

**MS15: MQSeries for MVS/ESA Archive log housekeeping
Version 1.1**

User Guide

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Take Note!

Before using this User's Guide and the product it supports, be sure to read the general information under "Notices".

Third Edition, September 2002

This edition features changes made to packaging as a result of re-issuing the software to accommodate changes required to support WebSphere MQ for z/OS Version 5 Release 3.

Second Edition, December 1999

This edition applies to Version 1.1 of MQSeries for MVS/ESA Archive log housekeeping and to all subsequent releases and modifications until otherwise indicated in new editions.

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Summary of Changes

Date	Changes
September 2002	The SLEEP module originally supplied as part of this package is now no longer required as it is available in base OS/390 and z/OS function.
20th December 1999	Added function to enable this tool to be tied into backup procedures to ensure that archive logs are only deleted once suitable backups have been taken.
20th October 1999	Initial release

1.0 Introduction

This document describes an exec designed to housekeep archive logs stored on disk by MQSeries for MVS/ESA, i.e. it will delete redundant archive logs in order to save disk space. The archive logs are regarded as redundant from the MQSeries for MVS/ESA recovery perspective, i.e. they are not required by the product to recover from a failure. If you need to keep archive logs for reasons other than recovery then you should not use this exec.

You must keep in mind that there are certain recovery scenarios, where you might need the archive logs, even though they are eligible to be deleted by the exec, for instance if you need to restart using a backup of a pageset that has been damaged, you will need the active and archive log backups that go with the pageset backup in order to recover your queue manager. For this reason, it is essential that you consider use of this exec in association with your backup procedures.

Note: This Supportpac requires SupportPac MA19 in order to submit commands to the queue manager from a REXX exec.

1.1 Installation

Take the following actions to install the SupportPac from the MS15.ZIP file:

1. Use **INFOZIP's** UNZIP to unpack the **MS15.ZIP** file.

This produces

ms15.src	Source library
ms15.loa	Load library
license2.txt	License file

2. The library files need to be transferred to the destination TSO system as sequential binary files with a record format of FB 80. Use one of the following methods to accomplish this:

- To send them via ftp ensure the BINARY option is set then use the following commands:

```
site fixrecfm 80
```

```
put ms15.src ms15.srcseq
```

```
put ms15.loa ms15.loadseq
```

- With Personal Communications, use the "Send Files to Host" option under the Transfer menu item to transmit to TSO

PC File	ms15.src etc
Host File	ms15.srcseq etc
Transfer Type	loadlib

The Transfer type of **loadlib** may need to be correctly setup. To do this, use the “Setup.Define Transfer Types” option under the Transfer menu item and create the **loadlib** type with the Ascii, CRLF and Append checkboxes all unselected, the **Fixed** radio button selected and the **LRECL** set to **80**

3. On TSO, issue the following commands to unload these sequential files into TSO partitioned datasets:

- **receive indsnam(ms15.srcseq)**
when prompted for a filename, reply
dsn(ms15.source)
- **receive indsnam(ms15.loadseq)**
when prompted for a filename, reply
dsn(ms15.load)

4. Confirm that the datasets have been unloaded correctly by browsing the PDS and ensuring the appropriate members exist as shown in the following table.

DATASET	MS15 LOAD	MS15 SOURCE
MEMBERS	SLEEP	MNGLOGS MNGLOGSJ SLEEP SLEEPJ

1.1.1 Enabling the exec

To run the exec you should tailor the MNGLOGSJ job to your requirements, it looks like this:


```

//<jobcard>
// SET MA19LOAD=<MA19.LOADLIB>
// SET MS15=<MS15 HIGH LEVEL QUALIFIERS>
// SET MQHLQS=<MQSERIES HIGH LEVEL QUALIFIERS>
//RMNGLOGS EXEC PGM=IKJEFT01,REGION=2M,DYNAMNBR=99
//SYSEXEC DD DSN=&MS15..SOURCE,DISP=SHR
//SYSTSPRT DD SYSOUT=*
//SYSPRINT DD SYSOUT=*
//STEPLIB DD DSN=&MA19LOAD.,DISP=SHR /* MA19 SUPPORTPAC */
// DD DSN=&MQHLQS..SCSQANLE,DISP=SHR
// DD DSN=&MQHLQS..SCSQAUTH,DISP=SHR
//SYSTSIN DD *
%MNGLOGS QMGR(<QUEUE MANAGER NAME E.G. VCMA>) -
HLQS(<MQSERIES HIGH LEVEL QUALIFIERS E.G. MQ.V210>) -
BS1(<BOOTSTRAP DATA SET NO.1 NAME E.G. MQ.VCMA.BSDS01>) -
BS2(<BOOTSTRAP DATA SET NO.2 NAME E.G. MQ.VCMA.BSDS02>) -
BSDS(<DUAL BOOTSTRAPS? Y OR N>) -
SLEEP(<SLEEP PERIOD BETWEEN CHECKS IN SECONDS>)
BACKUP(<TAKE BACKUPS? Y OR N>) -
RUNTYPE(<O - ONCE, C - CONTINUOUS>) -
RESTARTRBA(<RESTART RELATIVE BYTE ADDRESS>)
/*

```

You will need one copy of this job for each queue manager you wish to run it against.

1. Replace <jobcard> with valid job details for your system
2. Replace <MA19.LOADLIB> with the fully qualified name of the MA19 SupportPac load library.
3. Replace <MS15 HIGH LEVEL QUALIFIERS> with the high level qualifiers of the MS15 SupportPac data sets.
4. Replace <MQSERIES HIGH LEVEL QUALIFIERS> with the high level qualifiers of the MQSeries for MVS/ESA data sets.
5. Replace <QUEUE MANAGER NAME E.G. VCMA> with the name of the queue manager whose archive logs the exec will be monitoring.
6. Replace <MQSERIES HIGH LEVEL QUALIFIERS E.G. MQ.V210> with the high level qualifiers of the MQSeries for MVS/ESA data sets.
7. Replace <BOOTSTRAP DATA SET NO.1 NAME E.G. MQ.VCMA.BSDS01> with the name of your 1st bootstrap data set.
8. If you have a 2nd bootstrap data set, then replace <BOOTSTRAP DATA SET NO.2 NAME E.G. MQ.VCMA.BSDS02> with the name of your 2nd bootstrap data set, otherwise delete this particular record fro the job.
9. If you are using dual bootstrap data sets for this queue manager, then replace <DUAL BOOTSTRAPS? Y OR N> with Y, otherwise replace it with N. It is essential that this parameter is set correctly otherwise it could result in dual bootstrap data sets becoming inconsistent.

10. Replace <SLEEP PERIOD BETWEEN CHECKS IN SECONDS> with the time in seconds that you want the exec to sleep between checking the status of the archive logs, for example, 300 will cause it to sleep for 5 minutes.
11. If you want the exec to start your backup procedures, you need to do the following:
 - a. Edit MNGLOGS EXEC, and change the perform_backups routine at the very bottom of the exec to run your backup procedures. The backups should include:
 - Pagesets
 - Bootstrap datasets
 - Active logs
 - Archive logs
 - Object definitions if you need to keep them independently.
 To drive the backups, the exec uses two variables to hold the restart relative byte address:

Variable	Content
restart_rba	The restart RBA in hexadecimal.
decimal_restart_rba	The restart RBA in decimal.
 - b. In MNGLOGSJ replace <TAKE BACKUPS? Y OR N> with Y.
12. If you do not want MNGLOGS to start your backup procedures, replace <TAKE BACKUPS? Y OR N> with N.
13. If you want the exec to check the archive logs once only i.e. check and delete any redundant archive logs, and then terminate, replace <O - ONCE, C - CONTINUOUS> with O. If however you want the exec to run continuously in parallel with the queue manager then replace <O - ONCE, C - CONTINUOUS>with C.
14. If you want to specify to MNGLOGS the restart RBA you want it to start with then replace <RESTART RELATIVE BYTE ADDRESS> with the restart RBA you want it to use in hexadecimal notation, for example: 6DF37FFFF. This is an alternative way for you to tie the exec into your backup procedures. If you do not want to use this parameter, remove it from the JCL, and remove the continuation mark '-' from the end of the previous line.

1.1.2 SLEEP function

The USS services sleep() function is now used instead of the SLEEP module described in the following paragraph.

A TSO sleep function is provided with this SupportPac, which enables the exec to sleep (i.e. Not use any system resources) for a specified period. The source for this function (SLEEP) and sample JCL to build it (SLEEPJ) can be found in the MS15.SOURCE data set.

2.0 What it does

The exec is intended to manage archive logs on disk so that you only keep the ones MQSeries needs to be able to recover from a failure or backout incomplete work, however there are certain disaster scenarios, for instance pageset damage, which might require you to recover from archive logs which are no longer necessary to recover a clean system. It is therefore vital that you consider backing up your archive logs along with your pagesets, bootstrap data sets, and active logs, before deleting them from your main storage, to this end the exec has been written to allow you to tie it in with your backup procedures.

The exec can be run in one of two modes:

1. Once only:

Delete any redundant archive logs and then stop.

2. Continuous execution:

For as long as the queue manager is running, every so many seconds, delete any redundant archive logs and then sleep. This allows you to keep mainline DASD usage to the minimum required by the queue manager.

You can tie the exec into your backup procedures in one of two ways:

1. By specifying as a parameter the Restart Relative Byte Address (RBA) you have used for your backups, and running the exec in the "Once only" mode.
2. By specifying the backup parameter as "Y". This will cause the exec to run a subroutine called `perform_backups`. You should tailor this subroutine to execute your backup procedures.

The exec performs the following processing:

1. Determines whether the queue manager is active, and if it is:
 - a. Using either the MQSeries `DISPLAY USAGE` command, or the `RESTARTRBA` parameter, determines the restart RBA (Relative Byte Address) to be used to determine which archive logs can be deleted.
 - b. If requested, it runs the routine which can be tailored to run your backup procedures.
 - c. Using the `CSQJU004` utility shipped with MQSeries for MVS/ESA, it determines what archive logs the queue manager has produced.
 - d. It Determines which of the archive logs are out of date with respect to the restart RBA and deletes them, recording this in an array.

Note: It is not possible at this point in time to remove the references to the deleted archive logs from the bootstrap data sets as MQSeries has an exclusive lock on them.
 - e. It then goes to sleep for the specified period.
 - f. Repeats the above steps, unless you have specified that it should only perform them once.

2. When the queue manager is found to be no longer active, the CSQJU003 utility is used to update the bootstrap data sets, removing the references to the deleted archive logs from them.

2.1 Possible Extensions

The `process_archives` routine could be extended to use the `LISTDSI` function to determine the current location of archive logs. Once established, the routine could use `HMIGRATE` to cause HSM to migrate newly created archive logs, or `HDELETE` instead of `DELETE` to delete old logs without causing them to be recalled first.