that you can review. The report columns are described in the following table:

Column	Description
Unit	Indicates the name of the tape unit that was used to satisfy the allocation (only valid for ALLOCATE events).
Date	Indicates the date that the event occurred. The format is MM/DD/YY.
Time	Indicates the time that the event occurred. The format is HH:MM:SS.
Event	Describes what happened for this job. Possible events are: <ul style="list-style-type: none"> <li>ALLOCATE - The tape unit was successfully allocated for the job driving the event.</li> <li>ATAM Start - The started task for ATAM was started.</li> <li>ATAM Term - The started task for ATAM ended normally.</li> <li>FAIL - ATAM could not allocate a tape device for an allocation request. The MVS default option was then invoked.</li> <li>WAIT - An allocation request had to wait for a tape unit to become available. This same request may or may not have failed at a later time.</li> </ul>
Job Name	Indicates the name of the job that is driving the request.
Job Step	Indicates the name of the job step within the job that is driving the request.
DDNAME	Indicates the DDNAME within the job step of the job that is driving the request.

Column	Description
DSN	Indicates the name of the data set that is either being read from or written to for this job.

## Optional commands

There are three commands you can enter in the Option line of the Allocation Activity screen to find a string, sort the data, and print the current display. Each of these commands is described below.

### FIND

Syntax:

*FIND string or F string*

Find the first occurrence of the specified string in the scrollable area of the display.

Example:

FIND 690

In the example above, the FIND command will look for the text "690" in the scrollable area of the screen. If it finds this text, the FIND command will place the line containing that text at the top of the scrollable area.

### SORT

Syntax:

SORT UNIT|DATE|TIME|EVENT|JOB|STEP|DDN|DSNME

Sort the rows in the scrollable area by the specified column. The sort keywords are listed in the same order as the columns on the report. The keywords refer to the following columns:

- UNIT - Sort by the tape unit ID
- DATE - Sort by the Date column
- TIME - Sort by the Time column
- EVENT - Sort by the Event column
- JOB - Sort by the job name
- STEP - Sort by the job step name
- DDN - Sort by the DD name
- DSNME - Sort by the data set name, which is the DSN column

Example:

SORT UNIT

In the example above, the SORT command will sort the lines in the scrollable area based on the ID in the UNIT column.

## **PRINT**

Syntax:

PRINT

Print the information in the scrollable area of the screen.

Example:

PRINT

When you are finished reviewing the allocation activity of this tape drive, press PF3 to return to the Current Status screen. You can either choose another tape drive for which you want to review allocation activity or press PF3 again to return to the main menu.

---

## Chapter 4. Activity Reporting

The **Activity Reporting** option on the Automated Tape Allocation Manager main menu provides several reports to help you monitor tape drive activities. There are four primary reports for you to choose from, which are:

1. All activity
2. Job activity
3. Allocation activity
4. Failed allocations

Each of these reports is described in detail in this chapter.

---

### Common Fields

All of the reports have two items at the top of the screen that enable you to navigate the reports: the **SCROLL** field and the **Row N of N** field. These fields are described below.

The **SCROLL** field in the upper right corner works in the same manner as on other ISPF screens. The **SCROLL** field accepts a value or keyword to specify the scroll amount. Valid entries are: PAGE, CSR, MAX, DATA, HALF, or a number.

The **Row N of N** area indicates the number of the top row in the current view of the report and the total number of rows in the report. If you page down (F8), the first number will change to the top row of this view, while the second number (total rows) remains the same. This helps you see where you are in the report. If there are no rows for a report (the report is empty), the message "No rows to display" appears in place of the "Row N of N" message.

---

### Common Commands

There are three commands you can type in the Option line on any of the reports to find a string, sort the data, and print the current display. Each of these commands is described below.

#### FIND

Syntax:

FIND *string* or F *string*

Find the first occurrence of the specified string in the scrollable area of the display.

Example:

FIND 652

In the example above, the FIND command will look for the text "652" in the scrollable area of the screen. If it finds this text, the FIND command will place the line containing that text at the top of the scrollable area.

## SORT

Syntax:

```
SORT EVENT|DATE|TIME|UNIT|JOB|STEP|DDN|DSNME
```

Sort the rows in the scrollable area by the specified column. The sort keywords are listed in the same order as the columns on the report. The keywords refer to the following columns:

- EVENT - Sort by the Event column
- DATE - Sort by the Date column
- TIME - Sort by the Time column
- UNIT - Sort by the tape unit ID
- JOB - Sort by the job name
- STEP - Sort by the job step name
- DDN - Sort by the DD name
- DSNME - Sort by the data set name, which is the DSN column

Example:

```
SORT UNIT
```

In the example above, the SORT command will sort the lines in the scrollable area in ascending order based on the ID in the UNIT column. Ascending order is the default.

If you want to change the order to descending order, type a "D" after the column name. This is shown in the following example:

```
SORT UNIT D
```

## PRINT

Syntax:

```
PRINT
```

Print the information in the scrollable area of the screen.

Example:

```
PRINT
```

## Accessing the Activity Reporting option

To access the **Activity Reporting** screen, type **2** in the Option line of the ATAM main menu and press Enter. A window appears, as shown in the following example:

```
ATH$MAIN ----- Automated Tape Allocation Manager for z/OS and OS/390 -----
Option ==> 2_____

1 Current Status                               User ID: myuserid
2 Activity Reporting                           Date...: 2001/12/14
S +-----+                                     Release: V1R1
  |----- Select Activity Report -----|
  | Option ==>                             |
  |                                         |
  | 1 All Activity                         |
  | 2 Job Activity                         |
  | 3 Allocation Activity                  |
  | 4 Failed Allocations                   |
  |                                         |
  | X Exit Reporting Menu                  |
  +-----+
+-----+
```

You must type a number in the Option line to choose the report you want to view. Valid choices are:

Value	Description
1	<b>All Activity.</b> View a report listing all of the activities for all of the tape drives.
2	<b>Job Activity.</b> View a report listing all of the activities based on job name.
3	<b>Allocation Activity.</b> View a report listing all of the allocations that occurred for all of the tape drives.
4	<b>Failed Allocations.</b> View a report listing all of the allocations that were requested by jobs, but did not occur or that failed during the job.

## All Activity report

To select the All Activity report, type **1** in the Option line of the Select Activity Report window and press Enter. The All Activity report lists all of the activities associated with ATAM, and is initially sorted by the Date column. An example is shown below:

```

Row 1 of 48 ----- All Activity ----- 2001/12/14 12:08:37
Option ==>                                     SCROLL ==> CSR

-----
EVENT      Date      Time      Unit  Job Name  Job Step  DDNAME  DSN
ATAM Start 12/07/01  1:32:25  N/A   N/A       N/A      N/A     N/A
ALLOCATE   12/07/01  1:33:05  0651  ABCDE    STEP1    SYSOUT   WXYZ.CRASH
ALLOCATE   12/07/01  1:52:16  0652  ABCDE    STEP1    SYSOUT   WXYZ.TEST.
ALLOCATE   12/07/01  2:46:48  0652  ABCD5    STEP1    SYSOUT   WXYZ.TEST.
ALLOCATE   12/07/01  4:00:04  0690  WEEKLY04 STEP1    TAPE     WEEKL.BKUP
ATAM Start 12/07/01  14:14:54 N/A   N/A       N/A      N/A     N/A
ATAM Term  12/08/01  1:52:58  N/A   N/A       N/A      N/A     N/A
ATAM Start 12/08/01  1:55:28  N/A   N/A       N/A      N/A     N/A
ALLOCATE   12/08/01  4:00:04  0690  DAILY001 STEP1    TAPE     DAILY.BKUP
ATAM Start 12/08/01  12:56:34 N/A   N/A       N/A      N/A     N/A
ATAM Term  12/08/01  13:41:11 N/A   N/A       N/A      N/A     N/A
ATAM Start 12/08/01  13:41:45 N/A   N/A       N/A      N/A     N/A
ALLOCATE   12/08/01  13:42:14 0652  ABCDE    STEP1    SYSOUT   WXYZ.TEST.
ATAM Term  12/08/01  14:05:32 N/A   N/A       N/A      N/A     N/A
ATAM Start 12/08/01  14:59:25 N/A   N/A       N/A      N/A     N/A
ALLOCATE   12/08/01  14:59:55 0652  ABCDE    STEP1    SYSOUT   WXYZ.TEST.
ATAM Term  12/08/01  15:08:07 N/A   N/A       N/A      N/A     N/A
ATAM Start 12/08/01  15:08:32 N/A   N/A       N/A      N/A     N/A

```

All of the information on this screen is for display only. However, you can enter commands in the Option line to find, sort, and print the data in the scrollable area of the report. For more information on the column headings and the type of data listed in the report, refer to "Display columns for All Activity report". For information on commands you can use in the Option line, refer to "Common Commands" on page 19.

## Display columns for All Activity report

The columns in the All Activity report contain information that is for display only. The report columns are described in the following table.

Column	Description
Event	<p>Describes what happened for this job. Possible events are:</p> <ul style="list-style-type: none"> <li>ALLOCATE - The tape drive was successfully allocated for the job driving the event.</li> <li>ATAM Start - The started task for ATAM was started.</li> <li>ATAM Term - The started task for ATAM ended normally.</li> <li>FAIL - ATAM could not allocate a tape device for an allocation request. The MVS default option was then invoked.</li> <li>WAIT - An allocation request had to wait for a tape unit to become available. This same request may or may not have failed at a later time.</li> </ul>



Column	Description
Date	Indicates the date that the event occurred. The format is MM/DD/YY.
Time	Indicates the time that the event occurred. The format is HH:MM:SS.
Unit	Indicates the name of the tape drive used to satisfy the allocation (only valid for ALLOCATE events).
Job Name	Indicates the name of the job that is driving the request.
Job Step	Indicates the name of the job step within the job that is driving the request.
DDNAME	Indicates the DDNAME within the job step of the job that is driving the request.
DSN	Indicates the name of the data set that is either being read from or written to for this job.

## Job Activity report

To select the Job Activity report, type **2** in the Option line of the Select Activity Report window, and press Enter. The Job Activity report lists all of the job activities, and is initially sorted by the job name. An example of a Job Activity report is below:

```

Row 1 of 170 ----- Job Activity ----- 2001/12/14 13:25:36
Option ====>                                SCROLL ====> CSR
-----
Job Name Job Step Event Date Time Unit DDNAME DSN
ABCDE STEP1 ALLOCATE 12/08/01 17:15:34 0652 SYSOUT ABCD.TEST.
ABCDE STEP1 ALLOCATE 12/08/01 17:06:02 0652 SYSOUT ABCD.TEST.
ABCDE STEP1 ALLOCATE 12/08/01 15:08:52 0652 SYSOUT ABCD.TEST.
ABCDE STEP1 ALLOCATE 12/13/01 1:59:12 0652 SYSOUT ABCD.TEST.
ABCDE STEP1 ALLOCATE 12/08/01 17:34:13 0652 SYSOUT ABCD.TEST.
ABCDE STEP1 ALLOCATE 12/08/01 17:23:31 0652 SYSOUT ABCD.TEST.
ABCDE STEP1 ALLOCATE 12/08/01 14:59:55 0652 SYSOUT ABCD.TEST.
ABCDE STEP1 ALLOCATE 12/07/01 1:52:16 0652 SYSOUT ABCD.TEST.
ABCDE STEP1 ALLOCATE 12/07/01 1:33:04 0551 SYSOUT ABCD.CRASH
ABCDE STEP1 ALLOCATE 12/08/01 13:42:14 0652 SYSOUT ABCD.TEST.
ABC05 STEP1 ALLOCATE 12/07/01 2:46:48 0652 SYSOUT ABCD.TEST.
DAILY001 STEP1 ALLOCATE 12/12/01 4:00:10 0690 TAPE DAILY.BKUP
DAILY001 STEP1 ALLOCATE 12/13/01 4:00:04 0690 TAPE DAILY.BKUP
DAILY001 STEP1 ALLOCATE 12/08/01 4:00:04 0690 TAPE DAILY.BKUP
DAILY003 STEP1 ALLOCATE 12/09/01 4:00:04 0690 TAPE WEEKL.BKUP
DAILY004 STEP1 ALLOCATE 12/14/01 4:00:04 0690 TAPE WEEKL.BKUP
DAILY004 STEP1 ALLOCATE 12/07/01 4:00:04 0690 TAPE WEEKL.BKUP

```

All of the information on this screen is provided for your review. However, you can enter commands in the Option line to find, sort, and print the data in the scrollable area of the report. For more information on the column headings and the type of data listed in the report, refer to “Display columns for Job Activity report” on page 24. For information on commands you can use in the Option line, refer to “Common Commands” on page 19.

## Display columns for Job Activity report

The columns in the Job Activity report contain information that is for display only. The report columns are described in the following table:

Column	Description
Job Name	Indicates the name of the job that is driving the request.
Job Step	Indicates the name of the job step within the job that is driving the request.
Event	Describes what happened for this job. Possible events are: <ul style="list-style-type: none"><li>• ALLOCATE - The tape drive was successfully allocated for the job driving the event.</li><li>• ATAM Start - The started task for ATAM was started.</li><li>• ATAM Term - The started task for ATAM ended normally.</li><li>• FAIL - ATAM could not allocate a tape device for an allocation request. The MVS default option was then invoked.</li><li>• WAIT - An allocation request had to wait for a tape unit to become available. This same request may or may not have failed at a later time.</li></ul>
Date	Indicates the date that the event occurred. The format is MM/DD/YY.
Time	Indicates the time that the event occurred. The format is HH:MM:SS.
Unit	Indicates the name of the tape drive used to satisfy the allocation (only valid for ALLOCATE events).
DDNAME	Indicates the DDNAME within the job step of the job that is driving the request.
DSN	Indicates the name of the data set that is either being read from or written to for this job.

## Allocation Activity report

To view the Allocation Activity report, type 3 in the Option line of the Select Activity Report window, and press Enter. The Allocation Activity report lists all of the jobs with an allocation activity, and is initially sorted by the unit ID. An example is shown below:

```

Row 1 of 89 ----- Allocation Activity ----- 2001/12/14 13:49:50
Option ==>                                     SCROLL ==> CSR
-----
Unit  Date      Time      Event      Job Name  Job Step  DDNAME  DSN
0651 12/07/01    1:33:04  ALLOCATE   ABCDE     STEP1    SYSOUT  ABCD.CRASH
0652 12/08/01    17:15:34  ALLOCATE   ABCDE     STEP1    SYSOUT  ABCD.TEST.
0652 12/08/01    17:06:02  ALLOCATE   ABCDE     STEP1    SYSOUT  ABCD.TEST.
0652 12/08/01    15:08:52  ALLOCATE   ABCDE     STEP1    SYSOUT  ABCD.TEST.
0652 12/13/01    1:59:12  ALLOCATE   ABCDE     STEP1    SYSOUT  ABCD.TEST.
0652 12/08/01    17:34:13  ALLOCATE   ABCDE     STEP1    SYSOUT  ABCD.TEST.
0652 12/08/01    17:23:31  ALLOCATE   ABCDE     STEP1    SYSOUT  ABCD.TEST.
0652 12/07/01    2:46:48  ALLOCATE   ABCD5     STEP1    SYSOUT  ABCD.TEST.
0652 12/07/01    1:52:16  ALLOCATE   ABCDE     STEP1    SYSOUT  ABCD.TEST.
0652 12/08/01    13:42:14  ALLOCATE   ABCDE     STEP1    SYSOUT  ABCD.TEST.
0652 12/08/01    14:59:55  ALLOCATE   ABCDE     STEP1    SYSOUT  ABCD.TEST.
0690 12/14/01    4:00:04  ALLOCATE   WEEKLY04  STEP1    TAPE    WEEKL.BKUP
0690 12/13/01    4:00:04  ALLOCATE   DAILY001  STEP1    TAPE    DAILY.BKUP
0690 12/12/01    4:00:10  ALLOCATE   DAILY001  STEP1    TAPE    DAILY.BKUP
0690 12/08/01    4:00:04  ALLOCATE   DAILY001  STEP1    TAPE    DAILY.BKUP
0690 12/07/01    4:00:04  ALLOCATE   WEEKLY04  STEP1    TAPE    WEEKL.BKUP
0690 12/09/01    4:00:04  ALLOCATE   WEEKLY03  STEP1    TAPE    WEEKL.BKUP

```

All of the information on this screen is provided for your review. However, you can enter commands in the Option line to find, sort, and print the data in the scrollable area of the report. For more information on the type of data in the report, refer to “Display columns for Allocation Activity report”. For information on commands you can use in the Option line, refer to “Common Commands” on page 19.

### Display columns for Allocation Activity report

The columns on the Allocation Activity report contain information that is for display only. The information provided on this screen is described in the following table.

Column	Description
Unit	Indicates the name of the tape drive used to satisfy the allocation (only valid for ALLOCATE events).
Date	Indicates the date that the event occurred. The format is MM/DD/YY.
Time	Indicates the time that the event occurred. The format is HH:MM:SS.

Column	Description
Event	Describes what happened for this job. Possible events are: <ul style="list-style-type: none"> <li>• ALLOCATE - The tape drive was successfully allocated for the job driving the event.</li> <li>• ATAM Start - The started task for ATAM was started.</li> <li>• ATAM Term - The started task for ATAM ended normally.</li> <li>• FAIL - ATAM could not allocate a tape device for an allocation request. The MVS default option was then invoked.</li> <li>• WAIT - An allocation request had to wait for a tape unit to become available. This same request may or may not have failed at a later time.</li> </ul>
Job Name	Indicates the name of the job that is driving the request.
Job Step	Indicates the name of the job step within the job that is driving the request.
DDNAME	Indicates the DDNAME within the job step of the job that is driving the request.
DSN	Indicates the name of the data set that is either being read from or written to for this job.

## Failed Allocations report

To select the Failed Allocations report, type **4** in the Option line of the Select Activity Report window, and press Enter. The Failed Allocations report lists all of the jobs with unsuccessful allocations, and is initially sorted by the job name. An example is shown below:

```

Row 1 of 2  ----- Failed Allocations -----      2001/12/16  14:23:53
Option  ==>                                     SCROLL ==>  CSR

-----
Job Name  Job Step  Event   Date      Time      Unit  DDNAME  DSN
ABCD5    STEP1    FAIL    12/15/01  13:46:48  0690  SYSOUT  ABCD.TEST
DAILY001 STEP1    FAIL    12/15/01  13:46:48  0690  TAPE    DAILY.BKUP

```

All of the information on this screen is provided for your review. However, you can enter commands in the Option line to find, sort, and print the data in the scrollable area of the report. For more information on the column headings and the type of data listed in the report, refer to “Display columns for Failed Allocations report” on page 27. For information on commands you can use in the Option line, refer to “Common Commands” on page 19.

## Display columns for Failed Allocations report

The columns on the Failed Allocations report contain information that is for display only. The information provided on this screen is described in the following table:

Column	Description
Job Name	Indicates the name of the job that is driving the request.
Job Step	Indicates the name of the job step within the job that is driving the request.
Event	Describes what happened for this job. Possible events are: <ul style="list-style-type: none"><li>• ALLOCATE - The tape drive was successfully allocated for the job driving the event.</li><li>• ATAM Start - The started task for ATAM was started.</li><li>• ATAM Term - The started task for ATAM ended normally.</li><li>• FAIL - ATAM could not allocate a tape device for an allocation request. The MVS default option was then invoked.</li><li>• WAIT - An allocation request had to wait for a tape unit to become available. This same request may or may not have failed at a later time.</li></ul>
Date	Indicates the date that the event occurred. The format is MM/DD/YY.
Time	Indicates the time that the event occurred. The format is HH:MM:SS.
Unit	Indicates the name of the tape drive used to satisfy the allocation (only valid for ALLOCATE events).
DDNAME	Indicates the DDNAME within the job step of the job that is driving the request.
DSN	Indicates the name of the data set that is either being read from or written to for this job.



---

## Appendix A. Migrating from Unicenter CA-MIA Tape Sharing to IBM Automated Tape Allocation Manager

CA-MIA and ATAM cannot coexist on the same image. To migrate from CA-MIA to ATAM, CA-MIA must be shutdown on the system before ATAM is started. This appendix outlines considerations and steps to follow when implementing ATAM in an environment that is currently using CA-MIA.

By definition, CA-MIA and ATAM share tape devices between multiple systems. In order to test ATAM on one system while continuing to run CA-MIA on one or more other systems, **it is imperative that the two products NOT be allowed to manage the same set of devices concurrently.** Failure to ensure that this does not happen could negatively impact your production processing. BEWARE!

---

### Example Environment

For the purposes of this document, assume the following:

1. There are two systems: SYSA and SYSB.
2. You have eight (8) tape units and their device addresses are 0280-0287.
3. The same tape unit device addresses refer to the same physical devices on both systems (e.g., 0280 on SYSA is the same physical device as 0280 on SYSB).
4. All of the tape units are assign-capable devices (e.g., 3480's or higher).
5. CA-MIA is currently installed on both systems and is managing all eight of these tape units.
6. You want to install ATAM on SYSA while leaving CA-MIA in operation on SYSB.

---

### Installation for testing of ATAM on SYSA

Follow the steps below to install ATAM for testing on SYSA.

#### Step 1: Select the devices each product will manage.

Let's assume that you want to test ATAM on SYSA using four tape units: device addresses 0280 through 0283. CA-MIA will continue to manage the remaining four devices: addresses 0284-0287.

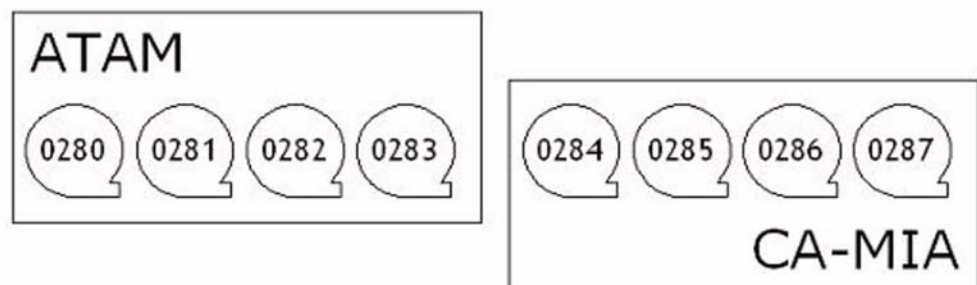


Figure 1. Devices can be managed by one product or the other, but not both!

## Step 2: Install ATAM on SYSA.

Install the software, but do **NOT** start the ATAM started task. Refer to the *Program Directory for IBM Automated Tape Allocation Manager for z/OS* for installation instructions.

## Step 3: Create an ATAM PARMLIB Member.

Create a PARMLIB member for ATAM on SYSA as outlined in “Step 6: Configure MVS system parameters” on page 8 and in Appendix C, “ATAM PARMLIB Member,” on page 37. The PARMLIB member should contain the following two records:

```
X,0000-FFFF
```

```
S,0280-0283
```

This will instruct ATAM to exclude all of the devices that it discovers, and only select device addresses 0280-0283 to be managed by ATAM.

**Note:** By default, ATAM discovers and manages all devices found on the system. Failure to create the PARMLIB member as outlined above will result in ATAM automatically attempting to manage all tape devices, including those that may already be under the control of CA-MIA.

## Step 4: Remove devices 0280-0283 from CA-MIA control on SYSB.

Use a CA-MIA command to remove devices 0280 through 0283 from CA-MIA control on SYSB. Refer to the CA-MIA documentation to determine the necessary command(s) and syntax.

Make any necessary changes to the CA-MIA configuration on SYSB to ensure that it will not attempt to manage devices 280-283 upon product restart.

## Step 5: Shut down CA-MIA on SYSA.

Ensure that CA-MIA will not restart automatically and that it will not attempt to manage device addresses 0280-0283 if CA-MIA is restarted. Make any necessary CA-MIA configuration changes as directed in the CA-MIA documentation.

## Step 6: Check for existing Allocation Recovery exits.

Issue the following console command to check for existing Allocation Recovery exits:

```
D PROG,EXIT,EX=IEF_ALLC_OFFLN
```

If you receive the following message then, yes, CA-MIA is active as indicated by the presence of module MIAALOCX:

```
CSV461I 11.10.55 PROG,EXIT DISPLAY 101
```

```
EXIT MODULE STATE MODULE STATE MODULE STATE
```

```
IEF_ALLC_OFFLN MIAALOCX A
```

CA-MIA and ATAM must not be allowed in the Allocation Recovery exit at the same time as they are not designed to work together. Ensure that CA-MIA is shutdown and its exit is not installed before proceeding further with ATAM start up.



If another product is installed in Allocation Recovery, you will receive the following message from ATAM at start up:

```
ATH012E MULTIPLE EXIT ROUTINES DETECTED, RESULTS MAY BE UNPREDICTABLE
```

## Step 7: Complete the ATAM configuration and product start up.

Following instructions in Chapter 2, “Configuring Automated Tape Allocation Manager,” on page 3, complete the installation and configuration of ATAM on SYSA.

## Installation for ATAM testing is complete

At this point, ATAM is running on SYSA and is managing device addresses 0280 through 0283. CA-MIA is operating on SYSB and is managing device addresses 0284 through 0287.

Operations staff should begin to familiarize themselves with the commands and operations of ATAM on SYSA. Refer to Appendix B, “Operator Commands,” on page 33 for more information on console operator commands.

ATAM can be stopped and started on SYSA at will, but it will only manage the devices specified in the PARMLIB member.

---

## Migrating to Production

Use the steps below to move ATAM into production, replacing the use of CA-MIA.

### Step 1: Install ATAM on SYSB.

Install the software, but do **NOT** start the ATAM started task. Refer to the *Program Directory for IBM Automated Tape Allocation Manager for z/OS* for installation instructions.

### Step 2: Create an ATAM PARMLIB Member

Create a PARMLIB member for ATAM on SYSB as outlined in “Step 6: Configure MVS system parameters” on page 8 and in Appendix C, “ATAM PARMLIB Member,” on page 37. The PARMLIB member should contain the following two records:

```
X,0000-FFFF
```

```
S,0280-0287
```

This will instruct ATAM to exclude all of the devices that it discovers, and only select device addresses 0280-0287 to be managed by ATAM.

Update the PARMLIB member for ATAM on SYSA as well, making it look the same as the PARMLIB member for SYSB (above).

### Step 3: Shut down CA-MIA on SYSB.

Ensure that CA-MIA will not restart automatically, and that it will not attempt to manage device addresses 0280-0287 if CA-MIA is restarted. Make any necessary CA-MIA configuration changes as directed in the CA-MIA documentation.

## **Step 4: Complete the ATAM configuration and product start up.**

Following instructions in Chapter 2, "Configuring Automated Tape Allocation Manager," on page 3, complete the installation and configuration of ATAM on SYSB.

ATAM is now managing devices 0280 - 0287 on SYSB.

## **Step 5: Add remaining devices to SYSA.**

Issue the following console command on SYSA to instruct ATAM to manage the devices that were excluded during parallel testing with CA-MIA.

```
F ATH,S,0284-0287 (where ATH is the name of the ATAM started task)
```

Alternatively, you could recycle the ATAM started task on SYSA and it would process the PARMLIB member at start up. However, issuing this console command is sufficient. Refer to Appendix B, "Operator Commands," on page 33 for more information on how to use the console commands.

---

## Appendix B. Operator Commands

Automated Tape Allocation Manager (ATAM) offers several different operator commands that can be used to display the status of ATAM and to dynamically alter the ATAM configuration. All commands are intended to be modifiers of the MVS modify command. For example, refer to the command below:

```
F ATH,L
```

This command displays the list of tape devices known to ATAM on the operator's console. ATAM commands consist of a single-letter command identifier followed by command modifiers, if required. Commands are also divided into two categories:

- Display commands
- Configuration commands

Both types of commands are described in this appendix.

Please note that any dynamic changes made to the ATAM configuration with these commands are not saved between the stop and start cycle of the ATAM started task. If you wish to issue a series of commands for each ATAM started task cycle, you must save the commands in a PARMLIB member. Commands contained in the ATAM PARMLIB member are executed each time ATAM is started. For more information on how to use an ATAM PARMLIB member, refer to Appendix C, "ATAM PARMLIB Member," on page 37

---

### Display Commands

Display commands provide information about ATAM on the issuing operator's console. Commands in this category have no effect on the current ATAM configuration.

The table below lists the single-character display commands you can use.

Command	Description
S	Lists the selectable tape units.
L	Lists the status of all tape units.
V	Lists the version of ATAM that is currently running.
T	Displays a list of the currently active ATAM tuning parameters. These are the same parameters you selected on the ATAM configuration panels in the ISPF interface. The tuning parameters are the following: <ul style="list-style-type: none"><li>• T1 = Offline Unit Polling Interval</li><li>• T2 = Online Unit Polling Interval</li><li>• T3 = Online Unit Iteration Count</li><li>• T4 = Reconfiguration Termination Limit</li><li>• T5 = Vary Online Wait Time</li><li>• T6 = Vary Online Maximum Attempts</li></ul> <b>Note:</b> For more information on these tuning parameters, refer to "ATAM configuration parameters" on page 10

Command	Description
W	Displays a list of all WTOR messages being monitored for automated response.

---

## Dynamic Configuration Commands

Configuration commands enable an operator to dynamically reconfigure ATAM without the need to recycle the ATAM started task. A list of the configuration commands is provided below:

Command	Description
S,xxxx	Defines the tape unit as selectable. Replace xxxx with the four-character ID of the tape unit. Once made selectable, a tape unit is available to ATAM for automatic allocation.
S,xxxx-yyyy	Defines a range of tape units that are now selectable to ATAM. Replace xxxx with the low numeric tape unit identifier and replace yyyy with the high numeric tape unit ID. All units between and including the high and low range will be made available.
X,xxxx	Excludes the tape unit identified by xxxx from ATAM's pool of tape units. Once excluded, the designated tape unit can no longer be automatically allocated (varied online) or deallocated (varied offline) by ATAM.
X,xxxx-yyyy	Excludes the range of tape units from xxxx to yyyy from ATAM's pool of tape units from which it can allocate and deallocate. All units in the range of xxxx through yyyy will be excluded.
Tz=nnn	Dynamically changes the applicable ATAM tuning parameter. Replace nnn with the value you wish to use in place of the current value. Modifiers and their meanings are listed below: <ul style="list-style-type: none"> <li>• T1 = Offline Unit Polling Interval</li> <li>• T2 = Online Unit Polling Interval</li> <li>• T3 = Online Unit Iteration Count</li> <li>• T4 = Reconfiguration Termination Limit</li> <li>• T5 = Vary Online Wait Time</li> <li>• T6 = Vary Online Maximum Attempts</li> </ul> <p><b>Note:</b> For more information on these tuning parameters, refer to "ATAM configuration parameters" on page 10</p>

Command	Description
W=msgid,reply,offset	<p>This command enables you to specify a message that ATAM is to automatically respond to when the required tape unit is online and available. You also specify the reply that is to be issued. The parameters are:</p> <ul style="list-style-type: none"> <li>• Msgid is the message number you wish to monitor.</li> <li>• Reply is the exact reply ATAM is to issue.</li> <li>• Offset is the exact location, starting with the first character in the message ID, where ATAM can find the unit ID of the target tape.</li> </ul> <p>For example, look at the command and message below:</p> <p>W=XYZ5373I,R,57</p> <p>XYZ5373I Unable to allocate tape drive with device type <i>device ID</i> for tape <i>volume ID</i>. Reply 'C' (cancel), 'R' (retry), or 'W' (wait).</p> <p>When message XYZ5373I is encountered, ATAM will reply with an R whenever the device ID indicated at offset 57 in the message text is online and available.</p>
R=msgid,reply,offset	<p>This command is similar to the "W=" command described above, but does not require a unit name or device ID. The "R=" command enables you to specify a message that ATAM is to automatically respond to and the reply that is to be issued. The parameters are:</p> <ul style="list-style-type: none"> <li>• Msgid is the message number you wish to monitor.</li> <li>• Reply is the exact reply ATAM is to issue. The reply text must match what is in the message being acted upon (quotes do not count as part of the reply text).</li> <li>• Offset is the location, starting with the first character in the message ID, where ATAM can find the matching reply text in the message. For the "R=" command, the location does not have to be exact. ATAM will scan up to seven (7) bytes forward to try and match the text. The offset to the matching string in the message is required so that ATAM will not issue invalid responses.</li> </ul> <p>For example, look at the command below:</p> <p>R=XYZ238D,WAIT,20</p> <p>This tells ATAM to respond with WAIT each time it encounters an XYZ238D message and that the string WAIT can be found at offset 20 through 27 in the message text.</p>

There are two messages that you can use to assign a response to either "W=" or "R=" commands:

- IEF238D - The default reply is WAIT.
- IEF433D- The default reply is NOHOLD.

In addition, ATAM allows you to alter the response issued to these messages.



---

## Appendix C. ATAM PARMLIB Member

The ATAM PARMLIB member allows you to specify ATAM commands that will be executed each time you start the ATAM started task. This member provides the ability to further customize ATAM to fit your particular tape unit environment. For a list of these commands and the command syntax, refer to Appendix B, "Operator Commands," on page 33

---

### Using the Exclude (X) command in a PARMLIB

When ATAM starts up, it automatically discovers and begins managing the eligible tape devices that it finds on the system. If there are specific device addresses that you do NOT want ATAM to manage, you must list those devices in an Exclude (X) command in the ATAM PARMLIB member. If tape device addresses are not specifically excluded via the "X" command in the PARMLIB member, ATAM will automatically discover and manage all eligible tape devices that it can find on the system.

#### Sample Exclude Command

This section shows how to use the Exclude (X) command in a PARMLIB. Let us assume that your tape device addresses are 0280-02FF and 03B0-03BF, which ATAM automatically discovers and manages. If you do not want ATAM to manage devices 02F0-02FF, you would type the following statement in your PARMLIB member:

```
X,02F0-02FF      NOTE: WE ARE EXCLUDING DEVICE RANGE 02F0-02FF
```

Now ATAM will manage all eligible tape drives, with the exception of 02F0 through 02FF. Without the "X" command, as shown in the above example, ATAM would discover and manage all eligible tape devices, including those with device addresses 02F0 through 02FF.

---

### Syntax rules

This section describes the syntax rules you must follow in the PARMLIB member. The rules are listed below:

- A command must start in the first column.
- Only one command per line is processed.
- Each command is terminated by the first blank encountered.
- Comments must be separated from the command by at least one blank.
- Any record with an asterisk (\*) in the first column is treated as a comment.

---

### Specifying the PARMLIB member name

To specify the name of the ATAM PARMLIB member that is read by ATAM at start up, follow these steps:

1. Choose option S, **Setup and Configuration** on the ATAM main menu.
2. Choose option 1 for **MVS Specific Information** on the ATAM Setup screen.

3. On the "Update Parameters for MVS System ssid" screen, type the PARMLIB member name in the **ATAM Parameter Member** field.

The ATAM PARMLIB member must exist in your system PARMLIB concatenation when the ATAM task is started. If a PARMLIB member does not exist in this concatenation, ATAM will issue a message, "ATH047E MEMBER xxxxxxxx NOT FOUND IN PARMLIB," and continue processing normally.

---

## Common Questions

This section contains questions and answers that may help you understand more about using PARMLIBs with the ATAM started task.

**Q: Can I add a PARMLIB DDname to the ATAM started task JCL to indicate which library I want it to look in for the member?**

A: No, ATAM uses Logical Parmlib Support to determine the system PARMLIB concatenation that was specified for your system during the IPL. To identify your system PARMLIB concatenation, issue the following console command:

```
D PARMLIB
```

An example of the response to the "D PARMLIB" command is shown below:

```
IEE251I 11.38.04 PARMLIB DISPLAY 645
PARMLIB DATA SETS SPECIFIED AT IPL
ENTRY  FLAGS  VOLUME  DATA SET
  1      S    OS280T  SYS1.ADCD08.PARMLIB
  2      S    OS39M1  SYS1.PARMLIB
```

One of the PARMLIB data sets listed in the example above must contain the member that was specified in the "ATAM Parameter Member" field (option S.1 from the ATAM main menu). For example, if you typed ATAM001 in the "ATAM Parameter Member" field then member ATAM001 must exist in one of the libraries listed in the output from the "D PARMLIB" command.

**Q: If I change the member name in the "ATAM Parameter Member" field (option S.1 from the ATAM main menu), do I have to recycle the ATAM started task?**

A: Yes, ATAM only searches for and executes the PARMLIB member contents at product initialization.



---

## Appendix D. VTS load balancing exit

When using z/OS to share two or more DFSMS-managed Virtual Tape Servers (VTS), a problem occurs when identifying which VTS library in the concatenation is specified as the STORGRP. The IBM Allocation Recovery exit, IEF\_ALLC\_OFFLN, only sees the units of the last library used, not the units of the other VTS libraries. This, in turn, causes Automated Tape Allocation Manager (ATAM) to see only the units from the last library.

With ATAM's VTS load balancing feature, all of the VTS libraries are used, not just the last library. This is accomplished through ATAM's STORCLAS ACS exit that uses a unique storage class name for each VTS library. This exit works in conjunction with your DFSMS STORCLAS and STORGRP ACS routines so that only one library name will be passed to MVS Allocation for a unit assignment. This library assignment will be based on the criteria for VTS load balancing in ATAM's STORCLAS ACS exit routine.

---

### Modifying storage class and group names

To implement VTS load balancing, you need to make changes to the DFSMS STORCLAS and STORGRP ACS routines, then update the ATAM STORCLAS exit with the new storage classes. Follow the steps below:

1. Using DFSMS, define and activate storage class names. You need to define:
  - a. A "generic" storage class name that can be used for any VTS library, such as SCVTS.
  - b. Specific storage class names for each VTS library, such as SCVTS1 for library 1, SCVTS2 for library 2, etc.
2. Update the DFSMS **STORCLAS** ACS routine with these new storage class names. Assign each name using the &STORCLAS variable, such as:

```
&STORCLAS = 'SCVTS'    (any VTS library)
```

```
&STORCLAS = 'SCVTS1'  (VTS library 1)
```

```
&STORCLAS = 'SCVTS2'  (VTS library 2)
```

3. Update the DFSMS **STORGRP** ACS routine so it can test for the ATAM-redirected assignment of the &STORCLAS variable. Perform the following steps to modify the DFSMS STORGRP ACS routine:
  - a. Update the &STORCLAS variable with the new storage class names, such as &STORCLAS = 'SCVTS'.
  - b. Update the &STORGRP variable with the storage group that represents the VTS library you want to associate with each storage class. For example, if storage group SGLIB2 (VTS library 2) should be associated with storage class SCVTS2, then the variables would look like this:

```
&STORCLAS='SCVTS2'
```

```
&STORGRP='SGLIB2' /*Storage group representing library 2
```

The screen below provides an example of how the STORGRP ACS routine may look when you have updated it with new storage classes and group assignments for three VTS libraries.

```

WHEN (&STORCLAS='SCVTS1') /*ATAM redirected to Library 1*/
DO
  SET &STORGRP='SGLIB1'
EXIT
END

WHEN (&STORCLAS='SCVTS2') /*ATAM redirected to Library 2*/
DO
  SET &STORGRP='SGLIB2'
EXIT
END

WHEN (&STORCLAS='SCVTS3') /*ATAM redirected to Library 3*/
DO
  SET &STORGRP='SGLIB3'
EXIT
END

WHEN (&STORCLAS='SCVTS') /*ATAM not active, use any VTS*/
DO
  SET &STORGRP='SGLIB1','SGLIB2','SGLIB3'
EXIT
END

```

- Next, update the ATAM member, ATH#VTSO, in the highlevel .SAMPLIB library to include the new storage classes. This is the ATAM STORCLAS exit that will perform the VTS load balancing.

**Note:** An example of the highlevel qualifier for ATAM is ATH.PR00110, but the HLQ is based on how the ATAM product libraries were named at your site.

The instructions for modifying the JCL in ATH#VTSO are listed in the member. A part of the code described in this member is shown below for your reference:

```

*-----*
* CHANGE THE VALUE "SCVTS" TO MATCH YOUR INSTALLATION'S STORCLAS* 00850001
* NAME FOR THE STORCLAS THAT TELLS SMS TO SELECT ANY VTS. * 00860001
*-----* 00870001
*-----* 00880001
VTSB_CLAS DC AL2(VTSB_CLAS_NAME#) 00890001
VTSB_CLAS_NAME DC C'SCVTS' DO NOT EXCEED 8 CHARACTERS 00900001
VTSB_CLAS_NAME# EQU *-VTSB_CLAS_NAME 00910001
DS (8-VTSB_CLAS_NAME#)C 00920001
*-----* 00930001
* VTS STORCLAS LIBRARY DEFINITION SECTION. * 00940001
* ADD YOUR STORCLAS DEFINITIONS TO MATCH THE STORCLAS THAT MATCH* 00950001
* EACH LIBRARY. * 00960001
* * 00970001
*-----* 00980001
*-----* 00990001
VTSB_SC# EQU 3 <= CHANGE TO MATCH TOTAL NUMBER IN TABLE 01000001
VTSB_LIBRARIES DS OF START ON FULL WORD BDY 01010001
VTSB_SC1 DC AL2(VTSB_SC1#) 01020001
VTSB_SC1_NAME DC C'SCVTS1' STORCLAS FOR VTS 1 01030001
VTSB_SC1# EQU *-VTSB_SC1_NAME 01040001
DS (8-VTSB_SC1#)C 01050001
01060001
VTSB_SC2 DC AL2(VTSB_SC2#) 01070001
VTSB_SC2_NAME DC C'SCVTS2' STORCLAS FOR VTS 2 01080001
VTSB_SC2# EQU *-VTSB_SC2_NAME 01090001
DS (8-VTSB_SC2#)C 01100001
01110001
VTSB_SC3 DC AL2(VTSB_SC3#) 01120001
VTSB_SC3_NAME DC C'SCVTS3' STORCLAS FOR VTS 3 01130001
VTSB_SC3# EQU *-VTSB_SC3_NAME 01140001
DS (8-VTSB_SC3#)C 01150001
01160001

```

The lines in italics in the example show where the storage class name is added to the JCL in ATH#VTSO.

5. When you are done adding the new storage classes to the ATH#VTSO member of `highlevel.SAMPLIB`, assemble and link this JCL, following the instructions in the member.
6. Stop and restart the ATAM started task to recycle the product.

ATAM is now ready to perform VTS load balancing. In actual use, the ATAM exit is run before the DFSMS STORGRP ACS routine to ensure the new storage classes are passed to the STORGRP ACS routine. This allows the STORGRP ACS routine to assign the appropriate library to ensure that all VTS libraries are used.

---

## Disabling VTS load balancing

If you decide you do not want to use VTS load balancing, you can disable ATAM's STORCLAS exit by doing the following:

1. Delete member ATH#VTSO from the `highlevel.LOADLIB` library, which is in the ATAM started task STEPLIB.  
**Note:** The high level qualifier (HLQ) may be ATH.PR0110 or another HLQ assigned by your system administrator when ATAM was installed.
2. Stop and restart the ATAM started task to recycle the product.

These instructions are also listed in the ATH#VTSO member for your reference.



---

## Appendix E. Volser-to-Unit Preferencing Exit

ATAM allows you to restrict the selection of available tape units by specific criteria. Now you can restrict one or more series of VOLSER ID's to a specific set of tape units. For example, if tape VOLSERS 005000 through 009999 are physically located at a remote data center, you can tell ATAM to direct mount requests to the tape device addresses at that data center. This is one example of *volser-to-unit preferencing*.

---

### Modify ATH#VALD

To use volser-to-unit preferencing, you must modify a model ATAM exit, ATH#VALD, in the *highlevel*.SAMPLIB library, where *highlevel* is the highlevel qualifier assigned to the ATAM product libraries by your system administrator. The ATH#VALD member contains instructions on how to modify the member to specify criteria for volser-to-unit preferencing.

---

### Assemble and link ATH#VALD

When you have modified the ATH#VALD member, you must assemble and link edit the module into your *highlevel*.LOADLIB library, where *highlevel* is the highlevel qualifier assigned to the ATAM product libraries by your system administrator.

Another member, \$ASMVALD, in the *highlevel*.SAMPLIB library, contains the JCL to perform the assemble and link edit processes. Refer to \$ASMVALD for instructions on assembling and linking the ATH#VALD member so volser-to-unit preferencing is used whenever ATAM is run.

**Note:** An ATH#VALD module must be present in the ATAM LOADLIB for volser-to-unit preferencing to work. If you do not want to use this feature, you do not need to put ATH#VALD in the ATAM load library.

---

### Enabling ATH#VALD for use

When you first implement ATH#VALD exit, or whenever you change the exit you already have in place, you must perform the following steps:

1. Stop the ATAM started task.
2. Assemble and link edit your customized ATH#VALD load module into the ATAM load library.
3. Start the ATAM started task.

---

### Disabling ATH#VALD

If you decide not to use volser-to-unit preferencing, you can disable this feature by doing the following:

1. Stop the ATAM started task.
2. Delete the ATH#VALD load module from the ATAM load library.
3. Restart the ATAM started task.



## Appendix F. Error Messages from ISPF

The error messages in this appendix are based on issues with ISPF or with entries made on ATAM's screens. For easier reading, "Automated Tape Allocation Manager" is referred to as "ATAM" in this appendix. All messages generated by ATAM have a severity code printed as the last character of the message ID. The severity codes are described in the following table:

Severity Code	Description
I	Information only. No user action required.
W	Warning message. Results may not be as expected.
E	Error message. Some may be user-correctable. Read the User Response to determine the course of action.

---

### ATH001I      COPYRIGHT SCREEN

**Explanation:** This screen lists the copyright information for this product.

**User Response:** No action required.

---

### ATH002E      INVALID SELECTION

**Explanation:** You have typed an invalid selection in the Option line.

**User Response:** Type a valid option from the choices listed on this screen, or type X to Exit.

---

### ATH030E      INVALID SELECTION

**Explanation:** You have typed an invalid selection in the line command (Cmd) column.

**User Response:** Type A in the line command (Cmd) column to select Allocation Activity or type X in the Option line to Exit.

---

### ATH031E      TRUNCATION ERROR

**Explanation:** An internal error occurred while attempting to display the Current Status panel.

**User Response:** Contact IBM customer support to report the problem.

---

### ATH032E      SEVERE ERROR

**Explanation:** An internal error occurred while attempting to display the current status panel.

**User Response:** Contact IBM customer support to report the problem.

---

### ATH033E      UNEXPECTED RC

**Explanation:** An internal error occurred, indicated by the return code (RC), while attempting to display the Current Status panel.

**User Response:** Contact IBM customer support to report the problem.

---

### ATH034E      INVALID SELECTION

**Explanation:** You have typed an invalid selection in the Option line.

**User Response:** Type a valid entry based on the menu options for this screen.

---

### ATH612E      INVALID MODE

**Explanation:** You have entered an invalid value for the mode.

**User Response:** Type 1 for Active or 2 for Passive mode.

---

### ATH617I      INVALID VALUE

**Explanation:** The value you typed is not valid for this field because the value is either non-numeric or out of range.

**User Response:** Type a value that is numeric and within the acceptable range for this field.

---

**ATH901E DATASET NOT FOUND**

---

**Explanation:** The Rocket Software default load library could not be located.

**User Response:** Ensure that the load library name is correct.

---

**ATH902E NO MVS SYSTEM NAME**

---

**Explanation:** An MVS system ID must be typed for processing.

**User Response:** Type an MVS system name.

---

**ATH904E VSAM OPEN ERROR**

---

**Explanation:** The specified data set could not be opened for I/O.

**User Response:** There may be related WTOR messages that were also issued as a result of this error. Attempt to determine the cause of the error from these other messages. If the problem persists, contact IBM customer support.

---

**ATH905E VSAM READ ERROR**

---

**Explanation:** An unexpected return code from VSAM was encountered while doing a read of the control file.

**User Response:** There may be related WTOR messages that were also issued as a result of this error. Attempt to determine the cause of the error from these other messages. If the problem persists, contact IBM customer support.

---

**ATH906I RECORD UPDATED**

---

**Explanation:** An updated record was successfully written to the control file.

**User Response:** None required.

---

**ATH907E ERROR IN VSAM UPDATE**

---

**Explanation:** An unexpected return code from VSAM was encountered while doing an update operation of the control file.

**User Response:** There may be related WTOR messages that were also issued as a result of this error. Attempt to determine the cause of the error from these other messages. If the problem persists, contact IBM customer support.

---

**ATH908I RECORD ADDED**

---

**Explanation:** A new record was successfully written to the control file.

**User Response:** None required.

---

**ATH909E INVALID VALUE**

---

**Explanation:** You have typed an invalid value where ATAM expects a 1 or 2.

**User Response:** Type 1 or 2 and press Enter.

---

**ATH910E ERROR IN VSAM ADD**

---

**Explanation:** An unexpected return code from VSAM was encountered while doing an add operation to a control file.

**User Response:** There may be related WTOR messages that were also issued as a result of this error. Attempt to determine the cause of the error from these other messages. If the problem persists, contact IBM customer support.

---

**ATH911E NO FIND STRING SPECIFIED**

---

**Explanation:** The (F)IND command was entered, but no parameters were specified.

**User Response:** Type a string after you type F or FIND.

---

**ATH912I FIND STRING NOT FOUND**

---

**Explanation:** The string you typed after the (F)IND command could not be found.

**User Response:** No action required.

---

**ATH913E INVALID PRIMARY COMMAND ENTERED**

---

**Explanation:** You typed an unknown primary command.

**User Response:** Type a different, valid command.

---

**ATH914E UNKNOWN COLUMN ENTERED**

---

**Explanation:** You typed the name of an unknown column when using the SORT command.

**User Response:** Type the name of a column that exists on this screen after the SORT command.

---

**ATH915E COLUMN UNSORTABLE**

---

**Explanation:** The SORT command is not supported for this column.

**User Response:** Type a different column name after the SORT command.

---

**ATH916E COLUMN NOT SPECIFIED**

---

**Explanation:** SORT column not entered. Column name or number must be specified.



**User Response:** Type a column name or number after the SORT command so it knows which column to sort.

**User Response:** Please verify that you entered the proper dataset name and that the data set exists.

---

ATH940E            DATASET NOT FOUND

**Explanation:** The specified data set could not be located.



## Appendix G. Error Messages from the ATAM Started Task

All messages generated by the Automated Tape Allocation Manager (ATAM) started task are listed in this appendix. A description of each message and suggestions on how you can resolve the problem are provided, where possible. For easier reading, "Automated Tape Allocation Manager" is referred to as "ATAM" in this chapter.

All messages have a severity code printed as the last character of the message ID. The severity codes are described in the following table:

Severity Code	Description
I	Information only. No user action required.
W	Warning message. Results may not be as expected.
E	Error message. Some may be user-correctable. Read the User Response to determine the course of action.
D	Operator intervention required.

---

**ATH001I**      **ATAM - ACTIVE MODE - VERSION X.X.XX**

**Explanation:** This message lists the version of ATAM you are using. It also indicates that ATAM has been started in the active processing mode.

**User Response:** None required.

---

**ATH002I**      **ATAM - PASSIVE MODE - VERSION X.X.XX**

**Explanation:** This message lists the version of ATAM you are using. It also indicates that ATAM has been started in the passive processing mode.

**User Response:** None required.

---

**ATH003W**      **ATAM DETECTED ANOTHER ACTIVE ATAM ADDRESS-SPACE, TERMINATING THIS TASK**

**Explanation:** The ATAM started task found another active ATAM started task. The started task will terminate after this message is displayed.

**User Response:** Either use the existing ATAM started task or stop the existing started task and restart ATAM.

---

**ATH004I**      **ATAM MUST BE EXECUTED AS A STARTED TASK**

**Explanation:** The only way to run ATAM is by using a started task.

**User Response:** Verify the name of the started task for ATAM (ATH was used in the sample JCL for the started task) and try executing the started task, such as S ATH.

---

**ATH005I**      **ATAM INITIALIZATION COMPLETE**

**Explanation:** This message informs you that the initialization process for ATAM is done.

**User Response:** None required.

---

**ATH006I**      **CONFIGURATION CHANGE DETECTED**

**Explanation:** This message is displayed if a dynamic I/O configuration change is detected by ATAM.

**User Response:** None required.

---

**ATH007I**      **ATAM RE-INITIALIZATION COMPLETE**

**Explanation:** The re-initialization process is done.

**User Response:** None required.

---

**ATH008I**      **NO TAPE UNITS DETECTED, ATAM TERMINATING**

**Explanation:** No selectable tape units were discovered on the MVS image. ATAM will terminate after this message is displayed.

**User Response:** None required.

---

**ATH009I      ATAM TERMINATION  
REQUESTED**

---

**Explanation:** A normal shutdown of the ATAM started task has begun.

**User Response:** None required.

---

**ATH010I      ATAM TABLE BUILD LIMIT  
EXCEEDED, ATAM TERMINATING**

---

**Explanation:** The number of dynamic I/O configuration changes has exceeded the threshold established for ATAM. The ATAM started task will terminate after this message is displayed.

**User Response:** Please verify that the value for the Reconfiguration Termination Limit in the ATAM configuration is correct, and then restart the ATAM started task.

---

**ATH011I      ATAM WAITING 15 SECONDS  
BEFORE TERMINATING**

---

**Explanation:** This is for your information.

**User Response:** None required.

---

**ATH012E      MULTIPLE EXIT ROUTINES  
DETECTED, RESULTS MAY BE  
UNPREDICTABLE**

---

**Explanation:** ATAM detected multiple copies of its allocation module. This is an error. ATAM will generate a diagnostic dump and then terminate.

**User Response:** Please contact IBM Customer Support.

---

**ATH013E      EXIT ATAM VERSION  
INCOMPATIBILITY ERROR, ATM  
TERMINATING WITH A  
DIAGNOSTIC DUMP**

---

**Explanation:** A mixture of ATAM releases and/or maintenance was detected while the ATAM started task was attempting to start. A diagnostic dump will be generated, and the started task will terminate.

**User Response:** Please verify that all installation or maintenance procedures completed successfully.

---

**ATH014I      xx,xxx TAPES DETECTED**

---

**Explanation:** The xx,xxx refers to the number of tapes discovered on the MVS image.

**User Response:** None required.

---

**ATH020E      ERROR PROCESSING WTOR  
MESSAGE xxxxxxxxxxxxxx**

---

**Explanation:** The xxxxxxxxxxxxxx refers to the ID of the message that could not be processed.

**User Response:** Verify that the W operator command or PARMLIB command was specified correctly.

---

**ATH021E      INVALID WTOR MESSAGE FLAG  
COMBINATION DETECTED**

---

**Explanation:** An unexpected error occurred while trying to process a WTOR message.

**User Response:** ATAM will attempt to recover from this error. If this message is received repeatedly, please contact IBM Customer Support for additional diagnostic information.

---

**ATH022E      BAD RETURN CODE FROM  
EDTINFO, WTOR PROCESSING  
SUSPENDED**

---

**Explanation:** An error occurred while attempting to access the table of eligible devices.

**User Response:** ATAM will attempt to recover from this error. If this message is received repeatedly, please contact IBM Customer Support for additional diagnostic information.

---

**ATH023E      ATAM LOGIC ERROR, DYNAMIC  
IODF UPDATE SUSPECTED**

---

**Explanation:** ATAM was unable to locate a device. The most likely cause is a dynamic change to the I/O configuration.

**User Response:** ATAM will attempt to recover from this error. If the message continues to display, please recycle the ATAM started task. If this fails to cure the problem, please contact IBM Customer Support for additional diagnostic information.

---

**ATH024E      ATAM RETURNED NON-TAPE  
DEVICE OR AN INTERNAL LOGIC  
ERROR HAS OCCURRED**

---

**Explanation:** The requested device was not a tape unit.

**User Response:** Please recycle the ATAM started task. If this fails to cure the problem, please contact IBM Customer Support for additional diagnostic information.

---

**ATH031W      NO BASE CONFIGURATION  
FOUND, USING DEFAULTS**

---

**Explanation:** You have not entered parameters for this MVS image, so ATAM is using default values for the parameters.

**User Response:** Select option S, Setup and Configuration, on the ATAM Main Menu to enter parameters for each MVS image on which you want to run ATAM.

---

**ATH032I BASE CONFIGURATION LOADED**

**Explanation:** ATAM is using the parameters you entered through the Setup and Configuration option.

**User Response:** None required.

---

**ATH033I PASSIVE MODE SELECTED**

**Explanation:** You selected passive mode, which tells ATAM to continually check for drives that are not being used and return them to "free" status (selectable and unallocated). In passive mode, ATAM will not attempt to vary a tape unit online.

**User Response:** None required.

---

**ATH034I ACTIVE MODE SELECTED**

**Explanation:** You selected active mode, which tells ATAM to automatically vary tape drives online in response to demands for tape drive units.

**User Response:** None required.

---

**ATH040W UNKNOWN COMMAND: xxxxxx**

**Explanation:** You entered a command that ATAM does not recognize.

**User Response:** Check the syntax and spelling of this command or type a different command.

---

**ATH041I TAPE LIST: xabc y xbcd y xcde y xdef y**

**Explanation:** This message displays a list of tapes where xabc refers to the tape unit ID and y is one of the following values:

- ? = Not validated
- x = Excluded
- S = Selectable
- P = Pending offline
- O = Online
- A = Allocated

**User Response:** None required.

---

**ATH042W UNIT xxxx UNKNOWN.**

**Explanation:** The xxxx refers to the invalid tape unit ID. The specified unit is not known to ATAM.

**User Response:** Use a valid tape unit ID.

---

**ATH043W INVALID RANGE SPECIFIED, ADDRESSES DECREASING.**

**Explanation:** One or both of the values you specified for the range are not valid.

**User Response:** Change one or both of the values you typed for the range.

---

**ATH044I NO TAPE UNITS DEFINED AS SELECTABLE**

**Explanation:** None of the tape units defined for this MVS image are available for use.

**User Response:** Contact your systems programmer to define one or tape units as selectable by this MVS image.

---

**ATH045I TIMES: T1=mmm T2=nnn, T3=ooo, T4=ppp.**

**Explanation:** This message tells you the values that are currently set for your tuning parameters. T1 refers to the first tuning parameter, T2 the second parameter, and so on. All of the values are numeric.

- T1=mmm. The Office Unit Polling Interval is set for mmm seconds.
- T2 = nnn. The Online Unit Polling Interval is set to nnn seconds.
- T3 = ooo. The Offline Unit Iteration Count is set to ooo iterations.
- T4 = ppp. The Reconfiguration Termination Limit is set to ppp dynamic changes.

**User Response:** None required. For more information on the tuning parameters, refer to "ATAM configuration parameters" on page 10

---

**ATH045I TIMES: T5=mmm T6=nnn, T7=ooo, T8=ppp.**

**Explanation:** This message tells you the values that are currently set for your tuning parameters. T5 refers to the fifth tuning parameter, T6 the sixth parameter, and so on. All of the values are numeric.

- T5 = mmm. The Vary Online Wait Time is set for mmm seconds.
- T6 = nnn. The Vary Online Maximum Attempts is set to nnn attempts.
- T7 and T8 are currently not defined and are reserved for future use.

**User Response:** None required. For more information on the tuning parameters, refer to "ATAM configuration parameters" on page 10

---

**ATH046W INVALID SYNTAX: xxxxxx**

**Explanation:** The command contained invalid syntax.

**User Response:** Re-enter the command using valid syntax.

---

**ATH047E** MEMBER ATPARMxx NOT FOUND  
IN PARMLIB.

**Explanation:** The default parmlib member was not found in the current PARMLIB concatenation. ATPARMxx is the name of the default parmlib member for ATAM, where xx is the major version release number for this version of ATAM, such as 02.

**User Response:** None required.

---

**ATH048I** PARMLIB MEMBER xxxxxxxx  
COMMAND IS yyyyyy

**Explanation:** The xxxxxxxx refers to the name of the PARMLIB member, and yyyyyy is the specific command.

**User Response:** None required.

---

**ATH049W** CANNOT SPECIFY A M=XX  
COMMAND FROM WITHIN A  
PARMLIB MEMBER

**Explanation:** You placed the M=xx command in the PARMLIB member for ATAM, but this command can only be used as a console command.

**User Response:** Remove the M=xx command from the PARMLIB member for ATAM.

---

**ATH050I** DIAGNOSTIC MESSAGES ARE  
BEING SUPPRESSED.

**Explanation:** This is an informational message.

**User Response:** None required.

---

**ATH050I** DIAGNOSTIC MESSAGES ARE  
BEING GENERATED.

**Explanation:** This is an informational message.

**User Response:** None required.

---

**ATH051I** WTOR MSGID xxxxxxxxxx HAS  
REPLY yyyyyyyyyyy AND OFFSET  
nnn

**Explanation:** The xxxxxxxxxx refers to the message ID, the yyyyyyyyyyy indicates the type of reply for this message, and OFFSET nnn refers to the exact location from the start of the message, denoted by msgid, where ATAM can find the tape unit ID.

**User Response:** None required.

---

**ATH052W** WTOR ENTRIES FOR  
ALLOCATION TYPE MESSAGES  
CANNOT BE UPDATED

**Explanation:** You cannot modify the established response to the selected message.

**User Response:** Do not attempt to modify the established response for this message.

---

**ATH058W** WTOR MSGID xxxxxxxxxx NOT  
DEFINED

**Explanation:** The specified WTOR message is not defined to ATAM.

**User Response:** None required.

---

**ATH059I** UNIT xxxx SELECT=x,  
REASON=xxxx

**Explanation:** The xxxx refers to the tape unit ID, the x after SELECT represents either Y or N, and the xxxx after REASON indicates why the unit was/was not selected.

**User Response:** No user action required.

---

**ATH080I** ATAM BLOCK DELETED

**Explanation:** This is an informational message.

**User Response:** None required.

---

**ATH081I** ATAM BLOCK CHAINED FROM  
SSCT

**Explanation:** This is an informational message.

**User Response:** None required.

---

**ATH082I** SELECTABLE FREE ONLINE TAPE  
DETECTED

**Explanation:** This is an informational message.

**User Response:** None required.

---

**ATH083I** VARY OFFLINE ATTEMPTED.

**Explanation:** This is an informational message.

**User Response:** None required.

---

**ATH084I** VARY ONLINE OF PENDING  
OFFLINE UNIT ATTEMPTED.

**Explanation:** This is an informational message.

**User Response:** None required.

---

**ATH085I      ALLOCATION TYPE MESSAGES  
DETECTED, NO VARY OFFLINES  
WILL BE ATTEMPTED.**

**Explanation:** One or more WTORs requesting allocation of a tape unit have been received, but the request could not be automatically responded to by ATAM. This message will continue to be displayed until a response is provided for all outstanding WTORs. During this time, ATAM will not attempt to vary offline any tape units currently online to the local MVS image. Once all of the WTORs have been cleared, ATAM will return to normal processing.

**User Response:** Free or add tape units and respond to the WTOR(s).

---

**ATH090I      ESOTERIC xxxxxxxx DETECTED IN  
WTOR yyyyyyyyyyy FOR REPLY ID  
nnnn**

**Explanation:** ATAM found the specified ESOTERIC unit name in the WTOR message it is processing. This message is informational only.

**User Response:** None required.

---

**ATH091I      UNIT MADE AVAILABLE, AND  
REPLY ISSUED TO WTOR**

**Explanation:** This is an informational message.

**User Response:** None required.

---

**ATH092I      NO DEVICE AVAILABLE TO  
SATISFY WTOR REQUEST**

**Explanation:** No tape units matching the required criteria could be located. Automatic allocation failed, and a WTOR is posted requesting operator intervention.

**User Response:** Respond to the WTOR that was issued.

---

**ATH093I      STORAGE OBTAINED FOR  
EDTINFO WORKAREA**

**Explanation:** This is an informational message.

**User Response:** None required.

---

**ATH094I      STORAGE RELEASED FOR  
EDTINFO WORKAREA**

**Explanation:** This is an informational message.

**User Response:** None required.

---

**ATH101D      JOB xxxxxxxx NEEDS A TAPE,  
REPLY C TO CANCEL, M FOR  
MANUAL ALLOCATION, W FOR**

**WAIT-NO HOLD OR I FOR  
INFORMATION.**

**Explanation:** ATAM automatic allocation failed for the specified job.

**User Response:** Respond to the WTOR in line with your site's requirements.

---

**ATH102W      NO SELECTABLE TAPE UNITS  
AVAILABLE.**

**Explanation:** This is an informational message.

**User Response:** None required.

---

**ATH103W      UNEXPECTED EXIT LOCATION,  
ATAM INTERNAL ERROR**

**Explanation:** ATAM has detected storage that potentially has been disrupted.

**User Response:** Please contact IBM Customer Support for additional diagnostic assistance.

---

**ATH104W      INVALID DIRECT SSCT ADDRESS,  
ATAM INTERNAL ERROR**

**Explanation:** ATAM has detected storage that potentially has been corrupted.

**User Response:** Please contact IBM Customer Support for additional diagnostic assistance.

---

**ATH140I      JOB xxxxxxxx, STEP yyyyyyyy,  
DDNAME zzzzzzzz REQUIRES AT  
LEAST 1 TAPE UNIT**

**Explanation:** The xxxxxxxx refers to the job name, yyyyyyyy refers to the specific step in the job, and zzzzzzzz refers to the specific DD line in the step that is requesting one or more tape units.

**User Response:** None required.

---

**ATH141I      ACCEPTABLE OFFLINE UNITS  
ARE:**

**Explanation:** This message appears before a list of offline units.

**User Response:** None required.

---

**ATH142I      ACCEPTABLE NON-ACCESSIBLE  
UNITS ARE:**

**Explanation:** This message appears before a list of non-accessible units.

**User Response:** None required.

---

**ATH143I**            **xabc y xbcd y xcde y xdef y**

**Explanation:** This is the list of tape units that accompanies another error message. The tape unit IDs are represented by xabc, xbcd, xcde, xdef, and the letter y is one of the following values:

- ? = Not validated
- x = Excluded
- S = Selectable
- P = Pending offline
- O = Online
- A = Allocated

**User Response:** None required.

---

**ATH190I**            **ATAM - VERSION x.x.xx**

**Explanation:** This message lists the version of ATAM that you are using.

**User Response:** None required.

---

**ATH191I**            **ATAM REQUESTING WAIT + NOHOLD**

**Explanation:** This is an informational message.

**User Response:** None required.

---

**ATH192I**            **ATAM REQUESTING DEFAULT PROCESSING**

**Explanation:** This is an informational message.

**User Response:** None required.

---

**ATH193I**            **ATAM REQUESTING CHECK OF ONLINE UNIT**

**Explanation:** This is an informational message.

**User Response:** None required.



---

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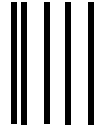
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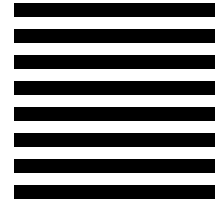
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