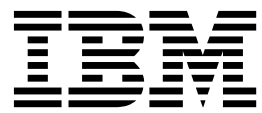


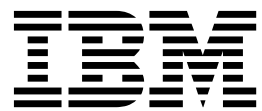
Version 3 Release 3

*IBM Tivoli Automated Tape Allocation
Manager for z/OS
User's Guide*



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May, 2018

This edition applies to Version 3, Release 3 of IBM Tivoli Automated Tape Allocation Manager for z/OS (product number 5698-B15) and to all subsequent releases and modifications until otherwise indicated in new editions.

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About this information

This book describes how to use IBM Tivoli Automated Tape Allocation Manager for z/OS (referred to as "ATAM") to significantly improve usage of costly tape units across images in order to minimize wait time and maximize availability. The book contains detailed information, such as sample JCL and descriptions of line commands, to ensure that you fully benefit from the use of this product.

The typical user of ATAM is a systems programmer or administrator who understands the issues relating to sharing system resources and offline storage, and is familiar with z/OS and its conventions. These topics are designed to help IT professionals perform these tasks:

- Perform steps to customize ATAM for your environment.
- Check the current status or modify the status of tape drives.
- Generate and view reports to monitor tape drive activities.
- Use console commands to dynamically change what ATAM is doing, such as which tape devices to manage.
- List console commands in a Commands member so that ATAM processes those commands upon start up.
- Modify specific configuration parameters, as needed.
- Run an exit program to assign specific volumes (volsers) to specific tape devices.
- Balance the load of virtual tape servers (VTS) to ensure multiple VTS libraries are used.

Where to find support and product information

The IBM Knowledge Center provides current support information and product documentation that you can view, print, and download. To locate publications with the most up-to-date information, refer to the following Web page:

http://www-01.ibm.com/support/knowledgecenter/SSATAY_3.3.0/com.ibm.ath.doc_3.3/welcome.html

ATAM V3.3 Summary of Changes

This section summarizes the significant improvements or enhancements for Automated Tape Allocation Manager (ATAM) V3.3 and refers you to relevant sections of this book for more information.

SC23-9736-06 for PTF UI55815

- *VTs Load balancing.* A new exit allows you to balance the load of Virtual Tape Servers (VTS) to ensure that multiple VTS libraries are used, not just the last one accessed. See Chapter 9, "VTS load balancing exit," on page 169 for more information.
- *Using ATAM with other products.* New information has been provided on using ATAM with ASG Zeke, with z/OS DFSMS OAM, and with IBM MQ. See Appendix C, "Notes on using ATAM with other products," on page 185 for more information.
- *More on VARY DEVICE processing.* Additional information has been provided on VARY DEVICE processing in ATAM. See "Considerations for ATAM VARY DEVICE processing" on page 30 for more information.
- *Changes to MDP command.* Additional information has been provided to explain how the MDP command can be used in special processing of specific started task (STC) address spaces. See "The MDP command" on page 135.
- *Changes to the ATAM Dynamic Allocation Exit.* New information has been added to explain when you may want to use the MDP command with this exit. See Appendix J, "ATAM Dynamic Allocation Exit," on page 233.

SC23-9736-05

- *New "IQ4" command.* This new command allows you to indicate whether ATAM IEEVARYD invocations should take advantage of the VDEV_DO_NOT_WAIT_FOR_ENQ option when responding to allocation requests. See "The IQ4 command" on page 129 for more information.
- *New parameters for "R" command.* Three new parameters have been added to the "R" command: J (job), I (inactivate), and A (activate). See "The R Command" on page 100 for more information.
- *New parameters for "W" command.* Three new parameters have been added to the "W" command: J (job), I (inactivate), and A (activate). See "The W Command" on page 117 for more information.
- *New "E" and "V" line commands.* On the ATAM Current Status screen, use either the "E" or "V" line commands to edit or view the current operational settings for ATAM on the selected system. See "VIEW systems" on page 43.
- *New JES information.* The ATAM Environment screen now lists the JES type, state, and name. See "Use of the Environment option" on page 189 for more information.
- *Additional information for "T4" parameter.* New information describes how table building, due to IOS configuration changes, is affected by the T4 parameter. See "Considerations for using the T4 parameter" on page 156 for more information.
- *Additional examples for the "SAF" command.* More examples have been provided to explain how to use the various forms of the "N" parameter with this command. See "The SAF command" on page 144 for more information.
- *Additional information for "SMF" command.* More information has been added to "SMF" command. See "The SMF command" on page 147 for more information.

- *New messages.* A few messages have been modified or added: ATH051I, ATH097I, ATH099I. See Appendix K, “Messages,” on page 237 for more information.

The changes below apply to Automated Tape Allocation Manager (ATAM) V3.2.

SC23-9736-04

The only change for this documentation version is that a note was added for “Log file clearing and continuing logging” on page 14 to explain how to prevent excessively large LOGFILES from being created. ATAM has been modified to ensure that a very large LOGFILE does not result in the allocation of an excessively large amount of storage to display the LOGFILE.

SC23-9736-03

The only change for this documentation version is for the “The SAF command” on page 144. In this section, a table was updated to clarify the syntax used for security entities for each ATAM command.

SC23-9736-02

- *New “M” parameter.* This parameter displays a matrix of the devices across all z/OS® images defined in the TapePlex. The specific devices listed in the matrix depends upon which major command (F, L, O, or S) uses the “M” parameter. For more information, refer to “The “M” Parameter” section listed under these four major commands.
- *New “VIEW pref” command.* This command displays a list of the defined job preference data for the current z/OS image. For more information, refer to “VIEW PREF” on page 60.
- *New DISPLAY command.* Use this command to reduce the amount of information appearing on the screen. You can expand the screen again as needed. For more details, refer to the “Optional commands” information in the “Allocation activity displayed” on page 62 section.
- *New DDR command.* Use the DDR command to indicate whether you want ATAM to monitor for occurrences of DDR swaps and report on whether they involve ATAM managed devices.
- *New messages* Several new messages have been added to this release. For information on any ATAM message, refer to Appendix K, “Messages,” on page 237.

SC23-9736-01

The only changes for this release are in this documentation. There are no changes to the ATAM software. Corrections have been made to steps four and five in the instructions on migrating to ATAM. For more information, refer to “Overview of migrating from CA-MIA to ATAM” on page 173.

SC23-9736-00

- *Integration with Tivoli® Enterprise Portal (TEP).* ATAM is now integrated with the Tivoli Enterprise Portal. Refer to the following books for more information:
 - IBM® Tivoli Automated Tape Allocation Manager for z/OS Monitoring Agent User's Guide (SC23-9740)
 - IBM Tivoli Automated Tape Allocation Manager for z/OS Monitoring Agent Planning and Configuration Guide (SC23-9739)

- *New and changed commands.* Several new commands are included in this release and changes have been made to some of the existing commands.
 - The "E" command shows a table listing esoteric names and device addresses.
 - The "SAF" command allows you to check or set the status of the ATAM command security facility. When SAF is enabled, you can have ATAM verify the authority of a user to issue an ATAM command through your local security product.
 - The "PJ" command displays current job preference specifications.
 - The "PD" command enables either location-based or tier-based device preferencing.
 - The "SSI" command allows you to check or set the status of the ATAM subsystem interface facility. When SSI is enabled, ATAM uses the z/OS subsystem interface broadcast to apply job or device preference processing to online devices.
 - The "B" parameter is used with the "S" command to establish a Scan Bypass Iteration value for a device or range of devices.
 - The following commands are now globally supported:
 - T: Options
 - V: Version
 - LRU: Least recently used
 - SMF: SMF recording
 - QUOTE: Quote replies
 - JLOGF: Logging option
 - MDP: Monitor dynamic allocation processing
 - EXITCOMPAT: Status of ATAM's IEF_ALLC_OFFLN exit
- *Device level T1-T3 processing.* Configuration parameters (T1 – T3) can be adjusted by delaying (or bypassing) the T1 scan interval for specific devices.
- *Job preference.* You can now instruct ATAM, via the "J" parameter of the "S" and "X" commands, to use preferential processing in device selection when allocating tape resources for specific jobs.
- *Device preference.* You can now instruct ATAM, via the PD command, to use preferential processing in device selection with allocated tape resources, based upon either location or tier (rank).
- *Restricted access to command facility.* You can now restrict access to ATAM commands with your SAF-enabled security facility. This helps ensure that only specific users are allowed to use commands.
- *Change to Tn parameter limits.* The lower limit has been set to five (5) seconds for all of the time-based "T" parameters.

Chapter 1. Introduction to ATAM

This chapter introduces you to the functionality provided by IBM Tivoli Automated Tape Allocation Manager for z/OS. Topics included in this chapter provide information on how devices are selected for processing as well as hardware and software requirements.

Note: For easier reading, IBM Tivoli Automated Tape Allocation Manager for z/OS is referred to as "ATAM" throughout the online help and documentation.

Reasons for using ATAM

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 24x7 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.

Contention for tape resources, especially those in mission-critical dataplexes, can create problems:

- Long wait times for application or process execution and delay of related business processes
- Significant operator attention to balancing tape storage needs against available resources
- Pressure to purchase costly excess tape capacity, often without a full understanding on how it will be used
- Longer return-on-investment (ROI) on hardware investments.

IBM Tivoli Automated Tape Allocation Manager for z/OS (ATAM) addresses tape device availability issues by providing automatic and unattended sharing of tape resources for optimal use across multiple images. Instead of dedicating tape devices to a specific image, ATAM ensures that existing tape drives are available, on demand, for requests for existing images. As a result, tape devices are used at maximum capacity, instead of sitting idle. By automatically responding to allocation requests, the need for operator intervention can be reduced.

Since your existing tape storage devices can be shared between multiple images, the result is:

- Better return on tape hardware investments
- Reduced delays in batch processing
- Improved use of existing devices
- Less operational overhead.

ATAM directly responds to actual user requests 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 environment

IBM Tivoli Automated Tape Allocation Manager for z/OS (ATAM) is completely flexible and can fit any MVS environment. ATAM works with both JES2 and JES3, but does not attempt to manage any tape drives that are JES3-controlled. Tuning and configuration parameters can be established to fit your environment. They can also be changed dynamically to accommodate changes in work load and priorities, without the need to undergo an outage in ATAM's operation.

A complete ISPF-based user interface is provided so you can easily create and modify your ATAM configuration. These panels include online help to ease the setup procedure.

You can access the state of ATAM and view or modify the state of your tape units relative to ATAM through the Current Status option. This option provides a quick and easy way to see what is in use, what is idle, and how tape units are being used. You can also change the state of tape units relative to ATAM.

In addition, ATAM provides online, real-time reports that you can easily view through the ATAM user interface and SMF records that can be processed with offline reports. Available real-time reports include:

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

With the detailed reports and the ability to look at your current status, you can determine if your tape units are being fully utilized. The detailed reports 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 see bottlenecks and configure accordingly.

Default Processing for ATAM

IBM Tivoli Automated Tape Allocation Manager for z/OS (ATAM) discovers all of the tape devices and automatically **excludes** them from ATAM's management. ATAM will only select the devices explicitly defined as "selectable" through the Select (S) operator command.

You can issue the "S" command from the following places:

- an MVS console
- the Current Status option on the ATAM main menu
- an ATAM Commands member.

You can select one device, multiple devices, or all devices. You can also combine the Select (S) and Exclude (X) commands to select a range of devices, but exclude a specific device in that range.

ATAM provides a random approach to device assignment. This is done to spread tape device and channel path usage across the list of managed devices and channel paths, substantially reducing the possibility of directing all allocations to a single group of tape devices.

Prerequisites

This topic lists any hardware and software requirements that must be fulfilled prior to using ATAM.

Hardware Requirements: ATAM supports 3480 and other assign-capable devices. It also supports 3420 and other devices that are not assign-capable devices.

Software Requirements: ATAM can be used on any supported release of z/OS and OS/390[®].

Chapter 2. Configure Automated Tape Allocation Manager

IBM Tivoli Automated Tape Allocation Manager for z/OS (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.

About this task

Before attempting to install and operate ATAM, please follow these simple steps:

1. Check the ATAM web page: <https://www.ibm.com/us-en/marketplace/tivoli-automated-tape-allocation-zos>. Follow the [IBM Knowledge Center] 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.

Follow the installation instructions in the Program Directory to place the product files onto your system. Once you have installed ATAM, you must customize it before you can use it.

Customization summary

After you install ATAM, you are ready to customize it for your system. The steps are listed in the table below.

About this task

Step	Description	Reference
1	Check the microcode level and authority requirements for the load library.	"Step 1: Checking requirements" on page 6
2	Create the configuration data set.	"Step 2: Creating a configuration data set and commands member" on page 6
3	Update the alternate system ID table (optional).	"Step 3: Creating alternate system names (optional)" on page 11
4	Create the log file.	"Step 4: Creating the log file" on page 12
5	Verify access.	"Step 5: Verifying access" on page 15.
6	Run the CLIST to access the ATAM ISPF interface.	"Step 6: Running CLIST to access ATAM ISPF interface" on page 15
7	Specify each MVS system and associated parameters.	"Step 7: Verifying MVS system parameters" on page 18
8	Customize and initiate the ATAM started task.	"Step 8: Customizing and initiating the ATAM started task" on page 30

Step 1: Checking requirements

Before using ATAM, review the list of requirements to ensure that you are ready to use ATAM. The requirements are listed below.

About this task

- The load library containing ATAM must be APF authorized.
- Ensure you are set up with an LE run-time environment.
- 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 auto-switchable. ATAM will ignore any devices that are configured as auto-switchable.
- It is possible for ATAM to manage the sharing of non-assign-capable devices, such as 3420s, among different MVS images, however, you must follow specific steps to set up ATAM to allow this.
- In order to use TCP/IP and UNIX services, you must have an OMVS segment defined to your security facility (i.e. RACF® or another security product).

Contact your systems administrator if you encounter difficulties starting ATAM.

Step 2: Creating a configuration data set and commands member

ATAM uses a configuration partitioned data set (PDS), which is allocated to the ATAM address space via an ATHCONFIG DD statement, to maintain product configuration information. This data set contains two types of members: *configuration* members and *command* members.

About this task

Configuration members have a name equal to the system they define. ATAM further identifies these members by the text "ATAM_CONFIGURATION_MEMBER" in the first byte of the first line of the member. These members contain keyword=value representations of the configuration data. This includes the T1-T8 parameters, LRU, QUOTE, and the TCP configuration parameters.

These members also serve to identify what MVS images are participating in global command processing. Global commands are routed to every image represented by a configuration member. If you start an ATAM instance on an MVS image that does not have a corresponding configuration member, the image does not initiate global command processing, and other participating images do not communicate with this image.

The command members are named ATHCMDxx, where xx is any suffix that resolves to a valid member name. The suffix can be specified in the configuration member (e.g. MEMBER=00) or can be issued as a command (e.g. F ATAM,C=00). Optionally, these members can be included in SYS1.PARMLIB, however, if duplicate members exist in both the Configuration PDS and SYS1.PARMLIB, ATAM uses the one in the Configuration PDS. The default member name is ATHCMD00.

ATAM does *not* use the configuration file to maintain device status information or to coordinate tape sharing between systems. There is no requirement to share this

configuration data set between multiple systems. Each ATAM started task can have its own configuration data set, if so desired.

However, if you intend to use the global command feature of ATAM, each unique configuration data set should contain an identical set of configuration members. The global command support uses the list of configuration members in the configuration data set to determine what systems participate in the "tapeplex" (i.e. network of ATAM-configured z/OS images). In particular, commands routed to all systems will be sent to each system defined via a configuration member.

In addition, if you intend to use ATAM to manage devices that are not assign-capable (i.e. 3420s), it is important that you define configuration members for each system sharing these devices. ATAM sends global "bid" requests to each configured system using the global commands support. If a system uses a device that is not assign-capable and the system is not connected to a global command process, results will be unpredictable.

If you prefer to share one configuration data set among multiple systems, the advantages are:

- You only maintain one copy of the configuration data set, so any changes you make to that file are applied to all of the systems. This is especially helpful if you make frequent changes to the configuration data set.
- Configuration changes for multiple systems can be made through ATAM's interface (TSO/ISPF panels), instead of requiring a separate log on to each system.

If you seldom make changes to the configuration data set, you may prefer to make one configuration data set for each system. An easy way to do that is to make a "master" configuration data set that contains all of the parameters you want, then copy that data set for each of the systems. You can then use the replicated configuration data set to make any changes that are unique for each system.

Note: Configuration members should not be included in SYS1.PARMLIB. In addition, SYS1.PARMLIB should not be allocated to the ATHCONFG DD statement of the ATAM address space or to the ATAM ISPF dialog invocation exec. Configuration members may be allocated to the ATAM ISPF dialog invocation exec via the configuration data set.

Editing ATHCNTLF sample

To create a configuration data set, a sample Commands member, and a sample configuration member, edit member ATHCNTLF in your SATHSAMP library and submit it. This JCL creates the configuration data set containing a sample Commands member and Configuration member.

About this task

The sample JCL and instructions for changing it are shown below:

```
//ATHCNTLF JOB <JOB PARAMETERS>
//*****
/* JOB NAME = ATHCNTLF
/*
/* LICENSED MATERIALS - PROPERTY OF IBM
/* 5698-B15
/* (C) COPYRIGHT IBM CORP. 2002,2018 ALL RIGHTS RESERVED.
/* (C) COPYRIGHT ROCKET SOFTWARE, INC. 2002, 2018 ALL RIGHTS RESERVED.
/* US GOVERNMENT USERS RESTRICTED RIGHTS - USE, DUPLICATION OR
```

```

/** DISCLOSURE RESTRICTED BY GSA ADP SCHEDULE CONTRACT WITH IBM CORP.
/**
/** DESCRIPTION: THIS JCL WILL BUILD THE CONFIGURATION DATA SET
/**             USED FOR HOLDING THE ATH CONFIGURATION
/**             INFORMATION AND COMMANDS MEMBERS
/** ACTIONS:
/** 1) CHANGE THE PREFIX PARAMETER TO A VALID HIGH LEVEL QUALIFIER
/**    FOR YOUR ENVIRONMENT.
/**    'ATH.V3R3' IS THE RECOMMENDED HIGH LEVEL QUALIFIER
/**
/** 2) CHANGE ?DISKUNIT? TO A VALID DASD UNIT NAME FOR YOUR
/**    ENVIRONMENT.
/**
/** 3) CHANGE ?SYSNAME? TO THE SYSNAME OF THE MVS IMAGE TO BE DEFINED
/**    FOR ATAM PROCESSING. THIS IS THE VALUE FROM THE SYSNAME
/**    PARAMETER IN SYS1.PARMLIB.
/**
/**    YOU CAN REPEAT THIS LINE FOR EACH IMAGE YOU INTEND TO DEFINE FOR
/**    ATAM PROCESSING, CHANGING THE ?SYSNAME? FOR EACH LINE TO REFLECT
/**    EACH OF THESE IMAGES.
/**
/**    FOR EXAMPLE,
/**          COPY OUTDD=ATHCONFIG,INDD=SATHSAMP
/**            SELECT MEMBER=((ATHCONFIG,SYSA,R))
/**          COPY OUTDD=ATHCONFIG,INDD=SATHSAMP
/**            SELECT MEMBER=((ATHCONFIG,SYSB,R))
/**          COPY OUTDD=ATHCONFIG,INDD=SATHSAMP
/**            SELECT MEMBER=((ATHCONFIG,SYSC,R))
/**          COPY OUTDD=ATHCONFIG,INDD=SATHSAMP
/**            SELECT MEMBER=((ATHCONFIG,SYSD,R))
/**
/** NOTES:
/** - TO ENSURE ATAM ADDRESS SPACE INITIATION OCCURS IN A TIMELY MANNER
/**   INSURE THAT THE CONFIGURATION DATA SET IS NOT MIGRATED OR
/**   ARCHIVED.
/**
/** - FOR SYSTEM NAMES THAT DO NOT CONFORM TO ISPF MEMBER NAME
/**   RESTRICTIONS, REFER TO THE ALTERNATE CONFIGURATION MEMBER NAME
/**   TABLE IN SAMPLE MEMBER ATHIDTBL.
/**
/*******
/**PARMS  SET  PREFIX='ATH.V3R3',
/**           DISKUNIT='?DISKUNIT?'
/**
/**DCONFIG EXEC PGM=IEFBR14
/**DELCONFIG DD DISP=(MOD,DELETE),
/**             UNIT=(&DISKUNIT,,DEFER),SPACE=(TRK,0),
/**             DSN=&PREFIX..ATHCONFIG
/**
/**ACONFIG EXEC PGM=IEFBR14
/**DELCONFIG DD DISP=(NEW,CATLG),
/**             UNIT=(&DISKUNIT,,DEFER),SPACE=(TRK,(10,1,50)),
/**             RECFM=FB,LRECL=80,BLKSIZE=0,DSORG=PO,
/**             DSN=&PREFIX..ATHCONFIG
/**
/**ACONFIG EXEC PGM=IEBCOPY
/**SYSPRINT DD SYSOUT=*
/**SATHSAMP DD DISP=SHR,
/**           DSN=&PREFIX..SATHSAMP
/**ATHCONFIG DD DISP=SHR,
/**           DSN=&PREFIX..ATHCONFIG
/**SYSIN    DD *
/**          COPY OUTDD=ATHCONFIG,INDD=SATHSAMP
/**            SELECT MEMBER=ATHCMD00
/**            SELECT MEMBER=((ATHCONFIG,?SYSNAME?,R))
/**

```

JCL Portion	Modification
PREFIX	Change the PREFIX parameter to a high-level qualifier that is appropriate for your environment. The recommended prefix name is ATH.V3R3, which is shown in the example.
?DISKUNIT?	Change the ?DISKUNIT? parameter to a valid DASD unit that is appropriate for your site.
?SYSNAME?	Change the ?SYSNAME? parameter to the system name (SYSNAME) of an MVS image on which you want to use ATAM.

Note: If ATAM is controlling tape drives that are shared among multiple MVS systems, configuration data sets and log files can be placed on a common DASD that is shared among all of the systems that use the tape drives. In order for an MVS image to participate in tape sharing, there must be an ATAM started task running on that image.

Sample ATHCMD00

You can modify the sample Commands member to include the commands appropriate for your site. When you run the ATHCNTLF job, a default Commands member, ATHCMD00, is created.

If you will be using ATAM on more than one MVS system and you require a unique set of commands for each of those systems, you can create a Commands member for each MVS system. However, be sure to assign a different number for the last two characters (ATHCMD01, ATHCMD02, etc.). If you want the same commands to be issued on all the MVS systems, share a single Commands member if possible (i.e. Configuration data set exists on shared DASD). An example of what ATHCMD00 looks like after it is created is shown below:

```
*-----*
* LICENSED MATERIALS - PROPERTY OF IBM                      *
* 5698-B15                                                    *
* (C) COPYRIGHT IBM CORP. 2002,2018 ALL RIGHTS RESERVED.    *
* (C) COPYRIGHT ROCKET SOFTWARE, INC. 2002, 2018 ALL RIGHTS RESERVED.*
* US GOVERNMENT USERS RESTRICTED RIGHTS - USE, DUPLICATION OR *
* DISCLOSURE RESTRICTED BY GSA ADP SCHEDULE CONTRACT WITH IBM CORP. *
*-----*
*
* SAMPLE COMMANDS MEMBER FOR ATAM V3R3M00                    *
*
*-----*
* DISPLAY VERSION INFO
V
*
* DISPLAY LRU STATUS
LRU
*
* DISPLAY QUOTE STATUS
QUOTE
*
* DISPLAY EXIT COMPATIBILITY STATUS
EXITCOMPAT
*
* SHOW STATUS OF ALL DRIVES
L
*
* DEFINE MESSAGE RESPONSES
R=IEF238D,WAIT,17
R=IEF433D,NOHOLD,17
R=ATH101D,W,81
```

```

*
* DISPLAY REPLY PARAMETERS
W
*
* INCLUDE SELECT COMMANDS BELOW TO INDICATE WHAT ATAM SHOULD MANAGE

```

While it is not necessary to create a Commands member, doing so is strongly recommended. To avoid ambiguity, most ATAM customers create a Commands member and specifically indicate which devices are being managed by the product via a series of Exclude (X) and Select (S) commands.

Sample ATHCONFG

When you run the ATHCNTLF job, it creates a Configuration data set (PDS) for the MVS system you specified in the job. The ATHCNTLF job also creates a sample Configuration member, ATHCONFG.

The name of the member should be identical to the MVS system name where ATAM is to execute, as described in the ATHCNTLF job. You will need a unique Configuration member for each MVS system on which you want ATAM to run.

Note: A configuration member is identified by the text ATAM_CONFIGURATION_MEMBER in the first line. When creating a new configuration member, be sure to include this text in the first line of the member. Otherwise, ATAM will not recognize the new member as a configuration member.

An example of a Configuration member is shown below:

```

ATAM_CONFIGURATION_MEMBER
*-----*
* LICENSED MATERIALS - PROPERTY OF IBM                      *
* 5698-B15                                                    *
* (C) COPYRIGHT IBM CORP. 2002,2018 ALL RIGHTS RESERVED.    *
* (C) COPYRIGHT ROCKET SOFTWARE, INC. 2002, 2018 ALL RIGHTS *
* US GOVERNMENT USERS RESTRICTED RIGHTS - USE, DUPLICATION *
* DISCLOSURE RESTRICTED BY GSA ADP SCHEDULE CONTRACT WITH  *
*-----*
*
* SAMPLE CONFIGURATION MEMBER FOR ATAM V3R3M00              *
*
* CHANGES:                                                  *
* HAB0330 07/2018 ATAM V3R3                                  *
*-----*
MODE=A                      Operational mode
ATHCMD=00                   Command member suffix
T1=030                      Offline Unit Polling Interval
T2=005                      Online Unit Polling Interval
T3=005                      Online Unit Iteration Count
T4=000                      Reconfiguration Termination Limit
T5=030                      Vary Online Wait Time
T6=999                      Vary Online Maximum Attempts
T7=030                      Bid interval
T8=008                      Randomization Threshold
QUOTE=Y                     Surround WTOR Responses in Quotes
LRU=N                       Use LRU Algorithm for selecting units
TCP=Y                       Global Command Processing participant
TIMEOUT=030                 TCP I/O Timeout
PORT=35043                  TCP Port Number
*HOSTNAME=                  TCP Address (Defaults to member name)
*                            Specify a value and uncomment if this is
*                            not correct.

```

This member contains system parameter values, which are initially set to the default values. You can change these values by typing new ones or by making entries in the parameter fields on the System Configuration screen (Option S on the ATAM main menu).

Step 3: Creating alternate system names (optional)

This step only applies to companies that use system names (SYSIDs) that begin with a numeric (i.e. 1SYS, instead of SYS1). If your MVS system names are different than the standard naming conventions, you must place the names in a special table, which is the Alternate Configuration Member Name Table.

About this task

The Alternate Configuration Member Name Table resides in a uniquely named member, ATHIDTBL, in the Configuration data set. This table can be modified and used in situations where the system name (CVTSNAME) for an MVS image does not conform to ISPF member name restrictions.

If a system ID is not found in the table in member ATHIDTBL, the system ID is used as the member name for assigning ATAM configuration member options to this specific MVS image. If a system ID is listed in ATHIDTBL, this member is checked for System-name-to-member-name assignments. ATAM uses Configuration member names specified in the ATHIDTBL member for MVS system names defined in this table.

A sample version of the Alternate Configuration Member Name Table member resides in member ATHIDTBL of the SATHSAMP data set. This member is optional and does not require updates if the MVS images defined to ATAM have names that conform to ISPF member naming restrictions.

The sample ATHIDTBL member, found in the SATHSAMP data set, is shown below:

```
ATAM_ALTSYSNAME_MEMBER  
KEYWORD=SYSID(MEMBER)
```

JCL Portion	Modification
KEYWORD	The keyword is SYSNAME.
SYSID	Type the MVS system name as specified on the SYSNAME parameter in the IEASYxx PARMLIB member.
MEMBER	Type the name of the Configuration member ATAM is to use when initiating on the indicated MVS image and when establishing ATAM TCP/IP linkage.

For example, to define a system named "1A2B" to use an alternate configuration member named "SYS1A2B," specify the following statement in the ATHIDTBL member:

```
SYSNAME=1A2B(SYS1A2B)
```

During ATAM initiation on this system, you will see the following messages:

```
ATH401I ALTERNATE SYSNAME TABLE DETECTED
```

```
ATH202I SYSTEM CONFIGURATION FOR HOST 1A2B USING ALTERNATE CONFIGURATION MEMBER  
SYS1A2B
```

```
ATH300I TCPIP CONFIGURATION INITIATING FOR LOCAL HOST 1A2B
```

Step 4: Creating the log file

The fourth step in customizing ATAM is to create the log file, which is used by the online reporting options.

About this task

A log file is required for ATAM if you will be using the real-time reporting options in the ATAM user interface. ATAM's online reports use the log file to present the results. If you are not interested in using online reporting, then you can allocate the log file as `//LOGFILE DD DUMMY`.

If you will be using ATAM's online reporting features, then the DDNAME "LOGFILE" identifies the sequential data set that ATAM uses to record tape allocation activity. The log file is only used as input for reports produced through ATAM's interface (TSO/ISPF panels).

Note: If you have used a log file with ATAM V2.1, you must create a new log file for ATAM V2.2 as changes have been made to the formatting in the log file. There are no log file changes for ATAM V3.2 and higher.

Examples of log records

There are a few different types of records that could be in the log file. You can have one file or multiple log files.

An example of the type of log record that you may find in the log file is a WAIT record. ATAM writes the WAIT log record whenever ATH#ALOC returns a WAIT-NOHOLD response to allocation. This indicates that, at this point in time, no currently selectable devices are available for the allocation request and MVS Allocation indicated that WAIT was an option. ATAM instructs MVS Allocation to process this request with WAIT-NOHOLD. It is possible to receive multiple WAIT records for the same request over a period of time, which are then eventually followed by an ALLOCATE record.

Another example of a record you may find in the log file is a FAIL record. ATAM writes the FAIL log record whenever ATH#ALOC has no available devices that can be assigned to the request. In addition to the FAIL log record, ATAM issues the following message when a FAIL occurs:

```
ATH102W NO SELECTABLE TAPE UNITS AVAILABLE
```

This message indicates that, at this point in time, all selectable devices are currently in use and MVS Allocation did not offer WAIT as a response. It is possible to receive multiple FAIL records over a period of time, which are then eventually followed by an ALLOCATE record.

Single or multiple log files

As distributed, ATAM continually appends to the specified log file. There is no requirement to share this file between multiple systems. If the log file is placed on shared DASD, multiple instances of ATAM can share the same log file. If shared DASD is not available, allocate a separate log file for each environment.

Modifying sample JCL in ATHLOGF member

The ATHLOGF member in the sample library can be modified to suit your environment.

About this task

The JCL for generating the log file is in member ATHLOGF in the SATHSAMP library. Refer to the next example to see the sample JCL and read instructions for changing it.

```
//ATHLOGF JOB <JOB PARAMETERS>
//*****
//* JOB NAME: ATHLOGF
//*
//* LICENSED MATERIALS - PROPERTY OF IBM
//* 5698-B15
//* (C) COPYRIGHT IBM CORP. 2002,2018 ALL RIGHTS RESERVED.
//* (C) COPYRIGHT ROCKET SOFTWARE, INC. 2002, 2018 ALL RIGHTS RESERVED.
//* US GOVERNMENT USERS RESTRICTED RIGHTS - USE, DUPLICATION OR
//* DISCLOSURE RESTRICTED BY GSA ADP SCHEDULE CONTRACT WITH IBM CORP.
//*
//* DESCRIPTION: THIS JOB WILL CREATE THE REQUIRED LOG FILE
//*              FOR AUTOMATED TAPE ALLOCATION MANAGER V3.3
//*
//* CAUTION:     YOU WILL NEED TO MODIFY THIS JCL BEFORE
//*              USING IT.
//*
//* ACTIONS:
//* 1) CHANGE THE PREFIX PARAMETER TO A VALID HIGH LEVEL QUALIFIER
//*    FOR YOUR ENVIRONMENT.
//*    'ATH.V3R3' IS THE RECOMMENDED HIGH LEVEL QUALIFIER
//*
//* 2) CHANGE ?DISKUNIT? TO A VALID DASD UNIT NAME FOR YOUR
//*    ENVIRONMENT.
//*
//* NOTES:
//* - TO ENSURE ATAM ADDRESS SPACE INITIATION OCCURS IN A TIMELY MANNER
//*   ENSURE THAT THE LOG FILE IS NOT MIGRATED OR ARCHIVED.
//*
//*****
//*****
//PARMS SET PREFIX='ATH.V3R3',
//          DISKUNIT='?DISKUNIT?'
//
//LOGF EXEC PGM=IEFBR14
//LOGFILE DD DISP=(NEW,CATLG,DELETE),
//          UNIT=&DISKUNIT,SPACE=(27820,(200,50)),
//          RECFM=FB,LRECL=260,BLKSIZE=27820,
//          DSN=&PREFIX..LOGFILE
```

JCL Portion	Modification
UNIT	Type the unit name. If "SYSDA" was the unit name, the unit would look like this: UNIT=SYSDA
DSN	Type the data set name of the log file, changing the high-level qualifier to meet your site's naming standards. Using ATH.V3R3 as the high-level qualifier, the data set name would look like this: DSN=ATH.V3R3.LOGFILE

For disk storage planning considerations, assume one 260-byte record per tape mount.

Log file clearing and continuing logging

If you need to, you can clear the log file or save the historical data then reset the log file, and continue with logging.

You can optionally instruct ATAM to clear the current log file content and continue with logging. This feature is helpful if you encounter a "space" error, such as an x37 abend, when the log file is full. You can clear the log file without losing any historical data and without terminating the ATAM address space by using the WRAP parameter in combination with the ATAM SMF option.

WRAP parameter

The WRAP parameter instructs ATAM to reset the LOGFILE data set to an empty state if it encounters a space-related failure. ATAM will then start writing log records from the beginning of the log file. Any data previously contained in the log file is lost, unless the ATAM SMF option is on. If it is on, all of the historical data will be saved to an SMF file.

Note: If your site uses a product that is designed to prevent x37 abends, do not allow this product to manage the ATAM LOGFILE.

To use the WRAP parameter, include this parameter on the EXEC statement in the ATAM procedure JCL (ATHPROC). The following example shows ATHPROC with the WRAP parameter (PARM='WRAP'):

```
//ATHPROC PROC PRDLIB='ATH.V3R2'  
//ATAM EXEC PGM=ATH#MAIN,TIME=1440,PARM='WRAP'  
//STEPLIB DD DISP=SHR,  
// DSN=&PRDLIB..SATHLOAD  
//LOGFILE DD DISP=SHR,  
// DSN=&PRDLIB..LOGFILE  
//ATHCONFIG DD DISP=SHR,  
// DSN=&PRDLIB..ATHCONFIG
```

Log messages

ATAM will issue one or more messages if there is a processing issue with the log file. The messages are shown below.

- If ATAM resets the log file to start from the beginning, you will see these messages:
ATH151W JOURNAL FAILURE DUE TO LACK OF SPACE IN LOGFILE
ATH152W LOGFILE DATA SET RESET TO EMPTY
- If for some reason ATAM is unable to reset the log file, ATAM issues the following message:
ATH153E LOGFILE DATA SET COULD NOT BE RESET TO EMPTY
- If the failure occurs during normal activity logging, the following message displays in combination with message ATH153 above:
ATH144E SEVERE ERROR. LOST JOURNAL ENTRY DUE TO FAILURE, LOGGING DISABLED
- If the failure occurs during ATAM address space initiation, the following message is displayed:
ATH156E COMMAND TASK INITIALIZATION FAILURE, LOGGING DISABLED

JLOGF command for status of a log file

The *JLOGF* console command lists the status of the ATAM LOGFILE. The command does not change the logging, but only reports on its current state, such as recording is on, off, or on and will wrap.

Step 5: Verifying access

It is important to ensure that the started task has the appropriate authorizations. This step describes the authorizations that are needed.

About this task

Verify that the ATAM started task has READ access to ATHCONFIG and UPDATE access to the LOGFILE. Failure to ensure that the started task has UPDATE access to the LOGFILE will result in 913 ABENDS.

Note: In order to use TCP/IP and UNIX services, you must have an OMVS segment defined to your security facility (i.e. RACF or another security product).

Step 6: Running CLIST to access ATAM ISPF interface

To use the features available through the ATAM interface, you must run the CLIST. Before you run the CLIST to access the ATAM interface, you must first tailor the two CLISTs found in the SATHSAMP library, which are ATH and ATHCLIST, to work in your environment.

About this task

The first sample CLIST, ATH, is shown below:

```
PROC 0 PRDLIB(ATH.V3R3)
/*****
/* JOB NAME: ATH */
/*
/* DESCRIPTION: THIS IS THE STUB ISPF INITIALIZATION CLIST FOR */
/* AUTOMATED TAPE ALLOCATION MANAGER V3.3. PLACE THIS */
/* CLIST IN A SHARED CLIST LIBRARY ACCESSIBLE TO ALL */
/* TSO USERS THAT REQUIRE ACCESS TO THE ATAM CUSTOMER */
/* INTERFACE. */
/*
/* LICENSED MATERIALS - PROPERTY OF IBM */
/* 5698-B15 */
/* (C) COPYRIGHT IBM CORP. 2002,2018 ALL RIGHTS RESERVED. */
/* (C) COPYRIGHT ROCKET SOFTWARE, INC. 2002, 2018 ALL RIGHTS RESERVED.*/
/* US GOVERNMENT USERS RESTRICTED RIGHTS - USE, DUPLICATION OR */
/* DISCLOSURE RESTRICTED BY GSA ADP SCHEDULE CONTRACT WITH IBM CORP. */
/*
*****/
CONTROL NOMSG
FREE FILE(ATHCLIST)
CONTROL MSG

SET CLISTLIB = &STR(&PRDLIB..SATHSAMP)
ALLOC FILE(ATHCLIST) DATASET('&CLISTLIB') SHR REU

ALTLIB ACTIVATE APPLICATION(CLIST) FILE(ATHCLIST)
ISPEXEC SELECT CMD(ATHCLIST PRDLIB(&PRDLIB)) NEWAPPL(ATH) PASSLIB

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

CLIST Line	Modification
PROC 0 PRDLIB()	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: <pre>PROC 0 PRDLIB(ATH.V3R3)</pre> In this example, ATH.V3R3 is the high-level qualifier of your ATAM customer interface resource libraries (i.e. SATHSAMP, SATHMENU, SATHPENU, SATHLOAD). Notes: 1. The PROC 0 PRDLIB() line is the very first line in the sample, above the instructions. 2. Make sure the CLIST allocates the same data sets that were specified in “Step 8: Customizing and initiating the ATAM started task” on page 30. The data set 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.V3R3)
/*****
/* JOB NAME: ATHCLIST                               */
/*                                                    */
/* LICENSED MATERIALS - PROPERTY OF IBM              */
/* 5698-B15                                           */
/* (C) COPYRIGHT IBM CORP. 2002,2018 ALL RIGHTS RESERVED. */
/* (C) COPYRIGHT ROCKET SOFTWARE, INC. 2002, 2018 ALL RIGHTS RESERVED.*/
/* US GOVERNMENT USERS RESTRICTED RIGHTS - USE, DUPLICATION OR */
/* DISCLOSURE RESTRICTED BY GSA ADP SCHEDULE CONTRACT WITH IBM CORP. */
/*                                                    */
/* DESCRIPTION: THIS IS THE ISPF INITIALIZTION CLIST FOR */
/*              AUTOMATED TAPE ALLOCATION MANAGER V3.3   */
/*                                                    */
/* CAUTION:     YOU MAY NEED TO MODIFY THIS CLIST BEFORE */
/*              USING IT. PAY CLOSE ATTENTION TO MATCH YOUR */
/*              SELECTED HIGH LEVEL QUALIFIER WITH THAT USED */
/*              FOR THE ATH LOAD LIBRARY, THE CONFIGURATION */
/*              DATA SET, AND THE ATH LOGFILE.         */
/*                                                    */
/* NOTES:                                              */
/* 1) 'ATH.V3R3' IS THE SUGGESTED HIGH LEVEL QUALIFIER. */
/* 2) COPY THIS MEMBER TO YOU SYSTEM CLIST LIBRARY ONCE IT */
/*    HAS BEEN MODIFIED.                               */
/* 3) A VALID ISPF ENVIRONMENT IS REQUIRED BEFORE EXECUTING */
/*    THIS CLIST.                                       */
/*                                                    */
/*****
/*****
CONTROL NOMSG
FREE FILE(ATHCONFIG LOGFILE)
CONTROL MSG
ISPEXEC LIBDEF ISPLIB DATASET ID('&PRDLIB..SATHMENU') COND STACK
ISPEXEC LIBDEF ISPLIB DATASET ID('&PRDLIB..SATHPENU') COND STACK
ISPEXEC LIBDEF ISPLIB DATASET ID('&PRDLIB..SATHTENU') COND STACK
ISPEXEC LIBDEF ISPLIB DATASET ID('&PRDLIB..SATHLOAD') COND STACK

ALLOC FILE(ATHCONFIG) DA('&PRDLIB..ATHCONFIG') SHR REUSE
ALLOC FILE(LOGFILE) DA('&PRDLIB..LOGFILE') SHR REUSE

ATH$MAIN

ISPEXEC LIBDEF ISPLIB
ISPEXEC LIBDEF ISPLIB

```

```
ISPEXEC LIBDEF ISPTLIB
ISPEXEC LIBDEF ISPLLIB

FREE FI(ATHCONFG LOGFILE)
```

You may need to customize the sample CLIST to work in your environment if you changed the suffixes of the installed data set names. It is important to ensure that the data set names constructed in the CLIST match the ones used in the JCL for the started task, which were specified in “Step 8: Customizing and initiating the ATAM started task” on page 30. The changes you must make are:

CLIST Line	Modification
PROC 0 PRDLIB(ATH.V3R3)	Type the high level qualifier in between the parentheses. The sample CLIST uses ATH.V3R3 for the high-level qualifier. Note: The PROC 0 PRODLIB() line is the very first line in the sample, above the instructions.
ATHCONFG	If the data set name constructed by the CLIST is not correct, type the correct name of the Configuration data set in between the parentheses. In the sample CLIST, the line containing the ATHCONFG data set is: ALLOC FILE(ATHCONFG) DA(&PRDLIB..ATHCONFG) where &PRDLIB is replaced with the high level qualifier specified in the PRDLIB parameter of the PROC statement. If you only changed the high level qualifier when creating this data set, you will not need to change this statement.
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(&PRDLIB..LOGFILE) where &PRDLIB is replaced with the high level qualifier specified in the PRDLIB parameter of the PROC statement. If you only changed the high level qualifier when creating this data set, you will not need to change this statement.

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.

```

----- Tivoli Automated Tape Allocation Manager for z/OS -----
Command ==>

Configuration data set: 'ATH.V3R3.ATHCONFIG'

Specify option below:
1 Current Status
2 Activity Reporting
S Setup and Configuration
E Environmental information
A About Automated Tape Allocation Manager
X Exit Automated Tape Allocation Manager

System name . . . : SYSA
User ID . . . . : myuserid
Today's date . . : 2018/07/18
Version . . . . : V3R03M00
Status . . . . : INACTIVE
ATH Service Task:
Start date . . . :
Start time . . . :
Discovered . . . :

+-----+
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+-----+

```

Related tasks:

“Step 8: Customizing and initiating the ATAM started task” on page 30
 You can modify the sample JCL for the started task to customize it for your environment. 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.

Step 7: Verifying MVS system parameters

About this task

In “Step 2: Creating a configuration data set and commands member” on page 6, you modified and ran the `ATHCNTLF` job to create a configuration data set, a configuration member, and a commands member. You can use the ATAM ISPF interface to review the configuration parameters for any of the MVS systems you defined. You can also create a new configuration for an MVS system and assign different values for system parameters for new or existing configurations. You do all of this through **Setup and Configuration** (option S) on the ATAM Main Menu.

Related tasks:

“Step 2: Creating a configuration data set and commands member” on page 6
 ATAM uses a configuration partitioned data set (PDS), which is allocated to the ATAM address space via an `ATHCONFIG` DD statement, to maintain product configuration information. This data set contains two types of members: *configuration* members and *command* members.

Creating a new configuration for a specific MVS system

You can create a new configuration member for an MVS system by choosing the **Setup and Configuration** option on the ATAM main menu. The System Configuration screen can also be used to view and change the values of an existing configuration member.

About this task

To access the System Configuration screen, choose option S, **Setup and Configuration**, on the ATAM main menu. If no configuration members currently exist in the Configuration data set, the following screen displays:

```
+----- No MVS System IDs -----+
|
| Command==>
|
| The configuration data set does
| not contain any definitions.
|
| Press Enter to create a definition.
| Enter Cancel or End to leave without
| creating a new definition.
|
+-----+
```

Press Enter to add a new configuration member to the data set. The following screen displays so you can specify a name for the new member.

```
+----- New Configuration -----+
|
| Command ==>
|
| Enter the new system configuration
| in the space below:
|
| New configuration . . . . . SYSA__
|
+-----+
```

Type a one- to eight-character MVS system name in the "New configuration" field. In the example above, the name of the new configuration member is SYSA.

Press Enter when you are done typing a name. The System Configuration screen displays next.

```
----- ATAM System Configuration -----
Command ==>

Configuration data set: 'ATH.V3R3.ATHCONFG'
Configuration member  : SYSA

MVS System Name . . . . . SYSA      MVS SYSNAME value
Operational Mode . . . . . A        A-Active, P-Passive
Initialization commands member suffix . . . 00 (ATHCMDxx)
Offline Unit Polling Interval (T1) . . . . 030 Seconds
Online Unit Polling Interval (T2) . . . . 005 Seconds
Online Unit Iteration Count (T3) . . . . 005 Iterations
Reconfiguration Termination Limit (T4) . . 000 Dynamic Changes
Vary Online Wait Time (T5) . . . . . 030 Seconds
Vary Online Maximum Attempts (T6) . . . . 999 Attempts
Device Bidding Wait Interval (T7) . . . . 030 Seconds
Randomization Threshold (T8) . . . . . 008 Randomization Threshold
Surround WTOR Responses in Quotes . . . . . Y Y-Yes, N-No
Use LRU to Select Devices . . . . . N Y-Yes, N-No
Global Command Processing . . . . . Y Y-Yes, N-No
TCP I/O Timeout . . . . . 030 Seconds
TCP Port Number . . . . . 35043 Number
TCP Host Name or Address . . SYSA

Press ENTER to save, END to exit.
```

For new definitions, the fields are populated with their default values. You can either keep the defaults or change the values to suit your environment.

ATAM Configuration Members screen

The ATAM configuration parameters are described in this table.

When you press Enter on the ATAM System Configuration screen, the ATAM Configuration Members screen displays. This is the same screen you see when you select "Setup and Configuration" on the ATAM main menu for the first time.

```
----- ATAM Configuration Members ----- Row 1 of 1
Command ==> _                               Scroll ==> CSR

Configuration data set: 'ATH.V3R3.ATHCONFIG'

Major command: Add - Add a Configuration member   System name . . : SYSA
Line commands: E-Edit V-View I-Insert D-Delete C-Copy R-Rename      >
CMD System Sysname Size Init Mod VV MM Created
____ SYSA SYSA 15 15 0 01.15 2018/04/07
***** Bottom of Data *****
```

The list displays the one system configuration member that you added. To add more systems, type the insert (I) command. The next example shows how this screen might look if there were several configuration members defined:

```
----- ATAM Configuration Members ----- Row 1 of 5
Command ==> _                               Scroll ==> CSR

Configuration data set: 'ATH.V3R3.ATHCONFIG'

Major command: Add - Add a Configuration member   System name . . : SYSA
Line commands: E-Edit V-View I-Insert D-Delete C-Copy R-Rename      >
CMD System Sysname Size Init Mod VV MM Created
____ SYSA SYSA 15 15 0 01.15 2018/04/07
____ SYSB SYSB 15 16 0 01.03 2018/06/17
____ SYSC SYSC 15 16 0 01.02 2018/06/17
____ SYSD SYSD 15 16 0 01.02 2018/06/17
____ SYSECFG 1133 15 15 0 01.00 2018/06/25
***** Bottom of Data *****
```

The columns on the ATAM Configuration Members screen are described below. When using the ATAM interface, page right to see additional columns.

Parameter	Name for SORT	Description
System	SYSTEM	Identifies the one- to eight-character name of the configuration member.
Sysname	SYSNAME	Identifies the MVS system name that is associated with the configuration member.
Size	SIZE	Specifies the current size (number of lines) of the configuration member.
Init	INIT	Specifies the initial size (number of lines) of the configuration member.
Mod	MOD	Indicates the number of lines in the member that have been added or changed.

Parameter	Name for SORT	Description
VV MM	VVMM (no space between letters)	Displays the version number (VV), which is set to one (1) when the member is created. Also displays the modification number (MM), which is the number of times this version has been modified.
Created	CREATED	Indicates the date that the configuration member was created.
Changed	CHANGED	Indicates the date and time that the configuration member was last modified.
ID	USERID	Provides the user ID that created the configuration member.
Mode	MODE	Indicates whether the processing mode is Active or Passive. The default mode is Active. Passive should only be used under the instruction of IBM Technical Support.
T1	T1	This represents the Offline Unit Polling Interval, which is the number of seconds to wait between attempts to see if a device is available to be varied offline or is still online.
T2	T2	This represents the Online Unit Polling Interval, which is the number of seconds to wait between attempts to vary an online device to offline.
T3	T3	This represents the Online Unit Iteration Count, which is the number of attempts to see if a device can be varied offline.
T4	T4	This represents the Reconfiguration Termination Limit, which is the number of times that the ATAM device table will be rebuilt due to a reconfiguration. Specifically, it is the number of times that ATAM will tolerate dynamic Input/Output Definition File (IODF) reconfigurations before terminating the started task.
T5	T5	This represents the Vary Online Wait Time, which is the number of seconds that ATAM must wait between attempts to find an available tape unit, and then vary the device online.
T6	T6	This represents the Vary Online Maximum Attempts, which is the maximum number of times that ATAM will attempt to find an available device for a job, and then vary the device online.
T7	T7	This represents the Device Bidding Wait Interval, which is the number of seconds ATAM waits for a device bid to respond before determining that the requested device is unavailable.
T8	T8	This represents the Randomization Threshold. The number of devices in the selectable offline device list must exceed the value displayed here for ATAM to perform random device selection. ATAM will not randomize device selection if the count is equal to or less than this number.
QUOTE	QUOTE	Specifies whether ATAM will surround captured WTOR responses with quotation marks and also whether an indication will be given that ATAM issued the response.
LRU	LRU	Indicates with "Yes" or "No" whether Least Recently Used (LRU) processing will be used. If Yes, the tape unit that has been dormant the longest will be the first one that ATAM will attempt to use.

Parameter	Name for SORT	Description
MEMBER	MEMBER	Identifies the last two digits in the name of the Commands member that is associated with this configuration member. The commands in the Command member define which tape devices the product is to manage.
Timeout	TIMEOUT	Specifies the number of seconds to attempt to connect to the TCP address before timing out.
TCP	TCP	Indicates with "Yes" or "No" whether this TapePlex z/OS image will participate in Global Command Processing. If Yes, the image will communicate with other systems in the TapePlex. If No, it will not.
Port	HOSTPORT	Specifies the TCP port number that is to be used for communication. The default is 35043.
Host name	HOSTNAME	Specifies the TCP host name or address that is to be used for communication. The default is the MVS system name, which means that the Sysname field will display the same value as the host name. When specifying a host name, use a maximum of 40 characters. If the host name is longer than 40 characters, specify the actual IP address using the format <code>nnn.nnn.nnn.nnn</code>. Note: If you are using VIPA, Virtual IP Addressing, and you experience ATAM communication failures, add the SOURCEVIPA parameter to the TCPIP IPCONFIG statement.

Specifying parameters on the System Configuration screen

You can modify the parameters used for a specific system by making changes to the values on the System Configuration screen.

About this task

To display the System Configuration screen, press **S** (for Setup and Configuration) on the ATAM main menu. When you create your first MVS system configuration file, insert (I) a new configuration file, or edit (E) an existing one, you will see the System Configuration screen.

```

----- ATAM System Configuration -----
Command ==>

Configuration data set: 'ATH.V3R3.ATHCONFIG'
Configuration member : SYSA

MVS System Name . . . . . SYSA      MVS SYSNAME value
Operational Mode . . . . . A        A-Active, P-Passive
Initialization commands member suffix . . . 00    (ATHCMDxx)
Offline Unit Polling Interval (T1) . . . . 030    Seconds
Online Unit Polling Interval (T2) . . . . 005    Seconds
Online Unit Iteration Count (T3) . . . . 005    Iterations
Reconfiguration Termination Limit (T4) . . 000    Dynamic Changes
Vary Online Wait Time (T5) . . . . . 030    Seconds
Vary Online Maximum Attempts (T6) . . . . 999    Attempts
Device Bidding Wait Interval (T7) . . . . 030    Seconds
Randomization Threshold (T8) . . . . . 008    Randomization Threshold
Surround WTOR Responses in Quotes . . . . Y      Y-Yes, N-No
Use LRU to Select Devices . . . . . N        Y-Yes, N-No
Global Command Processing . . . . . Y        Y-Yes, N-No
TCP I/O Timeout . . . . . 030    Seconds
TCP Port Number . . . . . 35043    Number
TCP Host Name or Address . . SYSA

Press ENTER to save, END to exit.

```

If you are creating a new configuration member, the default values appear in the fields on this screen. If you already created a configuration member for a specific MVS system, those values appear in the field. The System Configuration 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.

Note: The "Command" column in the table below shows the shortened name you can use in the Commands member (which is different than the System Configuration screen) for this parameter. For example, using the T1 command syntax, you could assign an offline unit polling interval of 60 seconds at start up by typing T1=60 in the Commands member.

The ATAM configuration parameters are described in the table on the next few pages.

Parameter	Command	Description
MVS System Name	none	Type the MVS system name in this field. This value defaults to the Configuration Member name, which IBM recommends. In instances where the MVS system name does not adhere to ISPF member naming conventions (for example, the name starts with a number instead of a letter), use the MVS System Name field to identify the MVS system this Configuration Member is to represent. If you save this value, ATAM uses it to update the Alternate Configuration Member Name Table, which links non-conforming MVS system names to ATAM Configuration Members. On the second sample ATAM Configuration Members screen in "Creating a new configuration for a specific MVS system" on page 18, the last Configuration Member is RS33CNFG and it is associated with an "alternate" system name, 1133. This is an example of a member name and system name that would be saved to the Alternate Configuration Member Name Table.
Operational Mode	none	Set the method for allocation that you want ATAM to perform. Select one of the following modes: • <i>Active</i>. Type A to indicate that you want ATAM to automatically vary tape drives online in response to demands for tape drive units. • <i>Passive</i>. Type P 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. <u>WARNING:</u> Do not use the Passive (P) mode unless you are instructed to do so by IBM Technical Support.
Initialization commands member suffix	none	Type the two-character suffix for the Commands member that contains any optional start up commands for ATAM. ATAM appends this value (suffix) to the characters "ATHCMD ", such as ATHCMD00, to identify the Commands member to be invoked during initialization of ATAM on this MVS image. The default value is 00. ATAM searches the Configuration data set for the Commands member.
Offline Unit Polling Interval	T1	Enter a number between 005 and 999 to indicate the number of seconds to wait between scanning for outstanding messages defined by the R or W command and detecting selectable, online, unallocated units. The default is 30 seconds.
Online Unit Polling Interval	T2	Enter a number between 005 and 999 to indicate the number of seconds to wait between scanning for outstanding messages defined by the R or W command and selectable, online, and un-allocated units, once either of these conditions has been detected at the T1 interval. The default is 5 seconds.

Parameter	Command	Description
Online Unit Iteration Count	T3	Enter a number between 000 and 999 to indicate the number of consecutive times ATAM finds a selectable, online, and unallocated device before attempting to vary it offline. The default is 5 iterations. The first detection is accompanied by message ATH082I. The T3 iteration occurs at the T2 interval. Note: It is recommended that you do not type a value of 000 for this parameter, but instead, code the value that fits your environment. If you type a 000 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	T4	Enter a number between 000 and 999 to indicate the number of times that ATAM will tolerate dynamic Input/Output Definition File (IODF) reconfigurations before terminating the started task. Essentially, this value indicates the number of times that the ATAM device table will be rebuilt due to a reconfiguration. The purpose of this limit is to conserve ECSA memory. The default is 000, which indicates that this parameter is disabled so that the ATAM device table is not rebuilt. When a value greater than zero is specified, ATAM will watch for dynamic IODF changes for a maximum of T4 times before the ATAM STC (started task) must be re-started. When ATAM detects IODF changes, ATAM will post message ATH006I, re-build the memory-resident list of known devices, and mark all devices as "excluded." Upon completion of the list rebuild, ATAM will post message ATH007I, then you must specify which devices you want ATAM to manage. You can do this by using ATAM's select (S) command or by instructing ATAM to re-process the command member by issuing a C=nn command. Most installations do not perform dynamic I/O configuration changes during normal processing, so IBM Technical Support recommends that the T4 parameter remain set at the default value of 000, meaning "disabled."
Vary Online Wait Time	T5	Enter a number between 005 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.

Parameter	Command	Description
Vary Online Maximum Attempts	T6	Enter a number between 000 and 999 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 999 attempts. The higher this value is, the more iterations ATAM will attempt before giving up and deferring to MVS allocation default behavior. If you type 000, ATAM will retry the request indefinitely until it either succeeds in finding a device or until the started task is ended. It is recommended that you do not type a value of 000 for this parameter, but instead, code the value that fits your environment.
Device Bidding Wait Interval	T7	Enter a number between 005 and 999 to indicate the number of seconds to wait for a device bid for a non-assign-capable device before determining the requested device to be unavailable. The default is 30 seconds.
Randomization Threshold	T8	Type a number between 000 and 999 to indicate the maximum number of devices that ATAM will process sequentially. If there are more than T8 devices in the available managed device list, ATAM will apply random selection logic to the devices on the list. The default is T8=8. To disable randomization, set T8=0 or specify LRU=Y.
Surround WTOR Responses in Quotes	QUOTE	If you type Y, ATAM will surround responses to WTOR messages with quotation marks (" ") and indicate that ATAM issued the response. This is the default. If you type N, ATAM will not place quotation marks around captured WTOR responses and will not indicate that ATAM issued the response.

Parameter	Command	Description
Use LRU Algorithm when Selecting Tape Units	LRU	Specify Y or N (default) to indicate whether you want ATAM to employ "Least Recently Used" (LRU) logic when selecting a tape device to be varied online. With this logic, 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. With a value of Y, ATAM will consume more resources in an attempt to balance the device load. Type N if you want to use ATAM's default device processing, which is randomized device selection. This type of process is more efficient because devices are selected at random. Least Recently Used (LRU) device selection operates by tracking the date and time that each tape unit was utilized while under the control of ATAM, 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.
Global Command Processing	GCTASK	Specify Y or N to indicate whether this z/OS image should participate in Global Command Processing. Use this option to limit or enable ATAM communications to this z/OS image via TCP/IP. Type Y if you want this z/OS image to participate in Global Command Processing. This z/OS image will process command requests initiated from other z/OS images in the TapePlex and initiate requests to other z/OS images in the TapePlex. Type N if you do not want this z/OS image to participate in Global Command Processing. This z/OS image will neither receive nor initiate commands related to other z/OS images in the TapePlex. Results requested by other z/OS images will not include information about this image. Results requested by this z/OS image will only contain information about this image. The default value for this option is Y.

Parameter	Command	Description
TCP I/O Timeout	none	Type a number from 005 - 999 to indicate how many seconds to attempt to connect to the TCP address before timing out. The default is 30. Note: ATAM checks the values listed in the TCP Address and TCP Port Number fields and returns right away if the specified host is not found. The TCP I/O Timeout is used only when attempting to contact a known host.
TCP Port Number	none	Type the port number that ATAM will use for communication. The default is 35043. Any unused port number can be specified. IBM Technical Support recommends that you use the same port number for all instances of ATAM.
TCP Address	none	Type the host name or IP address of the local system. If you specified an MVS system name on a previous panel, that MVS system name will automatically display in this field. You can change it at any time.

If you want to return to the default settings for ATAM, type the **DEFAULT** command in the Command line. This returns the settings for the System Configuration screen to their defaults.

When you are done, press Enter to save your changes, then PF3 to exit this screen and return to the ATAM main menu. If you do not want to save your changes, press END on the System Configuration screen.

Related tasks:

“Creating a new configuration for a specific MVS system” on page 18

You can create a new configuration member for an MVS system by choosing the **Setup and Configuration** option on the ATAM main menu. The System Configuration screen can also be used to view and change the values of an existing configuration member.

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 “Creating a new configuration for a specific MVS system” on page 18 and continuing onto “Specifying parameters on the System Configuration screen” on page 22.

TCP/IP Support

With the TCP/IP features, you can execute global commands, such as Select (S), on multiple remote systems from a single console. To use global commands, you must set up TCP/IP parameters. When you make entries in the TCP/IP fields on the System Configuration screen (option S from the ATAM main menu) for an MVS image, the following process occurs the next time you use ATAM:

1. A local ATAM gets its parameters from the configuration data set and checks to see if a port number has been configured.
2. If a port number has been configured, then TCP/IP support is enabled for that copy of ATAM.
3. All additional *system* records are read from the configuration data set to get the names of all remote ATAM systems and their port numbers. If there are

multiple configuration data sets, then all of the ATAM systems must be defined within every configuration data set that is being used across all systems.

When using the global console commands, List (L) and List Selectable (S), the output contains headers to show the ATAM system name and its associated units.

If you use a shared configuration file with all of the ATAM systems defined in it, you will only define the systems once. This eliminates the problem of having to update the file in multiple places.

If you have multiple configuration data sets due to shared DASD limitations, in order for global command support to work between all z/OS images in the ATAMPLEX, you must ensure that all z/OS images are defined in each of the configuration data set. The configuration data set accessed by a particular ATAM does not have to be exactly the same as a configuration data set accessed by another ATAM. The important items in the configuration data set, in terms of using TCP/IP, are the following:

- *The TCP address, such as a domain name or IP address.* You provide the address in the TCP Address field on the System Configuration screen, which is option S from the ATAM main menu.
- *The TCP Port, meaning the remote system's port number.* You specify the port number in the TCP Port Number field on the System Configuration screen.

These two items must be accurate or the remote ATAM system will not be accessible when you use global commands. If an ATAM system is not in the configuration data set or it is incorrectly defined, it will not be accessed when a global command is issued.

If you did not want a TapePlex z/OS image to participate in global command processing, change its Global Command Processing option (TCP) to "No". This will prevent the z/OS image from being part of global command processing. Please note however, that this does impact ATAM's ability to share devices that are not assign capable. Please see Appendix B, "Sharing devices that are not assign capable," on page 181 for further details.

Related concepts:

Appendix B, "Sharing devices that are not assign capable," on page 181
ATAM can manage devices that are not assign capable, but to do so you must perform a few additional configuration steps.

Considerations for MVS Allocation parameter

It is recommended that you change the value for a specific MVS allocation parameter to ensure it does not negatively impact ATAM processing. MVS allocation provides a parameter, MAXNWAIT, in the ALLOCxx member of PARMLIB that could affect ATAM processing.

ATAM uses the MVS Allocated and Offline Recovery Exit to assign devices to requests. There are instances where ATAM is unable to assign a device due to an exhausted tape pool. In this case, ATAM will, if possible, specify that allocation should allow the requestor to WAIT without holding its current resources (i.e. WAIT/NOHOLD).

Through the MVS ALLOCxx member, you can establish a policy for the use of offline devices in allocation recovery. The parameters specific to the Allocated and Offline Recovery Exit might look like this:

```
ALLC_OFFLN POLICY(WAITNOH) /*Wait while not holding resources*/
    MAXNWAIT(7)           /*7 "wait nohold" decisions allowed*/
    POLICYNW(CANCEL)       /*Cancel if wait is not allowed*/
```

Through these parameters, you can specify default behavior in cases where allocations invoke offline recovery processing. With the MAXNWAIT parameter, you can also define the number of times that either the Allocated and Offline Recovery exit or the POLICY parameter specifies WAIT/NOHOLD. Once the value specified in the MAXNWAIT parameter is reached, a subsequent offline recovery allocation attempt for the same request will default to the behavior specified in the POLICYNW parameter.

To ensure that the MAXNWAIT parameter does not adversely impact ATAM processing, IBM Technical Support recommends that this parameter be changed from the default value (5) to a value of 255 (the highest value allowed) when using ATAM to manage tape resource sharing. The lower this value is, the more likely ATAM will fail to assign a device because after this number of tries, MVS will no longer call ATAM's allocation and offline recovery exit. It is important that you check the MVS setting for the MAXNWAIT parameter and set it to 255.

For more information on these parameters and PARMLIB in general, refer to *z/OS MVS Initialization and Tuning Reference*, document number SA22-7592 on the IBM Knowledge Center: <https://www.ibm.com/support/knowledgecenter/>.

Considerations for ATAM VARY DEVICE processing

When varying devices with ATAM, you need to consider how devices will be selected from the Offline Device Table (ODT). ATAM uses the devices found in the ODT when determining which devices to vary online.

The UCB Flag, UCBVORSN, needs to remain *on* for a device to appear in the IEF_ALLC_OFFLN exit Offline Device Table (ODT). If the IOCDs defines a device as Online during an IPL, but the device fails to come online during the IPL, this flag will be set to *off*. This results in Allocation Recovery excluding the device from the IEF_ALLC_OFFLN Exit ODT. This affects ATAM because it builds its candidate list from the ODT. If ATAM-selectable devices do not appear in the ODT, ATAM will not attempt to vary them online. This will manifest as ATAM not responding to allocation requests, even though there are available ATAM-selectable devices.

To correct the flag, enter a manual Vary Online command against the device(s) in question. ATAM will Vary the device(s) back offline if unneeded.

Step 8: Customizing and initiating the ATAM started task

You can modify the sample JCL for the started task to customize it for your environment. 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.

About this task

The default procedure name is ATHPROC. The sample JCL is shown next.

```
//ATHPROC PROC PRDLIB='ATH.V3R3'
//*****
/* JOB NAME: ATHPROC
/*
/* LICENSED MATERIALS - PROPERTY OF IBM
```

```

/** 5698-B15
/** (C) COPYRIGHT IBM CORP. 2002,2018 ALL RIGHTS RESERVED.
/** (C) COPYRIGHT ROCKET SOFTWARE, INC. 2002, 2018 ALL RIGHTS RESERVED.
/** US GOVERNMENT USERS RESTRICTED RIGHTS - USE, DUPLICATION OR
/** DISCLOSURE RESTRICTED BY GSA ADP SCHEDULE CONTRACT WITH IBM CORP.
/**
/** DESCRIPTION: THIS IS THE STARTED TASK PROCLIB MEMBER
/**              FOR AUTOMATED TAPE ALLOCATION MANAGER V3.3
/**
/** CAUTION:     YOU MAY NEED TO MODIFY THIS JCL BEFORE
/**              USING IT. PAY CLOSE ATTENTION TO MATCH YOUR
/**              SELECTED HIGH LEVEL QUALIFIER WITH THAT USED
/**              FOR THE ATH LOAD LIBRARY, THE CONTROL
/**              DATASET, AND THE ATH LOG FILE.
/**
/** NOTES:
/** 1) 'ATH.V3R3' IS THE SUGGESTED (AND DEFAULT) HIGH LEVEL QUALIFIER.
/**    IF 'ATH.V3R3' IS NOT THE CORRECT HIGH LEVEL QUALIFIER, CORRECT
/**    THE SPECIFICATION ON THE 'PRDLIB' SUBSTITUTIONAL PARAMETER.
/** 2) COPY THIS MEMBER TO YOUR SYSTEM PROCLIB ONCE IT HAS
/**    BEEN MODIFIED.
/** 3) USE THE START COMMAND FROM AN MVS CONSOLE TO BEGIN
/**    STARTED TASK INITIALIZATION.
/**
/** CHANGES:
/** 08/2004 - ATAM176 - MODIFIED PROC TO USE SUBSTITUTIONAL PARAMETER
/**
/*******
/**ATAM    EXEC PGM=ATH#MAIN,TIME=1440
/**STEPLIB DD DISP=SHR,
/**           DSN=&PRDLIB..SATHLOAD
/**LOGFILE DD DISP=SHR,
/**           DSN=&PRDLIB..LOGFILE
/**ATHCONFG DD DISP=SHR,
/**           DSN=&PRDLIB..ATHCONFG

```

You must customize the sample JCL to work in your environment. It is important to ensure that the data set 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. If you used the defaults for the data set name and the load library, the data set name is ATH.V3R3.SATHLOAD.
LOGFILE DD	Type the data set name of the log file. The default name is ATH.V3R3.LOGFILE.
ATHCONFG DD	Type the data set name of the ATHCONFG. The default name is ATH.V3R3.ATHCONFG.

DDNAME "ATHCONFG" identifies the configuration data set used to store ATAM configuration parameters. This file must be populated with configuration members containing the required administrative and configuration parameters through the product's ISPF panels prior to starting the ATAM started task (STC).

This configuration data set is *not* used to coordinate tape sharing between multiple systems. As a result, there is no requirement to place this file on shared DASD for multiple instances of ATAM to use it.

This file need not be shared between systems. The only advantage to sharing this file is that ATAM product parameters for any system can be updated from a single TSO/ISPF session. Since product parameter changes occur infrequently, there is no inherent value in sharing this data set between multiple copies of ATAM, however, many shops do so.

Starting and Stopping ATAM

Simple global commands can be used to start and stop the started task. Once you have set your configuration parameters on the System Configuration screen (option S on the ATAM Main Menu), you must stop and restart the started task for those settings to take effect.

About this task

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

```
S ATHPROC
```

Note: The same configuration data set is used for both the ISPF started task and the ATAM started task.

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

```
P ATHPROC
```

This command assumes that you kept the name of the started task as provided in the sample JCL, which is `hlq.SATHSAMP(ATHPROC)`. 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.

How the started task works

About this task

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

About this task

You should set up the ATAM started task to start automatically when MVS is IPLed and TCP/IP is initialized. 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 start up.

It is important to ensure that the TCP/IP initialization completes before ATAM starts. To use ATAM's TCP services, TCP/IP must be initiated and ready to accept requests before starting ATAM.

You may want to use an automation product to detect the TCP/IP messages that indicate it is ready for processing. When the messages are detected, invoke the ATAM start-up process.

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

Understanding configuration data sets and command members

A configuration *data set* may include several configuration members and command members, which you can modify to suit your needs. A *configuration member* contains system parameter values for a specific MVS image. A *command member* contains a script of commands that determines which tape devices will be controlled by ATAM.

ATAM V3 makes use of a partitioned data set (PDS), commonly referred to as the Configuration data set. The contents of the data set include configuration members for ATAM-enabled MVS images and command members, formerly known as ATAM PARMLIB members, residing in the SYS1.PARMLIB data set. Both the ATAM started task and the System Configuration screen (option S from the ATAM Main Menu) reference this data set via the ATHCONFIG DD or file name.

Configuration Members

The configuration members contain KEYWORD=VALUE specifications for a particular ATAM-enabled MVS image. Each keyword identifies a parameter used to manipulate ATAM operations.

Note: In ATAM Version 1, this data was stored in the ATAM control file, which was a VSAM data set.

ATAM associates the configuration members to specific MVS images based on the member name. The member name matches the one- to eight-character MVS system name, as defined in the CVTSNAME field.

Note: A configuration member must contain the following text starting in the first column of line one: *ATAM_CONFIGURATION_MEMBER*. When creating a new configuration member, be sure to include this text in the first line of the member. Otherwise, ATAM will not recognize the new member as a configuration member, even if the member name matches the CVTSNAME field of the MVS image initiating ATAM.

ATAM ignores any text that is either considered to be a comment or does not identify a defined ATAM keyword. ATAM identifies comments as those lines containing an asterisk (*) in the first column.

ATAM only processes configuration member records that contain defined ATAM keywords. The keywords are listed in the table below:

Table 1. Keywords associated with configuration parameters

Keyword	Configuration Parameter
MODE	Operational Mode (Active, Passive)
ATHCMD	Initialization commands member suffix
T1	Offline Unit Polling Interval
T2	Online Unit Polling Interval
T3	Online Unit Iteration Count
T4	Reconfiguration Termination Limit
T5	Vary Online Wait Time
T6	Vary Online Maximum Attempts
T7	Wait interval for non-assign-capable device bidding requests
T8	Randomization threshold
QUOTE	Surround WTOR responses in quotes
LRU	Use Least Recently Used (LRU) algorithm when selecting tape units
TCP	Global Command Processing
TIMEOUT	TCP I/O Timeout
PORT	TCP Port Number
HOSTNAME	TCP Address

ATAM ignores all other lines. If ATAM detects multiple instances of a single keyword, it will only use the value specified for the last occurrence of the keyword.

Cannot find the configuration member

If ATAM is unable to find a configuration member for the MVS image initiating ATAM, it issues the following messages:

```
ATH031W NO BASE CONFIGURATION FOUND FOR SYSTEM system, USING DEFAULTS.
```

```
ATH305I TCPIP CONFIGURATION FOR LOCAL HOST system DISABLED DUE TO MISSING  
CONFIGURATION MEMBER
```

```
ATH095W NO LOCAL TCPIP INFO CONFIGURED. ATAM REMOTE HOST SUPPORT DISABLED.
```

The first message, ATH031W, indicates that because no configuration member exists for the MVS image, ATAM will execute based on its operational defaults. The second message, ATH305I, indicates that the TCPIP resource for the local host will not be initiated because of the missing configuration member. The third message, ATH095W, indicates that ATAM did not initialize the TCP/IP communications options. The TCP/IP cross-system communication option requires that a configuration member exists for each ATAM-enabled MVS image that will participate in the communications link.

Note: IBM recommends that the configuration data set be shared between all participating MVS images, if possible. Where this is not possible, a complete copy of the configuration data set should be defined on participating MVS images that do not share DASD. In order for ATAM-enabled MVS images to share the TCP/IP communications link, they must have knowledge of each other based on the definitions in the configuration data set.

Found the configuration member

Upon successful processing of the configuration members in the configuration data set, ATAM issues the following messages:

```
ATH032I BASE CONFIGURATION LOADED
ATH300I TCPIP CONFIGURATION INITIATING FOR type HOST system
ATH302I TCPIP CONFIGURATION COMPLETE FOR HOST system
```

The first message, ATH032I, indicates that ATAM found a configuration member for the initiating MVS image and parsed the contents to establish the ATAM operational parameters. The second and third messages, ATH300I and ATH302I, indicate the start and end of the TCP/IP configuration processing for an MVS image named *system* that is either a remote or a local system type. Each MVS identified by this message pair is a participant in ATAM TCP/IP cross-system communications.

Commands Members

The Commands members, identified by the first six characters of their name, ATHCMD, contain ATAM commands to be issued during ATAM initialization. The last two characters of the Commands member name, when combined with ATHCMD, must form a valid eight-character member name.

Note: This is data formerly stored in the ATAM PARMLIB members in the MVS PARMLIB concatenation.

Any valid ATAM command can be placed in these members for invocation during ATAM initialization. The ATHCMD keyword in the configuration member allows you to identify a unique commands member for each ATAM-enabled MVS image. Do this by specifying a two-character suffix to complete the member name (e.g. ATHCMD=00 selects command member ATHCMD00). If you do not provide an ATHCMD keyword in a configuration member for a particular MVS image, ATAM uses the default member name, which is ATHCMD00.

Cannot find commands member

If the configuration data set (ATHCONFIG DD statement) is not found in the ATAM started task, ATAM will search the MVS PARMLIB concatenation for the command member (ATHCMDxx). If the member is not in either location, you will receive the following messages:

```
IEF764I ATAM ATHCONFIG ATAMMAIN PARMLIB READ FAILED - MEMBER ATHCMD00 NOT
FOUND.
ATH047W COMMANDS MEMBER ATHCMD00 WAS NOT FOUND IN THE CONFIGURATION DATA SET OR
PARMLIB CONCATENATION
```

The first message, IEF764I, is an MVS message issued as a result of the service ATAM invokes to read the commands member. The second message, ATH047W, is an ATAM message describing the specific problem.

How to edit a commands member

The ATAM user interface does not offer the ability to edit the contents of commands members. You will have to make any edits through a standard MVS editing tool, such as ISPF.

Chapter 3. Current Allocation Status

After you have set the configuration options for your MVS systems, and stopped and restarted the started task, select option 1, **Current Status** on the ATAM main menu to verify that ATAM is working as you configured it.

The **Current Status** option displays a global view of ATAM information. The status screens reflect information from all of the z/OS images defined in the data set listed in the Configuration Data Set field.

```
----- ATAM Current Status ----- Row 1 of 5
Command ==> _ Scroll ==> CSR

Configuration data set: 'ATH.V3R2.ATHCONF'

Discovered . . . . . : 42          System name . . : SYSC
Selectable . . . . . : 0          User ID . . . . : TSUSER
Allocated . . . . . : 0          Today's date . . : 2018/08/05
Pending offline . . . : 0        Version . . . . . : V3R02M00
Online . . . . . : 18          Status . . . . . : ACTIVE
Successful allocations: 0        ATH Service Task: ATHPROC
Allocation failures . : 0        Start date . . . : 2018/08/05
Forced waits . . . . : 0        Start time . . . : 12:27:51

Major Command: VIEW {SYS ALL SEL ONL OFF ALLOC EXCL PEND MOUNT PREF}

----- All units -----
Line Commands: A-Allocations
                S-Make unit selectable
                X-Exclude unit
                +
CMD  Unit  System  Selectable  Online  Allocated  Pending off
-----
0500 SYSC      N          N          N          N
0500 SYSA      N          N          N          N
0500 SYSB      N          N          N          N
0500 SYSD      N          N          N          N
0500 SYSE      N          N          N          N
0501 SYSC      N          N          N          N
0501 SYSA      N          N          N          N
0501 SYSB      N          N          N          N
0501 SYSD      N          N          N          N
0501 SYSE      N          N          N          N
0502 SYSC      N          N          N          N
0502 SYSA      N          N          N          N
0502 SYSB      N          N          N          N
0502 SYSD      N          N          N          N
0502 SYSE      N          N          N          N
***** Bottom of Data *****
```

The ATAM Current Status screens are all formatted into two sections, a *fixed* portion and a *dynamic* portion. The sections are separated by a line that contains text, such as "All units," "Defined Systems," or "Selectable SYSA Units," describing the data that is displayed in the dynamic area.

To refresh the current status display, simply press Enter. ATAM will obtain the current data available and display it. In some cases, such as the Online field, there is a timing delay in data reporting. The data will refresh when the timing parameters (T1, T2, and T3) have been fulfilled.

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

Fixed section

The ATAM Current Status screen, which you can access by choosing the Current Status option on the ATAM main menu, contains a fixed section and a dynamic section. This topic describes the fields in the fixed section of the ATAM Current Status screen.

The fixed portion is the top section of the screen. It remains constant regardless of the dynamic portion's content. The data always reflects the state of ATAM on the current z/OS image. For example, when using the ATAM dialog on system SYSA, the data in the fixed portion of the screen reflects the state of ATAM on system SYSA.

On screens that display a reduced number of lines, such as 24 or 32, use the "Display" major command to remove the fixed section. This allows for the display of more tabular data in the dynamic section.

The fixed portion of the ATAM Current Status screen includes the following information (and more):

- 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 number of successful allocations
- the number of allocation failures
- the number of forced waits

The table below describes the fields on the top half of the ATAM Current Status screen.

Table 2. Fixed fields on ATAM Current Status screen

Field	Description
Discovered	Indicates the number of tape units that are actually defined to this MVS system.
Selectable	Indicates the number of tape units that are available for use.
Allocated	Indicates the number of tape units that are currently allocated.
Pending offline	Indicates the number of tape units that are allocated, but will be taken offline once the allocation is released.
Online	Indicates the number of tape units that are currently assigned to a job.
Successful allocations	Indicates the number of successful allocation events.
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 had to wait because ATAM was unable to immediately service the request (i.e. no available tape units).
System name	Displays the one to eight-character name of the system that is being reported.
User ID	Displays the one to eight-character ID of the user who started this session of ATAM.
Today's date	The format for the current date is YYYY/MM/DD.

Table 2. Fixed fields on ATAM Current Status screen (continued)

Field	Description
Version	Displays the version, release, and modification numbers for ATAM. The format is <i>VnRmmMnn</i> , where "n" is a number.
Status	Indicates the current status of the started task: - Active - the started task is running. - Inactive - the started task is not running.
ATH Service Task	The name of the started task used by ATAM for processing.
Start date	Indicates the date that the started task was initialized. The format for the date is YYYY/MM/DD.
Start time	Indicates the time that the started task was initialized. The format for the time is HH:MM:SS.

Dynamic section

The ATAM Current Status screen, which you can access by choosing the Current Status option on the ATAM main menu, contains a fixed section and a dynamic section. This topic describes the fields in the dynamic section of the ATAM Current Status screen.

The dynamic portion is the bottom section of the screen. It changes based on what subcommand you use with the VIEW major command.

In the Command line, type VIEW, followed by one of these subcommands:

Table 3. VIEW subcommands

VIEW subcommand	Results
SYSTEMS	Displays a list of all of the z/OS images defined in the configuration data set.
ALL	Displays a list of all tape units discovered on all of the defined z/OS images with active ATAM address spaces.
SELECT	Displays a list of all selectable tape units on all of the defined z/OS images with active ATAM address spaces.
ONLINE	Displays a list of all online tape units on all defined z/OS images with active ATAM address spaces.
OFFLINE	Displays a list of all offline tape units on all defined z/OS images with active ATAM address spaces.
ALLOC	Displays a list of all allocated tape units on all defined z/OS images with active ATAM address spaces.
EXCLUDED	Displays a list of all excluded tape units on all defined z/OS images with active ATAM address spaces.
PENDING	Displays a list of all tape units that are allocated, but will be taken offline once the allocation is released.
MOUNT	Displays a list of tape units that are waiting for a volume to be mounted.
PREF	Displays the list of defined Job Preference data on the current system.

Major Command field

The "Major Command" field contains point-and-shoot versions of the above subcommands. So, as an alternative to typing VIEW and a subcommand in the Command line, simply position the cursor on the desired subcommand and press <Enter>.

The resulting dynamic displays may contain one or more entries per discovered device. There will be an entry for each z/OS image with an active ATAM address space that discovered the device. For example, if device 0500 is discovered by ATAM address spaces that are active on five z/OS images, the display will contain five entries for device 0500, each with a different name in the System column.

Note: The data in the dynamic portion of the screen is a result of ATAM status queries initiated to the local and remote ATAM address spaces. Therefore, there is a short delay in the time required for the screen to display the data. For example, it may take a few seconds for the VIEW SYSTEMS display to reflect a change to the ATAM environment.

Line Commands field

The "Line Commands" field provides a list of valid line commands that you can use with the current dynamic display. For example, if you used the VIEW SYSTEMS command to display a list of defined systems, you could then use the "S" line command to select a specific z/OS system, such as SYSA. The result would be a list of selectable devices on SYSA.

The line commands vary depending upon the type of data you choose to display in the dynamic section of the ATAM Current Status screen. Each topic in this document lists the line commands that are appropriate for each type of data.

Optional commands

For a complete list of commands for the ATAM Current Status screen, refer to "Optional commands."

Related concepts:

"Optional commands"

There are additional, optional commands you can enter in the Command line of the ATAM Current Status screen: SORT, FIND, PRINTX, and DISPLAY.

Optional commands

There are additional, optional commands you can enter in the Command line of the ATAM Current Status screen: SORT, FIND, PRINTX, and DISPLAY.

Use the FIND command to find a string, the SORT command to sort the data, and the PRINTX command to print the current display on the ATAM Current Status screen. In addition, you can use the DISPLAY COMPRESS command to compress (hide) the "fixed" part of the screen and the DISPLAY EXPAND command to enlarge the screen again to include the "fixed" part. Each of these commands is described below.

FIND command

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 this example, 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 command

Syntax:

```
SORT UNIT|SYSTEM|SELECT|ONLINE|ALLOCATED|PENDING|MOUNT|ALLOCS|TIER|SCAN|JOBNAME  
      |VOLUME|UNITBIN  A|D
```

UNIT Sort by the tape unit ID.

SYSTEM

Sort by the System ID.

SELECT

Sort by the IDs of all selectable tape units.

ONLINE

Sort by the IDs of all online tape units.

ALLOCATED

Sort by the IDs of all tape units that are currently allocated, indicating that the tape unit is actively being used by a job.

PENDING

Sort by the IDs of all tape units that are allocated, but will be taken offline once the allocation is released.

MOUNT

Sort by the IDs of all tape units that are waiting for a volume to be mounted.

ALLOCS

Sort by the number of allocation attempts successfully resolved by ATAM.

TIER Sort by device tier value.

SCAN Sort by device scan bypass value.

JOBNAME

Sort by the job name.

VOLUME

Sort by volume name or ID.

UNITBIN

This command uses a binary version of the unit name (UCB addresses) to ensure proper sorting. There is no associated column on the screen that displays the UNITBIN data.

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.

You have the option to sort the contents of a column in ascending (A) or descending (D) order.

Example:

```
SORT UNIT D
```

You can also refer to a column by its column number. For example, assume that, the "SELECT" column is column two. The example below shows how to sort by the "SELECT" column using ascending order.

Example:

```
SORT 2 A
```

PRINTX command

Syntax:

```
PRINTX
```

Print the contents of any scrollable area that displays tabular data. The contents of the current view are sent to a SYSOUT file allocated to your user ID. The name of the SYSOUT file is dynamically created by the system in the format SYSnnnnn, where nnnnn is a decimal between 1 and 99999.

To view the output of a PRINTX command, choose the *SDSF* option on the ISPF main menu and select your active TSO ID. The attached SYSOUT file contains the information that PRINTX captured.

Example:

```
PRINTX
```

DISPLAY command

Use the DISPLAY command to reduce the amount of information appearing on the screen. This is useful when executing the ATAM ISPF dialog on screens that display a maximum of 32 or 24 lines. When "compressed", the dialog displays only the major and minor command information and the tabular device data. The local system information normally displayed in the fixed section of the screen is removed. To restore the "fixed" information, issue the command with the "expand" parameter.

Syntax:

```
DISPLAY EXPAND|COMPRESS
```

Table 4. DISPLAY command syntax

Parameter	Description
EXPAND	Modify the Status display to include local system information contained in the "fixed" section. This is the default setting on entry to the Status display screen.
COMPRESS	Modify the Status display to exclude local system information and remove the "fixed" section.

Example #1:

```
DISPLAY EXPAND
```

In this example, the EXPAND parameter of the DISPLAY command will display the complete status information, including local system information contained in the fixed section.

```

----- ATAM Current Status ----- Row 1 of 3
Command ==>                               Scroll ==> CSR

Configuration data set: 'ATH.V3R2.ATHCONFIG'

Discovered . . . . . : 54                System name . . : SYSA
Selectable . . . . . : 0                User ID . . . . : USERID
Allocated . . . . . : 0                Today's date . . : 2018/09/10
Pending offline . . . : 0              Version . . . . : V3R02M00
Online . . . . . : 28                 Status . . . . : ACTIVE
Successful allocations: 0              ATH service task: ATHPROC
Allocation failures . : 0              Start date . . : 2018/09/08
Forced waits . . . . : 0              Start time . . : 13:47:38

Major Command: VIEW { SYS ALL SEL ONL OFF ALLOC EXCL PEND MOUNT PREF }

----- All units -----
Line Commands: A-Allocations
                S-Make unit selectable
                X-Exclude unit
CMD  Unit  System  Selectable  Online  Allocated  Pending off  - >
    05C7  SYSA           N           N         N         N
    0640  SYSA           N           N         N         N
    0640  SYSB           N           N         N         N
***** Bottom of Data *****

```

Example #2:

DISPLAY COMPRESS

In this example, the COMPRESS parameter of the DISPLAY command will remove the local system information contained in the fixed section.

```

----- ATAM Current Status ----- Row 1 of 3
Command ==>                               Scroll ==> CSR

Configuration data set: 'ATH.V3R2.ATHCONFIG'

Major Command: VIEW { SYS ALL SEL ONL OFF ALLOC EXCL PEND MOUNT PREF }

----- All units -----
Line Commands: A-Allocations
                S-Make unit selectable
                X-Exclude unit
CMD  Unit  System  Selectable  Online  Allocated  Pending off  - >
    05C7  RS22           N           N         N         N
    0640  RS52           N           N         N         N
    0640  RS53           N           N         N         N
***** Bottom of Data *****

```

VIEW systems

The VIEW SYSTEMS command is available on the ATAM Current Status screen. Use this command to display a list of all of the defined z/OS images with an actively communicating ATAM address space.

You can either type VIEW SYSTEMS in the Command line or you can select the word "SYSTEMS" from the choices in the Major Command field. The screen will look similar to the one below:

```

----- ATAM Current Status ----- Row 1 of 5
Command ==> _ Scroll ==> CSR

Configuration data set: 'ATH.V3R3.ATHCONFIG'

Discovered . . . . . : 368          System name . . : SYSA
Selectable . . . . . : 0            User ID . . . . : TSUSER
Allocated . . . . . : 0            Today's date . . : 2018/02/26
Pending . . . . . : 0             Version . . . . . : V3R03M00
Online . . . . . : 16             Status . . . . . : ACTIVE
Successful allocations: 0          ATH Service Task: ATHPROC
Allocation failures . : 0          Start date . . . : 2018/02/26
Forced waits . . . . . : 0         Start time . . . : 12:01:18

Major Command: VIEW {SYS ALL SEL ONL OFF ALLOC EXCL PEND MOUNT PREF}

----- Defined Systems -----
Line Commands: A-All S-Selectable L-Allocated O-Online F-Offline X-Excluded
                P-Pending offline M-Mount pending E-Edit V-View
                SA-Make all units selectable
                XA-Exclude all units
                >
CMD  System  Status  Units  Version  Jobname  Start date  Start time
----  -----  -----  -----  -----  -----  -----  -----
_____ SYSA   Local    368    3.03.00  ATHPROC   2018/02/26  12:01:18
_____ SYSB   Remote    368    3.03.00  ATHPROC   2018/02/25  07:40:13
_____ SYSC   Remote    368    3.03.00  ATHPROC   2018/02/25  07:40:47
_____ SYSD   Remote    368    3.03.00  ATHPROC   2018/02/25  07:41:55
_____ SYSE   Remote    368    3.03.00  ATHPROC   2018/02/25  07:41:59
***** Bottom of Data *****

```

The columns in the bottom half of the screen are described in the table below. Press the Page Right button to view the rest of the columns on this screen:

Table 5. VIEW systems data

Column name	Description
System	Identifies all of the z/OS images with an actively communicating ATAM address space.
Status	Reflects whether the z/OS image is an active remote, the local z/OS image, or is unavailable.
Units	Contains the number of devices discovered on the z/OS image.
Version	Specifies the version number of ATAM that is running on this system.
Jobname	Indicates the name of the started task used to start ATAM on this system.
Start Date	Uses the format YYYY/MM/DD to indicate the date that ATAM was started on this system.
Start Time	Uses the format HH:MM:SS to indicate the time that ATAM was started on this system.
Host name	Identifies the name of the host on which this system runs, using the format <i>systemname.hostname.com</i> .
LRU	Displays the current setting for the "Least Recently Used" option (LRU) for ATAM on each of the listed systems.
Quote	Displays the current setting for the "Surrounding WTOR Responses in Quotes" option (QUOTE) for ATAM on each of the listed systems.
Diag	Displays the current setting for the Diagnostic Messages option (DOF and DON) for ATAM on each of the listed systems.
ExitC	Displays the current Exit Compatibility option (EXITCOMPAT) for ATAM on each of the listed systems.

Table 5. VIEW systems data (continued)

Column name	Description
Exit	Displays the current state of the ATAM Allocated and Offline Device (IEF_ALLC_OFFLN) exit routine on each of the listed systems.
TCP	Displays the current state of the ATAM Global Communications Task option (GCTASK) on each of the listed systems.
T1	Displays the Offline Unit Polling Interval (T1) value on each of the listed systems.
T2	Displays the Online Unit Polling Interval (T2) value on each of the listed systems.
T3	Displays the Online Unit Iteration Count (T3) value on each of the listed systems.
T4	Displays the Reconfiguration Termination Limit (T4) value on each of the listed systems.
T5	Displays the Vary Online Wait Time (T5) value on each of the listed systems.
T6	Displays the Vary Online Maximum Attempts (T6) value on each of the listed systems.
T7	Displays the Device Bidding Wait Interval (T7) value on each of the listed systems.
T8	Displays the Randomization Threshold (T8) value on each of the listed systems.

There are several line commands that you can use to receive more detail about a specific line in the data list. These line commands are described in the next table.

Keep in mind that line commands will not provide any additional information on z/OS images where the Status column contains the phrase "Unavail." This phrase indicates that the z/OS image is defined in the configuration data set, but is not currently communicating with the local z/OS image. This usually occurs when an ATAM address space is not active on the z/OS image.

Table 6. Line commands for VIEW systems

Line command	Description
A	Display all discovered tape units on the specified z/OS image.
F	Display all offline tape units on the specified z/OS image.
L	Display all allocated tape units on the specified z/OS image.
M	Display all tape units waiting for a volume to be mounted.
O	Display all online tape units on the specified z/OS image.
P	Display all tape units in a "pending offline" state.
S	Display all selectable units on the specified z/OS image.
X	Display all excluded units on the specified z/OS image.
SA	Issue a command to make all discovered devices selectable on the specified z/OS image
XA	Issue a command to exclude all discovered devices on the specified z/OS image.
E	Edit the current options for the selecting ATAM system. The dialog will issue one or more commands to make any changes.

Table 6. Line commands for VIEW systems (continued)

Line command	Description
V	View the current options for the selecting ATAM system. Changes will not be allowed.

ATAM System Options

When viewing the ATAM Current Status, use either the "E" or "V" line commands to display the current operational settings for ATAM on the selected system. After selecting a system using the "E" line command, you will see the following screen display:

```

----- ATAM Current Status ----- Row 1 of 5
C  -----
C  ----- ATAM System Options -----
C  Command ==>

-

D  Configuration data set: 'ATH.V3R3.ATHCONFIG'
S  MVS System Name . . . : SYSA
A
P  Offline Unit Polling Interval (T1) . . . . . 30      Seconds
O  Online Unit Polling Interval (T2) . . . . . 5       Seconds
S  Online Unit Iteration Count (T3) . . . . . 5       Iterations
A  Reconfiguration Termination Limit (T4) . . . 5      Dynamic Changes
F  Vary Online Wait Time (T5) . . . . . 30          Seconds
   Vary Online Maximum Attempts (T6) . . . . . 999     Attempts
M  Device Bidding Wait Interval (T7) . . . . . 30      Seconds
   Randomization Threshold (T8) . . . . . 8           Randomization
-  Surround WTOR Responses in Quotes . . . . . Y      Y-Yes, N-No
L  Use LRU to Select Devices . . . . . N             Y-Yes, N-No

Press ENTER to continue, END to exit.

C
E
-----
SYSC Remote 368 3.03.00 ATHPROC 2018/02/25 07:40:47
SYSD Remote 368 3.03.00 ATHPROC 2018/02/25 07:41:55
SYSE Remote 368 3.03.00 ATHPROC 2018/02/25 07:41:59
***** Bottom of Data *****

```

On this screen, change any values you want to adjust. Changes you make result in the ATAM ISPF Dialog issuing the corresponding ATAM command to the selected system. The change will remain in effect until ATAM is re-cycled on that system or you change the value again. Pressing <Enter> without making any changes to the values on the screen has no effect on the ATAM options.

If you used the "V" line command to display this screen, no updates to the values are allowed.

Allocated units

When you have used the VIEW SYSTEMS command to display "Defined Systems" data, you can then use the "L" line command next to a specific system to display a list of all of the allocated tape units on the selected system. For example, if you type "L" in the CMD column next to SYSB, the screen will change to display a list of all of the allocated tape units on SYSB.

```

----- ATAM Current Status ----- Row 1 of 3
Command ==> _                      Scroll ==> CSR

Configuration data set: 'ATH.V3R3.ATHCONFIG'

Discovered . . . . . : 42           System name . . : SYSB
Selectable . . . . . : 0           User ID . . . . : TS0USER
Allocated . . . . . : 0           Today's date . . : 2018/07/05
Pending . . . . . : 0           Version . . . . : V3R03M00
Online . . . . . : 18           Status . . . . : ACTIVE
Successful allocations: 0       ATH Service Task: ATHPROC
Allocation failures . : 0       Start date . . : 2018/07/05
Forced waits . . . . : 0       Start time . . : 12:27:51

Major Command: VIEW {SYS ALL SEL ONL OFF ALLOC EXCL PEND MOUNT PREF}

----- Allocated SYSB units -----
Line Commands: A-Allocations
                S-Make unit selectable
                X-Exclude unit
                +
CMD  Unit  System Selectable Online Allocated Pending Allocations Job Name  Volume
----  ---  -
0530 SYSB      N          Y          Y          N          0      BKUP0D40 P10126
0531 SYSB      N          Y          Y          N          0      BKUP0B20 P10209
0540 SYSB      N          Y          Y          N          0      ..... L00011
***** Bottom of Data *****

```

The columns in the bottom half of the screen are described in the table below:

Table 7. Data results with allocated (L) line command

Column name	Description
Unit	Provides the name of the tape unit.
System	Identifies the system ID associated with this tape unit.
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 this 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.
Tier value	Indicates the Tier value assigned to the device (1-5), if Tier device preference is active.
Scan value	Indicates the Scan bypass value assigned to the device. The value indicates how many T1 iterations will skip online, unallocated processing for this device before ATAM varies the device offline.
Job Name	If the tape unit is allocated, the Job Name column contains the name of the job holding the allocation.
Volume	If there is a volume mounted on the tape, the Volume column contains the serial number of that volume.

There are several line commands that you can use to receive more detail about a specific line in the data list. These line commands are described in the next table.

Table 8. Line commands for allocated units of a specific system

Line command	Description
A	Display the allocation history for the specified device on the local z/OS image.
S	Make the device selectable on the z/OS image specified under the System column.
X	Exclude the device on the z/OS image specified under the System column.

Online units

When you have used the VIEW SYSTEMS command to display "Defined Systems" data, you can then use the "O" line command next to a specific system to display a list of all of the online tape units on the selected system. For example, if you type "O" in the CMD column next to SYSC, the screen will change to display a list of all of the online tape units on SYSC.

```

----- ATAM Current Status ----- Row 1 of 18
Command ==> _                      Scroll ==> CSR

Configuration data set: 'ATH.V3R3.ATHCONFIG'

Discovered . . . . . : 42                System name . . : SYSC
Selectable . . . . . : 0                User ID . . . . : TSUSER
Allocated . . . . . : 0                Today's date . . : 2018/07/05
Pending . . . . . : 0                Version . . . . : V3R03M00
Online . . . . . : 18                Status . . . . : ACTIVE
Successful allocations: 0            ATH Service Task: ATHPROC
Allocation failures . : 0            Start date . . : 2018/07/05
Forced waits . . . . : 0            Start time . . : 12:27:51

Major Command: VIEW {SYS ALL SEL ONL OFF ALLOC EXCL PEND MOUNT PREF}

----- Online SYSC units -----
Line Commands: A-Allocations
                S-Make unit selectable
                X-Exclude unit
CMD  Unit  System  Selectable  Online  Allocated  Pending  Allocations  Job Name  Volume
-----
0540 SYSC      N        Y        Y        N        0        DFMSHSM  L00011
0541 SYSC      N        Y        N        N        0        .....
05A0 SYSC      N        Y        N        N        0        .....
05A1 SYSC      N        Y        N        N        0        .....
05A2 SYSC      N        Y        N        N        0        .....
***** Bottom of Data *****

```

The columns in the bottom half of the screen are described in the table below:

Table 9. Data results with online (O) line command

Column name	Description
Unit	Provides the name of the tape unit.
System	Identifies the system ID associated with this tape unit.
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 this MVS image.
Pending	Indicates whether this tape unit is pending, but not online.

Table 9. Data results with online (O) line command (continued)

Column name	Description
Allocations	Indicates the number of times this specific tape unit was successfully allocated on this MVS image.
Tier value	Indicates the Tier value assigned to the device (1-5), if Tier device preference is active.
Scan value	Indicates the Scan bypass value assigned to the device. The value indicates how many T1 iterations will skip online, unallocated processing for this device before ATAM varies the device offline.
Job Name	If the tape unit is allocated, the Job Name column contains the name of the job holding the allocation.
Volume	If there is a volume mounted on the tape, the Volume column contains the serial number of that volume.

There are several line commands that you can use to receive more detail about a specific line in the data list. These line commands are described in the next table.

Table 10. Line commands for online units of a specific system

Line command	Description
A	Display the allocation history for the specified device on the local z/OS image.
S	Make the device selectable on the z/OS image specified under the System column.
X	Exclude the device on the z/OS image specified under the System column.

Selectable units

When you have used the VIEW SYSTEMS command to display "Defined Systems" data, you can then use the "S" line command next to a specific system to display a list of all of the selectable tape units on the specified system. For example, if you type "S" in the CMD column next to SYSA, the screen will change to display a list of all of the allocated tape units on SYSA.

```

----- ATAM Current Status ----- Row 1 of 56
Command ==> _ Scroll ==> CSR

Configuration data set: 'ATH.V3R3.ATHCONFIG'

Discovered . . . . . : 42          System name . . : SYSC
Selectable . . . . . : 0          User ID . . . . : TSUSER
Allocated . . . . . : 0          Today's date . . : 2018/04/05
Pending . . . . . : 0           Version . . . . : V3R03M00
Online . . . . . : 18           Status . . . . : ACTIVE
Successful allocations: 0        ATH Service Task: ATHPROC
Allocation failures . : 0        Start date . . : 2018/04/05
Forced waits . . . . : 0        Start time . . : 12:27:51

Major Command: VIEW {SYS ALL SEL ONL OFF ALLOC EXCL PEND MOUNT PREF}

----- Selectable SYSA units -----
Line Commands: A-Allocations
                S-Make unit selectable
                X-Exclude unit
                +
CMD  Unit System Selectable Online Allocated Pending Allocations Job Name Volume
----  ---
0500 SYSA      Y      N      N      N      0      .....
0501 SYSA      Y      N      N      N      0      .....
0502 SYSA      Y      N      N      N      0      .....
0503 SYSA      Y      N      N      N      0      .....
0530 SYSA      Y      N      N      N      0      .....
0531 SYSA      Y      N      N      N      0      .....
0540 SYSA      Y      N      N      N      0      .....
0541 SYSA      Y      N      N      N      0      .....
0590 SYSA      Y      N      N      N      0      .....
***** Bottom of Data *****

```

The columns in the bottom half of the screen are described in the table below:

Table 11. Data results with selectable (S) line command

Column name	Description
Unit	Provides the name of the tape unit.
System	Identifies the system ID associated with this tape unit.
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 this 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.
Tier value	Indicates the Tier value assigned to the device (1-5), if Tier device preference is active.
Scan value	Indicates the Scan bypass value assigned to the device. The value indicates how many T1 iterations will skip online, unallocated processing for this device before ATAM varies the device offline.
Job Name	If the tape unit is allocated, the Job Name column contains the name of the job holding the allocation.
Volume	If there is a volume mounted on the tape, the Volume column contains the serial number of that volume.

There are several line commands that you can use to receive more detail about a specific line in the data list. These line commands are described in the next table.

Table 12. Line commands for selectable units of a specific system

Line command	Description
A	Display the allocation history for the specified device on the local z/OS image.
S	Make the device selectable on the z/OS image specified under the System column.
X	Exclude the device on the z/OS image specified under the System column.

VIEW ALL

Use the "VIEW ALL" command to display a list of all of the discovered tape units from all of the ATAM-defined z/OS images. You can either type VIEW ALL in the Command line or you can select the word "ALL" from the choices in the Major Command field.

```

----- ATAM Current Status ----- Row 1 of 54
Command ==>                               Scroll ==> PAGE

Configuration data set: 'ATH.V3R3.ATHCONFIG'

Discovered . . . . . : 54                System name . . . : SYSA
Selectable . . . . . : 0                User ID . . . . . : TSUSER
Allocated . . . . . : 2                Today's date . . . : 2018/07/11
Pending offline . . . : 0              Version . . . . . : V3R03M00
Online . . . . . : 28                 Status . . . . . : ACTIVE
Successful allocations: 0              ATH service task: ATHPROC
Allocation failures . : 0              Start date . . . : 2018/07/11
Forced waits . . . . : 0              Start time . . . : 18:14:14

Major Command: VIEW { SYS ALL SEL ONL OFF ALLOC EXCL PEND MOUNT PREF}

----- All units -----
Line Commands: A-Allocations
                S-Make unit selectable
                X-Exclude unit
                +>
CMD  Unit  System  Selectable  Online  Allocated  Pending off
    0500 SYSD      N          Y          N          N
    0500 SYSC      N          N          N          N
    0500 SYSB      N          N          N          N
    0500 SYSA      N          N          N          N
    0501 SYSD      N          Y          N          N
    0501 SYSC      N          N          N          N
***** Bottom of Data *****

```

You can page right to see additional columns, such as Tier Value and Scan Value. The columns in the bottom half of the screen are described in the table below:

Table 13. VIEW ALL data

Column name	Description
Unit	Provides the name of the tape unit.
System	Identifies the system ID associated with this tape unit.
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 this MVS image.
Pending off	Indicates whether this tape unit is pending, but not online.

Table 13. VIEW ALL data (continued)

Column name	Description
Mount pend	Indicates whether this tape drive has a pending tape mount.
Allocations	Indicates the number of times this specific tape unit was successfully allocated on this MVS image.
Tier value	Indicates the Tier value assigned to the device (1-5), if Tier device preference is active.
Scan value	Indicates the Scan bypass value assigned to the device. The value indicates how many T1 iterations will skip online, unallocated processing for this device before ATAM varies the device offline.
Job Name	If a tape unit is allocated, the Job Name column contains the name of the job holding the allocation.
Volume	If there is a volume mounted on the tape, the Volume column contains the serial number of that volume.

There are several line commands that you can use to receive more detail about a specific line in the data list. These line commands are described in the next table.

Table 14. Line commands for VIEW ALL

Line command	Description
A	Display the allocation history for the specified device on the local z/OS image.
S	Make the device selectable on the z/OS image specified under the System column.
X	Exclude the device on the z/OS image specified under the System column.

VIEW ALLOC

Use the "VIEW ALLOC" command to display a list of all of the allocated tape units that were discovered on all of the defined z/OS images with an actively communicating ATAM address space. You can either type VIEW ALLOC in the Command line or you can select the word "ALLOC" from the choices in the Major Command field.

```

----- ATAM Current Status ----- Row 1 of 216
Command ==>                               Scroll ==> PAGE

Configuration data set: 'ATH.V3R3.ATHCONFIG'

Discovered . . . . . : 54                System name . . . : SYSA
Selectable . . . . . : 0                User ID . . . . . : TSUSER
Allocated . . . . . : 3                Today's date . . . : 2018/06/11
Pending offline . . . : 0              Version . . . . . : V3R03M00
Online . . . . . : 28                 Status . . . . . : ACTIVE
Successful allocations: 0              ATH service task: ATHPROC
Allocation failures . : 0              Start date . . . : 2018/06/11
Forced waits . . . . : 0              Start time . . . : 17:01:36

Major Command: VIEW { SYS ALL SEL ONL OFF ALLOC EXCL PEND MOUNT PREF }

----- Allocated units -----
Line Commands: A-Allocations
                S-Make unit selectable
                X-Exclude unit
                +>
CMD  Unit  System  Selectable  Online  Allocated  Pending off
    0500  SYSA      N        Y        Y        N
    0500  SYSA      N        Y        Y        N
    0500  SYSA      N        Y        Y        N

*****Bottom of data *****

```

The columns in the bottom half of the screen are described in the table below:

Table 15. VIEW ALLOC data

Column name	Description
Unit	Provides the name of the tape unit.
System	Identifies the system ID associated with this tape unit.
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 this MVS image.
Pending off	Indicates whether this tape unit is pending, but not online.
Mount pend	Indicates whether this tape drive has a pending tape mount.
Allocations	Indicates the number of times this specific tape unit was successfully allocated on this MVS image.
Tier value	Indicates the Tier value assigned to the device (1-5), if Tier device preference is active.
Scan value	Indicates the Scan bypass value assigned to the device. The value indicates how many T1 iterations will skip online, unallocated processing for this device before ATAM varies the device offline.
Job Name	Contains the name of the job allocated to the tape unit.
Volume	Contains the serial number of the volume mounted on the tape unit.

There are several line commands that you can use to receive more detail about a specific line in the data list. These line commands are described in the next table.

Table 16. Line commands for VIEW ALLOC

Line command	Description
A	Display the allocation history for the specified device on the local z/OS image.
S	Make the device selectable on the z/OS image specified under the System column.
X	Exclude the device on the z/OS image specified under the System column.

VIEW EXCLUDED

Use the "VIEW EXCLUDED" command to display a list of all of the excluded tape units that were discovered on all of the defined z/OS images with an actively communicating ATAM address space. You can either type VIEW EXCLUDED in the Command line or you can select the word "EXCLUDED" from the choices in the Major Command field.

```

----- ATAM Current Status ----- Row 1 of 216
Command ==>                               Scroll ==> PAGE

Configuration data set: 'ATH.V3R3.ATHCONFIG'

Discovered . . . . . : 54                System name . . . : SYSA
Selectable . . . . . : 0                User ID . . . . . : TSUSER
Allocated . . . . . : 2                Today's date . . . : 2018/07/11
Pending offline . . . : 0              Version . . . . . : V3R03M00
Online . . . . . : 28                 Status . . . . . : ACTIVE
Successful allocations: 0              ATH service task: ATHPROC
Allocation failures . : 0              Start date . . . : 2018/07/11
Forced waits . . . . : 0              Start time . . . : 17:01:37

Major Command: VIEW { SYS ALL SEL ONL OFF ALLOC EXCL PEND MOUNT PREF}

----- Excluded units -----
Line Commands: A-Allocations
                S-Make unit selectable
                X-Exclude unit
                +>
CMD  Unit  System  Selectable  Online  Allocated  Pending off
----  ----  -----  -
0500 SYSA      N      N      N      N
0500 SYSA      N      N      N      N
0500 SYSA      N      N      N      N
.
.
.
0532 SYSE      N      Y      N      N
0540 SYSC      N      Y      Y      N
0540 SYSB      N      Y      Y      N
0540 SYSD      N      Y      Y      N
***** Bottom of Data *****

```

The columns in the bottom half of the screen are described in the table below:

Table 17. VIEW EXCLUDED data

Column name	Description
Unit	Provides the name of the tape unit.
System	Identifies the system ID associated with this tape unit.
Selectable	Indicates whether this specific tape drive is currently available for selection.
Online	Indicates whether this specific tape unit is currently online.

Table 17. *VIEW EXCLUDED* data (continued)

Column name	Description
Allocated	Indicates whether this specific tape unit is currently allocated to this MVS image.
Pending off	Indicates whether this tape unit is pending, but not online.
Mount pend	Indicates whether this tape drive has a pending tape mount.
Allocations	Indicates the number of times this specific tape unit was successfully allocated on this MVS image.
Tier value	Indicates the Tier value assigned to the device (1-5), if Tier device preference is active.
Scan value	Indicates the Scan bypass value assigned to the device. The value indicates how many T1 iterations will skip online, unallocated processing for this device before ATAM varies the device offline.
Job Name	Contains the name of the job that is allocated to the tape unit.
Volume	Contains the serial number of the volume mounted on the tape unit.

There are several line commands that you can use to receive more detail about a specific line in the data list. These line commands are described in the next table.

Table 18. *Line commands for VIEW EXCLUDED*

Line command	Description
A	Display the allocation history for the specified device on the local z/OS image.
S	Make the device selectable on the z/OS image specified under the System column.
X	Exclude the device on the z/OS image specified under the System column.

VIEW OFFLINE

Use the "VIEW OFFLINE" command to display a list of all of the offline tape units that were discovered on all of the defined z/OS images with an actively communicating ATAM address space. You can either type VIEW OFFLINE in the Command line or you can select the word "OFFLINE" from the choices in the Major Command field.

```

----- ATAM Current Status ----- Row 1 of 26
Command ==> Scroll ==> PAGE

Configuration data set: 'ATH.V3R3.ATHCONFIG'

Discovered . . . . . : 54          System name . . . : SYSA
Selectable . . . . . : 0          User ID . . . . . : TSUSER
Allocated . . . . . : 2          Today's date . . : 2018/07/11
Pending offline . . . : 0        Version . . . . . : V3R03M00
Online . . . . . : 28          Status . . . . . : ACTIVE
Successful allocations: 0        ATH service task: ATHPROC
Allocation failures . : 0        Start date . . . : 2018/07/11
Forced waits . . . . . : 0       Start time . . . : 18:14:14

Major Command: VIEW {SYS ALL SEL ONL OFF ALLOC EXCL PEND MOUNT PREF}

----- Offline units -----
Line Commands: A-Allocations
                S-Make unit selectable
                X-Exclude unit
                +>
CMD  Unit  System  Selectable  Online  Allocated  Pending off
----  ---  -
0500 SYSA      N      N      N      N
0501 SYSA      N      N      N      N
0502 SYSA      N      N      N      N

***** Bottom of Data *****

```

The columns in the bottom half of the screen are described in the table below:

Table 19. VIEW OFFLINE data

Column name	Description
Unit	Provides the name of the tape unit.
System	Identifies the system ID associated with this tape unit.
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 this MVS image.
Pending off	Indicates whether this tape unit is pending, but not online.
Mount pend	Indicates whether this tape drive has a pending tape mount.
Allocations	Indicates the number of times this specific tape unit was successfully allocated on this MVS image.
Tier value	Indicates the Tier value assigned to the device (1-5), if Tier device preference is active.
Scan value	Indicates the Scan bypass value assigned to the device. The value indicates how many T1 iterations will skip online, unallocated processing for this device before ATAM varies the device offline.
Job Name	Contains the name of the job that is allocated to the tape unit.
Volume	Contains the serial number of the volume mounted on the tape unit.

There are several line commands that you can use to receive more detail about a specific line in the data list. These line commands are described in the next table.

Table 20. Line commands for VIEW OFFLINE

Line command	Description
A	Display the allocation history for the specified device on the local z/OS image.
S	Make the device selectable on the z/OS image specified under the System column.
X	Exclude the device on the z/OS image specified under the System column.

VIEW SELECT

Use the "VIEW SELECT" command to display a list of all of the selectable tape units that were discovered on all of the defined z/OS images with an actively communicating ATAM address space. You can either type VIEW SELECT in the Command line or you can select the word "SELECT" from the choices in the Major Command field.

The screen will look similar to the one below:

```

----- ATAM Current Status ----- Row 1 of 5
Command ==>                               Scroll ==> PAGE

Configuration data set: 'ATH.V3R3.ATHCONFIG'

Discovered . . . . . : 54                System name . . : SYSB
Selectable . . . . . : 0                User ID . . . . : TSUSER
Allocated . . . . . : 2                Today's date . . : 2018/07/11
Pending offline . . . : 0              Version . . . . : V3R03M00
Online . . . . . : 28                 Status . . . . : ACTIVE
Successful allocations: 0              ATH service task: ATHPROC
Allocation failures . : 0              Start date . . : 2018/07/11
Forced waits . . . . : 0              Start time . . : 19:01:04

Major Command: VIEW { SYS ALL SEL ONL OFF ALLOC EXCL PEND MOUNT PREF }

----- Selectable units -----
Line Commands: A-Allocations
                S-Make unit selectable
                X-Exclude unit
                +>
CMD  Unit  System  Selectable  Online  Allocated  Pending off
----  ----  -----  -
05C0 SYSB      Y          N          N          N
05C1 SYSB      Y          N          N          N
05C2 SYSB      Y          N          N          N
***** Bottom of Data *****

```

The columns in the bottom half of the screen are described in the table below:

Table 21. VIEW select data

Column name	Description
Unit	Provides the name of the tape unit.
System	Identifies the system ID associated with this tape unit.
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 this MVS image.
Pending off	Indicates whether this tape unit is pending, but not online.

Table 21. VIEW select data (continued)

Column name	Description
Mount pend	Indicates whether this tape drive has a pending tape mount.
Allocations	Indicates the number of times this specific tape unit was successfully allocated on this MVS image.
Tier value	Indicates the Tier value assigned to the device (1-5), if Tier device preference is active.
Scan value	Indicates the Scan bypass value assigned to the device. The value indicates how many T1 iterations will skip online, unallocated processing for this device before ATAM varies the device offline.
Job Name	Contains the name of the job that is allocated to the tape unit.
Volume	Contains the serial number of the volume mounted on the tape unit.

There are several line commands that you can use to receive more detail about a specific line in the data list. These line commands are described in the next table.

Table 22. Line commands for VIEW SELECT

Line command	Description
A	Display the allocation history for the specified device on the local z/OS image.
S	Make the device selectable on the z/OS image specified under the System column.
X	Exclude the device on the z/OS image specified under the System column.

VIEW ONLINE

Use the "VIEW ONLINE" command to display a list of all of the online tape units that were discovered on all of the defined z/OS images with an actively communicating ATAM address space. You can either type VIEW ONLINE in the Command line or you can select the word "ONLINE" from the choices in the Major Command field.

```

----- ATAM Current Status ----- Row 1 of 108
Command ==>                               Scroll ==> PAGE

Configuration data set: 'ATH.V3R3.ATHCONFIG'

Discovered . . . . . : 54                System name . . . : SYSA
Selectable . . . . . : 0                User ID . . . . . : TSUSER
Allocated . . . . . : 2                Today's date . . . : 2018/07/11
Pending offline . . . : 0              Version . . . . . : V3R03M00
Online . . . . . : 28                 Status . . . . . : ACTIVE
Successful allocations: 0              ATH service task: ATHPROC
Allocation failures . : 0              Start date . . . : 2018/07/11
Forced waits . . . . : 0              Start time . . . : 17:01:37

Major Command: VIEW { SYS ALL SEL ONL OFF ALLOC EXCL PEND MOUNT PREF }

----- Online units -----
Line Commands: A-Allocations
                S-Make unit selectable
                X-Exclude unit
                +>
CMD  Unit  System  Selectable  Online  Allocated  Pending off
    0501 SYSA      N        Y        N        N
    0502 SYSA      N        Y        N        N
    0530 SYSB      N        Y        N        N
***** Bottom of Data *****

```

The columns in the bottom half of the screen are described in the table below:

Table 23. VIEW ONLINE data

Column name	Description
Unit	Provides the name of the tape unit.
System	Identifies the system ID associated with this tape unit.
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 this MVS image.
Pending off	Indicates whether this tape unit is pending, but not online.
Mount pend	Indicates whether this tape drive has a pending tape mount.
Allocations	Indicates the number of times this specific tape unit was successfully allocated on this MVS image.
Tier value	Indicates the Tier value assigned to the device (1-5), if Tier device preference is active.
Scan value	Indicates the Scan bypass value assigned to the device. The value indicates how many T1 iterations will skip online, unallocated processing for this device before ATAM varies the device offline.
Job Name	Contains the name of the job that is allocated to the tape unit.
Volume	Contains the serial number of the volume mounted on the tape unit.

There are several line commands that you can use to receive more detail about a specific line in the data list. These line commands are described in the next table.

Table 24. Line commands for VIEW ONLINE

Line command	Description
A	Display the allocation history for the specified device on the local z/OS image.
S	Make the device selectable on the z/OS image specified under the System column.
X	Exclude the device on the z/OS image specified under the System column.

VIEW PREF

Use the "VIEW PREF" command to display a list of the defined job preference data on the current z/OS image. You can either type VIEW PREF in the Command line or you can select the word "PREF" from the choices in the Major Command field.

```

----- ATAM Job Preferences ----- Row 1 of 4
Command ==>                               Scroll ==> CSR

Configuration data set: 'ATH.V3R3.ATHCONFG'

Discovered . . . . . : 70                System name . . : SYSA
Selectable . . . . . : 32                User ID . . . . : USERID
Allocated . . . . . : 0                 Today's date . . : 2018/07/10
Pending offline . . . : 0                Version . . . . : V3R03M00
Online . . . . . : 0                   Status . . . . : ACTIVE
Successful allocations: 0                ATH service task: ATHPROC
Allocation failures . : 0                Start date . . : 2018/07/08
Forced waits . . . . : 0                 Start time . . : 13:48:24

Major Command: VIEW { SYS ALL SEL ONL OFF ALLOC EXCL PEND MOUNT PREF }

----- Job Preferences -----
Line Commands: S-View details
CMD Jobname Type Count Devices
PDBALDPR PREF 16 05A0 05A1 05A2 05A3 05A4 05A5 05A6 05A7 05A8 05A9
PDBALDEX OWNS 16 05A0 05A1 05A2 05A3 05A4 05A5 05A6 05A7 05A8 05A9
PDBALDRQ REQ 16 05B0 05B1 05B2 05B3 05B4 05B5 05B6 05B7 05B8 05B9
PDBALDXL EXCL 8 05C0 05C1 05C2 05C3 05C4 05C5 05C6 05C7
***** Bottom of Data *****

```

The columns in the bottom half of the screen are described in the table below:

Table 25. VIEW PREF online data

Column name	Description
Jobname	Identifies the job name associated with the job preference.
Type	Identifies the type of job preference. Valid types are: - PREF – Job prefers the use of the listed devices, but will execute on others if the listed devices are unavailable. - REQ – Job must execute on the listed devices and will wait for them to become available. - OWNS – Job is the only user of the listed devices. Only other jobs with the "OWNS" attribute for these devices will be allowed to use them. - EXCL – Job is excluded from using the listed devices.
Count	Identifies the total number of devices assigned to the job preference.

Table 25. VIEW PREF online data (continued)

Column name	Description
Devices	Identifies the first 21 devices assigned to the job preference. Select the job preference with the "S" line command to view additional devices if the number exceeds 21.

Job Preference detail display

Use the "S" line command to view the job preference detail for a specific job preference entry. When you type **S** next to a specific job preference on the current screen and press <Enter>, the Job Preference Detail screen is displayed. The display-only screen contains additional detail about the job preference, including a complete list of devices assigned to the job preference. Use this method to display the remaining device if they exceed 21.

```

+-----+
| ATHPJ0BD ----- ATAM Job Preference Detail ----- |
| Command ==>                                         |
|                                                     |
| Configuration data set: 'ATH.V3R3.ATHCONFG'         |
|                                                     |
| Job Name . . . . . : PDBALDPR                     |
| Type . . . . . : PREF                             |
| Count . . . . . : 16                               |
|-----+----- Devices -----+-----|
| 05A0 05A1 05A2 05A3 05A4 05A5 05A6 05A7 05A8 05A9 05AA 05AB 05AC 05AD |
| 05AE 05AF                                           |
|                                                     |
| Press END to exit.                                 |
+-----+

```

Press PF3 to return to the list of job preference data.

The fields on the Job Preference Detail screen are described in the table below.

Table 26. VIEW PREF detail data

Column name	Description
Configuration data set	Configuration data set currently in use. The Commands member associated with the current system configuration member may contain the commands used to establish the job preferences for this z/OS image.
Job Name	Specifies the one- to eight-character name of this job.
Job Type	Identifies the type of job. Valid types are: • PREF – Job prefers the use of the listed devices, but will execute on others if the listed devices are unavailable. • REQ – Job must execute on the listed devices and will wait for them to become available. • OWNS – Job is the only user of the listed devices. Only other jobs with the "OWNS" attribute for these devices will be allowed to use them. • EXCL – Job is excluded from using the listed devices.
Count	Identifies the total number of devices assigned to the job preference.
Devices	Identifies all the devices assigned to the job preference.

Allocation activity displayed

Use the "A" line command to view allocation information for a specific tape unit.

When you type **A** next to a specific tape unit on the Current Status screen and press <Enter>, the Allocations screen is displayed. This screen contains display-only information about the allocations made to the tape unit you selected on the Current Status screen. An example of the Allocations screen is shown next.

```
----- ATAM Log - Allocations ----- Row 1 of 1125
Command ==>                               Scroll ==> PAGE

Configuration data set: 'ATH.V3R2.ATHCONFIG'
Activity log data set : 'ATH.V3R2.LOGFILE'

System name . . : SYSA
+>
CMD   Date       Time       System  Event      Unit  Job Name  Job Step
-----
2018/06/23 11:45:54 SYSA    ALLOCATE   0500  ATHDT204  COPY1
2018/06/23 11:50:26 SYSA    ALLOCATE   0500  ATHDT204  COPY1
2018/06/23 11:59:40 SYSB    ALLOCATE   0500  ATHDT205  COPY1
2018/06/23 15:01:36 SYSB    ALLOCATE   0500  ATHDT203  COPY1
2018/06/23 15:07:23 SYSB    ALLOCATE   0500  ATHDT203  COPY1
2018/06/23 15:30:56 SYSB    ALLOCATE   0500  ATHDT203  COPY1
2018/06/23 15:52:42 SYSB    ALLOCATE   0500  ATHDT203  COPY1
2018/06/23 17:31:46 SYSB    ALLOCATE   0500  ATHDT202  COPY1
2018/06/23 18:00:24 SYSC    ALLOCATE   0500  ATHDT204  COPY1
2018/06/23 18:37:28 SYSD    ALLOCATE   0500  ATHDT204  COPY1
2018/06/23 18:49:02 SYSD    ALLOCATE   0500  ATHDT204  COPY1
2018/06/23 19:07:19 SYSD    ALLOCATE   0500  ATHDT204  COPY1
2018/06/23 19:43:53 SYSD    ALLOCATE   0500  ATHDT204  COPY1
2018/06/23 20:25:09 SYSD    ALLOCATE   0500  ATHDT203  COPY1
2018/06/23 20:48:30 SYSD    ALLOCATE   0500  ATHDT203  COPY1
2018/06/23 21:22:26 SYSA    ALLOCATE   0500  ATHTT201  COPY1
2018/06/23 21:23:15 SYSA    ALLOCATE   0500  ATHTT201  COPY1
```

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.

Display fields

The columns on the Allocations screen contain information that is displayed for your review. The report columns are described in the following table:

Column	Description
Date	Indicates the date that the event occurred. The format is YYYY/MM/DD.
Time	Indicates the time that the event occurred. The format is HH:MM:SS.
System	Identifies the system ID associated with this tape unit.
Event	Describes what happened for this job. Possible events are: • ALLOCATE - The tape unit was successfully allocated for the job driving the event. • ATAM Start - The started task for ATAM was started. • ATAM Term - The started task for ATAM ended normally. • FAIL - ATAM could not allocate a tape device for an allocation request. The MVS default option was then invoked. • 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.
Unit	Indicates the name of the tape unit that was used to satisfy the allocation (only valid for ALLOCATE events).

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.
DDName	Indicates the data definition name within the job step of the job that is driving the request.
DSName	Indicates the name of the data set that is either being read from or written to for this job.

Optional commands

There are several commands you can enter in the Command line of the Allocations screen: FIND, SORT, and PRINTX. Refer to the “Optional commands” on page 40 section for more information on these commands.

Related concepts:

“Optional commands” on page 40

There are additional, optional commands you can enter in the Command line of the ATAM Current Status screen: SORT, FIND, PRINTX, and DISPLAY.

Chapter 4. Activity Reporting option

The **Activity Reporting** option on the ATAM main menu provides several reports to help you monitor tape drive activities. When you choose option 2, **Activity Reporting**, on the ATAM main menu, a window displays with four options.

The four options are the primary Activity reports, which are:

- All activity
- Job activity
- Allocation activity
- Failed allocations

In addition to the four activity reports, another topic describes how ATAM provides data for SMF records and reporting. For more information, refer to "Record and report SMF data" on page 74.

Common fields

All of the reports have two items at either the top or bottom 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.

SCROLL field

The SCROLL field in the lower 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.

Row N of N

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

When you select a report with the Activity Reporting option on the ATAM main menu, you can use the FIND, SORT, and PRINTX commands. These commands are described below:

FIND Use the FIND command to locate a specific string of text or data in the report.

SORT Use the SORT command to sort the data in the report in several ways, such as column name and ascending/descending order, by using one of several sort keywords.

PRINTX

Use the PRINTX command to print a report as it is displayed on the screen.

Related concepts:

“Record and report SMF data” on page 74
Information on how ATAM records SMF data and how to view SMF records is described in this topic.

FIND

When viewing reports through option 2, Activity Reporting, on the ATAM main menu, you may want to search for specific text in a report. To do this, use the FIND command.

The syntax of the FIND command is described below.

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

The SORT command is a common command which means it is available for use on several ATAM screens. Sort the rows in the scrollable area by the specified column, and in either ascending (A) or descending (D) order.

Syntax:

`SORT DATE|TIME|SYSTEM|EVENT|UNIT|JOB|STEP|DDNAME|DSNAME|UNITBIN A|D`

The sort keywords are listed in the same order as the columns on the report. The keywords refer to the following columns:

DATE Sort by the Date column.

TIME Sort by the Time column.

SYSTEM
Sort by the System ID.

EVENT
Sort by the Event column.

UNIT Sort by the tape unit ID.

JOB Sort by the job name.

STEP Sort by the job step name.

DDNAME
Sort by the data definition (DD) name.

DSNAME
Sort by the data set name, which is the DSName column.

UNITBIN

This command uses a binary version of the unit name (UCB addresses) to ensure proper sorting. There is no associated column on the screen that displays the UNITBIN data.

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
```

You can also refer to a column by its column number. For example, to sort by the "Date" column, which is column 2, in ascending order, you would type:

```
SORT 2 A or SORT 2 (ascending order is the default)
```

PRINTX

The PRINTX command is an optional command that allows you to print data. Use the PRINTX command to print the contents of any scrollable area that displays tabular data.

Syntax:

```
PRINTX
```

The contents of the current view are sent to a SYSOUT file allocated to your user ID. The name of the SYSOUT file is dynamically created by the system in the format SYSnnnnn, where nnnnn is a decimal between 1 and 99999.

To view the output of a PRINTX command, choose the *SDSF* option on the ISPF main menu and select your active TSO ID. The attached SYSOUT file contains the information that PRINTX captured.

Example:

```
PRINTX
```

Activity Reporting screen

The Activity Reporting screen can display four different types of reports: All activity, Job activity, Allocation Activity, and Failed allocations.

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

```
----- Tivoli Automated Tape Allocation Manager for z/OS -----
Command ==>

Configuration data set: 'ATH.V3R2.ATHCONFIG'

Specify o +-----+ m name. . . : SYSA
2 1 Curre ----- Select Activity Report ----- ID . . . : myuserid
2 2 Activ Command ==> y's date . : 2018/04/21
S Setup Specify option below: ion . . . : V3R02MOD
E Envir us . . . : INACTIVE
Service Task:
1 All Activity t date . . :
2 Job Activity t time . . :
3 Allocation Activity overed . . :
4 Failed Allocations
X Exit Reporting Menu
+-----+
```

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

Value	Description
1	All Activity. View a report listing all of the activities for all of the tape drives.
2	Job Activity. View a report listing all of the activities based on job name.
3	Allocation Activity. View a report listing all of the allocations that occurred for all of the tape drives.
4	Failed Allocations. 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

The All Activity report lists all of the activities associated with ATAM. It is initially sorted by the Date column.

To select the All Activity report, follow these steps:

1. Type **2** on the ATAM main menu to select the Activity Reporting option.
2. Type **1** in the Command line of the Select Activity Report window and press <Enter>.

An example is shown below:

```

----- ATAM Log - All Activity ----- Row 1 of 476
Command ==>                               Scroll ==> CSR

Configuration data set: 'ATH.V3R2.ATHCONFIG'
Activity log data set : 'ATH.V3R2.LOGFILE'
+>
System name . . : SYS2
CMD   Date       Time       System  Event      Unit  Job Name  Job Step
2018/01/13 10:11:07 SYS3    ATAM Start  N/A    N/A      N/A
2018/01/13 10:11:08 SYS1    ATAM Start  N/A    N/A      N/A
2018/01/13 10:11:11 SYS5    ATAM Start  N/A    N/A      N/A
2018/01/13 10:11:11 SYS2    ATAM Start  N/A    N/A      N/A
2018/01/13 10:13:45 SYS2    ALLOCATE    0540    DFSMSHSM DFSMSHSM
2018/01/13 10:19:42 SYS2    ALLOCATE    0541    DFSMSHSM DFSMSHSM
2018/01/13 10:22:33 SYS1    ALLOCATE    0540    DFSMSHSM DFSMSHSM
2018/01/13 10:33:58 SYS3    ALLOCATE    0540    DFSMSHSM DFSMSHSM
2018/01/13 10:35:44 SYS2    ALLOCATE    0541    DFSMSHSM DFSMSHSM
2018/01/13 10:38:06 SYS5    ALLOCATE    0540    DFSMSHSM DFSMSHSM
2018/01/13 10:40:46 SYS5    ALLOCATE    0541    DFSMSHSM DFSMSHSM
2018/01/13 10:45:18 SYS2    ALLOCATE    0540    DFSMSHSM DFSMSHSM
2018/01/13 10:50:28 SYS2    ALLOCATE    0541    DFSMSHSM DFSMSHSM
2018/01/13 10:55:44 SYS3    ALLOCATE    0541    DFSMSHSM DFSMSHSM
2018/01/13 10:58:13 SYS2    ALLOCATE    0540    DFSMSHSM DFSMSHSM
2018/01/13 10:58:49 SYS1    FAILED      BKUP0D50 DUMP1
2018/01/13 10:58:50 SYS1    WAITING     BKUP0D50 DUMP1
2018/01/13 11:02:49 SYS5    ALLOCATE    0540    DFSMSHSM DFSMSHSM
2018/01/13 11:07:10 SYS2    ALLOCATE    0540    DFSMSHSM DFSMSHSM
2018/01/13 11:14:46 SYS3    ALLOCATE    0540    DFSMSHSM DFSMSHSM
2018/01/13 11:35:52 SYS2    ALLOCATE    0541    DFSMSHSM DFSMSHSM
2018/01/13 11:47:34 SYS3    ALLOCATE    0541    DFSMSHSM DFSMSHSM
2018/01/13 12:02:35 SYS2    ALLOCATE    0540    DFSMSHSM DFSMSHSM
2018/01/13 12:27:41 SYS5    ALLOCATE    0541    DFSMSHSM DFSMSHSM
2018/01/13 12:43:47 SYS3    ALLOCATE    05A8    ARYTAPE  PKG01
2018/01/13 12:48:06 SYS1    ALLOCATE    05AD    ATHTT101 COPY1
2018/01/13 12:48:08 SYS1    ALLOCATE    05AF    ATHTT101 COPY1
2018/01/13 12:48:12 SYS3    ALLOCATE    05A9    FULLBLD  SMP
2018/01/13 12:48:24 SYS2    ALLOCATE    05AB    ATHTD101 COPY1

(list continues)

```

All of the information on this screen is for display only. However, you can enter commands in the Command line to find, sort, and print the data in the scrollable area of the report.

Columns in All Activity report

The All Activity report lists all of the activities for all of the tape drives. The columns in the report are described in this topic.

The columns in the All Activity report contain information that is for display only. The columns are 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 YYYY/MM/DD.
Time	Indicates the time that the event occurred. The format is HH:MM:SS.
System	Specifies the system name of the z/OS system generating the log file record.

Column	Description
Event	Describes what happened for this job. Possible events are: • ALLOCATE - The tape drive was successfully allocated for the job driving the event. • ATAM Start - The started task for ATAM was started. • ATAM Term - The started task for ATAM ended normally. • FAILED - ATAM could not allocate a tape device for an allocation request. The MVS default option was then invoked. • WAITING - 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. • FORCED WAIT - An allocation request had to wait for a tape unit to become available from another system in the Tapeplex. Note: This event is available only on systems that include the z/OS allocation enhancement APAR OA07942.
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 data definition name within the job step of the job that is driving the request.
DSName	Indicates the name of the data set that is either being read from or written to for this job.

Job Activity report

The Job Activity report lists all of the activities based on job name. This allows you to see what happened when various jobs were processed.

To select the Job Activity report, follow these steps:

1. Type **2** on the ATAM main menu to select the Activity Reporting option.
2. Type **2** in the Command line of the Select Activity Report window, and press <Enter>.

An example of a Job Activity report is below:

```

----- ATAM Log - Job Activity ----- Row 1 of 453
Command ==>                               Scroll ==> CSR

Configuration data set: 'ATH.V3R2.ATHCONFIG'
Activity log data set : 'ATH.V3R2.LOGFILE'
+>
System name . . : SYS2
CMD   Date       Time       System  Event      Unit  Job Name  Job Step
2009/06/13  10:13:44  SYS2    ALLOCATE    0540  DFSMSHSM  DFSMSHSM
2009/06/13  10:19:43  SYS2    ALLOCATE    0541  DFSMSHSM  DFSMSHSM
2009/06/13  10:22:33  SYS1    ALLOCATE    0540  DFSMSHSM  DFSMSHSM
2009/06/13  10:33:58  SYS3    ALLOCATE    0540  DFSMSHSM  DFSMSHSM
2009/06/13  10:35:45  SYS2    ALLOCATE    0541  DFSMSHSM  DFSMSHSM
2009/06/13  10:38:05  SYS5    ALLOCATE    0540  DFSMSHSM  DFSMSHSM
2009/06/13  10:40:45  SYS5    ALLOCATE    0541  DFSMSHSM  DFSMSHSM
2009/06/13  10:45:17  SYS2    ALLOCATE    0540  DFSMSHSM  DFSMSHSM
2009/06/13  10:50:28  SYS2    ALLOCATE    0541  DFSMSHSM  DFSMSHSM
2009/06/13  10:55:45  SYS3    ALLOCATE    0541  DFSMSHSM  DFSMSHSM
2009/06/13  10:58:13  SYS2    ALLOCATE    0540  DFSMSHSM  DFSMSHSM
2009/06/13  10:58:50  SYS1    WAITING      BKUP0D50  DUMP1
2009/06/13  10:58:50  SYS1    FAILED      BKUP0D50  DUMP1
2009/06/13  11:02:49  SYS5    ALLOCATE    0540  DFSMSHSM  DFSMSHSM
2009/06/13  11:07:10  SYS2    ALLOCATE    0540  DFSMSHSM  DFSMSHSM
2009/06/13  11:14:47  SYS3    ALLOCATE    0540  DFSMSHSM  DFSMSHSM
2009/06/13  11:35:52  SYS2    ALLOCATE    0541  DFSMSHSM  DFSMSHSM
2009/06/13  11:47:35  SYS3    ALLOCATE    0541  DFSMSHSM  DFSMSHSM
2009/06/13  12:02:35  SYS2    ALLOCATE    0540  DFSMSHSM  DFSMSHSM
2009/06/13  12:27:42  SYS5    ALLOCATE    0541  DFSMSHSM  DFSMSHSM
2009/06/13  12:43:46  SYS3    ALLOCATE    05A8  ARYTAPE   PKG01
2009/06/13  12:48:05  SYS1    ALLOCATE    05AD  ATHTT101  COPY1
2009/06/13  12:48:08  SYS1    ALLOCATE    05AF  ATHTT101  COPY1
2009/06/13  12:48:12  SYS3    ALLOCATE    05A9  FULLBLD   SMP

```

All of the information on this screen is provided for your review. You can enter commands in the Command line to find, sort, and print the data in the scrollable area of the report.

Columns in 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
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 YYYY/MM/DD.
Time	Indicates the time that the event occurred. The format is HH:MM:SS.
System	Identifies the system ID associated with this tape unit.
Event	Describes what happened for this job. Possible events are: • ALLOCATE - The tape drive was successfully allocated for the job driving the event. • FAILED - ATAM could not allocate a tape device for an allocation request. The MVS default option was then invoked. • WAITING - 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. • FORCED WAIT - An allocation request had to wait for a tape unit to become available from another system in the Tapeplex. Note: This event is available only on systems that include the z/OS allocation enhancement APAR OA07942.
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.

Column	Description
DDName	Indicates the data definition name within the job step of the job that is driving the request.
DSName	Indicates the name of the data set that is either being read from or written to for this job.

Allocation Activity report

The Allocation Activity screen lists all of the jobs with an allocation activity.

To view the Allocation Activity report, follow these steps:

1. Type **2** on the ATAM main menu to select the Activity Reporting option.
2. Type **3** in the Command line of the Select Activity Report window, and press <Enter>.

The jobs in the example below are sorted by the Date and Time fields.

```

----- ATAM Log - Allocations ----- Row 1123 of 14257
Command ===>                               Scroll ==> PAGE

Configuration data set: 'ATH.WRK0320.ATHCONFIG'
Activity log data set : 'ATH.WRK0320.LOGFILE'

System name . . : RS23
CMD   Date       Time       System  Event      Unit  Job Name  Job Step
2018/09/17 15:36:46 RS25    ALLOCATE   0500  ATHTT403  COPY1
2018/09/17 15:38:32 RS25    ALLOCATE   0500  ATHTT403  COPY1
2018/09/17 15:40:19 RS25    ALLOCATE   0500  ATHTT403  COPY1
2018/08/23 11:42:11 RS22    ALLOCATE   0501  ATHDT201  COPY1
2018/08/23 11:44:58 RS25    ALLOCATE   0501  ATHDT202  COPY1
2018/08/23 11:46:52 RS25    ALLOCATE   0501  ATHDT202  COPY1
2018/08/23 11:54:28 RS25    ALLOCATE   0501  ATHDT202  COPY1
2018/08/23 11:59:07 RS25    ALLOCATE   0501  ATHDT202  COPY1
2018/08/23 12:59:16 RS25    ALLOCATE   0501  ATHDT202  COPY1
2018/08/23 13:44:08 RS25    ALLOCATE   0501  ATHDT201  COPY1
2018/08/23 14:07:43 RS25    ALLOCATE   0501  ATHDT201  COPY1
2018/08/23 14:39:24 RS23    ALLOCATE   0501  ATHDT201  COPY1
2018/08/23 14:46:00 RS23    ALLOCATE   0501  ATHDT201  COPY1
2018/08/23 15:41:08 RS23    ALLOCATE   0501  ATHDT201  COPY1
2018/08/23 15:57:54 RS25    ALLOCATE   0501  ATHDT204  COPY1
2018/08/23 18:08:21 RS25    ALLOCATE   0501  ATHDT203  COPY1
2018/08/23 18:37:55 RS25    ALLOCATE   0501  ATHDT203  COPY1
(list continues)

```

All of the information on this screen is for your review of ALLOCATE events only. However, you can enter commands in the Command line to find, sort, and print the data in the scrollable area of the report.

Columns in Allocation Activity report

The Allocation Activity report lists all of the allocations that occurred for all of the tape drives. The columns in the Allocation Activity report contain information that is for display only.

The Allocation Activity report columns are described in the following table.

Column	Description
Date	Indicates the date that the event occurred. The format is YYYY/MM/DD.
Time	Indicates the time that the event occurred. The format is HH:MM:SS.

Column	Description
System	Identifies the system ID associated with this tape unit.
Unit	Indicates the name of the tape drive used to satisfy the allocation (only valid for ALLOCATE events).
Event	Describes what happened for this job. The only event in this report is ALLOCATE, which means that the tape drive was successfully allocated for the job driving the event.
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 data definition name within the job step of the job that is driving the request.
DSName	Indicates the name of the data set that is either being read from or written to for this job.

Failed Allocations report

The Failed Allocations report lists all of the allocations that were requested by jobs, but did not occur or that failed during the job.

To select the Failed Allocations report, follow these steps:

1. Type **2** on the ATAM main menu to select the Activity Reporting option.
2. Type **4** in the Command line of the Select Activity Report window, and press <Enter>.

The Failed Allocations screen is displayed. It lists all of the jobs with unsuccessful allocations.

```

----- ATAM Log - Failures ----- Row 1 of 4
Command ==>                               Scroll ==> CSR

Configuration data set: 'ATH.V3R2.ATHCONFIG'
Activity log data set : 'ATH.V3R2.LOGFILE'

                                +>
                                System name . . : SYS2
CMD   Date       Time       System  Event      Unit  Job Name  Job Step
2018/01/13  10:58:50  SYS1   FAILED      BKUP0D50  DUMP1
2018/01/19  17:25:53  SYS3   FAILED      DFSMSHSM  DFSMSHSM
2018/01/21  14:45:54  SYS2   FAILED      MOUNT     5A4
2018/01/29  17:57:55  SYS5   FAILED      DFSMSHSM  DFSMSHSM
***** Bottom of Data *****

```

Use this screen to review job allocations with a status of FAIL only. You can enter commands in the Command line to find, sort, and print the data in the scrollable area of the report.

Columns in Failed Allocations report

The columns in the Failed Allocations report are for display only and are described in the following table:

Column	Description
Date	Indicates the date that the event occurred. The format is YYYY/MM/DD.
Time	Indicates the time that the event occurred. The format is HH:MM:SS.
System	Identifies the system ID associated with this tape unit.

Column	Description
Unit	Indicates the name of the tape drive used to satisfy the allocation (only valid for ALLOCATE events).
Event	Describes what happened for this job. The only event reported on this screen is FAIL, which means that ATAM could not allocate a tape device for an allocation request. The MVS default option was then invoked.
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 data definition name within the job step of the job that is driving the request.
DSName	Indicates the name of the data set that is either being read from or written to for this job.

Record and report SMF data

Information on how ATAM records SMF data and how to view SMF records is described in this topic.

ATAM maintains a record of its allocation activities in an optional sequential data set allocated to the LOGFILE DD statement of the ATAM address space, which is referred to as the LOGFILE. ATAM also records information to SMF via the SMF type 122 record. The ATAM Activity option offers the ability to view the contents of the LOGFILE. Access to the ATAM SMF records requires offline processing via local SMF reporting utilities.

You can optionally define a unique LOGFILE for each ATAM z/OS image or share a single LOGFILE among multiple ATAM z/OS images where possible. Because the LOGFILE is a DASD data set, it can occupy increasing amounts of DASD storage as ATAM records more and more allocation events. To change this, you can disable the LOGFILE and simply use ATAM SMF recording to maintain a historical record of ATAM allocation events. To disable the LOGFILE, remove the LOGFILE DD statement from the started task or replace the DD information with a DUMMY reference.

Data recorded to the ATAM SMF records duplicates the data written to the LOGFILE. ATAM SMF recording is optional. Use the ATAM **SMF** command to enable or disable SMF recording. The ATAM SMF records will not be generated if z/OS SMF is not active, if it has abended, or if z/OS SMF is not recording ATAM SMF type 122 records.

The SMF command syntax is described in “The *SMF* command” on page 147. Refer to this section for more information.

The data in the ATAM SMF record map that is unique to ATAM is described in detail in Appendix I, “ATAM SMF Record Map,” on page 219. Refer to this appendix for more information.

Related concepts:

“The *SMF* command” on page 147

Use the ATAM **SMF** command to check or set the status of ATAM SMF recording.

Appendix I, "ATAM SMF Record Map," on page 219

The Activity Reporting and Current Status options on the ATAM main menu allow you to see real time or "near" real time data from the ATAM log file. To see historical data, you can view the ATAM SMF data. The ATAM SMF record contains more information than what is provided in the ATAM log records.

Events that ATAM records

As described previously, ATAM records its activities and allocation events in a LOGFILE and SMF record. The events that are recorded are listed in this topic.

ATAM activity recording captures the following events:

- ATAM address space initialization
- Successfully resolved tape allocation requests
- Tape allocation requests resulting in WAIT-NOHOLD
- Tape allocation requests resulting in a forced WAIT-NOHOLD
- Tape allocation requests resulting in CANCEL
- Unexpected VARY-ONLINE failures (SMF recording only)
- ATAM address space termination

For more information on any of these events, choose the appropriate topic below:

- "ATAM address space initialization" on page 76
- "Successful tape allocation" on page 76
- "Tape allocation resulting in WAIT-NOHOLD" on page 76
- "Tape allocation resulting in forced WAIT-NOHOLD" on page 76
- "Tape allocation resulting in CANCEL" on page 77
- "Tape allocation resulting in unexpected VARY-ONLINE failures" on page 77
- "ATAM address space termination" on page 77

Related concepts:

"ATAM address space initialization" on page 76

When the ATAM address space is started, the event initiating the address space is recorded in the LOGFILE and in ATAM SMF records.

"Successful tape allocation" on page 76

Both LOGFILE and ATAM SMF records capture "successful tape allocation" events. ATAM initiates recording for this event whenever it successfully resolves a tape allocation request.

"Tape allocation resulting in WAIT-NOHOLD" on page 76

You can review details about tape allocation events that result in a WAIT-NOHOLD state. Both LOGFILE and ATAM SMF records capture events where tape allocation resulted in WAIT-NOHOLD. ATAM initiates recording for this event whenever it fails to resolve a tape allocation request, but successfully places the requesting task in a WAIT-NOHOLD state.

"Tape allocation resulting in forced WAIT-NOHOLD" on page 76

You can review details about tape allocation events that result in a "forced" WAIT-NOHOLD state.

"Tape allocation resulting in CANCEL" on page 77

You can review details about tape allocation events that are cancelled.

"Tape allocation resulting in unexpected VARY-ONLINE failures" on page 77
Only ATAM SMF records capture a tape allocation event that results in unexpected VARY-ONLINE failures, and ATAM only writes these records when the ATAM SMF command status is "ON,VARY". ATAM initiates recording for this event during the course of resolving a tape allocation, if it encounters VARY results that indicate something other than the device is assigned to another system.

"ATAM address space termination" on page 77

When the ATAM address space is terminated, the event initiating the termination is recorded in the LOGFILE and in ATAM SMF records.

ATAM address space initialization

When the ATAM address space is started, the event initiating the address space is recorded in the LOGFILE and in ATAM SMF records.

Both LOGFILE and ATAM SMF records capture ATAM address space initialization events. ATAM initiates recording for this event upon successful initiation of the ATAM address space logging facility.

Successful tape allocation

Both LOGFILE and ATAM SMF records capture "successful tape allocation" events. ATAM initiates recording for this event whenever it successfully resolves a tape allocation request.

The LOGFILE record contains the IEF_ALLC_OFFLN parameter list (UXPARMD) and the system name (CVTSNAME) of the z/OS image where the allocation attempt occurred. The ATAM SMF record contains all that is in the corresponding LOGFILE record and the ATAM internal data describing the selected device, the table of volume serials, and the table of eligible offline devices.

Tape allocation resulting in WAIT-NOHOLD

You can review details about tape allocation events that result in a WAIT-NOHOLD state. Both LOGFILE and ATAM SMF records capture events where tape allocation resulted in WAIT-NOHOLD. ATAM initiates recording for this event whenever it fails to resolve a tape allocation request, but successfully places the requesting task in a WAIT-NOHOLD state.

The LOGFILE record contains the IEF_ALLC_OFFLN parameter list (UXPARMD) and the system name (CVTSNAME) of the z/OS image where the allocation attempt occurred. The ATAM SMF record contains all that is in the corresponding LOGFILE record, the table of volume serials, and the table of eligible offline devices.

Tape allocation resulting in forced WAIT-NOHOLD

You can review details about tape allocation events that result in a "forced" WAIT-NOHOLD state.

Both LOGFILE and ATAM SMF records capture "forced" WAIT-NOHOLD events. ATAM initiates recording for this event whenever ATAM fails to resolve a tape allocation request, but successfully places the requesting task in a "forced" WAIT-NOHOLD state. Specifically, ATAM processes an override to the IEF_ALLC_OFFLN programming interface, instructing z/OS allocation to place the requesting task in a WAIT-NOHOLD state even though there appears to be no devices upon which to wait (see z/OS APAR OA07942).

The LOGFILE record contains the IEF_ALLC_OFFLN parameter list (UXPARMD) and the system name (CVTSNAME) of the z/OS image where the allocation

attempt occurred. The ATAM SMF record contains everything that is in the corresponding LOGFILE record, the table of volume serials, and the table of eligible offline devices.

Tape allocation resulting in CANCEL

You can review details about tape allocation events that are cancelled.

Both LOGFILE and ATAM SMF records capture tape allocations that result in CANCEL. ATAM initiates recording for this event whenever ATAM fails to resolve a tape allocation request and is unable to place the requesting task in a WAIT-NOHOLD state or the operator cancelled the task.

The LOGFILE record contains the IEF_ALLC_OFFLN parameter list (UXPARMD) and the system name (CVTSNAME) of the z/OS image where the allocation attempt occurred. The ATAM SMF record contains all that is in the corresponding LOGFILE record, the table of volume serials, and the table of eligible offline devices.

Tape allocation resulting in unexpected VARY-ONLINE failures

Only ATAM SMF records capture a tape allocation event that results in unexpected VARY-ONLINE failures, and ATAM only writes these records when the ATAM SMF command status is "ON,VARY". ATAM initiates recording for this event during the course of resolving a tape allocation, if it encounters VARY results that indicate something other than the device is assigned to another system.

The ATAM SMF record contains the IEF_ALLC_OFFLN parameter list (UXPARMD), the system name (CVTSNAME) of the z/OS image where the allocation attempt occurred, and the results block from the VARY attempt. The results block (mapped by control block VDRSARR mapped in macro IEEZB834) contains the following items:

- return code
- reason code
- possible message describing the results of the VARY attempt.

ATAM records all return/reason code combinations except for the reason code assigned to VDRSARR_ASSIGN, which indicates that the device is assigned to another system.

ATAM address space termination

When the ATAM address space is terminated, the event initiating the termination is recorded in the LOGFILE and in ATAM SMF records.

Both LOGFILE and ATAM SMF records capture events in which the ATAM address space is terminated. ATAM initiates recording for this event upon termination of the ATAM address space logging facility.

Chapter 5. Console Operator Commands

Automated Tape Allocation Manager (ATAM) offers operators several different console commands that can be used to perform a variety of functions, such as display the status of ATAM. The commands can also be used to dynamically alter the ATAM configuration.

All commands are intended to be modifiers of the MVS modify (F) command. The command format is the following:

F *ATHPROC*,*command*

The table below describes this format:

Table 27. Format of operator commands

Item	Description
F	This is the letter used for the MVS "modify" command.
ATHPROC	This refers to the job name of the ATAM started task, which in this example is <i>ATHPROC</i> .
command	This refers to an ATAM operator command. All of the operator commands are described in this chapter. Most of the commands consist of a single letter, followed by command modifiers, if required.

For example, if an operator wanted to list (L) the status of tape devices known to ATAM, the operator would type the following command:

F *ATHPROC*,L

Please note that any dynamic changes made to the ATAM configuration with console operator 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 Commands member. Commands contained in the ATAM Commands member are executed each time ATAM is started. For more information on how to use an ATAM Commands member, refer to Chapter 6, "Commands member customization," on page 153.

For the examples in this chapter, the following items are used:

Table 28. Terms used in examples

Term	Description
SYSA	Refers to the local system. All of the examples in this chapter show the commands being issued on SYSA.
RMT1, RMT2, and so on	Refers to remote systems that are running ATAM and have been defined in ATAM's configuration data set on SYSA.
ATHPROC	Refers to the job name for the ATAM started task.

Table 28. Terms used in examples (continued)

Term	Description
xxxx xxxx-yyyy	Refers to a device or a range of devices. The device specification is an IBM-format UCB address. When you specify a range of tape units, such as 0130-013F, ATAM looks at the low and high device addresses to ensure that these devices have already been discovered by ATAM. If not, the entire command is ignored. Note: Device addresses 0000 and FFFF are special values that will always be accepted. If you are unsure of the actual values on your system, specify a range that begins with 0000 or ends with FFFF.

The syntax for the commands includes symbols. The next table describes these symbols so you will understand how to read and type the commands.

Table 29. Symbols used in commands

Symbol	Description
Braces {}	Braces are used to indicate an entry that is required.
Brackets []	Brackets are used to indicate an entry that is optional. If there are multiple choices within the brackets, you can only choose one of the entries.
Vertical bar	Items that are separated by a vertical bar are alternative items. If multiple items are separated by vertical bars, you can only choose one of the items.
Asterisk *	An asterisk indicates <i>all</i> , such as all defined systems.

For more information on the commands, refer to the topics listed below.

- A** "The A command" on page 82
- C** "The C command" on page 83
- E** "The E command" on page 84
- F** "The F command" on page 87
- L** "The L command" on page 90
- M** "The M Command" on page 95
- N** "The N Command" on page 96
- O** "The O command" on page 97
- R** "The R Command" on page 100
- S** "The S command" on page 102
- T** "The T command" on page 114
- V** "The V command" on page 116
- W** "The W Command" on page 117
- X** "The X command" on page 120
- DDR** "The DDR Command" on page 125
- EXITCOMPAT** "The EXITCOMPAT command" on page 126

GCTASK

"The GCTASK command" on page 128

JLOGF

"The JLOGF command" on page 132

JOIN "The JOIN command" on page 132

LRU "The LRU command" on page 133

MDP "The MDP command" on page 135

PD "The PD command" on page 138

PJ "The PJ command" on page 140

QUOTE

"The QUOTE command" on page 142

SAF "The SAF command" on page 144

SMF "The SMF command" on page 147

Related concepts:

Chapter 6, "Commands member customization," on page 153

The ATAM Commands member, ATHCMDxx, allows you to further customize ATAM to fit your particular tape unit environment. By using specific commands in the ATAM Commands member, you can create a script of valid commands that will be executed each time you start the ATAM started task.

Global commands

You can send global commands from one console to all of your systems, assuming you have defined the systems in your configuration data set.

With ATAM's TCP/IP features, you can execute global commands on multiple remote systems from a single console. For example, if you use the N=* parameter with a console command, the asterisk (*) means "all" and the command will be sent to every system that ATAM has access to via TCP/IP. ATAM returns the responses to the system that initiated the command request.

To use global commands, you must have your systems defined to ATAM, so that ATAM can use TCP/IP to send a global command to all of your systems. You can define your systems by either using option S, **Setup and Configuration**, on the ATAM main menu, or by making entries directly into a configuration data set using the editor of your choice, such as ISPF Edit.

The configuration data set must contain the following:

- TCP address
- domain name or IP address
- Global Command Processing set to Yes
- TCP port, meaning the remote system's port number

If an ATAM system is not in the configuration data set or it is incorrectly defined (such as missing the TCP port number), it will not be accessed when a global command is issued. For more information on defining systems, refer to "Creating a new configuration for a specific MVS system" on page 18.

Note: IMPORTANT! In order to use TCP/IP and UNIX services, you must have an Open MVS (OMVS) segment defined to your security facility (i.e. RACF or another security product).

When using the global console commands, the command response output contains headers to show the ATAM system name and its associated units.

Related tasks:

“Creating a new configuration for a specific MVS system” on page 18

You can create a new configuration member for an MVS system by choosing the **Setup and Configuration** option on the ATAM main menu. The System Configuration screen can also be used to view and change the values of an existing configuration member.

The A command

Use the A command to see a list of allocated tape devices.

The A command displays tape devices that are currently allocated and not available for use. The syntax and parameters for the A command are described in the table below.

Table 30. Syntax and parameters for A command

Item	Description
Syntax	A[,N={sysid *}]
Parameters	N=sysid Specifying a System ID (sysid) with the N parameter indicates that the command is to be sent to the specified System ID as defined in ATAM's configuration data set. N=* Use an asterisk (*) with the N parameter to send the command to all defined systems.

Two examples show you how to use the parameters with the A command. Select an example from the list below.

- “The A command - Example #1”
- “The A command - Example #2”

The A command - Example #1

Type the following command to display the list of tape devices that are currently allocated or online and available for the current (initiating) system:

```
F ATHPROC, A
```

For example, if the system you are currently using is SYSA, the results you receive will look similar to the example below:

```
ATH061I SYSA 3431 A 754873 PDAB5075
ATH061I SYSA 3500 A 701088 HSM      00:05
ATH061I SYSA 3501 A 700673 HSM
```

The A command - Example #2

Type the following command to display tape devices that are currently allocated or online and available, for all systems:

F ATHPROC,A,N=*

The results you receive will look similar to the example below:

```
ATH061I SYSA 3431 A 754873 PDAB5075
ATH061I SYSA 3500 A 701088 HSM      00:05
ATH061I SYSA 3501 A 700673 HSM
ATH061I RMT2 3510 A 601369 HSM
ATH061I RMT2 3511 O 360111 .....
ATH061I RMT2 3512 P .....
ATH061I SYSA 3564 A 700151 HSM
ATH061I SYSA 3565 A 700787 HSM
ATH061I RMT1 3594 A 488229 OAM
ATH061I RMT1 3595 A 488406 OAM
ATH061I RMT1 359D A 488451 OAM
ATH061I RMT1 35A0 A 400592 HSM
ATH061I RMT1 35C4 A 400636 HSM
ATH061I RMT2 35C5 A 320261 HSM
```

In the messages above, the single character in the column between the device address and the volser indicates the device status. For example, looking at the first line, the *A* between the *3431* device address and the *754873* volser, indicates that the device is allocated to this job, *PDAB5075*. Refer to the chart below.

Table 31. Definitions of letters used for device status

Letter	Description
A	The device is allocated to a job.
O	The drive is online, but not allocated.
P	The device is in a "pending offline" state.

Note: You are unlikely to see a device status other than "A" because ATAM varies tape drives offline when they are not being used.

Looking at the example, refer to the following items:

- Five (5) seconds ago, job *HSM* running on *SYSA* requested volume *701088* to be mounted on drive *3500*.
- Device address *3511* is currently online to system *RMT2* and volume *360111* is physically mounted on the drive, but no job has the device allocated.
- Device *3512* is pending offline on system *RMT2*. No tape is mounted and the drive is not allocated to any job.

The C command

Use the *C* command to specify a different Commands member that you want ATAM to use.

For example, if *ATHCMD00* is associated with the MVS system, *SYSA*, and *ATHCMD01* is associated with *SYSB*, you could type *C=01* to tell ATAM to switch from using the *ATHCMD00* Commands member to *ATHCMD01*. For more information on Commands members, refer to “Step 2: Creating a configuration data set and commands member” on page 6.

The result of this command (switching to a different Commands member) is only applicable for the life of the IPL or ATAM address space. When you shut down ATAM or IPL your system, ATAM will revert to using the Commands member specified in the Configuration member for the MVS image. So continuing with our

example, if you use `C=01` to switch to *ATHCMD01*, then a few days later you perform an IPL on the system, ATAM will revert to *ATHCMD00*.

Note: The "C" command can only be used as a console command. You cannot place a "C" command in a Commands member.

Table 32. Syntax and parameter for C command

Item	Description
Syntax	C=xx
Parameter	xx This parameter specifies the last two characters of the <i>ATHCMDxx</i> Commands member that you want ATAM to use, such 00, 01, AA, ZZ, etc. The default name for a Commands member is <i>ATHCMD00</i> . However, you may want to use a different Commands member for each MVS system on which ATAM will run. In this case, you will need a unique, two-character identifier at the end of each Commands member.

Related tasks:

“Step 2: Creating a configuration data set and commands member” on page 6
ATAM uses a configuration partitioned data set (PDS), which is allocated to the ATAM address space via an *ATHCONFIG* DD statement, to maintain product configuration information. This data set contains two types of members: *configuration* members and *command* members.

The E command

Use the *E* command to display the ATAM Tape Device Esoteric table.

The command syntax allows you to display the entire table, a specific entry in the table, or those that are part of a Forced-Wait scenario. The list contains all the tape-based esoteric and generic definitions found in the eligible device table (EDT) and the devices represented by them.

You can use this display to determine which tape devices belong to which esoteric or generic definition. More important, you can determine if Forced-Wait conditions exist that may require attention. Refer to “Forced Wait” on page 204 for more information on this issue.

The syntax and parameters for the "E" command are described in the table below.

Table 33. Syntax and parameters for E command

Item	Description
Syntax	E[={esoteric name} ,W][,N={sysid *}]

Table 33. Syntax and parameters for E command (continued)

Item	Description
Parameters	E This command displays the entire ATAM esoteric table. E=esoteric name This command displays a specific esoteric entry from the table. E,W This command displays only the esoteric entries that are involved in Forced-Wait processing. E,N=sysid Specifying a System ID (sysid) with the "N" parameter indicates that the command is to be sent to the specified System ID as defined in ATAM's configuration data set. E,N=* Use an asterisk (*) with the "N" parameter to send the command to all defined systems.

Four examples are provided to show how to use the E command and its parameters. Select an example from the list below.

- "Example #1"
- "Example #2" on page 86
- "Example #3" on page 86
- "Example #4" on page 87

Example #1

This example shows how to display the complete ATAM esoteric table using the "E" command.

F ATAM,E

ATAM issues the following messages as a result.

```

ATH106I COMMAND ACCEPTED
ATH186I ESOTERIC  GENERIC  UCB      UCB      UCB
ATH187I 3590-1      3590-1  : 0530 xF 0531 xF 0532 xF
ATH187I                               : 0533 xF 0534 xF 0535 xF
ATH187I                               : 0540 xW 0541 xW 0542 xW
ATH187I                               : 0543 xW
ATH187I 3490        3490    : 0500 xF 0501 xF 0502 xF
ATH187I                               : 0503 xF
ATH187I 3400-6      3400-6  : 0560 xU 0561 xU
ATH187I VT3480GN    VT3480GN: 05C0 xF 05C1 xF 05C2 xF
ATH187I                               : 05C3 xF 05C4 xF 05C5 xF
ATH187I                               : 05C6 xF 05C7 xF
ATH187I VT3490GN    VT3490GN: 05B0 xF 05B1 xF 05B2 xF
ATH187I                               : 05B3 xF 05B4 xF 05B5 xF
ATH187I                               : 05B6 xF 05B7 xF 05B8 x0
ATH187I                               : 05B9 x0 05BA x0 05BB x0
ATH187I                               : 05BC x0 05BD x0 05BE x0
ATH187I                               : 05BF x0
ATH187I VT3490G2    VT3490G2: 05A0 SF 05A1 SF 05A2 SF
ATH187I                               : 05A3 SF 05A4 SF 05A5 SF
ATH187I                               : 05A6 SF 05A7 SF 05A8 SF
ATH187I                               : 05A9 SF 05AA SF 05AB SF

```

```

ATH187I          : 05AC SF 05AD SF 05AE SF
ATH187I          : 05AF SF
ATH187I CART      3490 : 0500 xF 0501 xF 0502 xF
ATH187I          : 0503 xF
ATH187I CXCART    VT3490G2: 05A0 SF 05A1 SF 05A2 SF
ATH187I          : 05A3 SF 05A4 SF 05A5 SF
ATH187I          : 05A6 SF 05A7 SF 05A8 SF
ATH187I          : 05A9 SF 05AA SF 05AB SF
ATH187I          : 05AC SF 05AD SF 05AE SF
ATH187I          : 05AF SF
ATH187I CXLARGE   VT3490GN: 05B0 xF 05B1 xF 05B2 xF
ATH187I          : 05B3 xF 05B4 xF 05B5 xF
ATH187I          : 05B6 xF 05B7 xF
ATH187I CXNL      VT3480GN: 05C0 xF 05C1 xF 05C2 xF
ATH187I          : 05C3 xF 05C4 xF 05C5 xF
ATH187I          : 05C6 xF 05C7 xF
ATH187I CXSMALL   VT3490GN: 05B8 x0 05B9 x0 05BA x0
ATH187I          : 05BB x0 05BC x0 05BD x0
ATH187I          : 05BE x0 05BF x0
ATH187I LCART     3590-1 : 0540 xW 0541 xW 0542 xW
ATH187I          : 0543 xW
ATH187I MCART     3590-1 : 0530 xF 0531 xF 0532 xF
ATH187I          : 0533 xF 0534 xF 0535 xF
ATH187I TAPE      3400-6 : 0560 xU 0561 xU
ATH187I 3400-5    3400-6 : 0560 xU 0561 xU
ATH187I 3400-3    3400-6 : 0560 xU 0561 xU
ATH187I 2400-3    3400-6 : 0560 xU 0561 xU
ATH187I SYS3480R  3490 : 0500 xF 0501 xF 0502 xF
ATH187I          : 0503 xF
ATH187I SYS348XR  3490 : 0500 xF 0501 xF 0502 xF
ATH187I          : 0503 xF
ATH188I END OF ESOTERIC LIST FOR SYSA
ATH107I COMMAND SUCCESSFUL

```

Example #2

This "E" command example shows how to display a specific entry from the ATAM esoteric table.

```
F ATAM,E=CXCART
```

ATAM issues the following messages as a result:

```

ATH106I COMMAND ACCEPTED
ATH186I ESOTERIC GENERIC UCB UCB UCB
ATH187I CXCART VT3490G2: 05A0 SF 05A1 SF 05A2 SF
ATH187I          : 05A3 SF 05A4 SF 05A5 SF
ATH187I          : 05A6 SF 05A7 SF 05A8 SF
ATH187I          : 05A9 SF 05AA SF 05AB SF
ATH187I          : 05AC SF 05AD SF 05AE SF
ATH187I          : 05AF SF
ATH188I END OF ESOTERIC LIST FOR RS22
ATH107I COMMAND SUCCESSFUL

```

Example #3

This "E" command example shows what will happen if you attempt to display a specific entry that does not exist in the ATAM esoteric table.

```
F ATAM,E=BADNAME
```

ATAM issues the following messages as a result:

```

ATH106I COMMAND ACCEPTED
ATH186I ESOTERIC GENERIC UCB UCB UCB
ATH189I NO ESOTERIC FOUND TO MATCH BADNAME
ATH188I END OF ESOTERIC LIST FOR RS22
ATH107I COMMAND SUCCESSFUL

```

Example #4

This "E" command example shows how to display only entries from the ATAM esoteric table that are part of a Forced-Wait operation.

```
F ATAM,E,W
```

If there are no "waiting" esoteric entries, ATAM issues the following messages as a result:

```
ATH106I COMMAND ACCEPTED
ATH186I ESOTERIC  GENERIC  UCB      UCB      UCB
ATH168I NO ESOTERICS IN FORCED WAIT STATUS
ATH188I END OF ESOTERIC LIST FOR RS22
ATH107I COMMAND SUCCESSFUL
```

If there is a "waiting" esoteric entry, ATAM issues the following messages as a result:

```
ATH106I COMMAND ACCEPTED
ATH186I ESOTERIC  GENERIC  UCB      UCB      UCB
ATH187I CX CART   *VT3490G2: 05A0 SF 05A1 SF 05A2 SF
ATH187I                : 05A3 SF 05A4 SF 05A5 SF
ATH187I                : 05A6 SF 05A7 SF 05A8 SF
ATH187I                : 05A9 SF 05AA SF 05AB SF
ATH187I                : 05AC SF 05AD SF 05AE SF
ATH187I                : 05AF SF
ATH188I END OF ESOTERIC LIST FOR RS22
ATH107I COMMAND SUCCESSFUL
```

In the first ATH187I message, an asterisk (*) precedes the generic name. This indicates that ATAM has placed a job in a "forced wait" condition that requires a device from this esoteric group. During ATAM's online, unallocated scan processing, it will choose devices from this esoteric to vary online in response to the waiting job.

The F command

Use the F command to display a list of tape devices that are currently offline.

The syntax and parameters for the F command are described in the table below.

Table 34. Syntax and parameters for F command

Item	Description
Syntax	F[,N={sysid *}] [,M]
Parameters	N=sysid Specifying a System ID (sysid) with the N parameter indicates that the command is to be sent to the specified System ID as defined in ATAM's configuration data set. N=* Use an asterisk (*) with the N parameter to send the command to all defined systems. ,M Use a comma (,) with the M parameter to display a matrix of all "offline" devices across all z/OS images defined in the tapeplex.

Examples and additional information are provided to show how to use the F command and its parameters. Select an item from the list below.

- “The F command - Example #1”
- “The F command - Example #2”
- “The M parameter”

The F command - Example #1

Type the following command to display the list of tape devices that are currently offline for the current (initiating) system:

```
F ATHPROC,F
```

For example, if the system you are currently using is SYSA, the results you receive will look similar to the example below:

```
ATH041I SYSA    TAPE LIST: 0500 xF 0501 xF 0502 xF 0503 xF
ATH041I SYSA    TAPE LIST: 0530 xF 0531 xF 0560 xU 0561 xU
ATH041I SYSA    TAPE LIST: 05B0 xF 05B1 xF 05B2 xF 05B3 xF
```

In the ATH041I messages in the example, the two characters to the right of the device address, such as the *xF* in *0500 xF*, indicates the current status of the device as excluded from ATAM use and currently offline to the indicated system.

The F command - Example #2

Type the following command to display the list of tape devices that are currently offline for all of the defined systems:

```
F ATHPROC,F,N=*
```

The results you receive will look similar to the example below:

```
ATH041I SYSA    TAPE LIST: 0500 xF 0501 xF 0502 xF 0503 xF
ATH041I SYSA    TAPE LIST: 0530 xF 0531 xF 0560 xU 0561 xU
ATH041I SYSA    TAPE LIST: 05B0 xF 05B1 xF 05B2 xF 05B3 xF
ATH041I SYSB    TAPE LIST: 0500 xF 0501 xF 0502 xF 0503 xF
ATH041I SYSB    TAPE LIST: 0530 xF 0531 xF 0560 xU 0561 xU
ATH041I SYSB    TAPE LIST: 05B0 xF 05B1 xF 05B2 xF 05B3 xF
ATH041I SYSC    TAPE LIST: 0500 xF 0501 xF 0502 xF 0503 xF
ATH041I SYSC    TAPE LIST: 0530 xF 0531 xF 0560 xU 0561 xU
ATH041I SYSC    TAPE LIST: 05B0 xF 05B1 xF 05B2 xF 05B3 xF
ATH041I SYSD    TAPE LIST: 0500 xF 0501 xF 0502 xF 0503 xF
ATH041I SYSD    TAPE LIST: 0530 xF 0531 xF 0560 xU 0561 xU
ATH041I SYSD    TAPE LIST: 05B0 xF 05B1 xF 05B2 xF 05B3 xF
```

The M parameter

Use the "M" parameter with the single "F" command to display a matrix of all "offline" devices across all z/OS images defined in the TapePlex.

Purpose

This parameter replaces the "N" parameter, in that it always executes as if N=* were specified (i.e. return information for all z/OS images in the TapePlex). The resulting display is a two-dimensional array with the devices on the x-axis and the reporting z/OS image on the y-axis.

To save space in the display, the column headings contain letters of the alphabet from "A" to "V" instead of actual z/OS system names. The end of the display contains a legend that matches the z/OS system name with the column heading letter. The maximum number of z/OS images that can be reported in the display is 22. Systems beyond that number will not appear in the response message.

Under each column heading, the device's status on that z/OS image is displayed in the same format as that found in message ATH041I, the result of the traditional "L" command. The status consists of a three-character field. Any special processing options appear in the first character field. The device's ATAM status appears in the second character field. The device's z/OS status appears in the third character field.

Syntax

To invoke this parameter, specify the major command (F) followed by ",M". This parameter is mutually exclusive with the ",N=" parameter. If both are specified, this will cause a command syntax error.

Table 35. Syntax for "M" parameter

Syntax	Description
F[,M]	Use the "M" parameter to display all devices that are offline on at least one of the z/OS images in the TapePlex. This parameter is mutually exclusive with the ",N=" parameter because it always targets all systems in the TapePlex (i.e. defaults processing is "N=*").

Example of "M" parameter

This example demonstrates the use of the "F" command with the "M" parameter, and the messages received as a result.

```
F ATHPROC,F,M
```

ATAM issues the following message in response:

```
ATH441I DEVICE LIST MAP 24
UNIT  A  B  C  D  E  F  G
0500  xF xF xF xF xF xF xF
0501  xF xF xF xF xF xF xF
0502  xF xF xF xF xF
0503  xF xF xF x0 xF
0530  xF x0 xF xF xF xA xF
0531  xF x0 xF xF xF xA xF
0532  xF xF xF xF xF
0533  xF xF xF xF xF
0534  xF xF xF xF xF
0535  xF xF xF xF xF
0540  xW xW xW xW xW xF xF
0550  xF xF
0551  xF xF
A=SYSA
B=SYSB
C=SYSC
D=SYSD
E=SYSE
F=SYSF
G=SYSG
```

In this display, devices 0500 through 0551 appear because they were the only devices found to be Offline on at least one of the z/OS images in the TapePlex. If a device appears in the matrix because of the selected status, its status is reported for all z/OS images in the TapePlex. If the status field is blank, the device is not defined on that z/OS image.

The message returned by this command differs slightly from other ATAM command response messages in that the message number ATH441I only appears once, at the beginning of the message. As for all multi-line messages, the lines appear together in the log or on the console.

The L command

Use the *L* command to check the status of all tape devices or a range of tape devices, .

The *L* command lists the status of all of the tape units known to ATAM. The syntax and parameters for the *L* command are described in the table below.

Note: This command is run automatically each time ATAM is started to display the list of available devices. If you currently use this command in your Commands member, you no longer need to do so unless you want to validate the results of any Select commands in the Commands member.

Table 36. Syntax and parameters for L command

Item	Description
Syntax	L [={xxxx xxxx-yyy}][,N={sysid *}] [,M]
Parameter for selecting a range of tape devices	L=xxxx-yyy This parameter indicates that ATAM is to list the status of the tape device addresses in the range <i>xxxx</i> through <i>yyy</i>, inclusive. When you specify a range of tape units, such as <i>L=0130-013F</i>, ATAM looks at the low and high device addresses to ensure that these devices have already been discovered by ATAM. If not, the entire command is ignored. Note: Device addresses 0000 and FFFF are special values that will always be accepted. If you are unsure of the actual values on your system, specify a range that begins with 0000 or ends with FFFF.
Parameter for specifying a subsystem ID	N=sysid Specifying a sysid with the <i>N</i> parameter indicates that the command is to be sent to the specified System ID as defined in ATAM's configuration data set. <i>N</i>=* Use an asterisk (*) with the <i>N</i> parameter to send the command to all defined systems. When you use an asterisk, the result is that you see messages indicating the status of all the tape units on all systems. In the messages, the first word following the WTOid indicates which system the results are from.
Parameter for displaying a matrix of devices	L,M This parameter displays a matrix of all devices or a range of devices across all z/OS images defined in the tapeplex.

Several examples show you how to use the parameters with the *L* command. Select an example from the list below.

- “The *L* command - Example #1” on page 91
- “The *L* command - Example #2” on page 92
- “The *L* command - Example #3” on page 92

- “The M parameter” on page 92

The L command - Example #1

The following example shows how you use the List (L) command to list the status of all tape units on the local system, which is SYSA. If you do not use the "N" parameter to specify which system(s) to use, the default is to perform this command on the local system.

```
F ATHPROC,L
```

When you type the command above, you may see results like that shown below.

```
ATH041I SYSA TAPE LIST: 0500 SF 0501 SF 0502 SF 0503 SF
ATH041I SYSA TAPE LIST: 0530 x0 0531 xF 0540 xW 0541 xW
ATH041I SYSA TAPE LIST: 0560 xF 0561 x0 0568 x0 0569 x0
ATH041I SYSA TAPE LIST: 0576 xU 0561 xU 0578 x0 0579 x0
ATH041I SYSA TAPE LIST: 05A0 x0 05A1 x0 05A2 x0 05A4 x0
```

In some cases, you will see a "+" (plus) or "-" (minus) sign as part of the ATH041I message. These symbols are described in the table below.

Table 37. Definitions of symbols used for ATAM status

Symbol	Description
-	The device is not eligible for Random or LRU device selection processing.
+	The device is permanently assigned and its status will not change as the result of an S=ALL or X=ALL command.

In the ATH041I messages in the example, the two characters to the right of the device address, such as the *SF* in *0500 SF*, indicates the current status of the device.

The first character is the ATAM status:

Table 38. Definitions of letters used for ATAM status

Letter	Description
S	The device is selectable and is being managed by ATAM.
x	The device is excluded. It is not being managed by ATAM.

The second character is the device status:

Table 39. Definitions of letters used for device status

Letter	Description
A	The device is currently allocated to a job step.
F	The device is currently offline to the specified system.
O	The drive is currently online, but not allocated, to the specified system.
P	The device is in a "pending offline" state, also referred to as "vary offline."
U	The device is unavailable, meaning it is physically disconnected from the MVS image.
W	The device is auto switchable.
?	The device status could not be determined.

Refer to the explanation of message ATH041I in Appendix K, “Messages,” on page 237.

The L command - Example #2

This example shows the command used to list the status of all of the tape units on system *RMT1*. To see this list, use the following command:

```
F ATHPROC,L,N=RMT1
```

You will see results similar to the following:

```
ATH041I RMT1 TAPE LIST: 0500 SF 0501 SF 0502 SA 0503 SA
ATH041I RMT1 TAPE LIST: 0550 SF 0551 SF 0552 SF 0553 SF
ATH041I RMT1 TAPE LIST: 0560 SF 0561 SF 0568 x0 0569 x0
ATH041I RMT1 TAPE LIST: 056A x0 056B x0 056c x0 056D x0
ATH041I RMT1 TAPE LIST: 056E xW 056F xW 0570 xW 0571 xW
ATH041I RMT1 TAPE LIST: 0572 x0 0573 x0 0574 x0 0575 x0
ATH041I RMT1 TAPE LIST: 0576 x0 0577 x0 0578 x0 0579 x0
ATH041I RMT1 TAPE LIST: 057A x0 057B x0 057C x0 057D x0
ATH041I RMT1 TAPE LIST: 057E x0 057F x0 0590 SF
```

The L command - Example #3

This example instructs the ATAM started task, running on all defined systems (SYSA through SYSD), to list the status of device addresses 280 through 283:

```
F ATHPROC,L=280-283,N=*
```

You will see results similar to the following:

```
ATH041I SYSA TAPE LIST: 0280 x0 0281 x0 0282 x0 0283 x0
ATH041I SYSB TAPE LIST: 0280 x0 0281 x0 0282 x0 0283 x0
ATH041I SYSC TAPE LIST: 0280 x0 0281 x0 0282 x0 0283 x0
ATH041I SYSD TAPE LIST: 0280 x0 0281 x0 0282 x0 0283 x0
```

The M parameter

Use the "M" parameter with the single "L" command to display a matrix of all or a range of devices across all z/OS images defined in the TapePlex.

Purpose

This parameter replaces the "N" parameter, in that it always executes as if N=* were specified (i.e. return information for all z/OS images in the TapePlex). The resulting display is a two-dimensional array with the devices on the x-axis and the reporting z/OS image on the y-axis.

To save space in the display, the column headings contain letters of the alphabet from "A" to "V" instead of actual z/OS system names. The end of the display contains a legend that matches the z/OS system name with the column heading letter. The maximum number of z/OS images that can be reported in the display is 22. Systems beyond that number will not appear in the response message. Refer to the examples below.

Under each column heading, the device's status on that z/OS image is displayed in the same format as that found in message ATH041I, the result of the traditional "L" command. The status consists of a three-character field. Any special processing options appear in the first character field. The device's ATAM status appears in the second character field. The device's z/OS status appears in the third character field.

Syntax

To invoke this parameter, specify the major command (L) followed by "M". The syntax and methods for using the "M" parameter are shown below. Please note that

this parameter is mutually exclusive with the “,N=” parameter because “N” targets all systems in the TapePlex (i.e. defaults processing is “N=*”). If both parameters are specified, this will cause a command syntax error.

Table 40. Syntax for “M” parameter

Item	Description
Syntax	L[={xxxx xxxx-yyyy}] ,M]
Parameter for displaying all discovered devices in the matrix	L,M Use the “M” parameter to display the status of all discovered devices on all the z/OS images in the TapePlex.
Parameter for displaying a specific device in the matrix	L=xxxx,M Use the “M” parameter to display the status of a specific device on all the z/OS images in the TapePlex.
Parameter for displaying a matrix showing a range of devices	L=xxxx-yyyy,M Use the “M” parameter to display the status of a range of devices on all the z/OS images in the TapePlex.

To see examples of how to use the “M” parameter with the “L” command, refer to the following topics:

- “The L command with M parameter- Example #1”
- “The L command with M parameter- Example #2” on page 94
- “The L command with M parameter- Example #3” on page 95

The message returned by this command differs slightly from other ATAM command response messages in that the message number ATH441I only appears once, at the beginning of the message. As for all multi-line messages, the lines appear together in the log or on the console.

The L command with M parameter- Example #1

This example demonstrates the use of the “L” command with the “M” parameter, and the messages received as a result.

```
F ATHPROC,L,M
```

When you type this command, you may see results like that shown below.

```
ATH441I DEVICE LIST MAP
UNIT  A  B  C  D  E  F  G
0500  xF xF xF xF xF xF xF
0501  xF xF xF xF xF xF xF
0502  xF xF xF xF xF
0503  xF xF xF x0 xF
0530  xF x0 xF xF xF xA xF
0531  xF x0 xF xF xF xA xF
0532  xF xF xF xF xF
0533  xF xF xF xF xF
0534  xF xF xF xF xF
0535  xF xF xF xF xF
0540  xW xW xW xW xW xF xF
0541  xW xW xW xW xW
0542  xW xW xW xW xW
0543  xW xW xW xW xW
0550                      xF xF
0551                      xF xF
0590  xF
0591  xF
```

```

0592  xF
0593  xF
0594  xF
0595  xF
0596  xF
0597  xF
0598  xF
0599  xF
059A  xF
059B  xF
059C  xF
059D  xF
059E  xF
059F  xF
05A0  SF x0 x0 x0 x0
05A1  SF x0 x0 x0 x0
05A2  SF x0 x0 x0 xF
05A3  SF x0 x0 x0 x0
05A4  SF x0 x0 x0 x0
05A5  SF x0 x0 x0 x0
05A6  SF x0 x0 x0 x0
05A7  SF x0 x0 x0 x0
05A8  SF x0 x0 x0 x0
05A9  SF x0 x0 x0 x0
05AA  SF x0 x0 x0 x0
05AB  SF x0 x0 x0 x0
05AC  SF x0 x0 x0 x0
05AD  SF x0 x0 x0 x0
05AE  SF x0 x0 x0 x0
05AF  SF x0 x0 x0 x0
A=SYSA
B=SYSB
C=SYSC
D=SYSD
E=SYSE
F=SYSF
G=SYSG

```

In this example, the resulting display includes all discovered tape devices on all of the z/OS images in the TapePlex. If the status field is blank, the device is not defined on that z/OS image.

The L command with M parameter- Example #2

This example demonstrates the use of the L=xxxx command with the "M" parameter, and the messages received as a result.

```
F ATHPROC,L=0500,M
```

When you type this command, you may see results like that shown below.

```

ATH441I DEVICE LIST MAP
UNIT  A  B  C  D  E  F  G
0500  xF xF xF xF xF xF xF
A=SYSA
B=SYSB
C=SYSC
D=SYSD
E=SYSE
F=SYSF
G=SYSG

```

In this example, only device 0500 appears in the message because it was specified in the command. Its status is reported on all of the z/OS images in the TapePlex. If the status field is blank, the device is not defined on that z/OS image.

The L command with M parameter- Example #3

This example demonstrates the use of the L=xxxx-yyy command with the "M" parameter, and the messages received as a result.

```
F ATHPROC,L=0500-0503,M
```

When you type this command, you may see results like that shown below.

```
ATH441I DEVICE LIST MAP
UNIT  A B C D E F G
0500  xF xF xF xF xF xF xF
0501  xF xF xF xF xF xF xF
0502  xF xF xF xF xF
0503  xF xF xF x0 xF
A=SYSA
B=SYSB
C=SYSC
D=SYSD
E=SYSE
F=SYSF
G=SYSG
```

In this example, only devices 0500 through 0503 appear in the message because they were specified in the command. Their status is reported on all of the z/OS images in the TapePlex. If the status field is blank, the device is not defined on that z/OS image.

The M Command

Use the M operator command to display pending tape mount requests.

This command applies only to those device addresses that are currently allocated to a job step.

Table 41. Syntax and parameters for M command

Item	Description
Syntax	M[,N={sysid *}]
Parameters	N=sysid Specifying a sysid with the N parameter indicates that the command is to be sent to the specified System ID as defined in ATAM's configuration data set. N=* Use an asterisk (*) with the N parameter to send the command to all defined systems.

Two examples show you how to use the parameters with the M command. Select an example from the list below.

- "The M command - Example #1"
- "The M command - Example #2" on page 96

The M command - Example #1

Type the following command to display pending tape mount requests on the local system, which is SYSA in this example. If you do not use the "N" parameter to specify which system(s) to use, the default is to perform this command on the local system.

```
F ATHPROC,M
```

The results you receive will look similar to the example below:

```
ATH065I SYSA 3500 701088 HSM      00:05
ATH065I SYSA 3565 700345 HSM      00:05
```

The M command - Example #2

Type the following command to display pending tape mount requests on all systems:

```
F ATHPROC,M,N=*
```

The results you receive will look similar to the example below:

```
ATH065I SYSA 3500 701088 HSM      00:05
ATH065I RMT1 3512 PRIVAT PDAA2430 00:42
ATH065I RMT1 3516 PRIVAT PDAA5075 00:07
ATH065I SYSA 3565 700345 HSM      00:05
ATH065I RMT2 3570 123456 PRQA1200 00:10
ATH065I RMT2 3572 234567 PYEA0000 00:22
```

In the first line of the example above, job name *HSM* on *SYSA* has been waiting for 5 seconds for volume *701088* to be mounted on drive *3500*.

The N Command

Use the *N* operator command to set or display the target *sysid* for ATAM operator commands.

You can use *N* in combination with other ATAM operator commands to specify the target system IDs (sysids) to which you want to send ATAM commands. The syntax is shown below.

Table 42. Syntax and parameters for *N* command

Item	Description
Syntax	N [={sysid *}]
Parameters	sysid Specifying a <i>sysid</i> indicates that the ATAM commands are to be sent to the specified System ID. * (asterisk) Use an asterisk (*) to send ATAM commands to all of the <i>sysids</i> defined in the ATAM configuration data set.

Several examples show you how to use the parameters with the "N" command. Select an example from the list below.

- "The N command - Example #1"
- "The N command - Example #2" on page 97
- "The N command - Example #3" on page 97

The N command - Example #1

When used alone (without a sysid or an asterisk), the *N* command instructs ATAM to display the current target setting for ATAM commands. Type the following command to display the current target system ID (sysid) setting:

```
F ATHPROC,N
```

A message displays as shown below:
ATH064I TARGET SYSID FOR ATAM COMMANDS: SYSA

The N command - Example #2

When *N* is used in combination with the *sysid* parameter, all ATAM commands issued on the local system are sent to the target system ID (*sysid*). Type the following command to send future ATAM commands to RMT1:

```
F ATHPROC,N=RMT1
```

A message displays as shown below:
ATH063I DEFAULT SYSID SET TO - RMT1

The N command - Example #3

When *N* is used in combination with an asterisk (*), all ATAM commands issued on the local system are sent to all of the systems defined in the ATAM configuration data set. The configuration data set is associated with the ATAM STC (started task) on the local system.

Type the following command to send all ATAM commands to all systems:

```
F ATHPROC,N=*
```

A message displays as shown below:
ATH063I DEFAULT SYSID SET TO - *

The O command

Use the *O* command to check online tape devices.

The *O* command displays tape devices that are currently online. The syntax and parameters are described in the table below.

Table 43. Syntax and parameters for O command

Item	Description
Syntax	O[,N={sysid *}] [,M]
Parameters	N=sysid Specifying a System ID (<i>sysid</i>) with the <i>N</i> parameter indicates that the command is to be sent to the specified System ID as defined in ATAM's configuration data set. N=* Use an asterisk (*) with the <i>N</i> parameter to send the command to all defined systems. ,M Use a comma (,) with the <i>M</i> parameter to display a matrix of all "online" devices across all z/OS images defined in the tapeplex.

Two examples show you how to use the parameters with the *O* command. Select an example from the list below.

- "The *O* command - Example #1" on page 98
- "The *O* command - Example #2" on page 98
- "The *M* parameter" on page 98

The O command - Example #1

Type the following command to display the list of tape devices that are currently online on the current (initiating) system:

```
F ATHPROC,0
```

For example, if the system you are currently using is SYSA, the results you receive will look similar to the example below:

```
ATH041I SYSA    TAPE LIST: 0500 x0 0501 x0 0502 x0 0503 x0
ATH041I SYSA    TAPE LIST: 0530 x0 0531 x0 05B0 x0 05B1 x0
ATH041I SYSA    TAPE LIST: 05B2 x0 05B1 xF 05B3 x0
```

In the ATH041I messages in the example, the two characters to the right of the device address, such as the *xO* in *0500 xO*, indicates the current status of the device as excluded from ATAM use and currently online to the indicated system.

The O command - Example #2

Type the following command to display the list of tape devices that are currently online for all of the defined systems:

```
F ATHPROC,0,N=*
```

The results you receive will look similar to the example below:

```
ATH041I SYSA    TAPE LIST: 0500 x0 0501 x0 0502 x0 0503 x0
ATH041I SYSA    TAPE LIST: 0530 x0 0531 x0 05B0 x0 05B1 x0
ATH041I SYSA    TAPE LIST: 05B2 x0 05B3 x0
ATH041I SYSB    TAPE LIST: 0500 x0 0501 x0 0502 x0 0503 x0
ATH041I SYSB    TAPE LIST: 0530 x0 0531 x0 05B0 x0 05B1 x0
ATH041I SYSB    TAPE LIST: 05B2 x0 05B3 x0
ATH041I SYSC    TAPE LIST: 0500 x0 0501 x0 0502 x0 0503 x0
ATH041I SYSC    TAPE LIST: 0530 x0 0531 x0 05B0 x0 05B1 x0
ATH041I SYSC    TAPE LIST: 05B2 x0 05B3 x0
ATH041I SYSD    TAPE LIST: 0500 x0 0501 x0 0502 x0 0503 x0
ATH041I SYSD    TAPE LIST: 0530 x0 0531 x0 05B0 x0 05B1 x0
ATH041I SYSD    TAPE LIST: 05B2 x0 05B3 x0
```

The M parameter

Use the "M" parameter with the single "O" command to display a matrix of all "online" devices across all z/OS images defined in the TapePlex.

Purpose

This parameter replaces the "N" parameter, in that it always executes as if N=* were specified (i.e. return information for all z/OS images in the TapePlex). The resulting display is a two-dimensional array with the devices on the x-axis and the reporting z/OS image on the y-axis.

To save space in the display, the column headings contain letters of the alphabet from "A" to "V" instead of actual z/OS system names. The end of the display contains a legend that matches the z/OS system name with the column heading letter. The maximum number of z/OS images that can be reported in the display is 22. Systems beyond that number will not appear in the response message.

Under each column heading, the device's status on that z/OS image is displayed in the same format as that found in message ATH041I, the result of the traditional "L" command. The status consists of a three-character field. Any special processing options appear in the first character field. The device's ATAM status appears in the

second character field. The device's z/OS status appears in the third character field.

Syntax

To invoke this parameter, specify the major command (O) followed by “,M”. The syntax and methods for using the "M" parameter are shown below. Please note that this parameter is mutually exclusive with the “,N=” parameter because "N" targets all systems in the TapePlex (i.e. defaults processing is “N=*”). If both parameters are specified, this will cause a command syntax error.

Table 44. Syntax for "M" parameter

Item	Description
Syntax	O[,M]
Parameter for displaying device matrix	0,M Use the "M" parameter to display the status of all devices online on at least one of the z/OS images in the TapePlex.

Example

This example demonstrates the use of the "O" command with the "M" parameter, and the messages received as a result.

```
F ATHPROC,0,M
```

When you type the command above, you may see results like that shown below.

```
ATH441I DEVICE LIST MAP
UNIT  A  B  C  D  E  F  G
0503  xF xF xF x0 xF xF xF
0530  xF x0 xF xF xF xA xF
0531  xF x0 xF xF xF xA xF
05A0  xF x0 x0 x0 x0 xF xF
05A1  xF x0 x0 x0 x0
05A2  xF x0 x0 x0 xF
05A3  xF x0 x0 x0 x0
05A4  xF x0 x0 x0 x0
05A5  xF x0 x0 x0 x0
05A6  xF x0 x0 x0 x0
05A7  xF x0 x0 x0 x0
05A8  xF x0 x0 x0 x0
05A9  xF x0 x0 x0 x0
05AA  xF x0 x0 x0 x0
05AB  xF x0 x0 x0 x0
05AC  xF x0 x0 x0 x0
05AD  xF x0 x0 x0 x0
05AE  xF x0 x0 x0 x0
05AF  xF x0 x0 x0 x0
0640  xF xF xF xF xF x0 xF
A=SYSA
B=SYSB
C=SYSC
D=SYSD
E=SYSE
F=SYSF
G=SYSG
```

In this example, devices 0503 through 0640 appear because they were the only devices found to be online on at least one of the z/OS images in the TapePlex. If a

device appears in the matrix because of the selected status, its status is reported for all z/OS images in the TapePlex. If the status field is blank, the device is not defined on that z/OS image.

The message returned by this command differs slightly from other ATAM command response messages in that the message number ATH441I only appears once, at the beginning of the message. As for all multi-line messages, the lines appear together in the log or on the console.

The R Command

This topic describes the *R* command, the syntax, and parameters.

Use the *R* command to specify a message that ATAM is to automatically respond to and the reply that is to be issued. The *R* operator command is similar to the *W* operator command, but does not require a unit name or device ID. See also “The *W* Command” on page 117.

Table 45. Syntax and parameters for R command

Item	Description
Syntax	R=msgid,reply,offset[,J=jobname] R=msgid,I=nnn R=msgid,A=nnn
Parameters	msgid This parameter is the message number that you wish to monitor. The maximum number of characters allowed for the "msgid" is 11. reply This parameter is the exact reply that 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). The maximum number of characters allowed for the reply is 11. offset This parameter is the location (offset), starting with the first character in the message ID, where ATAM can find the matching reply text. The offset number must be in the range of 1 - 127. For the "R" command, the location does not have to be exact. ATAM will begin scanning at the specified offset and continue until the end of the message 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. An example is provided in the next section. J= Optionally, add this parameter to assign response behavior to a specific job name. This is useful for situations where different jobs require different responses to a WTOR. For example, relative to ATAM processing, HSM may need a CANCEL response to the IEF238D WTOR, while all other jobs need a WAIT response. Without the "J" parameter, the MSGID response applies to all jobs.

The next table contains additional parameters for this command.

Table 46. Parameters for R command (continued)

Item	Description
Parameters (continued)	I=nnn Use the "I" parameter to inactivate a specific MSGID from ATAM WTOR scanning. When the MSGID is inactivated, ATAM continues to detect the WTOR, but ATAM either no longer responds to it or suspends ATAM VARY processing (e.g. ATH085I message) while the WTOR is outstanding. The <i>nnn</i> variable is the three-digit number assigned to the MSGID when added to ATAM. The number can be found by displaying the active MSGID list using the following command: <pre>F ATAM,W</pre> <pre>ATH057I WTOR QUEUE SCANNING IS ACTIVE ATH073I ID STATUS MESSAGE REPLY TEXT OFFSET UNIT JOBNAME ATH051I 003 ACTIVE ATH101D W 81 N ATH051I 002 ACTIVE IEF433D NOHOLD 17 N ATH051I 001 INACTIVE IEF238D WAIT 17 N</pre> You must specify the MSGID and ID number when you specify the "R" command with the "I" parameter. For example, to inactivate ATH101D, which has an ID of 003, you would enter the following command: <pre>F ATAM,R=ATH101D,I=003</pre> A=nnn Use the "A" parameter to activate a specific MSGID that has previously been inactivated. The <i>nnn</i> variable is the three-digit number (ID) assigned to the MSGID when added to ATAM. The ID number can be found by displaying the active MSGID list using the following command: <pre>F ATAM,W</pre> <pre>ATH057I WTOR QUEUE SCANNING IS ACTIVE ATH073I ID STATUS MESSAGE REPLY TEXT OFFSET UNIT JOBNAME ATH051I 003 ACTIVE ATH101D W 81 N ATH051I 002 ACTIVE IEF433D NOHOLD 17 N ATH051I 001 INACTIVE IEF238D WAIT 17 N</pre> You must specify the MSGID and ID number when you specify the "R" command with the "A" parameter. For example, to re-activate ATH101D, which has an ID of 003, you would enter the following command: <pre>F ATAM,R=ATH101D,A=003</pre>

Refer to "Example #1" for a sample of how to use the "R" command with its parameters.

Related concepts:

"The W Command" on page 117

Use the W command to specify a message that ATAM is to automatically respond to for messages that contain device type information.

Example #1

Look at the command shown below.

```
F ATHPROC,R=XYZ238D,WAIT,35
```

This tells ATAM to respond with WAIT each time it encounters an XYZ238D message, and that the string WAIT can be found at or after offset 35 in the message text.

When you type this example command above, the following messages inform you that ATAM will do as you asked:

```
ATH057I WTOR QUEUE SCANNING IS ACTIVE
ATH051I ACTIVE WTOR MSGID XYZ238D HAS REPLY WAIT AND OFFSET 35
```

Now look at the sample XYZ238D message below:

```
-----1-----2-----3-----4-----
XYZ238D jobname - REPLY DEVICE NAME, 'WAIT' OR 'CANCEL'
```

Referring to the sample message and command above, ATAM automatically responds with WAIT because WAIT is found at offset 35 or later (in this case, 39) in the message text.

Example #2

Look at the command shown below.

```
F ATAM,R=IEF238D,CANCEL,17,J=HSM
```

This tells ATAM to respond with CANCEL each time HSM encounters an IEF238D message as a result of ATAM processing. In response to the "R" command, ATAM displays the following information.

```
ATH057I WTOR QUEUE SCANNING IS ACTIVE
ATH073I ID      STATUS MESSAGE      REPLY TEXT  OFFSET UNIT JOBNAME
ATH051I 004    ACTIVE IEF238D      CANCEL      17  N   HSM
ATH051I 003    ACTIVE ATH101D      W           81  N
ATH051I 002    ACTIVE IEF433D      NOHOLD      17  N
ATH051I 001    ACTIVE IEF238D      WAIT        17  N
```

The S command

Use the S command to display the current status of all of the tape units that ATAM is managing, which are the tape units that are marked as "selectable" to ATAM. With the S command, you can set or display the tape device addresses being managed by ATAM.

The S command lists the current status of all of the tape units that ATAM is managing, which are the tape units that are marked as "selectable" to ATAM. With the S command, you can set or display the tape device addresses being managed by ATAM.

When ATAM is started, it automatically discovers all of the tape devices on the system and builds a table in memory of the addresses it has discovered. ATAM will, by default, *exclude* all of the devices in the table. This is done before any commands in the ATAM Commands member are processed. Use the select (S) command in the Commands member to explicitly define one or more tape devices that you want ATAM to manage whenever ATAM is started.

When using the S command alone, meaning without any additional parameters, ATAM displays the list of device addresses that it is currently managing. If you use the S command in combination with parameters, you can select a specific device address, a range of tape devices, or all tape devices for ATAM to manage.

There are several topics related to the S command describing parameters and providing examples. Select a topic from the list below.

- “The B parameter”
- “The F parameter” on page 104
- “The J parameter” on page 105
- “The M parameter” on page 106
- “The P parameter” on page 107
- “The T parameter” on page 108
- “The Location parameter” on page 109
- “Syntax and parameters for S command” on page 110
- “The S command - Example #1” on page 111
- “The S command - Example #2” on page 112
- “The S command - Example #3” on page 112
- “The S command - Example #4” on page 112
- “The S command - Example #5” on page 113
- “Usage Considerations” on page 113
- “The U parameter” on page 109

The B parameter

Use the "B" parameter with the "S" command to establish a Scan Bypass Iteration value for a device or range of devices.

Purpose

The Scan Bypass Iteration (SBI) value specifies the number of times ATAM will “bypass” processing a selectable device found to be online and unallocated before ATAM attempts to vary the device offline. This is different than the T2 value in that this bypass applies specifically to the T1 cycle.

For example, if a device has an SBI of three, ATAM will scan at the T1 interval three times before inspecting the device. So, for a T1=030 value, the device could potentially remain online and unallocated for 90 seconds before ATAM attempts to vary it offline. This effectively allows you to specify T1/T2/T3 processing at the device level.

Specify an SBI value by including the "B" parameter at the end of an "S" command statement with a value between zero (0) and thirty (30). A value of zero (0) disables scan bypass processing for the device.

Syntax

Table 47. Syntax for "B" parameter

Syntax	Description
F ATAM,S=xxxx-yyy,B=n	Devices xxxx through yyyy will be assigned a Scan Bypass Iteration value of n, where n is a value from 0 to 30. To turn off this feature, specify a value of zero (0). Zero is the default.

Example

This example shows how to specify a Scan Bypass Iteration value for a range of devices.

```
F ATAM,S=05C0-05C7,B=5
```

ATAM issues the following message in response:

```
ATH106I COMMAND ACCEPTED
ATH227I SCAN BYPASS VALUE 05 ASSIGNED TO THESE DEVICES
ATH041I SYSA TAPE LIST: 05C0 SF 05C1 SF 05C2 SF 05C3 SF
ATH041I SYSA TAPE LIST: 05C4 SF 05C5 SF 05C6 SF 05C7 SF
ATH107I COMMAND SUCCESSFUL
```

To remove the SBI value, re-issue the command specifying B=0. The SBI value is also set to zero (0) when devices are excluded via the "X" command.

The F parameter

Use the F parameter with the S=ALL and S=nnnn-nnnn commands to indicate that range processing should continue even if an error is encountered with a device.

This parameter is implemented by using ",F" parameter syntax with the S=ALL or S=nnnn-nnnn command. To see examples of how to use the "F" parameter with the "S" command, view the following topics:

- "Example without F parameter"
- "Example with F parameter"
- "Example with F parameter and global command" on page 105
-

Example without F parameter

This example shows the use of an "S" command without an "F" parameter, and the messages received as a result.

Command:

```
F ATHPROC,S=560-561
```

Messages:

```
ATH106I COMMAND ACCEPTED ATH029W DEVICE 32108003 ON UNIT 0560 UNSELECTABLE
ATH018I STATUS CHANGE RESULTS DISPLAY: ATH041I RS22 TAPE LIST: 0560 xU 0561 xU
ATH108W COMMAND COMPLETED WITH ERRORS
```

In this case, the command fails because 560 it is not attached. However, the command stops here and does not continue processing the next device in the range.

Example with F parameter

This example shows the use of an "S" command with an "F" parameter, and the messages received as a result.

Command:

```
F ATHPROC,S=560-561,F
```

Message:

```
ATH106I COMMAND ACCEPTED ATH029W DEVICE 32108003 ON UNIT 0560 UNSELECTABLE
ATH029W DEVICE 32108003 ON UNIT 0561 UNSELECTABLE
ATH018I STATUS CHANGE RESULTS DISPLAY: ATH041I RS22 TAPE LIST: 0560 xU 0561 xU
ATH108W COMMAND COMPLETED WITH ERRORS
```

In this case, although the command fails against 560, processing continues against the next device in the range. Unfortunately, in this case, the command also fails for the second device in the range.

Example with F parameter and global command

This example shows the use of an "S" command with an "F" parameter, and also with an "N" parameter to indicate a global command. The messages received as a result of this command are also listed below.

Command:

```
F ATHPROC,S=560-561,F,N=SYSB
```

Message:

```
ATH106I COMMAND ACCEPTED
ATH018I STATUS CHANGE RESULTS DISPLAY: ATH041I RS23 TAPE LIST: 0560 xU 0561 xU
ATH108W COMMAND COMPLETED WITH ERRORS
```

The actual error messages are issued on the remote systems, but are not returned to the requesting system. The requesting system only receives notification that the command completed, but with errors, as identified by message ATH108W. Without the "F" parameter, range processing stops at the first error.

The J parameter

Purpose

The "J" parameter is used with the "S" and "X" commands to define a job name for device preferencing. Job-based preferencing directs a job (or group of jobs) to a specific set of devices, either through excluding (X=) or including (S=) devices. In addition, job-based preferencing can be exclusive, required, or general.

- *General* means that the job defined in the preference will be directed to use the indicated devices first, if available. If not available, the job will use other devices. The default is General, meaning neither "E" nor "R" is specified.
- *Exclusive* means only the job defined in the preference can use the device; it will be excluded from all other requestors. The syntax for "exclusive" is ",E".
- *Required* means the job defined in the preference will use only that device, but the device is available to other requestors. The syntax for "required" is ",R".

Syntax

The table below shows how to use the "J" parameter in combination with the Select (S) and Exclude (X) commands.

Table 48. Examples of "J" parameter with "S" and "X" commands

Syntax	Description
F ATAM,S=xxxx-yyyy,J=jobname	The <i>jobname</i> prefers assignment to devices "xxxx" through "yyyy" but may use other devices. Any other jobs may use these devices.
F ATAM,S=xxxx-yyyy,J=jobname,E	Only <i>jobname</i> can be assigned to devices "xxxx" through "yyyy" and no other jobs may use these devices.
F ATAM,S=xxxx-yyyy,J=jobname,R	The <i>jobname</i> can only be assigned to devices "xxxx" through "yyyy" but others may use those devices.

Table 48. Examples of "J" parameter with "S" and "X" commands (continued)

Syntax	Description
F ATAM,X=xxxx-yyyy,J=jobname	The <i>jobname</i> is excluded from using devices "xxxx" through "yyyy" but may use other devices. Any other jobs may use these devices.
F ATAM,S=ALL,J=jobname	The <i>jobname</i> can use any device, which means the job is removed from any previously established job preferencing.

The M parameter

Use the "M" parameter with the single "S" command to display a matrix of all "selectable" devices across all z/OS images defined in the TapePlex.

Purpose

This parameter replaces the "N" parameter, in that it always executes as if N=* were specified (i.e. return information for all z/OS images in the TapePlex). The resulting display is a two-dimensional array with the devices on the x-axis and the reporting z/OS image on the y-axis.

To save space in the display, the column headings contain letters of the alphabet from "A" to "V" instead of actual z/OS system names. The end of the display contains a legend that matches the z/OS system name with the column heading letter. The maximum number of z/OS images that can be reported in the display is 22. Systems beyond that number will not appear in the response message.

Under each column heading, the device's status on that z/OS image is displayed in the same format as that found in message ATH041I, the result of the traditional "L" command. The status consists of a three-character field. Any special processing options appear in the first character field. The device's ATAM status appears in the second character field. The device's z/OS status appears in the third character field.

Syntax

To invoke this parameter, specify the major command (S) followed by ",M". The syntax and methods for using the "M" parameter are shown below. Please note that this parameter is mutually exclusive with the ",N=" parameter because "N" targets all systems in the TapePlex (i.e. defaults processing is "N=*"). If both parameters are specified, this will cause a command syntax error.

Table 49. Syntax for "M" parameter

Item	Description
Syntax	S,M
Parameter for displaying device matrix	S,M Use the "M" parameter to display all devices that are Selectable on at least one of the z/OS images in the TapePlex. This parameter cannot be specified with any other Select command parameters, such as those that change the state of ATAM's management of a device.

Note: For more information on the other parameters for the "S" command, refer to "The S command" on page 102.

Example

This example demonstrates the use of the "S" command with the "M" parameter, and the messages received as a result.

```
F ATHPROC,S,M
```

When you type the command above, you may see results like that shown below.

```
ATH441I DEVICE LIST MAP
UNIT  A  B  C  D  E  F  G
05A0  SF x0 x0 x0 x0 xF xF
05A1  SF x0 x0 x0 x0
05A2  SF x0 x0 x0 xF
05A3  SF x0 x0 x0 x0
05A4  SF x0 x0 x0 x0
05A5  SF x0 x0 x0 x0
05A6  SF x0 x0 x0 x0
05A7  SF x0 x0 x0 x0
05A8  SF x0 x0 x0 x0
05A9  SF x0 x0 x0 x0
05AA  SF x0 x0 x0 x0
05AB  SF x0 x0 x0 x0
05AC  SF x0 x0 x0 x0
05AD  SF x0 x0 x0 x0
05AE  SF x0 x0 x0 x0
05AF  SF x0 x0 x0 x0
A=SYSA
B=SYSB
C=SYSC
D=SYSD
E=SYSE
F=SYSF
G=SYSG
```

In this example, devices 05A0 through 05AF appear because they were the only devices found to be Selectable on at least one of the z/OS images in the TapePlex. If a device appears in the matrix because of the selected status, its status is reported for all z/OS images in the TapePlex. If the status field is blank, the device is not defined on that z/OS image.

The message returned by this command differs slightly from other ATAM command response messages in that the message number ATH441I only appears once, at the beginning of the message. As for all multi-line messages, the lines appear together in the log or on the console.

Related concepts:

"The S command" on page 102

Use the S command to display the current status of all of the tape units that ATAM is managing, which are the tape units that are marked as "selectable" to ATAM. With the S command, you can set or display the tape device addresses being managed by ATAM.

The P parameter

Use the "P" parameter with the S= command to exclude devices from any S=ALL or X=ALL processing.

Specifying ",P" with the "S=" and "X=" commands sets a flag in the device entry that prevents its manipulation by the ALL specification. Refer to the example below:

```
F ATAM,X=500,P      *Device 500 permanently excluded
F ATAM,S=501,P      *Device 501 permanently selectable
F ATAM,S=ALL        *Make all devices selectable, except device 500
F ATAM,X=ALL        *Exclude all devices from ATAM, except device 501
F ATAM,S=500        *Make device 500 selectable and reset "permanent" flag
F ATAM,X=501        *Exclude device 501 and reset "permanent" flag
```

When you specify the "P" parameter with the "S" command, the ATAM device status displays as follows:

```
ATH041I SYSA TAPE LIST: 0500+SF 0501+SF 0502+SF 0503+SF
```

The plus (+) between the device number and "SF" indicates that the device is permanently assigned and will not be processed as part of a S=ALL or X=ALL command.

You cannot specify the "P" parameter with any other "S" command parameters, such as "U" or "F".

The T parameter Purpose

The "T" parameter is used with the "S" and "X" commands to define a tier (rank) for device preferencing. Use tier-based preferencing to specify a value, from one to five, to "rank" the devices for consideration. A "Tier 1" device would be considered before devices with a tier of two, three, four, or five.

Note: If you want to use tier-based device preferencing, you must first set the "PD" command to TIER, as in PD=TIER. For information, refer to "The PD command" on page 138.

Examples

The examples below show how to use the "T" parameter with the Select command.

Table 50. Examples of "T" parameter in combination with Select command

Syntax	Description
F ATAM,S=xxxx-yyyy,T=x	The value of "x" can be one through five (1 - 5), with one being the highest tier and five being the lowest. In an allocation request, "tier 1" devices would be considered first, followed by "tier 2," "tier 3," etc. The devices "xxxx" through "yyyy" would all be assigned to the tier specified by the "T=x" value.
F ATAM,S=xxxx-yyyy,T	If the value of "x" is not specified, ATAM sets all of the devices to Tier 1.

Related concepts:

"The PD command" on page 138

Use the PD command to enable either location-based or tier-based preferencing of devices. You can also indicate that you do not want to use device preferencing.

The Location parameter

Purpose

The location parameter is used with the "S" and "X" commands to indicate whether devices are either local or remote. For example, you may have a group of tape devices residing in the same building as the processor while another group is located 20 miles away. For non-specific requests (scratch tapes), you may want to ensure that the devices in the same building (local) are considered first before the remote devices.

Note: If you want to use location-based device preferencing, you must first set the PD command to Location, as in PD=L. For information, refer to "The PD command" on page 138.

Examples

The examples below show how to use the "Local" and "Distant" parameters with the Select command.

Table 51. Examples of "Local" and "Distant" parameters in combination with Select command

Syntax	Description
F ATAM,S=xxxx-yyyy,D	Devices "xxxx" through "yyyy" are considered remote (distant) devices and are available for allocations only after ATAM reviews all of the eligible non-remote (local) devices.
F ATAM,S=xxxx-yyyy,L	Devices "xxxx" through "yyyy" are considered local devices, which is the default.

Related concepts:

"The PD command" on page 138

Use the PD command to enable either location-based or tier-based preferencing of devices. You can also indicate that you do not want to use device preferencing.

The U parameter

Use the U parameter with the S= command to exclude the devices from LRU and Random device selection. You can specify a single device (S=nnnn), a range of devices (S=nnnn-nnnn), or all devices (S=ALL).

The "U" parameter associated with the "S" command instructs ATAM to process the list of offline devices presented to its IEF_ALLC_OFFLN exit routine in the given order when the identified device appears in the list. ATAM operates by assigning managed tape devices through control it obtains via its z/OS Allocated and Offline Device (IEF_ALLC_OFFLN) exit routine. Allocation presents a list of acceptable offline devices that can resolve the allocation request. ATAM selects entries from this list in one of three ways:

Method of selection	Description
Top Down	ATAM chooses from the list in the presented order.
Random	ATAM randomly chooses devices from the list using the T8 value as a limiting threshold.
LRU	ATAM chooses from the list based upon Least-Recently-Used logic.

There are instances where z/OS allocation optimizes the list of devices presented to the IEF_ALLC_OFFLN exit to support device position relative to tape volume serial location. In these instances, it is not appropriate for ATAM to choose devices from this list in any way other than Top Down. However, this may not be the case for all tape devices in the data center.

Use the "U" parameter to identify a group of ATAM-managed tape devices that will not be assigned via the Random or LRU process. When a device defined as such appears in the offline device list of the IEF_ALLC_OFFLN exit, ATAM will choose a device using the Top Down method, regardless of the LRU command (LRU) or Random threshold (T8).

To set this value, enter the "S" command with the "U" parameter as follows:

Command	Description
F ATAM,S=0500-0503,U	Make devices 500 through 503 selectable, but not eligible for LRU or Random processing.
F ATAM,S=0500-0503	Make devices 500 through 503 selectable and eligible for LRU or Random processing. Use this version of the command to remove this specification.

When you specify the "U" parameter with the "S" command, the ATAM device status displays as follows:

```
ATH041I SYSA TAPE LIST: 0500-SF 0501-SF 0502-SF 0503-SF
```

The dash (-) between the device number and "SF" indicates that the device selection will not use Random or LRU processing if this device is in the offline device list.

You cannot specify the "U" parameter with any other "S" command parameters, such as "P" or "F".

Syntax and parameters for S command

This topic lists the variety of parameters and syntax that you can use with the "S" command.

The syntax and parameters for the "S" command are described in the table below.

Table 52. Syntax and parameters for S command

Item	Description
Syntax	S [={xxxx xxxx-yyyy ALL[,F ,P ,U]}[,N={sysid *}][,M]
Parameter for selecting one device	S=xxxx This parameter specifies that tape device address xxxx is to be managed by ATAM.

Table 52. Syntax and parameters for S command (continued)

Item	Description
Parameter for selecting a range of tape devices	S=xxxx-yyy This parameter indicates that ATAM is to manage tape device addresses in the range <i>xxxx</i> through <i>yyy</i>, inclusive. When you specify a range of tape units, such as S=0130-013F, ATAM looks at the low and high device addresses to ensure that these devices have already been discovered by ATAM. If not, the entire command is ignored. Note: Device addresses 0000 and FFFF are special values that will always be accepted. If you are unsure of the actual values on your system, specify a range that begins with 0000 or ends with FFFF. You could also use the S=ALL command to select all of the tape devices on your system.
Parameter for selecting all tape devices	S=ALL Select all of the tape devices available to ATAM at start up by using the ALL parameter.
Parameter for specifying a System ID	N=sysid Specifying a System ID (sysid) with the N parameter indicates that the command is to be sent to the specified System ID as defined in ATAM's configuration data set.
Parameter for all defined systems	N=* Use an asterisk (*) with the N parameter to send the command to all defined systems. The first word following the WTOid, as shown in the example in the next section, indicates which system the results are from.
Parameter for continuing range processing regardless of errors encountered	F Use the F parameter with the S=ALL and S=nnnn-nnnn commands to indicate that range processing should continue even if an error is encountered with a device.
Parameter for displaying a matrix of selectable devices	S,M Use the M parameter with the single S command (no equal sign after the "S") to display a matrix of all selectable devices across all z/OS images defined in the TapePlex.
Parameter for excluding devices from S/X=ALL processing	P Use the P parameter with the S= command to exclude devices from any S=ALL processing.
Parameter for excluding devices from LRU and Random device selection	U Use the U parameter with the S= command to exclude the devices from LRU and Random device selection. You can specify a single device (S=nnnn), a range of devices (S=nnnn-nnnn), or all devices (S=ALL).

The S command - Example #1

The following example shows how you use the Selectable (S) command to list the status of all selectable tape units.

```
F ATHPROC,S
```

When you type the command above, you may see results like that shown below. Keep in mind that the first word following the WTO ID indicates which system the results are from. The system is SYSA in the example below.

```
ATH106I COMMAND ACCEPTED
ATH018I STATUS CHANGE RESULTS DISPLAY
ATH041I SYSA TAPE LIST: 0280 SF 0281 SF 0282 SF 0283 SF
ATH041I SYSA TAPE LIST: 0284 SF 0285 SF 0286 SF 0287 SF
ATH041I SYSA TAPE LIST: 0288 SF 0289 SF 028A SF 028B SF
ATH041I SYSA TAPE LIST: 028C SF 028D SF 028E SF 028F SF
ATH041I SYSA TAPE LIST: 0290 SF 0291 SF 0292 SF 0293 SF
ATH041I SYSA TAPE LIST: 0294 SF 0295 SF 0296 SF 0297 SF
ATH041I SYSA TAPE LIST: 0298 SF 0299 SF 029A SF 029B SF
ATH041I SYSA TAPE LIST: 029C SF 029D SF 029E SF 029F SF
ATH107I COMMAND SUCCESSFUL
```

The S command - Example #2

This example shows how to specify that ATAM is to manage device address "28D":

```
F ATHPROC,S=28D
```

Expected results:

```
ATH106I COMMAND ACCEPTED
ATH018I STATUS CHANGE RESULTS DISPLAY
ATH041I SYSA TAPE LIST: 028D SF
ATH107I COMMAND SUCCESSFUL
```

The S command - Example #3

This example instructs the ATAM started task, running on all defined systems (N=*), to begin managing device addresses "280" through "283":

```
F ATHPROC,S=280-283,N=*
```

Expected results:

```
ATH106I COMMAND ACCEPTED
ATH018I STATUS CHANGE RESULTS DISPLAY
ATH041I SYSA TAPE LIST: 0280 SF 0281 SF 0282 SF 0283 SF
ATH041I SYSB TAPE LIST: 0280 SF 0281 SF 0282 SF 0283 SF
ATH041I SYSC TAPE LIST: 0280 SF 0281 SF 0282 SF 0283 SF
ATH041I SYSD TAPE LIST: 0280 SF 0281 SF 0282 SF 0283 SF
ATH107I COMMAND SUCCESSFUL
```

The S command - Example #4

This example instructs ATAM to manage all of the tape devices that were discovered when ATAM started:

```
F ATHPROC,S=ALL
```

Expected results:

```
ATH106I COMMAND ACCEPTED
ATH018I STATUS CHANGE RESULTS DISPLAY
ATH041I SYSA TAPE LIST: 0280 SF 0281 SF 0282 SF 0283 SF
ATH041I SYSA TAPE LIST: 0284 SF 0285 SF 0286 SF 0287 SF
ATH041I SYSA TAPE LIST: 0288 SF 0289 SF 028A SF 028B SF
ATH041I SYSA TAPE LIST: 028C SF 028D SF 028E SF 028F SF
ATH041I SYSA TAPE LIST: 0290 SF 0291 SF 0292 SF 0293 SF
ATH041I SYSA TAPE LIST: 0294 SF 0295 SF 0296 SF 0297 SF
ATH041I SYSA TAPE LIST: 0298 SF 0299 SF 029A SF 029B SF
ATH041I SYSA TAPE LIST: 029C SF 029D SF 029E SF 029F SF
ATH107I COMMAND SUCCESSFUL
```

The S command - Example #5

This example instructs ATAM to select all of the tape devices on the system, then exclude one device address. The following command shows how to select all of the tape devices on the system:

```
F ATHPROC,S=ALL          *SELECT ALL TAPE DEVICES ON THE SYSTEM
```

Expected results:

```
ATH106I COMMAND ACCEPTED
ATH018I STATUS CHANGE RESULTS DISPLAY
ATH041I SYSA TAPE LIST: 0280 SF 0281 SF 0282 SF 0283 SF
ATH041I SYSA TAPE LIST: 0284 SF 0285 SF 0286 SF 0287 SF
ATH041I SYSA TAPE LIST: 0288 SF 0289 SF 028A SF 028B SF
ATH041I SYSA TAPE LIST: 028C SF 028D SF 028E SF 028F SF
ATH041I SYSA TAPE LIST: 0290 SF 0291 SF 0292 SF 0293 SF
ATH041I SYSA TAPE LIST: 0294 SF 0295 SF 0296 SF 0297 SF
ATH041I SYSA TAPE LIST: 0298 SF 0299 SF 029A SF 029B SF
ATH041I SYSA TAPE LIST: 029C SF 029D SF 029E SF 029F SF
ATH107I COMMAND SUCCESSFUL
```

The following command shows how to exclude one device on the system:

```
F ATHPROC,X=0280          *EXCLUDE ONE DEVICE (0280)
```

Expected results:

```
ATH106I COMMAND ACCEPTED
ATH018I STATUS CHANGE RESULTS DISPLAY
ATH041I SYSA TAPE LIST: 0280 xF
ATH107I COMMAND SUCCESSFUL
```

Usage Considerations

This topic describes how ATAM handles any issues that occur while using the "S" command.

If you are using S=ALL or S=xxxx-yyyy and ATAM encounters a problem with one of the devices, it pauses at that point and notifies you of the problem. For example, if a device is not physically connected so it cannot be brought online, a message displays to inform you of a problem.

An example of the message is shown below, then an "L" command is implemented to show the list of devices. You can see that device 0560, which was mentioned as unselectable in the message, also shows up as unselectable in the list:

```
F ATHPROC,S=ALL
ATH106I COMMAND ACCEPTED
ATH029W DEVICE 32108003 ON UNIT 0560 UNSELECTABLE
ATH108W COMMAND COMPLETED WITH ERRORS
F ATHPROC,L

ATH041I RS25 TAPE LIST: 0500 SF 0501 SF 0502 SF 0503 SF
ATH041I RS25 TAPE LIST: 0530 SF 0531 SF 0560 UF 0561 UF
ATH041I RS25 TAPE LIST: 05A0 x0 05A1 x0 05A2 x0 05A3 x0
ATH041I RS25 TAPE LIST: 05A4 x0 05A5 x0 05A6 x0 05A7 x0
ATH041I RS25 TAPE LIST: 05A8 x0 05A9 x0 05AA x0 05AB x0
ATH041I RS25 TAPE LIST: 05AC x0 05AD x0 05AE x0 05AF x0
ATH041I RS25 TAPE LIST: 05B0 x0 05B1 x0 05B2 x0 05B3 x0
ATH041I RS25 TAPE LIST: 05B4 x0 05B5 x0 05B6 x0 05B7 x0
ATH041I RS25 TAPE LIST: 05B8 x0 05B9 x0 05BA x0 05BB x0
ATH041I RS25 TAPE LIST: 05BC x0 05BD x0 05BE x0 05BF x0
```

The *T* command

Use the *T* command to display or modify ATAM configuration parameters.

There are eight "T" parameters that you can adjust as needed. Most of these parameters are related to internal timing algorithms. Modifying configuration parameters should not be done without consulting ATAM Technical Support.

Note: Each time that ATAM is started, regardless of the presence or contents of the ATAM Commands member, ATAM displays the current setting of the configuration parameters for your review. If you currently specify these commands in your ATAM Commands member, you no longer need to do so unless you want to validate the results of any Select commands that are in the Commands member.

When the *T* command is used alone, meaning without any command parameters, it causes ATAM to display the current settings for all of the parameters. The configuration parameters are:

- T1** Offline Unit Polling Interval
- T2** Online Unit Polling Interval
- T3** Online Unit Iteration Count
- T4** Reconfiguration Termination Limit
- T5** Vary Online Wait Time
- T6** Vary Online Maximum Attempts
- T7** Device bidding Wait Time
- T8** Randomization Threshold

Table 53. Syntax and parameters for T command

Item	Description
Syntax	T[z=nnn][,N={sysid *}]
Parameters	z=nnn This parameter assigns a new value of <i>nnn</i> to the tuning parameter <i>z</i>, where <i>z</i> is a number. N=sysid Specifying a System ID (sysid) with the "N" parameter indicates that the command is to be sent to the specified System ID as defined in ATAM's configuration data set. N=* Use an asterisk (*) with the "N" parameter to send the command to all defined systems.

Two examples show you how to use the parameters with the *T* command. Select an example from the list below.

- "The *T* command - Example #1" on page 115
- "The *T* command - Example #2" on page 115

The T command - Example #1

The following example shows how you how to display the current settings of ATAM tuning parameters:

```
F ATHPROC,T
```

When you type the command above, you may see results like that shown below.

```
ATH045I TIMES: T1=060, T2=060, T3=005, T4=015
ATH045I TIMES: T5=030, T6=020, T7=000, T8=008
```

The T command - Example #2

This example shows how to dynamically assign a value of 30 seconds to the T1 tuning parameter, which is the Offline Unit Polling Interval.

```
F ATHPROC,T1=30
```

When you type the command above, the T1 value is changed to 30, as shown in the results below:

```
ATH045I TIMES: T1=030, T2=060, T3=005, T4=015
ATH045I TIMES: T5=030, T6=020, T7=000, T8=008
```

The U command

Use the *U* command to create an SVC Dump of ATAM's address space.

With this command, you can create an SVC Dump of the ATAM address space. Also use the *U* operator command with the **ASID** sub-parameter to dump another address space along with the ATAM address space.

The syntax and parameters for the *U* command are described in the table below.

Table 54. Syntax and parameters for U command

Item	Description
Syntax	U[=xxxx]
Parameters	=xxxx This parameter instructs ATAM to create an SVC Dump of the ATAM address space and the address space identified by its hexadecimal representation <i>xxxx</i> . If you have z/OS® System Display and Search Facility (SDSF), obtain the hexadecimal ASID from the ASIDX column of the Display Active (DA) Option.

The U command - Example #1

This example shows how to obtain an SVC Dump of the ATAM Address Space. Type the *U* command without any parameters as follows:

```
F ATHPROC,U
```

After issuing this command, z/OS MVS issues messages consistent with SVC Dump creation.

The U command - Example #2

This example shows how to use the *U* command to obtain an SVC Dump of the ATAM Address Space and an address space with a hexadecimal ASID value of "006F". To do so, type the following:

F ATHPROC,U=006F

After issuing this command, z/OS MVS issues messages consistent with SVC Dump creation.

Note: Only use this command at the request of IBM Technical Support. Once obtained, send the SVC Dump to IBM Technical Support.

The V command

Use the *V* command to display the current version number for ATAM.

If an active ATH#VALD volume preference table exists, the *V* command will also indicate that a volume preferencing exit is installed, and will display a table that includes a line for each entry in the ATH#VALD table.

The syntax and parameters for the *V* command are described in the table below.

Table 55. Syntax and parameters for V command

Item	Description
Syntax	V[,N={sysid *}]
Parameters	V This command displays the current version number for ATAM. In addition, if a volume preferencing exit is installed, ATAM will display a table of entries in the ATH#VALD table. V,N=sysid Specifying a System ID (sysid) with the "N" parameter indicates that the command is to be sent to the specified System ID as defined in ATAM's configuration data set. V,N=* Use an asterisk (*) with the "N" parameter to send the command to all defined systems.

Example

The following example shows how you use the Version (V) command to display the current version number for ATAM.

F ATHPROC,V

When you type the *V* command, you will see results like this, assuming there is no volume preference table to display:

ATH001I ATAM - ACTIVE MODE - VERSION V2R02M00

If there is a volume preferencing exit, the rows in the table will display along with other messages as shown below:

ATH001I ATAM - ACTIVE MODE - VERSION V2R02M00
ATH160I VOLUME PREFERENCING EXIT INSTALLED
ATH161I -- VOLSER --- --- UCB ---
ATH162I HIGH LOW HIGH LOW
ATH163I AAAAAA 999999 0000 FFFF

The W Command

Use the *W* command to specify a message that ATAM is to automatically respond to for messages that contain device type information.

This capability is specifically for allocation attempts that do not consider offline devices. The message must contain an esoteric identifying the device type needed to resolve the allocation. ATAM retrieves the esoteric from the message and uses this information to vary an appropriate device online. After doing so, ATAM will reply to the message using a value specified in the *W* command.

Table 56. Syntax and parameters for W command

Item	Description
Syntax	W=msgid,reply,offset[,J=jobname] W=msgid,I=nnn W=msgid,A=nnn

Table 56. Syntax and parameters for W command (continued)

Item	Description
Parameters	msgid This parameter is the unique message number you want to monitor. The maximum number of characters allowed for the "msgid" is 11. reply This parameter is the exact text that ATAM is to use when replying to the message. The maximum number of characters allowed for the reply is 11. offset This parameter is the exact location, starting with the first character in the message ID, where ATAM can find the unit ID of the target tape. The offset number must be in the range of 1 - 127. J= Optionally, add this parameter to assign response behavior to a specific job name. This is useful for situations where different jobs require different responses to a WTOR. For example, relative to ATAM processing, HSM may need a CANCEL response to the IEF238D WTOR, while all other jobs need a WAIT response. Without the "J" parameter, the MSGID response applies to all jobs. I=nnn Use the "I" parameter to inactivate a specific MSGID from ATAM WTOR scanning. When the MSGID is inactivated, ATAM continues to detect the WTOR, but ATAM either no longer responds to it or suspends ATAM VARY processing (e.g. ATH085I message) while the WTOR is outstanding. The <i>nnn</i> variable is the three-digit number (ID) assigned to the MSGID when added to ATAM. The ID number can be found by displaying the active MSGID list using the following command: <pre>F ATAM,W ATH057I WTOR QUEUE SCANNING IS ACTIVE ATH073I ID STATUS MESSAGE REPLY TEXT OFFSET UNIT JOBNAME ATH051I 003 ACTIVE ATH101D W 81 Y ATH051I 002 ACTIVE IEF433D NOHOLD 17 N ATH051I 001 INACTIVE IEF238D WAIT 17 N</pre> You must specify the MSGID and ID number when you specify the "W" command with the "I" parameter. For example, to inactivate ATH101D, which has an ID of 003, you would enter the following command: <pre>F ATAM,W=ATH101D,I=003</pre>

The next table describes additional parameter for this command.

Table 57. Syntax and parameters for W command (continued)

Item	Description
Parameters (continued)	A=nnn Use the "A" parameter to activate a specific MSGID that has previously been inactivated. The <i>nnn</i> variable is the three-digit number assigned to the MSGID when added to ATAM. The number can be found by displaying the active MSGID list using the following command: <pre>F ATAM,W</pre> <pre>ATH057I WTOR QUEUE SCANNING IS ACTIVE ATH073I ID STATUS MESSAGE REPLY TEXT OFFSET UNIT JOBNAME ATH051I 003 ACTIVE ATH101D W 81 N ATH051I 002 ACTIVE IEF433D NOHOLD 17 N ATH051I 001 INACTIVE IEF238D WAIT 17 N</pre> You must specify the MSGID and ID number when you specify the "W" command with the "A" parameter. For example, to re-activate ATH101D, which has an ID of 003, you would enter the following command: <pre>F ATAM,W=ATH101D,A=003</pre>

The W command - Example #1

When the W command is used alone, meaning without any parameters, ATAM displays the current list of WTORs that are being monitored for an automated response. An example is shown below:

```
F ATHPROC,W
```

When you type this command, messages similar to the following are displayed:

```
ATH048I  COMMANDS  MEMBER  ATHCMD00  ISSUED  R=ATH101D,W,81
ATH057I  WTOR  QUEUE  SCANNING  IS    ACTIVE  994
ATH073I   STATUS  MESSAGE  ID      REPLY  TEXT    OFFSET
ATH051I   ACTIVE  ATH101D   W              81
ATH051I   ACTIVE  IEF433D   NOHOLD          17
ATH051I   ACTIVE  IEF238D   WAIT           17
```

The W command - Example #2

This example shows how to use the message ID, reply, and offset parameters with the W command.

```
F ATHPROC,W=XYZ5373I,R,57
```

Now look at the sample XYZ5373I message below:

```
-----+-----1-----+-----2-----+-----3-----+-----4-----+-----5-----+
XYZ5373I  Unable to allocate tape drive with device type device
ID for tape volume ID. Reply 'C' (cancel), 'R' (retry), or 'W'
(wait).
```

Referring to the sample message and command above, when ATAM encounters message XYZ5373I, ATAM will issue the following message:

```
ATH090I  ESOTERIC device ID DETECTED IN WTOR XYZ5373I FOR REPLY ID nnnn
```

It will then use the device ID to determine if it is managing any devices of that type. If it is, ATAM will attempt to vary one of these devices online. If it fails, ATAM continues trying all of the ATAM-managed devices of this type.

If ATAM is able to vary a device online, ATAM issues this message:

ATH091I UNIT MADE AVAILABLE AND REPLY ISSUED TO WTOR

If ATAM is unable to vary a device online, ATAM issues this message:

ATH092I NO DEVICE AVAILABLE TO SATISFY WTOR REQUEST

ATAM will reply with an "R" to the outstanding WTOR if ATAM is able to vary a device online.

The W command - Example #3

Look at the command below.

F ATAM, W=ANR5373I,R,50,J=TSM

This example tells ATAM to respond with an "R" and a valid device each time TSM encounters an ANR5373I message as a result of ATAM processing. In response to the "W" command, ATAM displays the following information:

```
ATH057I WTOR QUEUE SCANNING IS ACTIVE
ATH073I ID      STATUS MESSAGE      REPLY TEXT  OFFSET UNIT  JOBNAME
ATH051I 005    ACTIVE ANR5373I      R           50   Y   TSM
ATH051I 004    ACTIVE IEF238D      CANCEL      17   N   HSM
ATH051I 003    ACTIVE ATH101D      W           81   N
ATH051I 002    ACTIVE IEF433D      NOHOLD      17   N
ATH051I 001    ACTIVE IEF238D      WAIT        17   N
```

The X command

Use the X command to prevent ATAM from managing a device that was previously selected.

When ATAM is started, it automatically discovers all of the tape devices on the system and builds a table in memory of the addresses it has discovered. ATAM will, by default, *exclude* all of the devices in the table before any commands in the Commands member are processed. This is done to ensure that you have total control over which devices you want ATAM to manage.

You must use the Select (S) command (and parameters) in the Commands member to specify which device(s) you want ATAM to manage at start up. Use the exclude (X) command if you want to prohibit ATAM from managing a previously selected device.

The F parameter

The "F" parameter associated with the "X" command indicates that ATAM should continue range processing regardless of errors encountered. This parameter is implemented by using ",F" parameter syntax with the X=ALL or X=nnnn-nnnn command.

Other topics provide examples of how the "X" command works with the "F" parameter, without the "F" parameter, and in combination with the "F" parameter and global commands.

Example without F parameter

This example shows the use of an "X" command without an "F" parameter.

Command:

F ATHPROC,X=560-561

In this case, the command stops at the first error and does not continue processing the next device in the range.

Example with F parameter

This example shows the use of an "X" command with an "F" parameter.

Command:

```
F ATHPROC,X=560-561,F
```

In this case, if the command fails for a device in the range, processing continues against the next device in the range.

Example with F parameter and global command

This example shows the use of an "X" command with an "F" parameter, and also with an "N" parameter to indicate a global command.

Command:

```
F ATHPROC,X=560-561,F,N=SYSB
```

Any error messages are issued on the remote systems, but are not returned to the requesting system. The requesting system only receives notification that the command completed, but with errors (e.g. ATH108W). Without the "F" parameter, range processing stops at the first error.

The J parameter

Purpose

The "J" parameter is used with the "S" and "X" commands to define a job name for device preferencing. Job-based preferencing directs a job (or group of jobs) to a specific set of devices, either through excluding (X=) or including (S=) devices. In addition, job-based preferencing can be exclusive, required, or general.

- *General* means that the job defined in the preference will be directed to use the indicated devices first, if available. If not available, the job will use other devices. The default is General, meaning neither "E" nor "R" is specified.
- *Exclusive* means only the job defined in the preference can use the device; it will be excluded from all other requestors. The syntax for "exclusive" is ",E".
- *Required* means the job defined in the preference will use only that device, but the device is available to other requestors. The syntax for "required" is ",R".

Syntax

The table below shows how to use the "J" parameter in combination with the Select (S) and Exclude (X) commands.

Table 58. Examples of "J" parameter with "S" and "X" commands

Syntax	Description
F ATAM,S=xxxx-yyyy,J=jobname	The <i>jobname</i> prefers assignment to devices "xxxx" through "yyyy" but may use other devices. Any other jobs may use these devices.
F ATAM,S=xxxx-yyyy,J=jobname,E	Only <i>jobname</i> can be assigned to devices "xxxx" through "yyyy" and no other jobs may use these devices.

Table 58. Examples of "J" parameter with "S" and "X" commands (continued)

Syntax	Description
F ATAM,S=xxxx-yyyy,J=jobname,R	The <i>jobname</i> can only be assigned to devices "xxxx" through "yyyy" but others may use those devices.
F ATAM,X=xxxx-yyyy,J=jobname	The <i>jobname</i> is excluded from using devices "xxxx" through "yyyy" but may use other devices. Any other jobs may use these devices.
F ATAM,S=ALL,J=jobname	The <i>jobname</i> can use any device, which means the job is removed from any previously established job preferencing.

The P parameter

The "P" parameter associated with the "X" command indicates that ATAM should exclude devices from the S=ALL or X=ALL processing. Specifying ",P" with the "S=" or "X=" command sets a flag in the device entry that prevents its manipulation by the ALL specification. Refer to the example below:

```
F ATAM,X=500,P    *Device 500 permanently excluded
F ATAM,S=501,P    *Device 501 permanently selectable
F ATAM,S=ALL      *Make all devices selectable, except device 500
F ATAM,X=ALL      *Exclude all devices from ATAM, except device 501
F ATAM,S=500      *Make device 500 selectable and reset "permanent" flag
F ATAM,X=501      *Exclude device 501 and reset "permanent" flag
```

Syntax and parameters for X command

The syntax and parameters for the "X" command are described in the table below.

Table 59. Syntax and parameters for X command

Item	Description
Syntax	X={xxxx xxxx-yyyy ALL}[,F ,J ,O ,P][,N={sysid *}]
Parameter for excluding one device	X=xxxx This parameter identifies the single, specific device address that you do not want ATAM to manage.
Parameter for excluding a range of devices	X=xxxx-yyyy This parameter specifies a range of device addresses that you do not want ATAM to manage. When you specify a range of tape units, such as X=0130-013F, ATAM looks at the low and high device addresses to ensure that these devices have already been discovered by ATAM. If not, the entire command is ignored. Note: Device addresses 0000 and FFFF are special values that will always be accepted. If you are unsure of the actual values on your system, specify a range that begins with 0000 or ends with FFFF.
Parameter to exclude all tape devices	X=ALL Exclude all of the tape devices available to ATAM at start up by using the ALL parameter.

Table 59. Syntax and parameters for X command (continued)

Item	Description
Parameter for continuing range processing regardless of errors encountered	F Use the F parameter with the X=ALL and X=nnnn-nnnn commands to indicate that range processing should continue even if an error is encountered with a device.
Parameter for excluding the use of a device for a specific job	J=jobname Use the J parameter with the X=nnnn-nnnn command to prohibit the specified job from using the devices listed in the Exclude command.
Parameter for excluding devices on one or more System IDs	N=sysid Specifying a System ID (sysid) with the "N" parameter indicates that the command is to be sent to the specified System ID as defined in ATAM's configuration data set. N=* Use an asterisk (*) with the "N" parameter to send the command to all defined systems.
Parameter for varying a device offline	0 This optional parameter indicates that you want ATAM to issue a <i>vary offline</i> request for the specified device(s).
Parameter for excluding devices from S/X=ALL processing	P Use the P parameter with the X= command to exclude devices from any X=ALL processing.

The X command - Example #1

The following example instructs ATAM *not* to manage device address 28D:

```
F ATHPROC,X=28D
```

Expected results:

```
ATH106I COMMAND ACCEPTED
ATH018I STATUS CHANGE RESULTS DISPLAY
ATH041I SYSA TAPE LIST: 028D x0
ATH107I COMMAND SUCCESSFUL
```

The X command - Example #2

This example shows how to remove four devices from ATAM's control:

```
F ATHPROC,X=280-283
```

Expected results:

```
ATH106I COMMAND ACCEPTED
ATH018I STATUS CHANGE RESULTS DISPLAY
ATH041I SYSA TAPE LIST: 0280 x0 0281 x0 0282 x0 0283 x0
ATH107I COMMAND SUCCESSFUL
```

The X command - Example #3

This example specifies that ATAM is not to manage device 28E (X=28E) on the current MVS system, and requests that an attempt be made to place the drive offline (O):

```
F ATHPROC,X=28E,0
```

Expected results:

```
ATH106I COMMAND ACCEPTED
ATH018I STATUS CHANGE RESULTS DISPLAY
ATH041I SYSA TAPE LIST: 028E xF
ATH107I COMMAND SUCCESSFUL
```

The X command - Example #4

This example specifies that ATAM is not to manage device 28E (X=28E) on any MVS system (N=*), and requests that an attempt be made to place the drive offline (O):

```
F ATHPROC,X=28E,0,N=*
```

Expected results:

```
ATH106I COMMAND ACCEPTED
ATH018I STATUS CHANGE RESULTS DISPLAY
ATH041I SYSA TAPE LIST: 028E xF
ATH041I SYSB TAPE LIST: 028E xF
ATH041I SYSC TAPE LIST: 028E xF
ATH041I SYSD TAPE LIST: 028E xF
ATH107I COMMAND SUCCESSFUL
```

The X command - Example #5

This example instructs ATAM to exclude all of the devices that ATAM discovered at start up:

```
F ATHPROC,X=ALL *EXCLUDE ALL DEVICES ON THE SYSTEM
```

Expected results:

```
ATH106I COMMAND ACCEPTED
ATH018I STATUS CHANGE RESULTS DISPLAY
ATH041I SYSA TAPE LIST: 0280 x0 0281 x0 0282 x0 0283 x0
ATH041I SYSA TAPE LIST: 0284 x0 0285 x0 0286 x0 0287 x0
ATH041I SYSA TAPE LIST: 0288 x0 0289 x0 028A x0 028B x0
ATH041I SYSA TAPE LIST: 028C x0 028D x0 028E x0 028F x0
ATH041I SYSA TAPE LIST: 0290 x0 0291 x0 0292 x0 0293 x0
ATH041I SYSA TAPE LIST: 0294 x0 0295 x0 0296 x0 0297 x0
ATH041I SYSA TAPE LIST: 0298 x0 0299 x0 029A x0 029B x0
ATH041I SYSA TAPE LIST: 029C x0 029D x0 029E x0 029F x0
ATH107I COMMAND SUCCESSFUL
```

NOTE: By default, ATAM automatically excludes all of the tape devices that are discovered at start up. However, if you included an S=ALL command in the Commands member to select all of the devices, you could "re-exclude" them later by using the X=ALL command shown in this example.

The X command - Example #6

This example instructs ATAM to manage all of the tape devices on the system, then exclude one device address.

The following command shows how to select all of the tape devices on the system:

```
F ATHPROC,S=ALL *SELECT ALL TAPE DEVICES ON THE SYSTEM
```

Expected results:

```
ATH106I COMMAND ACCEPTED
ATH018I STATUS CHANGE RESULTS DISPLAY
ATH041I SYSA TAPE LIST: 0280 SF 0281 SF 0282 SF 0283 SF
```

```

ATH041I SYSA TAPE LIST: 0284 SF 0285 SF 0286 SF 0287 SF
ATH041I SYSA TAPE LIST: 0288 SF 0289 SF 028A SF 028B SF
ATH041I SYSA TAPE LIST: 028C SF 028D SF 028E SF 028F SF
ATH041I SYSA TAPE LIST: 0290 SF 0291 SF 0292 SF 0293 SF
ATH041I SYSA TAPE LIST: 0294 SF 0295 SF 0296 SF 0297 SF
ATH041I SYSA TAPE LIST: 0298 SF 0299 SF 029A SF 029B SF
ATH041I SYSA TAPE LIST: 029C SF 029D SF 029E SF 029F SF
ATH107I COMMAND SUCCESSFUL

```

The following command shows how to exclude one device on the system:

```
F ATHPROC,X=0280          *EXCLUDE ONE DEVICE (0280)
```

Expected results:

```

ATH106I COMMAND ACCEPTED
ATH018I STATUS CHANGE RESULTS DISPLAY
ATH041I SYSA TAPE LIST: 0280 x0
ATH107I COMMAND SUCCESSFUL

```

The *DDR* Command

Use the *DDR* command to indicate whether you want ATAM to monitor for occurrences of DDR swaps and report on whether they involve ATAM managed devices.

With the DDR option enabled, ATAM reports via a message whenever a tape device is involved in a DDR Swap. The message indicates the source and target volumes and identifies whether these volumes are managed by ATAM.

Table 60. Syntax and parameters for DDR command

Item	Description
Syntax	DDR [={Y N}][,N={sysid *}]
Parameters	DDR This command, without any parameters, displays the status of the DDR option. DDR=Y This parameter sets the DDR option to "on". DDR=N This parameter sets the DDR option to "off". N=sysid Specifying a System ID (sysid) with the "N" parameter indicates that the command is to be sent to the specified System ID as defined in ATAM's configuration data set. N=* Use an asterisk (*) with the "N" parameter to send the command to all defined systems.

Three examples show you how to use the parameters with the DDR command. Select an example from the list below.

- "Example #1" on page 126
- "Example #2" on page 126
- "Example #3" on page 126

DDR Option Processing

When the ATAM DDR monitoring option is activated, it issues the following message each time a DDR Swap occurs.

```
ATH461I DDR SWAP FROM uuuu(n) TO uuuu(n) DETECTED
```

The message indicates the source and target of the DDR Swap operation and the state of the devices involved in the operation, relative to ATAM. If a device is selectable, *n* will be replaced with "s". If a device is excluded, *n* will be replaced with "x".

Example #1

This example shows how to use the DDR command to display the current status of the DDR option. Simply issue the DDR command without any parameter.

```
F ATHPROC,DDR
```

ATAM issues the following message in response to the above command if the DDR option's current status is "off".

```
ATH098I DDR OPTION IS NO
```

ATAM issues the following message in response to the above command if the DDR option's current status is "on."

```
ATH098I DDR OPTION IS YES
```

Example #2

This example shows how to use the DDR command to activate the ATAM DDR monitoring option. Issue the DDR option with the "Y" parameter as described below.

```
F ATHPROC,DDR=Y
```

ATAM issues the following message in response to the above command.

```
ATH098I DDR OPTION IS YES
```

Example #3

This example shows how to use the DDR command to deactivate the ATAM DDR monitoring option. Issue the DDR option with the "N" parameter as described below.

```
F ATHPROC,DDR=N
```

ATAM issues the following message in response to the above command.

```
ATH098I DDR OPTION IS NO
```

The *EXITCOMPAT* command

Use the *EXITCOMPAT* command to indicate whether ATAM should perform exit processing, even if another (non-ATAM) exit exists.

When using ATAM, you will want to know if ATAM is the only product requiring an exit routine or if there are other vendors' products competing for the same exit routine, causing unpredictable results. ATAM issues the following messages during product initiation if multiple exit routines are found on the MVS recovery allocation exit, IEF_ALLC_OFFLN.

```
ATH016W RESULTS MAY BE UNPREDICTABLE. MULTIPLE EXIT ROUTINES DETECTED.
```

```

ATH012I IEF_ALLC_OFFLN EXIT DETECTED: <module name> STATE: <state>
ATH241W EXITCOMPAT=N AND OTHER IEF_ALLC_OFFLN EXIT(S) DETECTED. ATH#ALOC IS
DISABLED.

```

These messages tell you that the default mode of operation is to disable ATAM's exit processing because ATAM found another installed exit. You can include the EXITCOMPAT=Y command in the ATAM Commands member to override this behavior and activate ATAM's exit processing.

When you use the EXITCOMPAT command alone, without any parameters, ATAM displays the status of the exit setting. The parameters allow you to change the exit setting, as described below.

Table 61. Syntax and parameters for EXITCOMPAT command

Item	Description
Syntax	EXITCOMPAT [= {Y N}] [,N={sysid *}]
Parameters	Y This parameter indicates that you want to use ATAM's exit (turns on exit compatibility) for processing allocation requests. N This parameter indicates that you want the ATAM exit to be disabled (turns off exit compatibility) due to the presence of a non-ATAM exit routine. This does not disable ATAM tape management. For devices defined to ATAM as selectable, ATAM will continue to vary them offline when it detects they are online and unallocated. N=sysid Specifying a System ID (sysid) with the "N" parameter indicates that the command is to be sent to the specified System ID as defined in ATAM's configuration data set. N=* Use an asterisk (*) with the "N" parameter to send the command to all defined systems.

Several examples are provided to help you use the EXITCOMPAT command correctly.

The EXITCOMPAT command - Example #1

The following example displays the current exit setting:

```
F ATHPROC,EXITCOMPAT
```

The EXITCOMPAT command - Example #2

The following sequence of messages indicates that ATAM detected other IEF_ALLC_OFFLN exit routines besides its own and lists the first of these exits detected in message ATH012I. The sequence also indicates that the EXITCOMPAT=N command was previously entered and that ATAM has disabled its IEF_ALLC_OFFLN exit routine:

```

ATH016W RESULTS MAY BE UNPREDICTABLE. MULTIPLE EXIT ROUTINES DETECTED.
ATH012I IEF_ALLC_OFFLN EXIT DETECTED: <module name> STATE: <state>
ATH074I EXITCOMPAT OPTION IS NO
ATH241W OTHER IEF_ALLC_OFFLN EXIT(S) DETECTED, ATH#ALOC IS DISABLED.

```

The EXITCOMPAT command - Example #3

This example shows how to turn off the exit compatibility and displays the new setting:

```
F ATHPROC,EXITCOMPAT=N
```

Results

Entering the EXITCOMPAT command in its various forms will always result in ATAM issuing the ATH074I message. However, ATAM will accompany this message with other messages describing the state of the ATAM IEF_ALLC_OFFLN exit routine and the information about other exit routines at this exit point. See the following examples.

Example #1

The following sequence of messages indicates that the EXITCOMPAT=N command was previously entered and currently additional IEF_ALLC_OFFLN exit routines have caused ATAM to disable its IEF_ALLC_OFFLN exit routine:

```
ATH074I EXITCOMPAT OPTION IS NO
ATH241W OTHER IEF_ALLC_OFFLN EXIT(S) DETECTED, ATH#ALOC IS DISABLED.
```

Example #2

The following sequence of messages indicates that ATAM detected other IEF_ALLC_OFFLN exit routines besides its own and lists the first of these exits detected in message ATH012I. The sequence also indicates that the EXITCOMPAT=N command was previously entered and that ATAM has disabled its IEF_ALLC_OFFLN exit routine:

```
ATH016W RESULTS MAY BE UNPREDICTABLE. MULTIPLE EXIT ROUTINES DETECTED.
ATH012I IEF_ALLC_OFFLN EXIT DETECTED: <module name> STATE: <state>
ATH074I EXITCOMPAT OPTION IS NO
ATH241W OTHER IEF_ALLC_OFFLN EXIT(S) DETECTED, ATH#ALOC IS DISABLED.
```

Example #3

The following sequence of messages indicates that the EXITCOMPAT=Y command was previously entered and currently the ATAM IEF_ALLC_OFFLN exit routine is enabled:

```
ATH074I EXITCOMPAT OPTION IS YES
ATH242I IEF_ALLC_OFFLN EXIT ATH#ALOC IS ENABLED
```

The GCTASK command

Use the GCTASK operator command to enable and disable ATAM global command processing (global command tasks).

With the GCTASK command, you can re-establish ATAM global command processing if it failed due to a TCPIP shutdown or due to some other TCPIP error. You can also use this command to disable global command processing on an ATAM-configured z/OS image.

Table 62. Syntax and parameters for GCTASK command

Item	Description
Syntax	GCTASK[={E D}]

Table 62. Syntax and parameters for GCTASK command (continued)

Item	Description
Parameters	The GCTASK command by itself, without any parameters, displays the status of the global command tasks. E This parameter enables the global command tasks. D This parameter disables and terminates the global command tasks.

Several examples are provided to help you understand how to use the GCTASK command.

The GCTASK command - Example #1

This example shows how to use the GCTASK command to display the current status of the global command tasks. Type the GCTASK command without any parameters as shown below:

```
F ATHPROC,GCTASK
```

A message will display that indicates whether the global command tasks are active:

```
ATH075I TCP COMMUNICATION TASKS ARE ENABLED
```

The GCTASK command - Example #2

This example shows how to use the GCTASK command to re-establish global command tasks that have previously stopped. To re-establish global command processing, type the following:

```
F ATHPROC,GCTASK=E
```

The following messages will display to indicate the new status of the global command tasks:

```
ATH075I TCP COMMUNICATION TASKS ARE ENABLED
ATH111I TCPIP Server Init Complete IPAddr(RS22),Port(35043),Timeout(30)
ATH147I TCPIP Client Init Complete IPAddr(RS22)
```

The GCTASK command - Example #3

This example shows how to use the GCTASK command to terminate the global command tasks and disable global command processing for the z/OS image that issued the ATAM command:

```
F ATHPROC,GCTASK=D
```

The following messages will display to indicate the new status of the global command tasks:

```
ATH150I TCPIP Client shutdown requested
ATH116I TCPIP Server shutdown requested
ATH075I TCP COMMUNICATION TASKS ARE DISABLED
```

The IQ4 command

Use the *IQ4* command to indicate whether ATAM VARY processing should wait for the SYSIEFSD.Q4 ENQ when responding to allocation requests.

ATAM uses the IEEVARYD macro to vary devices online and offline. ATAM uses the macro during online, unallocated scan processing to vary ATAM-managed devices offline once they are unallocated. ATAM also uses the macro during allocation recovery to vary eligible devices online.

With z/OS 1.7, the IEEVARYD macro provided a new feature that allows the requestor to choose whether to wait for the SYSIEFSD.Q4 ENQ if held. The online, unallocated scan processing takes advantage of this feature and does not wait for VARY-offline processing. Now, the *VARY-online* processing optionally takes advantage of this feature. You can control this with the *IQ4* command as follows:

- Specify *IQ4=Y* to have the IEEVARYD macro processing *wait* for the SYSIEFSD.Q4 ENQ if held when servicing an allocation request. In this case, the IEEVARYD macro waits for the ENQ for a specified amount of time defined by IOS. Once this time expires, the IEEVARYD macro returns to the caller with an indication that it was unable to vary the device online. ATAM will skip the device and move on to the next device in the candidate list. ATAM candidate list processing time may be lengthened if the SYSIEFSD.Q4 resource is held.
- Specify *IQ4=N* to have the IEEVARYD macro processing *avoid waiting* for the SYSIEFSD.Q4 ENQ if held when servicing an allocation request. In this case, the IEEVARYD macro immediately returns control to the requestor if the ENQ is held. ATAM will skip this device and move to the next device in the candidate device list. ATAM can potentially process more quickly through its candidate device list if the SYSIEFSD.Q4 resource is held.

In either case, whether ATAM IEEVARYD requests do or do not wait for the SYSIEFSD.Q4 resource, the device specified in the IEEVARYD request is not used. The *IQ4* command specification only controls how long it takes for ATAM to make that determination.

The syntax of the *IQ4* command and the parameters are described in the table below.

Table 63. Syntax and parameters for IQ4 command

Item	Description
Syntax	IQ4[={N Y}][,N={sysid *}]
Parameters	IQ4 This command, without any parameters, displays the current status of the ATAM SYSIEFSD.Q4 ENQ Wait option. IQ4=Y This command instructs ATAM allocation processing to wait for the SYSIEFSD.Q4 ENQ if held. The default is <i>IQ4=Y</i>. IQ4=N This command instructs ATAM allocation processing to <i>not</i> wait for the SYSIEFSD.Q4 ENQ if held. N=sysid Specifying a System ID (sysid) with the "N" parameter indicates that the command is to be sent to the specified System ID as defined in ATAM's configuration data set. N=* Use an asterisk (*) with the "N" parameter to send the command to all defined systems.

A few examples show how to use the parameters with the IQ4 command. Select from the examples below.

Example #1

This example shows how to use the IQ4 command to display the current status of the ATAM SYSIEFSD.Q4 Wait option.

```
F ATAM,IQ4
```

ATAM issues the following message as a result:

```
ATH106I COMMAND ACCEPTED 440
ATH099I IQ4 OPTION IS YES
ATH107I COMMAND SUCCESSFUL
```

Example #2

This example shows how to instruct ATAM allocation processing to wait for the SYSIEFSD.Q4 resource.

```
F ATAM,IQ4=Y
```

ATAM issues the following message as a result:

```
ATH106I COMMAND ACCEPTED 440
ATH099I IQ4 OPTION IS YES
ATH107I COMMAND SUCCESSFUL
```

Example #3

This example shows how to instruct ATAM allocation processing to not wait for the SYSIEFSD.Q4 resource.

```
F ATAM,IQ4=N
```

ATAM issues the following message as a result:

```
ATH106I COMMAND ACCEPTED 440
ATH099I IQ4 OPTION IS NO
ATH107I COMMAND SUCCESSFUL
```

Example #4

This example shows how to use the "N" command with routing to a single system. The example command below instructs ATAM allocation processing, on a specific ATAM-defined system (SYSA), to *not* wait for the SYSIEFSD.Q4 resource.

```
F ATAM,IQ4=N,N=SYSA
```

ATAM issues the following message as a result:

```
ATH106I COMMAND ACCEPTED 440
ATH067W SYSA ATH099I IQ4 OPTION IS NO
ATH107I COMMAND SUCCESSFUL
```

Example #5

This example shows how to use the "N" command with routing to all systems. The example command below instructs ATAM allocation processing, on all ATAM-defined systems, to *not* wait for the SYSIEFSD.Q4 resource.

```
F ATAM,IQ4=N,N=*
```

ATAM issues the following message as a result:

```

ATH106I COMMAND ACCEPTED 411
ATH099I IQ4 OPTION IS NO
ATH067W SYSB      ATH099I IQ4 OPTION IS NO
ATH067W SYSC      ATH099I IQ4 OPTION IS NO
ATH067W SYSD      ATH099I IQ4 OPTION IS NO
ATH067W SYSE      ATH099I IQ4 OPTION IS NO
ATH107I COMMAND SUCCESSFUL

```

The *JOIN* command

The *JOIN* command makes ATAM aware of other z/OS images running ATAM.

Note: Do not issue the *JOIN* command directly. Accessing the ATAM ISPF Dialog Status option internally invokes the *JOIN* command to perform the indicated updates.

The *JOIN* command connects the z/OS image initiating the request to all of the z/OS images listed in its configuration data set. For example, if the configuration data set contains several configuration members, each for a different z/OS system (such as SYSA, SYSB, TEST, and PROD), the *JOIN* command will join the z/OS image initiating the request (Ex: SYSA) to all of the other z/OS systems identified by the configuration members (Ex: SYSB, TEST, and PROD).

The purpose of the *JOIN* command is to make ATAM aware of other z/OS images running ATAM. This command is internally issued by ATAM, so you will rarely have a need to issue it. The Current Status option on the ATAM main menu issues this command for each invocation and displays the data maintained by the *JOIN* command.

The *JLOGF* command

Use the *JLOGF* command to check the current state of logging.

The *JLOGF* command lists the status of ATAM LOGFILE data set usage. It does not change the state of logging, but only reports on its current state.

When you issue the F ATHPROC,JLOGF command, ATAM will issue one of the following messages:

Table 64. Messages in response to JLOGF command

Message	Description
ATH076I LOG FILE RECORDING IS OFF	This message indicates that ATAM is not writing to the LOGFILE data set. This is either because ATAM previously disabled logging due to an error or optionally disabled logging due to the lack of a LOGFILE DD statement in the ATAM address space.
ATH076I LOG FILE RECORDING IS ON	This message indicates that ATAM is writing to the LOGFILE data set. However, in this state, ATAM will terminate logging if a space-related failure (i.e. x37 ABEND) occurs.

Table 64. Messages in response to JLOGF command (continued)

Message	Description
ATH076I LOG FILE RECORDING IS ON AND WILL WRAP	This message indicates that ATAM is writing to the LOGFILE data set and will reset (i.e. empty) the LOGFILE if it encounters a space-related failure (i.e. x37abend). To activate the wrap function, include WRAP as a parameter on the EXEC statement in the ATAM procedure JCL (i.e. ATHPROC).

The syntax and parameters are listed in the table below:

Table 65. Syntax and parameters for JLOGF command

Item	Description
Syntax	JLOGF [,N={sysid *}]
Parameters	JLOGF This command lists the current status of ATAM LOGFILE data set usage. JLOG,N=sysid Specifying a System ID (sysid) with the "N" parameter indicates that the command is to be sent to the specified System ID as defined in ATAM's configuration data set. JLOG,N=* Use an asterisk (*) with the "N" parameter to send the command to all defined systems.

The LRU command

Use the *LRU* operator command to indicate whether you want ATAM to use "Least Recently Used" (LRU) logic when selecting a device to be varied online.

With the LRU logic, the tape unit that has been dormant the longest will be the first one ATAM will attempt to use. This ensures that all available tape units are used for requests.

Table 66. Syntax and parameters for LRU command

Item	Description
Syntax	LRU [{Y N}] [,N={sysid *}]

Table 66. Syntax and parameters for LRU command (continued)

Item	Description
Parameters	LRU This command, without any parameters, displays the status of the LRU option. LRU=Y This parameter sets the LRU option to "on". LRU=N This parameter sets the LRU option to "off". N=sysid Specifying a System ID (sysid) with the "N" parameter indicates that the command is to be sent to the specified System ID as defined in ATAM's configuration data set. N=* Use an asterisk (*) with the "N" parameter to send the command to all defined systems.

Several examples show you how to use the parameters with the LRU command.

The LRU command - Example #1

This example shows how to use the LRU command to display the current status of the Least Recently Used option. Simply type the LRU command without any parameters.

```
F ATHPROC,LRU
```

A message will display which indicates whether the LRU logic is currently being used:

```
ATH060I LRU OPTION IS YES
```

The LRU command - Example #2

To indicate you want ATAM to use LRU logic for selecting devices, type the following:

```
F ATHPROC,LRU=Y
```

A message will display:

```
ATH060I LRU OPTION IS YES
```

The LRU command - Example #3

To indicate you do not want ATAM to use LRU logic for selecting devices, type the following:

```
F ATHPROC,LRU=N
```

A message will display:

```
ATH060I LRU OPTION IS NO
```

The MDP command

Use the *MDP* operator command to enable and disable ATAM's dynamic allocation exit processing (ATAM IEFDB401).

Note: Use this command with caution! Please read Appendix J, “ATAM Dynamic Allocation Exit,” on page 233 thoroughly before activating this option. Unnecessary activation of this facility will introduce additional overhead in dynamic allocation processing for tape and non-tape requests.

With this command, you can activate and deactivate the ATAM IEFDB401 exit routine using the z/OS Dynamic Exits Facility. Also use the MDP operator command to indicate whether the ATAM IEFDB401 exit should simply monitor unsupported dynamic allocation requests, or monitor and modify them to behave appropriately for ATAM.

When you use the MDP command alone, without any parameters, ATAM displays the status of the exit setting. The parameters allow you to change the exit setting, as described below.

Table 67. Syntax and parameters for normal processing of MDP command

Item	Description
Syntax (normal)	MDP [= {Y M N}] [,N={sysid *}]
Parameters (normal)	Y This parameter activates the ATAM IEFDB401 exit routine for dynamic allocation request block monitoring only. M This parameter activates the ATAM IEFDB401 exit routine for dynamic allocation request block monitoring and modification. N This parameter disables and deactivates the IEFDB401 exit routine. N=sysid Specifying a System ID (sysid) with the "N" parameter indicates that the command is to be sent to the specified System ID as defined in ATAM's configuration data set. N=* Use an asterisk (*) with the "N" parameter to send the command to all defined systems.

The next table describes the command syntax and parameters that are used for special processing of the MDP command. Special processing is used for specific STC address spaces identified with the J= parameter. Contact IBM Technical Support before using the special processing options.

Table 68. Syntax and parameters for special processing of the MDP command for specific STC address spaces

Item	Description
Syntax (special)	MDP ={Y M N}],J=Jobname[,0],N={sysid *}

Table 68. Syntax and parameters for special processing of the MDP command for specific STC address spaces (continued)

Item	Description
Parameters (special)	Y This parameter activates the ATAM IEFDB401 exit routine for dynamic allocation request block monitoring only. Special processing allows activation of this parameter for specific STC address spaces identified with the J= parameter. Contact IBM Technical Support before using the special processing options.
	M This parameter activates the ATAM IEFDB401 exit routine for dynamic allocation request block monitoring and modification. Special processing allows activation of this parameter for specific STC address spaces identified with the J= parameter. Contact IBM Technical Support before using the special processing options.
	N This parameter removes a job from the MDP table.
	J=jobname This parameter identifies the job to be added to or removed from the MDP table. The table is limited to 10 entries. Contact IBM Technical Support before using the special processing options.
	O This parameter specifies that ATAM will only modify the dynamic allocation parameter list for this job. Contact IBM Technical Support before using the special processing options.
	N=sysid Specifying a System ID (sysid) with the "N" parameter indicates that the command is to be sent to the specified System ID as defined in ATAM's configuration data set.
	N=* Use an asterisk (*) with the "N" parameter to send the command to all defined systems.

Example #1

This example shows how to use the MDP command to display the status of the IEFDB401 exit routine. Type the MDP command without any parameters as follows:

```
F ATHPROC,MDP
```

A message will display that indicates whether the IEFDB401 exit routine is active:

```
ATH012I IEFDB401          EXIT DETECTED: IEFDB401  STATE:   ACTIVE
ATH086I MDP OPTION IS NO
```

Example #2

This example shows how to use the MDP command to activate the ATAM IEFDB401 exit routine. To activate IEFDB401 exit processing for monitoring only, type the following:

```
F ATHPROC,MDP=Y
```

A message will display that indicates the new status of the IEFDB401 exit routine:

```
ATH017I DYNAL EXIT LOADED FROM ATH.V3R2.SATHLOAD
ATH016W RESULTS MAY BE UNPREDICTABLE. MULTIPLE EXIT ROUTINES DETECTED
ATH012I IEFDB401          EXIT DETECTED: IEFDB401  STATE:   ACTIVE
ATH012I IEFDB401          EXIT DETECTED: ATH#DYNA  STATE:   ACTIVE
ATH087I MDP OPTION IS YES, RECORD INCOMPATIBLE DYNAMIC ALLOCATIONS
```

Note that activation of the ATAM IEFDB401 exit results in ATAM issuing message ATH016W. This occurs because z/OS maintains a default exit routine named IEFDB401 at the IEFDB401 exit. However, the default IEFDB401 exit routine processing has no impact on ATAM IEFDB401 exit routine processing.

Example #3

This example shows how to use the MDP command to activate the ATAM IEFDB401 exit routine. To activate IEFDB401 exit processing for monitoring and modification, type the following:

```
F ATHPROC,MDP=M
```

A message will display that indicates the new status of the IEFDB401 exit routine:

```
ATH017I DYNAL EXIT LOADED FROM ATH.V3R2.SATHLOAD
ATH016W RESULTS MAY BE UNPREDICTABLE. MULTIPLE EXIT ROUTINES DETECTED
ATH012I IEFDB401          EXIT DETECTED: IEFDB401  STATE:  ACTIVE
ATH012I IEFDB401          EXIT DETECTED: ATH#DYNA  STATE:  ACTIVE
ATH088I MDP OPTION IS YES, MODIFY INCOMPATIBLE DYNAMIC ALLOCATIONS
```

Note that activation of the ATAM IEFDB401 exit results in ATAM issuing message ATH016W. This occurs because z/OS maintains a default exit routine named IEFDB401 at the IEFDB401 exit. However, the default IEFDB401 exit routine processing has no impact on ATAM IEFDB401 exit routine processing.

Example #4

This example shows how to use the MDP command to deactivate the IEFDB401 exit routine and disable IEFDB401 exit routine processing:

```
F ATHPROC,MDP=N
```

Upon execution, ATAM uses the z/OS Dynamic Exits Facility to remove the ATAM IEFDB401 exit routine from the IEFDB401 exit. The following messages will display, indicating the new status of the IEFDB401 exit routine:

```
ATH012I IEFDB401          EXIT DETECTED: IEFDB401  STATE:  ACTIVE
ATH086I MDP OPTION IS NO
```

Example #5

This example shows how to use the MDP command to activate the IEFDB401 exit routine for a specific job:

```
F ATHPROC,MDP=M,J=STCJOB
```

Upon execution, ATAM displays the new status of the ATAM IEFDB401 exit routine and the contents of the MDP table:

```
ATH106I COMMAND ACCEPTED
ATH012I IEFDB401          EXIT FOUND: IEFDB401, ACTIVE
ATH012I IEFDB401          EXIT FOUND: ATH#DYNA, ACTIVE
ATH235I JOBNAME  OPTION
ATH236I STCJOB    MODIFY
ATH237I END OF JOBNAME LIST FOR SYSA
ATH086I MDP OPTION IS YES, RECORD
ATH107I COMMAND SUCCESSFUL
```

Note that this example indicates that the ATAM IEFDB401 exit will modify non-conforming dynamic allocation parameter lists for the Started Task Job, STCJOB, but it will monitor all batch jobs for non-conforming dynamic allocation parameter lists.

Example #6

This example shows how to use the MDP command to remove a specific job from the MDP table:

```
F ATHPROC,MDP=N,J=STCJOB
```

Upon execution, ATAM displays the new status of the ATAM IEFDB401 exit routine and the contents of the MDP table:

```
ATH106I COMMAND ACCEPTED
ATH012I IEFDB401          EXIT FOUND: IEFDB401, ACTIVE
ATH012I IEFDB401          EXIT FOUND: ATH#DYNA, ACTIVE
ATH235I JOBNAME  OPTION
ATH238I NO JOBS DEFINED TO MDP
ATH237I END OF JOBNAME LIST FOR SYSA
ATH086I MDP OPTION IS YES, RECORD
ATH107I COMMAND SUCCESSFUL
```

See Appendix J, "ATAM Dynamic Allocation Exit," on page 233 for more information on this exit, which can be used to monitor and, optionally, modify dynamic allocation request blocks that target ATAM-managed tape devices.

Related concepts:

Appendix J, "ATAM Dynamic Allocation Exit," on page 233

This appendix describes ATAM's dynamic allocation exit which can be used to monitor and, optionally, modify dynamic allocation request blocks that target ATAM-managed tape devices.

The PD command

Use the PD command to enable either location-based or tier-based preferencing of devices. You can also indicate that you do not want to use device preferencing.

Tier-based preferencing

Use this type of device preferencing to specify a value, from one to five, to "rank" devices for consideration. A "Tier 1" device is considered first, then "Tier 1 and Tier 2" devices, then "Tier 1, 2, and 3" devices, and so on, finally expanding consideration to all of the suitable devices.

Location-based preferencing

Use this type of device preferencing to assign devices as either local or distant. For example, you may have a group of tape devices residing in the same building as the processor while another group is located 20 miles away. For non-specific requests (scratch tapes), you may want to ensure that the devices in the same building (local) are considered first before the remote (distant) devices.

The PD command is like a "master switch" to enable either location- or tier-based device preferencing, or to disable device preferencing. Due to the added overhead that is introduced in allocation processing by using device preferencing, it is recommended that you do *not* use these features unless you clearly need them. More specific information, such as the type of location (local or distant), tier number (one - five), and job name, is determined through the parameters you use with the Select (S) and Exclude (X) commands.

Syntax and parameters

The syntax and parameters for the PD command are described in the table below.

Table 69. Parameters for PD command

Item	Description and example
Syntax	PD [={D L T}][,N={sysid *}]
Parameters	PD This command, without any parameters, displays the current status of the device preference feature. PD=D This parameter disables the device preference feature. PD=L This parameter enables device preference for location processing. PD=T This parameter enables device preference for tier processing. N=sysid Specifying a System ID (sysid) with the "N" parameter indicates that the command is to be sent to the specified System ID as defined in ATAM's configuration data set. N=* Use an asterisk (*) with the "N" parameter to send the command to all defined systems.

Example #1

This example shows how to use the PD command to display the current status of the device preference facility.

```
F ATAM,PD
```

A message will display indicating that the device preference facility is disabled:

```
ATH106I COMMAND ACCEPTED
ATH222I DEVICE PREFERENCE DISABLED
ATH107I COMMAND SUCCESSFUL
```

Example #2

This example shows how to use the PD command to enable location-based device preferencing.

```
F ATAM,PD=L
```

A message will display indicating that the device preference facility is enabled for location-based preferencing.

```
ATH106I COMMAND ACCEPTED
ATH222I DEVICE PREFERENCE ENABLED FOR LOCATION
ATH107I COMMAND SUCCESSFUL
```

Example #3

This example shows how to use the PD command to enable tier-based device preferencing.

```
F ATAM,PD=T
```

A message will display indicating that the device preference facility is enabled for tier-based preferencing.

```
ATH106I COMMAND ACCEPTED
ATH222I DEVICE PREFERENCE ENABLED FOR TIER VALUES
ATH107I COMMAND SUCCESSFUL
```

The PJ command

Use the PJ command to list the ATAM job preference definitions. With job preferencing, you can direct a job to a specific set of devices, either through excluding or including devices.

There are four job preference processing options (types):

PREF The job defined as the preference uses these devices first, but considers all eligible devices if the preferred devices are unavailable.

REQ The job defined as the preference requires these devices. It will not run on devices not identified in this preference.

EXCL The job defined as the preference is excluded from using these devices. It will use any other devices not specified in this exclusion preference.

OWNS

Only the job defined as the preference can use these devices. They are excluded from all other requestors. The job will not run on any other devices

Note: This option effectively removes the identified devices from availability and isolates their use to only this job and other job preferences of this type which include these devices. Use with care.

Job preference processing increases the overhead of ATAM allocation device selection and potentially reduces the availability of tape device resources to the non-preference tape jobs. Please consider these concerns and weigh them in your choice to use this facility.

The syntax of the PJ command and the parameters are described in the table below.

Table 70. Syntax and parameters for PJ command

Item	Description
Syntax	PJ [= <i>jobname</i> ,E] [,N={ <i>sysid</i> *}]

Table 70. Syntax and parameters for PJ command (continued)

Item	Description
Parameters	PJ This command, without any parameters, displays all of the jobs currently defined in the job preference table. PJ=jobname This command displays a specific entry in the job preference table. PJ,E This command displays all job preference entries that identify exclusive-use (owner) preferences. N=sysid Specifying a System ID (sysid) with the "N" parameter indicates that the command is to be sent to the specified System ID as defined in ATAM's configuration data set. N=* Use an asterisk (*) with the "N" parameter to send the command to all defined systems.

A few examples show how to use the parameters with the PJ command. Select from the examples below:

- "Example #1"
- "Example #2" on page 142
- "Example #3" on page 142

Example #1

This example shows how to use the PJ command to display all the jobs currently defined in the job preference table.

```
F ATAM,PJ
```

If there are no jobs in the table, ATAM issues the following message:

```
ATH106I COMMAND ACCEPTED
ATH221I NO JOB PREFERENCES FOUND
ATH107I COMMAND SUCCESSFUL
```

If there are jobs in the table, ATAM issues a message similar to the following message:

```
ATH106I COMMAND ACCEPTED
ATH216I JOBNAME  TYPE  UCB      UCB      UCB      UCB
ATH217I PDBALDG  PREF: 05C0 SF 05C1 SF 05C2 SF 05C3 SF
ATH217I          : 05C4 SF 05C5 SF 05C6 SF 05C7 SF
ATH217I PDBALDR  REQ : 05C5 SF 05C6 SF 05C7 SF
ATH217I PDBALDE  OWNS: 05C0 SF 05C1 SF 05C2 SF
ATH217I PDBALDX  EXCL: 05C0 xF 05C1 xF 05C2 xF 05C3 xF
ATH217I          : 05C4 xF 05C5 xF 05C6 xF 05C7 xF
ATH218I END OF JOB PREFERENCE LIST FOR SYSA
ATH107I COMMAND SUCCESSFUL
```

Message ATH216I contains the column headings and message ATH217I contains each data row in the table. ATAM lists the job preference Job name under the "JOBNAME" heading and the job preference type under the "TYPE" heading.

Note: The device list display is the same as that of the “L” command. Refer to “The L command” on page 90 for a description of this data.

Example #2

This example shows how to use the PJ command to display a specific job in the job preference table.

```
F ATAM,PJ=PDBALDG
```

If there is no job in the table with job name “PDBALDG”, ATAM issues the following message:

```
ATH106I COMMAND ACCEPTED
ATH216I JOBNAME  TYPE  UCB      UCB      UCB      UCB
ATH219I NO JOB PREFERENCE FOUND TO MATCH PDBALD
ATH218I END OF JOB PREFERENCE LIST FOR RS22
ATH107I COMMAND SUCCESSFUL
```

If there is a job in the table with job name “PDBALDG”, ATAM issues the following message:

```
ATH106I COMMAND ACCEPTED
ATH216I JOBNAME  TYPE  UCB      UCB      UCB      UCB
ATH217I PDBALDG  PREF: 05C0 SF 05C1 SF 05C2 SF 05C3 SF
ATH217I           : 05C4 SF 05C5 SF 05C6 SF 05C7 SF
ATH218I END OF JOB PREFERENCE LIST FOR RS22
ATH107I COMMAND SUCCESSFUL
```

Example #3

This example shows how to use the PJ command to display all job preferences that specify an exclusive-use (owner) preference.

```
F ATAM,PJ,E
```

If there are job preferences defined as exclusive-use, ATAM issues the following message:

```
ATH106I COMMAND ACCEPTED
ATH216I JOBNAME  TYPE  UCB      UCB      UCB      UCB
ATH217I PDBALDE  OWNS: 05C0 SF 05C1 SF 05C2 SF
ATH218I END OF JOB PREFERENCE LIST FOR RS22
ATH107I COMMAND SUCCESSFUL
```

If there is no job preference defined as such, ATAM issues the following message:

```
ATH106I COMMAND ACCEPTED
ATH117I NO EXCLUSIVE-USE (TYPE=OWN) JOB PREFERENCES
ATH218I END OF JOB PREFERENCE LIST FOR RS22
ATH107I COMMAND SUCCESSFUL
```

The QUOTE command

Use the *QUOTE* command to specify or check the use of quotation marks.

With the *QUOTE* command, you can indicate whether you want ATAM to surround the WTOR responses issued by ATAM with quotations marks. The default is Y (yes). You can also check the current status of the *QUOTE* option.

Table 71. Syntax and parameters for QUOTE command

Item	Description
Syntax	QUOTE [={Y N}][,N={sysid *}]

Table 71. Syntax and parameters for QUOTE command (continued)

Item	Description
Parameters	QUOTE This command, without any parameters, displays the current status of the QUOTE option. QUOTE=Y This parameter sets the QUOTE option to "on". QUOTE=N This parameter sets the QUOTE option to "off". N=sysid Specifying a System ID (sysid) with the "N" parameter indicates that the command is to be sent to the specified System ID as defined in ATAM's configuration data set. N=* Use an asterisk (*) with the "N" parameter to send the command to all defined systems.

Several examples are provided to show how to use the QUOTE command.

The QUOTE command - Example #1

This example shows how to use the QUOTE command to display the current status of the QUOTE option. Simply type the QUOTE command without any parameters.

```
F ATHPROC,QUOTE
```

A message will display which indicates whether the QUOTE option is currently turned on or off:

```
ATH069I QUOTE OPTION IS YES
```

The QUOTE command - Example #2

To indicate you want ATAM to surround the WTOR responses issued by ATAM with quotation marks, type the following:

```
F ATHPROC,QUOTE=Y
```

A message will display:

```
ATH069I QUOTE OPTION IS YES
```

The QUOTE command - Example #3

To indicate you do not want ATAM to use quotation marks around WTOR responses issued by ATAM, type the following:

```
F ATHPROC,QUOTE=N
```

A message will display:

```
ATH069I QUOTE OPTION IS NO
```

The SAF command

Use the SAF command to check or set the status of the ATAM command security facility. When SAF is enabled, you can have ATAM verify the authority of a user to issue an ATAM command through your local security product.

Each ATAM command has a corresponding security entity and the access level required to enter the command. To secure the ATAM commands, you must enable this option and define these security entities to the OPERCMDS class. Display commands require READ access while commands that modify ATAM require UPDATE or CONTROL.

The table below lists the syntax and parameters for the SAF command.

Table 72. Syntax and parameters for SAF command

Item	Description
Syntax	SAF [= {N W F}] [,N={sysid *}]
Parameters	SAF This command, without any parameters, displays the current status of ATAM security facility. SAF=N This command instructs the ATAM command security facility to <i>not</i> operate on the current system. SAF=W This command enables the ATAM command security facility in WARN mode. Users not authorized to issue certain ATAM commands will receive a violation message from your security product, but ATAM will allow the command to process. SAF=F This command enables the ATAM command security facility in FAIL mode. Users not authorized to issue certain ATAM commands will receive a violation message from your security product, and ATAM will fail the command. The following message will be displayed: ATH129W SAF SECURITY DENIED ACCESS TO COMMAND Note: If SAF is enabled with WARN or FAIL mode, but the ATAM command security entities have not been defined to your security product, ATAM processes the commands. Next, ATAM issues the following message: ATH128W SAF CALL UNABLE TO VERIFY COMMAND ACCESS AUTHORITY, RC(<i>return_code</i>) RS(<i>reason_code</i>) For this, define the entities or turn off the ATAM SAF facility. N=sysid Specifying a System ID (sysid) with the "N" parameter indicates that the command is to be sent to the specified System ID as defined in ATAM's configuration data set. N=* Use an asterisk (*) with the "N" parameter to send the command to all defined systems.

Examples

Several examples are provided to help you understand how to use the parameters with the SAF command. Select from the examples below.

- “Example #1” on page 146
- “Example #2” on page 146
- “Example #3” on page 146
- “Example #4” on page 147
- “Example #5” on page 147
- “Example #6” on page 147

ATAM Command Security Entities

The following is a list of the ATAM commands and their corresponding security entities and required access levels.

Table 73. ATAM commands, corresponding security entities, and required access levels

ATAM Command	Security Entity	Required Access
P ATAM	ATAM.SHUTDOWN	CONTROL
EXITCOMPAT=	ATAM.EXITCOMPAT.MODIFY	UPDATE
EXITCOMPAT	ATAM.EXITCOMPAT	READ
GCTASK=	ATAM.GCTASK.MODIFY	UPDATE
GCTASK	ATAM.GCTASK	READ
LRU=	ATAM.LRU.MODIFY	UPDATE
LRU	ATAM.LRU	READ
JLOGF	ATAM.JLOGF	READ
QUOTE=	ATAM.QUOTE.MODIFY	UPDATE
QUOTE	ATAM.QUOTE	READ
SMF=	ATAM.SMF.MODIFY	UPDATE
SMF	ATAM.SMF	READ
SAF=	ATAM.SAF.MODIFY	UPDATE
SAF	ATAM.SAF	READ
PD=	ATAM.PREFDEV.MODIFY	UPDATE
PD	ATAM.PREFDEV	READ
PJ	ATAM.PREFJOB	READ
MDP=	ATAM.MDP.MODIFY	UPDATE
MDP	ATAM.MDP	READ
WTORSCAN=	ATAM.WTORSCAN.MODIFY	UPDATE
WTORSCAN	ATAM.WTORSCAN	READ
L=	ATAM.LIST.DEV	READ
Q=	ATAM.QUERY	READ
E=	ATAM.ESOTERIC	READ
S=	ATAM.SELECT.DEV	UPDATE
X=	ATAM.EXCLUDE.DEV	UPDATE
T=	ATAM.TOPTION	UPDATE

Table 73. ATAM commands, corresponding security entities, and required access levels (continued)

ATAM Command	Security Entity	Required Access
W=	ATAM.WTORADD	UPDATE
R=	ATAM.WTORADD	UPDATE
DO	ATAM.DIAGNOSTICS	UPDATE
V	ATAM.VERSION	READ
L	ATAM.LIST	READ
S	ATAM.SELECT	READ
X	ATAM.EXCLUDE	READ
M	ATAM.MOUNT	READ
A	ATAM.ALLOCATED	READ
O	ATAM.ONLINE	READ
F	ATAM.OFFLINE	READ
T	ATAM.TOPTIONS	READ
E	ATAM.ESOTERIC	READ

Example #1

This example shows how to use the SAF command to display the current status of the ATAM command security facility.

```
F ATAM,SAF
```

ATAM issues the following message as a result:

```
ATH106I COMMAND ACCEPTED
ATH087I SAF OPTION IS NO
ATH107I COMMAND SUCCESSFUL
```

Example #2

This example shows how to instruct the ATAM command security facility to operate in WARN mode.

```
F ATAM,SAF=W
```

ATAM issues the following message as a result:

```
ATH106I COMMAND ACCEPTED
ATH087I SAF OPTION IS WARN
ATH107I COMMAND SUCCESSFUL
```

Example #3

This example shows how to instruct the ATAM command security facility to operate in FAIL mode.

```
F ATAM,SAF=F
```

ATAM issues the following message as a result:

```
ATH106I COMMAND ACCEPTED
ATH087I SAF OPTION IS FAIL
ATH107I COMMAND SUCCESSFUL
```

Example #4

This example shows how to instruct the ATAM command security facility to *not* operate on the current system.

```
F ATAM,SAF=N
```

ATAM issues the following message as a result:

```
ATH106I COMMAND ACCEPTED
ATH087I SAF OPTION IS NO
ATH107I COMMAND SUCCESSFUL
```

Example #5

This example shows how to instruct the ATAM command security facility to *not* operate on a specific system, TST07.

```
F ATAM,SAF=N,N=TST07
```

ATAM issues the following message as a result:

```
ATH106I COMMAND ACCEPTED
ATH067W TST07 ATH087I SAF OPTION IS NO
ATH107I COMMAND SUCCESSFUL
```

Example #6

This example shows how to instruct the ATAM command security facility to *not* operate on the current system or on any previously specified systems. In the example below, the command is issued on one system. The resulting messages indicate that SAF is set to "No" on the current system and also on the other system, TST07.

```
F ATAM,SAF=N,N=*
```

ATAM issues the following message as a result:

```
ATH106I COMMAND ACCEPTED 896
ATH087I SAF OPTION IS NO
ATH067W TST07 ATH087I SAF OPTION IS NO
ATH107I COMMAND SUCCESSFUL
```

The SMF command

Use the ATAM **SMF** command to check or set the status of ATAM SMF recording.

ATAM maintains a record of its allocation activities in a log file. ATAM can also record information to SMF via the SMF type 122 record, if you instruct ATAM to do so with the ATAM **SMF** command. This command enables you to check or set the status of ATAM SMF recording.

ATAM will always write the ATAM Initialization and ATAM Termination SMF record subtypes, regardless of the SMF option. The SMF option only controls whether ATAM writes SMF records for allocation processing and command invocations from the ATAM ISPF dialog and TEP.

You can use only the log file, only ATAM SMF recording, or both, as you prefer. Because the log file is a DASD data set, it will occupy increasing amounts of DASD storage as ATAM records more and more allocation events. To change this, you can disable the log file and simply use ATAM SMF recording to maintain a historical record of ATAM allocation events. Data recorded to the ATAM SMF records duplicates the data written to the log file.

Note: Access to the ATAM SMF records requires offline processing via local SMF reporting utilities. ATAM will not generate the ATAM SMF records if z/OS SMF is not active, if it has abended, or if z/OS SMF is not recording ATAM SMF type 122 records.

Table 74. Syntax and parameters for SMF command

Item	Description
Syntax	SMF [={Y N V}][,N={sysid *}]
Parameters	SMF This command, without any parameters, displays the current status of ATAM SMF recording. SMF=Y This parameter sets the SMF option to "yes" to enable ATAM SMF recording for everything, except for unexpected VARY-ONLINE failures. SMF=N This parameter sets the SMF option to "no" to disable ATAM SMF recording. SMF=V This parameter sets the SMF option to "yes" to enable ATAM SMF recording for everything, including unexpected VARY-ONLINE failures. N=sysid Specifying a System ID (sysid) with the "N" parameter indicates that the command is to be sent to the specified System ID as defined in ATAM's configuration data set. N=* Use an asterisk (*) with the "N" parameter to send the command to all defined systems.

Several examples are provided to help you understand how to use the SMF command. Select from the examples below:

- "The SMF command - Example #1"
- "The SMF command - Example #2" on page 149
- "The SMF command - Example #3" on page 149
- "The SMF command - Example #4" on page 149

The SMF command - Example #1

This example shows how to use the SMF command to display the current status of the ATAM SMF recording option.

To display the current status, simply type the SMF command without any parameters.

```
F ATHPROC,SMF
```

ATAM issues one of the following messages as a result:

```
ATH079I SMF OPTION IS NO
ATH079I SMF OPTION IS YES
ATH079I SMF OPTION IS YES,INCLUDE VARY FAILURES
```

The SMF command - Example #2

This example shows how to instruct ATAM to use SMF recording.

To indicate you want ATAM to use SMF recording for everything, except for unexpected VARY-ONLINE failures, type the following command:

```
F ATHPROC,SMF=Y
```

ATAM issues the following message as a result:

```
ATH079I SMF OPTION IS YES
```

The SMF command - Example #3

This example shows you how to tell ATAM that you do not want to use SMF recording.

To indicate you do not want ATAM to perform SMF recording, type the following:

```
F ATHPROC,SMF=N
```

A message will display:

```
ATH079I SMF OPTION IS NO
```

The SMF command - Example #4

This example shows you how to instruct ATAM to use SMF recording, even for VARY-ONLINE failures.

To indicate that you want ATAM to use SMF recording for everything, including unexpected VARY-ONLINE failures, type the following command:

```
F ATHPROC,SMF=V
```

A message will display:

```
ATH079I SMF OPTION IS YES,INCLUDE VARY FAILURES
```

When SMF is unavailable

If z/OS SMF recording is disabled or otherwise inactive, entering command SMF=Y or SMF=V results in the following message:

```
ATH078E SMF OPTION DISABLED: SMF IS NOT ACTIVE OR HAS ENDED ABNORMALLY
```

If z/OS SMF is not actively recording ATAM SMF record type 122, entering command SMF=Y or SMF=V results in the following message:

```
ATH078E SMF OPTION DISABLED: SMF IS NOT RECORDING TYPE 122 RECORDS
```

The SSI command

Use the SSI command to check or set the status of the ATAM subsystem interface facility.

When SSI is enabled, ATAM utilizes the z/OS subsystem interface broadcast of function code 78 to apply job, device, or the optional ATH#VALD volser-to-unit preference processing to online devices. This mechanism allows ATAM to manipulate the eligible device list for online devices in a manner that emulates preference processing when varying offline devices online.

Note: For more information on volser-to-unit preferencing and the ATH#VALD exit, refer to Chapter 8, "Volser-to-Unit Preferencing Exit," on page 163.

By default, this facility is disabled. Enable it only if you intend to use one or more of the ATAM preference features. The facility only supports preference processing for online devices. It does not apply to ATAM preference processing that occurs when varying devices online in response to tape allocation requests.

Table 75. Syntax and parameters for SSI command

Item	Description
Syntax	SSI[={N Y}]
Parameters	SSI This command, without any parameters, displays the current status of the ATAM subsystem interface facility. SSI=Y This command enables the ATAM subsystem interface facility. ATAM will supplement preference processing for offline devices by applying those same considerations to online devices through manipulation of the eligible device list. SSI=N This command disables the ATAM subsystem interface facility.

Several examples show you how to use the parameters with the SSI command. Select an example from the list below.

- “Example #1”
- “Example #2”
- “Example #3” on page 151

Related concepts:

Chapter 8, “Volser-to-Unit Preferencing Exit,” on page 163

This topic describes how to use the volser-to-unit preferencing exit to determine which tape units handle specific volume serial IDs, referred to as VOLSERS.

Example #1

This example shows how to use the SSI command to display the current status of the ATAM subsystem interface facility.

```
F ATAM,SSI
```

ATAM issues the following message as a result:

```
ATH106I COMMAND ACCEPTED
ATH097I SSI OPTION IS NO
ATH107I COMMAND SUCCESSFUL
```

Example #2

This example shows how to instruct the ATAM subsystem interface facility to support preference of online devices.

```
F ATAM,SSI=Y
```

ATAM issues the following message as a result:

```
ATH106I COMMAND ACCEPTED
ATH097I SSI OPTION IS YES
ATH107I COMMAND SUCCESSFUL
```

Example #3

This example shows you how to disable the ATAM subsystem interface facility.

```
F ATAM,SSI=N
```

ATAM issues the following message as a result:

```
ATH106I COMMAND ACCEPTED  
ATH097I SSI OPTION IS NO  
ATH107I COMMAND SUCCESSFUL
```

Chapter 6. Commands member customization

The ATAM Commands member, ATHCMDxx, allows you to further customize ATAM to fit your particular tape unit environment. By using specific commands in the ATAM Commands member, you can create a script of valid commands that will be executed each time you start the ATAM started task.

ATAM discovers all of the tape devices and automatically **excludes** them from ATAM's management. ATAM only selects the devices explicitly defined as "selectable" in the Commands member or via a manually entered operator command. You can select one device, multiple devices, or all devices. You can also combine the Select (S) and Exclude (X) commands to select a range of devices, but exclude a specific device in that range.

Combination of Select (S) and Exclude (X) commands

To control which tape devices ATAM will manage, you can combine Select (S) and Exclude (X) commands in the Commands member.

ATAM automatically excludes all of the tape devices it discovers at start up and then processes any commands in the Commands member. If you want ATAM to manage one, multiple, or all of the discovered tape devices each time ATAM is started, you must use a Select (S) command in the Commands member to tell ATAM which devices to manage.

However, you may decide that you want to combine the Select command with an Exclude (X) command so that a range of tape devices, or all tape devices are automatically selected whenever ATAM is started, but one or more specific devices are excluded from ATAM's management.

For example, let us assume that you have told ATAM, through a Select (S) command in the Commands member, to manage tape device addresses 0280-02FF and 03B0-03BF:

```
S=0280-02FF
```

```
S=03B0-03BF
```

If you decide later that you do not want ATAM to manage devices 02F0-02FF, you would type the following statement in your Commands member:

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

Now ATAM will manage tape drives 0280-02FF and 03B0-03BF, with the exception of 02F0 through 02FF.

You can specify a single tape unit or a range of tape units. When you specify a range of tape units, such as X=0130-013F, ATAM looks at the low and high device addresses to ensure that these devices have already been discovered by ATAM. If not, the entire command is ignored.

Note: Device addresses 0000 and FFFF are special values that will always be accepted. If the actual values on your system are subject to change, specify a range that begins with 0000 or ends with FFFF.

Syntax rules

You can use commands in the ATAM Commands member, `ATHCMDxx`, to customize ATAM to fit your particular tape unit environment. There are syntax rules for adding commands to the Commands member.

This section describes the syntax rules you must follow in the Commands 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.

Commands member name

You can assign or change the name of a Commands member through the Setup and Configuration option on the ATAM main menu.

Use the ATAM Commands member, which ATAM reads at start up, to specify which tape devices you want ATAM to manage. ATAM will automatically discover all of the eligible tape devices that it can find on the system, then exclude them all from ATAM's management, until the Commands member is processed. Use the select (S) command in the Commands member to list the devices you want ATAM to manage.

To specify the name of the ATAM Commands member, follow these steps:

1. Choose option S, **Setup and Configuration** on the ATAM main menu.
2. Type the **E** line command next to the configuration member you want to edit.
3. Type a two-character suffix in the "Initialization commands member suffix" field and press **Enter**.

If a Commands member does not exist in this concatenation, ATAM will issue a message and continue processing normally.

Note: If you change the name of the Commands member by typing a new or different suffix, you must recycle the ATAM started task to ensure the new Commands member is used instead of the previous one.

Chapter 7. Configuration parameters

The configuration parameters allow you to define system parameter values for a specific MVS image. You can change the default values on the Setup and Configuration screen, which you can access from the ATAM main menu.

Internally, Automated Tape Allocation Manager (ATAM) consists of two key components: one that operates *proactively* and one that operates *reactively*. This topic describes the configuration parameters that are used in each component, along with the effects caused by changing the parameter values. The product-provided defaults will work well in most shops.

You will find the configuration parameters listed on the ATAM System Configuration screen, which is described in “Specifying parameters on the System Configuration screen” on page 22. To display this screen, choose option **S**, Setup and Configuration, on the ATAM main menu, then select from the list of configuration members on the ATAM Configuration Members screen. An example of the ATAM System Configuration screen is shown below:

```
----- ATAM System Configuration -----
Command ==>

Configuration data set: 'ATH.V3R2.ATHCONFIG'
Configuration member : SYSA

MVS System Name . . . . . SYSA      MVS SYSNAME value
Operational Mode . . . . . A        A-Active, P-Passive
Initialization commands member suffix . . . . 00    (ATHCMDxx)
Offline Unit Polling Interval (T1) . . . . . 030    Seconds
Online Unit Polling Interval (T2) . . . . . 005    Seconds
Online Unit Iteration Count (T3) . . . . . 005      Iterations
Reconfiguration Termination Limit (T4) . . . . 000    Dynamic Changes
Vary Online Wait Time (T5) . . . . . 030          Seconds
Vary Online Maximum Attempts (T6) . . . . . 999      Attempts
Device Bidding Wait Interval (T7) . . . . . 030      Seconds
Randomization Threshold (T8) . . . . . 008          Randomization Threshold
Surround WTOR Responses in Quotes . . . . . Y        Y-Yes, N-No
Use LRU to Select Devices . . . . . N              Y-Yes, N-No
Global Command Processing . . . . . Y              Y-Yes, N-No
TCP I/O Timeout . . . . . 030          Seconds
TCP Port Number . . . . . 35043        Number
TCP Host Name or Address . . SYSA

Press ENTER to save, END to exit.
```

By changing the parameters listed above, you can tailor the process of allocating tape drives. There are several "T" parameters on the screen, which are:

- T1** Offline Unit Polling Interval.
- T2** Online Unit Polling Interval.
- T3** Online Unit Iteration Count.
- T4** Reconfiguration Termination Limit.
- T5** Vary Online Wait Time.
- T6** Vary Online Maximum Attempts.
- T7** Device bidding Wait Time.

T8 Randomization Threshold.

Related tasks:

“Specifying parameters on the System Configuration screen” on page 22
You can modify the parameters used for a specific system by making changes to the values on the System Configuration screen.

Considerations for using the T4 parameter

This topic provides a more detailed explanation of when to use the T4 parameter to re-build the ATAM device table.

The T4 parameter, Reconfiguration Termination Limit, is not part of the "proactive/reactive" processing described in other topics. The purpose of the T4 parameter is to specify the maximum number of dynamic IODF configurations that you want ATAM to automatically detect and resolve. Essentially, the value you specify for T4 indicates the number of times you want ATAM to re-build the ATAM device table due to a change in the configuration. The default for this parameter is five (5).

Specifying zero for the T4 value

One example of when you may want to increase the value for T4 is if the frequency of IOS tape configuration changes has increased. ATAM will shutdown if the following occurs:

1. ATAM detects an IO configuration change,
2. ATAM is executing with T4=000, and
3. ATAM determines that the ATAM device table is inconsistent with the new IOS tape configuration.

In the above instance, you will receive messages ATH006I and ATH015W. Next, ATAM will issue message ATH026E and terminate if it finds the ATAM device table is substantially different from the IOS tape configuration. To avoid future occurrences of this event, specify a non-zero value for the T4 parameter.

There are instances where IOS configuration changes do not impact ATAM. In those cases, when T4=000, ATAM will issue the message combination ATH006I and ATH015W only once, but will not terminate.

Specifying a non-zero number for the T4 value

When the T4 value is greater than zero, ATAM will re-build its device table each time it detects a change to the IOS tape configuration that is inconsistent with the ATAM device table. Once the number of re-builds exhausts the T4 value, ATAM requests further instruction via a WTOR message.

As ATAM approaches the T4 value, it warns of impending expiration. Once the rebuild iteration count is within five invocations of the T4 value, ATAM issues the following message:

```
ATH134W ATAM TABLE BUILD COUNT APPROACHING xxx, yyy RE-BUILDS REMAINING
```

The above message specifies the current T4 value, *xxx*, and the remaining iterations, *yyy*. Once the number of iterations for ATAM re-build processing reaches the T4 value, it issues the following WTOR message.

ATH010D ATAM TABLE BUILD LIMIT EXCEEDED. REPLY R TO RESET, N= TO RESET WITH NEW LIMIT, T TO TERMINATE.

Respond to this WTOR to instruct ATAM on how to continue processing. Valid responses are R, N=*nnn*, or T.

- Specify **R** to reset the iteration count for ATAM device table re-building to the original T4 value and re-build the table.
- Specify **N=*nnn***, where *nnn* is a value from 1-999. This response changes the T4 value to *nnn*, resets the iteration count to the new T4 value, and re-builds the table.
- Specify **T** to terminate that ATAM address space.

While ATAM waits for a response to this WTOR, it suspends unallocated, online managed tape scan processing. Because of this, ATAM will only wait two minutes before initiating default processing, **R**, to reset the build iteration counter to the original T4 value and re-build the ATAM device table.

If the time allotted for ATAM to wait for a response to ATH010D expires, it initiates default processing after issuing the following message.

ATH137W NO RESPONSE TO CONFIGURATION CHANGE MESSAGE ATH010D -REBUILDING TABLE

ATHCMD*nn* member processing

The new ATAM device table excludes all tape devices. After ATAM finishes rebuilding the tape device table, ATAM reprocesses the default ATHCMD*nn* member, re-issuing all of the commands in the member. This is done to re-establish any "select" and "exclude" specifications provided in the member.

Review the default ATHCMD*nn* member and modify "select" and "exclude" commands to properly reflect the new IODF configuration. Update the ATHCMD*nn* member to reflect changes to the IODF configuration member that affect tape devices.

How re-building table affects ECSA usage

ATAM's extended common service area (ECSA) usage increases the first time ATAM re-builds its device table. This occurs because ATAM must build a new table while maintaining the previous table to manage in-flight allocation processing. After the first increase relative to re-build processing, subsequent device table re-build processing will approximately double ATAM's ECSA usage.

Additional ECSA usage considerations

Although the T4 parameter provides ATAM with the ability to dynamically respond to IODF configuration changes, it is best that these changes be scheduled to take advantage of normal maintenance windows. This will enable the ATAM address space to be cycled in response to the IODF configuration changes, and ATAM's ECSA usage will remain at its initialization level.

How IOS configuration changes affect processing

The IOS configuration can change while ATAM is rebuilding its table due to prior change detection. If this occurs, ATAM will reinitiate the table build process, contingent on the number of remaining build requests as identified by the T4 parameter. If the number of remaining build requests has been exhausted, the

ATAM address space will terminate. This scenario is rare in that it is a result of many IOS configuration change requests initiated within a small time interval.

Proactive processing

The T1, T2, and T3 parameters are used to proactively process tape devices.

The proactive component is responsible for checking the status of the tape devices being managed by ATAM, and for ensuring that devices not currently in use are kept in an offline state. The following configuration parameters are used in the proactive component:

T1 Offline Unit Polling Interval

T2 Online Unit Polling Interval

T3 Online Unit Iteration Count

How proactive processing works

Every T1 seconds, ATAM examines its in-memory list of managed devices and checks for changes to the unit control blocks (UCBs) and for selectable, online, unallocated UCBs. If there are no changes and no online devices, ATAM goes back to sleep. If UCB changes are detected, ATAM refreshes the in-memory information about the device.

If the device is online and unallocated, ATAM issues message ATH082I. After finding the ATAM-managed device selectable, online, and unallocated for T3 additional iterations of the scan, ATAM attempts to vary the device offline. During this scan, ATAM first checks for the outstanding messages defined with either the R or W commands. If detected, ATAM attempts to reply to the messages as defined and does not attempt any "vary" processing. ATAM continues scanning every T2 seconds, each time issuing message ATH085I, until resolution of the outstanding messages. Once resolved, the scan interval returns to every T1 seconds.

Changing the value of T1

The T1 parameter on the ATAM System Configuration screen represents the Offline Unit Polling Interval, which is the number of seconds ATAM will wait between attempts to see if a device is available to be varied offline or is still online. You may want to adjust the number of seconds, depending upon whether you typically perform a large number or small number of tape mounts.

Although the processing requirements for checking UCBs are minimal, decreasing the value of T1 will cause this processing to occur more frequently. As a result, ATAM will perform more work and, therefore, use more CPU time to do it. Installations that perform a large number of tape mounts on multiple systems may want to decrease the value of T1 to ensure that unused drives are readily available on the system that needs them.

Increasing the value of T1 instructs ATAM to check UCBs less often. Increasing T1 will reduce the amount of work that ATAM has to do. Due to the fact that "vary offline" requests will happen less frequently, tape devices will be left online for a longer period of time after the previous job has unallocated the drive. Installations that perform a small number of tape mounts, or who do not often run into allocation problems, may want to consider increasing the value of T1.

How T2 and T3 are used

The value for T2 determines how long ATAM sleeps between scans when one or more of the commands, defined via the R or W command, remains outstanding. Once manual or automated intervention resolves the message, ATAM returns to the T1 interval for scans. While the T2 interval is in effect, ATAM will not perform any "vary offline" processing.

Once ATAM finds a device that is selectable, online, and unallocated, the T3 parameter indicates how many subsequent iterations ATAM will detect this condition before attempting to vary the device offline. T1 and T3, in effect, determine how "persistent" ATAM is about getting a device varied offline. T2 determines how quickly ATAM automatically responds to messages defined via the R or W commands.

Reactive processing

The T5 and T6 parameters are used to process tape devices reactively, meaning "as needed."

The reactive component of ATAM is responsible for providing jobs with tape devices on an "as needed" basis. The following configuration parameters are used in the reactive component:

T5 Vary Online Wait Time

T6 Vary Online Maximum Attempts

How reactive processing works

The reactive component of ATAM spends the majority of its time sitting idle in MVS allocation recovery. It acts as a "front-end" to allocation recovery, meaning before allocation-related WTOs appear (such as IEF238D). When a job requests a tape device, ATAM determines whether it currently has a device that can be used to satisfy the request. If a device is available, then the device is varied online and is allocated by the job. This component (reactive) then goes back to sleep.

How T5 and T6 are used

If no devices are immediately available to service the allocation request, ATAM sleeps for T5 seconds and checks its list of devices again. This process is repeated until a device is available for the job or until T6 attempts have been made, whichever occurs first. If no device is available after T6 attempts, there is simply not enough hardware available to service the number of requests at this point in time.

What happens next

If the reactive component of ATAM is unable to service a request, it issues message ATH101D, which is a WTOR offering recovery options that include:

- Cancel the request.
- Defer to MVS allocation default processing. OR
- (optional) Invoke a WAIT-NOHOLD request.

ATAM automates the response to ATH101D with a default response of WAIT-NOHOLD, however, this is not always a valid response to this message (i.e.

WAIT-NOHOLD is not always an option). If this message remains outstanding for T5 seconds, as in cases where WAIT-NOHOLD was not an option, then standard allocation recovery processing takes place and ATAM deletes the ATH101D message. The IEF238D message appears followed by an IEF433D message. ATAM automatically responds to IEF238D with "WAIT" and IEF433D with "NOHOLD".

While these messages remain outstanding, ATAM also posts the following message:
ATH085I ALLOCATION MESSAGES DETECTED, ATAM VARY PROCESSING SUSPENDED.

ATAM then temporarily suspends "vary offline" processing until the situation has cleared.

Considerations for using T5 and T6

The objective of ATAM is to make the most efficient use of existing tape devices while reducing human intervention. Installations that frequently have short-duration tape requests may want to consider increasing the values of T5 (Vary Online Wait Time) and T6 (Vary Online Maximum Attempts), which you can access through option S, Setup and Configuration, on the ATAM main menu. The T5 and T6 parameters work together. Start with small increases to T5. Increasing the value of T5 will give you more time for existing tape jobs to complete, and will release the tape device for use by another job. The T6 value determines how many times to process a T5-based wait.

Installations that often find themselves in allocation may have reached the ceiling on their existing hardware investment. Infrequent, but lengthy, allocation conditions might be addressed by increasing the values of T5 and T6, or by considering adjustments to the batch workload mix at the time of these problems.

Considerations for using the T7 parameter

This topic contains more information about the T7 parameter (Device Bidding Wait Time). You can change the value for this parameter through option S, **Setup and Configuration**, on the ATAM main menu.

The T7 parameter, **Device Bidding Wait Time**, sets the amount of time a job will wait for a non-assign-capable device allocation before terminating the wait and using the default allocation recovery process. This will prevent any waiting jobs from waiting indefinitely, in cases where the global command support does not respond in a timely fashion or at all. Once the wait exceeds this number of seconds, the exit issues the following message:

```
ATH124I ATAM WAIT FOR UNIT ucb HAS EXPIRED
```

This message indicates that the response to the bid command did not complete within the time period specified by the T7 parameter. The default for T7 is 30 seconds.

For more information on device bidding, refer to Appendix B, "Sharing devices that are not assign capable," on page 181.

Related concepts:

Appendix B, "Sharing devices that are not assign capable," on page 181
ATAM can manage devices that are not assign capable, but to do so you must perform a few additional configuration steps.

Considerations for T8

To improve the tape device selection process, ATAM randomly selects a device from its pool of managed tape drives, which spreads usage more evenly across the tape device list. The T8 parameter determines when random selection is used.

The T8 parameter, **Randomization Threshold**, is used to control how many devices are available to ATAM for the random selection process. For example, if you set T8 to a value of eight (8), which is the default, there must be more than eight devices in the available selection list before ATAM will apply random selection logic to the list. If there are less than eight devices, ATAM will process the device list sequentially instead of randomly.

Adjust for randomization

When determining how to adjust for randomization, consider the following:

- Increasing this number (T8) reduces the likelihood that ATAM will randomly select devices from the available device list. For example, if T8=100, there must be greater than 100 devices on the list before ATAM will randomly select devices from the list.
- Decreasing this number increases the likelihood that ATAM will randomly select devices. For example, if T8=4, there only needs to be more than four devices on the list before ATAM will randomly select devices.

Turn off randomization

If you would like to turn off randomization completely, set T8=0. A value of zero (0) disables randomization. You can also set LRU=Y (yes) to disable randomization.

Sequential processing for special ordered lists

There are instances where allocation provides an ordered list to ATAM that should not be altered. This may be done for efficiency of movement, meaning that allocation orders the devices by units closest to the volume serials. In these cases, ATAM should not attempt to randomly select devices from the available device list, so it is essential that you set T8=0.

Another consideration for these special cases is that ATAM should not apply Least Recently Used (LRU) logic to device selection. To ensure that LRU processing is not used, set LRU=N.

To summarize, if you want to disable any attempt by ATAM to change the manner in which the available device list is accessed, do the following:

- Set T8=0 to disable randomization.
- Set LRU=N to disable Least Recently Used device selection.

Note: For more information on LRU, refer to “Specifying parameters on the System Configuration screen” on page 22.

Related tasks:

“Specifying parameters on the System Configuration screen” on page 22

You can modify the parameters used for a specific system by making changes to the values on the System Configuration screen.

Chapter 8. Volser-to-Unit Preferencing Exit

This topic describes how to use the volser-to-unit preferencing exit to determine which tape units handle specific volume serial IDs, referred to as VOLSERS.

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*. Several topics in this chapter provide additional information on this exit.

If you activate the ATAM Subsystem Interface (SSI), ATAM will use the contents of ATH#VALD to establish volume-to-device preference processing for ATAM-managed, online, unallocated devices. Refer to “The SSI command” on page 149 for more details on the ATAM Subsystem Interface.

Related concepts:

“The SSI command” on page 149

Use the SSI command to check or set the status of the ATAM subsystem interface facility.

Related tasks:

“Enabling ATH#VALD” on page 166

When you first implement ATH#VALD exit, or whenever you change the exit you already have in place, you must perform a few steps to enable ATH#VALD for use.

“Disabling ATH#VALD” on page 166

If you decide not to use volser-to-unit preferencing, you can disable this feature.

“Reviewing the contents of ATH#VALD” on page 166

You can view the contents of the ATH#VALD table.

Related reference:

“Modify ATH#VALD”

To use volser-to-unit preferencing, you must modify a model ATAM exit, ATH#VALD.

“Assemble and link ATH#VALD” on page 165

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

Modify ATH#VALD

To use volser-to-unit preferencing, you must modify a model ATAM exit, ATH#VALD.

This member is located in the *highlevel*.SATHSAMP library, where *highlevel* is the high-level qualifier assigned to the ATAM product libraries by your system administrator. ATH#VALD contains instructions on how to modify the member to specify criteria for volser-to-unit preferencing. An example of ATH#VALD is shown below.

```

*****
* ATH#VALD - PRODUCT:      ATAM V3.3.0                      *
*           FUNCTION:      USER VOLSER TO UNIT XREF EXIT    *
*           ENVIRONMENT:   TCB MODE                          *
*                                                                 *
* LICENSED MATERIALS - PROPERTY OF IBM                      *
* 5698-B15                                                  *
* (C) COPYRIGHT IBM CORP. 2002, 2018 ALL RIGHTS RESERVED.   *
* (C) COPYRIGHT ROCKET SOFTWARE, INC. 2002, 2018 ALL RIGHTS *
* US GOVERNMENT USERS RESTRICTED RIGHTS - USE, DUPLICATION *
* DISCLOSURE RESTRICTED BY GSA ADP SCHEDULE CONTRACT WITH  *
* IBM CORP.                                                  *
*                                                                 *
* CHANGE HISTORY:                                           *
* 05/2005 - PK06285 - MEMBER COMPLETELY REWORKED USING NEW *
*           ATHMVALD MACRO TO GENERATE DATA-ONLY          *
*           CSECT ATH#VALD.                                  *
*                                                                 *
*****
* SUMMARY: THIS IS A DATA-ONLY CSECT THAT DEFINES A TABLE *
* OF VOLUME SERIAL RANGES. FOR VOLUME SERIAL REQUESTS THAT *
* FALL WITHIN A RANGE ENTRY IN THE TABLE, ATAM ATTEMPTS   *
* ALLOCATION OF A UNIT FROM THAT ADDRESS RANGE.              *
*                                                                 *
* FOR VOLUME SERIALS THAT DO NOT FALL WITHIN ANY RANGE     *
* SPECIFIED IN THE TABLE, ATAM ASSUMES ANY AVAILABLE UNIT *
* MAY BE USED.                                              *
*                                                                 *
* DSECT FORMAT: +0, HALFWORD LENGTH OF VOLUME SERIAL FOR   *
* COMPARE +2, 6-BYTE FIELD CONTAINING BOTTOM OF VOLUME     *
* SERIAL RANGE +8, 6-BYTE FIELD CONTAINING TOP OF VOLUME   *
* SERIAL RANGE +14, 2-BYTE FIELD CONTAINING BOTTOM OF UNIT *
* ADDRESS (IN BINARY) +16, 2-BYTE FIELD CONTAINING TOP OF *
* UNIT ADDRESS (IN BINARY)                                  *
*                                                                 *
* DESCRIPTION: THE MACRO STATEMENTS DEFINE THE CONTENTS OF *
* THE ATH#VALD VOLUME PREFERENCE TABLE. THE ATHMVALD MACRO *
* HAS THREE PRINCIPLE FUNCTIONS: INITIALIZATION (INIT),     *
* DEFINITION (DEFINE), AND TERMINATION (END).                *
*                                                                 *
* 1) THE FIRST MACRO INVOCATION MUST INCLUDE THE INIT      *
* (INITIALIZATION) PARAMETER.                                *
*                                                                 *
* 2) FOLLOW THE INIT PARAMETER WITH ONE OR MORE DEFINE      *
* (DEFINITION) INVOCATIONS, WHICH MUST ALSO INCLUDE THE    *
* VOLUMES AND UNITS SUBPARAMETERS. EACH DEFINE INVOCATION *
* REPRESENTS AN ENTRY IN THE ATH#VALD TABLE.                *
*                                                                 *
* 3) THE LAST MACRO INVOCATION MUST INCLUDE THE END        *
* (TERMINATION) PARAMETER.                                    *
*                                                                 *
* THE INIT AND DEFINE(S) STATEMENTS PREPARE THE TABLE AND *
* COLLECT THE DATA SPECIFIED IN THE DEFINE SUBPARAMETERS. *
* THE END STATEMENT BEGINS AND COMPLETES THE ACTUAL ATH#VALD *
* TABLE DEFINITION.                                         *
*                                                                 *
* MACRO DEFINE HAS TWO SUBPARAMETERS, VOLUMES AND UNITS,   *
* WHICH MUST CONTAIN TWO VALUES. IN BOTH CASES, THE FIRST *
* VALUE IS THE BOTTOM OF THE RANGE AND THE SECOND VALUE IS  *
* THE TOP OF THE RANGE (I.E. 001,050). BOTH PARAMETERS     *
* ALSO REQUIRE THE FIRST VALUE TO BE LESS THAN OR EQUAL    *
* TO THE SECOND VALUE. THE VOLUMES SUBPARAMETER HAS A     *
* FURTHER REQUIREMENT THAT BOTH THE BOTTOM AND TOP VALUES *
* MUST BE EQUAL IN LENGTH.                                  *
*                                                                 *
* FINALLY, ALL VALUES ARE SPECIFIED IN CHARACTER FORMAT.  *
*                                                                 *
* EXAMPLE: ATHMVALD DEFINE,VOLUMES=(001200,001500),UNITS=(01A0,01AF) *
*                                                                 *
* THIS EXAMPLE REQUIRES ANY VOLUME SERIAL NUMBER BETWEEN, AND

```

```

* INCLUSIVE OF, 001200 TO 001500 TO ONLY UTILIZE TAPE UNITS 01A0 TO *
* 01AF. *
* *
* NOTE: THE SUPPLIED ENTRY (IN THE SAMPLE CODE BELOW) ALLOWS ALL *
* VOLUME SERIALS TO UTILIZE ANY AVAILABLE TAPE UNIT AND SHOULD NOT BE *
* USED. *
*****
        ATHMVALD INIT                                MUST BE SPECIFIED FIRST
        ATHMVALD DEFINE,VOLUMES=(AAAAAA,999999),UNITS=(0000,FFFF)
        ATHMVALD END                                MUST BE SPECIFIED LAST
***** Bottom of Data *****

```

Assemble and link ATH#VALD

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

Another member, ATHAVALD, in the *highlevel*.SATHSAMP library, contains the JCL to perform the assemble and link edit processes. The ATHAVALD member contains instructions on assembling and linking the ATH#VALD member so volser-to-unit preferencing is used whenever ATAM is run. An example is shown next.

```

//ATHAVALD JOB <PARAMETERS>,REGION=6M
//*****
//* MEMBER: ATHAVALD
//*
//* LICENSED MATERIALS - PROPERTY OF IBM
//* 5698-B15
//* (C) COPYRIGHT IBM CORP. 2002,2018 ALL RIGHTS RESERVED.
//* (C) COPYRIGHT ROCKET SOFTWARE, INC. 2002, 2018 ALL RIGHTS RESERVED.
//* US GOVERNMENT USERS RESTRICTED RIGHTS - USE, DUPLICATION OR
//* DISCLOSURE RESTRICTED BY GSA ADP SCHEDULE CONTRACT WITH IBM CORP.
//*
//* DESCRIPTION: THIS JOB WILL CREATE THE DATA DEFINITION
//*              CSECT USED TO SUPPORT CUSTOMER SPECIFIC
//*              VOLSER TO UNIT PREFERENCING. IT ASSEMBLES AND
//*              LINKS SATHSAMP MEMBER ATH#VALD INTO ATAM LOAD
//*              LIBRARY SATHLOAD.
//*
//* CAUTION:     YOU WILL NEED TO MODIFY THIS JCL BEFORE
//*              USING IT.
//*
//* NOTES:
//* 1) 'ATH.V3R3' IS THE SUGGESTED HIGH LEVEL QUALIFIER.
//* 2) SYSDA HAS BEEN SPECIFIED FOR THE UNIT PARAMETER.
//* 3) THE DATA DEFINITION IS IN SYSIN
//* 4) CHANGE THE ATHLEVEL SYMBOLIC TO MATCH YOUR INSTALLATION
//*****
//ASMHCL      PROC  PREFIX='ATH.V3R3'                <= ATH HIGH LEVEL QUAL
//ASSEMBLE    EXEC  PGM=ASMA90,COND=(4,LT),
//              PARM='LINECOUNT(0),LIST(121),NOXREF,NORLD'
//SYSROUT     DD    SYSOUT=*
//SYSUT1      DD    UNIT=VIO,SPACE=(CYL,(5,5))
//SYSUT2      DD    UNIT=VIO,SPACE=(CYL,(5,5))
//SYSUT3      DD    UNIT=VIO,SPACE=(CYL,(5,5))
//SYSLIB      DD    DISP=SHR,DSN=&PREFIX..SATHSAMP      <= ATH SAMPLIB
//SYSIN       DD    DISP=SHR,DSN=&PREFIX..SATHSAMP(ATH#VALD)  ""
//SYSLIN      DD    DSN=&&OBJ,UNIT=VIO,SPACE=(TRK,(5,5),RLSE),
//              DISP=(NEW,PASS)
//SYSPUNCH    DD    SYSOUT=*
//*
//LINK        EXEC  PGM=IEWL,COND=(4,LT),

```

```

// PARM=('LIST,XREF,MAP')
//SYSPRINT DD SYSOUT=*
//SYSUT1 DD UNIT=SYSDA,SPACE=(CYL,(1,1))
//SYSUT2 DD UNIT=SYSDA,SPACE=(CYL,(1,1))
//SYSLIB DD DUMMY
//SYSLIN DD DSN=&&OBJ,DISP=(OLD,PASS)
// DD DDNAME=SYSIN
//SYSLMOD DD DSN=&PREFIX..SATHLOAD,DISP=SHR <= ATH LOADLIB
// PEND
//ATH#VALD EXEC ASMHCL
//LINK.SYSIN DD *
ENTRY ATH#VALD
NAME ATH#VALD(R)
/*

```

Note: An ATH#VALD module must be present in the ATAM SATHLOAD, which is the load library, 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

When you first implement ATH#VALD exit, or whenever you change the exit you already have in place, you must perform a few steps to enable ATH#VALD for use.

About this task

To use the ATH#VALD exit, perform the following steps:

Procedure

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.

About this task

To disable volser-to-unit preferencing, perform the following steps:

Procedure

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

Reviewing the contents of ATH#VALD

You can view the contents of the ATH#VALD table.

About this task

To determine the contents of the ATH#VALD volume preference table in an ATAM load library, follow these steps:

Procedure

1. On the ATAM main menu, type **E** to select the **Environment** option. The ATAM Environment screen displays. An example is shown below:

```

----- ATAM Environment ----- Row 1 of 25
Command ==>                               Scroll ==> PAGE

Configuration data set: 'ATH.V3R3.ATHCONFG'
Load module data set : 'ATH.V3R3.SATHLOAD'

LRU . . . : N T1: 30 System SMF ID . : SYSB User ID . . . : MYUSERID
Quote . . : Y T2: 5 MVS version . . : SP7.2.1 Today's date . : 2018/02/26
Diag msgs : Y T3: 5 DF product name : DFSMS Version . . . : V3R03M00
Exitcomp : N T4: 0 DF version . . : 02.01.00 Status . . . : ACTIVE
Exit . . : Y T5: 10 DF SMS ID . . : SMS ATH Service Task: ATHPROC
TCP . . : Y T6: 999 TS0/E version . : 4.01.0 Start date . . : 2018/02/21
              T7: 10 PDF version . . : PDF 7.1 Start time . . : 09:15:15
              T8: 8 JES2 name . .(a): JES2 Discovered . . : 368
              OS version . . : z/OS 02.01.00
              ISPF version . : ISPF FOR z/OS 02.01.00

----- Load Modules -----
Major Command: Record - Record diagnostic data to ISPF List data set
Line Command : B-Browse +>
CMD  Module      Date      Time  FMID      Level      Version      Address
----  -
ATH$ACES 06/09/18 15.01 HAB0310 HAB0310 V3R03M00
ATH$ACTV 06/09/18 15.01 HAB0310 HAB0310 V3R03M00
ATH$ADMN 06/09/18 15.01 HAB0310 HAB0310 V3R03M00

```

Notice that there is a list of load modules at the bottom of the screen. Page down to see additional load modules.

2. Locate the ATH#VALD load module. If the ATH#VALD entry contains a value in the Address column, the ATH#VALD table is loaded and active. Type **S** to select it. The following screen displays:

```

----- ATAM Volume Serial Unit Preference Table ----- Row 1 to 1 of 1
Command ==>                               Scroll ==> CSR

Configuration data set: 'ATH.V3R3.ATHCONFG'
Load module data set : 'ATH.V3R3.SATHLOAD'
Load module name      : ATH#VALD
Assembly date         : 02/09/18
Assembly time         : 12.43
ATAM product version  : 3.3.00
Table size in bytes   : 68
Table entries         : 1
Table status          : ACTIVE

              -- Volser ---      -- UCB --
              Low  High      Low  High
              AAAAAA 999999      0000 FFFF

***** Bottom of data *****

```

What to do next

The tabular display will include a line for each entry in the ATH#VALD table. The lines are processed in the order of appearance.

Chapter 9. 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_ALLOC_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, which 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.

To modify the storage class and group names, follow the steps below:

1. Using DFSMS, define and activate storage class and group names. You need to define:
 - a. A "generic" storage class name that can be used for any VTS library, such as SCVTS1, if a definition does not already exist.
 - b. A specific storage class name for each VTS library, such as SCVTS11 for library 1, SCVTS12 for library 2, SCVTS13 for library 3, etc.
 - c. A specific storage group name for each VTS library, such as SGLIB1 for library 1, SGLIB2 for library 2, SGLIB3 for library 3, etc.
2. Update the DFSMS STORCLAS ACS routine with these new storage class names. This could include, but is not limited to, adding the newly defined storage classes to a FILTLIST statement containing your existing VTS library storage classes.
3. Update the DFSMS STORGRP ACS routine so it can test for the ATAM redirected assignment of the &STORCLAS variable.

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='SCVTS11') /*ATAM redirected to Library 1*/
DO
  SET &STORGRP='SGLIB1'
EXIT
END
WHEN (&STORCLAS='SCVTS12') /*ATAM redirected to Library 2*/
DO
  SET &STORGRP='SGLIB2'
EXIT
END
WHEN (&STORCLAS='SCVTS13') /*ATAM redirected to Library 3*/
DO
  SET &STORGRP='SGLIB3'
EXIT
END
WHEN (&STORCLAS='SCVTS1') /*ATAM not active, use any VTS*/
DO
  SET &STORGRP='SGLIB1','SGLIB2','SGLIB3'
EXIT
END

```

4. Next, update the ATAM member, ATH#VTSO, in the highlevel.SATHSAMP 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 high-level qualifier for ATAM is ATH, 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:

```

*****
*
* THIS ASSEMBLER SOURCE MEMBER, ATH#VTSO, MUST BE ASSEMBLED AND
* INSTALLED IN THE ATAM LOAD LIBRARY, SATHLOAD. WHEN CODING, FOLLOW
* ASSEMBLER STATEMENT CONTINUATION RULES.
*
* TO DISABLE VTS SUPPORT SIMPLY DEFINE THE MODULE CREATED BY ASSEMBLY
* OF THIS MODULE, ATH#VTSO, FROM THE ATAM LOAD LIBRARY, SATHLOAD, AND
* RECYCLE THE ATAM STARTED TASK.
*
*****
ATHMVTSO INIT
ATHMVTSO DEFINE,
  CLASS=SCVTS1,
  SERVERS=(SCVTS11,SCVTS12,SCVTS13)          VTS 1,2,3
ATHMVTSO DEFINE,
  CLASS=SCVTS2,
  SERVERS=(SCVTS11, SCVTS12,SCVTS13, SCVTS14) VTS 1,2,3,4
ATHMVTSO DEFINE
  CLASS=SCVTS3,
  SERVERS=(SCVTS11,SCVTS12)          VTS 1,2
ATHMVTSO END

```

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

5. When you have finished adding the new storage classes to the ATH#VTSO member of *highlevel.SATHSAMP*, assemble and link this source member using the JCL sample member ATHAVTSO of *highlevel.SATHSAMP*.
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 do not want to use VTS load balancing, you can disable the STORCLAS exit used by ATAM.

To disable ATAM's STORCLAS exit, do the following:

1. Delete member ATH#VTSO from the *highlevel*.SATHLOAD library, which is in the ATAM started task STEPLIB.

Note: The high-level qualifier (HLQ) may be ATH 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 our reference.

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

Migrating from CA-MIA to ATAM can be accomplished in a gradual manner if you would like time to test ATAM.

ATAM operates as a low-level OS/390 and z/OS system tool, managing tape devices across disparate MVS images within and across sysplex environments. When considering a change from Unicenter CA-MIA Tape Sharing for z/OS (referred to as "CA-MIA" in this appendix) to ATAM, you may need these products to cooperatively manage their tape devices in order to test ATAM and ease into migration. This appendix provides information on how to smoothly migrate from CA-MIA to ATAM and also how to enable them to co-exist on the same images until you are ready to migrate completely to ATAM.

The first and second sections of this appendix describe the test and production processes you must follow to migrate from CA-MIA to ATAM. These are the "plug and play" migration steps.

The third section provides more details on the steps you must take to enable CA-MIA and ATAM to co-exist on the same image for a longer test period. When in co-existence mode, ATAM works as a "relief valve," accessing ATAM-assigned drives only when CA-MIA exhausts its pool of managed devices. ATAM has been specially enhanced to enable it to run concurrently with CA-MIA. This allows you to test ATAM without shutting down CA-MIA, and to gradually assign more and more devices over to ATAM's management as part of the migration path.

Overview of migrating from CA-MIA to ATAM

This section assumes that your intention is to test that ATAM is working as expected, then completely migrate from CA-MIA to ATAM.

CA-MIA and ATAM were not designed to work together on the same image although ATAM has been enhanced to allow this to occur. Information is provided on the considerations and steps to follow when implementing ATAM in an environment that is currently using CA-MIA.

To migrate from CA-MIA to ATAM, *CA-MIA should be shutdown on the system before ATAM is started*. 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.

Example Environment

This topic describes the environment used in the example steps described in the next few sections.

For the purposes of this document, assume the following:

- There are two systems: SYSA and SYSB.

- You have eight (8) tape units and their device addresses are 0280-0287.
- 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).
- All of the tape units are assign-capable devices (e.g., 3480's or higher).
- CA-MIA is currently installed on both systems and is managing all eight of these tape units.
- You want to install ATAM on SYSA while leaving CA-MIA in operation on SYSB.

The steps for installing and testing ATAM on SYSA are described next.

Step 1: Selecting the devices each product will manage.

About this task

Let's assume that you have eight tape devices, 0280 through 0287. You could test ATAM on SYSA using four tape units: device addresses 0280 through 0283. That would leave CA-MIA to manage the remaining four devices: addresses 0284-0287. Devices can be managed by one product or the other, but not both!

Step 2: Installing ATAM on SYSA.

About this task

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: Creating an ATAM Commands member.

About this task

Create a commands member for ATAM on SYSA as outlined in these sections:

- "Creating a new configuration for a specific MVS system" on page 18.
- Chapter 6, "Commands member customization," on page 153

Continuing with our example, the Commands member should contain the following record:

```
S=0280-0283
```

When ATAM starts, it automatically *excludes* all of the devices that it discovers until the Commands member is processed. The Select (S) command, shown above, in the Commands member instructs ATAM to select device addresses 0280-0283 for ATAM to manage.

Related concepts:

Chapter 6, "Commands member customization," on page 153

The ATAM Commands member, ATHCMDxx, allows you to further customize ATAM to fit your particular tape unit environment. By using specific commands in the ATAM Commands member, you can create a script of valid commands that will be executed each time you start the ATAM started task.

Related tasks:

"Creating a new configuration for a specific MVS system" on page 18

You can create a new configuration member for an MVS system by choosing the **Setup and Configuration** option on the ATAM main menu. The System Configuration screen can also be used to view and change the values of an existing

configuration member.

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

About this task

Follow these steps:

1. Use a CA-MIA command to remove devices 0280 through 0283 from CA-MIA control on SYSB.

Note: Refer to the CA-MIA documentation to determine the necessary command(s) and syntax.

2. 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.

Note: For an example of how this was done at one test site, refer to “Enabling CA-MIA and ATAM to co-exist” on page 178. However, be sure to refer to the latest CA-MIA documentation for the command syntax.

Related concepts:

“Enabling CA-MIA and ATAM to co-exist” on page 178

While ATAM was not originally designed to co-exist with CA-MIA on the same image, specific enhancements have been made to ATAM to enable it to work concurrently with CA-MIA.

Step 5: Shut down CA-MIA on SYSA.

About this task

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.

Make sure that all jobs allocated to devices assigned by CA-MIA complete, and unallocate those devices before shutting down CA-MIA. Do not vary these devices offline. ATAM will initiate a "vary-offline" request for selectable devices once they are in an unallocated, online state.

Step 6: Checking for existing Allocation Recovery exits.

About this task

ATAM installs a module as a z/OS installation exit, IEF_ALLC_OFFLN, which is the Allocated or Offline Device Installation exit. However, CA-MIA and ATAM were not designed to operate in this allocation recovery exit at the same time.

1. 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
```

```
IEF_ALLC_OFFLN MIAALOCX A
```

2. If CA-MIA is active, ensure that CA-MIA is shutdown and its exit is not installed before proceeding further with ATAM start up.

Note: If you prefer, you can disable the CA-MIA allocation recovery exit. An example of how this was done at one test site is listed in “Enabling CA-MIA and ATAM to co-exist” on page 178. Always check the latest CA-MIA documentation for the appropriate commands and syntax.

3. If another product or locally written module is installed in Allocation Recovery, you will receive the following messages from ATAM at start up:

```
ATH012W MULTIPLE EXIT ROUTINES DETECTED. RESULTS MAY BE UNPREDICTABLE
ATH012I IEF_ALLC_OFFLN EXIT DETECTED: <module name> STATE: <state>
ATH241W EXITCOMPAT=N AND OTHER IEF_ALLC_OFFLN EXIT(S) DETECTED. ATH#ALOC IS
DISABLED.
```

These messages tell you that the default mode of operation is to disable ATAM's exit processing because ATAM found another installed exit. You can include the EXITCOMPAT=Y command in the ATAM Commands member to override this behavior and activate ATAM's exit processing.

Related concepts:

“Enabling CA-MIA and ATAM to co-exist” on page 178

While ATAM was not originally designed to co-exist with CA-MIA on the same image, specific enhancements have been made to ATAM to enable it to work concurrently with CA-MIA.

Step 7: Completing the ATAM configuration and product start up.

About this task

Following instructions in Chapter 2, “Configure Automated Tape Allocation Manager,” on page 5, complete the installation and configuration of ATAM on SYSA.

Related tasks:

Chapter 2, “Configure Automated Tape Allocation Manager,” on page 5
IBM Tivoli Automated Tape Allocation Manager for z/OS (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.

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

Migrating to Production

When you are done testing ATAM, you are ready to start using ATAM on a regular (production) basis.

Use the steps below to move ATAM into production after you have completed any testing of ATAM, replacing the use of CA-MIA.

Step 1: Install ATAM on SYSB.

About this task

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: Creating an ATAM Commands Member

About this task

Create a Commands member for ATAM on SYSB as outlined in these sections:

- "Creating a new configuration for a specific MVS system" on page 18.
- Chapter 6, "Commands member customization," on page 153

The Commands member should contain the following record:

```
S=0280-0287
```

When ATAM starts, it automatically *excludes* all of the devices that it discovers until the Commands member is processed. The Select (S) command, shown above, in the Commands member instructs ATAM to select device addresses 0280-0287 for ATAM to manage.

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

Related concepts:

Chapter 6, "Commands member customization," on page 153

The ATAM Commands member, ATHCMDxx, allows you to further customize ATAM to fit your particular tape unit environment. By using specific commands in the ATAM Commands member, you can create a script of valid commands that will be executed each time you start the ATAM started task.

Related tasks:

"Creating a new configuration for a specific MVS system" on page 18

You can create a new configuration member for an MVS system by choosing the **Setup and Configuration** option on the ATAM main menu. The System Configuration screen can also be used to view and change the values of an existing configuration member.

Step 3: Shutting down CA-MIA on SYSB.

About this task

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.

Make sure that all jobs allocated to devices assigned by CA-MIA complete, and unallocate those devices before shutting down CA-MIA. Do not vary these devices offline. ATAM will initiate a "vary-offline" request for selectable devices once they are in an unallocated, online state.

Step 4: Complete the ATAM configuration and start up

About this task

Following instructions in Chapter 2, “Configure Automated Tape Allocation Manager,” on page 5, complete the installation and configuration of ATAM on SYSB.

ATAM is now managing devices 0280 - 0287 on SYSB.

Related tasks:

Chapter 2, “Configure Automated Tape Allocation Manager,” on page 5
IBM Tivoli Automated Tape Allocation Manager for z/OS (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.

Step 5: Add remaining devices to SYSA.

About this task

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 Commands member at start up. However, issuing this console command is sufficient.

Enabling CA-MIA and ATAM to co-exist

While ATAM was not originally designed to co-exist with CA-MIA on the same image, specific enhancements have been made to ATAM to enable it to work concurrently with CA-MIA.

These enhancements enable you to have a longer time frame for testing ATAM and for becoming familiar with ATAM's many commands and unique features. Co-existence also allows you to have a progressive migration path from CA-MIA to ATAM by gradually removing drives from CA-MIA's control and assigning them to ATAM.

ATAM's unique ability to manage tape devices without requiring a shared communications link (i.e. shared DASD files) involves making use of the MVS allocation recovery exit, which requires that ATAM-managed devices be offline. This is contrary to CA-MIA's design, which requires that its managed devices be online. However, important to their ability to co-exist is the fact that both products offer the ability to exclude devices from their sphere of influence.

Excluding and selecting devices with ATAM is as simple as typing a Select (S) or Exclude (X) console command. In outside testing, it was determined that there were a few steps that needed to be taken to exclude tape devices from CA-MIA's control and assign them to ATAM. In general, these steps accomplish two objectives:

- Disable the CA-MIA allocation recovery exit.
- Modify the CA-MIA list of managed devices by issuing a series of CA-MIA commands and modifying the configuration data set.

An example of how to perform these processes is described in another topic in this section.

IMPORTANT: The examples of CA-MIA commands used in this section are specific to one test site and are not generic CA-MIA commands. You must refer to the CA-MIA documentation regarding these commands before attempting to perform any of the steps.

Example environment

The following information describes the sample scenario around which these steps were developed:

- Devices D10 - D11 are assigned to CA-MIA and devices D12 - D13 to ATAM.
- The command symbol that begins each command is a "not" symbol (~) in this example, but can be any symbol your site has defined to use with CA-MIA commands.

Steps for excluding devices from CA-MIA and assigning them to ATAM

The steps in this topic provide an example of how to exclude tape devices from CA-MIA and assign them to ATAM to manage.

About this task

The table in this section contains notes, comments, and command examples provided by a site who performed co-existence testing. This information is included "as is" in an effort to assist you in your migration efforts. Please be sure to consult CA-MIA documentation for specific syntax.

Table 76. Examples of commands for modifying CA-MIA to give control to ATAM

Step	Description
1	Define as OVG to CA-MIA the devices you want to assign to ATAM. Refer to the following example: <pre>~VARY(D10-D13) OVG GLOBAL</pre> Issue this command on one system only. This prevents any system from using the drives until you are done testing.
2	Modify the CA-MIA control file by excluding these same devices from the list (i.e., D10 - D13). It may be best to create a new control file (device list).
3	Force CA-MIA to read the new control file. Refer to the following example when you are ready to re-synchronize CA-MIA: <pre>~RESYNCH DEVLIST=device_list_name</pre> This tells CA-MIA to read the device list from this member. If you created a new control file, be sure to use the new device_list_name.
4	Define the excluded devices as NOTOVG to CA-MIA. An example of how this could be done is shown below: <pre>~VARY(D10-D13) NOTOVG LOCAL</pre> This command allows the drives to become usable again, allowing ATAM to vary the devices on and offline.

Table 76. Examples of commands for modifying CA-MIA to give control to ATAM (continued)

Step	Description
5	(Optional) If you do not know the name of the CA-MIA allocation recovery exit, type the following command to display it: <pre>D PROG,EXIT,EN=IEF_ALLC_OFFLN</pre> A message will display the name of the allocation recovery exit belonging to CA-MIA. In the example below, the name of the active (A) CA-MIA exit is MIAALOCX: <pre>CSV461I 11.10.55 PROG,EXIT DISPLAY 101</pre> <pre>IEF_ALLC_OFFLN MIAALOCX A</pre>
6	Disable the CA-MIA allocation recovery exit. The command must be issued on all MVS images running ATAM and would look similar to this: <pre>SETPROGEXIT,MODIFY,EXITNAME=IEF_ALLC_OFFLN,MODNAME=MIAALOCX,STATE=INACTIVE</pre> Note: ATAM now offers an EXITCOMPAT command which was designed specifically to allow ATAM to co-exist with CA-MIA. This command enables you to override CA-MIA's exit and activate ATAM's exit processing.
7	Start ATAM, then assign devices to ATAM. To start ATAM, type the following at a command line: <pre>S ATHPROC</pre> To assign all of the devices to ATAM, you would type the following Modify (F) command, assuming "ATHPROC" is the name of the started task for ATAM:F <pre>ATHPROC,S=D10-D13</pre>

Note: Make sure that all jobs allocated to devices assigned by CA-MIA complete, and unallocate those devices before shutting down CA-MIA. Do not vary these devices offline. ATAM will initiate a "vary-offline" request for selectable devices once they are in an unallocated, online state.

After completing the steps above, ATAM will be able to manage all of the devices, D10-D13, leaving CA-MIA to manage other devices, such as D14-D1F.

This completes the information about enabling CA-MIA and ATAM to co-exist until you are ready to migrate all devices to ATAM.

Appendix B. Sharing devices that are not assign capable

ATAM can manage devices that are not assign capable, but to do so you must perform a few additional configuration steps.

Some devices used in tape management are not assign-capable devices, such as 3420s. For ATAM to manage the sharing of these types of devices among different MVS images, ATAM must have the ability to definitively determine the status of these devices on the various MVS images. To accomplish this, ATAM must establish a communications link between the sharing MVS images via TCP/IP. In other words, ATAM must enable its global command support to effectively communicate the state of non-assign-capable devices to ATAM-defined MVS images.

Ordinarily, global command support is optional, making ATAM's use of TCP/IP optional as well. However, for ATAM to manage devices that are not assign-capable devices, you must enable ATAM's global command support on all z/OS images in the Tapeplex.

To establish this communications link, you must perform the following steps using the ATAM ISPF-based user interface or by modifying the configuration member and the Commands member:

1. Define each MVS image that is to share the devices. If you do not define an MVS image that has access to the non-assign-capable devices, integrity problems could result.
2. For each MVS image, define the Commands member name.
3. For each MVS image, define the TCP/IP configuration parameters.
4. Start ATAM on each defined MVS image. If you define the MVS image, but do not start ATAM on that image, bidding will always fail due to a lack of response.

When TCP/IP configuration is defined

This topic describes how ATAM handles tape devices that are not assign-capable when TCP/IP is defined.

In order to use TCP/IP and UNIX services, you must have an OMVS segment defined to your security facility (i.e. RACF or another security product). If you have correctly provided the TCP/IP configuration parameters for Global Commands support, the ATAM address space issues the following message at the completion of initiation:

```
ATH111I TCPIP Server Init Complete IPAddr(address),Port(port),Timeout(seconds)
```

ATAM detects devices that are not assign-capable during address space initiation. The devices are typically tape devices that pre-date IBM 3480/3490 and emulating devices. If detected, ATAM issues the following message:

```
ATH027I NON-ASSIGN-CAPABLE DEVICE devtype DETECTED ON UNIT uuuu
```

If you do not wish to have ATAM manage these device types, you must exclude them from ATAM by using the exclude (X) command.

Bid for devices

When a job attempts to allocate a device that is managed by ATAM, but is not an assign-capable device, ATAM uses a global command to "bid" for a device. The messages that are subsequently generated by ATAM depend upon whether the bid was successful or if it failed.

ATAM supports devices that are not assign-capable by issuing commands to the Global Commands facility. These commands request status information about the device from all participating ATAM-defined MVS images. When a job attempts allocation of a non-assign-capable device managed by ATAM, the ATAM allocation recovery exit issues the following command:

```
F ATHPROC,*,B=ucb,T=12345678,A=asid,E=12435678,N=*
```

Through the Global Commands facility, ATAM routes this command to all of the ATAM-defined MVS images, in effect "bidding" for device *ucb*. A bid is successful under the following circumstances:

- All of the ATAM-defined MVS images responded to the command.
- The device is managed by all of the ATAM-defined MVS images.
- No other ATAM-defined MVS images had an outstanding "lower" bid for the device.
- The device was not allocated on any other ATAM-defined MVS image.

ATAM issues the following message in the requesting address space to indicate that it has initiated a bid for a device:

```
ATH125I ATAM JOB jobname WAITING FOR devtype DEVICE ON UNIT ucb
```

Once the bid process receives a response, the exit issues the following message:

```
ATH126I ATAM WAIT FOR UNIT ucb POSTED
```

If the bid is successful, the ATAM allocation recovery exit assigns the device to the requesting address space and allocation completes.

If the bid fails, the exit issues the following message and repeats the process for the next available device, if one exists, or transfers control to default allocation processing when no available device exists:

```
ATH123I ATAM WAIT FOR UNIT ucb FAILED
```

In addition to issuing the above messages in the requesting address space, the ATAM address space issues the following messages to indicate bidding status and results:

```
ATH110I BID FOR DEVICE ucb INITIATED
```

```
ATH110I BID FOR DEVICE ucb FAILED, IN USE
```

```
ATH110I BID FOR DEVICE ucb FAILED, NOT MANAGED
```

```
ATH110I BID FOR DEVICE ucb FAILED, OUTBID
```

```
ATH110I BID FOR DEVICE ucb SUCCESSFUL
```

An address space will only wait for the number of seconds specified in the T7 parameter (Device Bidding Wait Interval), which you can set through the command interface (for example, F ATHPROC,T7=30). The T7 value sets the amount of time a job will wait for a non-assign-capable device allocation before terminating the wait and using the default allocation recovery process. This will prevent these waiting jobs from waiting indefinitely, in cases where the global command support

does not respond in a timely fashion or at all. Once the wait exceeds this number of seconds, the exit issues the following message:

```
ATH124I ATAM WAIT FOR UNIT ucb HAS EXPIRED
```

This message indicates that the response to the bid command did not complete within the time period specified by the T7 parameter.

When TCP/IP configuration is not defined

This topic describes how ATAM handles tape devices that are not assign-capable when TCP/IP is not defined.

If you have not properly defined the ATAM TCP/IP configuration parameters or if you specified TCP=N in the configuration members, the ATAM address space issues the following message when you start it:

```
ATH095W NO LOCAL TCPIP INFO CONFIGURED. ATAM REMOTE HOST SUPPORT DISABLED.
```

If you receive this message, global command support is unavailable and ATAM will not attempt to share devices that are not assign-capable. If you have instructed ATAM to manage these devices, and the ATAM allocation recovery exit detects a request for these devices, ATAM does not attempt to determine the state of the device on the other images and instead issues the following message:

```
ATH101D JOB jobname NEEDS A TAPE, REPLY C TO CANCEL, M FOR MANUAL ALLOCATION,  
W FOR WAIT-NO HOLD OR I FOR INFORMATION
```

You can respond to this message or allow ATAM to automatically respond to this message through the WTOR auto-response facility. If ATAM does not automatically reply to this message, ATAM will wait for the number of seconds specified in the T5 parameter (Vary Online Wait Time field) and repeat this behavior for the number of iterations specified in the T6 parameter (Vary Online Maximum Attempts field). Once the number of iterations has been exhausted, ATAM transfers the request to default allocation recovery processing.

Appendix C. Notes on using ATAM with other products

This appendix provides tips on how to use ATAM with other products. These tips were developed through ATAM use and testing at sites also using the products and facilities mentioned in this appendix. This information is provided in an effort to be proactive in helping you address common issues, saving you time as well.

Using ATAM with TSM

ATAM manages tape devices by maintaining them offline. IBM Tivoli Storage Manager (TSM) allocates tape devices using dynamic allocation in a way that precludes offline devices from consideration. When TSM's initial allocation attempt fails, TSM issues message ANR5373I and waits for a response.

When ATAM is the reason tape resources are offline, the appropriate response to the ANR5373I message is W for "wait." This response causes TSM to retry its dynamic allocation in a manner that will consider offline devices, giving ATAM the opportunity to resolve the allocation.

Using ATAM with HSM

When IBM Hierarchical Storage Management (HSM) attempts to allocate a tape resource that results in either ATAM issuing the ATH101D message or the MVS allocation recovery exit issuing the IEF238D message, the proper response for the ATH101D message is C for Cancel. In this case, HSM will issue its own message, ARC0381A, giving you the option to instruct HSM to wait and try again or actually terminate the request.

Using ATAM with CDB/Auto-Utilities

ATAM customers have reported job failures during execution of products from CDB Software. This is related to dynamic allocation requests. Please contact CDB Software for APAR 573 to address this. Refer to the next section for additional information.

Programs using dynamic allocation for tape data sets

Please note that any application programs that use dynamic allocation must consider offline tape devices in their requests or the application may fail. ATAM operates by keeping devices offline, therefore all allocation requests for ATAM-managed tape devices must consider offline devices.

Using ATAM with ASG Zeke

ATAM customers that also use ASG-Zeke will need to install a special ASG-Zeke PTF to bypass the tape drive check during dispatch. Contact ASG-Zeke support for complete details on this requirement. Refer to the "Special – SAD – Bypass tape drive check during dispatch" PTF. The PTF is described as sourced in 550A and above. Compatibility with ATAM requires that the ASG-Zeke SAD parameter is set to SAD=Y to bypass the tape drive check when dispatching a job.

Using ATAM with z/OS DFSMS OAM (Object Support)

For ATAM customers, z/OS DFSMS OAM provides an optional parameter, `ALLOCRETRYMINUTES(minutes)`, in the `CBROAMxx` PARMLIB member (`SETOAM` command). The `ALLOCRETRYMINUTES(minutes)` parameter specifies the time, in minutes, that OAM retries dynamic allocation of a tape drive that failed because all online tape devices are allocated before issuing message CBR6400D. If ATAM is in use, you might want to reduce the time that OAM makes retry attempts or to bypass retry processing entirely and issue CBR6400D immediately, so ATAM can start allocating a tape drive without having to wait for OAM retry processing. By automatically responding to allocation requests, ATAM reduces the need for operator intervention and enables more efficient use of tape drives.

Valid values for the *minutes* variable are 0, 1, 2, 3, 4, and 5. A value of 0 means no retry will be attempted and CBR6400D will be issued immediately. The default value is 5. Automation should also be used to respond to the CBR6400D WTOR message.

Note: This is a global specification only and cannot be specified at the storage group level.

Using ATAM with IBM MQ

For ATAM customers using IBM MQ, review the IBM MQ `ARCWTOR` parameter. MQ may issue message CSQJ008E to request preparation of the dataset. Tape dynamic allocation performed by IBM MQ has to consider offline devices. The `ARCWTOR` parameter adjusts IBM MQ behavior as it pertains to tape dynamic allocation requests. Contact IBM Technical Support for IBM MQ for further details.

Appendix D. IEF238D Processing Considerations

This topic describes different methods for responding to MVS IEF238D messages.

MVS allocation posts a WTOR message when the system needs one or more additional devices to complete the allocation for a job step. The following sequence of messages and replies is not uncommon:

```
xx IEF238D jobname - REPLY DEVICE NAME, 'WAIT' OR 'CANCEL'  
reply xx,wait
```

```
yy IEF433D jobname - WAIT REQUESTED -- REPLY 'HOLD' OR 'NOHOLD'  
reply yy,nohold
```

Although ATAM is not a console automation product, it does provide some rudimentary WTOR scanning and response capability.

During ATAM's "Offline Unit Polling Interval" (T1), which is set at 30 seconds by default, ATAM requests a list of outstanding WTORs on the local system. If any of the following message IDs are found, ATAM temporarily stops issuing vary offline requests for the tape device addresses that it is managing in order to prevent redundant queuing of vary offline requests:

- IEF238D
- IEF433D
- ATH101D

ATAM ships with sample "R=" commands to automatically reply to specific forms of the above messages. However, IBM Technical Support **strongly** encourages you to use other means to respond to these messages.

Consider using your existing console automation product, ALLOCxx, or MPFLST to automate the response to the messages listed below:

Table 77. List of messages requiring operator or automated response

Message	Reply
IEF238D <i>jobname</i> - REPLY DEVICE NAME, 'WAIT' OR 'CANCEL'	WAIT
IEF238D <i>jobname</i> - REPLY 'WAIT' OR 'CANCEL'	WAIT
IEF433D <i>jobname</i> - WAIT REQUESTED -- REPLY 'HOLD' OR 'NOHOLD'	NOHOLD
ATH101D <i>jobname</i> NEEDS A TAPE, REPLY C TO CANCEL, M FOR MANUAL ALLOCATION, W FOR WAIT-NO HOLD OR I FOR INFORMATION	W

MVS allocation may generate multiple forms of the IEF238D message. In some cases, you may see the following form of this message:

```
xx IEF238D jobname - REPLY DEVICE NAME OR 'CANCEL'
```

When this form of the IEF238D message displays, MVS allocation has indicated that waiting for a device is not an option and you must intervene manually to determine the appropriate response.

Relative to ATAM tape resource assignment, one of the following has occurred:

1. All eligible devices are offline and all ATAM-managed devices are currently in use on other systems, or
2. There are other eligible devices that you do not have under ATAM's control and these devices are currently offline.

The sample message rule for IEF238D that ships with ATAM will not respond to the above format of this message because it does not contain "WAIT" as an option.

Note: Refer to the *IBM MVS System Messages* manual for more information.

Appendix E. ATAM Diagnostics

If you should encounter any problem with ATAM, you may want to contact IBM Technical Support for assistance. Before calling, there are a few items you can check and some information you can prepare that will help in diagnosing the problem

While great effort and testing have been performed to create a quality product, it is possible that you will find a behavior or problem that requires a call to IBM Technical Support to resolve. This appendix describes the steps you should follow to collect diagnostic information prior to calling IBM Technical Support. Gathering this diagnostic information ahead of time will result in a significant time savings for you by cutting down on the number of calls made to determine the source and resolution of a problem.

Follow these steps before calling IBM Technical Support with an issue:

1. Verify that ATAM was properly installed.
2. Verify that the ATAM configuration properly identifies managed and unmanaged resources. This is done by creating a configuration member for each MVS system on which ATAM will be started, and by the use of Select (S) and Exclude (X) commands in the Commands member that ATAM uses at start up to determine which devices to manage.
3. Verify ATAM is active on the appropriate MVS images, unless the problem you are experiencing is that ATAM fails to start.
4. Save any SVC dumps related to the anomaly as IBM Technical Support may request them.
5. Obtain and save any system log (SYSLOG) data spanning the period of time one hour before and after the anomaly as IBM Technical Support may request this data.
6. Select option E, **Environment information**, on the ATAM main menu to gather information that IBM Technical Support may require in diagnosing the problem.

Use of the Environment option

The ATAM user interface provides a mechanism for obtaining information about the environment of an MVS image executing ATAM.

On the ATAM main menu, this is listed as option E, **Environmental information**. When you select this option, the information that displays depends upon whether your ATAM address space is active. The next two examples show sample screens for active and inactive information. IBM Technical Support personnel may have you recite information contained on this screen or you can save the diagnostic information in an ISPF List data set to send when reporting a problem.

ATAM is active

If your ATAM address space is active when you choose option E on the ATAM main menu, a screen similar to the following will display. This example shows a lot of information. You will need to page down to see all of the contents on your

screen. Notice that the fields at the top of the screen contain values. Also notice that the "Status" field shows a value of "ACTIVE." This is how you can tell if ATAM has been started on this system.

```

----- ATAM Environment ----- Row 1 of 31
Command ==> Scroll ==> CSR

Configuration data set: 'ATH.V3R3.ATHCONFIG'
Load module data set : 'ATH.V3R3.SATHLOAD'

LRU . . . N T1 . 30 System SMF ID . : RS06 System name . . : SYSB
Quote . . Y T2 . 5 MVS version . . : SP7.1.0 User ID . . . : MYUSERID
Diag msg . Y T3 . 5 DF product name : DFSMS Today's date . : 2018/02/26
Exitcomp . N T4 . 0 DF version . . : 02.01.00 Status . . . : ACTIVE
Exit . . . Y T5 . 10 DF SMS ID . . : SMS ATH Service Task: ATHPROC
TCP . . . Y T6 . 999 TSO/E version . : 4.01.0 Start date . . : 2018/02/21
T7 . 10 PDF version . . : PDF 7.1 Start time . . : 09:15:15
T8 . 8 JES2 name . .(a): JES2 Discovered . . : 368
OS version . . : z/OS 02.01.00
ISPF version . : ISPF FOR z/OS 02.01.00
----- Load Modules -----
Major Command: Record - Record diagnostic data to ISPF List data set
Line Command : B-Browse +>
CMD Module Date Time FMID Level Version Address
-----
___ ATH$ACES 02/15/18 17.16 HAB0330 HAB0330 V3R03M00
___ ATH$ACTV 02/15/18 17.17 HAB0330 HAB0330 V3R03M00
___ ATH$ADMN 02/15/18 17.16 HAB0330 HAB0330 V3R03M00
___ ATH$ADM1 02/15/18 17.17 HAB0330 HAB0330 V3R03M00
___ ATH$FALA 02/15/18 17.17 HAB0330 HAB0330 V3R03M00
___ ATH$JOBA 02/15/18 17.17 HAB0330 HAB0330 V3R03M00
___ ATH$MAIN 02/15/18 17.16 HAB0330 HAB0330 V3R03M00
___ ATH$STAT 02/15/18 17.16 HAB0330 HAB0330 V3R03M00
___ ATH$UNTA 02/15/18 17.17 HAB0330 HAB0330 V3R03M00
___ ATH#ACSS 02/15/18 17.16 HAB0330 HAB0330 V3R03M00
___ ATH#ACS0 02/15/18 17.16 HAB0330 HAB0330 V3R03M00
___ ATH#ALOC 02/15/18 17.16 HAB0330 HAB0330 V3R03M00 89414330
.
.
.

```

ATAM is inactive

If you choose option E, **Environmental information**, on the ATAM main menu and ATAM is inactive, a screen similar to the following will display. Again, you must page down to see all of this information. Notice that the real-time options, such as the "Tn" fields and operational settings, are unavailable when ATAM is inactive. Also notice that the "Status" field has a value of "INACTIVE." This is how you can tell that ATAM is inactive.

```

----- ATAM Environment ----- Row 1 of 31
Command ==> Scroll ==> CSR

Configuration data set: 'ATH.V3R3.ATHCONFIG'
Load module data set : 'ATH.V3R3.SATHLOAD'

LRU . . . N T1 . 0 System SMF ID . : RS06 System name . . : SYSB
Quote . . Y T2 . 0 MVS version . . : SP7.1.0 User ID . . . : MYUSERID
Diag msg . Y T3 . 0 DF product name : DFSMS Today's date . : 2018/02/26
Exitcomp . N T4 . 0 DF version . . : 02.01.00 Status . . . : ACTIVE
Exit . . : Y T5 . 0 DF SMS ID . . : SMS ATH Service Task: ATHPROC
TCP . . . Y T6 . 000 TSO/E version . : 4.01.0 Start date . . : 2018/02/21
T7 . 0 PDF version . . : PDF 7.1 Start time . . : 09:15:15
T8 . 0 JES2 name . .(a): JES2 Discovered . . : 368
OS version . . : z/OS 02.01.00
ISPF version . : ISPF FOR z/OS 02.01.00

----- Load Modules -----
Major Command: Record - Record diagnostic data to ISPF List data set
Line Command : B-Browse +>
CMD Module Date Time FMID Level Version Address
-----
ATH$ACES 02/21/18 15.01 HAB0330 HAB0330 V3R03M00
ATH$ACTV 02/21/18 15.01 HAB0330 HAB0330 V3R03M00
ATH$ADMN 02/21/18 15.01 HAB0330 HAB0330 V3R03M00
.
.
.
.

```

Changing values on Environment screen

ATAM options can be changed from the Environment screen by typing over the values with new values.

The values on the Environment screen are dynamic, but they represent the real-time command settings. You can change these settings by typing a new value on the Environment screen. When you type a new value, ATAM issues the appropriate command to make the change. For example, if the Environment screen shows LRU=N, you can change the "N" to "Y" on the Environment screen and ATAM will issue the appropriate command, in this case F ATAM,LRU=Y. The Environment screen immediately shows the new value.

You can type over multiple values, but once you press <Enter>, ATAM displays a confirmation screen for each changed value. The confirmation screen allows you to continue issuing the change command or cancel the request. An example is shown below:

```

+----- Confirm Option Change and Target -----+
...
... Command ==>
...
... Press Enter to confirm an option change for
... the specified system. Specify "*" to route
... the request to all defined systems, for
... supported options.
...
... Option          : LRU
... New value       : Y
... Target system   .
...
...
...
...
+-----+

```

The confirmation screen also allows you to specify a target system for the command, as described below:

- A blank specification sends the command to the local system only.
- Specifying an asterisk (*) sends the command to *all* defined systems.
- Specifying a system name sends the command to that system.

Note: It is important to use a valid system name or the command will not be performed.

If ATAM is not active on the system, the Environment screen displays with no values, and the input fields are disabled.

Recording diagnostic details

Before calling technical support, you can easily gather diagnostic information that will help in determining how to solve the problem.

When you call IBM Technical Support, they may ask you to read the information contained on the ATAM Environment screen, similar to the examples shown in the previous topic. To expedite problem determination, you can write this data to an ISPF List data set and send it to IBM Technical support when reporting the problem. This will reduce or eliminate a number of questions regarding this information during a diagnostic session.

To write the diagnostic data to an ISPF List data set, type **RECORD** on the command line of the ATAM Environment screen. Once you type this command, the following screen displays:

```
----- Record Diagnostic Information -----
Command ===> _

This command writes the data presented on this screen and the contents of
all Configuration and Commands members in the Configuration data set to an
ISPF List data set.

List data set name:

If a data set name appears in the List data set name field, the dialog
will append the recorded data to information already contained in this
data set. If you wish to prevent this, invoke the ISPF List service now
via the LIST command and specify a disposition for the current data set.
After doing so, press Enter on this screen to create a new list data set.

Press Enter to confirm this request or enter End to cancel the request.
```

This screen confirms your request and indicates the current status of your ISPF List data set. You may already have an active data set because of prior ISPF requests. You may want to append to this data set, or create a new data set just for the environmental information.

If there is a current ISPF List data set, the name displays in the "List data set name" field. Otherwise, this field is blank. To append to an existing list data set, press Enter.

To create a new list data set, type "ISPF LIST" on the command line and specify a disposition for the current list data set. Upon completion, ISPF will return you to the above screen. Press Enter to continue with creating a list data set for the environmental information.

When you press Enter, the following screen displays:

```
Specify Disposition of List Data Set
Command ==> _

List Data Set (MYUSERID.SYSA.SPF5.LIST) Disposition:
Process Option . . . 1 1. Print data set and delete
                        2. Delete data set without printing
                        3. Keep existing data set and
                           continue with new data set

Batch SYSOUT class . . *
Local printer ID or
writer-name . . . . .
Local SYSOUT class . .

Press ENTER key to process the list data set.
Enter END command to exit without processing the list data set.

Job statement information: (Required for system printer)
==> //MYUSERID10 JOB (ACCT#),'JOE MILES',CLASS=A,MSGCLASS=X,
==> // MSGLEVEL=(1,1),REGION=0M,NOTIFY=&SYSUID
==> //*
==> /*

-----
ATH513I - Environmental information written to ISPF list data set
MYUSERID.SYSA.SPF5.LIST
-----
```

Specify a disposition for the list data set. You can either print the data set (option 1), keep the data set for electronic delivery (option 3), or delete the data set if you do not want to send the information (option 2). If you choose option 3 to keep the data set, record the name of the list data set (contained in the "List Data Set" field and the ATH513I message text) to electronically deliver this information to IBM Technical Support. After choosing an option, the ATAM Environment screen displays again.

Example of list data set

This topic describes the diagnostic information that is saved in the list data set.

The list data set created by the RECORD command contains an image of the data on the ATAM Environment screen, plus the complete contents of the Configuration data set and the contents of the Command member associated with this system. From the sequence of steps described in the previous section, "Recording diagnostic details" on page 192, a list data set named MYUSERID.SYSA.SPF5.LIST would contain the following information for the MVS image executing the ATAM user interface:

```

----- ATAM Environment ----- Row 1 of 31
Command ==> Scroll ==> CSR

Configuration data set: 'ATH.V3R3.ATHCONFIG'
Load module data set : 'ATH.V3R3.SATHLOAD'

LRU . . . N T1 . 30 System SMF ID . : RS06 System name . . : SYSB
Quote . . Y T2 . 5 MVS version . . : SP7.1.0 User ID . . . : MYUSERID
Diag msg . Y T3 . 5 DF product name : DFSMS Today's date . : 2018/02/26
Exitcomp . N T4 . 0 DF version . . : 02.01.00 Version . . . : V3R03M00
Exit . . . Y T5 . 30 DF SMS ID . . : SMS ATH Service Task: ATHPROC
TCP . . . Y T6 . 999 TS0/E version . : 4.01.0 Start date . . : 2018/02/21
T7 . 30 PDF version . . : PDF 7.1 Start time . . : 09:15:15
T8 . 8 JES2 name . .(a): JES2 Discovered . . : 368
OS version . . : z/OS 02.01.00
ISPF version . : ISPF FOR z/OS 02.01.00

----- Load Modules -----
Major Command: Record - Record diagnostic data to ISPF List data set
Line Command : B-Browse +>
CMD Module Date Time FMID Level Version Address
-----
ATH$ACES 02/15/18 17.16 HAB0330 HAB0330 V3R03M00
ATH$ACTV 02/15/18 17.17 HAB0330 HAB0330 V3R03M00
ATH$ADMN 02/15/18 17.16 HAB0330 HAB0330 V3R03M00
ATH$ADM1 02/15/18 17.17 HAB0330 HAB0330 V3R03M00
ATH$FALA 02/15/18 17.17 HAB0330 HAB0330 V3R03M00
ATH$JOBA 02/15/18 17.17 HAB0330 HAB0330 V3R03M00
ATH$MAIN 02/15/18 17.16 HAB0330 HAB0330 V3R03M00
ATH$STAT 02/15/18 17.16 HAB0330 HAB0330 V3R03M00
ATH$UNTA 02/15/18 17.17 HAB0330 HAB0330 V3R03M00
ATH#ACSS 02/15/18 17.16 HAB0330 HAB0330 V3R03M00
ATH#ACS0 02/15/18 17.16 HAB0330 HAB0330 V3R03M00
ATH#ALOC 02/15/18 17.16 HAB0330 HAB0330 V3R03M00 89414330
.
.
.

```

Page right to see additional columns. All of the columns are described below.

LRU Indicates whether ATAM is using "Least Recently Used" (LRU) logic when selecting a device to be varied online. With this logic, the tape unit that has been dormant the longest will be the first one ATAM will attempt to use. This ensures that all available tape units are used for requests.

Quote Indicates whether responses to captured WTOR messages are to be surrounded by quotation marks ("").

Diag msgs

Indicates if diagnostic messages will be issued to better indicate ATAM's processing path. These messages are only useful to IBM Technical Support.

Exitcomp

Indicates whether ATAM should perform exit processing, even if another (non-ATAM) exit exists.

- **Y** (yes). Indicates that you want to use ATAM's exit (turns on exit compatibility) for processing allocation requests.
- **N** (no). Indicates that you want the ATAM exit to be disabled (turns off exit compatibility) due to the presence of a non-ATAM exit routine. This does not disable ATAM tape management. For devices defined to ATAM as selectable, ATAM will continue to vary them offline when it detects they are online and unallocated.

Exit Indicates the state of the ATAM IEF_ALLC_OFFLN exit routine, ATH#ALOC.

- **Y** (yes). Indicates that the ATAM exit is active and processing allocation requests.

- **N (no).** Indicates that the ATAM exit is disabled due to the EXITCOMPAT command setting and the presence of a non-ATAM IEF_ALLC_OFFLN exit routine.

TCP Indicates if TCP communication is active.

T1 (Offline Unit Polling Interval)

Displays the number of seconds to wait between scanning for outstanding messages defined by the R or W command and detecting selectable, online, unallocated units.

T2 (Online Unit Polling Interval)

Displays the number of seconds to wait between scanning for outstanding messages defined by the R or W command and selectable, online, unallocated units, once either of these conditions has been detected at the T1 interval.

T3 (Online Unit Iteration Count)

Displays the number of consecutive times ATAM finds a selectable, online, unallocated device before attempting to vary it offline. The first detection is accompanied by message ATH082I. The T3 iteration occurs at the T2 interval.

T4 (Reconfiguration Termination Limit)

Displays the number of times that ATAM will tolerate dynamic IODF reconfigurations before terminating the started task. The purpose of this limit is to conserve ECSA memory.

T5 (Vary Online Wait Time)

Displays the number of seconds that ATAM will wait between attempts to find an available tape unit, and then vary the device online.

T6 (Vary Online Maximum Attempts)

Displays the maximum number of times that ATAM will attempt to find an available device for a job, and then vary the device online.

T7 (Device Bidding Wait Interval)

Displays the number of seconds ATAM will wait for a device bid to respond before determining the requested device to be unavailable.

T8 (Randomization Threshold)

Displays the randomization threshold number. The count of units in the available device list must exceed this number for ATAM to employ randomized unit selection logic.

System SMF ID

Identifies the MVS system ID associated with this configuration data set.

MVS version

Identifies the release and version numbers for the MVS operating system.

DF product name

Indicates the name of the Data Facility product used on this system. The default is Data Facility Storage Management System (DFSMS), an IBM facility.

DF version

Lists the version number, release number, and mod level of the DFSMS product.

DF SMS ID

Indicates the ID associated with the Data Facility Storage Management System. The default is SMS.

TSO/E version

Identifies the release and version numbers for the Time Sharing Option/Extended version software.

PDF version

Identifies the release and version numbers for the Program Development Facility software.

JES information

Lists the JES type, state, and name. The field heading contains either JES2 or JES3. The character in parenthesis indicates a-active or i-inactive. The JES subsystem name appears after the colon.

OS version

Identifies the release and version numbers for the Operating System.

ISPF version

Identifies the release and version numbers for the Interactive Systems Productivity Facility software.

System name

Displays the name of the subsystem on which ATAM was running.

User ID

Displays the TSO/E user ID of the person who selected the Environment option on the ATAM main menu and recorded the environment information.

Today's date

Indicates the current date in YYYY/MM/DD format.

Version

Indicates the version, release, and modification level of ATAM.

Status Displays either ACTIVE or INACTIVE to indicate if an ATAM started task was initiated.

ATH Service Task

Displays the name of this ATAM started task. The default is ATHPROC.

Start date

Indicates the date, using YYYY/MM/DD format, that this instance of ATAM was started.

Start time

Indicates the time, using HH:MM:SS format, that this instance of ATAM was started.

Discovered

Identifies the number of tape devices that were found upon start up.

The diagnostic data that is generated when using the RECORD command, also includes the following items:

- A list of tape drives that were either selected or excluded in the Command member,
- An index listing of all of the members in the Configuration data set,
- The complete contents of the Command member associated with this system, and
- the complete contents of each configuration member.

Page down to see this additional information. Examples of this data are shown on the following below.

```

1 Tape list: 0500 xF 0501 xF 0502 xF 0503 xF 0530 xF 0531 xF 0540 x0 0541 xA
  Tape list: 0560 xU 0561 xU 05A0 x0 05A1 x0 05A2 x0 05A3 x0 05A4 x0 05A5 x0
  Tape list: 05A6 x0 05A7 x0 05A8 x0 05A9 x0 05AA x0 05AB x0 05AC x0 05AD x0
  Tape list: 05AE x0 05AF x0 05B0 xF 05B1 xF 05B2 xF 05B3 xF 05B4 xF 05B5 xF
  Tape list: 05B6 xF 05B7 xF 05B8 xF 05B9 xF 05BA xF 05BB xF 05BC xF 05BD xF
  Tape list: 05BE xF 05BF xF

(Additional information is provided, but not shown in this example, regarding the index
listing of the configuration data set.)

1      DATASET:  ATH.V3R2.ATHCONFG      DATE: 06/18/18      ATHCMD00
      MEMBER:  ATHCMD00      LEVEL:   01.10      TIME: 14:04
                                USERID: MYUSERID      PAGE: 01 OF 01

START
COL  ----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8

1 *
1 * THIS PARMLIB MEMBER IS FOR ATAM V3R2M00
1 *
1 *
1 * TURN ON DIAGNOSTIC MODE
1 *
1 DON
1 *
1 * DISPLAY VERSION INFO
1 *
1 V
1 *
1 * DISPLAY LRU STATUS
1 *
1 LRU
1 *
1 * DISPLAY EXIT COMPATIBILITY STATUS
1 *
1 EXITCOMPAT
1 *
1 * EXCLUDE ALL BUT 560 AND 561 FROM ATAM CONTROL
1 *
1 S=0560-0561
1 *X=05A0-05BF
1 *X=0500-0503
1 *X=0530-0531

1 * LIST ALL SELECTABLE DRIVES
1 S
1 * SHOW STATUS OF ALL DRIVES
1 L
1 * DISPLAY TUNING PARAMETERS
1 T
1 * MESSAGE PROCESSING SECTION
1 R=IEF238D,WAIT,17
1 R=IEF433D,NOHOLD,17
1 R=ATH101D,W,81
1 W=SEQW010W,RETRY,53
1 W

```

The next example shows the contents of the configuration members.

```

      DATASET: ATH.V3R2.ATHCONFG      DATE: 06/18/18
      MEMBER:  SYSA                    LEVEL:  01.02      TIME: 21:33
                                      USERID: MYUSERID    PAGE: 01 OF 01

START
COL  ----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8

1  ATAM_CONFIGURATION_MEMBER
1  MODE=A                               Dialog inserted, MYIDA, 2017/05/21
1  ATHCMD=00                           Dialog inserted, MYIDA, 2017/05/21
1  T1=030                              Dialog inserted, MYIDA, 2017/05/21
1  T2=005                              Dialog inserted, MYIDA, 2017/05/21
1  T3=005                              Dialog inserted, MYIDA, 2017/05/21
1  T4=000                              Dialog inserted, MYIDA, 2017/05/21
1  T5=030                              Dialog inserted, MYIDA, 2017/05/21
1  T6=999                              Dialog inserted, MYIDA, 2017/05/21
1  T7=030                              Dialog inserted, MYIDA, 2017/05/21
1  QUOTE=Y                             Dialog inserted, MYIDA, 2017/05/21
1  LRU=N                               Dialog inserted, MYIDA, 2017/05/21
1  TCP=Y                               Dialog inserted, MYIDB, 2017/05/21
1  TIMEOUT=030                         Dialog inserted, MYIDA, 2017/05/21
1  PORT=35043                          Dialog inserted, MYIDA, 2017/05/21
1  HOSTNAME=SYSA                       Dialog inserted, MYIDA, 2017/05/21
1  T8=008                              Dialog inserted, MYIDA, 2017/18/06
      DATASET: ATH.V3R2.ATHCONFG      DATE: 06/18/18
      MEMBER:  SYSB                    LEVEL:  01.01      TIME: 21:33
                                      USERID: MYUSERID    PAGE: 01 OF 01

START
COL  ----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8

1  ATAM_CONFIGURATION_MEMBER
1  MODE=A                               Dialog inserted, MYIDB, 2017/05/23
1  ATHCMD=00                           Dialog inserted, MYIDB, 2017/05/23
1  T1=030                              Dialog inserted, MYIDB, 2017/05/23
1  T2=005                              Dialog inserted, MYIDB, 2017/05/23
1  T3=005                              Dialog inserted, MYIDB, 2017/05/23
1  T4=000                              Dialog inserted, MYIDB, 2017/05/23
1  T5=030                              Dialog inserted, MYIDB, 2017/05/23
1  T6=999                              Dialog inserted, MYIDB, 2017/05/23
1  T7=030                              Dialog inserted, MYIDB, 2017/05/23
1  T8=008                              Dialog inserted, MYIDA, 2017/18/06
1  QUOTE=Y                             Dialog inserted, MYIDB, 2017/05/23
1  LRU=N                               Dialog inserted, MYIDB, 2017/05/23
1  TCP=Y                               Dialog inserted, MYIDB, 2017/05/23
1  TIMEOUT=030                         Dialog inserted, MYIDB, 2017/05/23
1  PORT=35043                          Dialog inserted, MYIDB, 2017/05/23
1  HOSTNAME=SYSC                       Dialog inserted, MYIDB, 2017/05/23
      DATASET: ATH.V3R2.ATHCONFG      DATE: 05/18/18
      MEMBER:  SYSC                    LEVEL:  01.28      TIME: 21:33
                                      USERID: MYUSERID    PAGE: 01 OF 01

START
COL  ----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8

1  ATAM_CONFIGURATION_MEMBER
1  MODE=A                               Dialog inserted, MYIDA, 2017/05/08
1  ATHCMD=00                           Dialog inserted, MYIDA, 2017/05/08
1  T1=030                              Dialog inserted, MYIDA, 2017/05/08
1  T2=005                              Dialog inserted, MYIDA, 2017/05/08
1  T3=005                              Dialog inserted, MYIDA, 2017/05/08
1  T4=005                              Dialog inserted, MYIDA, 2017/05/08
1  T5=030                              Dialog inserted, MYIDA, 2017/05/08
1  T6=999                              Dialog inserted, MYIDA, 2017/05/08
1  T7=030                              Dialog inserted, MYIDA, 2017/05/08
1  T8=000                              Dialog inserted, MYIDA, 2017/18/05
1  QUOTE=Y                             Dialog inserted, MYIDA, 2017/05/08
1  LRU=N                               Dialog inserted, MYIDA, 2017/05/08
1  TCP=Y                               Dialog inserted, MYIDA, 2017/05/08
1  TIMEOUT=030                         Dialog inserted, MYIDA, 2017/05/08
1  PORT=35043                          Dialog inserted, MYIDA, 2017/05/08
1  HOSTNAME=SYSC                       Dialog inserted, MYIDA, 2017/05/08

```

In most instances, the only members in the Configuration data set are those used by ATAM. However, if you chose to use an existing data set for your Configuration data set and it contains information unrelated to ATAM processing, it will also print those members. If the data related to these members is sensitive, you may remove them from the list data set. Be aware, however, that diagnosis might require a complete list of all of the members and their contents, regardless of whether you believe them to be used as ATAM components.

Related concepts:

“Recording diagnostic details” on page 192

Before calling technical support, you can easily gather diagnostic information that will help in determining how to solve the problem.

Appendix F. Migrate process from ATAM V1

If you are currently using ATAM Version 1 and are ready to upgrade to a more recent version, this appendix describes how to perform this migration.

The migration steps are listed in the sections that follow.

Step 1: Changing the format of the configuration file and data

ATAM V3 uses a Configuration data set (PDS or PDSE) instead of the VSAM data set referenced by the ATHPARMS DD statement. There is no conversion utility to create or move configuration data. Other items to consider:

- The Configuration data set is allocated by the ATAM address space and ISPF dialog via the ATHCONFIG file name.
- Configuration statements are in the format KEYWORD=VALUE and can be modified directly in the member or by choosing option **S, Setup and Configuration**, on the ATAM main menu and making entries in the fields.

Step 2: Changing from PARMLIB member to Commands member

Beginning with ATAM V2, ATAM uses a Commands member instead of a PARMLIB member. The suggested location of the Commands member is in the Configuration data set, but it can reside in SYS1.PARMLIB. Other items to consider:

- Copy the current ATAM V1 PARMLIB member into a Commands member, named ATHCMD00 by default, in the Configuration data set.
- The Commands member must be named with prefix ATHCMDnn, where nn can be any alphanumeric values that resolve into a valid member name. The default value is "00".
- If you need a unique Commands member for each MVS image, the Configuration members can be used to connect specific System configuration members to Commands members.

Step 3: (Optional) Creating an alternate names table

The configuration data set can potentially contain member ATHIDTBL. The ATAM ISPF dialog will create and maintain this member dynamically in cases where MVS system names cannot be used for Configuration member names.

Step 4: Reviewing LOGFILE

If you have used a LOGFILE with ATAM V2.1 and earlier, you must create a new log file for ATAM as changes have been made to the formatting in the log file.

Step 5: (Optional) Using EXITDSN keyword to load exits

A separate EXITDSN keyword is now optional. Beginning with ATAM V2, ATAM will load its exits from the STEPLIB contained in the address space or from MVS Linklist, unlike ATAM V1. However, ATAM can still be directed to load its exits from a specific data set via the EXITDSN keyword in the Configuration member.

Please note that the EXITDSN keyword value cannot be set from the ATAM V2 ISPF interface. It can only be manipulated by directly editing a configuration member.

Note: IMPORTANT: Do not use this keyword unless specifically instructed to do so by IBM Technical Support.

SYSIEFSD.Q4 ENQ Support

Beginning with ATAM V2.2, ATAM no longer waits on the SYSIEFSD.Q4 ENQ when running on z/OS 1.7. ATAM makes use of a new feature provided on the IEEVARYD macro that allows the user to bypass waiting on this ENQ if it is not available.

Appendix G. Considerations for ATH101D and device assignment

You can automate a response to message ATH101D to ensure tape resources are kept available as much as possible.

ATAM issues WTOR message ATH101D when it is unable to assign a tape device. This happens when tape device resources are exhausted. It does not happen immediately. ATAM will retry the request at an interval specified in the T5 parameter (Vary Online Wait Time) for T6 iterations (Vary Online Maximum Attempts).

We suggest automating the response to this message either with ATAM's built-in WTOR response facility or by using your own automation facility. Moreover we suggest the automated response to the message to be "W" for WAIT. This instructs allocation to place the requesting job in a wait condition without holding resources (i.e. WAIT-NOHOLD). The "R" command topic provides information on how to use ATAM to set an automatic response for the ATH101D message

ATH101D and APAR OA07942

One of the z/OS PTF's contains APAR OA07942. The options listed in ATAM message ATH101D will vary depending upon whether APAR OA07942 is installed.

If you have not installed the z/OS PTF containing APAR OA07942, the ATH101D message does not always include an option to wait for devices to become available. This occurs if all devices of the type requested appear offline on the requesting z/OS image.

In cases like this, completion of the allocation request requires manual intervention. You must either reply to the ATH101D message with one of the other available options or allow T6 iterations (Vary Online Maximum Attempts) of T5 intervals (Vary Online Wait Time) to expire, at which point ATAM terminates the wait for a response to ATH101D and defers to z/OS allocation defaults to resolve the allocation. ATAM issues message ATH100I to indicate the number of seconds it will wait before deferring to z/OS allocation defaults for further processing. Further allocation processing typically includes z/OS issuing WTOR message IEF238D, however defaults as specified in PARMLIB member ALLOCxx will affect this processing.

Once you install the z/OS PTF containing APAR OA07942, the ATH101D message will always include an option to wait for devices to become available. The WAIT option is available even if all devices of the type requested appear offline on the requesting z/OS image. This APAR allows the ATAM's Allocated and Offline Device Installation exit (IEF_ALLC_OFFLN) to offer a job the option to wait for resources, even if all selectable devices appear offline. ATAM refers to this as a "forced wait," which is described in the Forced Wait topic. This is acceptable because ATAM has knowledge of tape resources that extends beyond a single z/OS image.

Installing both PTFs make ATAM more automated in its response to managed tape requests across Sysplex, non-Sysplex, and x-Plex environments. However, with

neither, or only one of the PTFs installed, ATAM functions as previously described (i.e. WAIT is not available if all devices appear offline).

Forced Wait

When you respond with a "W" (wait) to the ATH101D message, ATAM may use a "Forced Wait" when all candidate volumes appear to be offline.

ATAM defines a "Forced Wait" as a WAIT condition it initiates when all candidate volumes appear offline on the requesting z/OS image. ATAM issues the following message whenever a "W" response to the ATH101D message will result in a "Forced Wait" condition:

```
ATH100I ATAM WILL WAIT nnnnn SECONDS FOR A REPLY, OTHERWISE IT WILL DEFAULT  
      TO WAIT-NOHOLD FORCE
```

The following z/OS allocation message appears whenever ATAM (or any other IEF_ALLC_OFFLN exit routine) initiates a "Forced Wait" condition:

```
IEF019I jobname procstep stepname ddname +xxx THE  
      ALLOCATED/OFFLINE EXIT, IEF_ALLC_OFFLN,  
      DIRECTED ALLOCATION TO WAIT
```

When ATAM places a requestor in a "Forced Wait," awaking the allocation attempt requires a subsequent allocation attempt or an attempt to vary a candidate device online. If neither of these events occurs, the wait could continue indefinitely.

To address this, ATAM looks for possible Forced-Wait conditions while performing scans for online, unallocated devices at an interval defined by the number of seconds specified on the T1 (Offline Unit Polling Interval) and T2 (Online Unit Polling Interval) parameters. If, while scanning, ATAM determines that a previous allocation attempt for a particular device tape resulted in a forced wait, it will attempt to vary online any device of that type to awake the waiting allocation request. This will continue until another allocation attempt or the "vary online" attempt resolves the waiting request.

Appendix H. Column display functions

The display of columns can be changed in a number of ways to suit your needs. Several commands enable you to modify the display.

ATAM's CSETUP functionality enables you to:

- Rearrange report columns horizontally using the CFIX and CORDER options.
- Control the vertical ordering of columns using the CSORT option.

Additional column display functions enable you to:

- Insert column numbers above each display column.
- Generate a ruler at the top of the report columns beneath the headings.
- Display an entire row-column data element.

All of these functions are described in this appendix. The customizations (or "views") you configure using CFIX, CORDER, and CSORT can be saved across sessions.

Please note the following regarding syntax presented in this appendix:

- Underlines indicate the minimum acceptable abbreviation for each keyword.
- Variables are shown in *italicized* lowercase type.
- Keyword options are separated by vertical lines (|).

Accessing the CSETUP primary option menu

The CSETUP primary option menu enables you to access the various CSETUP options and configure column display functions according to your display needs.

About this task

The CSETUP command uses the following syntax:

CSETUP

Launches the CSETUP primary option menu.

To access and use the CSETUP primary option menu:

Procedure

1. On any dynamic display (for example, the Objects Profile Display panel, the Utilities Profile Display panel, or the Jobs Profile Display panel), type CSETUP (or CSET) in the option line and press Enter. The Setup Primary Option Menu displays:

Figure 1. Setup Primary Option Menu panel

```

SETUP ----- Setup Primary Option Menu ----- YYYY/MM/DD HH:MM:SS
Command ==>

Temporary View

1 CFIX      Select columns to be fixed on the left side of the report
2 CORDER    Modify the horizontal placement of unfixed columns
3 CSIZE     Customize the size of columns
4 CSORT     Select columns to sort
5 CRESET    Reset column values
6 CREMOVE   Remove all customizations, including original defaults
7 PVIEW     Permanent View (toggle between temporary and permanent)

HELP      Setup Tutorial

```

2. Type the number corresponding to the option you want to access in the Command line and press Enter. The following options are available on the Setup Primary Option Menu:

CFIX Option 1, CFIX, enables you to fix and unfix columns.

CORDER

Option 2, CORDER, enables you to reposition columns.

CSIZE Option 3, CSIZE, enables you to customize the size of the columns.
This command is not supported at this time.

CSORT

Option 4, CSORT, enables you to select one or more columns for sorting and thus modify the order of the rows displayed.

CRESET

Option 5, CRESET, enables you to reset all customizations.

CREMOVE

Option 6, CREMOVE, enables you to remove all customizations.

PVIEW

Option 7, PVIEW, enables you to toggle between permanent view and temporary view.

Note: You can also directly invoke each CSETUP option by typing the corresponding command (for example, CFIX, CORDER, CSORT, CRESET, CREMOVE, or PVIEW) in the option line on any dynamic display and pressing Enter.

Fixing a column

About this task

The CFIX option enables you to fix and unfix columns. A fixed column is always located at the far left side of the display. It does not shift horizontally (as unfixed columns do) when scrolling to the left or right. Certain columns may be permanently fixed in the report and cannot be unfixed by the user. Such a column has a fix status of P (permanently fixed).

A column cannot be fixed if it is larger than the available display area. There are also restrictions for fixing columns related to the size requirements of other columns.

To fix a column:

Procedure

1. Type CFIX in the option line on any display panel and press Enter. The Define Fixed Columns panel displays.

Figure 2. Define Fixed Columns panel

```

CFIX ----- Define Fixed Columns ----- YYYY/MM/DD HH:MM:SS
Option ==>                               Scroll ==> PAGE
-----+>
                                           ROW 1 OF 9

Column Function ==> 1 (1-Fix/Unfix, 2-Order, 3-Size, 4-Sort)
Permanent View ==> Y (Y-Perm, N-Temp) Reset View ==> N (Y,N)

Device_Width : 80
Old_Fixed_Width: 37      Old_Unfixed_Width: 43
New_Fixed_Width:         New_Unfixed_Width:

-----

Cmd New Old Len Column_Name
P  P  P    5 CMD
P  P  P   32 NAME
-      10 CREATOR
-      5 UPDT
-     32 DESCRIPTION
-     10 LAST_USER

Enter: Process selections; PF3: Exit and save; CAN: Exit without save
Line Cmds: F Fix U Unfix

```

The following fields appear on the Define Fixed Columns panel:

Column Function

Enables you to jump to any of the CSET functions by typing in the appropriate number. The number corresponding to the current option displays in this field.

Permanent View

Indicates whether or not the view you define is permanent or temporary. Valid values are:

- Y-View customizations are permanent.
- N-View customizations are temporary.

Reset View

Resets all customizations.

Device_Width

Shows the current display device size (screen width).

Old_Fixed_Width

Shows the sum of the FIXED column widths prior to any changes in the current CFIX panel.

Old_Unfixed_Width

Shows the UNFIXED area prior to any changes in the current CFIX panel. $\text{Old_Unfixed_Width} = \text{Device_Width} - \text{Old_Fixed_Width}$.

New_Fixed_Width

Shows the sum of the FIXED column widths that will result if the FIX/UNFIX changes are saved.

New_Unfixed_Width

Shows the UNFIXED area that will result if the FIX/UNFIX changes are saved. $\text{New_Unfixed_Width} = \text{Device_Width} - \text{New_Fixed_Width}$.

Cmd Field where you specify line commands. Valid line commands are F (fix) and U (unfix).

New Displays the new CFIX view settings.

Old Displays the previous CFIX view settings.

Len Shows the length of the column.

Column_Name

Shows the name of the column.

2. Type F in the Cmd field next to column(s) you want to fix.
3. Type U in the Cmd field next to column(s) you want to unfix.
4. Press Enter. The changed values display in the New column next to the corresponding column(s).
5. Press PF3 to save changes and return to the display panel.

Repositioning columns

The CORDER option enables you to reposition report columns.

About this task

If any columns are fixed, they are grouped together as the leftmost report columns. The unfixed columns are grouped together to the right of any fixed columns.

CORDER does not move a column out of its group. A fixed column cannot be relocated to the right of an unfixed column. Likewise, an unfixed column cannot be relocated to the left of a fixed column.

To reposition columns:

Procedure

1. Type CORDER in the option line on any display panel and press Enter. The Define Column Display Order panel displays.

Figure 3. Define Column Display Order panel

```

CORDER ----- Define Column Display Order ----- YYYY/MM/DD HH:MM:SS
Option ==> Scroll ==> PAGE
----->
ROW 1 OF 9

Column Function ==> 2 (1-Fix/Unfix, 2-Order, 3-Size, 4-Sort)
Permanent View ==> N (Y-Perm, N-Temp) Reset View ==> N (Y,N)

Cmd Fix New Old Column_Name
___ P      1 CMD
___ P      2 NAME
___      3 CREATOR
___      4 UPDT
___      5 DESCRIPTION
___      6 LAST_USER
___      7 LAST_UPDATED
___      8 CRTD_USER
___      9 CREATED_USER
***** Bottom of Data *****

Enter: Process selections; PF3: Exit and save; CAN: Exit without save
Line Cnds: Specify number for column position

```

The following fields appear on the Define Column Display Order panel:

Column Function

Enables you to jump to any of the CSET functions by typing in the appropriate number. The number corresponding to the current option displays in this field.

Permanent View

Indicates whether or not the view you define is permanent or temporary. Valid values are:

- Y – View of customizations is permanent.
- N – View of customizations is temporary.

Reset View

Resets all customizations.

Cmd Field where you specify the number for column position.

Fix Displays fixed columns. Valid values are:

- F – Indicates the column is fixed.
- P – Indicates the column is permanently fixed.

New Displays the new CORDER view settings.

Old Displays the previous CORDER view settings.

Column_Name

Shows the name of the column.

2. Type a number next to a column to specify its order.
3. Press Enter. The new column order numbers display in the New column next to each column.
4. Press PF3 to return to the display panel.

CSORT function

This topic describes the CSORT command.

CSORT functionality enables you to select one or more columns for sorting and thus modify the order of the rows displayed on many of ATAM's product panels. Columns are selected by sort priority and direction. Direction is either ascending (default) or descending. When more than one column is selected for sorting, the second column only differentiates when rows have matching data in the first column. Similarly, a third column only impacts the sort when data in both the first two columns are identical.

Defining sort columns

About this task

A maximum of nine columns can be selected for sorting at one time. Internal requirements may create a smaller maximum. A message is issued if the maximum number of columns selected for sorting is exceeded.

Note: CSORT and SORT are synonymous.

To invoke sorting:

Procedure

1. Type CSORT (or SORT) in the option line on any display panel and press Enter. The Define Sort Columns panel displays:

Figure 4. Define Sort Columns panel

```

SORT ----- Define Sort Columns ----- YYYY/MM/DD HH:MM:SS
Option ==>                               Scroll ==> PAGE
----->
                                         ROW 1 OF 9

Column Function ==> 4 (1-Fix/Unfix, 2-Order, 3-Size, 4-Sort)
Permanent View ==> N (Y-Perm, N-Temp)  Reset View ==> N (Y,N)
Stop Sorting    ==> N (Y,N)

Cmd Dir New Old Column_Name
- - - - -
- - - - - NAME
- - - - - CREATOR
- - - - - UPDT
- - - - - DESCRIPTION
- - - - - LAST_USER
- - - - - LAST_UPDATED
- - - - - CRTD_USER
- - - - - CREATED_USER

Enter: Process selections; PF3: Exit and save; CAN: Exit without save
Ord: 1-9 Dir: A Asc D Desc

```

The following fields appear on the Define Sort Columns panel:

Column Function

Enables you to jump to any of the CSET functions by typing in the appropriate number. The number corresponding to the current option displays in this field.

Permanent View

Indicate whether or not the view you define is permanent or temporary. Valid values are:

- Y – View of customizations is permanent.

- N – View of customizations is temporary.

Reset View

Resets all customizations.

Stop Sorting

Indicates whether or not to stop sorting as specified. Valid values are:

- Y – Stop sorting.
- N – Continue sorting.

Cmd Field where you specify the sort order.

Dir Specifies the lexicographic order for the column. Valid values are:

- A – Values are listed in ascending order, smallest to largest (default).
- D – Values are listed in descending order, largest to smallest.

New Displays the new CSORT view settings.

Old Displays the previous CSORT view settings.

Column_Name

Shows the name of the column.

2. Type **A** or **D** in the Cmd field next to the columns on which you want to base your sort.
3. Press Enter. The new sort preferences are displayed in the New column.
4. Press **PF3** to return to the display panel.

Fastpath SORT command

The SORT command can be used as a primary (fastpath) command by typing the appropriate SORT syntax in the Option line of any report panel and pressing Enter. The functionality supports both single and multi-column sorting and enables users to specify sort order (ascending or descending) for each column in the sort.

Syntax for single-column sorting

The syntax for single-column sorting is as follows:

`SORT column_identifier dir`

Where *column_identifier* is either the **column name** or the **relative column number** and *dir* is the direction in which to sort the column data. Valid values for *dir* are:

asc Sorts data in ascending order (default).

desc Sorts data in descending order.

Notes:

1. There must be a space between the *column_identifier* and its *dir* (if used).
2. The **relative column number** for a column is determined based on the column's placement when visible on the screen. Thus, relative column numbers are only available for columns currently visible on the screen. Relative column numbers are determined by counting the displayed columns from left to right, with the leftmost visible column being assigned the number '1' and each successive column (reading left to right) being assigned a relative column number that is incremented by 1. **Hint:** To quickly determine the column number, use the CNUM command to toggle on the column numbers above each display column.

3. You can sort on a column that is not displayed if you use the **column name** (instead of the **relative column number**) as the `column_identifier` in the SORT syntax.

Multi-column sorting

The syntax for multi-column sorting is as follows:

```
SORT column_identifier dir column_identifier dir
```

Where *column_identifier* is either the column name or the relative column number and *dir* is an optional indication of the direction in which to sort the column data. Valid values for *dir* are:

asc Sorts data in ascending order (default).

desc Sorts data in descending order.

Please note that *column_identifier* and *dir* values must all be separated by spaces. The maximum number of columns that can be sorted at once is nine (9).

SORT examples

For a report display that has three columns, all of which display on the screen:

Column 1: Name

Column 2: Creator

Column 3: Status

The following examples show how you can sort these columns:

SORT NAME

Sorts display data in ascending order based on the value in the Name column (when no *dir* value is specified, the default sort order is ascending, thus SORT NAME and SORT NAME A are synonymous).

SORT NAME D

Sorts display data in descending order based on the value in the Name column.

SORT NAME DESC

Sorts display data in descending order based on the value in the Name column.

SORT NAME A CREATOR D

Sorts display data first in ascending order based on the value in the Name column and then sorts data in descending order based on the value in the Creator column.

SORT NAME ASC CREATOR DESC

Sorts display data first in ascending order based on the value in the Name column and then sorts data in descending order based on the value in the Creator column.

SORT 1 A

Sorts display data in ascending order based on the value in the Name column.

SORT 1 A CREATOR D

Sorts display data first in ascending order based on the value in the Name column and then sorts data in descending order based on the value in the Creator column.

SORT 3 2 1

Sorts the display data first in ascending order based on the value in the Status column, then in ascending order based on the value in the Creator column, and finally in ascending order based on the value in the Name column.

Using the FORM command

You can use the FORM command on several screens to display the contents of a row in a vertical format instead of horizontal. This helps you see all of the data at a glance rather than paging right to see all of the data when displayed normally (horizontally).

About this task

FORM reformats one row of data elements (a row) so that each data element is placed on a separate line. By default, the top currently visible line is reformatted. If the cursor is placed on a different row, prior to pressing ENTER, that row is reformatted (easy to do if a PF key is set to FORM).

To provide an example of how the FORM command affects the display of data, let's look at the "All Activity" report.

Procedure

1. On the ATAM main menu, choose option 2, **Activity Reporting**.
2. On the "Select Activity Report" window, choose option 2, **Job Activity**.

Results

A screen similar to the one below will display.

```
----- ATAM Log - Job Activity ----- Row 1 of 283
Command ==>                               Scroll ==> PAGE

Configuration data set: 'ATH.V3R3.ATHCONFIG'
Activity log data set : 'ATH.V3R3.LOGFILE'

+>
System name . . : SYSA
CMD   Date       Time       System  Event      Unit  Job Name  Job Step
2018/01/13 11:13:44 SYSA    ALLOCATE   0540  DFSMSHSM  DFSMSHSM
2018/01/13 11:19:42 SYSA    ALLOCATE   0541  DFSMSHSM  DFSMSHSM
2018/01/13 11:22:33 SYSC    ALLOCATE   0540  DFSMSHSM  DFSMSHSM
2018/01/13 11:33:58 SYSB    ALLOCATE   0540  DFSMSHSM  DFSMSHSM
2018/01/13 11:35:45 SYSA    ALLOCATE   0541  DFSMSHSM  DFSMSHSM
2018/01/13 11:38:05 SYSD    ALLOCATE   0540  DFSMSHSM  DFSMSHSM
2018/01/13 11:40:46 SYSD    ALLOCATE   0541  DFSMSHSM  DFSMSHSM
2018/01/13 11:45:17 SYSA    ALLOCATE   0540  DFSMSHSM  DFSMSHSM
2018/01/13 11:50:28 SYSA    ALLOCATE   0541  DFSMSHSM  DFSMSHSM
2018/01/13 11:55:45 SYSB    ALLOCATE   0541  DFSMSHSM  DFSMSHSM
2018/01/13 11:58:14 SYSA    ALLOCATE   0540  DFSMSHSM  DFSMSHSM
2018/01/13 11:58:50 SYSC    WAITING    BKUP0D50  DUMP1
2018/01/13 11:58:50 SYSC    FAILED     BKUP0D50  DUMP1
2018/01/13 12:02:49 SYSD    ALLOCATE   0540  DFSMSHSM  DFSMSHSM
2018/01/13 12:07:10 SYSA    ALLOCATE   0540  DFSMSHSM  DFSMSHSM
2018/01/13 12:14:46 SYSB    ALLOCATE   0540  DFSMSHSM  DFSMSHSM
2018/01/13 12:35:52 SYSA    ALLOCATE   0541  DFSMSHSM  DFSMSHSM
```

Example

In this example, notice that the last column is "Job Step" and if you want to see the rest of the columns, such as DSNNAME, you must page right to do so. Now if you type FORM in the Command line at the top of the Job Activity report, you will see this display for the first row of data.

```
----- ATAM Log - Job Activity ----- Row 1 of 283
Command ==>                               Scroll ==> PAGE

Configuration data set: 'ATH.V3R3.ATHCONFIG'
Activity log data set : 'ATH.V3R3.LOGFILE'

System name . . : SYSA

Column Name Column Value
CMD
DATE          2018/01/13
TIME          11:13:44
SYSTEM        SYSA
EVENT         ALLOCATE
UNIT          0540
JOB           DFSMSHSM
STEP          DFSMSHSM
DDNAME        RESIN1
DSNAME        REALLY.LONG.DSNAME
UNITBIN

***** Bottom of Data *****
```

Notice how all of the column names are listed vertically under one column and you can now see the data for the DSNNAME and UNITBIN columns. You don't have to page right to see the data.

NROW and PROW commands can be issued while in FORM mode to change to the next (NROW) or previous (PROW) set of data elements. For example, if you type **NROW** in the Command line at the top of the screen, you will see the contents of the second row. An example of the second row is shown below:

```
----- ATAM Log - Job Activity ----- Row 1 of 283
Command ==>                               Scroll ==> PAGE

Configuration data set: 'ATH.V3R3.ATHCONFIG'
Activity log data set : 'ATH.V3R3.LOGFILE'

System name . . : SYSA

Column Name Column Value
CMD
DATE          2018/01/13
TIME          11:19:44
SYSTEM        SYSA
EVENT         ALLOCATE
UNIT          0541
JOB           DFSMSHSM
STEP          DFSMSHSM
DDNAME        RESIN1
DSNAME        REALLY.LONG.DSNAME
UNITBIN

***** Bottom of Data *****
```

If you compare the screen above to the one before it, you'll notice that the TIME and UNIT columns contain different data, indicating that this is the next (second) row in the Job Activity Report.

If you would like to move forward or backward by several lines, you can use one of the following commands:

NROW *n* (to move forward)
PROW *n* (to move backward)

In this case, the "*n*" is an integer. If *n* is omitted, *n*=1 is assumed.

What to do next

You can assign FORM, NROW and PROW to PF keys if you use these commands frequently. To do so, type the **KEYS** command, which is an ISPF command. The list that displays shows the currently assigned PF keys and you can make changes as needed.

Reset of CSET customizations

The CRESET option enables you to reset all customizations.

The CRESET option enables you to reset all customizations. After CRESET is issued, all fixed columns are unfixed (except for any permanently fixed columns), all selected sort columns are deselected and sorting is disabled, all column sizes are set to the initial values or maximum values if no suggested value previously existed, and original column locations are restored. The CRESET option can be selected from the Setup Primary Menu (option S) or issued as a primary command:

CRESET

Resets all customizations (unfixes fixed columns, deselects selected sort columns, sorting disabled, column sizes set to initial values, original column locations restored).

Note: CRESET differs from CREMOVE in that CREMOVE sets all column sizes to their maximum values ignoring any initial, suggested sizes.

Removal of CSET customizations

The CREMOVE option enables you to remove all customizations.

After you issue the CREMOVE command, all fixed columns are unfixed (except for those that are permanently fixed), all selected sort columns are deselected and sorting is disabled, all column sizes are set to their maximum values, and original column locations are restored. The CREMOVE option can be selected from the Setup Primary Menu (option S) or issued as a primary command:

CREMOVE

Removes all customizations (unfixes fixed columns, deselects selected sort columns, sorting disabled, column sizes set to maximum values, original column locations restored).

Note: CREMOVE differs from CRESET in that CREMOVE sets all column sizes to their maximum values ignoring any initial, suggested sizes.

Column numbering

If you would like to see the column number displayed above each column in a report, use the CNUM command.

Column numbering inserts a column number above each display column. The inserted column numbers are relative to the leftmost display column. Use the following command to invoke column numbering:

CNUM

Enables you to toggle on/off the column numbers above each display column.

Notes:

1. The leftmost displayed column is always numbered one (1) regardless of how far to the right you scroll.
2. You can use column numbers when issuing the SORT fastpath command.
3. Column numbers are not removed by CRESET nor CREMOVE. To remove column numbers, re-issue the CNUM command.

Ruler display

The COLS command enables you to generate a ruler at the top of the report columns beneath the headings.

This ruler tracks the current position within the column. The < > symbols indicate whether there is additional column data to the left or right of the displayed data. For example:

<-5----2-----5->

In this example, positions 13 through 28 are displayed. There is data both to the left and right of the currently displayed area.

The COLS command can be issued by itself, as a toggle switch, or with one parameter (ON|OFF). The syntax is as follows:

COLS (ON|OFF)

Enables you to generate a ruler at the top of the report columns to track the current position within the column.

Expand columns

To expand a specific row-column to view the full data in that element, use the CEXPAND command.

The CEXPAND command enables you to display an entire row-column data element. To invoke CEXPAND, place the cursor on a row-column element and issue the CEXPAND command. The cursor position determines the row-column that expands.

The CEXPAND command can be issued by itself or with two parameters (row and column). The syntax is as follows:

CEXPAND (row column)

Enables you to display an entire row-column data element where *row* is the number of the row and *column* is the number of the column (non-heading lines only) that you want to expand.

CSET restrictions

The following restrictions apply to CSET options:

- Total fixed column sizes cannot exceed screen width.

- Total fixed column sizes must leave enough unfixed space for the minimum allowed size for all unfixed columns.

Appendix I. ATAM SMF Record Map

The Activity Reporting and Current Status options on the ATAM main menu allow you to see real time or "near" real time data from the ATAM log file. To see historical data, you can view the ATAM SMF data. The ATAM SMF record contains more information than what is provided in the ATAM log records.

The ATAM SMF record map consists of a fixed portion followed by a variable portion. The first 18 bytes of the record contains standard SMF header information as described in the *z/OS MVS System Management Facilities Guide* (IEA2G260). The record type contained in the SMF122TYPE field determines the content of the record's variable portion. The remaining portion of the SMF record contains data unique to ATAM. See member ATHSMFAS in the ATAM sample data set, SATHSAMP, for an ALC map of the ATAM SMF record.

The ATAM SMF record can contain nine types of data, which are listed below:

Type	Description
0	ATAM address space initialization
1	Successful allocation
2	WAIT-NOHOLD initiated by ATAM
3	Failed allocation
4	ATAM address space termination
5	"Forced" WAIT-NOHOLD initiated by ATAM
6	Unexpected vary-online failures during allocation events
7	Unsupported dynamic allocation tape request
8	Vary online requests made in response to allocation waits

Use the value contained in the SMF122TYPE field to determine the format of the variable portion of the record. Some record types are optional and only appear if you enable the appropriate option. Two examples are the following:

- ATAM generates SMF122TYPE 6 records when you specify command SMF=V.
- ATAM generates SMF122TYPE 7 records when you specify command MDP=Y or MDP=M.

Fixed part of ATAM SMF record

This section describes the fixed portion of the ATAM SMF record. Refer to the table below.

Table 78. Fixed portion of ATAM SMF record

Offset	Name	Length	Format	Description
0 - 0	SMF122LEN	2	Binary	Record length. This field and the next field (total of four bytes) form the RDW (record descriptor word). See "Standard SMF Record Header" in the <i>z/OS MVS System Management Facilities</i> guide (IEA2G260) for a detailed description.

Table 78. Fixed portion of ATAM SMF record (continued)

Offset	Name	Length	Format	Description
2 - 2	SMF122SEG	2	Binary	Segment descriptor (See record length field).
4 - 4	SMF122FLG	1	Binary	System indicator: • Bit 0-2: Reserved • Bit 3-6: Version indicators • Bit 7: Reserved See "Standard SMF Record Header" in the <i>z/OS MVS System Management Facilities</i> guide (IEA2G260) for a detailed description.
5 - 5	SMF122RTY	1	Binary	Record type 122 (X' 7A).
6 - 6	SMF122TME	4	Binary	Time since midnight, in hundredths of a second, that the record was moved into the SMF buffer.
10 - A	SMF122DTE	4	Packed	Date when the record was moved into the SMF buffer, in the form of 0cydddf. See "Standard SMF Record Header" in the <i>z/OS MVS System Management Facilities</i> guide (IEA2G260) for a detailed description.
14 - E	SMF122SID	4	EBCDIC	System identification, which is taken from the SID parameter of the z/OS MVS SMFPRMxx PARMLIB member.
18 - 12	SMF122TYPE	1	Binary	Record type. This identifies the data contained in the variable data portion of the record. • 0 - ATAM initialization • 1 - Successful allocation • 2 - WAIT-NOHOLD initiated • 3 - Failed allocation • 4 - ATAM termination • 5 - Forced WAIT-NOHOLD • 6 - Unexpected VARY failure • 7 - Unsupported SYNALLOC event • 8 - VARY WAIT response
20 - 14	SMF122FLG1	1	Binary	Data area flags. Flags in this field indicate which data areas are present in the variable portion of the record. Possible values are: • X'01' - IEF_ALLOC_OFFLN parameter list (UXPARMD) • X'02' - IEEVARYD results (VDRSARR) • X'04' - Device record present • X'08' - Init/Term records present • X'10' - IEF_ALLC_OFFLN volume serial table (UXVOLTBL) • X'20' - IEF_ALLC_OFFLN offline device table (UXOFLTBL)
22 - 16	SMF122STCK	8	Binary	This is the STCK time of day of the SMF record creation.
30-1E	SMF122UNIT	4	EBCDIC	For SMF122TYPE 1, 6, and 8, this is the UCB ID. It is blank for all other record types.

Variable part of ATAM SMF record

This section describes the variable portion of the ATAM SMF record. There are several tables of information in this section. Choose the table you want to view from the list below:

- “Address space initiation and termination records”
- “Successful device allocation records” on page 222
- “WAIT/NOHOLD and allocation failure records” on page 225
- “VARY online failures” on page 226
- “Unsupported dynamic allocation records” on page 229
- “Vary device online for allocation wait” on page 230

Address space initiation and termination records

The following table describes the ATAM address space initiation and termination records. This is the record format for SMF122TYPE 0 and SMF122TYPE4 records.

Table 79. Address space initiation and termination records

Offset	Name	Len	Format	Description
34 - 22	SMF122JINTS	8	Binary	This is the starting TOD of the ATAM address space, taken from the ASCBINTS field.
42 - 2A	SMF122JSIGN	8	Binary	This is an "internal use only" field.
50 - 32	SMF122JT1	2	Binary	This is the T1 value set during ATAM address space initiation.
52 - 34	SMF122JT2	2	Binary	This is the T2 value set during ATAM address space initiation.
54 - 36	SMF122JT3	2	Binary	This is the T3 value set during ATAM address space initiation.
56 - 38	SMF122JT4	2	Binary	This is the T4 value set during ATAM address space initiation.
58 - 3A	SMF122JT5	2	Binary	This is the T5 value set during ATAM address space initiation.
60 - 3C	SMF122JT6	2	Binary	This is the T6 value set during ATAM address space initiation.
62 - 3E	SMF122JT7	2	Binary	This is the T7 value set during ATAM address space initiation.
64 - 40	SMF122JT8	2	Binary	This is the T8 value set during ATAM address space initiation.

Table 79. Address space initiation and termination records (continued)

Offset	Name	Len	Format	Description
66 - 42	SMF122JFLAG1	1	Binary	These flags identify the state of certain ATAM options during initiation and termination. Possible values are: • X'80' - "Silent" mode flag. • X'40' - Do not quote replies. • X'20' - Bypass LRU. • X'10' - Run ATAM IEF_ALLC_OFFLN in "dummy mode" because EXITCOMPAT=NO and ATAM detected multiple exits. • X'08" - TCP/IP enabled and active. • X'04' - SMF recording enabled. • X'02' - SMF VARY recording enabled. • X'01' - EXITCOMPAT setting: 0=N, 1=Y.
67 - 43	SMF122JFLAG2	1	Binary	These flags identify the state of certain ATAM options during initiation and termination. • X'80' - Logging enabled. • X'40' - Command task active. • X'20' - Wrap log file when out of space. • X'10' - Dynaloc exit active. • X'08" - Dynaloc exit processing: 0-WARN/LOG, 1-MODIFY/LOG.
70 - 46	SMF122JTAPECNT	4	Binary	This is the number of tape devices discovered during ATAM initialization.
74 - 4A	SMF122JJOBNAME	8	EBCDIC	This is the ATAM started task job name.
82 - 52		68	Binary	Reserved
150 - 96	SMF122JSYSNAME	8	EBCDIC	This is the CVTSNAME value (i.e. system name) of the system executing ATAM.

Successful device allocation records

This section describes the ATAM successful device allocation records. This is the record format for SMF122TYPE 1 records.

Table 80. Successful device allocation records

Dec Offset	Hex Offset	Name	Len	Format	Description
34	22	SMF122UXPARMD	114	-	This is the IEF_ALLC_OFFLN exit parameter list, UXPARMD, for this allocation request. See <i>z/OS MVS Data Areas</i> , Volume 5 (SSAG-XTLST) for details. Macro IEFZB481 maps this area.

Table 80. Successful device allocation records (continued)

Dec Offset	Hex Offset	Name	Len	Format	Description
150	96	SMF122SYSNAME	8	EBCDIC	This is the CVTSNAME value (i.e. system name) of the system executing ATAM.
158	9E		104	Binary	Reserved
262	106	SMF122VOLOSET	2	Binary	This is the offset from the beginning of the SMF record to the IEF_ALLC_OFFLN volume table, UXVOLTBL. Macro IEFZB481 maps this area.
264	108	SMF122OFLOSET	2	Binary	This is the offset from the beginning of the SMF record to the IEF_ALLC_OFFLN offline device table, UXOFLTBL. Macro IEFZB481 maps this area.
266	10A		12	Binary	Reserved
278	116	SMF122ETID	4	EBCDIC	This is the tape device number in character format.
282	11A	SMF122ETAD	2	Binary	This is the tape device number in binary format.
284	11C	SMF122EAID	2	Binary	This is the ASID from the UCBAID field for this device.
286	11E	SMF122EFGS	1	Binary	This flag byte describes the current state of the device. Possible values are: • X'01' - Tape is new and unchecked. • X'02' - Tape is selectable. • X'04' - Tape is bypassed by "all" processing. • X'08' - Tape is allocated. • X'10' - Tape is retain/pass mounted. • X'20' - Tape is not connected. • X'40' - Tape is pending offline. • X'80' - Tape is online.

Table 80. Successful device allocation records (continued)

Dec Offset	Hex Offset	Name	Len	Format	Description
287	11F	SMF122ESID	1	Binary	This selection flag byte describes the state of the device during the last device scan. Possible states are: • 01 - Status set by command. • 02 - Status set by online at start-up. • 03 - Status set by varied online. • 04 - Status set by assigned elsewhere. • 05 - Status set by vary online failed. • 06 - Status set by JES3 controlled. • 07 - Status set by auto-switchable. • 08 - Status set by boxed. • 09 - Status set by pending offline. • 10 - Status set by multi-assigned. • 11 - Status set by bid request.
288	120	SMF122EFHS	1	Binary	This flag byte describes the current state of the device. The X'80' position indicates whether the tape is defined as auto-switchable.
289	121		1	Binary	Reserved
290	122	SMF122EFRC	4	Binary	This is the count of free checks.
294	126	SMF122EEON	4	Binary	This is the count of successful VARY-ON requests.
298	12A	SMF122EEOF	4	Binary	This is the count of VARY-OFF requests.
302	12E	SMF122ELRU	8	Binary	This is the last time ATAM successfully varied this device online, stored in TOD (Time of Day) format.
310	136	SMF122EMNT	8	Binary	This is the time of the last volume mount request, stored in TOD format.
318	13E	SMF122ETYP	4	Binary	This is the device type for this device, copied from the UCBTYP field of the device UCB.

Table 80. Successful device allocation records (continued)

Dec Offset	Hex Offset	Name	Len	Format	Description
322	142	SMF122EBID	4	Binary	This is the BID value (lower four bytes of TOD), if this device was part of a bid request for a device that is not assign-capable.
326	146	SMF122EJNM	8	EBCDIC	This is the name of the job last allocated to this device as part of a RETAIN/PASS process.
334	14E	SMF122EJID	8	EBCDIC	This is the job ID of the job last allocated to this device as part of a RETAIN/PASS process.
342	156	UXOFLTBL	Vary		This is the IEF_ALLC_OFFLN offline device table, UXOFLTBL. Macro IEFZB481 maps this area. Determine its actual location in the record by using the SMF122OFLOSET field.
Vary	Vary	UXVOLTBL	Vary		If present, this is the IEF_ALLC_OFFLN volume table, UXVOLTBL. Macro IEFZB481 maps this area. Determine its actual location in the record by using the SMF122VOLOSET field.

WAIT/NOHOLD and allocation failure records

This section describes the ATAM-initiated WAIT/NOHOLD and allocation failure records. This is the record format for SMF122TYPE 2, 3, and 5 records.

Table 81. WAIT/NOHOLD and allocation failure records

Dec Offset	Hex Offset	Name	Len	Format	Description
34	22	SMF122UXPARMD	114		This is the IEF_ALLC_OFFLN exit parameter list, UXPARMD, for this allocation request. See <i>z/OS MVS Data Areas</i> , Volume 5 (SSAG-XTLST) for details. Macro IEFZB481 maps this area.
150	96	SMF122SYSNAME	8	EBCDIC	This is the CVTSNAME value (i.e. system name) of the system executing ATAM.
158	9E		104	Binary	Reserved
262	106	SMF122VOLOSET	2	Binary	This is the offset from the beginning of the SMF record to the IEF_ALLC_OFFLN volume table, UXVOLTBL. Macro IEFZB481 maps this area.

Table 81. WAIT/NOHOLD and allocation failure records (continued)

Dec Offset	Hex Offset	Name	Len	Format	Description
264	108	SMF122OFLOSET	2	Binary	This is the offset from the beginning of the SMF record to the IEF_ALLC_OFFLN offline device table, UXOFLTBL. Macro IEFZB481 maps this area.
266	10A		12	Binary	Reserved
278	116	UXOFLTBL	Vary		This is the IEF_ALLC_OFFLN offline device table, UXOFLTBL. Macro IEFZB481 maps this area. Determine its actual location in the record by using the SMF122OFLOSET field.
Vary	Vary	UXVOLTBL	Vary		If present, this is the IEF_ALLC_OFFLN volume table, UXVOLTBL. Macro IEFZB481 maps this area. Determine its actual location in the record by using the SMF122VOLOSET field.

VARY online failures

This section describes ATAM unexpected VARY online failures during allocation attempts. This is the record format for SMF122TYPE 6 records.

Note: ATAM records this record type only if the ATAM SMF option indicates that it should record unexpected VARY online failures.

Table 82. VARY online failures

Dec Offset	Hex Offset	Name	Len	Format	Description
34	22	SMF122UXPARMD	114		This is the IEF_ALLC_OFFLN exit parameter list, UXPARMD, for this allocation request. See <i>z/OS MVS Data Areas</i> , Volume 5 (SSAG-XTLST) for details. Macro IEFZB481 maps this area.
150	96	SMF122SYSNAME	8	EBCDIC	This is the CVTSNAME value (i.e. system name) of the system executing ATAM.
158	9E	SMF122VDRSARR	104	-	This is the VARY Device Service Results Array. Macro IEEZB834 maps this area.
262	106	SMF122VOLOSET	2	Binary	This is the offset from the beginning of the SMF record to the IEF_ALLC_OFFLN volume table, UXVOLTBL. Macro IEFZB481 maps this area.

Table 82. VARY online failures (continued)

Dec Offset	Hex Offset	Name	Len	Format	Description
264	108	SMF122OFLOSET	2	Binary	This is the offset from the beginning of the SMF record to the IEF_ALLC_OFFLN offline device table, UXOFLTBL. Macro IEFZB481 maps this area.
266	10A		12	Binary	Reserved
278	116	SMF122ETID	4	EBCDIC	This is the tape device number in character format.
282	11A	SMF122ETAD	2	Binary	This is the tape device number in binary format.
284	11C	SMF122EAID	2	Binary	This is the ASID from the UCBASID field for this device.
286	11E	SMF122EFGS	1	Binary	This flag byte describes the current state of the device. Positions in this byte are: • X'01' - Tape is new and unchecked. • X'02' - Tape is selectable. • X'04' - Tape is bypassed by "all" processing. • X'08' - Tape is allocated. • X'10' - Tape is retain/pass mounted. • X'20" - Tape is not connected. • X'40" - Tape is pending offline. • X'80' - Tape is online.

Table 82. VARY online failures (continued)

Dec Offset	Hex Offset	Name	Len	Format	Description
287	11F	SMF122ESID	1	Binary	This selection flag byte describes the state of the device during the last device scan. Possible states are: • 01 - Status set by command. • 02 - Status set by online at start-up. • 03 - Status set by varied online. • 04 - Status set by assigned elsewhere. • 05 - Status set by vary online failed. • 06 - Status set by JES3 controlled. • 07 - Status set by auto-switchable. • 08 - Status set by boxed. • 09 - Status set by pending offline. • 10 - Status set by multi-assigned. • 11 - Status set by bid request.
288	120	SMF122EFHS	1	Binary	This flag byte describes the current state of the device. The X'80' position indicates whether the tape is defined as auto-switchable.
289	121		1	Binary	Reserved
290	122	SMF122EFRC	4	Binary	This is the count of free checks.
294	126	SMF122EEON	4	Binary	This is the count of successful VARY-ON requests.
298	12A	SMF122EEOF	4	Binary	This is the count of successful VARY-OFF requests.
302	12E	SMF122ELRU	8	Binary	This is the last time ATAM successfully varied this device online, stored in TOD (Time of Day) format.
310	136	SMF122EMNT	8	Binary	This is the time of the last volume mount request, stored in TOD format.
318	13E	SMF122ETYP	4	Binary	This is the device type for this device, copied from the UCBTYP field of the device UCB.

Table 82. VARY online failures (continued)

Dec Offset	Hex Offset	Name	Len	Format	Description
322	142	SMF122EBID	4	Binary	This is the BID value (lower four bytes of TOD), if this device was part of a bid request for a device that is not assign-capable.
326	146	SMF122EJNM	8	EBCDIC	This is the name of the job last allocated to this device as part of a RETAIN/PASS process.
334	14E	SMF122EJID	8	EBCDIC	This is the job ID of the job last allocated to this device as part of a RETAIN/PASS process.
342	156	UXOFLTBL	Vary		This is the IEF_ALLC_OFFLN offline device table, UXOFLTBL. Macro IEFZB481 maps this area. Determine its actual location in the record by using the SMF122OFLOSET field.
Vary	Vary	UXVOLTBL	Vary		If present, this is the IEF_ALLC_OFFLN volume table, UXVOLTBL. Macro IEFZB481 maps this area. Determine its actual location in the record by using the SMF122VOLOSET field.

Unsupported dynamic allocation records

This section describes the unsupported dynamic allocation ATAM records. This is the record format for SMF122TYPE 7 record. ATAM writes this record type when monitoring for the occurrence of tape dynamic allocations that include request block parameters incompatible with ATAM.

Table 83. Unsupported dynamic allocation records

Dec Offset	Hex Offset	Name	Len	Format	Description
34	22	SMF122AJOBNAME	8	EBCDIC	This job name performed the dynamic allocation reported in this record.
42	2A	SMF122ASTEPPNAME	8	EBCDIC	This step name performed the dynamic allocation reported in this record.
50	32	SMF122ADDNAME	8	EBCDIC	The dynamic allocation reported in this record allocated this DD name. ATAM includes this data in the record only if it was available in the dynamic allocation request block.

Table 83. Unsupported dynamic allocation records (continued)

Dec Offset	Hex Offset	Name	Len	Format	Description
58	3A	SMF122ADSNAME	44	EBCDIC	The dynamic allocation reported in this record allocated this data set name. ATAM includes this data in the record only if it was available in the dynamic allocation request block.
102	56	SMF122APGMRNAME	20	EBCDIC	This is the T3 value set during ATAM address space initiation.
122	6A	SMF122AUNITNAME	8	EBCDIC	The dynamic allocation reported in this record allocated this unit name. ATAM includes this data in the record only if it was available in the dynamic allocation request block.
130	72	SMF122ADEVTYPE	4	Binary	The dynamic allocation reported in this record allocated this device type.
134	76	SMF122APGMNAME	8	EBCDIC	This program name performed the dynamic allocation reported in this record.
142	7E		24	Binary	Reserved
150	96	SMF122ASYSNAME	8	EBCDIC	This is the CVTSNAME value (i.e. system name) of the system executing ATAM.
158	9E	SMF122AS99RB	20	Binary	This is the dynamic allocation request block. It is mapped by the S99RB DSECT in mapping macro IEFZB4D0.

Vary device online for allocation wait

This section describes the vary-online-to-wait ATAM records. This is the record format for SMF122TYPE 8 records. ATAM writes this record type when the ATAM address space varies a device online in an attempt to resolve an address space placed in an allocation wait.

Table 84. Vary-online-to-wait ATAM records

Dec Offset	Hex Offset	Name	Len	Format	Description
34	22	SMF122VJOBNAME	8	EBCDIC	This is the job name for the ATAM address space.
42	2A	SMF122VESOTERIC	8	EBCDIC	This is the esoteric needed to satisfy the waiting allocation.
50	32	SMF122VDEVTYPE	4	Binary	This is the device type within the esoteric needed to satisfy the waiting allocation.

Table 84. Vary-online-to-wait ATAM records (continued)

Dec Offset	Hex Offset	Name	Len	Format	Description
54	36	SMF122VGENERIC	8	EBCDIC	This is the generic name of the device type needed to satisfy the waiting allocation.
62	3E	SMF122APGMRNAME	88	Binary	Reserved
150	96	SMF122VSYSNAME	8	EBCDIC	This is the CVTSNAME value (i.e. system name) of the system executing ATAM.

Customer interface initiated commands

This section describes the customer interface initiated records. This is the record format for SMF122TYPE 9 records. ATAM writes this record type when the ATAM address space issues a command on behalf of either the ATAM ISPF dialog or ATAM TEP-enabled customer interfaces.

Table 85. Customer interface initiated commands

Offset	Name	Length	Format	Description
34 - 22	SMF122CSYSNAME	8	EBCDIC	This is the CVTSNAME value (i.e. system name) of the system executing the ATAM command.
42 - 2A	SMF122CUID	8	EBCDIC	This is the User ID assigned to the user invoking the command. For an ISPF-initiated command, this will be the TSO User ID. For a TEP portal request, this would be established by TEP.
50 - 32	SMF122CCMDTXT	128	EBCDIC	This is the text of the command actually invoked by the ATAM address space.

Appendix J. ATAM Dynamic Allocation Exit

This appendix describes ATAM's dynamic allocation exit which can be used to monitor and, optionally, modify dynamic allocation request blocks that target ATAM-managed tape devices.

The dynamic allocation request block allows for dynamic allocation attempts that do not consider offline devices. This poses a problem for ATAM if the dynamic allocation for a managed tape does not consider offline devices. To address this, ATAM allows optional activation of a dynamic allocation exit routine at the z/OS IEFDB401 exit. If active, the ATAM IEFDB401 exit will monitor and, optionally, modify dynamic allocation request blocks that target ATAM-managed tape devices in this manner.

Although z/OS allows an IEFDB401 exit routine to terminate the allocation request, ATAM's version of this exit does not offer this option. ATAM does not want to terminate allocations that are inconsistent with ATAM processing. Instead, through commands, ATAM warns of the impending problem and optionally offers correction if possible.

On entry, the ATAM IEFDB401 exit determines if it needs to invoke any processing. To determine this, it answers the following questions:

- Is this an allocation attempt?
- Will the allocation attempt consider offline devices?
- Is the allocation for a tape device?
- Is the pool of qualifying tape devices managed by ATAM?
- Should ATAM warn of the incompatibility?
- Should ATAM modify the request block?

When active, the ATAM IEFDB401 exit routine depends on information in the dynamic allocation request block to make processing decisions. However, it makes certain decisions prior to scanning the request block. For example, the exit bypasses the following job names using the shortest possible code path:

1. JES2
2. JES3
3. LLA
4. VLF
5. WLM
6. MMS
7. OMVS
8. RACF
9. SMS
10. SMF
11. CATALOG
12. ALLOCAS
13. CONSOLE

The exit only processes batch-initiated work, bypassing time-sharing (TSO) and started task (STC) work.

Note: The MDP command provides a way to allow the exit to interact with named STC address spaces, but do this only after consultation with IBM Technical support.

Finally, the exit bypasses processing if it is unable to determine the unit name or device type for the attempted allocation. Since the exit intent is to process only ATAM-managed tape devices, it requires the device type or unit name to ensure that:

- the allocation is for a tape device
- the device is an ATAM-managed tape device

Once ATAM determines that it is appropriate to process the dynamic allocation request, it will report the inconsistent request through messages and the ATAM SMF record.

Using the MDP command

With the MDP command, you can activate and deactivate the ATAM IEFDB401 exit routine using the z/OS Dynamic Exits Facility. You can also use this command to indicate whether the ATAM IEFDB401 exit should simply monitor unsupported dynamic allocation requests, or monitor and modify them to behave appropriately for ATAM. For more detailed information, refer to “The *MDP* command” on page 135.

Note: Use the “MDP” command with caution! Unnecessary activation of this facility will introduce additional overhead in dynamic allocation processing for tape and non-tape requests.

Related concepts:

“The *MDP* command” on page 135

Use the *MDP* operator command to enable and disable ATAM's dynamic allocation exit processing (ATAM IEFDB401).

Using the MDP command with STC address space

The ATAM IEFDB401 exit avoids interaction with STC address spaces. STC address spaces that perform dynamic allocation without considering offline devices could be unable to tolerate waiting for an offline device.

Although the MDP command provides an Option when the STC address space has no way to accommodate ATAM, use this Option only with guidance from IBM Technical Support. IBM Technical Support consults with the owner of the STC address space to decide the impact of using the MDP Option.

For more detailed information, refer to “The *MDP* command” on page 135.

Related concepts:

“The *MDP* command” on page 135

Use the *MDP* operator command to enable and disable ATAM's dynamic allocation exit processing (ATAM IEFDB401).

Exit messages

As part of the ATAM dynamic allocation exit processing, the exit may issue messages.

ATH164W UNSUPPORTED DYNAMIC ALLOCATION OF MANAGED DEVICE DETECTED

ATH165I S99FLAG1(*flags*) S99FLAG2(*flags*) STEP(*name*) PROGRAM(*name*)

ATH166I DD(*name*) UNIT(*name*) DEVTYPE(*type*)

ATH167I UPDATED FLAGS, S99FLAG1(*flags*) S99FLAG2(*flags*)

See Appendix K, "Messages," on page 237 for more information on these messages.

Related information:

Appendix K, "Messages," on page 237

All messages generated by the Automated Tape Allocation Manager (ATAM) started task, entries on ATAM's screens, or issues with ISPF 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, IBM Tivoli Automated Tape Allocation Manager for z/OS is referred to as "ATAM" in this appendix.

Appendix K. Messages

All messages generated by the Automated Tape Allocation Manager (ATAM) started task, entries on ATAM's screens, or issues with ISPF 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, IBM Tivoli Automated Tape Allocation Manager for z/OS is referred to as "ATAM" in this appendix.

Several of the messages use variables to indicate different types of information. Each message explains what the variables represent for that specific message. For example, *xxxx* could represent a name, a command, or a number, depending upon the context of the message.

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 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 VxRxMxx

Explanation: This message lists the version, release, and modification numbers for the ATAM software that 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 VxRxMxx

Explanation: This message lists the version, release, and modification numbers for the ATAM software that 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.

ATH004W 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, *type*

Explanation: This message is displayed if a dynamic I/O configuration change is detected by ATAM. The configuration change affected the tape devices. The *type* describes the change detected. The different types are described below.

- COUNT – The number of detected tape devices has changed since the last scan.

- ADDED – Devices were added although the device count remained the same, suggesting devices were also removed.
- INSERTED – Devices were inserted in the middle of the tape device range, although the tape device count remained the same.
- REMOVED – Devices were removed from the tape device range.

The most common configuration detection type will be Count. However, there are instances where the count may remain the same even though the configuration has changed. The type is only of use to IBM Technical Support in instances where you feel the configuration change detection was unwarranted.

User response: None required. However, the number of ATAM automated responses to configuration change is limited by the T4 value. Once this limit is exhausted, ATAM issues WTOR message ATH010D requesting instruction as to how to proceed. If you feel this was an unwarranted occurrence, contact IBM Technical Support and provide the information in message ATH006I.

ATH007I ATAM RE-INITIALIZATION COMPLETE

Explanation: The re-initialization process is done.

User response: None required.

ATH008W 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.

ATH010D ATAM TABLE BUILD LIMIT EXCEEDED, REPLY R TO RESET, N=nnn TO RESET WITH NEW LIMIT, T TO TERMINATE

Explanation: The number of dynamic I/O configuration changes has exceeded the threshold established for ATAM. ATAM issues this WTOR to request instruction on how to respond to this event. Your options are as follows:

- R – RESET. Resets the configuration change detection threshold to the original T4 value and rebuilds the ATAM table.

- N – NEW. Resets the configuration change detection threshold to the value specified in the reply, nnn, and rebuilds the ATAM table.
- T – TERM. Terminates the ATAM address space.

ATAM waits two minutes for a response to this WTOR. If it does not receive a response in two minutes, it cancels the outstanding WTOR and invokes the RESET option as a default.

User response: Respond to the WTOR with one of the indicated values. If you have experienced an increase in the number of IO configuration changes relative to your tape device pool, you may want to consider temporarily increasing the ATAM dynamic configuration change detection threshold, T4. Refer to "Considerations for using the T4 parameter" on page 156 for more details.

ATH010W 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. Specify zero (0) for this parameter on the System Configuration screen (option S from the ATAM main menu) to disable this feature.

ATH011I ATAM WAITING 15 SECONDS BEFORE TERMINATING

Explanation: This is for your information.

User response: None required.

ATH012I *exit_type* EXIT FOUND: *module_name* , *state*

Explanation: This message is issued whenever message ATH016W is issued. Its purpose is to display the other modules that are installed as the z/OS IEF_ALLC_OFFLN installation exit. The module name that was detected is listed in the message and the "state" will either be ACTIVE or INACTIVE.

User response: See message ATH016W, which explains the actions you can take.

ATH013E ATAM VERSION INCOMPATIBILITY ERROR, ATAM TERMINATING WITH 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 xxx,xxx TAPES DETECTED

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

User response: None required.

**ATH015W CONFIGURATION CHANGE TABLE
BUILD BYPASSED BECAUSE THE
FACILITY IS DISABLED, T4=000**

Explanation: While scanning the discovered tape devices, ATAM detected a change in the configuration. This could be a result of tape devices added to or removed from the hardware configuration, or changes in device identification. With the table re-build function disabled, ATAM detects configuration changes, but does not alter its "in-storage" description of the detected devices.

User response: Determine if the configuration changes could impact ATAM operations by providing unmanaged tape devices. To resynchronize the configurations, shutdown and restart ATAM. Enable the re-build facility by specifying a T4 value greater than zero (0).

**ATH016W RESULTS MAY BE UNPREDICTABLE.
MULTIPLE EXIT ROUTINES
DETECTED AT EXIT *exitname*.**

Explanation: ATAM installs a module as a z/OS installation exit, IEF_ALLC_OFFLN, which is the Allocated or Offline Device Installation exit. The ATH016W message displays when there is at least one other non-ATAM module, either a vendor product or locally written, installed as well. Message ATH012I will be issued to display the other module(s).

The *exitname* may be one of the following:

- IEF_ALLC_OFFLN
- IEF_VOLUME_MNT
- IEFDB401

Additionally, the z/OS operator command shown below will display the exit installed as the Allocated or Offline Device Installation exit:

D PROG,EXIT,EN=IEF_ALLC_OFFLN,DIAG

User response: See the ATH012I message or D PROG command results to determine if there are other modules installed as IEF_ALLC_OFFLN. If another module is varying tape drives online, then ATAM's behavior may be unpredictable. If another module manages tape drives, then place the drives it manages in ATAM's exclude list. Refer to "Combination of Select (S) and Exclude (X) commands" on page 153 for instructions.

ATH017I *exit_type* EXIT LOADED FROM *source*

Explanation: ATAM issues this message for each dynamic exit it loads. The *exit_type* is replaced with either MOUNT or ALLOC. The *source* is replaced with either the source data set name or the word LINKLIST, which indicates the exit source was the MVS LINKLIST.

User response: None required.

ATH018I STATUS CHANGE RESULTS DISPLAY:

Explanation: This message precedes the results of an internally invoked list command. ATAM invokes the list command to display the results of a status change command (S or X). The display includes only the devices specified in the status change command. This message is immediately followed by message ATH041I.

User response: None required.

**ATH019E WTOR PROCESSING ERROR, NO
ESOTERIC FOUND AT SPECIFIED
OFFSET**

Explanation: ATAM was unable to find an esoteric specified at the offset identified when the WTOR was defined to ATAM. This message is preceded by message ATH020E and ATH090I. ATH020E identifies the defined WTOR, and ATH090I identifies the defined WTOR, reply ID, and the esoteric retrieved from the WTOR, which in this case is blank. ATAM disables any further processing of this defined WTOR.

User response: Re-define the WTOR to ATAM, specifying the exact position of the first character of the esoteric in the WTOR. If the WTOR in question does not contain an esoteric specification, you cannot use the ATAM W command to process it.

**ATH020E ERROR PROCESSING WTOR
MESSAGE *msg_number***

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

User response: Verify that the W operator command or the W command listed in the Commands member 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 **EDTINFO FAILURE, WTOR**
PROCESSING SUSPENDED, RC (*return*
code) **RS** (*reason code*)

Explanation: An error occurred while attempting to access the table of eligible devices. The EDTINFO return code and reason code describe the specific error. This message is preceded by message ATH020E and ATH090I. ATH020E identifies the defined WTOR, and ATH090I identifies the defined WTOR, reply ID, and the esoteric retrieved from the WTOR. ATAM disables any further processing of this defined WTOR.

User response: Verify the validity of the esoteric identified in message ATH090I. Ensure that the esoteric identifies ATAM-managed tape devices. If it does not, you cannot define this WTOR for processing via the ATAM W command. This could also result from an incorrect specification of the esoteric offset when defining the WTOR to ATAM. If this is the cause, re-define the WTOR to ATAM using the correct esoteric offset. If re-defining the message does not correct the problem, contact IBM Technical Support.

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.

ATH025E **ATAM UNABLE TO** *action* **MODULE**
module_name, **ATAM TERMINATING**

Explanation: An unexpected error occurred while trying to do one of the following actions:

- **LOAD.** Load ATAM module ATH#OUTF or ATH#VALD into CSA. The storage required by these modules is minimal so failure to load may suggest a general CSA/ECSA storage utilization problem. ATAM terminates.
- **FIND.** Find the indicated module in either the ATAM STEPLIB DD statement or z/OS LINKLIST.

This suggests that the module is not in the STEPLIB concatenation or the ATAM STEPLIB concatenation is incorrect.

User response: For the LOAD action, resolve any CSA/ECSA storage problems and attempt to restart ATAM. For the FIND action, verify that the ATAM procedure STEPLIB concatenation properly references the ATAM load library, then attempt to restart ATAM. If this message is received repeatedly, please contact IBM Customer Support for additional diagnostic information.

ATH026E **INCONSISTENCY FOUND BETWEEN**
ATAM DEVICE TABLE AND IOS TAPE
CONFIGURATION, ATAM
TERMINATING

Explanation: While scanning the detected tape devices, ATAM detected a change in the configuration. However, you elected to disable ATAM's automatic table rebuilding process (T4=000).

A second scan of the new IOS configuration indicates that the tape portion of the configuration is inconsistent with ATAM's internal tables and the tables can no longer be used in ATAM's current configuration. This message is preceded by messages ATH006I and ATH015W.

User response: Restart ATAM. To avoid future occurrences of this event, specify a non-zero value for the T4 parameter. Refer to "Considerations for using the T4 parameter" on page 156 for more information on the T4 parameter.

ATH027I **NON-ASSIGN-CAPABLE DEVICE**
devtype **DETECTED ON UNIT** *unit_ID*

Explanation: During initiation, ATAM detected a device that is not "assign capable." The device is on the unit named in the message and, if managed by ATAM, will require special handling to share between ATAM-defined MVS images.

User response: To share this device among MVS images, the device must be defined to ATAM and ATAM must be started on all ATAM-defined MVS images.

ATH028I **NON-ASSIGN-CAPABLE DEVICE**
devtype **ON UNIT** *unit_ID* *status*

Explanation: During initiation, ATAM detected a device with a device type that is not "assign capable." The device is on the unit specified in the message. The *status* is one of the following:

- HAS NO OPERATIONAL PATHS
- IS NOT CONNECTED

In either case, the message indicates that the device is physically unavailable to the MVS image. Bid requests

issued by this image for this device will fail, while bid requests received by this image communicate success back to the requestor.

User response: If the device is legitimately unavailable, no response is needed. Otherwise, make the device available and restart the ATAM address space.

**ATH029W DEVICE *devtype* ON UNIT *unit_ID*
UNSELECTABLE**

Explanation: ATAM was unable to change the status of the managed device on the unit named in the message because the device is unavailable on this image. The MVS image does not have a physical connection to the device. If this is the case at ATAM initiation, message ATH028I will appear in the ATAM JESMSGLOG.

User response: Re-connect the device if possible. Do not try to make this device selectable.

**ATH030E DEVICE *devtype* ON UNIT *unit_ID*
ONLINE WITH AUTOSWITCH
ATTRIBUTE**

Explanation: This message lists a specific device and unit that is currently online and is autoswitchable. However, ATAM does not manage devices that are autoswitchable.

User response: Make sure the devices you want ATAM to manage are **not** defined as autoswitchable. ATAM will ignore any devices that are configured as autoswitchable.

**ATH031W NO BASE CONFIGURATION FOUND
FOR SYSTEM *sysname*, 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" on the ATAM System Configuration screen (option S on the main menu), 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. However, it is strongly recommended that you only use "passive mode" when instructed to do so by IBM Technical Support. Use "active mode" instead.

ATH034I ACTIVE MODE SELECTED

Explanation: You selected "active mode" on the ATAM System Configuration (option S on the main menu), which tells ATAM to automatically vary tape drives online in response to demands for tape drive units.

User response: None required.

ATH035I VTS BALANCE MODE ENABLED

Explanation: This message tells you that VTS (virtual tape server) load balancing feature has been enabled.

User response: None required.

ATH036I VTS BALANCE MODE STOPPED

Explanation: This message tells you that the VTS (virtual tape server) load balancing feature has been stopped.

User response: None required.

**ATH037E VTS BALANCE SUPPORT INSTALL
ERROR:**

Explanation: This message tells you that an error occurred while attempting to use the VTS (virtual tape server) load balancing feature.

User response: Contact IBM Technical Support for assistance.

ATH038W CSAB OBTAIN ERROR.

Explanation: This message indicates that ATAM was unable to obtain storage for its CSAB control block.

User response: Contact IBM Technical Support for assistance.

ATH038W CSAB OBTAIN ERROR.

Explanation: This message indicates that ATAM was unable to obtain storage for its CSAB control block.

User response: Contact IBM Technical Support for assistance.

ATH038W CSAB OBTAIN ERROR.

Explanation: This message indicates that ATAM was unable to obtain storage for its CSAB control block.

User response: Contact IBM Technical Support for assistance.

ATH038W CSAB OBTAIN ERROR.

Explanation: This message indicates that ATAM was unable to obtain storage for its CSAB control block.

User response: Contact IBM Technical Support for assistance.

ATH038W CSAB OBTAIN ERROR.

Explanation: This message indicates that ATAM was unable to obtain storage for its CSAB control block.

User response: Contact IBM Technical Support for assistance.

ATH039I NO TAPE UNITS DETECTED *state*.

Explanation: This message indicates that there are no tape devices in the indicated *state*. The *state* variable contains one of the following values:

- ONLINE - No tape devices found to be online.
- OFFLINE - No tape devices found to be offline.

User response: None required.

ATH039I NO TAPE UNITS DETECTED *state*.

Explanation: This message indicates that there are no tape devices in the indicated *state*. The *state* variable contains one of the following values:

- ONLINE - No tape devices found to be online.
- OFFLINE - No tape devices found to be offline.

User response: None required.

ATH040W UNKNOWN COMMAND: *command*

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 *system name* TAPE LIST: *uuuu at uuuu at uuuu at uuuu at*

Explanation: This message displays a list of tapes where *uuuu* refers to the tape unit ID, "*a*" refers to the ATAM status, and "*t*" refers to the device status.

For the ATAM status, the letter "*a*" is one of the following values:

- S = Selectable
- x = Excluded

For the device status, the letter "*t*" is one of the following values:

- ? = unknown
- A = Allocated
- F = Offline
- O = Online
- P = Pending offline
- U = Unavailable. Device is physically disconnected from the MVS image.
- W = Auto Switchable

User response: None required.

ATH042W UNIT *unit_ID* UNKNOWN.

Explanation: The *unit_ID* variable 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.

ATH044W 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 more tape units as selectable by this MVS image.

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=ooo. The Device Bidding Wait Time for devices that are not assign-capable is set for *ooo* seconds
- T8=ppp. The Randomization Threshold is set to *ppp* devices. There must be more than *ppp* devices in the available device selection list before ATAM will apply random selection logic to the list.

User response: None required. If you would like more information on the tuning parameters, refer to Chapter 7, "Configuration parameters," on page 155.

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=ooo. The Device Bidding Wait Time for devices that are not assign-capable is set for *ooo* seconds
- T8=ppp. The Randomization Threshold is set to *ppp* devices. There must be more than *ppp* devices in the available device selection list before ATAM will apply random selection logic to the list.

User response: None required. If you would like more information on the tuning parameters, refer to Chapter 7, “Configuration parameters,” on page 155.

ATH046E **INVALID SYNTAX:** *command*

Explanation: The command contained invalid syntax.

User response: Re-enter the command using valid syntax.

ATH047W **COMMANDS MEMBER** *member_name*
WAS NOT FOUND IN THE
CONFIGURATION DATA SET OR
PARMLIB CONCATENATION

Explanation: The *member_name* refers to the name of the Commands member. The default Commands member was not found in the configuration data set. ATHCMD00 is the default name for the Commands member, however you can have a different Commands member for each MVS system. In this case, the last two characters of the name must be unique for each system, such as ATHCMD01 or ATHCMDAA.

User response: Refer to “Understanding configuration data sets and command members” on page 33 for more information on configuration data sets and commands members.

ATH048I **COMMANDS MEMBER** *member_name*
ISSUED *command*

Explanation: The *member_name* refers to the name of the Commands member, and *command* is the specific command that was issued. This message displays when ATAM is processing each line of text in the Commands member.

User response: None required.

ATH049W **CANNOT SPECIFY A C=XX**
COMMAND FROM WITHIN A
COMMANDS MEMBER

Explanation: You placed the C=xx command in the Commands member for this MVS system, but this command can only be used as a console command.

User response: Remove the C=xx command from the Commands member.

ATH050I **DIAGNOSTIC MESSAGES** *state*

Explanation: This is an informational message. The *state* variable will either be SUPPRESSED or GENERATED.

User response: None required.

ATH051I *id status message_ID reply_type offset unit*
jobname

Explanation: This message contains several types of information, as described below:

- *id*. This column lists the unique ID number of the message monitored by ATAM.
- *status*. This variable will either be ACTIVE or INACTIVE
- *message_ID*. This variable displays a message ID.
- *reply_type*. This variable indicates the type of reply for this message, such as NOHOLD, WAIT, or W.
- *offset*. This variable is the exact location from the start of the message, denoted by msgid, where ATAM can find the tape unit ID.
- *unit*. This variable is either Y (yes) or N (no). If the column contains a "Y", the offset identifies the position of a unit name contained in the message. This is indicative of a message defined to ATAM using the "W" command.
- *jobname*. This column lists the name of the job assigned to the message, if a job exists.

User response: None required. For more information on the "W" command, refer to “The W Command” on page 117.

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.

ATH053I **SCANNING OF WTOR QUEUE**
RE-ACTIVATED

Explanation: This is an informational message.

User response: None required.

**ATH054W SCANNING OF WTOR QUEUE
ALREADY ACTIVE**

Explanation: You attempted to activate the WTOR queue, but it is already active, so the command to activate it (again) is ignored.

User response: None required.

**ATH055I SCANNING OF WTOR QUEUE
DE-ACTIVATED**

Explanation: This is an informational message.

User response: None required.

**ATH056W SCANNING OF WTOR QUEUE
ALREADY DE-ACTIVATED**

Explanation: You attempted to de-activate the WTOR queue, but it is already de-activated, so the command to de-activate it (again) is ignored.

User response: None required.

ATH057I WTOR QUEUE SCANNING IS *state*

Explanation: This is an informational message. The *state* variable will display either ACTIVE or INACTIVE as needed.

User response: None required.

**ATH058W WTOR MSGID *message_ID* NOT
DEFINED**

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

User response: None required.

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

Explanation: The *unit_ID* 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: None required.

ATH060I LRU OPTION IS *yes/no*

Explanation: This message lists the current state of the Least Recently Used (LRU) option, which is either YES (use LRU) or NO (do not use LRU). For more information on the LRU option, refer to "The LRU command" on page 133.

User response: None required.

**ATH061I *system unit state volume address*
[*hh:mm:ss*]**

Explanation: This message lists the IDs of tape units that are currently allocated, or online and available, and are associated with the system listed in the message. The information provided for each tape unit includes:

- *system* - system name
- *unit* - unit ID
- *state* - the state of the tape unit
- *volume* - volume name
- *address* - allocating address space
- *hh:mm:ss* - hours, minutes, seconds that passed waiting for a mount. The time values only appear when a value of "M" for mount is assigned to the *state* variable. A time display of **:**:** means ATAM was unable to establish how long a mount has been outstanding. This is usually the case for mounts with DEFER on the UNIT specification.

User response: None required.

**ATH062E UNKNOWN ATAM SYSTEM - *system*
*name***

Explanation: The ATAM system listed in the message is undefined.

User response: You may have typed the name incorrectly. Verify the name of the ATAM system that you want to use and try again.

ATH063I DEFAULT SYSID SET TO - *system name*

Explanation: This message indicates a successful F ATHPROC,N=xxxx command. The default designation of all global commands will be the system name listed in the message.

User response: None required.

**ATH064I TARGET SYSID FOR ATAM
COMMANDS: *system name***

Explanation: This message displays the name of the target system ID, meaning the default ATAM system filter, when one is not specified.

User response: None required.

ATH065I *system unit volume address hh:mm:ss*

Explanation: This is the output of an F ATHPROC,M command, where:

- *ssss* - system name
- *uuuu* - unit ID
- *vvvvvv* - volume
- *aaaaaaaa* - allocating address space

- *hh:mm:ss* - hours, minutes, seconds that passed waiting for a mount. A time display of ***:**:** means ATAM was unable to establish how long a mount has been outstanding. This is usually the case for mounts with DEFER on the UNIT specification.

User response: None required.

ATH066W *system name* **NO RESPONSE**

Explanation: The system listed in the message did not respond to a global command that you entered.

User response: Verify that ATAM is active on the indicated system and verify the system name. Also check the TCP/IP settings and network connectivity to ensure that the TCP/IP facility properly initialized.

ATH067W *system name Message_from_remote_system*

Explanation: This message displays the MVS system name which relates to the message that follows. Refer to the examples below. These examples use TEST and PROD for the system names.

Example #1:

```
ATH067W TEST ATH029W DEVICE 32108003 ON UNIT
0560 UNSELECTABLE
```

Example #2:

```
ATH067W PROD ATH046E INVALID SYNTAX: X=QWERTY
```

User response: Review the text in the *Message_from_remote_system*, immediately following ATH067W, to determine what to do next.

ATH068I **UNIT** *unit name* **ALREADY OFFLINE**

Explanation: When the F ATHPROC,X=uuuu,0 command was issued to vary offline the tape unit listed in the message (*unit name*), the drive was already offline.

User response: None required.

ATH069I **QUOTE OPTION IS** *yes/no*

Explanation: This is an informational message that lists the state of the QUOTE option, which is either YES (Quotes are used) or NO (Quotes are not used). For more information on the QUOTE option, refer to “The QUOTE command” on page 142.

User response: None required.

ATH070I *variable* **COMPLETED JOIN REQUEST FROM REMOTE HOST** *host_name*

Explanation: This message indicates that the JOIN command issued by *host_name* was processed and completed.

User response: For more information on the JOIN command, refer to “The JOIN command” on page 132.

ATH071I *variable* **SUCCESSFULLY JOINED REMOTE HOST** *host_name*

Explanation: This message displays if the JOIN request is successful. The *host_name* identifies the system that was joined.

User response: For more information on the JOIN command, refer to “The JOIN command” on page 132.

ATH072E **JOIN REQUEST FAILED:** *config_ds_name* **CONFIGURATION DOES NOT INCLUDE** *system*

Explanation: The *config_ds_name* identifies the configuration data set that is missing the name of the z/OS *system* you are attempting to JOIN. The JOIN command failed.

User response: For more information on the JOIN command, refer to “The JOIN command” on page 132.

ATH073I **STATUS MESSAGE ID REPLY TEXT OFFSET UNIT**

Explanation: This message is always followed by companion message ATH051I. It contains the column headings that describe the columnar data contained in message ATH051I.

User response: None required.

ATH074I **EXITCOMPAT OPTION IS** *sss*

Explanation: This message displays the status of the EXITCOMPAT command setting. The *sss* value is replaced by either YES or NO:

- YES. EXITCOMPAT=Y was previously specified.
- NO. EXITCOMPAT=N was previously specified. This was set because of the presence of another installed exit.

User response: None required. For more information on EXITCOMPAT, refer to “The EXITCOMPAT command” on page 126.

ATH075I **TCP COMMUNICATION TASKS ARE** *state*

Explanation: This is an informational message that lists the state of the ATAM global command communications tasks, which is either ENABLED or DISABLED.

User response: None required. For more information on the GCTASK command, refer to “The GCTASK command” on page 128.

ATH076I LOG FILE RECORDING IS *state*

Explanation: This message displays the status of LOGFILE processing in response to the JLOGF command. One of the following states replaces the *state* text:

- *OFF* - ATAM logging is inactive, either optionally or due to a prior failure.
- *ON* - ATAM logging is active, but failures will terminate logging.
- *ON, WRAP* - ATAM logging is active and ATAM will reset the LOGFILE data set to an empty state if it encounters failures.

User response: None required. For more information on the JLOGF command, refer to “The JLOGF command” on page 132.

ATH077E TARGET SYSID SPECIFICATION INVALID. GLOBAL COMMAND SUPPORT DISABLED ON LOCAL HOST *host name*

Explanation: This message indicates that the *host name* in the “N” command or sub-parameter is not defined in the configuration data set. A system must be defined in the ATAM configuration data set to perform as a target system ID for the “N” command or sub-parameter.

User response: Correct the target system ID and re-issue the command.

ATH078E SMF OPTION DISABLED: SMF IS NOT RECORDING TYPE 122 RECORDS

Explanation: This message indicates that the ATAM SMF option has been disabled because z/OS SMF is not actively recording ATAM SMF record type 122.

User response: None required. For more information on the SMF option, refer to “The SMF command” on page 147.

ATH079I SMF OPTION IS *state*

Explanation: This is an informational message that lists the current status of the System Management Facility (SMF) option. The *state* will be one of the following:

- *YES*. Save historical data from the ATAM log file in an SMF file.
- *NO*. Disable SMF recording.
- *YES, INCLUDE VARY FAILURES*. Save historical data from the ATAM log file in an SMF file, and also record any tape allocation events that result in unexpected VARY-ONLINE failures.

User response: None required. For more information on the SMF option, refer to “The SMF command” on

page 147 and “Record and report SMF data” on page 74.

ATH080I ATAM BLOCK DELETED

Explanation: This is an informational message.

User response: None required.

ATH081I ATAM BLOCK CHAINED TO SSCT AND LOCATED AT *address*

Explanation: The message displays the address of the ATAM BLOCK obtained during ATAM initialization.

User response: None required.

ATH082I SELECTABLE FREE ONLINE TAPE DETECTED, UNIT *unit_ID*, BYPASS *xx/yy*

Explanation: The *unit_ID* in this message indicates a device number that was detected as being selectable, online, and unallocated. If ATAM determines that the device is in the same condition for T3 additional iterations, ATAM will attempt to vary the device offline to make it available to other systems.

If this message includes the BYPASS *xx/yy* text, the device has a Scan Bypass value. This indicates that the device will not be immediately considered for vary-offline processing. It instead will wait *yy* iterations of the T1 value before being considered for vary-offline processing.

When *xx* equals *yy*, ATAM will consider the device for vary-offline processing, if it is still online and unallocated. This allows you to have certain devices remain online and unallocated longer than others, in effect, customizing the T1 processing at the device level.

Note: For more information on the T3 parameter, refer to Chapter 7, “Configuration parameters,” on page 155.

User response: None required.

ATH083I VARY OFFLINE ATTEMPTED, UNIT *unit_ID*

Explanation: This is an informational message identifying a device, *unit_ID*, which ATAM has attempted to vary offline. This occurs as ATAM attempts to reclaim managed devices that are found in an online, unallocated state.

User response: None required.

**ATH084I VARY ONLINE OF PENDING OFFLINE
UNIT ATTEMPTED, UNIT *unit_ID***

Explanation: This is an informational message identifying a device, *unit_ID*, for which ATAM has initiated a vary-online request. It does this when it detects a managed device in a pending offline state as a result of prior vary-offline attempt.

User response: None required.

**ATH085I ALLOCATION MESSAGES
DETECTED, ATAM VARY
PROCESSING SUSPENDED**

Explanation: One or more WTORs requesting allocation of a tape unit remain outstanding. This message will continue to be displayed until a response is provided for the 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). ATAM can be configured to automate the response to WTOR messages that impact its processing. Also consider using your automation tool to automate the responses to these WTOR messages.

Note: For more information on automating responses to WTOR messages, refer to Appendix D, “IEF238D Processing Considerations,” on page 187.

ATH086I MDP OPTION IS *state*

Explanation: This informational message displays the current status of the Monitor Dynamic allocation Parameter (MDP) option. The possible *states* are:

NO MDP is not active.

YES, RECORD

MDP is active and will record unsupported dynamic allocation requests in the ATAM SMF record type 122.

YES, MODIFY

MDP is active and will modify unsupported dynamic allocation requests

This message is issued in response to the MDP command.

User response: None required.

ATH087I SAF OPTION IS *state*

Explanation: This message lists the current state of the ATAM command security information option. The possible *states* are:

NO Command security is not active.

WARN Command security is active, but will only warn of unauthorized attempts to issue ATAM commands.

FAIL Command security is active and will fail unauthorized attempts to issue ATAM commands.

This message is issued in response to the SAF command.

User response: None required.

**ATH088E SMF OPTION DISABLED: SMF IS
NOT ACTIVE OR HAS ENDED
ABNORMALLY**

Explanation: ATAM is unable to record SMF data because SMF is unavailable.

User response: Correct the system problem that has disabled SMF processing. Restart SMF processing.

**ATH089W PC ROUTINE UNAVAILABLE, ISPF
COMMAND INTERFACE DISABLED**

Explanation: This message indicates that ATAM was unable to establish the cross-memory environment necessary to support the ATAM ISPF command interface to the ATAM address space.

User response: Stop and restart the ATAM address space. If the problem persists, contact IBM Technical Support.

**ATH090I ESOTERIC *unit_ID* DETECTED IN
WTOR *msg_num* FOR REPLY ID
*reply_num***

Explanation: ATAM found the specified esoteric *unit_ID* or name in the WTOR message it is processing. The *msg_num* identifies a specific ATAM message number and *reply_num* is the reply number associated with the response.

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.

**ATH095W NO LOCAL TCPIP INFO
CONFIGURED. ATAM REMOTE HOST
SUPPORT DISABLED.**

Explanation: Remote communication is disabled because ATAM was unable to find a configuration member for the initiating system.

User response: To assign a configuration member to a system, select option **S**, Setup and Configuration, on the ATAM main menu, then specify an MVS system ID on the ATAM System Configuration screen and enter values in the fields. Be sure to fill in the TCP/IP fields at the bottom of the screen. When you are done configuring this information, restart ATAM.

Note: If you do not want to use TCP/IP for a system, you can also use commands to set the "non-TCP/IP" configuration options, such as T1-T7 values, Quote, and LRU options. Refer to the table in "Specifying parameters on the System Configuration screen" on page 22 for a list of commands you can use.

ATH096I NO RESPONSES TO DISPLAY.

Explanation: The current query had no matches on the ATAM system(s) specified.

User response: None required.

ATH097I SSI OPTION IS *state*

Explanation: This message displays the status of the ATAM subsystem interface option. The *state* value is replaced with either YES or NO.

- YES. Indicates that SSI=Y was previously specified.
- NO. Indicates that SSI=N was previously specified.

User response: None required.

ATH098I DDR OPTION IS *state*

Explanation: This message displays the status of the Dynamic Device Reconfiguration (DDR) monitoring option. The *state* value is replaced by either YES or NO.

- YES. Indicates that DDR=Y was previously specified.
- NO. Indicates that DDR=N was previously specified.

User response: None required.

ATH099I IQ4 OPTION IS *state*

Explanation: This message displays the status of the SYSIEFSD.Q4 WAIT (IQ4) option. The *state* value is replaced by either YES or NO.

- YES. Indicates that IQ4=Y was previously specified.
- NO. Indicates that IQ4=N was previously specified.

User response: None required.

**ATH100I ATAM WILL WAIT *num_scnds*
SECONDS FOR A REPLY, OTHERWISE
IT WILL DEFAULT TO *action*.**

Explanation: This is a companion message to ATH101D. ATAM issues it to describe how long it will wait for a response to the ATH101D WTOR before continuing processing.

- *Num_scnds*. The number of seconds the ATH101D message will remain outstanding. ATAM will perform the action when the time period expires.
- *Action*. The type of action that ATAM will perform. Possibilities include: WAIT-NOHOLD and MANUAL ALLOCATION.

User response: Verify that the default response to ATH101D, specified by the ATAM "R" command, is defined correctly. For instances where the defined response is not valid for the message issued, verify that you have sufficient tape resources to respond to tape allocation requests. Also, verify that all ATAM-managed tape drives are consistently defined on all ATAM-defined MVS images (i.e., each ATAM is managing the same list of tape resources.).

**ATH101D JOB *jobname* NEEDS A TAPE, REPLY C
TO CANCEL, M FOR MANUAL
ALLOCATION, W FOR WAIT-NO
HOLD OR I FOR INFORMATION.
ORJOB *jobname* NEEDS A TAPE, REPLY
C TO CANCEL, M FOR MANUAL
ALLOCATION OR I FOR
INFORMATION.**

Explanation: ATAM automatic allocation failed for the specified job. There may not be enough drives to meet the demand or that are usable by ATAM to meet the need.

User response: Try adjusting the polling interval, especially if you have recently added extra images to your sysplex. The polling interval indicates how long you want ATAM to look for drives to take offline.

- Increasing the polling interval will make drives available longer on the specific system they are varied on to.
- Decreasing the polling interval will make the drives more sharable between the different images.

For more information on polling intervals, refer to “Step 7: Verifying MVS system parameters” on page 18 and to Chapter 7, “Configuration parameters,” on page 155.

Note: When HSM attempts to allocate a tape resource that results in either ATAM issuing the ATH101D message or the MVS allocation recovery exit issuing the IEF238D message, the proper response to the ATH101D message is C for Cancel. In this case, HSM will issue its own message, ARC0381A, giving you the option to instruct HSM to wait and try again or actually terminate the request.

ATH102W NO SELECTABLE TAPE UNITS AVAILABLE.

Explanation: This is an informational message.

User response: None required.

ATH103W ATAM INTERNAL ERROR. UNEXPECTED EXIT LOCATION FOR *exit_name*

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

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

ATH104W ATAM INTERNAL ERROR. INVALID DIRECT SSCT ADDRESS IN *exit_ID*

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

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

ATH105E UNABLE TO GET STATUS TABLE LOCK. ATAM INTERNAL ERROR

Explanation: Either the system is extremely slow or hung, or an internal coding error has occurred.

User response: A restart of the ATAM address space may be required if the problem persists. Contact IBM Customer Support if you need assistance.

ATH106I COMMAND ACCEPTED

Explanation: This message indicates that the Select (S) or Exclude (X) action command will be attempted on the ATAM system(s) specified.

User response: None required.

ATH107I COMMAND SUCCESSFUL

Explanation: This message indicates that the Select (S) or Exclude (X) action command was successful on the system(s) specified.

User response: None required.

ATH108W COMMAND COMPLETED WITH ERRORS

Explanation: This message indicates that the Select (S) or Exclude (X) action command was completed, but one or more errors occurred.

User response: Look at any additional error messages for more information.

ATH109W COMMAND REQUIRES TCPIP SUPPORT

Explanation: The command is not supported when the ATAM TCPIP facility is not active. Certain ATAM commands require this facility to properly execute.

User response: Verify that the TCPIP configuration was properly provided, if you intended to use this support.

ATH110I BID FOR DEVICE *dev_ID* status

Explanation: This message describes the bid status for the device named in *dev_ID*. The *status* of a bid is one of the following:

- INITIATED. The bid process has been initiated.
- FAILED, NOT MANAGED. The bid failed because one of the ATAM-defined MVS images is not managing the device.
- FAILED, OUTBID. The bid failed because one of the ATAM-defined MVS images had a lower bid for the device.
- FAILED, IN USE. The bid failed because one of the ATAM-defined MVS images is currently using the device.
- SUCCESSFUL. The bid for this device was successful.

If the message returned is from one of the ATAM-defined MVS images, message ATH067W with the MVS image name precedes the ATH110I message. An example is shown below:

ATH067W RS22 ATH110I BID FOR DEVICE 056I FAILED, IN USE

User response: None required.

ATH111I TCPIP Server Init Complete IPAddr (*address*), Port (*port*), Timeout (*seconds*)

Explanation: The message indicates that ATAM's TCP/IP function successfully initiated and describes

settings for the parameters associated with this function on the initiating Host.

- *Address*. The IP address assigned to the initiating host.
- *Port*. The port number assigned to the initiated host.
- *Seconds*. The time-out value, in seconds, for the initiating host.

User response: None required.

ATH112W TCPIP Server Init Failed IPAddr
(*address*) *Port (port)*, *Timeout (seconds)*, *rc*
(*return code*)

Explanation: The message indicates that ATAM's TCP/IP function failed to initiate successfully. It also describes the TCP/IP settings for the initiating host and the return code for the error.

- *Address*. The IP address assigned to the initiating host.
- *Port*. The port number assigned to the initiated host.
- *Seconds*. The time-out value, in seconds, for the initiating host.
- *Return code*. The return code from the failing service. Return codes are referred to as ERRNO and their meanings can be found in the following data set: 'SYS1.MACLIB(BPXVERNO)'.

User response: Wait for a short period of time (five minutes). ATAM will automatically attempt to restart its TCP/IP function. If it continues to fail, stop and re-start the ATAM address space. If it continues to fail after that, contact IBM Technical Support and report the failure along with the return code in the message.

ATH113E TCPIP Server selectex socket error (*num*)

Explanation: This error message indicates that the global command server task encountered a socket error during the "selectex" service. The value of *num* is the error number reported by the selectex service.

User response: Correct the TCPIP error that initiated the problem. If a TCPIP shutdown is the cause, restart TCPIP, then use the GCTASK=Y command to restart the ATAM global command tasks.

ATH114E TCPIP Server shutdown due to network error

Explanation: This error message indicates that the global command server task has been shutdown due to an error. Messages previously issued by ATAM describe the specific error.

User response: None required.

ATH115E TCPIP Server shutdown due to socket error

Explanation: This error message indicates that the global command server task has encountered a socket in error. ATAM stops the server task and issues additional messages describing the failure.

User response: Use the GCTASK=Y command to re-establish ATAM global command tasks.

ATH116I TCPIP Server shutdown requested

Explanation: ATAM internal processing has requested that the server task portion of the ATAM global command processor to be terminated. This request is either due to previously detected errors, indicated by prior ATAM messages, or due to an ATAM shutdown.

User response: None required

ATH117I NO EXCLUSIVE-USE (TYPE=OWN) JOB PREFERENCES

Explanation: ATAM issues this message in response to the following command if there are no corresponding entries to match the request.

F ATAM,PJ,E

The command requests ATAM display all job preferences that are defined as the exclusive-user (owner) of a group of devices.

User response: None required.

ATH120W GLOBAL COMMAND SUPPORT TASKS STOPPED

Explanation: This is a warning message indicating that the ATAM global command support tasks have been stopped. ATAM describes the cause of this action in previous messages that indicate either a shutdown request or an error in TCPIP processing.

User response: Restart the global command support tasks using the GCTASK command when the cause of the termination is resolved.

ATH121I GLOBAL COMMAND SUPPORT TASKS RESTART *xxx*, *yyy* RESTARTS REMAIN

Explanation: This is an informational message indicating that an automatic restart of the global command tasks has completed. This message also indicates the remaining number of automatic restarts ATAM will attempt before terminating without a restart. The value in *xxx* indicates the current restart iteration, the value in *yyy* indicates the number of restart iterations remaining.

User response: None required.

**ATH122W GLOBAL COMMAND SUPPORT
TASKS RESTART COUNT
EXHAUSTED**

Explanation: This is a warning message indicating that the number of automatic restarts of the global command tasks have been exhausted. This indicates that ATAM will not attempt to automatically restart the global command tasks.

User response: None required.

**ATH123I ATAM WAIT FOR UNIT *unit_ID*
FAILED**

Explanation: The job attempted to acquire the unit listed in the message via the bid process, but failed because one of the other ATAM-defined MVS images is using the device.

User response: None required.

**ATH124I ATAM WAIT FOR UNIT *unit_ID* HAS
EXPIRED**

Explanation: The job attempted to acquire the unit specified in the message via the bid process, but failed because the wait time expired before ATAM responded to the bid. The T7 parameter establishes the amount of time a bid waits for a response. The default is 30 seconds, which is the maximum recommended value.

User response: None required.

**ATH125I ATAM JOB *jobname* WAITING FOR
devtype DEVICE ON UNIT *unit_ID***

Explanation: The job listed in the message (*jobname*) is attempting to acquire a device of a specific device type (*devtype*) on the named unit (*unit_ID*) and is now waiting for a response to the bid request. The allocation recovery exit interrupts the wait once the ATAM address space responds to the bid.

If the time for the wait exceeds the number of seconds specified in the T7 parameter, the allocation recovery exit interrupts the wait and issues message ATH124I.

User response: None required.

**ATH126I ATAM WAIT FOR UNIT *unit_ID*
POSTED**

Explanation: The job succeeded in acquiring the named unit via the bid process.

User response: None required.

**ATH127I GLOBAL COMMAND SUPPORT
TASKS START DELAYED FOR <
num_scds SECONDS**

Explanation: This is an informational message that indicates the amount of time that ATAM will delay the re-start of global command tasks in response to the GCTASK=Y command. ATAM delays response to the GCTASK=Y command for 120 seconds for instances where the ATAM global command tasks terminated due to an error condition. The value in *num_scds* is the maximum number of seconds remaining before ATAM will actually re-establish the global command tasks.

User response: None required.

**ATH128W SAF CALL UNABLE TO VERIFY
COMMAND ACCESS AUTHORITY,
RC(return_code) RS(reason_code)**

Explanation: ATAM command security was unable to verify access authority because there is no command entity profile defined to your security product. Access is granted.

User response: If the command should be "protect," define the security entity associated with the command to your security product with the desired access.

**ATH129W SAF SECURITY DENIED ACCESS TO
COMMAND**

Explanation: ATAM command security determined that the user issuing the command did not have sufficient authority to do so. Your security product will also issue messages describing the specific failure.

User response: If the user should be allowed to issue the command, authorize them to do so via your security product.

**ATH131I INITIALIZATION COMMANDS
STARTED**

System action: This informational message is issued by ATAM during initialization when it begins processing internal commands. Internal commands are diagnostic-based and can only be defined by IBM Technical Support.

User response: None required.

**ATH132I INITIALIZATION COMMANDS
COMPLETED**

Explanation: This informational message is issued by ATAM when it finishes processing all internal commands.

User response: None required.

**ATH133W SAF CALL RETURNED UNSUPPORT
RETURN CODE, RC(*return_code*)**

Explanation: ATAM command security detected an invalid or unsupported return code from the SAF interface.

User response: Turn off the ATAM SAF option and contact IBM Technical Support.

**ATH134W ATAM TABLE BUILD COUNT
APPROACHING *xxx*, *yyy* REBUILDS
REMAINING**

Explanation: ATAM issues this message to warn that the number of detected IO configuration changes to the tape device pool is within five iterations of the threshold set in the ATAM T4 value. The message specifies the T4 value, *xxx*, and the number of remaining rebuilds, *yyy*. Once the number of iterations is exhausted, ATAM issues WTOR ATH010D to request further instruction.

User response: None required, but consider increasing the T4 value if IO configuration changes to the tape device pool have increased in frequency.

**ATH135E INVALID INTERNAL COMMAND
RECEIVED**

Explanation: ATAM encountered an internal error while attempting to write a log record.

User response: Contact IBM Technical Support.

**ATH136E INCORRECT RESPONSE TO
MESSAGE ATH010D**

Explanation: The response to the ATH010D WTOR was not one of the listed values.

User response: Correct the response to the ATH010D WTOR by specifying one of the listed values of R, N=*nnn*, or T.

**ATH137W NO RESPONSE TO CONFIGURATION
CHANGE MESSAGE ATH010D –
REBUILDING TABLE**

Explanation: ATAM did not receive a response to the ATH010D WTOR within two minutes of issuing the message. ATAM resets the configuration detection count to the original T4 value and rebuilds the ATAM table.

User response: None required, however, if you wish to provide a response other than RESET, enter a response within two minutes or use an automated operator response facility to provide an automated response to the WTOR.

**ATH138W QEDIT COMPLETED WITH
ERRORS,RC(*return_code*)**

Explanation: An error occurred in the ATAM command processing facility. The QEDIT service returned an unacceptable return code.

User response: Re-issue the command. If the problem persists, stop and re-start the ATAM address space. Contact IBM Technical Support and provide the message and return code.

**ATH139E FAILURE DURING COMMAND TASK
INITIALIZATION, LOGGING
DISABLED**

Explanation: ATAM encountered an external error while attempting to initialize the LOGFILE task. This error message is typically preceded by a message or abend describing the specific failure (e.g. D37-04 for an out-of-space condition). ATAM disables the logging function until its address space is restarted.

User response: Delete and re-allocate the data set allocated to the LOGFILE DD statement of the ATAM address space. If you do not need to retain the records, you can also specify LOGFILE DD DUMMY.

**ATH140I JOB *jobname*, STEP *step_name*, DDNAME
DD_name REQUIRES AT LEAST 1 TAPE
UNIT**

Explanation: The job listed as *jobname* refers to a specific step in the job, *step_name*, and a specific DD line in the step, *DD_name*, 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 units that are not accessible.

User response: None required.

ATH143I *unit_ID y unit_ID y unit_ID y unit_ID y*

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

- x = Excluded
- S = Selectable

User response: None required.

ATH144E SEVERE ERROR. LOST JOURNAL ENTRY DUE TO FAILURE, LOGGING DISABLED

Explanation: ATAM encountered an external error while attempting to write a log record. This error message is typically preceded by a message or abend describing the specific failure (e.g. D37-04 for an out-of-space condition). ATAM disables the logging function until the ATAM address space is restarted.

User response: Delete and re-allocate the data set allocated to the LOGFILE DD statement of the ATAM address space. If you do not need to retain the records, you can also specify LOGFILE DD DUMMY.

ATH145W TCPIP Client Init Failed IPAddr(*address*)

Explanation: ATAM's TCP/IP function failed to initiate successfully. The *address* variable refers to the IP address assigned to the initiating host.

User response: Use the GCTASK command to attempt to restart the ATAM TCP/IP facility. If it continues to fail after that, contact IBM Technical Support and report the failure along with the return code in the message.

ATH147I TCPIP Client Init Complete IPAddr(*address*)

Explanation: ATAM's TCP/IP client functions successfully initiated. The IP address assigned to the initiating Host is listed in the message.

User response: None required.

ATH148E TCPIP Client selectex socket error (*num*)

Explanation: This error message indicates that the global command client task encountered a socket error during the "selectex" service. The value of *num* is the error number reported by the selectex service.

User response: Correct the TCPIP error that initiated the problem. If a TCPIP shutdown is the cause, restart TCPIP and then use the GCTASK=Y command to restart the ATAM global command tasks.

ATH149E TCPIP Client shutdown due to network error

Explanation: This error message indicates that the global command client task has been shutdown due to an error. Messages previously issued by ATAM describe the specific error.

User response: None required.

ATH150I TCPIP Client shutdown requested

Explanation: ATAM internal processing has requested that the client task portion of the ATAM global command processor be terminated. This request is either due to previously detected errors, indicated by prior ATAM messages, or due to an ATAM shutdown.

User response: None required.

ATH151W JOURNAL FAILURE DUE TO LACK OF SPACE IN LOGFILE

Explanation: This message indicates that ATAM encountered a space-related failure when trying to write data to the LOGFILE. If you did not include the WRAP parameter on the EXEC statement of the ATAM procedure JCL (i.e. ATHPROC), ATAM also issues either message ATH144E or ATH156E and disables logging.

User response: None required.

ATH152W LOGFILE DATA SET RESET TO EMPTY

Explanation: This message indicates that ATAM encountered a space-related failure, but was able to reset the LOGFILE data set to an empty state because of the WRAP parameter. ATAM continues logging, but any data previously contained in the LOGFILE data set is lost. If the ATAM SMF option is on, ATAM maintains historical data in the ATAM SMF records.

User response: None required.

ATH153E LOGFILE DATA SET COULD NOT BE RESET TO EMPTY

Explanation: This message indicates that ATAM encountered a space-related failure, but was unable to reset the LOGFILE data set to an empty state. ATAM also issues either message ATH144E or ATH156E and disables logging. An MVS abend should accompany this message.

User response: Attempt to resolve the error that prompted the MVS abend accompanying the failure. If the problem persists, contact IBM Technical Support.

ATH154E SMF LOGGING DISABLED, RC(*return_code*)

Explanation: This message indicates that the SMF logging, which is based on the setting in ATAM for the SMF option, is now disabled. A *return code* is provided to give an indication as to why the logging was disabled.

User response: Check the return code to see if a problem exists that requires correcting. For more information on the SMF option, refer to "Record and report SMF data" on page 74.

ATH155I COMMAND TASK *state*

Explanation: This message displays the current *state* of the logging facility. The *state* values are:

- INITIATING – ATAM is initiating the logging facility. This typically occurs during ATAM initialization, but can occur during table rebuild processing.
- TERMINATING – ATAM is terminating the logging facility. This typically occurs during ATAM shutdown processing, but can occur during table rebuild processing or in response to an error condition.

User response: None required.

ATH156E COMMAND TASK INITIALIZATION FAILURE, LOGGING DISABLED

Explanation: ATAM encountered an external error while attempting to initialize the logging facility. This error message is typically preceded by a message or abend describing the specific failure (e.g. D37-04 for an out-of-space condition). ATAM fails to initialize the logging facility and disables it until the ATAM address space is restarted.

User response: Delete and re-allocate the data set allocated to the LOGFILE DD statement of the ATAM address space. If you do not need to retain the records, you can also specify LOGFILE DD DUMMY.

ATH157E COMMAND TASK TERMINATION FAILURE

Explanation: ATAM encountered an external error while attempting to terminate the logging facility. This error message is typically preceded by a message or abend describing the specific failure (e.g. D37-04 for an out-of-space condition). ATAM disables the logging facility until the ATAM address space is restarted.

User response: Delete and re-allocate the data set allocated to the LOGFILE DD statement of the ATAM address space. If you do not need to retain the records, you can also specify LOGFILE DD DUMMY.

ATH158W NO SELECTABLE TAPE UNITS DEFINED

Explanation: ATAM was unable to assign a device to satisfy the tape allocation request. This occurred because no devices were defined to ATAM management.

User response: If this result is unexpected, define devices to ATAM management using the ATAM "S" command. For more information on this command, refer to Chapter 5, "Console Operator Commands," on page 79.

**ATH159W NO SELECTABLE TAPE UNITS
DEFINED FOR VOLUME
PREFERENCING DEVICE RANGES**

Explanation: The ATAM volume preference exit, ATH#VALD, is active and the requested volume serial falls within the volume serial range for one of the exit entries. However, ATAM does not have any selectable devices defined that fall within the device range of any entries in the ATH#VALD table. In this case, ATAM fails to assign a device to the requestor.

User response: Either disable the exit by deleting it from the ATAM load library (SATHLOAD) if unnecessary, or correct the exit to properly identify the appropriate volume serial and device range.

**ATH160I VOLUME PREFERENCING EXIT
INSTALLED**

Explanation: The ATAM volume preference exit and load module, ATH#VALD, was detected in the ATAM load library and has been successfully installed. The presence of the exit activates ATAM volume serial preferencing.

User response: None required.

ATH161I -- VOLSER --- --- UCB ---

Explanation: This message is part of a multi-line display that reports the contents of the ATAM volume preference table, non-executable module ATH#VALD. Message ATH162I follows this message.

User response: None required.

ATH162I HIGH LOW HIGH LOW

Explanation: This message is part of a multi-line display that reports the contents of the ATAM volume preference table, non-executable module ATH#VALD. Message ATH161I precedes this message and message ATH163I follows it.

User response: None required.

ATH163I vvvvvv vvvvvv uuuu uuuu

Explanation: This message is part of a multi-line display that reports the contents of the ATAM volume preference table, non-executable module ATH#VALD. Message ATH161I and ATH162I precede this message. ATAM issues this message for each entry in the ATH#VALD table. ATAM replaces the first and second vvvvvv with the low and high volume serials in the range. ATAM replaces the first and second uuuu with the low and high device UCBs in the range.

User response: None required.

**ATH164W UNSUPPORTED DYNAMIC
ALLOCATION OF MANAGED DEVICE
DETECTED**

Explanation: This message indicates that ATAM detected a dynamic allocation request block for an ATAM-managed tape device that does not consider offline devices. Messages ATH165I and ATH166I accompany this message to further describe the allocation request.

User response: None required.

**ATH165I S99FLAG1(flags) S99FLAG2(flags)
STEP(name) PROGRAM(name)**

Explanation: This message lists the dynamic allocation request block flags, the step name, and the program name requesting the allocation. The flags listed are the values in the S99FLAG1 and S99FLAG2 fields of the dynamic allocation request block. Message ATH164W precedes this message.

User response: None required.

ATH166I PROGRAM(***) DD(*****)
UNIT(*****) DEVTYPE(*****)**

Explanation:

System action:

User response:

**ATH167I UPDATED FLAGS, S99FLAG1(flags)
S99FLAG2(flags)**

Explanation: ATAM issues this message if it modifies a dynamic allocation request block. This occurs if you specify the command MDP=M and ATAM detects and modifies a dynamic allocation request block to consider offline devices. It lists the new values ATAM assigned to the S99FLAG1 and S99FLAG2 fields of the request block. Messages ATH164W, ATH165I, and ATH166I precede this message.

User response: None required.

**ATH168I NO ESOTERICS IN FORCED WAIT
STATUS**

Explanation: This message is issued in response to the Esoteric-Wait command, F ATAM,E,W. It indicates that currently there are no tape-based esoteric definitions for ATAM-managed tapes in a FORCE-WAIT condition.

User response: None required.

**ATH169E TDT SERVICE CALL FAILURE: TDTH
OBTAIN FAILURE, RC(return code)
RS(reason code)**

Explanation: The esoteric processing table initialization process was unable to obtain the necessary storage. Record the return code and reason code from the message and report this to IBM Technical Support.

User response: Contact IBM Technical Support.

**ATH170E CROSS MEMORY INITIALIZATION
FAILURE: MISSING SSCT**

Explanation: ATAM cross memory initialization could not execute because it could not find the ATAM subsystem. This suggests an internal processing error.

User response: If the problem persists after verifying ATAM installation, contact IBM Technical Support.

**ATH171E CROSS MEMORY INITIALIZATION
FAILURE: MISSING ATAP HEADER**

Explanation: ATAM cross memory initialization could not execute because it could not find the ATAM block. This suggests an internal processing error.

User response: If the problem persists after verifying ATAM installation, contact IBM Technical Support.

**ATH172E CROSS MEMORY INITIALIZATION
FAILURE: INVALID FUNCTION**

Explanation: ATAM failed to complete the cross memory initialization due to an invalid function request. This suggests an internal processing error.

User response: Stop and restart the ATAM address space. Verify that ATAM was properly installed. If the problem persists, contact IBM Technical Support.

**ATH173E CROSS MEMORY INITIALIZATION
FAILURE: LINKAGE INDEX RESERVE
FAIL**

Explanation: ATAM failed to complete the cross memory initialization due to a linkage index reserve failure.

User response: Stop and restart the ATAM address space. If the problem persists, contact IBM Technical Support.

**ATH174E CROSS MEMORY INITIALIZATION
FAILURE: AUTHORIZATION INDEX
SET FAILURE**

Explanation: ATAM failed to complete the cross memory initialization due to a table create failure.

User response: Stop and restart the ATAM address

space. If the problem persists, contact IBM Technical Support.

**ATH175E CROSS MEMORY INITIALIZATION
FAILURE: ENTRY TABLE CREATE
FAILURE**

Explanation: ATAM failed to complete the cross memory initialization due to a table create failure.

User response: Stop and restart the ATAM address space. If the problem persists, contact IBM Technical Support.

**ATH176E CROSS MEMORY INITIALIZATION
FAILURE: ENTRY TABLE CONNECT
FAILURE**

Explanation: ATAM failed to complete the cross memory initialization due to a table connect failure.

User response: Stop and restart the ATAM address space. If the problem persists, contact IBM Technical Support.

**ATH177I CROSS MEMORY ENVIRONMENT
INITIALIZED**

Explanation: ATAM address space initialization successfully established a cross memory environment. This environment is necessary to allow the ATAM ISPF customer interface to view and modify device status information across the tapeplex.

User response: None required.

**ATH178E CROSS MEMORY INITIALIZATION
FAILURE: ENTRY TABLE DESTROY
FAILURE**

Explanation: During ATAM termination, ATAM was unable to destroy its linkage index table.

User response: If the problem persists, contact IBM Technical Support.

**ATH179I CROSS MEMORY ENVIRONMENT
CLEANUP COMPLETE**

Explanation: During ATAM termination, ATAM successfully completed the removal of its PC routine.

User response: None required.

**ATH180E CROSS MEMORY INITIALIZATION
FAILURE: PC ROUTINE *module* LOAD
FAILURE**

Explanation: The ATAM PC routine initialization was unable to load the PC routine load module, *module*. This suggests a problem with ATAM product installation or an internal processing error.

User response: If the problem persists after verifying the ATAM product installation process, contact IBM Technical Support.

**ATH181E PC ROUTINE *x* EXECUTION FAILURE:
MISSING ATAP HDR**

Explanation: The ATAM PC routine, *x*, could not execute because it could not find the ATAM block. This suggests an internal processing error. The *x* will be replaced by one of the following values:

- 0 – Indicates the problem occurred in ATAM module ATH#PCR0.
- 1 – Indicates the problem occurred in ATAM module ATH#PCR1.
- 2 – Indicates the problem occurred in ATAM module ATH#PCR2.

User response: Verify that the ATAM address space and ISPF user interface reference the same ATAM load library. If the problem persists after verifying ATAM installation, contact IBM Technical Support.

ATH182I PC ROUTINE *x* INITIALIZED

Explanation: The ATAM PC routine, *x*, successfully executed validation. ATAM is now ready to respond to ATAM "state" information requisitions by the ATAM ISPF customer interface. The *x* will be replaced by one of the following values:

- 0 – Indicates that validation completed for module ATH#PCR0.
- 1 – Indicates that validation completed for module ATH#PCR1.
- 2 – Indicates that validation completed for module ATH#PCR2.

User response: None required.

**ATH183E PC ROUTINE *x* EXECUTION FAILURE:
INVALID FUNCTION**

Explanation: The ATAM PC routine, *x*, did not recognize the specified function. This suggests an internal processing error. The *x* will be replaced by one of the following values:

- 0 – Indicates the problem occurred in ATAM module ATH#PCR0.
- 1 – Indicates the problem occurred in ATAM module ATH#PCR1.
- 2 – Indicates the problem occurred in ATAM module ATH#PCR2.

User response: Verify that the ATAM address space and ISPF user interface reference the same ATAM load library. If the problem persists after verifying ATAM installation, contact IBM Technical Support.

**ATH184E TDT SERVICE CALL FAILURE:
MISSING ATAP HDR**

Explanation: ATAM esoteric processing table initialization experienced an internal failure. Provide this message to IBM Technical Support.

User response: Contact IBM Technical Support.

**ATH185E TDT SERVICE CALL FAILURE:
INVALID FUNCTION**

Explanation: ATAM esoteric processing table initialization experienced an internal failure. Provide this message to IBM Technical Support.

User response: Contact IBM Technical Support.

**ATH186I ESOTERIC GENERIC UCB UCB UCB
UCB**

Explanation: This message identifies the esoteric generic unit control blocks.

User response: None required.

ATH187I *name type : uuuu at uuuu at uuuu at*

Explanation: This message displays a list of tapes, where *uuuu* refers to the tape unit ID, the letter "a" refers to the ATAM status, and the letter "t" refers to the device status.

For the ATAM status, the letter "a" is one of the following values:

- S – Selectable
- x – Excluded

For the device status, the letter "t" is one of the following values:

- ? – unknown
- A – Allocated
- F – Offline
- O – Online
- P – Pending offline
- U – Unavailable. Device is physically disconnected from the MVS image.
- W – Auto Switchable

User response: None required.

**ATH188I END OF ESOTERIC LIST FOR *system
name***

Explanation: This message informs you that you have reached the end of the esoteric list for the system specified in the message.

User response: None required.

**ATH189I NO ESOTERIC FOUND TO MATCH
*esoteric name***

Explanation: The name specified in the message does not match any esoteric on the list.

User response: None required.

**ATH190I ATAM - VERSION VxRxxMxx -
*module_name***

Explanation: This is a diagnostic message that is issued only if the ATAM DON command has been issued. This message lists the version of ATAM that you are using where *Vx* is the version number, *Rx* is the release number, and *Mxx* is the modification number. The message is issued each time *module name* starts executing. The *module name* will be one of the following values:

- ATH#ALOC – the ATAM IEF_ALLC_OFFLN exit routine
- ATH#DYNA – the ATAM IEFDB401 exit routine
- ATH#VMNT – the IEF_VOLUME_MNT exit routine

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 UNITS**

Explanation: This is an informational message.

User response: None required.

**ATH194I ATAM REQUESTING *dev_name* DEVICE
ON UCB *unit_ID***

Explanation: This message informs you that ATAM is requesting a type of tape device (*dev_name*) on the UCB address or unit name (*unit_ID*).

User response: None required.

**ATH201W SYSTEM CONFIGURATION: VALUE
MISSING - DEFAULT USED FOR
KEYWORD *keyword***

Explanation: During ATAM address space initialization, processing of the Configuration member

for the initiating system detected a keyword that did not reference a value. For the indicated keyword, ATAM selected the default value.

User response: If the default value is not acceptable, use the ATAM interface (option S from the main menu) to correct the Configuration Member for the initiating system. If you prefer, you can use ISPF edit to directly modify the configuration member for the initiating system.

**ATH202I SYSTEM CONFIGURATION FOR
HOST *host name* USING ALTERNATE
CONFIGURATION MEMBER *member***

Explanation: ATAM address space initialization detected an entry in the Alternate Configuration Member Name table (member ATHIDTBL) for the initiating image. The ATHIDTBL is created and modified for instances where the SYSNAME keyword value of a Configuration Member is not equal to the Configuration Member name. If ATAM issues this message during initiation, the ATHIDTBL member has a corresponding entry for the initiating system that describes a Configuration Member name that does not match the MVS System Name.

User response: The use of MVS system names that do not adhere to ISPF member name restrictions necessitates the use of this facility. If the MVS system name does adhere to ISPF member name restrictions, remove the cross reference by using the ATAM interface to set the SYSNAME value equal to the Configuration Member name. If you prefer, you can edit the Configuration Member directly via ISPF edit and change the SYSNAME keyword value to equal the Configuration Member name.

**ATH210E PRF SERVICE CALL FAILURE:
MISSING OR INVALID SSCT**

Explanation: ATAM job preference processing experienced an internal processing error. Report this message to IBM Technical Support.

User response: Contact IBM Technical Support.

**ATH211E PRF SERVICE CALL FAILURE:
INVALID FUNCTION**

Explanation: ATAM job preference processing experienced an internal processing error. Report this message to IBM Technical Support.

User response: Contact IBM Technical Support.

**ATH212E PRF SERVICE CALL FAILURE: PRFH
OBTAIN FAILURE, RC(*return code*)
RS(*reason code*)**

Explanation: The job preference request was unable to obtain the storage necessary to complete the request. Record the return code and reason code from the

message and report this to IBM Technical Support.

User response: Contact IBM Technical Support.

**ATH213E PRF SERVICE CALL FAILURE: PRFB
OBTAIN FAILURE, RC(*return code*)
RS(*reason code*)**

Explanation: The job preference request was unable to obtain the storage necessary to complete the request. Record the return code and reason code from the message and report this to IBM Technical Support.

User response: Contact IBM Technical Support.

**ATH214E JOB PREFERENCE *job_name* EXISTS
OPT(*current type*) REQ(*requested type*)**

Explanation: This message indicates that the job preference you attempted to add already exists, but as a different type. The current type is the job preference type for the existing entry. The requested type is the job preference type for the entry you tried to add. The preference types are displayed by their internal coding. The corresponding types are as follows:

- 40 – OWNS
- 20 – REQ
- 10 – EXCL
- 00 – PREF

User response: To change the preference type for a job preference, you must remove the current job preference entry and add it with the new preference type. If you do not wish to change the preference type, re-issue your command with the correct preference type. Use the job preference display to determine the current preference type for the job preference you wish to update.

**ATH215E JOB PREFERENCE FOR *job name* DOES
NOT EXIST**

Explanation: This message indicates that the job preference you attempted to remove does not exist. The job preference is identified by *jobname*. This message is issued in response to the command:

F ATAM,S=ALL,J=jobname

User response: Display the defined job preferences using the job preference display command and verify the job preference you wish to remove. Re-issue the command with the correct job name.

ATH216I JOBNAME TYPE UCB UCB UCB UCB

Explanation: This is an informational message issued in response to the job preference display command:

F ATAM,PJ

User response: It displays column headings for the columnar data included in message ATH217I, which

immediately follows this message. See message ATH217I for further details.

ATH217I *jobname type: uuuu at uuuu at uuuu at uuuu at*

Explanation: This is an informational message issued in response to the job preference display command:

F ATAM,PJ

This message displays the *jobname* identifying the preference, the preference type, and the devices *uuuu* assigned to the preference.

The preference type will be one of the following:

- PREF** Job prefers the use of the listed devices, but will execute on others if the listed devices are unavailable.
- REQ** Job must execute on the listed devices and will wait for them to become available.
- OWNS** Job is the only user of the listed devices. Only other jobs with the "OWNS" attribute for these devices will be allowed to use them.
- EXCL** Job is excluded from using the listed devices.

This message also displays a list of tapes assigned to the job preference, where *uuuu* refers to the tape unit ID, the letter "a" refers to the ATAM status, and the letter "t" refers to the device status.

For the ATAM status, the letter "a" is one of the following values:

- S – Selectable
- x – Excluded

For the device status, the letter "t" is one of the following values:

- ? – unknown
- A – Allocated
- F – Offline
- O – Online
- P – Pending offline
- U – Unavailable. Device is physically disconnected from the MVS image.
- W – Auto Switchable

User response: None required.

ATH218I **END OF JOB PREFERENCE LIST FOR**
system name

Explanation: This is an informational message that indicates the end of the display of job preference entries for *system name*. The *system name* will be one of the z/OS hosts targeted in the job preference display command:

F ATAM,PJ,N=*system name*

User response: None required.

ATH219I **NO JOB PREFERENCE FOUND TO**
MATCH *job name*

Explanation: This message indicates that no job preference definition currently exists for the specified *job name*. This message is issued in response to command:

F ATAM,PJ=*job name*

User response: None required.

ATH220I **NO ACTIVE JOB PREFERENCE**
FOUND

Explanation: The message displays the current state of the ATAM Job Preference facility. This message is issued in response to the following command:

F ATAM,PJ

This message indicates that the job preference control block structure exists, but it does not contain any active job preference definitions. This indicates that any previously defined job preference entries have all been deleted.

User response: None required.

ATH221I **NO JOB PREFERENCES FOUND**

Explanation: The message displays the current state of the ATAM Job Preference facility. This message is issued in response to command:

F ATAM,PJ

This message indicates that the job preference control block structure does not exist, indicating that no job preference has been defined since the start of this instance of the ATAM address space.

User response: None required.

ATH222I **DEVICE PREFERENCE** *state*

Explanation: The message displays the current state of the ATAM Device Preference facility. This message is issued in response to command:

F ATAM,PD

The various states are listed below:

DISABLED

Device preference disabled

ENABLED FOR TIER VALUES

Device preference enabled for Tier processing

ENABLED FOR LOCATION

Device preference enabled for Location processing

When TIER device preference is enabled, in ATAM device displays, for selectable devices, ATAM replaces the “S” with the device Tier Value (e.g. 1-5)

When LOCATION device preference is enabled, in ATAM device displays, for selectable devices, ATAM replaces the “S” with an “L” for Local devices and with a “D” for Distant devices.

User response: None required.

ATH224I JOB *job name* REMOVED FROM PREFERENCING

Explanation: The job identified by *job name* has been removed from job preference processing. ATAM issues this message in response to the following command:

F ATAM,S=ALL,J=*job name*

User response: None required.

ATH225I INCOMPLETE MESSAGES FROM *system name* DUE TO STORAGE CONSTRAINT

Explanation: While responding to a global command request, ATAM was unable to acquire the storage required to contain and ship the response to the requesting system. ATAM returned what it could, given the storage available. This message notifies the user that fewer response messages were returned than actually exist. *System name* identifies the host that returned a truncated response.

User response: None required. You may want to consider reducing the size of your request.

ATH227I SCAN BYPASS VALUE *yy* ASSIGNED TO THESE DEVICES

Explanation: A Scan Bypass value of *yy* has been assigned to the listed devices. When these devices are managed by ATAM and found online and unallocated, ATAM will require *yy* iterations of the T1 scan interval before varying these devices offline.

User response: None required.

ATH228I TIER PREFERENCE VALUE *tt* ASSIGNED TO THESE DEVICES

Explanation: ATAM Tier preference processing has been requested for the listed devices. The devices in this list have been assigned a tier value of *tt*, where *tt* is a numeric value from 01 to 05.

User response: None required.

ATH229I LOCATION PREFERENCE DEFINES THESE DEVICES AS *state*

Explanation: ATAM Location preference processing has been requested for the listed devices. The state indicates the device selection order.

LOCAL

The device will be selected first if any are available.

DISTANT

The device will be selected if no local devices are available.

User response: None required.

| ATH235I JOBNAME OPTION

| **Explanation:** This is an informational message issued in response to the Modify Dynamic Allocation Parameter list (MDP) display command:

| F ATAM,MDP

| It displays column headings for the columnar data included in message ATH236I, which follows this message.

| **User response:** See message ATH236I for further details.

| ATH236I *Jobname Option*

| **Explanation:** This is an informational message issued in response to the Modify Dynamic Allocation Parameter list (MDP) display command:

| F ATAM,MDP

| This message displays the Started Task (STC) *Jobname* allowed to use the MDP facility and the MDP *Option* for this job. By default, the MDP has no effect on STC address spaces. If the STC address space *Jobname* appears in this display, MDP will affect it as defined by the *Option*.

| The *Option* will be one of the following:

- | • **MONITOR** – ATAM monitors the job for unsupported dynamic allocation requests and issues messages ATH164W, ATH165I, and ATH166I.
- | • **MODIFY** – ATAM monitors the job for unsupported dynamic allocation requests, issues messages ATH164W, ATH165I, and ATH166I, and modifies the dynamic allocation parameter list so that ATAM supports the requests.
- | • **MODIFY THIS JOB ONLY** – ATAM monitors the job for unsupported dynamic allocation requests, issues messages ATH164W, ATH165I, and ATH166I, and modifies the dynamic allocation parameter list so that ATAM supports the requests. This indicates that ATAM will employ dynamic allocation exit processing only for the specified job.

| **User response:** No action required. For more information on the MDP command, refer to “The MDP command” on page 135.

| **ATH237I END OF JOBNAME LIST FOR *system id***

| **Explanation:** This is an informational message that indicates the end of the display of MDP job entries for *system id*. The *system id* will be one of the z/OS hosts targeted in the MDP display command:

| F ATAM,MDP,N=*system name*

| **User response:** No action is required.

| **ATH238I NO JOBS DEFINED TO MDP**

| **Explanation:** This is an informational message that indicates there are no job names in the MDP table.

| **User response:** No action is required.

**ATH240I NO OTHER EXITS DETECTED.
IEF_ALLC_OFFLN EXIT ATH#ALOC IS
ENABLED.**

Explanation: This message is in response to the ATAM started task command, EXITCOMPAT=N. When there are no other z/OS IEF_ALLC_OFFLN exits installed on the system, the ATAM exit, which is module ATH#ALOC, is enabled for processing.

User response: None required.

**ATH241W OTHER IEF_ALLC_OFFLN EXIT(S)
DETECTED. ATH#ALOC IS
DISABLED.**

Explanation: This message is in response to the ATAM started task command, EXITCOMPAT=N. One or more z/OS IEF_ALLC_OFFLN exits were installed on the system. Since EXITCOMPAT=N, the ATAM exit, which is module ATH#ALOC, is disabled for processing. ATAM will not bring drives online. The ATAM started task remains active.

User response: Evaluate the other exits that are installed and determine if they can coexist with ATAM. See the User Response section of message ATH016W for further action. Also refer to “The EXITCOMPAT command” on page 126 for more details on how to use this command.

**ATH242I IEF_ALLC_OFFLN EXIT ATH#ALOC IS
ENABLED.**

Explanation: Either the product default of EXITCOMPAT=Y is in effect or the command EXITCOMPAT=Y was issued. The z/OS IEF_ALLC_OFFLN exit installed by ATAM exit, which is module ATH#ALOC, is operational.

User response: None required.

**ATH243I PASSIVE MODE: ATH#ALOC EXIT
AND EXITCOMPAT COMMAND
DISABLED**

Explanation: ATAM was started in Passive mode. In Passive mode, the EXITCOMPAT command is unavailable because ATAM does not initialize its IEF_ALLC_OFFLN exit.

User response: None required.

**ATH244E T4 VALUE MUST BE GREATER THAN
ZERO**

Explanation: ATAM requires that the N=*nnn* value specified in response to the ATH010D WTOR message be greater than zero. ATAM does not allow a zero value in response to the ATH010D message because setting T4=000 disables the ATAM dynamic configuration change detection facility.

User response: Correct the response to the ATH010D message by including a value greater than zero.

| **ATH245E THE MDP JOB TABLE IS AT
MAXIMUM CAPACITY**

| **Explanation:** ATAM displays this message when an attempt to update the MDP job table failed due to insufficient capacity. The MDP table accommodates only 10 entries. Attempts to add more than 10 entries will fail and receive this message.

| **User response:** Remove entries that are no longer needed, and try adding the entry again.

| **ATH246E ENTRY *Jobname* NOT FOUND IN MDP
JOB TABLE**

| **Explanation:** ATAM displays this message when an attempt to change or remove an entry for *Jobname* fails because the entry is not in the table.

| **User response:** No action is required.

**ATH290I JOB PREFERENCE INFLUENCING
ALLOCATION FOR *job name*, *step name*,
*DD name***

Explanation: ATAM issues this informational message to indicate that its job preference processing has influenced the process used to choose a device for the allocation request.

Job name

Lists the name of the job making the request.

Step name

Identifies the name of the step making the request.

DD name

Specifies the data definition (DD) of the request.

User response: None required.

ATH291I *type* **PREFERENCE INFLUENCING ALLOCATION FOR** *job name, step name, DD name, OPT(entry type)*

Explanation: ATAM issues this informational message to indicate that its subsystem interface job preference processing has influenced the process used to choose a device for the allocation request.

Type Lists the type of preference processing. Valid types are:

- **JOB** - ATAM selects a device based upon the requestor's job name.
- **DEV** - ATAM selects a device based upon the tier or location of the device.
- **VOL** - ATAM selects a device based upon the contents of the user-build ATH#VALD table.

Job name
Lists the name of the job making the request.

Step name
Lists the name of the step making the request.

DD name
Specifies the data definition (DD) of the request.

Entry type
Identifies the point at which the subsystem interface invoked the ATAM facility.

There are several *entry types*, as described in the list below.

80	This is the first ATAM call for this job step or dynamic allocation request.
40	ATAM was called from Recovery Allocation processing.
20	ATAM was called from Tape Allocation "retry" processing.
10	ATAM was called from Common Allocation "retry" processing.

The ATH291I message appears twice for instances when the ATAM IEF_ALLC_OFFLN exit is called to resolve the allocation. The entry type in the first message will be "80" and the entry type in the second message will be "40".

User response: None required.

ATH292I **DEVICE** *Unit ID* **ELIGIBILITY** *action*

Explanation: ATAM issues this message when its subsystem interface facility modifies device eligibility in the eligible device list (EDL) in support of preference processing. In cooperation with ATAM preference processing, for online devices, ATAM will either change

the eligibility or remove the device from the EDL based upon a defined preference.

Unit ID
Identifies the UCB device name.

action Identifies the action taken against the device in the EDL. The possible actions are listed below.

CHANGED
ATAM modified the eligibility relative to other devices in the EDL.

REMOVED
ATAM removed the device from the EDL.

User response: None required.

ATH293I **PREFERENCE PROCESSOR SCANNING FOR EXCLUSIVE-USE (OWNED) DEVICES**

Explanation: ATAM issues this message to indicate when its subsystem interface preference processing is scanning the EDL for devices that should be removed from the list. This occurs to support the exclusive-use (owned) preference definitions. Devices that are "owned" should only be available to the jobs defined with an ATAM preference to "own" them. If the requesting job is not the "owning" job, the device should be removed from the list.

User response: None required.

ATH300I **TCPIP CONFIGURATION INITIATING FOR** *type* **HOST** *host name*

Explanation: ATAM detected a configuration member for host *host name* that contains configuration data. It will initialize the necessary ATAM TCPIP supporting structures for the host. If the italicized *host name* matches the MVS system name, the *type* of host is LOCAL. Otherwise, the *type* of host is REMOTE.

User response: None required.

ATH301W **TCPIP CONFIGURATION: VALUE MISSING - DEFAULT USED FOR** **KEYWORD** *keyword*

Explanation: During initialization of the TCPIP configuration data for a particular host name, ATAM detected a keyword that did not contain a value. In this instance, it uses the product default value for the keyword.

This message will be preceded by message ATH300I identifying the configuration member that contains the keyword with the missing value.

User response: Use the ATAM interface (option S on the main menu) to correct the configuration member for the indicated host.

ATH302I TCPIP CONFIGURATION COMPLETE FOR HOST *host name*

Explanation: ATAM completed the TCPIP configuration for *host name*. This host will now participate in the ATAM global command processing.

User response: None required.

ATH303I TCPIP CONFIGURATION FOR *type* HOST *host name* USING ALTERNATE CONFIGURATION MEMBER *member*

Explanation: ATAM detected a configuration member where the SYSNAME parameter in the configuration member does not match the Configuration Member name. This condition requires the use of the Alternate Configuration Member Name Table (ATHIDTBL). The use of this facility is required only for MVS system names that do not conform to ISPF member name restrictions. Otherwise, the Configuration Member name should be the same as the MVS system name.

User response: If you get this message for an MVS system whose name adheres to ISPF naming conventions, consider changing the SYSNAME keyword value so that it equals the name of the Configuration Member in which it resides.

ATH304W TCPIP CONFIGURATION UPDATING DUPLICATE HOST CONFIGURATION FOR *type* HOST *host name*.

Explanation: During ATAM TCPIP configuration initialization, it detected a duplicate host name definition. The previously defined host definitions are replaced with the duplicate definition information. The host *type* is either LOCAL or REMOTE, and the *host name* is the host being processed at the time ATAM detected the duplicate information.

User response: Remove the duplicate data from the Configuration data set via the ATAM interface (option S on the main menu, then use the Delete (D) line command).

ATH305I TCPIP FOR LOCAL HOST *host name* DISABLED DUE TO MISSING CONFIGURATION MEMBER.

Explanation: During ATAM TCPIP configuration initialization, ATAM could not find a configuration member for the local host listed in the message. TCP/IP functions were disabled for this host.

User response: Create a configuration member for this host. For details, refer to "Understanding configuration data sets and command members" on page 33.

ATH401I ALTERNATE SYSNAME TABLE DETECTED

Explanation: During address space initialization, ATAM detected the Alternate Configuration Member Name Table member, ATHIDTBL, in the Configuration data set. ATAM requires the use of this table when customers must define MVS system names to ATAM that do not adhere to ISPF member naming conventions. ATAM creates and modifies this member any time the SYSNAME value in a Configuration Member does not match the Configuration Member name.

User response: None required.

ATH402E ALTERNATE SYSNAME TABLE: SYSNAME VALUE LENGTH INVALID, EITHER 0 OR GREATER THAN 8 CHARACTERS

Explanation: While processing the Alternate Configuration Member Name table, ATAM detected an invalid value specification. The System name portion of the value was not the correct length.

User response: Use the ATAM interface (option S on the main menu) to define the Configuration member supporting the MVS system name in question. If you prefer, you can use ISPF Edit services to directly edit the ATHIDTBL member and correct the MVS system name.

ATH403E ALTERNATE SYSNAME TABLE: CONFIGURATION MEMBER NAME LENGTH INVALID, EITHER 0 OR GREATER THAN 8 CHARACTERS

Explanation: While processing the Alternate Configuration Member Name table, ATAM detected an invalid value specification. The Configuration Member portion of the value was not the correct length.

User response: Use the ATAM interface (option S on the main menu) to define the Configuration member supporting the MVS system name in question. If you prefer, you can use ISPF Edit services to directly edit the ATHIDTBL member and correct the configuration member name.

ATH404E ALTERNATE SYSNAME TABLE: CONFIGURATION MEMBER NOT SPECIFIED

Explanation: While processing the Alternate Configuration Member Name table, ATAM detected an invalid value specification. The value did not specify a Configuration member name.

User response: Use the ATAM interface (option S on the main menu) to define the Configuration member supporting the MVS system name in question. If you prefer, you can use ISPF Edit services to directly edit

the ATHIDTBL member and include a configuration member name on the incorrect statement.

ATH439E FAILURE DURING SCAN TASK INITIALIZATION

Explanation: The online, unallocated tape device scan task failed initialization processing.

User response: Stop and re-start the ATAM address space. If problem persists, contact IBM Technical Support.

ATH443E DEV SERVICE CALL FAILURE: MISSING OR INVALID SSCT

Explanation: The ATAM address space detected a problem while attempting to process the Map parameter of the L, S, O, or F command.

User response: Retry the command. If the problem persists, recycle the ATAM address space and contact IBM Technical Support.

ATH444E DEV SERVICE CALL FAILURE: INVALID FUNCTION

Explanation: The ATAM address space detected a problem while attempting to process the Map parameter of the L, S, O, or F command.

User response: Retry the command. If the problem persists, recycle the ATAM address space and contact IBM Technical Support.

ATH455I SCAN TASK *state*

Explanation: This message displays the current state of the online, unallocated device scan facility. The *state* values are:

- INITIATING – ATAM is initiating the scan facility. This typically occurs during ATAM initialization, but can occur during table rebuild processing.
- TERMINATING – ATAM is terminating the scan facility. This typically occurs during ATAM shutdown processing, but can occur during table rebuild processing.

User response: None required.

ATH461E DDR SWAP FROM *ucb(x)* TO *ucb(y)* DETECTED

Explanation: ATAM detected a DDR Swap via its DDR Swap Event Notification exit routine. This indicates that the DDR monitor option is on.

User response: None required.

ATH465I DDR EVENT EXIT ROUTINE *state*

Explanation: This message displays the current *state* of the DDR event exit routine. The *state* values are:

- ACTIVE – The exit routine is active due to a detected event.
- COMPLETE – The exit routine has completed processing.

User response: None required.

ATH470I ATAM ENF LISTENING *state*

Explanation: This message displays the current state of the ATAM ENF listening facility. The *state* values are:

- INITIATING – ATAM is initiating the ENF listening facility. This typically occurs during ATAM initialization.
- TERMINATING – ATAM is terminating the ENF listening facility. This typically occurs during ATAM shutdown processing.

User response: None required.

ATH475I CONFIGURATION REQUEST EXIT ROUTINE *state*

Explanation: This message displays the current *state* of the Configuration Request event exit routine. The *state* values are:

- ACTIVE – The exit routine is active due to a detected event.
- COMPLETE – The exit routine has completed processing.

User response: None required.

ATH485I CONFIGURATION COMPLETE EXIT ROUTINE *state*

Explanation: This message displays the current *state* of the Configuration Complete event exit routine. The *state* values are:

- ACTIVE – The exit routine is active due to a detected event.
- COMPLETE – The exit routine has completed processing.

User response: None required.

ATH495I SCAN *state*

Explanation: This is a diagnostic message that only appears if the ATAM DON has been entered. This message indicates that the ATAM online, unallocated device scan is active.

User response: None required.

ATH501I Copyright Screen

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

User response: None required.

ATH502I Please enter a valid option or an X to Exit

Explanation: You have typed an invalid letter or number in the Command line.

User response: Type a letter or number for an option listed on this screen, or type **X** to exit.

ATH503E Truncation error on panel *panel name* in program *module name*, RC=*return code*

Explanation: An error occurred on the screen (panel) listed in the message.

User response: Try exiting the dialog and re-entering it again (choose the same option). If that does not resolve this error, use option E, *Environmental information*, on the ATAM main menu to collect diagnostic information, then contact IBM Technical Support.

Note: For more information on gathering diagnostic details, refer to Appendix E, "ATAM Diagnostics," on page 189.

ATH504E Severe error on panel *panel name*, in program *module name*, RC=*return code*

Explanation: An error occurred on the screen (panel) listed in the message.

User response: Try exiting the dialog and re-entering it again (choose the same option). If that does not resolve this error, use option E, *Environmental information*, on the ATAM main menu to collect diagnostic information, then contact IBM Technical Support.

Note: For more information on gathering diagnostic details, refer to Appendix E, "ATAM Diagnostics," on page 189.

ATH505E Critical error on panel *panel name*, in program *module name*, RC=*return code*

Explanation: An error occurred on the screen (panel) listed in the message.

User response: Try exiting the dialog and re-entering it again (choose the same option). If that does not resolve this error, use option E, *Environmental information*, on the ATAM main menu to collect diagnostic information, then contact IBM Technical Support.

Note: For more information on gathering diagnostic details, refer to Appendix E, "ATAM Diagnostics," on page 189.

ATH506W *command* is not a valid command.

Explanation: The text you typed is not a command that ATAM recognizes.

User response: Correct the command. Press the Help key to view a list of available commands.

ATH507I Request cancelled

Explanation: The process you started was cancelled because you chose to end it, usually by pressing the END key.

User response: None required.

ATH508E Error in program *module name* attempting to display panel *panel name*, rc=*return code*

Explanation: An error occurred when ATAM attempted to display a specific screen.

User response: Try exiting the dialog and re-entering it again (choose the same option). If that does not resolve this error, use option E, *Environmental information*, on the ATAM main menu to collect diagnostic information, then contact IBM Technical Support.

Note: For more information on gathering diagnostic details, refer to Appendix E, "ATAM Diagnostics," on page 189.

ATH509W Invalid line command

Explanation: You have typed an invalid letter or number as a line command.

User response: Type a letter or number for a line command that is listed on this screen.

ATH510E Storage exhausted for environmental diagnostics, RC=*return code*

Explanation: When using option E, *Environment Information*, on the ATAM main menu, the diagnostic information that was gathered used more storage than allotted for this type of information.

User response: You may need to create a new list data set to contain this diagnostic information. For details on how to create a list data set, refer to Appendix E, "ATAM Diagnostics," on page 189.

ATH511I *object name* **refreshed**

Explanation: This is for your information only.

User response: None required.

ATH512E **Storage exhausted for view linked list,**
RC=return code, SIZE=requested size

Explanation: ATAM needs more storage allotted for viewing the data for this option. The *return code* is the failed request and the *requested size* is the size of the storage request.

User response: Try exiting the dialog and re-entering it again (choose the same option). If that does not resolve this error, use option E, *Environmental information*, on the ATAM main menu to collect diagnostic information, then contact IBM Technical Support.

Note: For more information on gathering diagnostic details, refer to Appendix E, "ATAM Diagnostics," on page 189.

ATH513I **Environmental information written to**
ISPF list data set *list name*

Explanation: This message tells you the name of the ISPF list data set where the diagnostic information was stored.

User response: Make a note of the data set name so you can send it to IBM Technical Support, if necessary.

ATH514I **Configuration member** *name operation*

Explanation: This message tells you that the ATAM dialog successfully completed the function described by *operation* for the configuration member identified by *name*. Possible *operation* values are:

- *Created* - Created new member in configuration data set.
- *Updated* - Updated existing member in configuration data set.

User response: None required.

ATH515I **Configuration member** *name operation*
cancelled

Explanation: This message tells you that the ATAM dialog cancelled the function described by *operation* for the configuration member identified by *name*. Possible *operation* values are:

- *Create* - Created new member in configuration data set.
- *Update* - Updated existing member in configuration data set.

User response: None required.

ATH516E **Open failed for ATHCONFIG | LOGFILE,**
RC=return code

Explanation: The ATAM ISPF dialog customer interface was unable to access the indicated ATAM file. Possible file types are:

- ATHCONFIG - Configuration data set
- LOGFILE - Log data set

The *return code* variable describes the failure that resulted from the attempt to access the indicated file.

User response: Verify that the indicated data set exists and the ATAM ISPF dialog customer interface properly allocates it. Review the configuration instructions in "Understanding configuration data sets and command members" on page 33. Contact IBM Technical Support for further assistance.

ATH530E **Invalid Selection, The only valid**
selection is A (Allocation Activity).

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 enter End (PF3) to exit.

ATH534E **Invalid Selection, please enter a valid**
menu option

Explanation: You have typed a letter or number in the Command line that is not associated with any option on this screen.

User response: Type a valid character based on the menu options for this screen.

ATH535E **Invalid value, please enter a Y (Yes) or**
N (No).

Explanation: You have typed a letter other than Y or N. The only valid letters are Y and N.

User response: Type a Y for "Yes" or an N for "No".

ATH538E **ATAM address space subsystem**
communication failure, RC=return code

Explanation: The Status option was unable to communicate with the ATAM address space and cannot display status data as a result.

User response: Verify that the ATAM address space is active.

ATH541W The specified member name already exists in the configuration data set.

Explanation: You have typed a Commands member name or a Configuration member name that already exists.

User response: Type a different name.

ATH542W A configuration member for the specified MVS System ID already exists in the configuration data set.

Explanation: You tried to assign a configuration member to an MVS system ID, however that system ID already has a configuration member associated with it.

User response: Either use the existing configuration member, modify the existing configuration member, or assign your new configuration member name to a different MVS system ID.

ATH543W Delete of configuration member *name* failed, RC *return code*

Explanation: The attempt to delete the configuration member failed with the indicated return code.

User response: Retry the request. If the error persists, exit and re-enter the ATAM dialog and try again. If it continues to fail, record the return code and report the error to IBM Technical Support. Use ISPF utility services to delete the member.

ATH544W Rename of configuration member *old name* to new name *new name* failed, RC *return code*

Explanation: The attempt to rename the configuration member failed with the indicated return code.

User response: Retry the request. If the error persists, exit and re-enter the ATAM dialog (user interface) and try again. If it continues to fail, record the return code and report the error to IBM Technical Support. Use ISPF utility services to rename the member.

ATH545W Copy of configuration member *source name* to new member *target name* failed, RC *return code*

Explanation: The attempt to copy the configuration member failed with the indicated return code.

User response: Retry the request. If the error persists, exit and re-enter the ATAM dialog (user interface) and try again. If it continues to fail, record the return code and report the error to IBM Technical Support. Use ISPF utility services to copy the member.

ATH546W Storage exhausted for view linklist, limit search to reduce storage usage.

Explanation: The results for this option were too large to display on the screen.

User response: Modify your search to restrict the results so they take up less space, or try exiting the dialog and re-entering it again (choose the same option). If that does not resolve this error, use option E, *Environmental information*, on the ATAM main menu to collect diagnostic information, then contact IBM Technical Support.

Note: For more information on gathering diagnostic details, refer to Appendix E, "ATAM Diagnostics," on page 189.

ATH547I Configuration member *name* action.

Explanation: The dialog successfully completed the attempted action for the indicated configuration member. Actions reported are Copied, Renamed, and Deleted.

User response: None required.

ATH550E ATHIDTBL member error - Alternate configuration member name table does not contain identifying text in first column of first line. Enter HELP for more information.

Explanation: A value specified in the MVS System Name field requires an update to the alternate configuration member name table (ATHIDTBL), but the member does not contain the correct identifying text. The first column of the first line in this member must contain the text ATAM_ALTSYSNAME_MEMBER.

User response: Use ISPF utility services to delete the current ATHIDTBL member and allow the ATAM dialog to rebuild it. If you prefer, you can use ISPF Edit to manually insert this text in member ATHIDTBL at the appropriate location.

ATH551E ATHIDTBL member error - Alternate configuration member name table indicates system name *system name* already associated with configuration member *member*. Enter HELP for more information.

Explanation: A value specified in the MVS System Name field already exists in the alternate configuration member name table (ATHIDTBL). However, it is associated with a different configuration member name.

User response: If your intent is to create or modify a configuration member for an MVS system name that does not conform to ISPF member naming conventions (i.e. starts with a number instead of a letter), cancel the update of this configuration member, and select and

modify the configuration member that is already associated with the specified system name.

ATH552I **ATHIDTBL member modified** *member name* **Configuration member line action:** *line number*

Explanation: A value was changed in the ATHIDTBL member for the line identifying the configuration member with the name *member name*. The specific *line number* and *action* taken to change the configuration member is listed in the message.

User response: None required.

ATH553E **ATHIDTBL internal error - Incorrect parameter list provided to alternate configuration member table update routine. Use the Environment command to gather diagnostic information then contact IBM Technical Support.**

Explanation: The ATAM dialog encountered an internal processing error trying to update the alternate configuration member name table (ATHIDTBL).

User response: Gather the pertinent documentation and contact IBM Technical Support.

ATH554E **ISPF service error message text**

Explanation: The ATAM dialog (user interface) received an error from an ISPF service while processing a change to the alternate configuration member name table (ATHIDTBL). The ISPF service error message text describes the ISPF service and the failure.

User response: Retry the request. If failure continues, exit and re-enter the ATAM dialog (user interface), then retry the request. If failure persists, gather pertinent diagnostic information and contact IBM Technical Support. Manually update the ATHIDTBL member using the ISPF Edit facility to continue processing.

ATH555E **ATHIDTBL member error - Member FIND service failed, RC** *return code*, **RS** *reason code*

Explanation: While attempting to process a change to the alternate configuration member name table (ATHIDTBL), the DFSMS FIND service failed with an unexpected return code and reason code.

User response: Retry the request. If failure continues, exit and re-enter the ATAM dialog (user interface), then retry the request. If failure persists, gather pertinent diagnostic information and contact IBM Technical Support. Manually update the ATHIDTBL member using the ISPF Edit facility to continue processing.

ATH559E **ATHIDTBL member error - specified system** *system name* **already exists as a configuration member name. Enter HELP for more information.**

Explanation: The alternate configuration member name table (ATHIDTBL) should only be used for instances where the MVS system name does not conform to ISPF member naming conventions. In this case, the ATAM dialog (user interface) detected that the specified MVS System Name already exists as a member in the configuration data set, suggesting that the system name *does* conform to ISPF member naming conventions.

User response: Correct the MVS system name specification if incorrect. Otherwise, cancel the update/create of this configuration member and, instead, update the configuration member that matches the MVS system name.

ATH610E **Duplicate Value - The specified IP address is already specified in configuration member** *<member name>*.

Explanation: The message indicates that the provided IP address matches an address in another configuration member. The *<member name>* value identifies the configuration member that specifies this IP address.

User response: Choose another IP address that is appropriate for the z/OS image defined with this configuration member.

ATH611E **The specified value is incorrect. Please enter a valid MVS system name.**

Explanation: The MVS System Name field does not contain a value, or the specified value is incorrect. In most instances, this value will be the same as the configuration member name.

If the MVS system name does not conform to ISPF member name requirements (i.e., starts with a number instead of a letter), you must type a value in the MVS System Name field that is different from the configuration member name. Specifying a value in this field that is not equal to the configuration member name will result in the creation or modification of the ATHIDTBL member (alternate configuration member name table).

User response: Set the MVS System Name equal to the configuration member name, unless the system name does not adhere to ISPF member name requirements. In that case, specify the non-conforming system name in this field.

ATH612E Invalid Mode. Active (A) or Passive (P) are the only valid modes.

Explanation: You have typed a letter or number other than A or P for the mode field. The only acceptable entries for this field are A for "Active" mode or P for "passive" mode.

User response: Type *A* for Active mode or *P* for Passive mode.

Note: It is strongly recommended that you do not use Passive mode unless you are instructed to do so by IBM Technical Support.

ATH613E Invalid Member Suffix. The specified member suffix, when appending to the characters ATHCMD, must result in a valid member name.

Explanation: The member suffix consists of two characters that are added to the end of "ATHCMD." For example, a suffix of "01" would result in a member name of ATHCMD01. Perhaps the suffix you typed is more than two characters or is already used in a member name.

User response: Type a different, two-character suffix for the Commands member name.

ATH616E Invalid Value. The specified value is incorrect. Please enter a decimal value between 1 and 99999.

Explanation: You have either typed a non-numeric value, a value of zero (0), or a value greater than 99999.

User response: Type a number between 1 and 99999.

ATH617E Invalid Value. The specified value is incorrect. Please enter a decimal value between 1 and 999.

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 number between 1 and 999.

ATH618E Invalid Value. The specified value is incorrect. Please enter the TCP address for MVS system *sysname*

Explanation: You have not provided a TCP address for the MVS image listed in the message.

User response: You can correct this by going to option S, Setup and Configuration, from the main menu, and specify a TCP address for this MVS image. For more information on the TCP/IP fields, refer to "Step 7: Verifying MVS system parameters" on page 18.

ATH619E Invalid Value. The specified value is incorrect. Please enter a decimal value between 0 and 999.

Explanation: You have either typed a non-numeric value or a value that is greater than 999.

User response: Type a number between 0 and 999.

ATH620E Invalid Value. The specified value is incorrect. Please enter a Y or N.

Explanation: You typed an invalid value for an input field that requires either a Y or N response.

User response: Type a Y or N.

ATH621E Invalid Value. The specified value is incorrect. Please enter a decimal value between 5 and 999.

Explanation: You have either typed a non-numeric value or a value that is less than five or greater than 999.

User response: Type a number between five and 999.

ATH911E No find string specified. The (F)IND command was entered but no parameters were specified.

Explanation: You used the (F)IND command, but didn't indicate what value or words you want to find.

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

ATH912I Find string not found. The requested find string was not found.

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

User response: None required.

ATH914E An unknown column was specified using the SORT command.

Explanation: The column name you typed after the SORT command is not correct. You may have typed it incorrectly or typed the name of a column that does not exist on this screen.

User response: Type the name of an existing column after the SORT command.

ATH915E SORT is not supported for the specified column.

Explanation: The column you specified after the SORT command cannot be sorted.

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

ATH916E **Sort column not entered. Column name or number must be specified.**

Explanation: You must type either the name or number of a column after the SORT command so it knows which column to sort.

User response: Type a column name or number after the SORT command.

ATH941E **Enter a FIND command. The RFIND key works only after a FIND character string is entered.**

Explanation: You must type a FIND command before you can use the RFIND key.

User response: Type a FIND command before using the RFIND key.

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