# AJM/S - Advanced Job Management / Sysout Manual

T-Systems International GmbH

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## Short Description

This edition applies to "AJM/S - Advanced Job Management / Sysout" version 2.1, FMID PAJS210, RMID QZ11003.

# Change History

| Version | Date | Editor's Initials | Changes / Remarks |
|---|---|---|---|
| PAJS210-01 | 2011-01-04 | Beate Kawelke | First version with new T-Systems layout, manual completely rewritten (Draft version, not complete) |
| QZ10068-01 | 2011-01-28 | Beate Kawelke | Overview of AJM/S server, regular jobs (e.g. archiving) and description of solutions for operation problems added. |
| QZ11003-01 | 2011-06-20 | Beate Kawelke | Overview and operational information reworked. |

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# 1 Who should read this book

This book contains all information about the AJM/S software.

| If you want to | please refer to... |
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| get a general overview on the AJM/S functionality | „Introduction" on page 15 |
| get an overview on the administration interface | "The administration interface" on page 33 |
| install AJM/S on your system | "Installation of AJM/S " on page 73 |
| view a Joblog | "Joblogs" on page 44 |
| define online or archive settings for Joblogs | "Online / Archive Definitions" on page 54 |
| access the SYSLOG | "SYSLOG View" on page 57 |
| solve a problem with the AJM/S software | "Problem management" on page 80 |

Table 1:     Who should read this book

# 2 Introduction

## 2.1 Functional overview

**AJM/S** (**A**dvanced **J**ob **M**anagement **/ S**ysout) is a Joblog management tool on z/OS systems.

AJM/S reads the job output (Joblog) and makes it available for viewing. The retention period of Joblogs can be individually defined. The user can use various criteria to select his/her applications and gains a quick overview of their status. Several views are available. AJM/S also offers a convenient function for the display of information from the system log (SYSLOG). Additionally Joblogs and SYSLOGs can be kept in archives until their retention date has elapsed.

Benefits:

- Professional management of Joblog and SYSLOG data
- Individual definition of online and archive retention periods
- ISPF interface with search function, various views and status overview
- Integrated interfaces to job scheduler (e.g. AJM) to pass status information and call administration dialog
- Tape archive administration using sophisticated tools
- Printing, online display, archiving and reload of data

AJM/S administers log information generated by the operating system as part of a job run (i.e., Joblogs).
Once the Joblogs have been read in from the JES spool they are made available online for a period defined by the user.
The Joblogs can then be selected by individual criteria (e.g., job name, completion code) and, if necessary, be printed. In so doing the user is supported by an intuitive ISPF administration interface.
The Joblogs can be displayed in various views, enabling a quick overview.

Detailed information may be optionally presented as net lists or net / job lists or sorted by category codes and / or start and end times; these features lighten the daily workload considerably. Depending on the selection, the individual steps are displayed by DD name and/or message.
The user can choose whether s/he wishes to display a job's last or highest completion code and set a maximum completion code value which should be considered to be OK for this job.
The logs are archived for an individually definable period. The Joblogs are stored in a tape archive and can be restored selectively by the user, meaning they can again be made available online.

For SYSLOGs loaded into AJM/S, AJM/S features a comprehensive SYSLOG search function that searches the system logs by date/time and other criteria and lists the results.
The selected SYSLOG data can be displayed, printed and copied into a file.

An internal log function records every user and system action so all activities can be tracked retroactively.

## 2.2 Documentation

The following documents are available:

- PDF documents:
    - Installation manual
    - User manual including customization (this document)
    - Quick reference card
- Online documentation (in AJM/S administration interface):
    - Help information, field-sensitive
    - News (select "N" in the main menu)

# 3    Concepts

## 3.1    AJM/S datasets

This chapter gives a brief overview of the datasets that AJM/S uses for the management of Joblog data.

**Spool dataset**

A spool dataset holds Joblog and SYSLOG data that is available for online viewing. Each Joblog/SYSLOG that AJM/S reads in from the JES spool is copied into an AJM/S spool database and then deleted from the JES spool. To save space on disk, Joblog data can be compressed before it is stored. AJM/S uses an optimized algorithm to store Joblog data on a spool dataset and to provide fast access to retrieve/delete Joblog data. AJM/S requires at least one spool dataset to be operable. If multiple spool datasets are used, Joblogs can be assigned to one of the defined spool datasets using the "online / archive definitions" dialog (see "Online / Archive Definitions" on page 54). If a spool dataset is full or the Joblog is not explicitly assigned to a spool dataset, AJM/S stores the data on the first available spool dataset that has sufficient space.

**Online database**

The online database mainly contains a directory of all Joblog/SYSLOG data that is stored on the spool dataset(s). For each Joblog/SYSLOG data an index record is created. In addition to the information about its place on the spool it holds general information about job execution (e.g. jobname job-Id, completion code) and other key information that can be used as a selection criterion to search for a Joblog.

Additionally, the online database contains:
- The current settings that are defined via the "online / archive definitions" dialog
- Information about the archived AJM/S log datasets (dataset name, time period covered by the dataset)
- Information about the currently defined spool datasets (only used by the AJM/S server for internal purposes)

**Archive tape**

The archive job which is executed in regular intervals copies Joblog and SYSLOG data to an archive tape. When the online retention period of Joblog/SYSLOG data has expired it is removed from the spool dataset(s). SYSLOG and Joblog data that is kept on the archive tape and removed from the spool dataset can be reloaded for viewing until the archive retention period has also expired.

**Archive database**

The archive database mainly contains a directory of Joblogs that are stored on archive tapes. For each Joblog that is stored on an archive tape, an index record is created. In addition to the information about its place on the tape it holds general information about job execution (e.g. jobname job-Id, completion code) and other key information that can be used as a selection criterion to search for a Joblog.
The archive database keeps information about Joblogs whose execution start time is not older than 30 days (default). The default value can be modified by the AJM/S systems administrator.

Additionally, the archive database contains:
- Information about the status of the last executed archive job
- Information about available archive tapes (dataset names)
- Information about available archive level 2 databases (dataset name, time period covered by this database)
- Information about outstanding reload requests that have not yet been processed

**Archive level 2 database**

An archive level 2 database contains a directory of Joblogs that are stored on an archive tape. It keeps information about Joblogs for which the execution start time is older than 30 days (default). AJM/S therefore uses several level 2 databases; each covers an interval of the same length (default: 30 days) in full days. The default value can be modified by the AJM/S systems administrator.

To save virtual storage the archive level 2 databases are only opened on demand when data is retrieved by a user request or data is updated by the archive job. The database is closed by the AJM/S server when there was no access to the database for more than 15 minutes. The default value of 15 minutes can be modified by the AJM/S systems administrator. To reduce the amount of virtual storage used by open databases the AJM/S administrator can limit the maximum number of databases that are open at the same time.

**AJM/S log datasets**

All actions performed by the AJM/S server itself, any user or the system administrators are logged in an AJM/S-internal log. AJM/S uses two active log datasets which are written alternately. If the currently written log dataset is full, AJM/S switches to the other dataset and copies the full dataset to a log archive which is organized as a generation data group (GDG).

AJM/S saves information about all available log archive datasets (dataset name, time period covered by the dataset) to a log index record that is stored in the online database.

**Spool backup datasets**

For each Joblog that is read in from the JES spool, AJM/S additionally writes a copy of the SYSOUT datasets to a spool backup dataset. These backup datasets enable AJM/S to recover the contents of a spool dataset after a physical or logical error has occurred or if a Joblog was accidentally deleted from the spool dataset.

By default, the spool backup datasets have a lifetime of 5 days. You can use dialog function 30 to get information, when each backup dataset expires. The time interval refres to the read-in-time, not the job start time. AJM/S deletes obsolete spool backup datasets when the first Joblog is read in after midnight. The default setting of 5 days can be modified by the AJM/S systems administrator.

**Internal index dataset**

The internal index dataset is used by AJM/S for internal control. It contains the following information:

- The highest processing number that AJM/S has assigned to a Joblog. It must be unique for each Joblog that is handled by AJM/S. The highest processing number assigned to the Joblogs of a spool is also stored there, so it can be recovered, if the internal index is reinitialized.
- List of existing spool backup datasets including their expiration date and the read-in time interval they cover
- List of Joblogs that are being processed. This includes the pointers to the buffers that are occupied for each Joblog. When the AJM/S server is started the list is checked for Joblogs that are not yet completely processed and recovers them from the spool backup datasets, before it starts to read in data from the JES spool. This guarantees that no Joblog information gets losts after a system crash or an abnormal end of the server.

**EDB database system**

AJM/S uses theT-Systems software EDB (**E**asy-to-use **D**ata **B**ase) to store both online and archive index data. EDB is designed to manage huge amounts of data and its technical concept provides high performance with only a minimum of maintenance required. Each database consists of two datasets, one ("data") containing the database records and one ("key") containing index data which allow fast access to the database records via various selection criteria.

EDB dynamically expands the database size if necessary and provides an interface that allows to backup or compress the database on demand.
To guarantee short reponse times for database requests, EDB uses dataset organization VSAM linear dataset via access method DIV (data in virtual). When a database is opened, a complete image of the "data" part is copied into a dataspace, the "key" part is either copied into virtual storage (online database, archive database) or into a second dataspace (archive level 2 database). Database updates are frequently written to the dataset (every 10 seconds) using the DIV SAVE instruction which reduces the risk of a data loss to a minimum.

## 3.2      Routing a Joblog to AJM/S

To route a Joblog to AJM/S, you can:

- Set the "MSGCLASS="-parameter of your JCL to an output class that is assigned to AJM/S.
  To make sure that AJM/S receives the complete Joblog check the JCL's "//xxx DD SYSOUT="-statements for a proper setting of the output class.
- Reroute a Joblog to an output class that is assigned to AJM/S by using one of the available utilities (SDSF, JVS, ISPF 3.8, etc.)
- Use the AJM/R agent to run a job on other systems (e.g. Windows, Unix, SAP) and specify that the Joblog should be routed to a line printer daemon (LPD). For more details about the LPD, please refer to the AJM (Advanced Job Mangement) manual.

It is recommended to route the entire Joblog to a SYSOUT class that is assigned to AJM/S. Especially the standard Joblog datasets JESJCL, JESMSGLG, JESYSMSG are essential for AJM/S to evaluate the key information of a Joblog and make it available for display.

Note: The SYSOUT classes read in by AJM/S are displayed on the main menu of the AJM/S administration dialog (see "The Main Menu" on page 39).

## 3.3      The group/net assignment

The concept of AJM/S is adapted to the job scheduler AJM. Each job that is defined in AJM is assigned a specific net, each net is assigned a specific group. AJM/S also uses these terms.

The Joblog of an AJM controlled job is assigned the same net/group as defined in AJM. To enable AJM/S to correctly assign a Joblog to the appropriate group/net AJM inserts standardized "//*" comment statements into the JCL when submitting a job. When AJM/S reads in a Joblog from JES spool it scans the JESJCL input for these comment statements and retrieves the following information: Name of group, name of net, net sequence number, execution mode. This allows to group the display of Joblog information based on an AJM net execution.

The Joblog of non-AJM-controlled jobs and the SYSLOG are assigned to group/net "$DEFAULT/$DEFAULT" unless the AJM/S administrator modified these default settings during the installation/customization processing.  The user can assign the Joblog of a non-AJM job to a user defined group using the "//* AJMS" control statement.

### 3.3.1    The "//* AJMS" control statement

You may optionally provide additional control information for AJM/S by adding a "//* AJMS" control statement to the JCL of a job. The control statement can be inserted at any position within the JCL.

The format for this control statement is as follows:

```
//* AJMS [JG=jobgroup], [GROUP=group], [COMM=comment]
```

**JG**            Job group
                  This parameter allows adding jobs to so-called job groups. It does not change the group to which the job belongs (see GROUP parameter below). The assigned value can only be used as a selection criterion in the Joblog filter (field "**Job group**"). You can specify a value of up to eight characters.

**GROUP**         Group name
                  This parameter allows to overwrite the default group assignment ("$DEFAULT") of a job that is not controlled by the job scheduler AJM. The Joblog of this job can then be selected by specifying this group name in the Joblog filter (field "**Group**"). The default net assignment "$DEFAULT" is not affected by this parameter. If this parameter is found in an AJM controlled job, it will be ignored.
                  A group name consists of up to two qualifiers, separated by "**.**". Each qualifier may have up to eight characters.

**COMM**          Comment
                  This parameter allows adding a comment that will be displayed as a message line in the "Joblog details" panel (see "The Joblog details" on page 50). If you specify the COMM parameter, it has to be the last parameter in the control statement. If you want to add more than one comment, you can specify multiple control statements.

## 3.4    How a job is read in

To retrieve Joblog data from JES AJM/S uses the Subsystem Interface (SSI) function "process SYSOUT". The SSI provides information about Joblog data sequentially, each SYSOUT dataset of a specific job is passed one after the other.

To determine a **job's completion code** AJM/S by default uses the same logic as the job scheduler AJM: if a job consists of more than one job step, the completion code of the last executed job step is taken as the job's completion code. If the highest completion code of all executed steps shall be taken instead, the default setting can be modified for specific jobs or all jobs by adding an entry to the online / archive definitions (see "Online / Archive Definitions" on page 54).

If the **size of a Joblog exceeds 10 MB**, AJM/S splits the Joblog in two or more logical fragments. Each fragment has a maximum size of 10 MB. If a Joblog was split each logical fragment is represented by an entry with anidentical job name and job-id on the list of Joblogs (panel description see "Online / Archive Definitions" on page 54).

If the **size of a SYSOUT dataset exceeds 8 MB**, AJM/S splits the dataset in two or more logical fragments. Each fragment has a maximum size of 8 MB. If a dataset was split each logical fragment is represented by an entry with an identical DD name on the Joblog details.

If the **size of a Joblog exceeds a maximum line limit** the Joblog will be truncated by AJM/S. The default value is a line limit of 20.000 lines, the remainder of the Joblog data will be ignored by AJM/S. To avoid truncation or to increase the line limit for one or all jobs add an entry to the online / archive definitions (see "Online / Archive Definitions" on page 54). **Note:** SYSLOG data will never be truncated.

## 3.5     The AJM/S archive

### 3.5.1     General information

For revision purposes it is often required that Joblog data and especially SYSLOG data is kept over months or even years. The concept of AJM/S allows keeping Joblog and SYSLOG data over an unlimited time period. Data that shall be kept after their online retention period (see below) has expired is written to an archive tape. Once Joblog or SYSLOG data is written to an archive tape it is no longer directly accessible for viewing, only an index record is kept online that contains information about where to find the Joblog data on tape and key information about the job execution (start time, end time, completion code, etc.). To make archived data again available for viewing it must be reloaded via a command from the administration dialog.

The archiving function is performed by a batch job, the archive job. This job is planned and monitored by the AJM/S systems administrator. For more details see "The AJM/S archive job" on page 30.

### 3.5.2     Online retention period

Each Joblog that is managed by AJM/S gets assigned an online retention period which determines how long the Joblog shall be kept online by AJM/S. When the online retention period has expired, the next archiving job removes the Joblog data from the online database and the spool dataset.

The default value for online retention is 2 days if a job ended normal (default is completion code = C0000) and 7 days if a job ended in error (default is a completion code > C0000).

All default settings can be modified for one or all jobs by adding an entry to the online / archive definitions (see "Online / Archive Definitions" on page 54).

### 3.5.3     Archive retention period

Each Joblog that is managed by AJM/S gets assigned an archive retention period which determines how long AJM/S shall keep it in its archive database. When the archive retention period has expired, the next archiving job deletes the Joblog information from the archive database.

The default value for archive retention is 366 days.

The default setting can be modified for one or all jobs by adding an entry to the online / archive definitions (see "Online / Archive Definitions" on page 54).

# 4    The AJM/S Server

## 4.1    Functional Overview

The AJM/S server runs as a started task and covers all basic functions of Joblog management:

- Read Joblog data from JES spool (JES spool reader task)
- Save Joblog data to AJM/S spool datasets (spool writer task)
- Open AJM/S datasets (spool datasets, online-/archive- databases, etc.) for I/O processing
- Provide a communication interface for user requests (TSO/ISPF, batch interface) and the archive job
- Perform authorization checking for any kind of user requests
- Provide a command interface via MVS "MODIFY" command
- Write an internal log for control and revision purposes
- Interact with the archive job to perform Joblog archiving functions (cleanup of spool datasets, online-/archive – databases)

## 4.2    The JES spool reader task

The JES spool reader task reads in Joblog data from all JES output classes that are assigned to the AJM/S server

To retrieve Joblog data it connects to JES as an external writer using the Subsystem Interface (SSI) function "process SYSOUT". The SSI provides the SYSOUT datasets of a job sequentially.

To gather key information about a job execution the JES spool reader task uses information provided by the Subsystem Output Block (SSOB) and scans the standard SYSOUT datasets (JESJCL, JESMSGLG and JESYSMSG). An online index entry is created to keep the key information about a job execution.

If a job has run but AJM/S does not find a job end time, it uses the current read-in time instead. If a job was not executed (e.g. due to a JCL error), start time and end time are identical to the submit time.

AJM/S assigns the default group and net until it finds an overwriting specification in JESJCL (//* AJM or //*AJMS GROUP=). For each Joblog that is read in AJM/S searches for the best matching online definition to determine the Joblogs online retention period and the line limit. Joblog data is truncated when the total number of lines read in exceeds the currently valid line limit. No lines are read in any more nor written to backup. Exception: If JESJCL has not yet been processed, AJM/S continues to read in Joblog data until JESJCL is entirely processed. The input of JESJCL is checked for "//* AJM" or "(//*AJM command statements. This ensures that the group-/net assignment of a Joblog is correct even if the Joblog data is truncated.

If the job name assigned to a SYSOUT dataset is **SYSLOG,** AJM/S uses the first input record that contains a valid time stamps as job start time and the last input record that contains a valid time stamp as job end time. If the input exceeds 8 MB, AJM/S splits the SYSLOG member. The start and end time for each fragment is then calculated separately. There is no line limit for SYSLOG data, so SYSLOG data is always completely read in.

Joblogs received from **AJM/R** via line printer daemon (LPD) are embedded in a XML document. AJM/S parses the XML document to retrieve key information about the job execution and the Joblog content. AJM/R Joblogs are limited to 2 MB.

Joblog data retrieved from JES is written to an internal buffer and alos to the current spool backup file. When all datasets of a Joblog have been processed, Joblog data is deleted from the JES spool and the spool writer task is posted to signalize that Joblog data can now be be written to the AJM/S spool. Control Information for the spool writer task is passed via the internal index.

The JES spool reader task uses up to 10 entries in the internal index to pass control information to the spool writer task. When all entries are in use, read in processing is suspended and the message "**AJSXW10W – INTERNAL BUFFER FULL ...**" is written to the console and the AJM/S log. Read in processing is resumed as soon as at least 1 entry in the internal index is released by the spool writer task.

## 4.3        The spool writer task

The spool writer task is posted by the JES reader task when Joblog data can be written to the spool dataset. Control information about data to be written is taken from the internal index. To save spool space Joblog data is compressed before it is written to a spool dataset. The spool writer task also adds the online index entry to the online database and finally releases the internal index entry for the currently processed Joblog to make it available for the JES reader task again.

**Note:** AJM/S can be operated with one or multiple spool datasets. If multiple spool datasets are used, a Joblog can be assigned to a preferred spool dataset (see "Online / Archive Definitions" on page 54). If the preferred spool dataset is full or not available (e. g. locked), the spool writer task ignores that setting and selects another spool dataset that has enough free space to store Joblog data.

## 4.4        The „Spool Doctor" task

The "Spool Doctor" task is activated on demand and provides the following functions:

- Recovery of Joblogs that were currently in process when the AJM/S server ended abnormally (internal recovery is automatically processed when the AJM/S server is restarted)
- Automatic recovery of Joblogs from the spool backup datasets after a storage shortage condition on the spool datasets (see "Monitoring the AJM/S spool datasets" on page 23)
- Manual recovery of Joblogs from the spool backup datasets (modify command **"F ajms,RECOVER=...".**)
- Consistency check and repair of a spool dataset, consistency check and repair of online index entries for Joblogs that are stored on the spool dataset (modify command **"F ajms,CHECK=spoolname"**)

While the "Spool Doctor" task is active information messages **AJSSDnnI** are written to the console and the AJM/S log to report the progress of the currently active function.

The "Spool Doctor" task does not perform multiple requests concurrently. Requests that are entered while the task is busy are rejected until the currently processed function has completed.

When the "Spool Doctor" task is busy it can be stopped by entering the modify command "**F ajms,STOP=SPLDOC**". It is however not recommended to enter this command while a consistency check of a spool dataset and the related online database entries is active. A premature termination of this function includes the risk that inconsistencies are not completely detected and repaired.

## 4.5        Starting the AJM/S Server

The AJM/S server can be started as soon as JES is operational. The start procedure has two parameters: the logical server name as defined in the AJM/S names module (mandatory parameter) and the JESRDR parameter (optional) that controls whether the JES spool reader task shall be activated (JESRDR=ACT) or not (JESRDR=INACT). The JES spool reader task can be activated and inactivated at any time using a modify command (see "Console interface to the AJM/S server" on page 78). Startup consists of the following steps:

1)   Initialize the database and connectivity environment
2)   Open the AJM/S online database
3)   Open the AJM/S spool files
4)   Initialize the JES spool reader task (establishes interface to JES and spool backup files)
5)   Start the spool writer subtask
6)   Write the "AJM/S ready" message AJSBF01I
7)   Openthe archive database (level 1)
8)   Process cleanup of the archive level 2 databases, if necessary

## 4.6 Terminating the AJM/S Server

The AJM/S server is terminated via the stop command (see "Console interface to the AJM/S server" on page 78). Depending on the size of the online and archive databases, it may take some time until the database system (EDB) has saved its key tables and the server terminates. EDB writes log messages about the progress of the saving process to the console and the Joblog of the server task.

**Note:** The server stops automatically when the JES reader subtask fails, because this task cannot be restarted by the internal task management but is essential for the function of the server.

## 4.7 Restarting the AJM/S Server

If the AJM/S server was cancelled or has ended abnormally the indexes (key tables) of the databases are not saved properly. When the AJM/S server is restarted the database indexes are automatically rebuilt by the database system (EDB). Depending on the database sizes the rebuild process can take up to several minutes. EDB writes log messages about the progress of the rebuild process to the console and the Joblog of the server task.

If a system automation tool monitors the availability of the AJM/S server it is recommended to restart the server only once, if it has terminated abnormally. Depending on the error reason multiple attempts to restart the server without analysing the problem can cause subsequent errors, which might worsen the problem and probably cause a damage of data.

If the reason for the failure of the AJM/S server is not clear or can not be solved by the AJM/S systems administrator, we recommend contacting the AJM/S development team before any further steps are taken.

## 4.8 Monitoring and maintaining the AJM/S server

The following chapters give an overview on those parts of the AJM/S system that should be monitored and maintained by the systems administrator.The earlier a critical situation is detected, the faster it can be corrected and the lower is the risk to cause a bottleneck or a serious impact on performance and availability.

### 4.8.1 Monitoring the daily cleanup (archive job)

To guarantee high performance and availability of AJM/S it is essential that the archive job is executed in regular intervals. It is recommended to execute the archive job every working day.

The archive job moves Joblogs to the archive tape. It deletes Joblogs whose expiration date has expired from the spool dataset(s) and the online database. Additionally, the archive job performs a cleanup of the archive databases and the archive tapes. The spool writer task permanently adds Joblog data to the spool datasets and the online database. If the archive job is not executed or fails, no data is deleted from the spool datasets and they fill up until there is no more space available. For more details see "The AJM/S archive job" on page 30.

### 4.8.2 Monitoring the AJM/S spool datasets

Please check in regular intervals, if the number of Joblogs per day and the average number of lines per Joblog still match the estimated amount. Spool datasets, unlike online and archive database, are initialized with a fix size and are not expanded dynamically.

You can either use dialog function 30 or the modify command "**F ajms,STAT**" to get an overview of the current usage of spool space for each spool dataset. To get significant information about the usage of spool space it is recommended to check right before the next scheduled archive job is executed. If the average amount of Joblogs per day permanently increases, the spool dataset(s) should either be expanded or a new spool dataset should be added to the AJM/S.

When the total usage of all AJM/S spool datasets exceeds 80%, a warning message "**AJSSP21W  SPOOL SPACE IS nn % FULL, RUN AJM/S-ARCHIVE**" is written to the console and the AJM/S log. This message is repeated whenever the percentage of used space increases. If available an automation tool can react on this message to start the archive job or inform the operation staff. If the archive job cannot release sufficient space on the spool dataset, a manual intervention is required (i.e. you need to expand or add a spool dataset).

When all spool datasets are full, AJM/S writes Joblogs only to the spool backup datasets. They are not visible to the user via the AJM/S dialog function. These Joblogs are automatically recovered by the "Spool Doctor" task when the total usage of all AJM/S spool datasets has fallen below 80% again.

### 4.8.3    Expanding an AJM/S spool dataset

To expand the size of an existing spool dataset, a sample job is provided in member AJSSPEXP of the AJM/S SAMPLIB library. Please perform the following steps:

- Adapt the JCL of the sample job AJSSPEXP (dataset name, new dataset size)
- Stop the AJM/S server.
- Run the adapted job AJSSPEXP
- Restart the AJM/S server

### 4.8.4    Adding a new AJM/S spool dataset

To add a new spool dataset to the system, please perform the following steps:

- Update the AJM/S parameter module using the dialog function 32.2 (add new spool dataset definition)
- Restart your TSO/ISPF session to make sure that the modified parameter module is available for the dialog function
- Create and initialize the new spool dataset using the dialog function 32.3
- Stop and restart the AJM/S server

### 4.8.5    Removing an AJM/S spool dataset

To remove a spool dataset from the system please perform following steps:

- Lock the spool dataset using the modify command "**F ajms,LOCK=spoolname**". The parameter spoolname specifies the logical name of the spool dataset as it is defined in the parameter module. If a spool dataset is locked, data stored on the spool are still available for viewing, but no new Joblog data is stored to the dataset.
- Wait until all Joblogs stored on this spool dataset are moved to the archive. Depending on the settings of the online retention period, it can take several days until all Joblog data is moved by the archive job. Use dialog function 30 to control the number of Joblogs on this spool dataset
- Update the AJM/S parameter module using the dialog function 32.2 (delete spool dataset definition).
- Stop and restart the AJM/S server.
- Delete the spool dataset.

### 4.8.6    Monitoring the online database

The content of the online database is permanently modified; index records are added by the spool writer task and deleted by the archive job. Even though the database system (EDB) reuses space that is released by the delete requests the database gets fragmented. To control the current degree of fragmentation you can use dialog function 30. If the size of the fragmented space exceeds 4 MB, the database should be compressed. Depending on the amount of Joblog data that is managed by AJM/S, this might happen every day. To compress and defragment the database, enter the modify command "**F ajms,COMPRESS=ONLINE".** As the compress requires exclusive database control, any requests against the database are rejected while the compression is performed. It is best practice to issue the command via batch job and use a job scheduler (e.g. AJM) to initiate job execution. The job should be executed at a time when there is little activity by end user requests.

**Note:** The server must not be stopped while the database compression is performed. Do not run the compression while the archive job is active. The archive job could fail because of a timeout when trying to access the online database.

### 4.8.7    Monitoring the archive database

The content of the archive database is permanently modified; index records are added and deleted by the archive job. Even though the database system (EDB) reuses space that is released by the delete requests, the database gets fragmented. To control the current degree of fragmentation you can use dialog function 30. If the size of fragmented space exceeds 4 MB, the database should be compressed. Depending on the amount of Joblog data that is managed by AJM/S this might happen every day. To compress and defragment the database enter the modify command "**F ajms,COMPRESS=ARCHIVE".** As the compress requires exclusive database control, any requests against the database are rejected while the compression is performed. It is best practice to issue the command via batch job and use a job scheduler (e.g. AJM) to initiate job execution. The job should be executed at a time when there is little activity by end user requests.

**Note:** The server must not be stopped while the database compression is performed. Do not run the compression while the archive job is active. The archive job could fail because of a timeout when trying to access the archive database.

### 4.8.8    Monitoring the AJM/S Log datasets

All actions performed by the AJM/S server itself, any user or the system administrator are logged in an AJM/S-internal log. AJM/S uses two active log datasets which are written alternately. If the currently written log dataset is full, AJM/S switches to the alternate dataset and copies the full dataset to a log archive which is organized as a generation data group (GDG). If the server is unable to allocate a new backup generation, it switches to the inactive dataset and writes an error message **AJSLGnnE**. If the problem could not be solved until the alternate log file has filled up too, the server stops writing log records.

You should also check if the time period covered by the active log datasets and the archived log datasets is large enough to fit the current needs. To get an overview of the time period covered by all log datasets use dialog function 20 and select output format "L(ist)". To cover a longer time period, you can either expand the active log files (see below) or modify the GDG Limit of the archived log datasets.

### 4.8.9    Expanding AJM/S Log datasets

To expand the size of the active AJM/S log datasets while the server is active, please perform the following steps:

- Determine which one is the currently inactive log dataset by using dialog function 20 and selecting output format "L(ist)"
- Use the dialog function 32.3 to delete and reinitialize the currently inactive log dataset
- Wait until the active log dataset is switched by the server. Depending on the current size this can take up to several days
- Use the dialog function 32.3 to delete and reinitialize the currently inactive log dataset

To expand the size of the active AJM/S log datasets when the server is down, please perform the following steps:

- Copy both log datasets to a GDG dataset using the GDG base entry for archive log datasets as specified in the AJM/S parameter module
- Use the dialog function 32.3 to delete and reinitialize both log datasets
- Restart the server
- Enter the modify command "**F ajms,LOGINDEX**" to refresh the list of archived log datasets

## 4.9     Recovering the AJM/S Server

The following chapters provide an overview on how to recover datasets of the AJM/S system when they are physically or logically damaged and how to recover Joblogs that were accidentally deleted.

### 4.9.1     Recovering a Joblog from the spool backup datasets

If a Joblog was accidentally deleted, it can be recovered from the spool backup datasets by activating the "Spool Doctor" task. To recover a Joblog enter the following modify command:

**F ajms,RECOVER=##H,JOB=jobname,REPLACE=YES**

- ## is the number of hours since the data was read in from JES. The "Spool Doctor" task requires this reference value to set the starting point for the search in the spool backup datasets. To identify date and time when a Joblog was read in from JES, you can use the AJM/S log (dialog function 20) and search for the message indicating that the Joblog was written to the spool dataset.
- **jobname** is the name of the Joblog that should be recovered. If you want to recover a group of Joblogs the jobname can be specified generically by abbreviating the jobname with an asterisk, e.g. "ABC*".

The spool backup datasets hold copies of Joblog data only for a couple of days. The number of days is specified by the AJM/S systems administrator when AJM/S is installed. Joblogs that are older than that can not be recovered!

If a Joblog was truncated because it exceeded the line limit, the truncated part can not be recovered even when the online/archive definition for the job is modified to allow more lines. The reason is that, after reaching the line limit, the truncated part is not written to the spool backup datasets.

### 4.9.2     Recovering the internal index dataset

There are three occasions on which the internal index dataset needs to be recovered:

- The startup of the AJM/S server fails after a system crash or after an abnormal end of the server
- The basic information on the available spool backup datasets is inconsistent. The consistency of this information can be checked by dialog function 30
- Storing of data to the online database fails with an error reason 69 (decimal) of the database system (EDB) this indicates a duplicate key condition

To recover an internal index dataset, please perform the following steps:

- Stop the AJM/S server
- Use the dialog function 32.3 to delete and reallocate the internal index dataset
- Restart the AJM/S server
- To make sure that no Joblog data is lost enter the modify command "**F ajms,RECOVER=##H**"; whereby ## is the number of hours since the last Joblog was successfully written to the spool dataset(s).

**Warning:** Do not reinitialize the internal index dataset **and** a spool dataset in one step. When the internal index is reallocated, the AJM/S server reinitializes the dataset contents during startup and reads control information from the header of all spool dataset(s). This header information is reset when a spool dataset is reinitialized and can not be reconstructed.

### 4.9.3    Recovering a spool dataset

To recover a physically or logically damaged spool dataset, please perform the following steps:

- Stop the AJM/S server
- Use the dialog function 32.3 to delete, reallocate and initialize the spool dataset
- Start the AJM/S server with parameter "**JESRDR=INACT**"
- Enter the modify command "**F ajms,CHECK=spoolname**" to activate the "Spool Doctor" task. It removes all invalid index records from the online database that refer to the spool dataset. The parameter **spoolname** specifies the logical name of the spool dataset as it is defined in the parameter module
- Enter the modify command "**F ajms,RECOVER=##H**" to activate the "Spool Doctor" task. The parameter **##H** must specify the number of hours since the last archive job was started and successfully executed. The "Spool Doctor" task recovers all Joblogs that are still available on the spool backup files but are not stored on any spool
- Enter the modify command "**F ajms,JESRDR=ACT**" to activate the JES spool  reader subtask

**Warning:** Do not reinitialize the internal index dataset and a spool dataset in one step. When the internal index is redefined the AJM/S server reinitializes the dataset contents during startup processing and reads control information from the header of all spool dataset(s). This header information is reset when a spool dataset is reinitialized and can not be reconstructed.

### 4.9.4    Recovering the online database

To recover a physically or logically damaged online database, please perform the following steps:

- Stop the AJM/S server
- Delete the online database (key and index dataset)
- Rename the database backup datasets that were written by the last successfully executed archive job to the original name. The names of the backup datasets are derived from the original name and have the suffix "Dyyddd.Thhmmss". If the original dataset names of the online database are not known, they can be found in the AJM/S parameter module (use the dialog function 32.2). You can use either software tool IDCAMS (command ALTER) or software tool Fileaid to rename the datasets.
- Restart the server
- Perform a consistency check for each defined spool dataset to update the references in the recovered database (see "Checking and repairing a spool dataset" on page 28)

**Note:** Online / archive definitions that have been added/changed since the database backup was taken, will be lost.

### 4.9.5    Recovering the archive database

To recover a physically or logically damaged archive database, please perform the following steps:

- Stop the AJM/S server
- Use the dialog function 32.3 to delete and reallocate the archive index and the key dataset
- Copy the latest backup generation of the archive database to the newly defined archive index dataset using IDCAMS REPRO. If the name of the GDG base entry for backups of the archive database is not known, it can be found in the AJM/S parameter module (use the dialog function 32.2)
- If there is no valid backup generation available, use the dialog function 32.3 to delete and reallocate the archive database and execute the archive repair utility for **all** archive tapes
- Restart the server

### 4.9.6    Recovering an archive level 2 database

To recover a physically or logically damaged archive level 2 database, please perform the following steps:

- If the AJM/S server is active, lock the archive level 2 database using the modify command „**F ajms,LOCK=#nnnnn**" (#nnnnn is the name suffix of the affected database)
- If the backup was taken by HSM, use HRECOVER to restore the database datasets (index and key dataset)

- If the backup was not taken by HSM, delete the datasets of the damaged database and rename the database backup datasets (index and key dataset) to the original name. The names of the backup datasets are derived from the original name and have the suffix "Dyyddd.Thhmmss"
- If the AJM/S server is active, unlock the archive level 2 database using the modify command „**F ajms,UNLOCK=#nnnnn**" (#nnnnn is the name suffix of the affected database)

**Note:** If the database was damaged while it was updated by the archive job, it might be necessary to repair the archive index entries (see "Repairing Archive Index Entries" below).

### 4.9.7    Repairing Archive Index Entries

If archive index entries are inconsistent they can be recovered by running the archive repair utility. A typical indication that archive index entries are inconsistent is when a reload of archived Joblog data fails with error message **AJSAR54E** / **AJSAR60E**.

To recover inconsistent archive index entries, please perform the following steps:

- Use the dialog function 1 to get the list of archived Joblogs
- Enter the line command „DIA" for the Joblog that could not be reloaded
- Scroll down to the bottom of the displayed list. The last data block (LAYOUT OF ARCHIVE GENERATION RECORD ON ARCHIVE EDB) contains the dataset name of the archive tape that should be used as input for the archive repair job
- Execute the archive repair utility (see "Executing the archive repair utility AJSAUREP" on page 29)

### 4.9.8    Repairing damaged or lost archive tapes

If an archive tape is damaged or lost, the affected data is lost unless a backup was taken, e.g. by a storage management tool. If this is the case, reallocate a new tape with the original name, copy the backup to it and run the archive repair job (see "Executing the archive repair utility AJSAUREP" on page 29).

### 4.9.9    Checking and repairing a spool dataset

We recommend checking the consistency of a spool dataset after the server has terminated abnormally or after the online database has been restored from a backup.

Checking is processed by the "Spool Doctor" taskwhich can be be initiated by entering the console command "**F ajms,CHECK=spoolname**" The **spoolname** parameter specifies the logical name of the spool dataset as it is defined in the parameter module.

Note: Depending on the size of a spool dataset it can take several minutes until the checking function has completed. Any requests to the spool dataset (read requests of end users, update requests of the spool writer task, etc.) are suspended until the checking function has completed. The "Spool Doctor" task can be stopped by entering the modify command "**F ajms,STOP=SPLDOC**". It is however not recommended to enter this command while a consistency check of a spool dataset and the related online database entries is active. A premature termination of this function includes the risk that inconsistencies are not completely detected and repaired.

The "Spool Doctor" task performs the following steps:

- It scans the spool dataset sequentially to get a list of valid Joblog entries
- It verifies and if necessary corrects the space management control blocks of the spool dataset
- It adds missing index records to the online database
- It deletes obsolete index records from the online database

## 4.10     Executing the archive repair utility AJSAUREP

The archive repair utility recovers/rebuilds entries on the archive databases from information that is stored on an archive tape. The execution of the archive repair utility is required when one of the following problems has occured:

- An archive tape was copied to new tape cartridges (tape recycle). This can cause the physical position of the Joblog data to change. Therefore the index entries of the archive database(es) have to be corrected. A typical indication for this problem is that the reload of archived Joblog data fails with error messages **AJSAR54E** / **AJSAR60E**.
- An archive database is damaged and has to be rebuilt from scratch because there is no valid database backup available. If this is the case, the archive repair utility must be executed for each archive tape.
- The tape description record of an archive tape is missing on the archive database. A typical indication for this problem is that the reload of archived Joblog data fails with error message **AJSAR55A**.
- The description record of an archive level 2 database is missing on the archive database. If this is the case, the archive level 2 database has to be deleted and the archive repair utility has to be executed for each archive tape. A typical indication for this problem is that the dataset information for an existing archive level 2 database is not shown in the output of the dialog function 30.

The repair utility reads the archive tape sequentially and extracts all information that is required to

- Add/correct index entries for archived Joblogs
- Add missing control entries that describe archive level 2 databases
- Add missing control entries that describe archive tapes

A sample job for the archive repair utility is provided in member AJSARCT6 of the AJM/S SAMPLIB library. Please insert the logical name of the AJM/S server into the "PARM=" parameter of the EXEC statement and insert the name of the archive tape into the "//$ARCTAP$ DD" statement.

Additional notes:
- The AJM/S server has to be active while the archive repair utility is executing.
- Do not execute the archive repair utility while the archive job is executing or a compress of the archive database is performed.
- Do not execute more than one repair job at the same time.
- Before the archive repair utility is started, lock all archive level 2 databases that might be updated ("**F ajms ,LOCK=#nnnnn**"). The archive repair utility dynamically allocates and opens archive level 2 databases for update. To identify which archive level 2 databases might be updated use the creation date of the archive tape that is used as input (from time) and the creation date of the subsequent archive tape (to time) as reference. Then call the dialog function 30 to get the list of archive level 2 databases. All databases with a "Range" time stamp that overlaps the reference values should be locked.
- After the repair job has completed, restart the server to refresh the table of archive level 2 databases and unlock the archive level 2 databases ("**F ajms,UNLOCK=#nnnnn**").

# 5      The AJM/S archive job

## 5.1      General information

The archive job is an essential component of AJM/S to maintain the system. It performs the following activities:

- It moves Joblogs to archive tapes
- It deletes Joblogs whose online expiration dates have expired from the online database and the spool dataset(s).
- It deletes Joblogs whose archive expiration dates have expired from the archive databases.
- It performs a cleanup of the archive databases and the archive tapes.

The archive job writes protocol messages to JESMSGLG that provide information about the progress of the archiving process and error messages if any problem occurs. The current status of archive processing is displayed in dialog function 30 of the main menu (see "System Information" on page 61).

A sample job for the the archive job is provided in member AJSARJOB of the AJM/S SAMPLIB library.

It is recommended to run the archive job in regular intervals. Depending on the amount of Joblog data that is managed by AJM/S and depending on the size of the spool datasets it may be necessary to run the job every work day or every n work days.

Alternatively the submission of the archive job can be controlled by an automation tool. When the total usage of all AJM/S spool datasets exceeds 80%, a warning message "**AJSSP21W  SPOOL SPACE IS nn % FULL, RUN AJM/S-ARCHIVE**" is written to the console and the AJM/S log. This message is repeated whenever the percentage of used space increases. An automation tool can react on this message and submit the archive job.

The job should be executed at a time when there is little activity by end user requests.

**Note:** Do not execute the archive job and the archive repair utility at the same time, because the archive job (via the AJM/S server) and the repair job would perform concurrent updates on archive level 2 databases.

## 5.2      The steps of the archive job

The archive job consists of the following steps, which are performed in the sequence below:

1)  Take a backup of the online database
    The subsequent steps use this backup as information base to retrieve Joblog information. Using a copy of the online database guarantees that the activities of the archive job do not interfere with the spool writer task and have no impact on the performance of end user requests.
2)  Build a list of all Joblogs that have to be archived or that have to be deleted from the online database and the spool datasets because their online expiration dates have expired
    This list is kept in virtual storage and is used by steps 3 and 5.
3)  Copy Joblogs to the archive tape and add the corresponding index entries to the archive database
4)  Take a backup of the archive database
5)  Delete expired Joblogs from the online database and the spool dataset(s)
    The archive job sends delete requests to the AJM/S server. The maximum buffer size that can be used for communication is limited to 32 Kb, that is why the delete requests are sent in packages of up to 8160 requests.
6)  Delete expired Joblogs from the archive
    The archive job sends a delete request to the AJM/S server and passes the start time of the archive job as reference date. The server then deletes all archive index entries from the archive databases whose expiration date is lower than this reference date.
7)  Uncatalog expired archive tapes
    The archive job reads all tape description records, selects the expired tape dataset(s), calls the catalog management to uncatalog the tape dataset(s) and finally deletes the tape description records from the archive database.

8) Move archive index entries from the archive database to the archive level 2 database(s)
   The archive job sends a move request to the AJM/S server and passes the start time of the archive job as reference date. The AJM/S server uses this reference date to determine which index entries have to be moved to the archive level 2 database(s). All index entries that describe a Joblog with a job start time that is older than "(reference date – n days)" are moved. The value "n days" is the "new generation interval" that is specified in the AJM/S parameter module.

## 5.3     The execution parameters of the archive job

The execution parameters are specified via the "PARM=" value of the EXEC statement. The archive job uses two positional and five keyword parameters.

The first (mandatory) positional parameter is the name of the AJM/S server. Specify the server name as defined in the AJM/S names module (see "The list of AJM/S servers (AJSNAMES module)" on page 65).
The second (optional) positional parameter "ALL" forces that all Joblogs that are currently stored in the spool dataset(s) are copied to the archive tape. This parameter allows redoing the copy of Joblog data to an archive tape. This might be necessary if a previously executed archive job failed due to physical problems when writing to the archive tape. If this is the case, the parameter "NEWTAPE" (see below) must also be specified to force the allocation of a new archive tape dataset.

The following keyword parameters are available:

**RET#=n**          Overrides the reference date to calculate the online retention period (relative)
                    This parameter changes the reference date that is used to determine which Joblog has expired and shall be deleted from the online database and the spool dataset(s). The value must be numeric between +7 and -7and specifies a number of days. The "+" sign can be omitted for positive values. It affects step 5 of the archive task (see above) and causes that Joblogs are regarded as expired n days later (+n) or n days earlier (-n). RET# is mutually exclusive with RETD. Default: RET#=0.

**RETD=**           Overrides the reference date to calculate the online retention period (absolute)
                    This parameter changes the reference date that is used to determine which Joblog has expired and shall be deleted from the online database and the spool dataset(s). The parameter value must have the format (YY.DDD). It affects step 5 of the archive task (see above) and causes that the online expiration of Joblogs is calculated based on this date. If the T-Systems jobscheduling softwareAJM is used to initiate the archive job the AJM variable "%CDATE"-can be used to specify the value. RETD is mutually exclusive with RET#. Default: The job start time of the archive job.

**PROC=**           Specifies which steps of the archive job are executed
                    This parameter controls if all steps (PROC=ALL), only steps 1 - 7 (PROC=ARC) or only step 8 (PROC=MOVE) are executed. This parameter allows splitting the daily maintenance in multiple logical steps. Default: PROC=ALL.

**NEWTAPE**         Forces a switch of the archive tape dataset
                    If you specify "NEWTAPE" a new archive tape dataset is allocated to archive Joblog data independent from the value "new generations after n days" in the parameter module. Only step 3 of the archive job (see above) is affected. This parameter can be used to switch to a new tape dataset if writing to the current tape dataset failed because the maximum number of volumes was reached or if a hardware error occurred when writing data to the currently active archive tape dataset.

**MOVE=**           Modifies the maximum number of moved archive index entries
                    This parameter specifies the maximum number of archive index entries that shall be moved to the archive level 2 database(s). The value "n" must be numeric in the range 1 – 1000. It affects step 8 of the archive job (see above) and causes that "n * 1000" entries are moved. Default: MOVE=1000.

## 5.3.1    Restarting the archive job

The archive job writes a status record to the archive database which contains the current status of the archiving process. If the job execution fails for any reason and the archive job is restarted, this record is used to determine where to resume the processing. The status record also keeps the original start time of the archive job, which guarantees that the same reference date is used to calculate expiration dates if the archive job is restarted.

The Joblog of the failing archive job should be scanned for messages indicating the error reason. Depending on the contents of the messages, a manual intervention might be required before the job can be restarted.  If one of the steps 5, 6 or 8 (see above) fails, please check the AJM/S log of the server task for further information describing the error reason. If one of the steps 1 and 4 (see above) fails, please check the Joblog of the AJM/S server task for further information describing the error reason.

# 6    The administration interface

## 6.1    General information

The AJM/S administration interface is available in a TSO/ISPF environment. Due to its structure, however, it differs in some respects from the usual TSO/ISPF-supported dialogs.
It offers you the following benefits:

- Help information that is field-sensitive, i.e. you get help information depending on the current position of the cursor
- Selective display of information
- Pre-selection of data by filters
- Jump commands to switch between dialogs
- Simultaneous dialogs

## 6.2    Structure of the AJM/S administration interface

The AJM/S administration interface consists of dialogs. Each dialog comprises various dialog steps.

You can enter dialogs via the **Main Menu** and in most cases via a jump command. You can enter dialog steps within a dialog using specific line commands and exit them using commands such as **END** or **CANCEL**.

You can jump between dialogs with specific primary commands; some dialogs can also be opened simultaneously.

To leave a dialog completely, you can either go back through the previously entered dialog steps (**END** or **CANCEL** primary commands) or exit it via the **RETURN** or **EXIT** primary commands.

## 6.3    Field-sensitive help information

You can request help information in all dialog steps. The displayed information depends on the position of the cursor. The benefit of this field-sensitive help information is that up-to-date, context-related information is available immediately instead of you having to look it up in a manual.

Information is available on:

- which line commands can be used in a specific line
- which values can be entered in a specific field
- what the displayed information means

## 6.4    Selective display of information

To avoid having to switch back and forth between various panels, all information about an object is displayed in one panel. The following features ensure transparency:

- In "browse" mode, only lines which contain values are displayed.
- A selection bar enables you to select the data which you want to see. This selection bar is effective in both "browse" and "update" mode.

Example: Selection bar for filter definition
You can either select "**ALL**" or any combination of the blocks "**DSC**" (description), "**SEL**" (selection), "**STA** "(status) or "**OPT**" (other criteria).

```
AJM/S ------------------------- Filter Update --------------------------
CMD===> _                                           SCROLL===> CSR
 X ALL   _ DSC _ SEL _ OPT
```

Figure 1:    Selection bar

## 6.5      Visual presentation of information

The AJM/S administration interface uses colour and inverse display to present information. If, for example, a mandatory field was not entered, an error message is displayed upon SAVE. The field in question is then highlighted in red inverse:

```
AJM/S --------------------------- Filter Update ---------------------------
CMD===>                                                    SCROLL===> CSR
 X ALL _ DSC _ SEL _ OPT
AJS0116E - AJSADPLS: Value not allowed
Filter      : _____
Sort list by : X   (Group/Start/End)
___ Descript.: _____
___ Selection: Group: _____    Net: _____    Job: _____
```

Figure 2:     Visual presentation (highlighting)

## 6.6      Filters

You can use a filter to pre-select the objects which you want to display or update. The use of filters allows selection by object name and other criteria, e.g. status or contents.

Most dialogs are entered via a filter panel. In some cases, default selection values are already set. How generic or specific the selection criteria needs to be that is entered, depends on the respective dialog.

In the Net / Job Lists dialog you can save your filter definitions. This allows you to keep sets of selection criteria for re-use. Filters with names other then #TEMPnnn are stored in the user profile and are then available for all subsequent AJM/S administration sessions. Temporary filters (#TEMPnnn) only apply to the current AJM/S session.

## 6.7      Jump commands

You can enter a dialog in two different ways:

1)    Select a dialog via the corresponding menu item (i.e. number) from the main menu.
2)    Enter a dialog directly via a jump command.

In the second case, the current dialog is interrupted and the requested dialog is started. After you exit this second dialog, you will be returned to the previous dialog at the point at which you entered the jump command.
When you enter a jump command for a dialog that was interrupted previously, you will return to the exact point where you exited it.

The benefit of these jump commands is that you can use them to look up something in another dialog without leaving the current one. For example, if you want to obtain information about online / archive definitions while you are looking into lists of Joblogs, simply use LDF to jump to the online / archive definition filter, select the definitions and then return to the list of Joblogs.

## 6.8      Parallel dialogs

You can use parallel dialogs to enter a dialog that is already active but use it to work on another object – without leaving the current dialog. This type of dialog is used for the net / job lists.

When you enter the JLG jump command, you will not return to the dialog which you previously left but you will get the filter list panel instead. There, you can either select one of the already active dialogs or you can add another one by selecting a filter entry. These dialogs will then execute independent of each other.

You can jump between parallel dialogs as you wish. The return point into an active dialog is always the step where you exited it.

# 7 General Commands

Within the AJM/S administration interface there are commands which can be used within every dialog. These commands are described in the following chapters.

## 7.1 Commands to get help information

**HELP**     In each panel within the AJM/S administration interface you can request help information using the **HELP** command (**PF1** key).
The information displayed is dependent on the position of the cursor ("field-sensitive"). If, for example, you would like to know which line commands can be used in a particular line, you place the cursor on the specific line command field and invoke the HELP function. In the same way you can also call up information about which values can be entered in a specific field or find out what displayed values mean.

## 7.2 Commands to exit a dialog step or a dialog

**END**     The **END** command (**PF3** key) is used to leave the current panel and to return to the place from which it was invoked.
If data has been changed in the current panel it will be checked before leaving. If all values are correct they will be saved. If they are incorrect, an error message will be issued and the respective panel will be displayed again.

**CAN**     To exit a panel without saving the changes to the data, use the **CAN** command.
As with the **END** command, you will return to the place from which the current panel was invoked.

**RETURN**     To end and entire dialog, use the **RETURN** command (**PF4** key). This is equal to a series of **CAN** commands, i.e. changes to the data will not be saved.
You will return to the previous dialog. If the current dialog was the only one active the main menu will be displayed.

**EXIT**     To exit the AJM/S administration interface altogether, use the **EXIT** command. This is equal to a series of **RETURN** commands, i.e. changes to the data will not be saved.
You will return to the panel from which the AJM/S administration interface was called.

## 7.3 Jump commands

You can either select a dialog via the main menu or enter it directly via a jump command. For details, please refer to "Jump commands" on page 34.

The following jump commands are available:

**MAI**     To jump to the main menu from where you can select the other dialogs (see "
The Main Menu" on page 39)
**JLG**     To jump to the "Joblogs" dialog, starting with a list of Joblog filters and already active Joblog dialogs (see "Joblogs" on page 41)
**LDF**     To jump to the "Online / Archive Definitions" dialog (see "
**SLG**     To jump to the "SYSLOG" dialog (see "
**LOG**     To jump to the "Log" dialog (see "Log View" on page 59)
**INF**     To jump to the "System Information" dialog (see "
System Information" on page 61). This is only available to users with **MASTER** authorization
**SWS**     To jump to the "Software Status" dialog (see "
Software Status" on page 64). This is only available to users with **MASTER** authorization

**PRM**         To jump to the "Parameters" dialog (see "Parameters" on page 65).This is only available to users with **MASTER** authorization

## 7.4     Commands in "update" mode (definition panels)

**SAVE**        The **SAVE** command stores any changes made in the AJM/S database. Unlike the **END** command, the current panel will not be exited.

**DO**          Use the **DO** command to set a so-called **DO-point**. All changes that you make after this point can then be undone by the **UNDO** command (see below). This is very helpful if you apply extensive changes and want to keep a "before changes" image.
**Note**: The changes prior to the **DO** command are not saved in the AJM/S database. You need to use either **SAVE** or **END** to save them.

**UNDO**        Use the **UNDO** command to undo all changes since the last **DO-point**.

**RESET**       Use the **RESET** command to undo your changes since the last **SAVE** command.

**BRW**         Use the **BRW** command to switch from "update" to" browse" mode. In "browse" mode, the data of an object is displayed but may not be changed.
Lines which contain no data will be suppressed (not shown) in "browse" mode.

**UPD**         Use the **UPD** command to switch back from "browse" to "update" mode.

## 7.5     Commands to search for character strings

**FIND string [ NEXT | PREV | FIRST | LAST | ALL ]**

The **FIND** command can be used to search for any character string within a display or update panel. The search always covers the entire information you selected previously, not just the part which is displayed on the screen. If a match is found outside of the displayed area, the panel will automatically scroll to that part. The **FIND** command is restricted to the values within a panel. It does not check the contents of the fixed portion (e.g. headings, field names).
The following **parameters** are available:

**string**      This is the character string which is searched for in the object's data. If this string contains any blanks, please enclose it in apostrophes (e.g. 'A B') or quotes (e.g. "A B").

**NEXT**        (Default) Use this parameter to search from the cursor position in a forward direction. The search stops at the next matching string. The cursor is placed on the position of the match.
If no matches are found, a message will be displayed.

**PREV**        Use this parameter to search from the cursor position in a backward direction. The search stops at the prior matching string. The cursor is placed on the position of the match.
If no matches are found, a message will be displayed.

**FIRST**       Use this parameter to search for the first occurrence of the string. The cursor is placed on the position of the match.
If no matches are found, a message will be displayed.

**LAST**        Use this parameter to search for the last occurrence of the string. The cursor is placed on the position of the match.
If no matches are found, a message will be displayed.

**ALL**         Use this parameter to count the number of occurrences of the string. A message will be displayed which contains the number of occurrences and the cursor is placed on the first match.

**RFIND**       Use the **RFIND** command (**PF5** key) to search for the next occurrence of a previously found string. The search starts at the current cursor position. The direction of the search depends on the previous search (i.e. if the search was performed with **NEXT** or **FIRST**, the direction is forward, if the search was performed with

**PREV** or **LAST**, the direction is backward).
If no more matches are found, a message will be displayed. If you use **RFIND** again, the search will start again at the beginning (**NEXT** / **FIRST**) or end (**PREV** / **LAST**).

## 7.6    Commands to change character strings

**CHANGE string1 string2 [ NEXT | PREV | FIRST | LAST | ALL ]**

The **CHANGE** command can be used to replace any character string within an update panel with another string. The search always covers the entire information you selected previously, not just the part which is displayed on the screen. If a match is found outside of the displayed area, the panel will automatically scroll to that part.
The **CHANGE** command is restricted to the values within a panel. It does not change the contents of the fixed portion (e.g. headings, field names).
The following **parameters** are available:

**string1**    This is the character string to be searched for in the object's data. If this character string contains any blanks, please enclose It in apostrophes (e.g. 'A B') or quotes (e.g. "A B").

**string2**    This is the character string that will replace **string1**. You can also use apostrophes and quotes (see above).

**NEXT**    (Default) Use this parameter to search from the cursor position in a forward direction. The search stops at the next matching string. The cursor is placed on the position of the match and the string is replaced.
If no matches are found, a message will be displayed.

**PREV**    Use this parameter to search from the cursor position in a backward direction. The search stops at the prior matching string. The cursor is placed on the position of the match and the string is replaced.
If no matches are found, a message will be displayed.

**FIRST**    Use this parameter to search for the first occurrence of the **string1**. The cursor is placed on the position of the match and the string is replaced.
If no matches are found, a message will be displayed.

**LAST**    Use this parameter to search for the last occurrence of the **string1**. The cursor is placed on the position of the match and the string is replaced.
If no matches are found, a message will be displayed.

**ALL**    Use this parameter to replace all occurrences of **string1** with **string2**. A message will be displayed to indicate the number of occurrences and the cursor is placed on the first match.

**RCHANGE**    Use the **RCHANGE** command (**PF6** key) to search for the next occurrence of a previously found string and replace it. The search starts at the current cursor position. The direction of the search depends on the previous change (i.e. if the change was performed with **NEXT** or **FIRST**, the direction is forward, if the change was performed with **PREV** or **LAST**, the direction is backward).
If no more matches are found, a message will be displayed. If you use **RCHANGE** again, the change will start again at the beginning (**NEXT** / **FIRST**) or end (**PREV** / **LAST**).

**RFIND**    Use **RFIND** (**PF5**) to position on the next match without performing the change. With consecutive **RFIND** and **RCHANGE** commands, you can go through the data and apply the changes wherever necessary.

## 7.7     Other commands

**DOWN**       Use the **DOWN** command (**PF8** key) to scroll downwards through your data.
The number of lines to be scrolled can be defined as a parameter of the **DOWN** command (e.g. "**DOWN 25**"). If this parameter is omitted, the value is taken from the scroll amount field in the panel.
If you want to scroll down to the end of your data, please use "**DOWN MAX**" or "**DOWN M**".

**UP**         Use the **UP** command (**PF7** key) to scroll upwards through your data.
The number of lines to be scrolled can be defined as a parameter of the **UP** command (e.g. "**UP 25**"). If this parameter is omitted, the value is taken from the scroll amount field in the panel.
If you want to scroll up to the top of your data, please use "**UP MAX**" or "**UP M**".

**TRACE**      This function is for diagnostic purposes only. Use "**TRACE ON**" to begin a trace and "**TRACE OFF**" to end
**ON /**       it. When you leave the AJM/S administration interface, a message will tell you the name of the dataset
**OFF**        which contains the collected trace information.
This dataset can be used by the developers to diagnose problems with the AJM/S software.

**COUNT**      Use this command to count number of entries in a list.
**/ CNT**      The result will be displayed in a message.

# 8    The Main Menu

When you enter the AJM/S administration interface, the following panel will be displayed:

```
AJM/S ----------------------------- Main Menu ------------------------------
CMD===>

Action: __  0.  Session Options                    AJM/S Server: server
            N.  News                                JES Classes : c c

            1.  Net/Job Lists
            2.  Online/Archive Definitions

            10. Syslog View
            20. Log View

            30. System Information
            31. Software Status
            32. Parameters
```

The main menu lists all available dialogs. You can select a dialog by entering the corresponding number in the **Action** field.

The dialog function 10 is only visible if the user is authorized to use this function, the dialog functions 30 – 32 are only visible if the user has master authorization (see "Authorization checking" on page 76).

The following list is an overview of all dialogs. Please refer to the indicated sections for details.

**0      Session Options**
Set your individual session parameters for the AJM/S administration interface
Details are described under "Session Options" on page 41

**N      News**
Display information about new features and changes
Details are described under "News" on page 43

**1      Net / Job Lists**
Search, list or view Joblogs
Details are described under "Joblogs" on page 43

**2      Online / Archive Definitions**
Search, list or update online or archive definitions
Here you can define the maximum size of a Joblog on spool, how long it is kept online and how long it will be archived.
Details are described under "Online / Archive Definitions" on page 54

**10     Syslog View**
Display information from the system log
Details are described under "SYSLOG View" on page 57

**20     Log View**
Search and display information from the internal AJM/S log
For each action that a user or the AJM/S server itself initiates, a log record is created.
Details are described under "Log View" on page 59

**30     System Information**
Display information about the AJM/S server and its databases (master authorization required)

Details are described under "System Information" on page 61

**31    Software Status**
Display information about the modules which are loaded in the AJM/S server address space (master authorization required)
Details are described under "Software Status" on page 64

**32    Parameters**
Customization dialog for your AJM/S server (master authorization required)
Details are described under "Parameters" on page 65

# 9    Session Options

The "Session Options" panel has the following layout:

```
AJM/S -------------------------- Session Options --------------------------
CMD===>                                              SCROLL===> CSR

Administration Language:  EN GE      -  deutsch
                             EN      -  english

Start Panel             :  __ Blank  -  Main-Panel
                             nn       -  Selection in Main Panel

Filter (Joblogs)        :  L P/L     -  Filter panel / list

Confirmation Panel      :  Y y/n     -  Confirm Delete Commands (DEL)
                        :  N y/n     -  Confirm Reload of Joblog (RLD)

Count elements          :  Y y/n     -  Display # of elements in list

Message to User         :  Y y/n     -  Message after reload complete

No. of Data Buffers     :  01 Blank  -  Default 1 Buffer
                             1 to 99 -  a maximum of 99 Buffers

Temporary Datasets      :  01 Primary Space     - Default  1 Track
                           01 Secondary Space   - Default  1 Track

Server                  :  AJS2____ AJS1     - First AJM/S server
                                    AJS2     - Second AJM/S server
```

The fields have the following meaning:

| | |
|---|---|
| **Administration language** | Select the language for the AJM/S administration interface (panels, messages, help texts) |
| **Start Panel** | Select the start panel for the AJM/S administration interface<br>Instead of starting with the main menu, you can select to always start with a specific dialog. For example, if you specify "1", each time you call the AJM/S administration interface, the first displayed panel is the Joblog filter. |
| **Filter (Joblogs)** | Select whether you want to have a list of filters (default) or a filter panel when you enter the "Net / job lists" dialog |
| **Confirmation Panel** | Select if you want to be prompted with a confirmation panel for some critical line commands (e.g. DEL for delete) |
| **Count elements** | Select if you want to get a message that displays the number of elements in a list<br>If you enter **Y** a message is displayed when a list is first shown. It contains the number of elements in this list.<br>If you enter **N** no such message is displayed. You can, however, use the **COUNT** or **CNT** primary command to count the elements in the list. |
| **Message to User** | Select if you want to receive a message in your TSO session after your reload request for a Joblog has completed |
| **No, of Data Buffers** | Specify the number of data buffers for the communication with the AJM/S server<br>If you select a filter which returns a lot of information, you might get an "RU overflow" message. If you want to display more data, you need to increase the number of data buffers by specifying a higher number in this field. |

**Temporary Datasets**    Specify the size of temporary datasets which are to be allocated, for example if you display log information

**Server**    If you do not want to connect to the first AJM/S server in the list, please specify the name of the required AJM/S server

# 10    News

With selection "N" on the main menu a list of news items is displayed:

```
-------------------------------- AJM/S - News --------------------------------
Command ===>                                             Scroll ===> CSR

 S - Select  P - Print                                        PF3 - End

 S   Short Information
 -----------------------------------------------------------------------------
 _ ! New ORDER parameter in Batch (Joblog Information)
 -----------------------------------------------------------------------------
 _ ! Job & Output Management with new Internet site
 -----------------------------------------------------------------------------
 _ ! Group name can be assigned via //* AJMS
 -----------------------------------------------------------------------------
 _ ! Available reports for the AJM/S log view
 -----------------------------------------------------------------------------
 _ ! AJSPRT: Partial print of AJM/S Joblogs
 -----------------------------------------------------------------------------
```

This list contains information about any new features or changes to the AJM/S software.

Whenever new information is available, the "N" in the main menu will be highlighted inverse. The most recent news is always at the top of this table.

The following line commands are available:

**S**    Display news entry
**P**    Print news entry

# 11    Joblogs

AJM/S reads the Joblogs from up to eight SYSOUT classes and stores them on internal spool datasets. Depending on the settings, large Joblogs may be truncated after their line limit has been reached. The excess data will either be lost or will be stored on special datasets. Please refer to "Online / Archive Definitions" on page 54 for a detailed description.

Depending on the settings, the Joblog is kept online for a certain amount of time. With the next run of the archive job, the data is also archived on tape. When the online retention time has elapsed, the online copy will be deleted.

If a Joblog is available in the archive database(s), you can reload it for online access. It will remain online until the end of the next day and will be deleted by the next archive job that runs after that date.

You can enter the "Net / job lists" dialog either by selecting "1" in the main menu or directly via the JLG jump command. You then get a filter list or a filter panel, depending on the settings in your session options. Based on the selection criteria which you specify on this panel, you will get a list of Joblogs. In this list, you can for example browse or view the Joblogs if they are on the online database or you can reload them from the archive.
The following topics will give detailed information about these dialog steps.

## 11.1    The Joblog filter

In the session options you can select whether you want to have a filter list or a filter panel. The filter list allows you to keep more than one set of filter criteria which can then be accessed by their name. The filter definitions are done in the filter update panel.

The filter panel is nearly identical to the filter update panel. After you have entered the filter criteria, simply press the Enter key to get a list of nets or Joblogs. When you switch from filter panel to filter list, the last values of the filter panel are available in a special filter entry named #SELECT.

When you enter the AJM/S administration interface for the first time, a generic filter will be created for you. The name of this filter is DEFAULT.

### 11.1.1   The Joblog filter list

The Joblog filter list panel has the following layout:

```
AJM/S --------------------------- Filter Dialogs ----------------------------
CMD===>                                                   SCROLL===> CSR

___ 001 Filter: #SELECT
            DB: O  + Group: *                 Net: *        Job: *
___ 002 Filter: FILTER01  My selection criteria (1)
            DB: B  + Group: *                 Net: *        Job: J01*
```

You can select a filter either by the S(EL) line command or by the primary commands "S number" (number = filter number in the list) or "S name" (name = filter name).

The following line commands are available in the filter list panel:

**B(RW)**      Display filter definitions in "browse" mode
**D(EL)**      Delete filter
**I(NS)**      Create new filter
**R(EP)**      Create new filter with identical contents
**S(EL)**      Select filter to display a list of nets or Joblogs
**U(PD)**      Update filter definition

If you already have an active dialog, the panel will have the following, additional information:

```
AJM/S -------------------------- Filter Dialogs ----------------------------
CMD===>                                               SCROLL===> CSR

___ 001 Filter: #SELECT
             DB: O  + Group: *                 Net: *        Job: *
___ 002 Filter: FILTER01  My selection criteria (1)
             DB: B  + Group: *                 Net: *        Job: J01*
  ___    Dialog: JLG / BRW Group: GRP.XY        Net: NET01    Job: J0101
```

The following line commands are available in the "Dialog" line:

**CAN**      Cancel this dialog (any open changes that exist, will not be saved)
**S(EL)**     Re-enter this dialog at the point where you left it

The fields in the filter panel are:

**Filter**          Filter name

**Description**     Description text

**DB**             Database
               Filter checks for information about the online ("**O**") or the archive database(s) ("**A**") or both ("**B**").

**+**              Indicates that there are additional selection criteria in the filter definition.

**Group / Net**     Selection by group, net and job name
**/ Job**           Please note that there can be more selection criteria (e.g. by status) which are not shown in this entry.

**Dialog**          Display of current dialog and the status in which it was (BRW = "browse" mode, UPD = "update" mode)

## 11.1.2   The filter update panel

The selection criteria of a Joblog filter are defined in the filter update panel. You can select by:

- Group / net / job name
- Interval, referring to the start or end time of the job
- Maximum number of job runs
- Database (online, archive or both)
- Return code of the job
- "In error" condition
- Execution user
- Job group

You can also select the order in which the matching Joblogs will be presented.

The layout of the filter update panel is the following:

```
AJM/S -------------------------- Filter Update ----------------------------
CMD===>                                                SCROLL===> CSR
 X ALL   _ DSC _ SEL _ OPT

Filter     : _____
Sort list by : __ (Group/Start/End)
___ Descript.: _____

___ Selection: Group: _____     Net: _____   Job: _____


Other selection criteria:

Interval   : from : _____ _____      to: _____ _____
        or : relat: __ ___  /  __ ___   (Min/Hrs/Day/Wk/Mon)
Reference  : to   : _       (Start / End time)
Limit      : last : ___     (Net / job runs)

Data       : from database: _  (Online/Archive/Both)
           : Recovery inf.: _  (Y/N)

Job        : Code       : __ _____     in error: _ (y/n/blank)
           : User       : _____
           : Job Group  : _____
```

The following values can be entered:

| | |
|---|---|
| **Filter** | Filter name <br> You can specify a filter name up to maximum of 8 characters. A filter with a name is stored in your profile and is available again in the next session. <br> If you do not specify a name, a temporary filter is created. The name of this filter will be #TEMPnnn (where nnn is a sequence number allocated by AJM/S) and it will not be kept in your user profile. |
| **Sort list by** | You can sort the list by the following criteria: <br> ▪ **G** Jobs are listed under their respective group / net <br> ▪ **S+** List of jobs sorted by start date / time (ascending) <br> ▪ **S-** List of jobs sorted by start date / time (descending) <br> ▪ **E+** List of jobs sorted by end date / time (ascending) <br> ▪ **E-** List of jobs sorted by end date / time (descending) |
| **Descr.** | Filter description <br> You can specify a description text which will appear in the filter list. |
| **Group / Net / Job** | Selection by group, net and / or job name <br> If you leave the "Job" field empty, a net list will be displayed. If you enter a value in the "Job" field, a job list will be displayed. <br> The names can be specified generically (abbreviated by "*"). If the user has no master authorization the first qualifier of the group name must be fully specified, only the second qualifier may be specified generically (e.g. GRP1.*, GRP1.A*). The usage of wildcard characters is not supported. <br> If you want to get information about the AJM/S logic of group/net assignment please refer to "The group/net assignment" on page 18. |
| **Interval** | You can either specify a date window or a relative date. The Joblogs will be selected based on the value in the "Reference" field, either by their start or their end date. |
| **Reference** | Please specify: <br> ▪ **S** if you want to select Joblogs by their start date / time <br> ▪ **E** if you want to select Joblogs by their end date / time |

| Limit | You can specify here how many net / job runs will be displayed. |
|---|---|

**from database**  Please select:
- **O** to select jobs from the online database
- **A** to select jobs from the archive
- **B** to select jobs from both databases

**Recovery inf.**  Specify here if you want additional information about recovery nets that were started for the selected nets. If you specify Y the recovery jobs will be included in the list.
Recovery information is only available for jobs that were started by AJM.

**Code**  Selection by completion code
The settings in the online / archive definitions for a Joblog specify if this code is either the highest completion code of all steps or the completion code of the last executed step. Please refer to "Online / Archive Definitions" on page 54 for details.

The first field contains the comparator:
- **=** equal
- **<>** not equal
- **>** greater than
- **<** less than
- **>=** greater or equal
- **<=** less or equal

The second field contains the code value (x for hexadecimal, n for numeric values):
- **Sxxx** System abends (e.g. SB37, S001, SX22 (generic))
- **IPL** Job was still active at IPL
- **FLUSH** e.g. JCL error etc.
- **Unnnn** User abends (e.g. U1111)
- **Cnnnn** Completion codes (e.g. C0004, C0012)

For the following codes, the first field may only be "=" or "<>":
- **AUTH** No authorization
- **JCLER** JCL error, job was rejected by JES
- **JFAIL** Job was cancelled prior to execution
- **NONE** Code could not be determined
- **ABNRM** Abnormal termination, incomplete Joblog closed by JES

**in error**  Selection by "in error" condition
The settings in the online / archive definitions for a Joblog specify which code is the maximumto be considered as "OK". Please refer to "Online / Archive Definitions" on page 54 for details.

**User**  Selection by execution user
The user id can be specified generically (abbreviated by "*"). The usage of wildcards is not supported.

**Job Group**  Selection by job group
The job group value is taken from the JG parameter in the job's //*AJMS card. Please refer to "The "//* AJMS" control statement" on page 19 for details.

### 11.1.3  The filter panel

The filter panel's layout is very similar to the filter update panel which is described in "The filter update panel" on page 45". The only difference is that you cannot enter a filter name and description.

When you press the Enter key, a list of nets or Joblogs will be displayed.

### 11.1.4  The list of nets

If you leave the "Job" field in the filter selection empty, you will get a list of nets. This list has the following layout:

```
AJM/S ------------ Net List ----------- Group: GROUP. *           Net: NET*
CMD===>                                                SCROLL===> CSR

Group:   GROUP.G1
___  Net: NET001      dd.mm.yy hh:mm - dd.mm.yy hh:mm     code
___  Net: NET002      dd.mm.yy hh:mm - dd.mm.yy hh:mm     code

Group:   GROUP.G2
___  Net: NET021      dd.mm.yy hh:mm - dd.mm.yy hh:mm     code
___  Net: NET021      dd.mm.yy hh:mm - dd.mm.yy hh:mm     code
```

The fields have the following meaning:

**Group**      Group name
              If you want to get information about the AJM/S logic of group/net assignment please refer to "The group/net assignment" on page 18.

**Net**        Net name
              If you want to get information about the AJM/S logic of group/net assignment please refer to "The group/net assignment" on page 18.
              There is a separate line for each net run. If there are several nets with the same name, the latest net run is on top.

**Date / time**   Start and end date and time of this net run

**Code**       Highest termination code within this net run

The following line commands are available:
**D(EL)**       Delete all Joblogs from this net run from the online database
**JOB**         Call the scheduling system (e.g. AJM)
**LOG**         Obtain information about this net from the AJM/S log
**RLD**         Initiate reload of this net run
**S(EL)**       Display the net / job list (see "The list of Joblogs" on page 49)

## 11.1.5 The list of Joblogs

You can get to the list of Joblogs:

- via a filter definition which has a value in the "Job" field
- via a S(EL) line command in the net list

The Joblog list panel has the following layout:

```
AJM/S - Net/Job List ---- Group: GROUP.G1          Net: NET001   Job: *
CMD===>                                            SCROLL===> CSR

Group:  GROUP.G1
___ Net:  NET001
  ___ Job: JOB001A(jobid)     dd.mm.yy hh:mm - dd.mm.yy hh:mm  code  typ user
  ___ Job: JOB001B(jobid)     dd.mm.yy hh:mm - dd.mm.yy hh:mm  code  typ user
```

The fields have the following meaning:

**Group**  Group name
If you want to get information about the AJM/S logic of group/net assignment please refer to "The group/net assignment" on page 18.
This line is only shown if you have selected "sort by group / net name" in the filter.

**Net**  Net name
If you want to get information about the AJM/S logic of group/net assignment please refer to "The group/net assignment" on page 18.
There is a separate line for each net run. If there are several nets with the same name, the latest net run is on top.
This line is only shown if you have selected "sort by group / net name" in the filter.

**Job**  Job name and job id.

**Date / time**  Start and end date and time of this job run

**Code**  Highest or last termination code within this job run
If the job is in "in error", the code will be displayed inverse.

**Type**  Special information or type of job run (for AJM jobs)
The following values may occur:
- **LIM**  Line limit reached, Joblog truncated
- **RLD**  Joblog will be reloaded from the archive
- **RST**  Job was part of a restart
- **REC**  Job was part of a recovery net
- **EXE**  Job was started by an EXE (execute) line command

**User**  User id. of the first user who checked this Joblog
If a Joblog is selected via a S(EL) or B(RW) line command, it is considered to be "checked".

If the Joblog was found in the online database, its information will be displayed in turquoise, a Joblog that was found in an archive database is displayed in blue.

If two or more lines are displayed with identical job name and job id this is an indication that either a job split was processed or a dataset split (see "How a job is read in" on page 19).

The following line commands are available:

Commands in the net line:

| | |
|---|---|
| **D(EL)** | Delete all Joblogs from this net run from the online database |
| **JOB** | Call the scheduling system (e.g. AJM) |
| **LOG** | Obtain information about this net from the AJM/S log |
| **RLD** | Initiate reload of this net run |

Commands to access the Joblog:

| | |
|---|---|
| **B(RW)** | Display the Joblog in "browse" mode |
| **V(IE)** | Display the Joblog in "view" mode |
| **S(EL)** | Show details about the job (see "The Joblog details" below for details) |
| **C(PY)** | Copy Joblog to a dataset (see "Copying a Joblog to a dataset" on page 53) |
| **PRT** | Print the Joblog |
| **RLD** | (for archived Joblogs) Reload Joblog from the archive |
| **D(EL)** | Delete Joblog from spool |

Miscellaneous commands :

| | |
|---|---|
| **JLG** | Call the Joblog management system (e.g. SDSF, JVS) |
| **JOB** | Call the scheduling system (e.g. AJM) |
| **LOG** | Obtain information about this Joblog from the AJM/S log |
| **STA** | Obtain additional status information (see "The Joblog status information" on page 52) |

## 11.1.6  The Joblog details

You can access details about the Joblog via the S(EL) line command in the job list.

The layout of the Joblog details panel is the following:

```
 AJM/S - Job Information - Group: GROUP.G1          Net: NET001   Job: JOB001A
 CMD===>                                            SCROLL===> CSR
  X ALL   _ STP _ MSG _ DDN

 ___  Job : JOB001A (jobid)           dd.mm.yy hh:mm - dd.mm.yy hh:mm  code
  ___ Message: message text 1
  ___ Message: message text 2
  ___ DD Name: JESMSGLG           nn lines
  ___ DD Name: JESJCL             nn lines
  ___ DD Name: JESYSMSG           nn lines

 ___  Step: STEP001           pgmname  dd.mm.yy hh:mm - dd.mm.yy hh:mm  code
  ___ Message: message text 3
  ___ DD Name: SYSPRINT          nn lines
```

The fields have the following meaning:

| | |
|---|---|
| **Job** | Job name and job id. |
| **Date / time** | Start and end date and time of this job run |
| **Code** | Highest or last termination code within this job run<br>If the job is in "in error", the code will be displayed inverse. |
| **Message** | There three types of messages which may appear:<br>■ System messages<br>AJM/S scans the Joblog contents and lists system messages which are relevant for the user (e.g. messages from JES or from the security server)<br>■ User messages<br>These messages may be provided in the COMM parameter of a //* AJMS card (see "The "//* AJMS" control statement" on page 19 for details). |

- AJM/S messages
  AJM/S will also add special messages if necessary, e.g. if the Joblog was truncated because the line limit was reached.

**DD Name**      DD name and its size (number of lines)
If the job contains steps with the same name, the step and proc step name will be displayed additionally.

**Step**      Step name, procedure step name (if available), program name (from the PGM= parameter), start and end date and time and the termination code of this step
If the step has no name, **\*UNKNOWN** will be displayed.

The following line commands are available:

Commands in the job line:

| | |
|---|---|
| **B(RW)** | Display the Joblog in "browse" mode |
| **V(IE)** | Display the Joblog in "view" mode |
| **S(EL)** | Display the Joblog in "browse" mode |
| **C(PY)** | Copy Joblog to a dataset (see "Copying a Joblog to a dataset" on page 53) |
| **PRT** | Print the Joblog |
| **JLG** | Call the Joblog management system (e.g. SDSF, JVS) |
| **JOB** | Call the scheduling system (e.g. AJM) |

Commands in the message line:

**none**

Commands in the DD name line:

| | |
|---|---|
| **B(RW)** | Display the data for this DD name in "browse" mode |
| **V(IE)** | Display the data for this DD name in "view" mode |
| **S(EL)** | Display the data for this DD name in "browse" mode |
| **C(PY)** | Copy data for this DD name to a dataset (see "Copying a Joblog to a dataset" on page 53) |
| **PRT** | Print the data for this DD name |

Commands in the step line:

| | |
|---|---|
| **B(RW)** | Display the data for this step in "browse" mode |
| **V(IE)** | Display the data for this step in "view" mode |
| **S(EL)** | Display the data for this step in "browse" mode |
| **C(PY)** | Copy data for this step to a dataset (see "Copying a Joblog to a dataset" on page 53) |
| **PRT** | Print the data for this step |

## 11.1.7  The Joblog status information

You can access information about the Joblog status via the STA line command in the job list.

The Joblog status panel has the following layout:

```
AJM/S ------ Status ----- Group: GROUP.G1          Net: NET001   Job: JOB001A
CMD===>                                            SCROLL===> CSR

Job run:
Start       : dd.mm.yy hh:mm          No.: jobid          Type: type
            : System:  system     JES Class: c
            : User:    user       Job Group: jobgroup
End         : dd.mm.yy hh:mm          Code: code

Spool / Archive:
Size        :              nn lines /       n blocks
Archive run : dd.mm.yy hh:mm (on medium)

Retention periods:
Online      : dd.mm.yy hh:mm
Archive     : dd.mm.yy hh:mm

Checked     : dd.mm.yy hh:mm User: user
```

The fields have the following meaning:

| | |
|---|---|
| **Start** | Start time of this job run |
| **No.** | Job id. |
| **Type** | Type of job run:<br>The following values may occur:<br>▪ **normal**  normal job run<br>▪ **Restart**  Job was part of a restart<br>▪ **Recovery**  Job was part of a recovery net<br>▪ **Execute**  Job was started by an EXE (execute) line command |
| **System** | Name of the system on which the job was executed |
| **JES Class** | SYSOUT class of the job |
| **User** | Execution user |
| **Job Group** | The job group value is taken from the JG parameter in the job's //*AJMS card. Please refer to "The "//* AJMS" control statement" on page 19 for details. |
| **End** | End time of this job run |
| **Size** | Size of this Joblog (number of lines and number of spool blocks) |
| **Archive run** | Date / time when this Joblog was archived |
| **on medium** | Archive medium (Tape unit)) |
| **Retention period** | Date / time when the Joblog expires online and in the archive<br>After this time, the Joblog will be deleted by an archive job. |
| **Checked** | Information, when and by whom the Joblog was first checked<br>If a Joblog is selected via a S(EL) or B(RW) line command, it is considered to be "checked". |

## 11.1.8  Copying a Joblog to a dataset

When you enter the CPY line command for a Joblog, a DD name or a step name, you will get the following panel:

```
AJM/S --------------------------- Create Dataset ----------------------------
CMD===>                                                       SCROLL===> CSR

Group:     GROUP.G1
Net:       NET001
Job:       JOB001A
Procstep:  *
Step:      *
DD Name:   *

Output dataset: user.jobname.jobid.Ddate.Ttime_____


Confirm action with "ENTER" , cancel with "END" or PF3

```

The "Output dataset" field will be preset with a dataset name. You can overwrite it, but please make sure that you have the authorization to allocate this dataset.

When you press the Enter key, the dataset will be created.

# 12    Online / Archive Definitions

In the online / archive definitions, you specify properties for Joblogs, e.g. line limits, retention periods or assignment to a spool dataset.

## 12.1    The online / archive definition filter

The filter panel for online / archive definitions has the following layout:

```
AJM/S ----------------- Filter Online / Archive Definitions ----------------
CMD===>                                                    SCROLL===> CSR

Group:      *_____
Net:        *_____
Job:        *_____

Spool Id.:  *_____
```

Here you can select a list of online / archive definitions by group, net or job name or by the spool id (please refer to "The parameter module" on page 66 to find out how spool ids are defined). The names can be specified generically (abbreviated by "*"). The usage of wildcard characters is not supported.

If you want to get information about the AJM/S logic of group/net assignment please refer to "The group/net assignment" on page 18.

## 12.2    The list of online / archive definitions

The list of online / archive definitions has the following layout:

```
AJM/S -------------------- Online / Archive Definitions --------------------
CMD===>                                                    SCROLL===> CSR

___ Group    : $DEFAULT        Net: $DEFAULT        Job: *
    Spool Id.: SPOOLn     Max. line-#: nnnnnn  Max. OK-Code: code   i

___ Group    : GROUP.G1        Net: NETO*          Job: *
    Spool Id.: SPOOLn     Max. line-#: 001000  Max. OK-Code: code   i
```

The fields have the following meaning:

**Group, net, job**    Group, net and job name
These fields specify for which jobs the assigned settings are valid.
When a Joblog is read in, AJM/S will select the definition with the best match, i.e. the less generic.

**Spool Id.**    Spool id (please refer to "The parameter module" on page 66 to find out how spool ids are defined)

**Max line-#**    Maximum number of lines which will be stored on the AM/S spool
When this maximum is reached, the Joblog is either truncated or the remaining data is written to overflow datasets, depending on the settings in the online / archive definition (see "The online / archive definition" on page 55).

**Max. OK-Code**    Maximum code which will be considered as "not in error"
If the completion code is higher than this value, the Joblog will be marked "in error". This Joblog information may be used as a filter criterion.

**i**    Indicator "Joblog's termination code"
This indicator shows if the Joblog's termination code is determined by the completion code of the last step ("L") or the highest completion code of all steps ("H")

The following line commands are available:

Commands to access the location definition:

**B(RW)**        Display the definition in "browse" mode (see "The online / archive definition" below)
**I(NS)**        Add a new definition
**R(EP)**        Add a new definition (with identical contents)
**S(EL)**        Display the definition in "browse" mode (see "The online / archive definition" below)
**U(PD)**        Display the definition in "update" mode (see "The online / archive definition" below)
**D(EL)**        Delete the definition

## 12.3    The online / archive definition

The online / archive definition panel has the following layout:

```
AJM/S -------------------- Online / Archive Definitions ---------------------
CMD===>                                              SCROLL===> CSR

Group      : $DEFAULT           Net: $DEFAULT   Job: *

Return Code : Display     : _ (Highest/Last)
            : Max. OK-Code : _____

List Size  : Max. line-# : _____
           : Rest in DS  : _ (y/n)      HLQ: _____

Spool      : Spool Id.   : _____
           : Retention   : normal    : __ ___ (Day/Wk/Mon/Gen)
           : Retention   : in error  : __ ___ (Day/Wk/Mon/Gen)

Archive    : Type        : _ (Tape/None)
           : Retention   : ___ ___ (Day/Wk/Mon)


Available spools:
SPOOL1      HLQ.AJMSXXX.SPOOL1
SPOOL2      HLQ.AJMSXXX.SPOOL2
SPOOL3      HLQ.AJMSXXX.SPOOL3
```

The fields have the following meaning:

**Group, net,**    Group, net and job name

**job**           These fields specify for which jobs the assigned settings are valid. The names can be specified
                  generically (abbreviated by "*"). The usage of wildcard characters is not supported.
                  When a Joblog is read in, AJM/S will select the definition with the best match, i.e. the less generic.
                  If you want to get information about the AJM/S logic of group/net assignment please refer to "The
                  group/net assignment" on page 18.


**Display**       Indicator "Joblog's termination code"
                  This indicator shows if the Joblog's termination code is determined by the completion code of the
                  last step ("L") or the highest completion code of all steps ("H")

**Max OK-**       Maximum code which will be considered as "not in error"
**Code**          If the completion code is higher than this value, the Joblog will be marked "in error". This Joblog
                  information may be used as a filter criterion.

**Max line-#**    Maximum number of lines which will be stored on the AM/S spool
                  When this maximum is reached, the Joblog is either truncated or the remaining data is written to
                  overflow datasets, depending on the settings in the "Rest in DS" field.
                  When the line limit has been reached, this will be indicated by a message in the AJM/S log. In the
                  job list, the Joblog will be marked with "LIM". The "limit reached" message will also appear in the
                  Joblog details panel. If overflow datasets have been created, their name(s) will also appear in this

panel (please refer to "The Joblog details" on page 50 for details).

**HLQ**  High-level qualifier for overflow datasets
If, after the line limit has been reached, the data should be written to overflow datasets, you need to specify the datasets' high-level qualifier.
The overflow datasets' name will be **hlq.jobname.jobid.Ddate.Ttime**, it is allocated with a default size of "SPACE=(TRK,(1,50),RLSE)". If more than one overflow dataset has to be created, the second dataset will have an appendix "**.A**", the third "**.B**" and so on. Thus, up to 27 overflow datasets per Joblog may be created.

Note: The started task user of the AJM/S server requires ALTER authorization for these datasets.

**Spool Id.**  Spool id from the list of spools (see "Available spools")
The Joblogs will be written to this spool dataset. If, however, the spool dataset is full, the Joblog will be stored on the first spool in the list with sufficient space.

**Retention (normal)**  Online retention period for Joblogs which did not end "in error"
You can specify the value in days, weeks or months. After this period has expired, the Joblog will be deleted from the spool dataset and written to archive tape by the next archive job.
Alternatively you can specify a number "n" of generations (GEN) that shall be kept online. AJM/S then keeps the Joblog of the last "n" job executions online, if Joblog "n+1" is read in the oldest Joblog entry will be deleted from the spool dataset and written to archive tape by the next archive job.

**Retention (in error)**  Online retention period for Joblogs which ended "in error"
You can specify the value in days, weeks or months. After this period has expired, the Joblog will be deleted by the next archive job.

**Archive Type**  Specify here if the Joblog will be archived on tape ("T") or if it will not be archived ("N")

**Archive Retention**  Archive retention period
You can specify the value in days, weeks or months. After this period has expired, the Joblog will be deleted by the next archive job.

**Available spools**  List of spool ids and the respective datasets (please refer to "The parameter module" on page 66 to find out how spool ids are defined)

# 13    SYSLOG View

AJM/S contains a feature to scan the contents of the system log (SYSLOG). You can select up to three selection criteria. The result will be displayed in "browse" mode and can then be printed or copied to a dataset.

The system log has to be in the AJM/S spool to be scanned. The "End date / time" fields show the date and time of the most current SYSLOG information about the spool. If you want to have more recent data, you may enter a "*" in the end date or in the end time field. AJM/S will then issue a WRITELOG command and wait until the data is read into its spool.

The SYSLOG search facility panel has the following layout:

```
---------------- S Y S L O G   S E A R C H   F A C I L I T Y ----------------
Command ===>

Start date / time            --> dd.mm.yy     hh:mm
End date   / time            --> dd.mm.yy     hh:mm  (* = current time)
Number of records to search  --> 0                   (0 = all)
Number of records to select  --> 0                   (0 = all)
Start value                  -->
Stop value                   -->

Record selection parameters:     (data followed by * = generic search)
   Location --> 1     Length --> 132
       Data -->

     and/or --> AND
   Location --> 1     Length --> 132
       Data -->

     and/or --> AND
   Location --> 1     Length --> 132
       Data -->

Enter Perform search            PF1  Help              PF3  Terminate
```

The fields have the following meaning:

| | |
|---|---|
| **Start date / time** | Date / time at which the scan of the SYSLOG data should start |
| **End date / time** | Date / time at which the scan of the SYSLOG data should end<br>If you specify a "*" in one of the fields, AJM/S will issue a WRITELOG command and wait for some time to make sure that the data was read into its spool. |
| **Number of records to search** | Maximum number of records to be scanned |
| **Number of records to select** | Maximum number of records to be listed in the result dataset |
| **Start value** | The scan will start when this string has been found. |
| **Stop value** | The scan will stop when this string has been found. |
| **Location** | Location of the search data in the SYSLOG record<br>If you specify "1", the scan will begin at the beginning of the record. |
| **Length** | Number of characters to be scanned |

The maximum value is 132, the record length of the SYSLOG.
The scan of a record starts at the "Location" position and is then performed on the next "Length" characters.

**Data**          Search criterion

**and / or**      Boolean operator
With "or", at least one of the conditions has to be true to list a record. With "and", all conditions have to be true to list a record.

After the scan, the result will be displayed in "browse" mode. When you leave the browse mode, you will get to the following panel:

```
 ---------------- S Y S L O G   S E A R C H   F A C I L I T Y ----------------
 Command ===>


    Select requested action by the cursor (x) and press Enter


         - Print SYSLOG information

         - Copy to external data set -->

         - Edit

         - Browse




 Enter Perform action              PF1 Help              PF3 Terminate
```

You can then print the result, copy it to a dataset, edit or browse it.

# 14    Log View

The AJM/S log contains information about both user and server actions. You can specify which information from the AJM/S log you want to display:

```
AJM/S ----------------------- Selection of Log Data -----------------------
CMD===>                                                    SCROLL===> CSR

Group            : *_____       Net: *_____    Job: *_____

Period           :    from: dd.mm.yy hh;mm   to: _____ _____
             or  :    last: __ ___ (Min/Hrs/Day/Wk/Mon)


Processing       : Joblog: Y    System: Y
AJM/S Administr. : Joblog: Y   Listdef: Y  O-Code Def: Y


Output parameters: Format: S (Std/Rep/Lst)     Limit: _____ Records
                 :  Report: _ (Rexx/Edit) _____
                 :   Mode: O (Online/Batch)      Edit: Y       (Y/N)
                 : AJSOUT: _ (Sys/Fix/Tmp/Gen)
                 : Dataset: _____
```

The fields have the following meaning:

**Group, net job**      Selection by group, net and job name
The names can be specified generically (abbreviated by "*"). If the user has no master authorization the first qualifier of the group name must be fully specified, only the second qualifier may be specified generically (e.g. GRP1.*, GRP1.A*). The usage of wildcard characters is not supported. If you want to get information about the AJM/S logic of group/net assignment please refer to "The group/net assignment" on page 18.

**Period**      Time frame for the report
You can either specify a date window or a relative value.

**Processing**      Selection by system action
You can select if you want to see log records for system actions on Joblogs (e.g. when a Joblog is written to a spool dataset) or other system action log records.

**AJM/S**      Selection by user action
**Administration**      You can select by object type, e.g. only information about Joblogs (e.g. the initiation of a reload).

"**Output parameters**" block:

**Format**      Format of log output
The following formats are available:
- **Standard (S)**:
  Display the log data in text format.
- **Report (R)**:
  Display the log data in column-oriented format. You can then specify if you want this report to be post-processed by a REXX or an edit macro.
- **List (L)**:
  List the available log datasets for the selected time window.

**Limit**      Maximum number of records to select

**Report**      Type of report post-processing

When you select the report format "**R**", you can either process the generated report with a REXX ("**R**") or an edit macro ("**E**").

**Mode**    The report can either be displayed directly ("**O**") or you can generate a batch job ("**B**"). If you choose the latter, you can select if you want to directly submit this job or display it in edit mode.

**AJSOUT**    Information about output dataset
The following options are available:
- **S**: route output to SYSOUT
- **F**: Fix name (please specify the name in the "**Dataset**" field)
- **T**: Fix name with time stamp (please specify the first qualifiers in the "**Dataset**" field)
- **G**: Generation dataset (please specify the GDG base name in the "**Dataset**" field)

# 15    System Information

The system information panel has the following layout:

```
AJM/S ------------------------- System Overview -------------------------
CMD===>                                              SCROLL===> CSR
 X ALL   _ INP _ SPL _ BKP _ EDB _ ARC _ AR2

AJM/S System   : AJSn       on host xxxx
Started        : dd.mm.yy   hh:mm
Maintenance Lvl: PAJS210 / QZnnnnn

Read in        :        nnn  Joblogs
               :      n.nnn  Datasets

Interner Index : jobname(jobid)       dd.mm.yy hh:mm src status

Spool          : SPOOL1   hlq.AJMSxxx.SPOOL1                      status
Initialization : dd.mm.yy hh:mm
No. of Blocks  : total:     n.nnn  used:          n.nnn  (  nn %)
No. of Joblogs :              nnn  Compression (blocks):    nn %

Backup datasets: hlq.AJMSxxx.SBKP.#00001                         status
               : Cont.: dd.mm.yy hh:mm - dd.mm.yy hh:mm valid: dd.mm.yy hh:mm

EDB Database   : $ONLIDX$  hlq.AJMSxxx.OIDX
Key Dataset    : $ONLKEY$  hlq.AJMSxxx.OKEY
No. of Records :          nnn   /       nn  Index pages
No. of Bytes   : total:         n.nnn.nnn
               : used:          n.nnn.nnn  (  nn %)
               : fragmented:    n.nnn.nnn  (  nn %)

EDB Database   : $ARCIDX$  hlq.AJMSxxx.AIDX
Key Dataset    : $ARCKEY$  hlq.AJMSxxx.AKEY
No. of Records :          nnn   /       nn  Index pages
No. of Bytes   : total:         n.nnn.nnn
               : used:            nn.nnn  (  nn %)
               : fragmented:      nn.nnn  (  nn %)

Archive Job    : dd.mm.yy  hh:mm - dd.mm.yy  hh:mm
               :       nnn  Joblogs archived
               :       nnn  Joblogs deleted (Online)
               :        nn  Joblogs deleted (Archive)
               :       nnn  Joblogs migrated to Archive level 2

Archive Level 2: $ARCIDX$  hlq.AJMSxxx.AIDX.#nnnnn
Key Dataset    : $ARCKEY$  hlq.AJMSxxx.AKEY.#nnnnn
Status         : status
Initialization : dd.mm.yy  hh:mm
Contents       : total:        n.nnn records
               : Range:  dd.mm.yy  hh:mm  - dd.mm.yy  hh:mm
               : Start:  dd.mm.yy  hh:mm   - dd.mm.yy  hh:mm
               : End:    dd.mm.yy  hh:mm   - dd.mm.yy  hh:mm
               : Retent.: dd.mm.yy  hh:mm  - dd.mm.yy  hh:mm
```

The fields have the following meaning:

| | |
|---|---|
| **AJM/S System** | Name of the AJM/S server<br>This name corresponds to the entry in the AJSNAMES module (see "<br>The list of AJM/S servers (AJSNAMES module)" on page 65). |
| **on host** | LPAR name of system where the AJM/S server runs |
| **started** | Date / time when server was started |
| **Maintenance Level** | FMID and current PTF level of AJM/S server |
| **Read in** | Number of Joblogs and datasets which have been read in since the AJM/S server was started |

| | |
|---|---|
| **Internal Index** | Current contents of the internal index |
| | When AJM/S reads in a Joblog from JES, internal control information of the read in process is kept in the internal index dataset. This control information is released when the read in process for a Joblog was completely finished (Joblog data was written to spool, online index was created). This dataset can keep up to 10 entries. If the spool datasets are full or if another error occurred, the internal index may fill up. If this is the case, a warning message (AJSXW10W) will appear on the console. |
| | Usually, the "Internal Index" information block will be empty or contain just a few entries. These entries show the job name and job id., the time when the read-in has started, the source: |
| | ▪ **JES** JES Spool |
| | ▪ **TP** External system (e.g. output from Unix or SAP) |
| | ▪ **BKP** Backup dataset (Joblog is restored) |
| | and the status: |
| | ▪ Reading in |
| | ▪ Read-in complete |
| | ▪ Writing to spool |
| | ▪ Spool check active |
| | ▪ No space on spool |
| **Spool** | Spool id., spool dataset name and status: |
| | ▪ **open** Spool is currently used |
| | ▪ **locked** Spool is locked, it is available for READ activities only (see "Console interface to the AJM/S server" on page 78 on how to lock / unlock spools) |
| | ▪ **full** Spool is full (you may want to run an archive job to free space on this spool) |
| | Please refer to "AJM/S datasets" on page 16 for a detailed description of the AJM/S spools. |
| **Spool Initialization** | Date and time when this spool dataset was initialized |
| **Number of blocks (spool)** | Number of spool blocks (total and used) |
| **Number of Joblogs (spool)** | Number of Joblogs and their compression factor |
| **Backup datasets** | Information about the available JES spool backup datasets |
| | AJM/S uses backup datasets to keep a copy of each Joblog that was read-in. If a spool gets damaged or a Joblog was deleted inadvertently, its data can be recovered from the backup datasets. Please refer to "Recovering a Joblog from the spool backup datasets " on page 26 for details. |
| | The information consists of the dataset name of the backup dataset and its status: |
| | ▪ **Alloc** Dataset is allocated by AJM/S |
| | ▪ **Open** Dataset is open |
| | ▪ **Full** Dataset is full |
| | It also shows the earliest and latest read-in time of the Joblogs it contains and how long the backup dataset will be retained. After the retention time has elapsed, the dataset is no longer available for recovery. |
| **EDB Database** | DSN of EDB database |
| | $ONLIDX$ is the online database, $ARCIDX$ is the current archive database. |
| **Key Dataset** | DSN of EDB key dataset |
| **# of Records** | Number of records in this AJM/S database |

**Index Pages**   Number of pages used by the index of this AJM/S database

**# of Bytes**   Total number of allocated bytes, bytes in use and fragmentation on the AJM/S database

**Archive Job**   Information about the latest archive job run
Date and time of the job start and end is shown. The statistics section shows how many Joblogs were archived, deleted and moved to archive level 2 databases by the last archive job.
If an archive job is currently active there will be more information displayed concerning its current status.
Please refer to "The AJM/S archive job" on page 14 for a detailed description of the archive job.

**Archive Level 2**   Information about the archive level 2 databases
This block shows the dataset names of the EDB database and its key dataset. The status is shown:

- **inactive**   The archive level 2 database is currently not used by AJM/S. Most of the time, an archive level 2 database will have this status.
- **open**   This archive level 2 database is currently open because of a user request (e.g. a filter was selected which selects Joblogs that might be found on this archive database). If an archive level 2 database is open, the number of users which use it currently is displayed, too.
  After an archive level 2 database was used, it will remain open for some time.
- **in error**   This archive level 2 database is in error and cannot be used.
  The error status can be reset via "F ajs, CLEAR=..." from the console. Please refer to "Console interface to the AJM/S server" on page 78 for a description.
- **locked**   This archive level 2 database is locked.

In the second part of the block, you will find information about when the database was created, how many Joblogs it contains and which are the lowest start and the highest end dates of these Joblogs.
Please refer to "AJM/S datasets" on page 16 for a detailed description of the archive databases.

# 16    Software Status

The software status shows an overview of the modules which are loaded in the AJM/S server address space. If available, the FMID, PTF level and the date of the assembly are displayed.

This information is useful for debugging purposes, e.g. to find out if a certain level of a module is really active.

```
AJM/S ------------------------ Software Information ------------------------
CMD===>                                                 SCROLL===> CSR
AJS0517I - AJSADSTK: 57 modules
Module: AJSACCMD  FMID: PAJS210   PTF Level: PAJS210   from: 06.05.10 11:45
Module: AJSARMON  FMID: PAJS210   PTF Level: PAJS210   from: 18.11.10 11:28
Module: AJSARRLD  FMID: PAJS210   PTF Level: PAJS210   from: 19.11.10 10:40
Module: AJSA2MON  FMID: PAJS210   PTF Level: PAJS210   from: 16.04.10 13:50
Module: AJSBFCRA  FMID: PAJS210   PTF Level: PAJS210   from: 19.04.10 11:06
Module: AJSBFDDS  FMID: PAJS210   PTF Level: PAJS210   from: 07.06.10 13:40
Module: AJSBFIDC  FMID: PAJS210   PTF Level: PAJS210   from: 01.03.10 14:47
Module: AJSBFLCK  FMID: PAJS210   PTF Level: PAJS210   from: 16.11.10 14:48
Module: AJSBFMON  FMID: PAJS210   PTF Level: QZ10068   from: 02.12.10 14:26
```

# 17    Parameters

The parameters for the AJM/S server are defined via the parameters menu. There are three menu items:

```
AJM/S --------------------------- Parametrics -----------------------------
CMD===>                                                  SCROLL===> CSR

Selection: __   1.   Create server list
                2.   Create parameter module
                3.   Allocate / initialize datasets
```

The following list is an overview of all parameter dialogs. Please refer to the indicated sections for details.

**1      Create server list**
Create a list of all AJM/S servers with which you want to communicate
Details are described under "The list of AJM/S servers (AJSNAMES module)" below.

**2      Create parameter module**
Create module which contains all parameters for an AJM/S server.
Details are described under "The parameter module" on page 66.

**3      Allocate / initialize datasets**
Allocate and initialize the datasets (e.g. databases) for an AJM/S server
Details are described under "The allocation and initialization of datasets" on page 72.

## 17.1    The list of AJM/S servers (AJSNAMES module)
Use this dialog to define all AJM/S servers with which you want to communicate.

Note: An error message "**CSV003I REQUESTED MODULE AJSNAMES NOT FOUND**" will occur when you initially create this module. This message can be ignored.

The list of AJM/S servers has the following layout:

```
AJM/S ------------------------ List of AJM/S Systems -------- Row 1 to n of n
CMD ===>                                                 SCROLL===> CSR

    Name of LOADLIB: _____
+-- Commands: R(epeat) I(nsert) D(elete)
!
V   AJM/S Name  Parameter Module  Description
   --------------------------------------------------------------------------
_   AJS1____    AJSXxxxx          AJM/S System 1_____
```

The fields have the following meaning:

| | |
|---|---|
| **Name of LOADLIB** | DSN of the load library in which the AJSNAMES module will reside<br>This load library must be available to the AJM/S server address space and to the TSO/ISPF users. |
| **AJM/S Name** | Name of AJM/S Server (identifier)<br>It is used to select the AJM/S server in the EXEC parameter of the start up procedure, the daily archive job and the batch interface as well as in the session options (see "Session Options" on page 41).<br>It is part of the server ready message and the termination message to enable reactions of a system automation tool. The name of the selected server is displayed in the right upper corner of the main menu. |

| **Parameter** | Name of the parameter module for this AJM/S server |
| **Module** | The parameter module itself is created in the next step (see "The parameter module" below). |

| **Description** | Description text for this AJM/S server |
| | This value will be displayed in the list of available AJM/S server in the user's session options (see "Session Options" on page 41). |

The following line commands are available:

**R**     Create a new line (with identical contents)
**I**     Create a new line
**D**     Delete a line

When you press **PF3**, a job is generated and displayed for submit. Note: Please make sure that the second dataset in the **SYSLIB** DD statement is the name of the macro library which has been delivered with AJM/S. The job should end with a return code of zero. Please note that you might need to do an "**LLA REFRESH**" to make the new module available.

## 17.2    The parameter module
To create or change a parameter module, you first need to select the load library and member names:

```
AJM/S ----------------------- Create Parameter Module -----------------------
CMD===>                                                       SCROLL===> CSR

Input  : Dataset: INPUT.DATA.SET_____
       : Member:  AJSPARMX

Output : Dataset: OUTPUT.DATA.SET_____
       : Member:  AJSPARMY
```

If you do not specify a value in the "**Output**" block, the parameter module will be displayed in "browse" mode.

For installation purposes, an initial parameter module is delivered with the AJM/S software. To use this module as input, please specify the name of the AJM/S installation library in the "**Dataset**" field and the module name **AJSINPRM** in the "**Member**" field. Then specify your local load library and a local member name in the "**Output**" block.

The load library which you use as output dataset has to be accessible by the AJM/S server address space, the daily archive job, the batch interface and the TSO/ ISPF users. The member name has to correspond to the AJM/S server entry in the AJSNAMES module (see "The list of AJM/S servers (AJSNAMES module)" on page 65).

The parameter module definition panel has the following layout:

```
AJM/S ---------------------- Create Parameter Module -----------------------
CMD===>                                                    SCROLL===> CSR

Space Calculat.: No. of Joblogs per day   :
               : Retention (Online)     :      days
               : Retention (Archive)    :      days
               : No. of lines per Joblog :

Started Task  : NCI VTAM Application-ID  : AP??AJS1
              : NCI Timeout (short/long) : 030 300 seconds
              : Language System Messages : EN
              : "Waiting for work" msg.  : Y  (y/n)

JES           : Classes: 0
Default       : Group  : $DEFAULT          Net       : $DEFAULT

Process Joblog : Compression Mode     : I   E(nhanced) / I(BM) / N(one)
               : Write Syslog after   : 060 minutes (0=no Syslog)
               : LPD Name             : _____

Overflow DS   : Size                 : 001 / 050 T (Trks / Cyls)

Archive       : Tape:            HLQ: ???????? Unit: CTAPE
              : New Generation after: 030   days

Archive Level 2: New Generation after: 030   days
               : Minimum Size        : 01000 records
               : Parallel Access     : 02    databases
               : Close after         : 015   minutes
               : HSM backup available: Y     Y(es)/N(o)
               : Max. # of backups   : 64    datasets

Administration : QuickRef installed  : N     Y(es)/N(o)
               : Check via JESSPOOL   : N     Y(es)/N(o)
               : Check DD Names       : N     Y(es)/N(o)
               : Refr. Display after  : 005   seconds
___  Language  : GE deutsch
___              EN english

Datasets      : DFSMS-managed        : Y     Y(es)/N(o)

Online Index  : ????????.AJMS.OIDX
Online Keys   : ????????.AJMS.OKEY
Online Backup : ????????.AJMS.OBKP

Archive Index : ????????.AJMS.AIDX
Archive Keys  : ????????.AJMS.AKEY
Archive Backup : ????????.AJMS.ABKP

1. Log Dataset : ????????.AJMS.LOGFILE1
2. Log Dataset : ????????.AJMS.LOGFILE2
Log Archive GDG: ????????.AJMS.LOGFILE.ARCHIVE

Internal Index : ????????.AJMS.IIDX
Spool Backup  : ????????.AJMS.SBKP
              : Retention: 05 days
___  Spool DSN : Id: SPOOL1   DS: ????????.AJMS.SPOOL1
___              Id: SPOOL2   DS: ????????.AJMS.SPOOL2
```

The fields have the following meaning:

**Space calculation**    Size estimates for the dataset allocation
Please specify here how many Joblogs you plan to read per day into your AJM/S database and how many lines they have in average. Specify also how long the Joblogs will remain online and how long they will be kept in the archive.
Please refer to "The allocation and initialization of datasets" on page 72 for a description on how these estimates are used for dataset allocation.

**NCI VTAM Application-ID**    Name of the VTAM APPLID that he AJM/S server uses for communication

| | |
|---|---|
| **NCI Timeout** | Timeout value for communication between administration client (TSO/ISPF user, batch interface) and server. When this timeout value has been reached, the communication will be disconnected. Only the administration clients use these parameters, the server is not affected. |
| **Language of system messages** | Language for the messages which the AJM/S server writes to SYSLOG or to the Joblog<br>The languages which are currently available are **EN** (English) and **GE** (German). |
| **"Waiting for work" msg.** | Please specify here if the AJM/S server should issue a message if there are no more Joblogs to be read in. Recommended value: **N**<br>If there is a need to trace the data traffic, the message can also be activated or deactivated dynamically by console command. |
| **JES classes** | Up to 8 JES SYSOUT classes<br>The AJM/S server requires exclusive control of the assigned classes. Because a Joblog usually consists of more than one dataset, the results would be unpredictable, if the AJM/S server got only a part of them, cf. "The JES spool reader task" on page 21.<br><br>Note: The JES spool reader task connects to JES as an external writer function, therefore all JES SYSOUT classes that are assigned to AJM/S must have the attribute "HOLD=EXTWTR". |
| **Default** | Default values for group and net name<br>If the job has not been started by AJM and there is no //*AJMS card with a GROUP parameter, these values are substituted for the group and net name. |
| **Compression Mode** | Please select how the Joblogs should be compressed when they are written to the AJM/S spool:<br>■ **I** IBM compression method (callable service CSRCESRV) is used<br>   Performs quite well, good compression rate<br>■ **E** Internal method is used<br>   Uses more CPU than **I**, may have a slightly better compression rate<br>■ **N** no compression<br>   No additional CPU consumption, but needs more space on the spools<br>We recommend the IBM compression method because it provides a good compression rate with moderate performance impact. Depending on the contents of the Joblogs, a compression rate of ca. 40 per cent can be achieved. |
| **Write Syslog after** | Syslog write interval<br>AJM/S will automatically issue a WRITELOG console command every n minutes. If you do not want to automatically route your SYSLOG to AJM/S, please specify a value of zero. |
| **LPD Name** | Name of the LPD ("Line Printer Daemon") for the output from other platforms<br>AJM/R can route output from AJM-initiated jobs to AJM/S via an LPD. If you want to use this function, please specify here the name of the LPD. For details about output from other platforms, please refer to "Routing a Joblog to AJM/S" on page 18. |
| **Overflow DS** | Size of overflow datasets<br>When the line limit is reached for a Joblog and its online / archive definition specifies "Rest in DS", overflow datasets will be created. Please specifiy here the primary and secondary space and the unit for this allocation. |
| **Archive** | Please specify here the high level qualifier and the unit name for the tape archive. Please specify also after how many days the generation should be changed. Only the daily archive job uses these parameters, the server is not affected. |

Note: If you specify "DUMMY" as unit name, no archive generation datasets will be allocated and thus no physical archiving will be processed.

**Archive Level 2**

In this block you can specify the parameters for the archive databases level 2:

- **New generation**
  Please specify in which time period (n days) the archive databases shall be organized. Information about jobs whose start time is within the last 0 – n days is kept in archive database level 1, information about jobs whose start time dates back longer than n days is kept in an archive database level 2. The archive databases level 2 are dynamically created by the AJM/S server in intervals of n days, the dataset name used is the name of the archive database level 1 followed by a suffix ".#nnnn" (nnnn = sequence number).
  Note: A new generation will also be created if an archive database level 2 exceeds its maximum capacity of 2 million records before the interval of n days was reached.
  **Minimum size**
  Please specify here when an archive-level 2 database shall be merged with the subsequent database. If the number of valid records is less than the minimum size, the server moves the remaining records to the subsequent database and then deletes the empty database. This checking is done by the AJM/S server during startup processing only. Once the startup process is complete there will be no more checking until the next startup of the server.
- **Parallel access**
  Please specify here how many archive-level 2 databases can be opened for parallel access.
- **Close after … minutes**
  Please specify here after how many minutes an archive-level 2 database which is no longer accessed should be closed.
- **HSM Backup available**
  Please specify here if archive-level 2 databases can be backed up via HBACKDS. If you specify N the backup is taken via an internal logic.
- **Max. # of backups**
  If the archive-level 2 databases can not be backed up via HBACKDS, please specify here the maximum number of backup datasets which should be kept.

**Check via JESSPOOL**

If you specify N (default) the access to a Joblog will be checked against RACF class $AJM. If you specify Y it will be checked against RACF class JESSPOOL. The entities that are created for authorization checking differ depending on this selection.
Please refer to "Authorization checking" on page 76 for details.

**Check DD Names**

If you specify **N** (default) the access to a Joblog will be checked once. If you specify **Y** each dataset of the Joblog is checked separately. The entity which is checked contains the DD name as additional information.
Please note that specifying **Y** will lead to a higher amount of RACF third party checks and therefore will affect the performance of the AJM/S system.

**Refr. Display after**

Refresh interval for administration requests
If the user requests a refresh (e.g. if he presses the **Enter** key in a list), the request will only be sent to the AJM/S server if at least this interval has elapsed since the last request.
Only the administration clients use this parameter, the server is not affected.

**Languages**

Language for the AJM/S administration interface
The languages which are currently available are **EN** (English) and **GE** (German).
Only the administration clients use this parameter, the server is not affected.

**Datasets DFSMS-**

Please specify here whether the AJM/S datasets will reside on DFSMS-managed volumes (**Y**) or not (**N**).

**managed**

| | |
|---|---|
| **Online Index** | Dataset name of the EDB database (online database<br>For the allocation of this dataset, please refer to "The allocation and initialization of datasets" on page 72.<br><br>Note: The started task user of the AJM/S server requires ALTER authorization for this dataset. |
| **Online Keys** | Dataset name of the EDB key dataset (online database)<br>For the allocation of this dataset, please refer to "The allocation and initialization of datasets" on page 72.<br><br>Note: The started task user of the AJM/S server requires ALTER authorization for this dataset. |
| **Online Backup** | GDG base entry for the creation of backup datasets (online database)<br>For the allocation of this dataset, please refer to "The allocation and initialization of datasets" on page 72.<br><br>Note: The started task user of the AJM/S server requires ALTER authorization for this dataset. |
| **Archive Index** | Dataset name of the EDB database (archive database)<br>For the allocation of this dataset, please refer to "The allocation and initialization of datasets" on page 72.<br><br>Note: The started task user of the AJM/S server requires ALTER authorization for this dataset. |
| **Archive Keys** | Dataset name of the EDB key dataset (archive database)<br>For the allocation of this dataset, please refer to "The allocation and initialization of datasets" on page 72.<br><br>Note: The started task user of the AJM/S server requires ALTER authorization for this dataset. |
| **Archive Backup** | GDG base entry for the creation of backup datasets (archive database)<br>For the allocation of this dataset, please refer to "The allocation and initialization of datasets" on page 72.<br><br>Note: The started task user of the AJM/S server requires ALTER authorization for this dataset. |
| **1$^{st}$ Log Dataset** | Log dataset (first one in a set of two which are written alternately)<br>For the allocation of this dataset, please refer to "The allocation and initialization of datasets" on page 72.<br><br>Note: The started task user of the AJM/S server requires ALTER authorization for this dataset. |
| **2$^{nd}$ Log Dataset** | Log dataset (second one in a set of two which are written alternately)<br>For the allocation of this dataset, please refer to "The allocation and initialization of datasets" on page 72.<br><br>Note: The started task user of the AJM/S server requires ALTER authorization for this dataset. |
| **Log Archive GDG** | GDG base entry for the AJM/S log archive<br>For the allocation of this dataset, please refer to "The allocation and initialization of datasets" on |

Note: The started task user of the AJM/S server requires ALTER authorization for this dataset.

**Internal Index**      Dataset name of the internal index

Note: The started task user of the AJM/S server requires ALTER authorization for this dataset.

**Spool Backup**      Dataset name prefix for JES spool backup datasets
AJM/S creates datasets that start with this prefix plus one qualifier (#nnnnn). These datasets contain a copy of all Joblogs that are read in from JES spool. If necessary (e.g. after a physical damage on a Spool dataset) the Joblogs can be recovered based on this dataset.
Please also specify how many days the spool backup datasets shall be available for recovery purposes.

Note: The started task user of the AJM/S server requires ALTER authorization for this dataset.

**Spool DSN**      Spool identifier (DD name) and dataset name of the AJM/S spools
You can use I(NS) or R(EP) to add spools or D(EL) to delete spools from this list.
Please refer to "AJM/S datasets" on page 16 for details.

Note: The started task user of the AJM/S server requires ALTER authorization for this dataset.

When you press **PF3**, a job is generated and displayed for submit. Note: Please make sure that the second dataset in the **SYSLIB** DD statement is the name of the macro library which has been delivered with AJM/S. The job should end with a return code of zero. Please note that you might need to do an "**LLA REFRESH**" to make the new module available.

If the AJM/S server is currently active and the changed parameters are relevant for the server, you need to stop and re-start it to make the new parameters available.

## 17.3    The allocation and initialization of datasets

The datasets which are required for the AJM/S server are allocated via the following dialog:

```
AJM/S ---------------- Allocation / Initialization of Datasets ---------------
CMD===>                                                     SCROLL===> CSR

Information for Space Calculation:
No. of Joblogs per Day : _____
Retention (Online)     : ___ days
Retention (Archive)    : ___ days
No. of Lines per Joblog: _____

Select the datasets you want to allocate / initialize:

Online Datasets:
_ E  HLQ.AJMSXXX.OIDX                        Volser: _____
_ E  HLQ.AJMSXXX.OKEY                        Volser: _____
_ E  HLQ.AJMSXXX.OBKP                        GDG Limit: ___

Archive Datasets:
_ E  HLQ.AJMSXXX.AIDX                        Volser: _____
_ E  HLQ.AJMSXXX.AKEY                        Volser: _____
_ E  HLQ.AJMSXXX.ABKP                        GDG Limit: ___

Log Datasets:
_ E  HLQ.AJMSXXX.LOGFILE1                    Volser: _____
_ E  HLQ.AJMSXXX.LOGFILE2                    Volser: _____
_ E  HLQ.AJMSXXX.LOGFILE.ARCHIVE            GDG Limit: ___

Spool Datasets:
_ E  HLQ.AJMSXXX.IIDX                        Volser: _____
_ E  HLQ.AJMSXXX.SPOOL1                      Volser: _____
_ E  HLQ.AJMSXXX.SPOOL2                      Volser: _____
_ E  HLQ.AJMSXXX.SPOOL3                      Volser: _____
```

You use the previously created parameter module as input. The size estimates are taken from the parameter module and can be overtyped if necessary. The dataset names are displayed in a list. If a dataset already exists, this will be indicated by an **E** in front of the dataset name.

Select the datasets which you want to allocate via an **S** line command, enter the **VOLSER** (only needed if not SMS-managed) or **GDG limit** value and press the **Enter** key. A job is generated and displayed for submit. You can manually adapt the values for the allocated space if necessary.

Note: When the log datasets are initialised an SD37 abend occurs. This abend is intentional and can be ignored. Successful dataset initialisation is indicated by the **AJSLG04I** message.

# 18 Installation of AJM/S 2.1

## 18.1 Summary of changes
The new AJM/S version 2.1 contains the following new functions:

- Joblogs from AJM/R-initiated jobs (e.g. Windows, Unix, SAP) can now be received and processed by AJM/S.
- To find out how many elements are in a list, the following features were implemented:
    - In your session options you can now specify if you want to get a message the first time a list is displayed. This message will then show the number of elements in this list.
    - You can also use the new COUNT (or CNT) primary command to get the number of elements in the current list.
- The JESSPOOL resource class may now be used instead of $AJM to handle access to Joblogs on the AJM/S spool.
- If you are not authorized to view SYSLOG data, the topic is suppressed in the main menu.
- Performance improvements for several internal functions (e.g. spool repair)
- AJM/S Spool processing improved:
    - Lock / unlock commands introduced
    - Load balancing logic reworked
- Improved logic for creation and repair of tape archives
- Automatic cleanup of obsolete archive tapes
- Size of overflow datasets defined via parameter module

## 18.2 Migration
The new version 2.1 contains all changes and enhancements which were introduced in version 1.5. There are no migration steps to take when upgrading from version 1.5 with a PTF level of QZ09001 or higher to version 2.1. You may, however, want to check your parameter settings (see "The parameter module" on page 66) to make sure that the parameters added with this PTF level are set correctly.

## 18.3 Installation package
For the installation of AJM/S 2.1, you will receive a package which contains the following components:

- Software packages for:
    - AJM/S 2.1
    - EDB (database)
    - NCI (communication / middleware)
    - JOE (miscellaneous)
- Documentation:
    - AJM/S 2.1 installation guide
    - AJM/S 2.1 quick reference card
    - AJM/S 2.1 manual
    - installation guides and manuals for the pre-requisite products
- Miscellaneous information, e.g. contact information, general terms and conditions

The package has an HTML index page which lists the contents by product.

## 18.4 SMP/E installation
For AJM/S and the pre-requisite products EDB, NCI and JOE, please select the product from the main page. Upload the product package to your system and follow the instructions in the installation procedure guide.

Important note: Please install the EDB/NCI function **before** applying any PTFs to it. Thus, you make sure that the modules are linked correctly.

Please make sure that the modules of these products reside on load libraries which are APF authorized. Those load libraries should either be in the LINKLIST concatenation or they need to be specified as STEPLIBs in the AJM/S server STC and as ISPLLIBs for the TSO / ISPF user.

For the pre-requisite products EDB, NCI and JOE, no further customization is required.

## 18.5    Customizing AJM/S 2.1

To install AJM/S 2.1, the following steps are required:

| What to do | Additional information |
| --- | --- |
| Define a started task user for the AJM/S server | Make sure that the started task user has ALTER authorization for all datasets that are used for operation |
| Define authorization in classes DATASET, JESSPOOL, $AJM | See "Authorization checking" on page 76 |
| Customize the REXX to call the AJM/S administration interface | Sample in SAMPLIB member AJSISPF<br>Additional LIBDEF statements might be required. You might want to add the call to the customized REXX to your local ISPF command table or to a local selection panel. |
| Create the AJM/S server list | Call the previously customized REXX with parameter INST. Select 32 and 1 (see " The list of AJM/S servers (AJSNAMES module)" on page 65 for details). |
| Create the AJM/S parameter module | Call the previously customized REXX with parameter INST. Select 32 and 2 and use the AJSINPRM member from the AJM/S load library as input (see "The parameter module" on page 66 for details). |
| Allocate the AJM/S datasets | Call the previously customized REXX with parameter INST. Select 32 and 3 (see "The allocation and initialization of datasets" on page 72 for details). |
| Setup STC in PROCLIB | Sample in SAMPLIB member AJMS<br>Adapt the name of the AJM/S Server in the "PARM=" statement |
| Define VTAM APPLID for the STC | Sample in SAMPLIB member AJSVTAM |
| Define the VTAM ACBs for the ISPF clients | Sample in SAMPLIB member AJSSCLVT |
| Start the AJM/S server | see "Console interface to the AJM/S server" on page 78 for a list of commands available with the AJM/S started task |
| Define the daily archive job in the job scheduling system (e.g. AJM) | Sample AJSARJOB in SAMPLIB<br>Adapt the JCL and define the start options and the JCL member to the job scheduling system |
| Define a compress job in the job scheduling system (e.g. AJM) | Sample AJSDBCMP in SAMPLIB<br>Adapt the JCL and define the start options and the JCL member in the job scheduling system. It is recommended to run the job after the daily archive job has terminated normally. Do not run the compress job while the daily archive job is active! |

You can now call the AJM/S administration interface via the customized REXX.

# Appendix

# A    Authorization checking

## A.1    Objects in the AJM/S database

Objects in the AJM/S database (e.g. dumps, restore profiles) are protected via profiles in the general resource class **$AJM**. The authorization checking is done by the AJM/S server task. The following list contains all entities which are used to check the authorization:

| Object | Action | Entity | Authorization | Comments |
|---|---|---|---|---|
| **Joblog** | list, display information | group.#OUT.net.job | READ | "Owner", i. e. job execution user, is always authorized |
| **Joblog** | read data | group.#OUT.net.job or group.#OUT.net.job.ddn | READ | "Owner", i. e. job execution user, is always authorized |
| **Joblog** | delete Joblog | group.#OUT.net.job | UPDATE | "Owner", i. e. job execution user, is always authorized |
| **Online / archive definition** | list or read | group.#LDF.net.job | READ | User, system administrator is always authorized |
| **Online / archive definition** | add, update, delete | group.#LDF.net.job | UPDATE | |
| **Online / archive definition** | add, update | #GLOBAL.#LDF | UPDATE | additionally for definitions with longer retention time or higher line limit |

Table 2:    List of authorizations for AJM/S objects

If you want to trace which entities are checked, you can activate a trace for the authorization checking. The console command "**F AJS,RACFTRC=ON/OFF**" activates / deactivates the security trace. When a security trace is active, the AJM/S server writes messages to the AJM/S log for each security check it performs. Please refer to "Log View" on page 59 for a description of the AJM/S log.

## A.2    Additional checking

In addition to the profiles described under "Objects in the AJM/S database" above, the following authorizations need to be defined:

| Authorization for | Entity | Class | Authorization | Remarks |
|---|---|---|---|---|
| "Master" dialogs | $AJS.#GLOBAL | $AJM | READ | checked in user's address space |
| AJM/S log access | $AJS.#LOG | $AJM | READ | Access to all log records for non-MASTER users, checked by AJM/S server |
| PSI server datasets | dsn | DATASET | ALTER | Access of AJM/S STC to the AJM/S datasets (see "The allocation and initialization of datasets" on page 72) |
| PSI database backup | dsn | DATASET | READ | Access of AJM/S archive job to backup |

| Authorization for | Entity | Class | Authorization | Remarks |
|---|---|---|---|---|
| | | | | copy |
| PSI archive level 2 databases | dsn | DATASET | READ | Access of AJSAUREP job to restore tape information |
| PSI archive tapes | dsn | DATASET | ALTER | Acess of AJM/S archive job to archive tapes |
| | | | READ | Access of AJSAUREP job to restore tape information |
| Joblog read / delete | ** | JESSPOOL | ALTER | Access of AJM/S server to all Joblogs that should be read in from the JES spool |
| Writelog command | MVS.WRITELOG | OPERCMDS | READ | If the AJM/S server is customized to issue "WRITELOG" commands |

Table 3:        List of additional authorization checking

# B  Console interface to the AJM/S server

The following commands can be used to communicate with the AJM/S server via the console:

| Command | Description |
|---|---|
| F ajs, HELP | display all available commands |
| F ajs, STOP / P ajs | stop the AJM/S server |
| F ajs, STAT | show status information |
| F ajs, BACKUP = ONLINE / ARCHIVE | create a backup of the AJM/S online or archive database to a GDG member |
| F ajs, COMPRESS = ONLINE / ARCHIVE | compress the AJM/S online or archive database |
| F ajs, RACFTRC = ON / OFF | start / stop trace of security checks |
| F ajs, WAITMSG = ON / OFF | show / suppress the "waiting for work" message of the AJM/S reader (please refer to "The parameter module" on page 66 about this message) |
| F ajs, LOCK = name | lock a spool dataset (name = spool id.) Locked spools will no longer be used to store new Joblogs. |
| F ajs, UNLOCK = name | unlock a spool dataset (name = spool id.) |
| F ajs, LOCK = #nnnnn | lock access to archive level 2 database (nnnnn = number of the database) |
| F ajs, UNLOCK = #nnnnn | unlock access to archive level 2 database (nnnnn = number of the database) |
| F ajs, CLEAR = #nnnnn | clear error status of an archive level 2 database and open database (nnnnn = number of the database) |
| F ajs, JESRDR = ACT / INACT | start / stop the JES reader of the AJM/S server When the JES reader is stopped, AJM/S will no longer read any Joblogs from the JES spool. |
| F ajs, CHECK= name | start consistency check for a spool file (see "Checking and repairing a spool" on page 28 for details) |
| F ajs, RECOVER = nnH / nnD, JOB=jobn, REPLACE=NO / YES | recover Joblogs from the AJM/S spool backup datasets Use nnH or nnD to specify the interval in hours or days, resp. The interval is calculated from the time when the command is issued, no alignment to full hours or days. Two digits are required. Parameters JOB and REPLACE are optional. Job names may be specified generically when abbreviated by an asterisk. Defaults: JOB=*,REPLACE=NO |
| F ajs, STOP=SPLDOC | stop currently processed "Spool Doctor" function (check, recover) |

Table 4:    List of console commands for the AJM/S server

The following commands should only be used if requested by the AJM/S software development team:

| Command | Description |
|---|---|
| F ajs, LOGARCH = ACT / INACT / BOTH | take an archive copy of the log files |
| F ajs,LOGINDEX | force rebuild of log index |
| F ajs, KILL = subtask | stops a specific subtask |
| F ajs, EDBTRACE = BEFORE / AFTER / OFF | start / stop a trace of the EDB processing in the AJM/S server |
| F ajs, SPMTRC = ON / OFF | start / stop a trace of the spool-space manager |
| F ajs, VSAMTRC = ON / OFF | start / stop a trace of the VSAM processing of the AJM/S spool writer |

Table 5:    List of special console commands

# C      Additional (batch) utilities

## C.1      AJSAICMD: Batch / command interface

The AJSAICMD utility may be used for the following purposes:

- **ADDRESS**: address a specific AJM/S server
- **PROFILE**: set profile information (e.g. message level)
- **JOBLIST**: list Joblogs from the AJM/S online database
- **JOBREAD**: read Joblogs from the AJM/S spool
- **LOGLIST**: List AJM/S log datasets
- **LOGREAD**: Read AJM/S log datasets

A sample of the AJSAICMD utility can be found in the AJSBATCH member in the SAMPLIB which is delivered with the AJM/S software.

# D    Problem management

## D.1    Error messages
Error messages in AJM/S have the following structure:

```
AJSnnnns – module name: message text
```

The message parts have the following meaning:

**AJS**              indicates that this messages comes from the AJM/S software

**nnnn**             Four alphanumeric characters which make the message id. unique

**s**                Severity
                     The following severity codes may occur:
                     ▪   **I**: Information
                     ▪   **W**: Warning
                     ▪   **E**: Error
                     ▪   **A**: Serious error
                     ▪   **Q**: Action required (e.g. reply on console)
                     ▪   **T**: Trace

**module name**      Name of the module which has created this message

**message text**     Text of this message

A description of all AJM/S messages is also available for QuickRef.

## D.2    Support in case of software problems
If you encounter a problem with the AJM/S software, please collect the following information:

▪   **Detailed description**:
    Please collect all information which is relevant to debug this problem, e.g. which steps you have performed before the error has occurred. Also, you could add hardcopies or, for example, the dump dataset which you have received from the central AJM/S.
▪   **Messages**:
    Please collect any messages from the Joblog of the AJM/S server, SYSLOG and the AJM/S administration interface which are related to the error. You might include them directly in your mail or you might create a txt file.
▪   **Symptom dump**:
    This information can be found in the Joblog of the AJM/S server or in SYSLOG. Please put this data into your mail or in a txt file.
▪   **Dump dataset**:
    Whenever a severe problem occurs, the AJM/S server will **automatically** create an SVC dump. You might need to copy this dump dataset to another dataset to make sure that it does not get overwritten.
    Please send this dump dataset in TERSE format (please refer to the IBM manuals for a description).
    If the dump occurs in the AJM/S administration interface, please enable the dump via the "**environ**" primary command in ISPF. After that, please allocate a dump dataset under **SYSUDUMP** and **SYSABEND**. Make sure that it has **DISP=MOD** to gather all dump data. After the dump has been taken, please re-LOGON to close the dump dataset and send it to the software development team.
▪   **Traces**:
    The software development team might require trace information. If this is the case, you will receive detailed information about how and where this trace is created. Please send the resulting dataset by mail.

# E    Glossary

**Spool**
Either the JES spool from which Joblogs are read or the AJM/S spool on which Joblogs reside while they are online

**Online**
A Joblog is considered to be online as long as it resides on the AJM/S spool. It is deleted by the archive job when its retention period has exceeded but, depending on the online / archive definitions, it will remain available in the AJM/S archive.

**Archived**
A Joblog can be archived depending on its online / archive definitions. When it is no longer on the AJM/S spool, it can be reloaded from the archive. It will then remain online until the next archive job is executed.