Entire Output Management

System Administration

Version 3.5.1

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ADABAS & NATURAL

This document applies to Entire Output Management Version 3.5.1 and all subsequent releases.

Specifications contained herein are subject to change and these changes will be reported in subsequent release notes or new editions.

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System Administration

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Calendars	Describes the use of calendars and the functions to define them.
Physical Printers	Describes the attributes of physical printers and the functions to define them.
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Task Management	Describes how to start various tasks.
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Using Adabas Vista	Describes considerations for the use of Adabas Vista.

1 About this Documentation

Document Conventions

Convention	Description
Bold	Identifies elements on a screen.
`Monospace font`	Identifies service names and locations in the format *`folder.subfolder.service`*, APIs, Java classes, methods, properties.
`Italic`	Identifies: Variables for which you must supply values specific to your own situation or environment. New terms the first time they occur in the text. References to other documentation sources.
`Monospace font`	Identifies: Text you must type in. Messages displayed by the system. Program code.
{ }	Indicates a set of choices from which you must choose one. Type only the information inside the curly braces. Do not type the { } symbols.
|	Separates two mutually exclusive choices in a syntax line. Type one of these choices. Do not type the | symbol.
[ ]	Indicates one or more options. Type only the information inside the square brackets. Do not type the [ ] symbols.
...	Indicates that you can type multiple options of the same type. Type only the information. Do not type the ellipsis (...).

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2 Invoking System Administration

To invoke System Administration:

1 Enter 8 in the command line of the **Main Menu**.

The **System Administration** menu is displayed:

```
 11:12:22            **** Entire Output Management ****           2018-11-11
User ID XYZ                - System Administration -

 Maintenance Functions

  1 System Defaults
  2 Users
  3 Copy Natural Security Users
  4 Calendars
  5 Physical Printers

 Control Functions

  6 Monitor Start/Close
  7 Start Archiving Task
  8 Start Reviving Task
  9 Start Condense Task

  10 Transfer Objects                                                    ↩

  11 VTAM NOMVPRNT Management
Please select option.
 Command => _____________________________________________________________
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help        Exit  Flip                                          Menu
```

2 To invoke a function from the **System Administration** menu, you enter its number in the command line.

These functions are only available to you if you are a system administrator.

3 Defaults

As a system administrator, you can set system-wide defaults for various objects and functions.

This section covers the following topics:

Invoking Default Maintenance

To invoke default maintenance:

1 Enter 1 in the command line of the **System Administration** menu.

The **Default Definition Menu** is displayed, providing the following functions:

```
 1 - System defaults
 2 - Monitor defaults
 3 - Report processing defaults
 4 - Bundle processing defaults
 5 - Automatic archiving defaults
 6 - Automatic reviving defaults
 7 - Automatic cleanup defaults
 8 - CA Spool defaults
 9 - Natural Advanced Facilities defaults
10 - Trigger container file and user exits
11 - Default code pages
12 - 3GL interfaces
13 - Node definitions
14 - Email message definitions
```

2 To select a function, you enter its number in the command line.

System Defaults

This section covers the following topics:

- Integrating Natural Applications

Setting System Defaults

To set system defaults for Entire Output Management:

1 Enter 1 in the command line of the **Default Definition Menu**.

The **System Defaults** screen is displayed:

```
 18:32:08            **** ENTIRE OUTPUT MANAGEMENT ****           2018-11-11
UserId XYZ                    - System Defaults -

NOM definition-data file                NOM active-data file
   DBID ..................... 9____        DBID ..................... 9
   FNR ...................... 243__        FNR ...................... 243
Use owner ID ............... N
Date format ................ E
Support long names ......... Y
Automatic user definition... P

Daily cleanup
   Time ..................... _____
   Next run ................. 13/12/2018 00:01
Log
   Types .................... _ _ _ _ _ _ _ _ _ _
   Retention period ........ 10D__
Printouts
   Types .................... _ _ _      Type H
   Retention period ........ _____      ______

 Command => ____________________________________________________________________
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help        Exit  Flip  Do    Undo              Appl  Modfy       Menu
```

2 To change any settings, you have to press PF10 first.

The fields are described under *Components of System Defaults*.

Components of System Defaults

General

<table>
<tr><th>Field</th><th>Explanation</th></tr>
<tr><td>NOM definition-data file (DBID/FNR)</td><td>The Adabas database ID and file number of the Entire Output Management definition-data file (logical file 206).</td></tr>
<tr><td>NOM active-data file (DBID/FNR)</td><td>The Adabas database ID and file number of the Entire Output Management active-data file (logical file 91).</td></tr>
<tr><td>NOM trigger container file</td><td>See Trigger Container File.</td></tr>
<tr><td>Use owner ID</td><td>Y = Operating-system resources should be accessed with the user ID of the report owner or bundle coordinator. This allows users whose ID is not defined externally (RACF, BS2000 user ID, etc.) to use Entire Output Management.

N = The Entire Output Management user must have authorization to access operating-system resources.
<table>
<tr><th>Use Owner ID</th><th>User ID is ESY User</th><th>Browse</th><th>Submit Job</th></tr>
<tr><td rowspan="2">Y</td><td>Yes</td><td rowspan="2">Report Owner</td><td>User ID</td></tr>
<tr><td>No</td><td>Report Owner</td></tr>
<tr><td rowspan="2">N</td><td>Yes</td><td>User ID</td><td>User ID</td></tr>
<tr><td>No</td><td>-</td><td>Monitor</td></tr>
</table></td></tr>
<tr><td>Support long names</td><td>■ Y = Report names and bundle names may consist of up to 25 alphanumeric characters.
■ N = Report names may consist of up to 17 alphanumeric characters and bundle names of up to 8 alphanumeric characters.</td></tr>
<tr><td>Date format</td><td>Select the format to be used for date information in Entire Output Management:

■ A = American (MM/DD/YY)
■ B = American (MM/DD/YYYY)
■ E = European (DD/MM/YY)
■ F = European (DD/MM/YYYY)
■ G = German (DD.MM.YY)
■ H = German (DD.MM.YYYY)
■ I = International (YY-MM-DD)
■ J = International (YYYY-MM-DD)</td></tr>
<tr><td>Automatic user definition</td><td>■ N = User IDs must be defined manually with the Users function. This is the default.</td></tr>
</table>

Field	Explanation
	■ Y = If a user enters an ID which exists neither for a user nor a distribution list, Entire Output Management automatically defines the user ID with a default profile. The default profile will be taken from the user ID `DEFAULT`. ■ P = If a user enters an ID which exists neither for a user nor a distribution list, he/she will be prompted to decide whether he/she wishes to use the default profile `DEFAULT`.
Daily cleanup	Once a day, cleanup processing is performed which deletes: active reports (or marks them for archiving), expired active reports from archive/revival, log records, printout records, and active bundles. If you run the monitor as a single task, it will be unable to process any reports, bundles or printouts while performing daily cleanup. To avoid this, you can define multiple tasks (daily cleanup is done by task 1) or execute the daily, report and spool cleanup as a stand-alone batch job. To achieve the latter, execute the program `NOMCLEAN` in the library `SYSNOM` in a standard batch Natural job, ensuring that `LFILE 206` is set correctly to point to your Entire Output Management system file. You should schedule the batch job so that it finishes before the time specified for daily cleanup. **Time** = The time when you want to execute the cleanup process. **Next run** = The date and time of the next cleanup run.

Log/Printouts

Field	Explanation
Log	
Types	Specify the types of information to be logged by entering the following letters: R = Report maintenance information, B = Bundle maintenance information, P = Logical printer maintenance information, D = Distribution list maintenance information, L = Information about logon/logoff activities of users. W = Clear the work directory `$EOM_WORK` (under UNIX only); see below.
Retention period	Enter the default retention period for log records. This is the period of time that log records are kept in the Entire Output Management database. You set this period by entering a number followed by a letter indicating the unit of time: D = days, W = weeks, M = months. For example, 3D = 3 days, 5M = 5 months. Under UNIX, all log files are written to the directory `$EOM_WORK`; after the retention period, they will only be deleted from this directory if **Types** = W was specified.
Printouts	
Types	Specify the type(s) of printouts to be deleted automatically at the end of the printout Retention period: ■ D = Printed successfully. ■ E = Printing error.

Field	Explanation
	■ F = Printing failed.
Retention Period	Specify the default retention period for printouts. This is the period of time that printouts are kept in the Entire Output Management database. You set this period by entering a number followed by a letter indicating the unit of time: D = days, W = weeks, M = months. For example, 3D = 3 days, 5M = 5 months.
Type H	Specify the default retention period for held printouts. This is the period of time that printouts in Hold status are kept in the Entire Output Management database. You set this period by entering a number followed by a letter indicating the unit of time: D = days, W = weeks, M = months. For example, 3D = 3 days, 5M = 5 months.

Integrating Natural Applications

You can specify Natural applications which are to be displayed on the **Main Menu** of Entire Output Management, from where the users can invoke them (not available in the Output Management GUI client).

To integrate applications in the Main Menu:

1 Press PF9 on the **System Defaults** screen.

The **System Defaults > Applications** screen is displayed.

2 On this screen, you specify each application as follows:

Field	Explanation
Title	The text which is to be displayed on the **Main Menu**.
Library	The Natural library in which the application is contained.
Program	The name of the Natural program which is to be executed as startup transaction.
Parameters	The application-specific startup parameters.

The defined applications are displayed for all users on the **Main Menu** of Entire Output Management. Under Natural Security, only users with the appropriate access rights will be able to log on to an application.

To return from an application to the Entire Output Management **Main Menu**, the application must finish with RETURN.

Automatic Display of Other Software AG Products

If Entire Operations, Entire Event Management or Natural NSPF are installed at your site, these products are automatically displayed on the **Main Menu** of Entire Output Management. In this way, it is easy for users to "toggle" between them and Entire Output Management.

Under Natural Security, only users with the appropriate access rights will be able to log on to a product.

Monitor Defaults

This section covers the following topics:

The Monitor runs as one or more subtasks under Entire System Server or as one or more batch jobs and controls the generation, printing and distribution of reports and bundles.

Before you specify several Monitor tasks or allow several Natural tasks, you should check the value of `NATNUMSUB` in the Entire System Server startup parameters:

`NATNUMSUB=`*`subtask-maximum`*

`subtask-maximum` is the maximum number of subtasks (recommended: 20).

In z/OS and z/VSE, subtasks run under the Monitor Entire System Server node. In BS2000, one batch job is run for each Monitor task. In UNIX, each Monitor task uses a separate process.

Setting Monitor Defaults

To define default parameters for the Entire Output Management Monitor:

1 Enter `2` in the command line of the **Default Definition Menu**.

The **Monitor Defaults** screen is displayed.

2 To change any settings, you have to press PF10 first.

The fields available on the **Monitor Defaults** screen vary depending on the spool type. They are described under ***Components of Monitor Defaults***.

Special PF Keys

Key	Name	Function
PF7	CopFi	**Define container files**.
PF8	Tasks	**Define monitor tasks**.
PF9	Archv	Define automatic archive defaults.
PF10	Modfy	Switch from display mode to modify mode.

Components of Monitor Defaults

- General
- Spool Parameters
- Container Files
- Monitor Tasks

General

Field	Explanation	
Node	Displays the name/number of the Entire System Server node under which the Entire Output Management Monitor is run as a subtask or batch job.	
System	Displays the system type (e.g. z/OS, z/VSE).	
Spool type	Displays the spool type (POWER, JES2, JES3, SPOOL/BS2000 or UNIX).	
Batch module	This field is only available for POWER/JES2 and JES3. Enter the name of the Natural batch module to be used by the Monitor. The module must reside in the Entire System Server load library or in one of the Entire System Server steplib libraries defined for the Natural task that is started. For information on creating the batch module, see the *Installation and Customization* documentation.	
System server job name	This field is only available for POWER/JES2 and JES3. Enter the name of the Entire System Server job.	
Printer tasks	The number of tasks attached to print reports and bundles (maximum 32). See also the recommendations under ***Monitor Tasks***.	
Wait factor	These fields are used to adjust monitoring to the load in your installation. It is the time in seconds the Monitor waits between two consecutive monitoring cycles. During each cycle, the Monitor performs all the work accumulated since the end of the last cycle.	
	Minimum	Enter the minimum time in seconds the Monitor is to wait between two consecutive monitoring cycles.
	Maximum	Enter the maximum time in seconds the Monitor is to wait between two consecutive monitoring cycles.

Field	Explanation	
	Increment	If there is no activity during the minimum wait time, the wait time is increased by the value you enter here, until the maximum is reached. When activity occurs, the wait time returns to the minimum. Enter the number of seconds by which the wait time should increase.
Error handling	Retries	The number of retries for a failed Monitor operation. The action in error will not cause an error message, but it will be tried again after the time specified in the **Interval** field.
	Interval	The time in seconds after which a failed Monitor operation is tried again.
Emergency emails	You can specify one or more email addresses. In the case of severe errors, the Monitor will send error information to these addresses. See ***Email Message Definitions*** for details.	
Jobcards	Enter a job card to be used as a default when no other job card is specified. The following substitution variable can be used: `&USER`. **Trace:** Tracing requires a huge amount of database space and deteriorates performance considerably; therefore, the trace function should only be used if requested by Software AG Support. If the text `TRACE=` appears in the jobcards, the Monitor will write a detailed activity trace to its SYSOUT file(s). If the SYSOUT files are not available, for example, if the tracing Monitor routine runs in a server environment or online, the trace output is written to the System Automation Tools log file, which can be retrieved with the utility NOMLOG (see *Displaying the Monitor Log* under ***Monitor Management***). In addition, the Monitor trace switches on the tracing facilities of Entire System Server and the Natural Data Collection trace function if required by the specified program level. `TRACE` can be specified as follows: ■ `TRACE=OFF` - No tracing will be performed. ■ `TRACE=ON` - Everything will be traced (across all levels and all components). ■ `TRACE=`*`level`* - Everything will be traced up to the specified program *level* (as determined by the Natural system variable *LEVEL). ■ `TRACE=(`*`level`*`,[`*`component`*`,...])` - Tracing will be performed up to the specified program *level* for the specified *component(s)*. *`level`* can be `1 - 99`. *`component`* can be: ■ `MONITOR` = All Monitor administration traces (this is also always traced in conjunction with one of the other components).	

Field	Explanation
	■ SCAN = The scanning of spool systems for matching reports. ■ COPY = The copying of reports to a container file. ■ CREATE = The creation of active reports and bundles. ■ PRINT = Printout management. **Note:** The tracing of printers is not controlled by this job card. To trace printer tasks, you use the corresponding printer attribute; see *Attributes of Physical Printers*.

Spool Parameters

Field	Explanation
SPOOL/BS2000	
Rename files	Enter "Y" (yes) to rename files, or "N" (no) to not rename them. Entire Output Management renames the print files during processing by adding an internal ID to make them unique. If renaming is deactivated, the option **Copy files** (see below) must be set to "Y" to copy the source to a container file. To avoid inconsistencies with reports resulting from BS2000 input files with changing contents, they should be stored in the NOM database; that is, the reports should be defined with the general attribute **Store in NOM DB = Y**.
Copy files	Enter "Y" to copy BS2000 files to an Entire Output Management container file; or "N" to not copy them. At least one destination has to be defined; see *Container Files* below. When this option is active, the original BS2000 files will not be processed by Entire Output Management after being copied, in particular cleanup processing will not delete them.
Virtual printer	Enter the names of virtual printers (RSO) defined in BS2000. The printouts for this device are processed by Entire Output Management. (The printers must be virtual and must not be enabled for the spooling system). If the type of carriage control is not contained in the RECFORM attribute, the printout must be routed to the printer assigned to the corresponding carriage control. As of BS2000 spool version 3.0 B, exactly one virtual printer (not RSO), which can be addressed with the PRINT-DOCUMENT command, can be assigned to a BS2000 ID. In this case, enter *V in the **recform** field and leave the rest empty.
POWER/JES2 and JES3 Classes	
These fields are used to define the SYSOUT classes dedicated to Entire Output Management.	
Execution (JES3 only)	Enter a list of execution classes to be processed by Entire Output Management. This method creates considerable performance overhead and should only be used for compatibility reasons. In future, only SYSOUT classes should be used for processing by

Field	Explanation
	Entire Output Management. If, however, you still need this method during a transitional period: in addition to searching SYSOUT classes for output, execution classes can also be searched. In this case, the following limitations apply: ■ no default definitions are checked for processing; ■ messages that no report definition has been found for a certain SYSOUT file are not logged.
Sysout	Enter a list of SYSOUT classes to be processed by Entire Output Management. Only those jobs with SYSOUT files in these classes are processed.
Internal	Define one SYSOUT class to hold temporary SYSOUT files. This class *must not* be one of the classes defined in the **Sysout** field above.
Print	Enter the class in which reports and bundles are to be printed.
Error	Define one SYSOUT class to hold the SYSOUT files which cause an error during processing. This class *must not* be one of the classes defined in the **Sysout** field above.

Container Files

For information on the use of container files, see *Container Files and Active-Data File* in the *Concepts and Facilities* documentation.

To define a container file for the Monitor:

1 Press PF7 on the **Monitor Defaults** screen.

2 A window is displayed, in which you specify:

Field	Explanation
Destination	The destination of the container file, as specified in the `DEST=(,...)` parameter of the $$LST (POWER) or of the DD statement (JES).
DBID / FNR	The database ID and file number of the container file.

Monitor Tasks

This function is used to define subtask processing for the Entire Output Management Monitor.

You can split the workload of the Monitor between different tasks, each with its own wait factors.

The management functions of the Monitor (for example, cleanup, active bundle flushing) are always performed by Task 1. In addition, Task 1 will take over the work for any other task that fails.

To define subtasks:

1 Press PF8 on the **Monitor Defaults** screen.

The **Monitor Task Profile** screen is displayed:

```
 12:12:34           **** ENTIRE OUTPUT MANAGEMENT ****           2019-12-12
UserId XYZ                 - Monitor Task Profile -

  Task     Scan       Copy       Create     Printouts /        Wait Factors
Number   Queues     Sources     Reports     Special       Min   Max   Increment

   1        _          _           _           _           30    120      1__

   2        X          _           _           _           60__  300_     1__

 31-32      _          2           _           _           120_  3600     1__

   4        _          _           X           _           30__  180_     1__

   5        _          _           _           X           40__  240_     1__




Command => _____________________________________________________________________
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help        Exit  Flip  Do    Undo                                 Menu
```

2 Make the task specifications as desired.

Recommendations

The number of additional Monitor tasks depends on your execution environment. The following table gives some recommendations:

Environment	Total Number of Monitor Tasks	Additional Tasks for Functions	Wait Factors (in seconds)			Number of Printer Tasks
			Minimum	Maximum	Increment	
General recommendation	2	Manage Printouts/Special	5	30	1	2
Many short printouts	2	Manage Printouts/Special	1	20	1	4 - 10
Few large printouts	3	Manage Printouts/Special, Copy Sources	10	30	1	2 - 4
Many short printouts plus a few large printouts	3	Manage Printouts/Special, Copy Sources	1	20	1	4 - 10

Multiple Tasks for Copying of Sources

In a multi-node environment, the workload of copying sources may be too great for a single task to handle. In this case, you can split this workload between up to 9 tasks.

If the copying of sources is handled by multiple tasks, each of the tasks dedicated to copying sources cannot perform any other function.

To define multiple tasks for copying sources:

1 On the **Monitor Task Profile** screen, instead of marking the function **Copy Sources** with an "X", enter the number of tasks (1 to 9) for this function.

2 The additional tasks will appear in the task list.

Report Defaults

You can define default parameters for report processing. These defaults apply to newly-created reports and can be modified for each report.

This section covers the following topics:

Setting Report Defaults

To set defaults for report processing:

1 Enter 3 in the command line of the **Default Definition Menu**.

The following screen is displayed:

```
 17:43:25            **** ENTIRE OUTPUT MANAGEMENT ****           2018-11-11
User ID XYZ               - Report Processing Defaults -

Store in NOM DB ..... N
Archive directly ..... N
Create Definition .... _
Report Retention
   Number ........... 5__
   Unit ............. A
   Calendar ......... ________
   Action ........... P
Separator Pages
   Start ............ ________
   End .............. ________
   Copies ........... ___

Jobcards
   //NOMREPPR JOB CLASS=K,MSGCLASS=X_____________________________________
   ____________________________________________________________________
   ____________________________________________________________________

Command => ____________________________________________________________
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help        Exit  Flip  Do    Undo                   Modfy Edit  Menu
```

2 To change any settings, you have to press PF10 (Modfy) first. The fields are described under *Components of Report Defaults*

3 The values you enter on this screen are automatically written to the fields with the same names on the **Report Definition** screens.

For further information on report processing, see *Reports* in the *User's Guide*.

Components of Report Defaults

Field	Explanation	
Report Retention	These fields determine how long reports are stored in the Entire Output Management database. When this retention period expires, the reports are purged and/or archived, depending on the selected **Action**. The default retention period is the system-wide period defined by the system administrator.	
	Action	When the retention period expires, the report will be archived (A) or purged (P). When an active report is archived, its content is no longer available online. After this, it only exists in the

Field	Explanation	
		archive data set and has to be revived before it can be viewed or printed again.
	Number	Specify the number of days/weeks/months the report is to be stored in the Entire Output Management database.
	Unit	Possible values: ■ Working days (W) ■ Absolute days (A) ■ Weeks (V) ■ Months (M) If you select "working days", you have to specify a calendar which distinguishes between working and non-working days.
	Calendar	If you specify "working days" as the **Unit** of time, you have to specify the name of the calendar which determines which days are considered to be working days. See also ***Calendars***.
	Example: If you want reports to be kept for two working days, you specify Number 2 and Unit working days. Assuming that in the calendar referenced, Saturday and Sunday are defined as non-working days, this means that if a report is created on a Friday evening, it will be retained until Tuesday evening.	
Archive directly (Y/N/I)	This field sets the default value for the field of the same name in the *General Attributes* of report definitions.	
Store in NOM DB (Y/N)	You can use this option to take the report contents from the spool and store them in the Entire Output Management directory file for later viewing or archiving.	
Create definition (Y/N)	With this option, you can have report definitions created automatically for reports produced as a result of separation.	
Jobcards	Enter the job cards to be used for printing with batch jobs. The following substitution variables can be used: &USER and &REPORT.	
Separator Pages	Start	Enter the name of the separator page to be printed at the beginning of the report.
	End	Enter the name of the separator page to be printed at the end of the report.
	Copies	Specify how many times each separator page is to be printed.
	See *Separator Pages* for further information. To edit a separator page, position the cursor on the **Start** or **End** field, and press PF11 (Edit).	

Bundle Defaults

You can define default parameters for bundle processing. These defaults apply to newly-created bundles. They can be modified for each bundle.

For further information, see *Adding a Bundle Definition* in the *User's Guide*.

Setting Bundle Defaults

To set default parameters for bundle processing:

1 Enter 4 in the command line of the **Default Definition Menu**.

The following window is displayed:

```
+-------------------------------------------------------------------------+
!                      - Bundle Processing Defaults -                     !
!                                                                         !
!  Retention Period ....... ___  Unit _  Calendar ________                !
!                                                                         !
!  Hold Before Print ...... _ (Y/N)                                       !
!  Printer   List ......... ________ ________ ________ ________ ________  !
!            Copies ....... ___      ___      ___      ___      ___       !
!                                                                         !
!  Separator Bundle ....... ________ (Start)  ________ (End)  ___ (Copies)!
!            Report ....... _ (Y/N)                                       !
!                                                                         !
!  Print Job card                                                         !
!  ______________________________________________________________________ !
!                                                                         !
!  PF1 Help PF3 Exit PF5 Do PF6 Undo PF10 Modify PF12 Menu                !
!                                                                         !
+-------------------------------------------------------------------------+
```

2 To change any settings, you have to press PF10 first. The fields are described under ***Components of Bundle Defaults***.

3 The values you enter here are automatically written to the fields with the same names on the **Bundle Definition** screen.

Components of Bundle Defaults

Field	Explanation	
Retention	Period	Enter the number of absolute days, working days, weeks or months the bundles are to be kept in the Entire Output Management database. See the **Retention** field description under *Attributes of a Bundle* in the *User's Guide*.
	Unit	Possible values: ■ Working days `(W)` ■ Absolute days `(A)` ■ Weeks `(V)` ■ Months `(M)` If you select "working days", you have to select a calendar which distinguishes between working and non-working days.
	Calendar	Specify the name of a calendar, if "working days" is the unit for the retention period. For more information, see *Attributes of a Bundle* in the *User's Guide*. See also ***Calendars***.
	Example: You have defined a calendar in which Saturday and Sunday are marked as holidays. If have specified "2" as the **Period**, and "working days" as the **Unit** and the bundle is created on Friday evening, it will be retained until Tuesday evening.	
Separator Bundle	Start	Enter the name of the separator page to be printed at the beginning of the bundle.
	End	Enter the name of the separator page to be printed at the end of the bundle.
	Copies	Specify how many times each separator page is to be printed for the bundle.
	See *Separator Pages* for further information.	
Printer	List	You can enter up to 5 logical printer names. These are the printers on which the bundle will be printed. To select a printer from a list, enter a question mark (?) in this field.
	Copies	Specify the number of copies to be printed on the respective printer.
Separator Report	■ Y = Print the report separator pages. This is the default. ■ N = Do not print the report separator pages. The number of separator pages can be defined for each report in the bundle. See *Attributes of a Bundle* in the *User's Guide*.	

Field	Explanation
Hold before print	■ Y = The bundle is placed in Hold status in the printout queue until it is released manually for printing. ■ N = The bundle is printed immediately.
Print job card	Enter the job card to be used for printing on system printers. The following substitution variables can be used: `§USER` and `§BUNDLE`.

Automatic Archiving Defaults

You can set default parameters for archiving. These parameters enable you to create archive data sets and schedule automatic archiving.

For further information on archiving, see the sections *Archive Administration* and *Archiving Task*.

This section covers the following topics:

- Defining Parameters for Archiving
- Archiving Parameters
- Archiving Schedule Parameters

Defining Parameters for Archiving

To define the archiving parameter:

1 Enter `5` in the command line of the **Default Definition Menu**.

The **Archiving Parameters** screen is displayed.

2 Change the parameters as desired. The fields are described under *Archiving Parameters* below.

3 To define archiving schedule parameters, you press PF8 (Sched).

The **Archiving Parameters/Schedule** screen is displayed.

Change the parameters as desired. The fields are described under *Archiving Schedule Parameters* below.

4 To edit the job skeleton, you press PF11.

Archiving Parameters

Field	Explanation	
Parameters for All Operating Systems		
Default retention	Enter the default retention period for archive records. This is the period of time that reports are kept in the Entire Output Management database. When this period expires, the reports are marked for deletion in the archive catalog.	
	Number	Enter the number of units the reports are to be kept.
	Unit	D = days, W = weeks, M = months, Y = years. For example 3D (3days), 5M (5 months) etc.
Schedule	Time scheduled	Enter `Y` to activate the automatic time schedule, which you define below.
	Next run	The date and time for which the next archive run is scheduled. **Note:** The scheduling process can also be started manually by entering the option code >8.7 in the command line.
Data set prefix	Archive	Enter a prefix to be used for creating archive data set names. A sequential number is added automatically to this prefix to create a name for an archive data set. In BS2000 environments, archive data set prefixes will be automatically preceded by user ID `$TSOS..` For example, if the prefix is `L99020`, the data set name is `L99020.NOM0001`.
	Condense	You may enter a different prefix for archive data sets created by the condense job, so that these can be distinguished from normal archive data sets.
Delete empty	Automatic deletion of empty archive data sets. Enter "Y" or "N".	
Condense threshold	Numbers of active reports in an archive that will cause automatic condense marking of this archive.	
Skeleton	The name of the job skeleton used for the archive task on mainframes is `JARCSKEL`. You can edit this member by pressing PF11 (Edit). `JARCSKEL` must be located in the library `SYSNOMU`. The job skeleton used for condensing has to be saved in library `SYSNOMU` and must be named `JCDNSKEL`.	
Jobcards	Enter the job cards to be used for archiving with a batch job. See also *Limiting the Amount of Archiving and Condensing* below.	
Parameters for z/OS only		
EXPDT	Enter "Y" to provide the expiry date on every condense step. This will cause operating-system messages to be issued for the second and subsequent steps and these might require operator intervention.	

Field	Explanation	
	Enter "N" (or leave blank) to provide an expiry date (or output file retention period) only on the final condense step. This is the default and is compatible with earlier versions of Entire Output Management.	
Generic Name	Enter the generic name for tapes used in your installation. This parameter is used for archiving to tapes. The default is `TAPE` (`UNIT=TAPE` in JCL).	
Storage Class (SMS)	Enter the name of the storage class for the storage management system.	
Archive to disk	GDG	Enter "Y" to use a generation data set. For information on generation data sets, see the appropriate IBM documentation.
	Max. generations	Maximum generations. This field is taken from the definition of the generation data set and cannot be modified.
Parameter for z/VSE only		
DATE	Enter "Y" to provide the expiry date on every condense step. This will cause operating-system messages to be issued for the second and subsequent steps and these might require operator intervention. Enter "N" (or leave blank) to provide an expiry date (or output file retention period) only on the final condense step. This is the default and is compatible with earlier versions of Entire Output Management.	
SYS(*nnn*)	Enter a number to specify the z/VSE system file to be used for archiving.	
Parameter for BS2000 only		
RETPD	Enter "Y" to provide the expiry date on every condense step. This will cause operating-system messages to be issued for the second and subsequent steps and these might require operator intervention. Enter "N" (or leave blank) to provide an expiry date (or output file retention period) only on the final condense step. This is the default and is compatible with earlier versions of Entire Output Management.	
Device	The medium to which archiving is performed (tape, cassette, e.g. T9P, T9G, T-C1 ...).	

Limiting the Amount of Archiving and Condensing

In some cases, the number of active reports to be archived/condensed may be too high for one archiving/condensing run and should therefore be split. With the parameters `ARCHMAX` and `CONDMAX`, you can limit the number of active reports to be archived and condensed respectively. They are specified in one of the lines for the jobcards (see above) in the form of a comment for the job entry; for example: `//* ARCHMAX=20000`.

`ARCHMAX` can be used on all operating systems, `CONDMAX` can only be used on mainframes, but not on UNIX.

- ARCHMAX=*nnnnnn* - Archiving will stop when the specified number of archived active reports is reached. Message NOM0494 will be issued as a reminder that archiving has to performed again for the remaining active reports.
- CONDMAX=*nnnnnn* - Condensing will stop when the specified number of condensed active reports is reached. The source archive dataset will continue to have the status "condense". Message NOM0487 will be issued as a reminder that condensing has to performed again for the remaining active reports. Repeated condense jobs will create new condense datasets.

Archiving Schedule Parameters

Field	Explanation
Next run	Displays the date and time for which the next archiving run is scheduled (as calculated from on the archive schedule parameters specified on this screen).
Weekdays or Monthly Days	You can either select archiving to be performed every day or on certain days of the month or on certain week days: ■ For weekdays, you specify their two-character abbreviations (SU = Sunday, MO = Monday, etc.). ■ For days of the month, you specify their numbers (01 to 31). For archiving on every day of the month, you specify ALL; for archiving on the last day of the month, you specify LD.
Start time	You can specify the time of the day when archiving is to start. The default is 24:00 (midnight).
Calendar	If you specify a calendar here, archiving is performed only on days defined as *working days* in that calendar, but not on days defined as *holidays*. To select a calendar from a list, enter an asterisk (*) in this field. See also ***Calendars***.
Before/After Holiday(s)	Should an archiving date fall on a calendar holiday, enter A to perform it on the first workday *after* the holiday, enter B to perform it on the last workday *before* the holiday.

User-Defined Archives

You can define up to 9 custom archive types in addition to the standard archive. This enables you to:

- create multiple hierarchies for archived reports. For example, reports which need to be revived quickly can be archived to disk, with all other reports being archived to tape.

- archive to *non-standard data sets* (that is, data sets which cannot be accessed as a Natural work file) such as optical disks.

The Entire Output Management Monitor submits an archive job for each type which has active reports to be archived. It also submits a condense job for each type which has archive data sets to be condensed. It submits a revive job for each data set/volume containing reports to be revived.

Notes:

1. You cannot condense data sets of different types into a single output data set.
2. Entire Output Management assigns the logical volser name `NOMUDA` to all user-defined archives.

This section covers the following topics:

Invoking Archive Maintenance

To invoke archive maintenance:

1 Press PF9 (UsArc) on the **Archiving Parameters** screen.

The **User Defined Archive Maintenance** screen is displayed, listing all existing user-defined archive types.

For each archive type, the (internally allocated) type number, the name and the short description are displayed.

2 From this screen, you invoke the functions for the maintenance of user-defined archives, as described below.

Adding an Archive

To add a user-defined archive:

1 Press PF2 (Add) on the **User-Defined Archive Maintenance** screen:

2 The **User-Defined Archive Type** screen is displayed:

```
 14:25:48            **** ENTIRE OUTPUT MANAGEMENT ****            2018-11-11
User ID XYZ              - User Defined Archive Type -                       ↩

                                                                             ↩

Name ................. ARCTYP5_    Number: 5                                  ↩

Description .......... ____________________________________________________  ↩

DSN Prefix ........... ____________________________________                  ↩

Job Skeletons                                                                ↩

   Archive ........... ________    Revive : ________   Condense: ________   ↩

Default Retention               User Routine                                 ↩

   Number ............ ____        Library: ________                         ↩

   Unit .............. _           Member : ________                         ↩

Archive Jobcards                                                             ↩

   ____________________________________________________________________________
   ____________________________________________________________________________
   ____________________________________________________________________________
Revive Jobcards                                                              ↩

   ____________________________________________________________________________
   ____________________________________________________________________________
   ____________________________________________________________________________
                                                                             ↩

                                                                             ↩

 Command => ____________________________________________________________________
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help        Exit  Flip  Do    Undo             Attrb Edit        Menu
```

The fields are described under **Components of User-Defined Archives**.

Special PF-Keys

Key	Name	Function
PF9	Attrb	Define keywords for JCL substitution.
PF10	Edit	Edit skeletons and user routines. Cursor must be on object to edit it.

Defining Keywords for JCL Substitution

To define keywords for JCL substitution:

1 Press PF9 (Attrb) on the **User-Defined Archive Type** screen.

2 A screen is displayed, on which you can enter up to 28 job skeleton variables.

Whenever any of the keywords you define here appears in a job skeleton (prefixed with "&"), it is replaced by its value.

Certain keywords are reserved for Entire Output Management. If you attempt to add a keyword with a reserved name an error message is returned. It is your own responsibility to ensure that value substitution does not result in invalid JCL (for example, truncation).

3 Press PF9 to return to the previous screen.

Components of User-Defined Archives

Field	Explanation
Name	Enter an archive name (must be unique).
Number	The internally allocated type number.
Description	Enter a description.
DSN Prefix	The prefix used for data sets created for this archive type. If you leave this field blank, the value is taken from *Automatic Archiving Defaults*.
Job Skeletons	The name of the member in SYSNOMU to be used for submitting archive, revive and condense jobs.
Default Retention	The archive retention value to be used for any report which does not have its own retention value. If you leave this field blank, the value is taken from the *Automatic Archiving Defaults*.
User Routine	The user routine library and member to be invoked for this archive type. If you leave this field blank, the archive will be handled as a standard batch Natural work file.

Field	Explanation
Archive/Revive Jobcards	Jobcards to be used for archive/condense and revive jobs. If you leave these blank, they are taken from the *Automatic Archiving Defaults* and *Automatic Reviving Defaults*.

Modifying an Archive

You cannot modify a user-defined archive if there are any reports, active reports or archive data sets of this type.

To modify a user-defined archive:

1 On the **User-Defined Archive Maintenance** screen, mark the archive with the line command `MO`.

The **User-Defined Archive Type** screen is displayed for the selected archive.

2 Modify the data as desired. The fields are described under *Components of User-Defined Archives*.

Then press ENTER to save your modifications.

A message confirms the modification.

Displaying an Archive

To display a user-defined archive:

- On the **User-Defined Archive Maintenance** screen, mark the archive with the line command `DI`.

The **User-Defined Archive Type** screen is displayed for the selected archive. The fields are described under *Components of User-Defined Archives*.

Renaming an Archive

To rename a user-defined archive:

1 On the **User-Defined Archive Maintenance** screen, mark the archive with the line command `RN`.

2 A window will be displayed, in which you enter the new name of the archive.

Cross-Referencing an Archive

To display cross-reference information for a user-defined archive:

1 On the **User-Defined Archive Maintenance** screen, mark the archive with the line command `XR`.

The **XREF of Archive Type** window is displayed, It shows how many objects of each type use this archive.

2 Mark the relation type with any character in column **M** to display the list of objects.

Deleting an Archive

To delete a user-defined archive:

1 On the **User-Defined Archive Maintenance** screen, mark the archive with the line command `DE`.

2 Depending on the `CONFIRM` option (see SET command), you may be prompted to confirm the deletion.

Automatic Reviving Defaults

The reviving parameters enable you to schedule automatic reviving.

For further information, see the section *Start Reviving Task*.

This section covers the following topics:

- Defining Reviving Defaults
- Reviving Parameters

Defining Reviving Defaults

To define default parameters for reviving:

1 Enter `6` in the command line of the **Default Definition Menu**.

The **Reviving Parameters** screen is displayed.

```
 06:58:32            **** Entire Output Management ****           2019-11-11
User ID XYZ                  - Reviving Parameters -

Skeleton ................ JREVSKEL
Schedule
   Time scheduled ....... Y
   Next run ............. 12.11.2018 07:00
   not before ........... 07:00
   every ................ 06:00
   not later ............ 19:00
   Weekdays ............. MO TU WE TH FR __ __  (Su Mo Tu We Th Fr Sa)
   Or Monthly Days ...... ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
                          ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
                          ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
   Calendar ID .......... ________
   Before/After Holiday . _
Jobcards
   * $$ JOB JNM=NOMREV,CLASS=0,DISP=H,LDEST=*,SYSID=_____________________
   * $$ LST CLASS=Y,DISP=H_______________________________________________
   ______________________________________________________________________

 Command => ____________________________________________________________
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help        Exit  Flip  Do    Undo                    Edit        Menu
```

2 The fields are described under *Reviving Parameters* below.

3

Special PF Keys

Key	Name	Function
PF10	Edit	Edit the Job Skeleton

Reviving Parameters

Field	Explanation
Skeleton	The name of the job skeleton. The member resides in the library SYSNOMU.
Jobcards	Enter the job cards to be used for reviving.
Schedule	The following fields are used to define the automatic scheduling of the reviving process.
Time scheduled	Enter "Y" to activate the automatic time schedule, which you define below.
Next run	Displays the date and time for which the next revive run is scheduled (as calculated from on the revive schedule parameters specified on this screen).
Weekdays or Monthly Days	You can either select reviving to be performed every day or on certain days of the month or on certain week days:

Field	Explanation
	■ For weekdays, you specify their two-character abbreviations (SU = Sunday, MO = Monday, etc.). ■ For days of the month, you specify their numbers (01 to 31). For reviving on every day of the month, you specify `ALL`; for reviving on the last day of the month, you specify `LD`.
Not before	Reviving will not be performed before the time specified here.
Every	You can specify a time interval here. For example, to perform reviving every 6 hours, you specify `06:00`.
Not later	Reviving will not be performed after the time specified here.
Calendar ID	If you specify a calendar here, reviving is performed only on days defined as *working days* in that calendar, but not on days defined as *holidays*. To select a calendar from a list, enter an asterisk (*) in this field. See also ***Calendars***.
Before/After Holiday	Should a reviving date fall on a calendar holiday, enter `A` to perform it on the first workday *after* the holiday, enter `B` to perform it on the last workday *before* the holiday.

Automatic Cleanup Defaults

The cleanup parameters enable you to schedule automatic cleanup.

This section covers the following topics:

- Defining Cleanup Parameters
- Cleanup Parameters

Defining Cleanup Parameters

To define default parameters for Cleanup:

1 Enter `7` in the command line of the **Default Definition Menu**.

The **Cleanup Parameters** screen is displayed.

```
 18:01:02            **** ENTIRE OUTPUT MANAGEMENT ****           2019-11-11
User ID XYZ                  - Cleanup Parameters -

Spool Cleanup .... Y
Report Cleanup ... Y

Cleanup Schedule
  Time scheduled . Y
  not before ..... 07:00
      every ...... 01:01
  not later ...... 23:00

  Weekdays ....... __ __ __ __ __ __ __     (Su Mo Tu We Th Fr Sa)
  Or Monthly Days  ALL ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
                   ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___

  Calendar-Id .... ________      Before/After Holiday(s) .. _

Scheduled next ... 2018-11-12  18:11

Command => ____________________________________________________________________
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help        Exit  Flip  Do    Undo                                Menu
```

2 On this screen, you define the automatic scheduling of the cleanup process. The fields are described under *Cleanup Parameters* below.

Cleanup Parameters

Field	Explanation
Cleanup Process	
Spool cleanup	Enter `Y` to activate automatic SPOOL cleanup. This automatically deletes SPOOL files and container-file entries no longer needed by Entire Output Management.
Report cleanup	Enter `Y` to activate automatic report cleanup. This automatically deletes active reports with location SPOOL, if corresponding SPOOL file no longer exists because it was deleted outside Entire Output Management.
Cleanup Schedule	
Time scheduled	Enter `Y` to activate the automatic time schedule, which you define below.
Scheduled next	Displays the date and time for which the next cleanup run is scheduled (as calculated from on the cleanup schedule parameters specified on this screen).
Weekdays or Monthly Days	You can either select cleanup to be performed every day or on certain days of the month or on certain week days: ■ For weekdays, you specify their two-character abbreviations (SU = Sunday, MO = Monday, etc.). ■ For days of the month, you specify their numbers (01 to 31).

Field	Explanation
	For cleanup on every day of the month, you specify `ALL`; for cleanup on the last day of the month, you specify `LD`.
Not before	Cleanup will not be performed before the time specified here.
Every	You can specify a time interval here. For example, to perform cleanup every 6 hours, you specify `06:00`.
Not later	Cleanup will not be performed after the time specified here.
Calendar ID	If you specify a calendar here, cleanup is performed only on days defined as *working days* in that calendar, but not on days defined as *holidays*. To select a calendar from a list, enter an asterisk (*) in this field. See also ***Calendars***.
Before/After Holiday(s)	Should a cleanup date fall on a calendar holiday, enter `A` to perform it on the first workday *after* the holiday, enter `B` to perform it on the last workday *before* the holiday.

CA Spool Defaults

CA Spool Defaults are only available on mainframes.

CA Spool, among other spooling systems, can serve as source for the output data to be processed. Here you can define whether the CA Spool interface should be active or not.

Entire Output Management scans the specified destinations and moves the output into its own database container for further processing. The destinations to be scanned should be defined as virtual printers reserved for Entire Output Management. The destination is switched to the specified Temporary Destination (also a virtual printer) in order to avoid processing the same queue entry again.

This section covers the following topics:

- Defining CA Spool Defaults

- CA Spool Defaults

Defining CA Spool Defaults

To define default parameters for CA Spool:

1 Enter `8` in the command line of the **Default Definition Menu**.

The following screen is displayed:

```
 18:50:25            **** ENTIRE OUTPUT MANAGEMENT ****           2018-11-11
UserId XYZ                    - CA Spool Defaults -

Scan CA Spool queue .......... N

CA Spool Interface Version ... 90       CA Spool Version (1/2)  _
Temporary Destination ........ NOMTEMP_ Time Limit ............ 6_

  Destination DBID  FNR    Destination  DBID  FNR
  ___________ ____  ___    ___________  ____  ___
  NOMFIL2_    9____ 247__ _________     _____ _____
  _________   _____ _____ _________     _____ _____
  _________   _____ _____ _________     _____ _____
  _________   _____ _____ _________     _____ _____
  _________   _____ _____ _________     _____ _____
  _________   _____ _____ _________     _____ _____
  _________   _____ _____ _________     _____ _____
  _________   _____ _____ _________     _____ _____
  _________   _____ _____ _________     _____ _____
  _________   _____ _____ _________     _____ _____

 Command => ____________________________________________________________
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help        Exit  Flip  Do    Undo                              Menu
```

2 The fields are described under *CA Spool Defaults* below.

CA Spool Defaults

Field	Explanation
Scan CA Spool queue	Activate the CA Spool interface? Enter `Y` (yes) or `N` (no).
CA Spool Interface Version	Specify your current interface version of CA Spool (for example, 90).
CA Spool Version (1/2)	Specify your current version of CA Spool. For versions earlier than 2.0, specify `1`. For other versions, specify `2`.

Field	Explanation
Temporary Destination	Specify a virtual CA Spool destination to which Entire Output Management routes the output to be processed.
Time Limit	Enter the maximum number of seconds the Monitor is allowed to scan for output arriving through the CA Spool interface in one cycle. A value of 0 means no limit.
Destination	Specify up to 20 destinations to be scanned by Entire Output Management.
DBID / FNR	Specify the database ID and file number of the corresponding Entire Output Management container file in which to store the created reports.

Natural Advanced Facilities Defaults

Instead of printing output from Natural programs in the Natural Advanced Facilities spool file (FSPOOL), you can route it to an Entire Output Management file (SYS2), from which it can be distributed, bundled or separated.

Here you can define whether the NAF/NOM interface is active and from which Natural Advanced Facilities environments output is to be processed. A separate Entire Output Management container file can be assigned to each FSPOOL file. However, you can also assign the same Entire Output Management container file to all FSPOOL files.

This section covers the following topics:

- Defining Natural Advanced Facilities Defaults
- Natural Advanced Facilities Defaults

Defining Natural Advanced Facilities Defaults

To define default parameters for Natural Advanced Facilities:

1 Enter 9 in the command line of the **Default Definition Menu**.

The following screen is displayed:

```
 12:28:48            **** ENTIRE OUTPUT MANAGEMENT ****           2018-11-11
UserId XYZ        - Natural Advanced Facilities Defaults -


NAF Interface active .. Y        Time Limit .. 1_

    FSPOOL      Container         FSPOOL      Container
   DBID  FNR    DBID  FNR       DBID  FNR    DBID  FNR
   ____  ___    ____  ___       ____  ___    ____  ___
   __177 ___43  ____9 __212     _____ _____  _____ _____
   ___10 ___60  ____9 __212     _____ _____  _____ _____
   ___76 __210  ____9 __247     _____ _____  _____ _____
   11177 _1247  ____9 __247     _____ _____  _____ _____
   _____ _____  _____ _____     _____ _____  _____ _____
   _____ _____  _____ _____     _____ _____  _____ _____
   _____ _____  _____ _____     _____ _____  _____ _____
   _____ _____  _____ _____     _____ _____  _____ _____
   _____ _____  _____ _____     _____ _____  _____ _____
   _____ _____  _____ _____     _____ _____  _____ _____


 Command => _____________________________________________________________
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help         Exit  Flip  Do    Undo                              Menu
```

2 The fields are described under ***Natural Advanced Facilities Defaults*** below.

Natural Advanced Facilities Defaults

Field	Explanation
NAF interface active	Process spool data from Natural Advanced Facilities? Enter Y (yes) or N (no).
Time limit	Enter the maximum number of seconds the Monitor is allowed to scan for output arriving through the Natural Advanced Facilities interface in one cycle. A value of 0 means no limit.
FSPOOL DBID / FNR	The database ID and file number as defined in the FSPOOL parameter.
Container DBID / FNR	The database ID and file number of the Entire Output Management container file. Output is filed to a database and is subject to the transaction logic of the database. Be sure to issue an ET as soon as possible. Be sure to regularly issue new ETs to prevent the Hold queue from overflowing (when there is a large amount of output).Remember that output from BTs is also affected. Be sure that no user transaction is open during an Adabas CLOSE or DEFINE PRINTER. For further information, see the section *ET/BT Logic* in the *Natural Advanced Facilities* documentation.

Trigger Container File

Entire Output Management uses the trigger container file to process print data from various sources:

- **Natural**: Output files from Natural applications can be processed. In JES and POWER, these output files can belong to any output class. For more information, see the members `NOMTP`, `NOMTP--D`, `NOMTP--P` and `NOMSR--L` in the libraries `SYSNOMU` and `SYSNOMS` respectively. Please note that the API described as "NOM trigger processing" in these members is also used by Entire Operations.
- **Remote mainframe nodes**: If print data from remote mainframe nodes are to be processed, they are copied into the trigger container file. See also ***Node Definitions***.
- **Open Print Option**: Any output sent to Entire Output Management via the Open Print Option is copied in the trigger container file. See also *Installing the Open Print Option* in the *Installation and Customization* documentation.

If the trigger container file is to be used for any of these purposes, it has to be defined and activated.

To define and activate the trigger container file:

1 Enter `10` in the command line of the **Default Definition Menu**.

The **Trigger Container File and User Exits** screen is displayed.

2 On this screen, you specify:

- **DBID/FNR**: The database ID and file number of the trigger container file.
- **Process trigger queue**: Set this field to "Y" to activate the processing of the print data queued in the trigger container file. Set it to "N" it to deactivate processing.

For the activation/deactivation to take effect, you have to restart the Monitor.

User Exits

The user exits described below are located in the Natural library `SYSNOMS`.

This section covers the following topics:

Activating/Deactivating User Exits

To activate or deactivate a user exit:

1 Enter `10` in the command line of the **Default Definition Menu**.

The **Trigger Container File and User Exits** screen is displayed, listing the available user exits.

Their functions are described below.

2 To activate or deactivate a user exit, mark it with "Y" or "N" respectively.

User Exit Descriptions

User Exit	Explanation
NOMEX001	This exit is called by the Entire Output Management Monitor while scanning the spool queue. A call to this function indicates that no report definition was found for the specified source and the spool exit 001 flag was set. The exit must set the "process" flag to `TRUE` to advise Entire Output Management to make the source as subject for its normal cleanup processing, or `FALSE` to advise it not to process this output. In this case, the exit must switch the output from the Entire Output Management input queue to prevent subsequent processing for the same output.
NOMEX002	This exit is called by the Entire Output Management Monitor while scanning the spool queue. The function is called if the exit 002 flag is set to allow the modification of spool attributes before they are stored in the Entire Output Management database.
NOMEX003	This exit is called by Entire Output Management to allow/disallow access to Natural NSPF.
NOMEX004	This exit is called by Entire Output Management to allow suppression of log messages.
NOMEX005	This exit is called by Entire Output Management to allow modification of print job substitution variables.
NOMEX006	This exit is called by Entire Output Management to make available information about completed printouts.
NOMEX007	This exit is called by the Entire Output Management user interface when certain fields are to be modified online. This exit may set initial values for the fields and prohibit modification.
NOMEX008	This exit can only be used if Natural ISPF and its Incore Database are installed. It is called by Entire Output Management to allow the integration of user-written application logic with Entire Output Management, allowing the storing of notes for an active report or even for a specific line of an active report. The exit is invoked whenever the status of an active report changes, a documented example is provided in the library `SYSNOMS`.
NOMEX009	This exit is called by Entire Output Management to suppress optimization for counting lines of BS2000 input files.

User Exit	Explanation
	Assuming **Rename=N** (BS2000 files will not be renamed): Normally, when a BS2000 file is printed more than once by Entire Output Management, Entire Output Management will count the records in the file only once and pass this record count on for further processing. This makes sense, because Entire Output Management assumes that the contents of the file do not change. Upon special customer request, this exit was created to allow suppression of this optimization. This means that for each print to Entire Output Management the same file is counted again, because the file can change its contents and length. In this case, the flag `NOMEX009-COUNT-OPTIMIZE` should be set to false. If renaming is deactivated, reports resulting from BS2000 input files with changing contents can lead to inconsistencies. To avoid these, such reports should be stored in the NOM database; that is, they should be defined with the general attribute **Store in NOM DB = Y**.
NOMEX010	This exit is called by Entire Output Management to receive or suppress a log message.
NOMEX011	This exit is called by Entire Output Management immediately before a record is written to the required target (PC) and allows modification of browsed active report data as well as suppression and insertion of records. The object must be in a library accessible to the Entire Output Management online system. NOM221S contains a sample NOMEX011 as well as the parameter data area NOMEXP11. Output parameters for NOMEX011, see below.
NOMEX012	Unused.
NOMEX013	This user exit is called immediately before a report is opened. It will supply attributes of the active report to be opened, spool attributes, and the source attributes. Some fields can be changed and returned to Entire Output Management. For a description of what is to be tested, see the program source. Meta data can be associated with UNIX/Windows files (see also *UNIX/Windows Identification Attributes* in the *User's Guide*), or they can be transferred to Entire Output Management using the Open Print Option. These meta data are the properties of the print data. They are stored in the field `#SPOOL-ATTR-EXTENDED`.
NOMEX014	This user exit is invoked by RMPRRP (print reports) and RMPRBU (print bundles) once at the start of a printout within the printer task to retrieve the properties of a printout - especially the extended attributes, which are stored in the field `#SPOOL-ATTR-EXTENDED`. On meta data, see also NOMEX013 above. For a description of the parameters for this user exit, see the source of NOMEX014. All parameters are input-only parameters and cannot be changed - exceptions: the fields `NOMEX014-ERROR-CODE` and `NOMEX014-ERROR-TEXT`. If an error code is set at return time, Entire Output Management will display it instead of starting the printout. If error code 5 is set, any user message can be displayed; all other error numbers will display the corresponding Entire Output Management error message with `NOMEX014-ERROR-TEXT` containing the parameters of the message.

Output Parameters for NOMEX011

Parameter	Explanation
P-EXP-RC	Return code: ■ 0 = include record as is. ■ 4 = include modified record (P-EXP-RECORD). ■ 8 = insert P-EXP-RECNO lines from P-EXP-INSERT-LINES (next call to exit is with the same record). ■ 12 = suppress record. ■ 16 = terminate export with message P-EXP-RT. ■ 99 = continue export without calling NOMEX011 again.
P-EXP-RT	Error text for P-EXP-RC = 16.
P-EXP-RECNO	Number of records to insert.
P-EXP-RECORD	Modified record to be exported.
P-EXP-INSERT-LINES	Up to 10 lines to be inserted.
P-EXP-WORK	Work area for NOMEX011, maintained across calls.

Default Code Pages

This function is used to specify the code pages which are to be available in Entire Output Management. The defined code pages can be used in report and node definitions.

To add/remove a code page:

1 Enter 11 in the command line of the **Default Definition Menu**.

The **Default Code Pages** screen is displayed, listing the code pages already available in Entire Output Management.

With PF9 you can switch the display width of the **Name** and **Description** columns.

2 To add a code page, either enter its name manually, or enter an asterisk (*) in the **Name** column to select it from a list. The selection list provides the names of several commonly used code pages.

3 To remove a code page, remove its name from the **Name** column.

If a code page is used by any report or node definition, it cannot be removed.

Any code-page name specified on the **Default Code Pages** screen is automatically checked for validity (using a Natural MOVE ENCODED statement).

For further information on code pages, see *Unicode and Code Page Support* in the *Natural* documentation.

Node Definitions

This section covers the following topics:

General Information on Nodes

The source of the print data processed by Entire Output Management can be either the same mainframe or UNIX environment in which Entire Output Management runs or any other supported mainframe, UNIX or Windows environment. Thus it is possible to transfer the output of any mainframe, UNIX or Windows application and process it with Entire Output Management.

The environment in which Entire Output Management runs is called *local node*. Any other environments are called *remote nodes*.

If you only process print data from the local node, you only have one *node definition* for the local node; this is created automatically by Entire Output Management. In addition, to process print data from remote nodes, you have to create a node definition for each remote node.

If the print data come from a *remote UNIX node*, the transfer of the data is done by EntireX. If they come from a *remote mainframe node*, the transfer of the data is done by Entire System Server in conjunction with Entire Network. Therefore the use of remote UNIX and Windows nodes requires that EntireX and Entire System Server UNIX be installed, and use of remote mainframe nodes requires that Entire System Server and Entire Network be installed.

The print data from a remote mainframe node are copied into the trigger container file on the local node. Therefore this file has to be defined and its processing activated; see ***Trigger Container File***.

Code Pages

The code page used on a remote node may be different from the one on the local node.

If the print data come from a *remote UNIX node* which uses a different code page, EntireX automatically converts the data to match the local code page.

If the print data come from a *remote mainframe node* which uses a different code page, Entire System Server in conjunction with Entire Network converts the data to match the local code page. This requires the following:

- The Natural profile parameters `CFICU` and `CP` have to be set for the Natural environment of the local node.
- In the node definition of the remote node, you have to specify the code page used on the remote node.

If a different code page is to be used for an individual report, you can specify this in the corresponding report definition.

For general information on code pages, see *Unicode and Code Page Support* in the *Natural* documentation.

Entire Operations

For Entire Output Management to be able to process Entire Operations data from remote nodes, Entire Operations has to be installed on the same local node as Entire Output Management.

Listing Node Definitions

To list the nodes which are already defined:

- Enter `13` in the command line of the **Default Definition Menu**.

  The **Node Definitions** screen is displayed:

```
 10:34:53              **** ENTIRE OUTPUT MANAGEMENT ****           2018-12-12
  User ID XYZ                    - Node Definitions -

Cmd Node              No.   Description                 System           Status
___ _________________ _____ ___________________________ ________________ ________
 __ Monitor             40                               z/OS             Monitor
 __ cfmainframenode1    40                               z/OS             deactiv.
 __ daef             55522                               z/OS             deactiv.
 __ newUNIXnode                                          Unix             deactiv.
 __ npr_cftest             Test Node for CF..            Unix             deactiv.
 __ npr_cftest2            test node                     Unix             deactiv.
 __ npr_cftest3            test UNIX node CF             Unix             deactiv.
 __ npr_daeesmv6           npr node on daeesmv6          Unix             deactiv.
 __ npr_pcevi                                            Unix             deactiv.
 __ npr_su                                               Unix             deactiv.
 __ npr_susnat2_qe         EVI node QA                   Unix             deactiv.
 __ npr_susvmesm01         NPR node on susvmesm01        Unix             active
 __ npr_vmws200801         ESM82 test vm_- qe            Unix             deactiv.
 __ npr_win_pcsn4          SN's PC                       Unix             deactiv.
 __ su-1234              122 *** PRODUCTION NODE 123 D     Mainframe        deactiv.
Top Of Data
Command => _____________________________________________________________________
 DE delete  DI display  IN info  MO modify

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Add   Exit  Flip               -     +    Stat               Menu
```

It lists the nodes which are already defined. The Monitor node is listed first; the other nodes are in alphabetical order of node names.

For every node the following is displayed: its name, number, description, operating system, and status.

Status

See **Node status** under *Attributes of a Mainframe Node* and *Attributes of a UNIX or Windows Node*.

To check the current status of all active nodes, you press PF9 (Stat). For detailed status information, you use the line command IN.

If the status is "active" or "Monitor", the **System** field shows the operating system under which the node is running; for all others, it shows either "Mainframe" or "Unix".

Line Commands

Command	Function
DI	Display node definition.
MO	Modify node definition.
DE	Delete node definition.
IN	Display detailed status information.

Defining a Mainframe Node

To define a mainframe node:

1 On the **Node Definitions** screen, press PF2.

A node-type selection window is displayed.

2 Select "Mainframe".

The **Mainframe Node Definition > General Attributes** screen is displayed.

3 On this screen, you specify the general attributes of the node as desired.

To specify spool attributes for it, press PF10.

The general and spool attributes are described below.

Attributes of a Mainframe Node

General Attributes

Field	Explanation
Node name	Specify the name of the node. This field is case-sensitive.
Node number	Specify the node number which identifies the Entire System Server node. If the node is in use by any reports, you can only change the node number to one with the same spool type.
Description	You can enter a short text description of the node.
Node status	The current status of the node. Possible values: ■ A = Active: The node is scanned to get output to Entire Output Management. ■ D = Deactivated: A logon to this node is not possible. ■ S = Suspended: A logon to this node is currently not possible; it is reactivated by the Entire Output Management Monitor as soon as a logon is possible again. This status is set automatically and cannot be changed manually.

Field	Explanation
	■ I = Inactive: The node is inactive and has to be (re-)started. ■ E = Error: A non-recoverable error occurred, and the node is not active. To reactivate it, you have to change the status manually. ■ M = Monitor: This node is automatically defined during the installation. It is defined as environment for the Monitor, is never suspended, and its status cannot be changed. The Monitor attempts to log on to each node at each Monitor cycle. If a node cannot be accessed, the Monitor will write an error message to the Monitor log once, and set the node status to "S" (Suspended). If the node is active again, a message will be written to the Monitor log that it has been reactivated, and file processing will start again.
System	Displays the operating-system type and product name of the node.
ESY user ID	Specify the user ID used to log on to the target Entire System Server.
Code page	You can specify the name of a code page to be used by the node. You can either enter the name manually, or enter an asterisk (*) or press PF1 to select it from a list. A code page is required if the **Spool type** (see below) is different from that of the Monitor node. For the definition of code pages, see *Default Code Pages*.
Spool type	Possible spool types of a node are: SPOOL, JES2, JES3 or POWER. As long as the node definition is used in any report definition, the spool type cannot be changed.

Spool Attributes

Field	Explanation
Spool Type SPOOL (BS2000)	
Rename files	Enter "Y" (yes) to rename files, or "N" (no) to not rename them. Entire Output Management renames the print files during processing by adding an internal ID to make them unique. If renaming is deactivated, the option **Copy files** (see below) must be set to "Y" to copy the source to a container file. To avoid inconsistencies with reports resulting from BS2000 input files with changing contents, they should be stored in the NOM database; that is, the reports should be defined with the general attribute **Store in NOM DB = Y**.
Copy files	Enter "Y" to copy BS2000 files to an Entire Output Management container file; or "N" to not copy them. At least one destination has to be defined; see *Container Files*. When this option is active, the original BS2000 files will not be processed by Entire Output Management after being copied, in particular cleanup processing will not delete them.

Field	Explanation	
Virtual printer	Enter the names of virtual printers (RSO) defined in BS2000. The printouts for this device are processed by Entire Output Management. (The printers must be virtual and must not be enabled for the spooling system). If the type of carriage control is not contained in the RECFORM attribute, the printout must be routed to the printer assigned to the corresponding carriage control. As of BS2000 spool version 3.0 B, exactly one virtual printer (not RSO), which can be addressed with the `PRINT-DOCUMENT` command, can be assigned to a BS2000 ID. In this case, enter *V in the **recform** field and leave the others empty.	
Spool Type JES2/POWER		
Spool classes	These fields are used to define the SYSOUT classes dedicated to Entire Output Management.	
	Sysout	Enter a list of SYSOUT classes to be processed by Entire Output Management. Only those jobs with SYSOUT files in these classes are processed.
	Internal	Define one SYSOUT class to hold temporary SYSOUT files. This class *must not* be one of the classes defined in the **Sysout** field above.
	Print	Enter the class in which reports and bundles are to be printed.
	Error	Define one SYSOUT class to hold the SYSOUT files which cause an error during processing. This class *must not* be one of the classes defined in the**Sysout** field above.
Spool Type JES3		
Spool classes	The same as for JES2/POWER; see above.	
Execution	Enter a list of execution classes to be processed by Entire Output Management. This method creates considerable performance overhead and should only be used for compatibility reasons. In future, only SYSOUT classes should be used for processing by Entire Output Management. However, if you still need this method during a transitional period: in addition to searching SYSOUT classes for output, execution classes can also be searched. In this case, the following limitations apply: ■ no default definitions are checked for processing; ■ messages that no report definition has been found for a certain SYSOUT file are not logged.	

Defining a UNIX or Windows Node

To define a UNIX or Windows node:

1 On the **Node Definitions** screen, press PF2.

A node-type selection window is displayed.

2 Select "UNIX".

The **UNIX Node Definition** screen is displayed.

3 On this screen, you specify the attributes of the node as desired.

The fields are described under *Attributes of a UNIX or Windows Node* below.

Attributes of a UNIX or Windows Node

Field	Explanation

Node	Enter the desired node name here. A node on a UNIX or Windows system is identified by its name, not by a node number. This name must be registered at a broker and entered in the member SATSRV of the library SYSSATU in a section like this:
	
	`node_name SATSRV TYPE=ACI`
	`BROKER-ID=...`
	`SERVER-CLASS=NPR`
	`SERVER-NAME=...`
	`SERVICE=node_name`
	`USER-ID=...`
	`WAIT-TIME=30S`
	
	For details, see the *Entire System Server UNIX Installation* documentation.
	
	This field is case-sensitive.

Status	The current status of the node. Possible values: ■ A = Active: The node is scanned to get output to Entire Output Management. ■ D = Deactivated: A logon to this node is not possible. ■ S = Suspended: A logon to this node is currently not possible; it is reactivated by the Monitor as soon as a logon is possible again. This status is set automatically and cannot be changed manually. ■ I = Inactive: The node is inactive and has to be (re-)started. ■ E = Error: A non-recoverable error occurred, and the node is not active. To reactivate it, you have to change the status manually. ■ M = Monitor: The node is defined as environment for the Monitor, is never suspended, and invokes Entire System Server on UNIX via EntireX. Used on UNIX systems.

Field	Explanation
	■ ∟ = Local monitor: The node is defined as Monitor, it invokes Entire System Server as a subprogram without using EntireX. Used on UNIX systems. If UNIX nodes are defined, the Entire Output Management Monitor will try to log on to each node at each Monitor cycle. If a node cannot be accessed, the Monitor will write an error message to the Monitor log once and set the node status to "S" (Suspended). If the node is active again, a message will be written to the Monitor log that it has been reactivated, and file processing will start again.
Descr	This field describes the node definition.
Temp	Enter a directory here where files are stored that could not be processed by Entire Output Management. This is done to keep the directories "clean" of non-processable files which would waste CPU time. A directory name must not contain wild characters, because it is used to identify file directories uniquely. The last character must be '/' (this is concatenated automatically), the back slash is not allowed. For Windows systems it will be created automatically. This field is case-sensitive.
User ID	Enter the user ID used on the target node to log on to the machine. Entire Output Management will get exactly the rights this user ID has on the specified node. This field is case-sensitive.
Passw	Enter the password used on the target node to log on to the machine. It is stored and sent across the network in an encrypted format. This field is case-sensitive.
Confirm	As the password is entered without being displayed, you have to confirm your password typing it twice. This field is case-sensitive.
Group	On UNIX systems enter the group ID here, on Windows systems it is the domain name. Leave this field blank to get to the default group / domain. This field is case-sensitive.
Paths	Enter up to 10 default paths here. When creating a report, one of these paths must be selected for the report. A directory name must not contain wild characters, because it is used to identify file directories uniquely. The last character must be '/' (this is concatenated automatically), the back slash is not allowed. For Windows systems it will be created automatically. On Windows systems drive letters (e.g. 'C:/') will be recognized. These paths are owned by Entire Output Management. The Monitor will try to find reports for any of the files, copy them to the specified container file and create active reports. Then the file in the specified directory will be deleted. If no reports are found and no default report exists, the file will be moved to the directory specified in the 'Temp' field, a time stamp will be added, and Entire Output Management will forget about it.

Field	Explanation	
	These fields are case-sensitive.	
	Container DBID /FNR	Specify the database ID and file number of the container file which is connected to this path. Only the first entry is mandatory, if the other lines are left empty, they will default to the first line.

Email Message Definitions

This section covers the following topics:

General Information on Email Message Definitions

With this function, you can define certain events which will trigger the sending of emails to specified email addresses. For each error situation, you can specify which text is to be sent by email and to whom. As trigger, you can use any message number issued by Natural or Entire Output Management. In this way, you can inform the appropriate persons whenever a certain error situation has occurred.

Note: On UNIX systems, the sending of these emails requires that the mail program `sendmail` is available.

Emergency Emails

In the case of certain severe error situations, Entire Output Management will automatically send emergency emails. These are sent if one of the following errors occurs:

Message Number	Error
NAT1222	Memory allocation errors.
NAT1801, NAT1804, NAT1806	
NAT3001 to NAT3255	Database errors.
NAT5751	Memory allocation errors.
NAT6104	
NAT9969	Escaped from error loop.

Emergency emails are provided by Entire Output Management and are not user-modifiable. However, you can specify their recipients (in the **Emergency emails** field of the **Monitor Defaults**).

Attributes of an Email Message Definition

Field	Explanation
Name	The name identifying the message definition.
Subject	The title to be used as subject of the sent email.
General	
Email triggers	The error number(s) which trigger(s) the sending of the email. The email will be sent if any of these errors occurs. You can specify `NAT`*`nnnn`* and `NOM`*`nnnn`* message numbers. If you specify multiple numbers, separate them from each other by a semicolon. You can use asterisk notation for the message numbers. Examples: ■ If you specify `NAT3*`, any NAT message number from `3000` to `3999` will trigger the email. ■ If you specify `NOM*`, any NOM message will trigger the email.
Check cycle (min.)	The time interval in which Entire Output Management checks if one of the errors specified as triggers has occurred. To begin with, it is recommended to use a time interval of 30 minutes. Depending on how many emails are actually sent, you may then decide to increase or decrease the time interval. To deactivate the email message definition, you set this field to `0`.
Email text library	The Natural library in which the text member is stored.
Email text member	The Natural text member which contains the email text to be sent. If the text contains the string `&MESSAGES`, this will be replaced in the actual email by the message number which triggered the sending of the email. If the text contains the string `&LAST`, this will be replaced in the actual email by the time when the trigger check was performed last. To edit the text member itself, you press PF10 (Edit)
Email addressees	
From / Sender name	On UNIX: You specify the mail address to be used as sender. On mainframes: The internal default email address provided by Entire System Server (SEND-MAIL) will be used as sender. In addition, you can specify a sender name, which will precede the sender address when the email is sent. The sender name must not contain quotation marks.

Field	Explanation
Reply to	The email address to which the recipients' replies are sent.
Recipients	The email addresses of the email's recipients (direct, CC or BCC). If you specify multiple addresses, separate them from each other by a semicolon.
Recipients CC	
Recipients BCC	
To specify an email address, you place the cursor in the appropriate line and press ENTER. This will open a window in which you can specify email addresses (up to a total of 250 characters per field). Depending on the character set used, the character @ (at sign) may not be represented correctly in some environments. Therefore it should be specified within email addresses as (a).	
Test email	
To test an email to make sure all email addressees are specified correctly, you press PF9 (Test). A test email will be sent to all recipients, and in the case of an invalid email address an error message will be returned, indicating the address in question.	

Listing Email Message Definitions

To list all existing email message definitions:

1 Select Email message definitions (14) on the **Default Definition Menu**.

2 The **Email Message Definitions** screen will be displayed, listing all existing email message definitions.

The available functions are described below.

Creating a New Email Message Definition

To create a new email message definition:

1 On the **Email Message Definitions** screen, press PF2 (Add).

2 The **Email Message Definition** is displayed. Specify the attributes as desired.

They are described under *Attributes of an Email Message Definition*.

Modifying an Email Message Definition

To modify an email message definition:

1 On the **Email Message Definitions** screen, mark the definition with line command `MO`.

2 The selected **Email Message Definition** is displayed, and you can change it.

The fields are described under *Attributes of an Email Message Definition*.

Displaying an Email Message Definition

To display an email message definition:

1 On the **Email Message Definitions** screen, mark the definition with line command `DI`.

2 The selected **Email Message Definition** is displayed.

The fields are described under *Attributes of an Email Message Definition*.

Deleting an Email Message Definition

To modify an email message definition:

1 On the **Email Message Definitions** screen, mark the definition with line command `DE`.

2 Confirm the deletion.

3GL Interface

The 3GL interface is only available on mainframes.

The 3GL interface can transfer output line by line to Entire Output Management for further processing. The interface provides the functions OPEN, PUT, CLOSE. It consists of a control block, a data field and a work area. Several lists can be transferred to Entire Output Management at the same time, but each list must have its own control block and work area.

Control Block

Field	Offset	Length	Explanation
Function code	0	2	Possible values: ■ 1 = OPEN ■ 2 = PUT ■ 3 = CLOSE ■ 5 = End transaction ■ 6 = Backout transaction
Carriage control character	2	2	Possible values: ■ 1 = ASA code ■ 2 = IBM machine code ■ 3 = Siemens EBCDIC code ■ 4 = without carriage control character.
Interface description	4	2	Enter the number of the interface here which you have described in the ***3GL Interface Defaults***.
Return code	6	4	0 or error code.
ET possible	10	2	*Reserved for internal use.*
ET/BT necessary	12	2	Needed only when the caller is controlling the transaction logic (when automatic ET > 0). ■ 0 = No open transaction. ■ 1 = Transaction open.
Report opened	14	2	Possible values: ■ 0 = No OPEN has been performed for this control block. ■ 1 = A report has been opened for this control block.
Execute ET	16	2	*Reserved for internal use.*
Automatic ET	18	2	Possible values: ■ 0 = Transaction logic controlled by interface. ■ >0 = Transaction logic controlled by caller.
Database number	20	2	Database ID of the container file.
File number	22	2	File ID of the container file.
Line length	24	4	Must be supplied for the PUT function so that it can provide the line length.

Field	Offset	Length	Explanation
Defaults at OPEN	28	2	Possible values: ■ 0 = Default values are not written to the control block fields at OPEN. ■ 1 = Defaults are written to fields.
Debugging	30	2	*Reserved for internal use.*

Data Field

Field	Offset	Length	Explanation
Data	0	251	Contains the spool attributes during an OPEN and the print lines during a PUT.

Work Area

Field	Offset	Length	Explanation
Work area	0	4096	Only for internal use. The work area contains compressed output among other data.

Transaction Logic

The print lines are stored in an Adabas database. Like any other changes to a database, the stored records must be confirmed (END TRANSACTION) or rejected (BACKOUT TRANSACTION). The transaction logic can either be executed automatically by the interface or can be determined by the caller.

Bytes 1 to 63 of the spool attributes must uniquely identify the print data.

Automatic ET

If the field "Automatic ET" is set to "0", the interface performs an ET in the following situations:

1. during processing of the OPEN;
2. during processing of the PUT, if *n* records have been stored in the database since the last confirmation (*n* = value of "Automatic ET");
3. during processing of the CLOSE.

It is recommended to always choose "1" as the value for "Automatic ET".

Transaction Logic Controlled by Caller

In addition to the OPEN, PUT, CLOSE functions, you must also perform the functions END TRANSACTION and BACKOUT TRANSACTION before calling Adabas with ET or BT. After the CLOSE you must always perform an Adabas ET call.

You should only use this option when you are performing other database changes in your program. In all other cases, you should only work with "Automatic ET".

3GL Interface Maintenance

3GL Interface Maintenance is only available on mainframes.

A 3GL interface, among others, can serve as source for the output data to be processed. OPEN, PUT and CLOSE transfer the list data to these 3GL interfaces

OPEN transfers the interface number+attributes (spool attributes) for identification and display purposes. PUT transfers one print line at a time. A CLOSE call tells the interface that the list is complete. An entry is created for processing of the list. For further details, see the section **3GL Interface**.

The 3GL maintenance functions enable you to describe your own interface. The data entered are used to interpret the spool attributes and also to dynamically generate the **Report Definition > 3GL Identification** and **Active Reports > Spool Attributes** screens.

Invoking 3GL Interface Maintenance

To define default parameters for 3GL interfaces:

1 Enter `12` in the command line of the **Default Definition Menu**.

The **3GL Interface Maintenance** screen is displayed:

It lists the defined 3GL interfaces in numerical order.

2 From this screen, you invoke the functions for 3GL interface maintenance, as described below.

Modifying 3GL Interface Defaults

To describe the 3GL interface with the specified interface number:

1 On the **3GL Interface Maintenance** screen, enter `M0` in the command line preceding the interface you want to modify.

The following screen is displayed:

```
 16:29:31            **** Entire Output Management ****           2018-06-06
UserId XYZ                 - 3GL Interface Defaults -

3GL Interface 104
  active ..................... Y
  Time Limit ................. __
  Description ................ User-defined Spool (3GL Interface 104)_______

NOM container file
  DBID .......................     9
  FNR .......................    247

Identifying Attributes
  Prompt                  Offset  Length  Order  Generic (*)
   1040_________________    1__     8__     1_      Y
   1041_________________    9__     8__     2_      N
   1042_________________    17_     8__     3_      N
   _____________________    ___     ___     __      _
File identification
   1043_________________     33_     8__

 Command => ____________________________________________________________________
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help        Exit  Flip  Do    Undo             Attrb             Menu
```

2 Enter the attributes to be used as prompt in the report definition and link them to the spool attributes as specified in the OPEN call (Offset, Length). The fields are described under *3GL Interface Defaults*.

3 When you have finished modifying the interface, press ENTER to save your modifications.

A message confirms the modification.

Displaying 3GL Interface Defaults

To display the 3GL interface defaults:

- On the **3GL Interface Maintenance** screen, enter the line command `DI` next to the interface defaults you want to display.

  The **3GL Interface Defaults** screen is displayed for the defaults you selected. The fields are described under *3GL Interface Defaults*.

Deleting 3GL Interface Defaults

To delete the 3GL interface defaults:

1. On the **3GL Interface Maintenance** screen, enter the line command `DE` next to the interface defaults you want to delete.
2. Depending on the `CONFIRM` option (see SET command), you may be prompted to confirm the deletion.

3GL Interface Defaults

Field	Explanation
3GL Interface *nnn*	
active	Enter "Y" to activate this interface. For the Monitor to begin scanning for output arriving through this interface, you must bring it down and back up again.
Time Limit	Enter the maximum number of seconds the Monitor is allowed to scan for output arriving through the 3GL interface in one cycle. "0" means no limit.
Description	Enter a short description of the interface being defined.
NOM Container File	
DBID, FNR	Enter the database ID and file number of the Adabas file to be used as spool container.
Identifying Attributes	
Prompt	Enter the four-digit number (library SYSNOMU) in SYSERR of the field prompt. This text is used in the report definition to describe the identifying attributes. It will also be used in the display of spool attributes of an active report.
Offset	Enter the offset in spool attributes parameter. The value of the specific attribute will be extracted from this offset in the given length.
Length	Enter the length in spool attributes parameter. The value of the specific attribute will be extracted from the specified offset in the given length.
Order	Enter a number from 1 to 4 to specify the order in which the primary identification attributes will be evaluated.
Generic (*)	Enter "Y" if this attribute is to be used generically for report identification. Note that only one attribute can be used in this way.

Field	Explanation
File Identification	

Example

In the 3GL interface 104 during OPEN, the user ID is in bytes 1 to 8, the terminal ID in bytes 9 to 16, the program name in bytes 17 to 24 and the list name for post selection in bytes 33 to 40.

The prompts User ID, Terminal ID, Program and List Name were stored via SYSERR in the texts of numbers 1040, 1041, 1042, 1043 in the library SYSNOMU. When 3GL interface 104 is selected for report identification, a screen like the **3GL Interface Defaults** screen is displayed.

4 Users

The function **Users** enables the system administrator to grant user access to Entire Output Management by creating and modifying user IDs with their passwords and authorization profiles. Users are defined in Entire Output Management for the following purposes: security, distribution lists, logging.

Every user in Entire Output Management is associated with a *user definition*. In the user definition, you define which functions the user is allowed to perform and set various options which control the behaviour of the user interface.

This section describes the components of a user definition and the functions available for the maintenance of user definitions:

Components of a User Definition

A user definition consists of the following sections:

- User Record
- User Profile

User Record

Field	Explanation
User ID	Enter the user ID. The user ID uniquely identifies a user in Entire Output Management and is used for security and for report distribution. The user ID must be identified to the security package in your installation, if you have one, for example: RACF, TOP-SECRET, unless the profile field ESY User is set to "N".
First Name / Last Name	Enter the user's first name and last name.
Title	Enter the user's title (optional).
In addition, you can - optionally - enter the following information on the user: address information, office and departmental information, telephone numbers.	

User Profile

Field	Explanation
User Type (A/G/O/P)	Possible values: ■ A = Administrator: The user can see the entire printout queue. ■ G = General user: The user will only see the printouts he/she has explicit access to.

Field	Explanation
	■ O = Operator: The user can see the entire printout queue. In addition to the same rights as a general user, he/she may manage objects in the printout queue without having explicit authorization for them. ■ P = Printer-associated user: The user has access to all printouts of all printers he/she has access to. For this user, only the printout queue of the respective printer(s) will be shown.
Language Code (1/2)	Specify the language code for the user interface: 1 = English, 2 = German.
ESY User (Y/N)	Is the user ID defined in the external security system? Enter "Y" (yes) or "N" (no). (See also the field description for **Use Owner ID**).
Confirm (Y/N)	Enter "Y" to open a window requesting confirmation of deletion. Enter "N" to suppress the window.
Auto-Commit (E/I)	Enter "E" (explicit) to open a window requesting confirmation of modifications. Enter "I" (implicit) to commit modifications automatically.
Editor Prefix	Enter "Y" to display the six columns with line numbers on the left-hand side of the Editor screen when browsing active reports. Enter "N" to suppress the display.
Editor PF Keys	Enter "Y" to display the PF-key assignments at the bottom of the Editor screen when browsing active reports. Enter "N" to suppress the display.

Field	Explanation
Reports	The user may perform the following functions on objects of this type: ■ D = Display only. ■ M = Display and Modify. ■ P = Display, Modify and Purge.
Bundles	
Distribution Lists	
Printers	
Physical Printers	
Calendars	
Users	
Active Reports	
Active Bundles	
Printouts	
Sort selected active reports by (N/D)	Active reports are sorted: N = by name, D = by date (this is the default).
Set default filter to substring (Y/N)	This field only applies to the Output Management GUI Client (NGC). It sets the default for various NGC functions used to filter active

Field	Explanation
	reports and determines whether the report name that can be specified with any of these functions is interpreted as a prefix or as a substring. This default setting can be changed individually in every function concerned.
Archive	Y = The user is allowed to perform the corresponding function. N = The user is not allowed to perform the corresponding function.
Revive	
Flush Bundle	
Archive Administration	
Monitor Startup	
Monitor Shutdown	
Display Monitor	
System Defaults (D/M)	D = The user may display the system defaults. M = The user may modify the system defaults.
Restrict Abun (Y/N)	Y = prevent users from listing all active bundles. N = allow users to list all active bundles; users can display and add reports only into active bundles for which they are authorized; these bundles are highlighted in the Active Bundle list.
Abun List Format (1/2)	This option controls the behaviour of active bundle list wildcard selection: 1 = the user is presented with a list of matching active bundle names from which he/she may select one; active bundles with the selected name are then listed. 2 = all matching active bundle names are listed.
Display long names (Y/N)	Y = Long report and bundle names consisting of up to 25 characters (see System Defaults) are displayed. N = Long names are not displayed. If long-name display is not supported by the system, this field is automatically set to "N" and cannot be overwritten.

Invoking User Maintenance

To invoke user maintenance:

1 Enter 2 in the command line of the **System Administration** menu.

The **User Maintenance** screen is displayed:

```
 09:52:08            **** Entire Output Management ****          2019-11-11
User ID XYZ                    - User Maintenance -

Cmd User ID  Name                                                Phone
___ _______ ____________________________________________________ ____________
__  AD       Dent, Arthur                                        4405
__  AQ       Quatermain, Allan                                   5678
__  DC       Copperfield, David                                  1362
__  HF       Finn, Huckleberry                                   1372
__  JC       Carter, John                                        4444
__  JE       Eyre, Jane                                          1366
__  JP       Parlabane, Jack                                     2345
__  LL       Lamora, Locke                                       1233
__  MC       Thompson, Mercedes                                  5678
__  RM       Morgan, Rachel                                      6666
__  OT       Twist, Oliver                                       1367
__  RC       Crusoe, Robinson                                    1234
__  TA       Aching, Tiffany                                     1122
__  TS       Sawyer, Thomas                                      1785
__
All
 Command => ____________________________________________________________
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Add   Exit  Flip               -     +                     Menu
```

This screen lists all users defined in Entire Output Management. They are displayed in alphabetical order of user IDs.

For each user, the ID, name and telephone number are displayed.

To display only user IDs that start with a given prefix, you can use an asterisk (*) to enter selection criteria in the field above the user IDs.

2 From this screen, you invoke the individual user maintenance functions by pressing a PF key or by marking a user with a line command in the **Cmd** field.

Line Commands

Command	Function
CO	Copy the user definition.
DE	Delete the user definition.
DI	Display the user definition.
FO	Maintain the user's folder.
LO	Display log information for user definition.
MO	Modify the user record section of the user definition.
UL	Display log records of user activity.
UP	Modify the user profile section of the user definition.
XR	Cross-reference: display all objects related to the user.

Creating a New User Definition

To create a new user definition:

1 Press PF2 (Add) on the **User Maintenance** screen.

The **Define User** screen is displayed.

2 On this screen, you enter a user ID and the user's name, and - optionally - further information about the user as described under ***User Record***.

3 After you have made the appropriate specifications, press PF9 (Profl) on the **Define User** screen.

The **User Profile Definition** screen is displayed.

4 It lists the functions the user is authorized to perform. Next to each function, the possible values are shown in parentheses. Change the values ars desired. The fields are described under ***User Profile***.

Copying a User Definition

To copy a user definition:

1 On the **User Maintenance** screen, enter the line command `CO` next to the user.

The **Copy User Definition** window is displayed.

2 Type the name of the target user in the input field provided.

A message confirms that the user has been copied.

Modifying a User Definition

To modify the user record section of a user definition:

1 On the **User Maintenance** screen, enter the line command `MO` next to the user.

The **Define User** screen is displayed for the user you have selected.

2 The fields are described under *Components of a User Definition*.

Change the specifications as desired. Then save them.

To modify the user profile section of a user definition:

1 On the **User Maintenance** screen, enter the line command `UP` next to the user.

The user profile of the user is displayed.

2 The fields are described under *Components of a User Definition*.

Change the specifications as desired. Then save them.

Deleting a User Definition

When you delete a user definition, all other objects associated with the user (for example, active reports) will also be deleted. This means that the deletion process may be quite time-consuming. Therefore it is recommended that a user be deleted only when the Monitor is not active, or in batch mode.

To delete a user definition online:

1 On the **User Maintenance** screen, enter the line command `DE` next to the user.

2 Depending on the `CONFIRM` option (see SET command), you may be prompted to confirm the deletion.

To delete a user definition in batch mode:

- Use the application programming interface `NOMDELUS`, which is provided in the library `SYSNOM`. It is invoked as follows:

```
LOGON SYSNOM
NOMDELUS DELETE user-ID
```

The user will be deleted system-wide.

Cross-Referencing a User

To display cross-reference information about a user:

1 On the **User Maintenance** screen, enter the line command `XR` next to the user.

The **XREF of User** window for the selected user is displayed. It shows the entities related to the user ID, grouped by categories. If a category contains entities related to the user ID, you can mark that category in the `M` column with any character.

2 Mark the category for which cross-reference information is to be displayed.

A window is displayed, listing all entities of the selected type to which the user is linked.

Displaying Log Information About a User

To display log information about a user:

1 On the **User Maintenance** screen, enter the line command `LO` next to the user.

The **Log Display** screen is displayed for the user definition selected.

2 You can display more information about a log entry by marking it with the line command `IN`.

Displaying a User's Activity Log

To display log information about a user's activities:

- On the **User Maintenance** screen, enter the line command `UL` next to the user.

A list of all activities performed by the user is displayed. For each activity, the following information is displayed: the date and time when it was performed, the object on which it was performed, and a message explaining the activity.

Copying Natural Security Users

This function makes it easier for you to define users in Entire Output Management.You can copy Natural Security users definitions to the Entire Output Management database.

A default profile can be used for the users copied. The individual user profile can be defined directly on this screen.

To copy users from Natural Security:

1 Enter `3` in the command line of the **System Administration** menu.

The **Copy Natural Security Users** screen is displayed:

```
 09:37:25              **** Entire Output Management ****           2018-11-11
User ID XYZ             - Copy NATURAL SECURITY Users -

Default Profile ==> ________

Cmd User ID  Name                 T  R B L P  AR A R  AB F  PO  U C PH Message
___ ________ ____________________ _  _ _ _ _  __ _ _  __ _  __  _ _ __ ________
__  AAA      Ritchie Blackmore    G  P P P D   M Y Y   M N   M  _ D  D
__  ABC      Jon Lord             G  P P P D   M Y Y   M N   M  _ D  D
__  BCDE     Ian Paice            G  P P P D   M Y Y   M N   M  _ D  D
__  FGH      Nick Simper          G  P P P D   M Y Y   M N   M  _ D  D
__  IJK      Rod Evans            G  P P P D   M Y Y   M N   M  _ D  D
__  MNOPQ    Ian Gillan           G  P P P D   M Y Y   M N   M  _ D  D
__  ROG      Roger Glover         G  P P P D   M Y Y   M N   M  _ D  D
__  SAB      Tommy Bolin          G  P P P D   M Y Y   M N   M  _ D  D
__  SAT      Joe Satriani         G  P P P D   M Y Y   M N   M  _ D  D
__  STE      Steve Morse          G  P P P D   M Y Y   M N   M  _ D  D
__  TAST     Don Airey            G  P P P D   M Y Y   M N   M  _ D  D
__  UGH      Glenn Hughes         G  P P P D   M Y Y   M N   M  _ D  D
__  WHITES   David Coverdale      G  P P P D   M Y Y   M N   M  _ D  D
Top Of Data
 Command => ____________________________________________________________
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help        Exit  Flip  Do    Undo   -     +                     Menu
```

2 On this screen, you can select the users to be copied or modify their profiles, as described below.

Fields

Field	Explanation
Default Profile	A default profile can be very useful when copying a large group of users from Natural Security to Entire Output Management. If you select a default profile, it is automatically used for every user copied. To select a default profile, enter a user ID in this field. For a user selection list, enter a question mark (?) in this field. A help window opens. Press ENTER again to open the user selection window. When you perform the copy function, users marked with a character are copied with the Entire Output Management user profile of the user ID entered here.
User ID	The user ID as defined in Natural Security.
Name	The user's name.
T	User type. Enter an A here to define the user as an Administrator, or a G to define a General user.

Copying a User or Group of Users

To copy a user or group of users to Entire Output Management:

1 On the **Copy Natural Security Users** screen, enter any character in the **Cmd** field preceding the user to be copied.

"Defined" is displayed in the Message column following the users who were copied.

If you have selected a user ID for the default profile, the users marked with a character are copied with the Entire Output Management user profile of the user ID entered in the **Default Profile** field.

2 Press PF5 (Do) to confirm your work.

A message confirms that all modification have been committed. All users copied now appear on the **User Maintenance** screen.

Modifying a User Profile

You can modify an individual user profile on the **Copy Natural Security Users** screen before copying it to Entire Output Management.

To to do:

- Overwrite the values listed on the screen for that profile. You can enter the following function codes in the columns after the user names:

Function Code	Function
D	Display object only.
M	Display and Modify object.
P	Display, Modify and Purge object.
or:	
Y	Function allowed.
N	Function not allowed.

Column	Meaning	Function Codes
R	Reports	D, M, P
B	Bundles	D, M, P
L	Distribution lists	D, M, P
P	Logical printers	D, M, P
AR	Active reports	D, M, P
A	Archive	Y, N

Column	Meaning	Function Codes
R	Revive	Y, N
AB	Active bundles	D, M, P
F	Flush bundle	Y, N
PO	Printouts	D, M, P
U	Users	D, M, P
C	Calendars	D, M, P
PH	Physical printers	D, M, P

For example, to allow a user to display and modify bundles, enter an `M` in the "B" column to the right of the user name. To grant a user the permission to archive, enter a `Y` in the "A" column.

5 Calendars

Calendars are used to define retention periods for storage and archiving. Retention periods are specified as a number of days, counting either all days or only working days. In a calendar, you specify which days are to be considered working days and which are not. Non-working days can be:

- *annual holidays* = non-working days which occur once a year (for example, public or private holidays);
- *weekly holidays* = non-working days which occur every week (for example, Sundays).

A calendar is identified by its name and the year to which it refers.

A calendar always applies to one year. To ensure the correct calculation of retention periods across the turn of the year, you have to define a corresponding new calendar of the same name for the next year. If a retention period exceeds the end of the year, and a corresponding calendar for the following year has not been defined, Entire Output Management will calculate the retention period for the following year based on all days, without distinguishing between working and non-working days.

This section describes the functions available for calendars:

Invoking Calendar Maintenance

To invoke Calendar Maintenance:

- Enter 4 in the command line of the **System Administration** menu.

  The **Calendar Maintenance** screen is displayed:

```
 13:18:33            **** Entire Output Management ****           2018-11-11
User ID XYZ                  - Calendar Maintenance -

Cmd  Calendar  Year
___  ________  ____
 __  A-CALEND  2016
 __  DEMO-CAL  2015
 __  MYDATES   2016
 __
 __
 __
 __
 __
 __
 __
 __
 __
 __
 __
All
 Command => ____________________________________________________________
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Add   Exit  Flip               -     +                      Menu
```

This screen lists in alphabetical order all calendars which were defined by an authorized user. From this screen, you invoke the functions available for calendar maintenance.

Adding a Calendar

To add a new calendar:

1 Press PF2 on the **Calendar Maintenance** screen.

The **Add Calendar** window is displayed.

2 In this window, you specify the following:

Field	Explanation
Name	The name of the calendar to be added.
Year	The year to which the calendar is to apply.
Default	The name of a calendar to initialize the calendar to be added.

3 When you have entered the name and the year, the **Calendar** screen is displayed, showing the first half of the year:

```
 13:22:20            **** Entire Output Management ****           2018-06-06
                       - Calendar NEW-CAL     Year 2005 -

                 January              February             March
 Monday          4 11 18 25        1  8 15 22          1  8 15 22 29
 Tuesday         5 12 19 26        2  9 16 23          2  9 16 23 30
 Wednesday       6 13 20 27        3 10 17 24          3 10 17 24 31
 Thursday        7 14 21 28        4 11 18 25          4 11 18 25
 Friday       1  8 15 22 29        5 12 19 26          5 12 19 26
 Saturday     2  9 16 23 30        6 13 20 27          6 13 20 27
 Sunday       3 10 17 24 31        7 14 21 28          7 14 21 28


                 April                May                  June
 Monday          5 12 19 26          3 10 17 24 31        7 14 21 28
 Tuesday         6 13 20 27          4 11 18 25        1  8 15 22 29
 Wednesday       7 14 21 28          5 12 19 26        2  9 16 23 30
 Thursday     1  8 15 22 29          6 13 20 27        3 10 17 24
 Friday       2  9 16 23 30          7 14 21 28        4 11 18 25
 Saturday     3 10 17 24          1  8 15 22 29        5 12 19 26
 Sunday       4 11 18 25          2  9 16 23 30        6 13 20 27

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help        Exit  Wkdy               -     +     -     +
```

With PF7 and PF8 you can switch between the displays of the first half (January to June) and the second half (July to December) of the year.

Defining Working Days and Holidays

Non-working days (annual holidays and weekly holidays) are *highlighted* on the **Calendar Definition** screen, working days are shown without highlighting.

To change a working day to an annual holiday, or vice versa:

- On the **Calendar Definition** screen, place the cursor on the respective date, and overwrite the date with any character.

  The display (highlighted or not) will change accordingly.

To define weekly holidays:

1 Press PF4 (Wkdy) on the **Calendar Definition** screen.

  A window with the days of the week is displayed:

```
+-------------------------------------+
!                                     !
!  - Calendar MYCAL      Year 2016 - !
!                                     !
!                                     !
!     Please mark weekly holidays     !
!                                     !
!         _  Monday                   !
!         _  Tuesday                  !
!         _  Wednesday                !
!         _  Thursday                 !
!         _  Friday                   !
!         S  Saturday                 !
!         S  Sunday                   !
!                                     !
!         S Set   R Reset             !
!                                     !
!   PF3 End                           !
!                                     !
+-------------------------------------+
```

2 Mark with "S" the days which are to be weekly holidays.

To define a weekly holiday as a working day again, mark it with "R".

The changed status will be shown on the **Calendar Definition** screen by appropriate highlighting or non-highlighting.

Modifying a Calendar

To modify a calendar:

1 On the **Calendar Maintenance** screen, mark the calendar with the line command `MO`.

The **Calendar Definition** screen is displayed for the calendar you have selected.

2 You can modify the calendar as described under *Defining Working Days and Holidays*.

3 Then press ENTER to save your modifications.

A message confirms the modification.

Displaying a Calendar

To display a calendar:

- On the **Calendar Maintenance** screen, mark the calendar with the line command `DI`.

  The calendar selected is displayed.

Deleting a Calendar

To delete a calendar:

1. On the **Calendar Maintenance** screen, mark the calendar with the line command `DE`.
2. Depending on the `CONFIRM` option (see SET command), you may be prompted to confirm the deletion.

6 Physical Printers

A physical printer is a VTAM printer, a system printer, or a file when printing to disk or tape.

This section covers the following topics:

7 Attributes of Physical Printers

This section describes the attributes of a physical printer definition:

General Attributes

Field	Explanation
Printer ID	Enter the ID of the physical printer.
Printer type	The following printer types are supported by Entire Output Management: ■ **CASPOOL** - Print to CA Spool. ■ **DISKMVS** - Print data to disk (z/OS). ■ **EMAIL** - Physical printer representing one or more email addresses. ■ **NAF** - Print on Natural Advanced Facilities logical printer. ■ **SYSPRBS2** - System printer in BS2000. ■ **SYSPRJES** - System printer in JES (z/OS). ■ **SYSPRPWR** - System printer in POWER (z/VSE). ■ **TAPEMVS** - Print data on tape (z/OS). ■ **TAPEVSE** - Print data on tape (z/VSE) . ■ **VTAM** - VTAM printer. ■ **WRTSPOOL** - Output directly to spool (z/OS and z/VSE). ■ **UNIXLP** - Direct TCP Printing. ■ **NATUNIX** - Print on Natural for UNIX. ■ **DISKUNIX** - Output to UNIX or Windows file. Under Natural for UNIX, only the printers types NATUNIX and DISKUNIX are supported. Enter an asterisk (*) to display a selection list of all printer types.
Location	Enter the location of the physical printer. For example: 2nd floor, room 262.
Print program	The name of the program which does the actual printing.
Job skeleton	The name of the job skeleton in the SYSNOMU library, that is used when printing in batch mode. Press PF10 (Edit) to edit this job skeleton.
Escape character	The special character used to identify substitution variables.
Maximum lines	Enter the maximum number of lines allowed to be printed on this printer.
Time windows from/to	Printing is allowed only during the specified time intervals.

Special Attributes

Depending on the type of physical printer, there are different sets of special printer-type-specific attributes. The following physical printer types are supported and their special attributes explained below:

- CASPOOL
- DISKMVS
- EMAIL
- NAF
- SYSPRBS2
- SYSPRJES
- SYSPRPWR
- TAPEMVS
- TAPEVSE
- VTAM
- WRTSPOOL

The value specified for a special attribute will be used if there is no corresponding specification is made in the logical printer definition.

CASPOOL

Attribute	Explanation
Account	Enter the account number to be used.
Chars	Enter the character table to be used.
Class	Enter the output class to be used for system printers.
System ID	Enter system affinity.
Fcb	Enter the FCB image that describes the length (and, optionally, the width) of a page.
Formdef	Enter the name of the FORMDEF to be used.
Form	Enter the name of the form to be used.
Hold	Should the printout be held by CA Spool? Enter YES/NO.
Linect	Enter the maximum number of lines to be printed on a page.
Limit	Enter the maximum number of lines allowed.
Filename	Enter the name of the output file.
Pagedef	Enter the name of the PAGEDEF to be used.
Programmer	Enter the programmer's name.
Prmode	Enter PAGE to use page mode as PRMODE.
Retention	How long should the print file be retained after printing? Enter the retention period (in hours).

Attribute	Explanation
Room number	Enter the room number.
Trc	TRC (table reference characters). Enter YES/NO.
Writer	Enter the name of the NJE writer.

DISKMVS

Attribute	Explanation
Dataset	The file name to be used.
Member	The member name to be used.
Dataclas	This corresponds to the JCL parameter DATACLAS.
Dcb	This corresponds to the JCL parameter DCB.
Disp	The Disposition parameter.
Expdt	This corresponds to the JCL parameter EXPDT.
Like	This corresponds to the JCL parameter LIKE.
Lrecl	The record length to be used (for records of variable length, this is the maximum record length + record length field).
Mgmtclas	This corresponds to the JCL parameter MGMTCLAS.
Msvgp	This corresponds to the JCL parameter MSVGP.
Recfm	The record format to be used. In addition, this entry determines whether the data are printed with ASA/machine code or without carriage control characters.
Retpd	This corresponds to the JCL parameter RETPD.
Space	This corresponds to the JCL parameter SPACE.
Storclas	This corresponds to the JCL parameter STORCLAS.
Unit	The unit type.
Volser	The volser where the file is located.
Work file	This entry is made automatically according to the record format (RECFM) used. If RECFM is set to "V", work file number 01 will be used (this is the default); otherwise, work file number 02 will be used.

EMAIL

Attribute	Explanation	Symbol
Recipient	You can enter up to 9 e-mail addresses to which to send the report. Enter the at sign @ as (a).	&REC1. to &REC9.
Recipient-CC	You can enter up to 9 e-mail addresses to which to send the report as "CC" (carbon copy). Enter the at sign @ as (a).	&REC1-CC. to &REC9-CC.
From	This is the name which will appear as the sender of the e-mail.	&REPLY.
Node	This Entire System Server node will be used to send the mail. It can be different from the node the Entire Output Manager monitor uses. If this field is left blank, the node number of the monitor will be used. If this is the case, the monitor user ID (usually NOMMON) must be enabled for "UNIX Services" in your security system (like RACF or ACF2). If the node number is different from the monitor's number, any user ID who sends an e-mail is used for sending and must be enabled accordingly.	&EMAILNODE.
Encrypt	Enter "Y" to encrypt the e-mail message. (*This function is not yet available.*)	&ENCR.
Subject	The subject of the e-mail to be sent.	&SUBJ.
Text Member	For binary reports only: You can specify the name of a Natural text member whose contents is to be used as the actual text of the message.	&EMAIL-MEM.
Text Library	The library which contains the **Text Member**.	&EMAIL-LIB.

A printer of type EMAIL is available on mainframes only and uses the Entire System Server to send the mails. If the active report is of type "text", it will be sent line by line. If the active report is of type "binary", the binary file will be attached to the mail sent; and, if a **Text Member** is specified (see above), its contents will be used as the text of the mail.

NAF

Attribute	Explanation
Printer Profile	Enter the name of a Natural Advanced Facilities logical printer profile (LPF). The LPF determines which printer is used. For further information, see the *Natural Advanced Facilities* documentation.
CC Table	Enter the PROFILE parameter. For further information, see the *Natural Advanced Facilities* documentation.
Forms	Enter the FORMS parameter. For further information, see the description of the DEFINE PRINTER statement in the *Natural* documentation.
Listname	Enter the NAME parameter. For further information, see the description of the DEFINE PRINTER statement in the *Natural* documentation.

Attribute	Explanation
Disposition	Enter the DISP parameter (DEL/HOLD/KEEP). For further information, see the description of the DEFINE PRINTER statement in the *Natural* documentation.

SYSPRBS2

Attribute	Explanation
Orig. attributes	Should original print attributes be used? Enter YES/NO.
Chars-modification	Should all character set characteristics be used or only certain ones? Enter YES/NO.
Chars	Enter one or several character sets to be used for printing.
Class	Enter the job class to be used for the SPOOLOUT job.
Control	Determines whether control characters specific to laser printers will be used.
Destination	Determines logical printer to be used.
Dia	Enter the Formulardia to be used.
Document-format	Specifies the type of the document contents.
Fob	Enter the Forms Overlay Buffer (FOB) for overlaying printed pages with text and pictures.
Form	Enter the type of form to be used.
Header	Determines whether a header line will be printed on each page.
Image	Enter the name of a parameter file containing LOOP-, FOB- and CHARS-POOL sets.
Lines	Enter the number of lines to be printed on a page.
Loop	Enter the name of the LOOP set to be loaded in the carriage information buffer of the printer.
Pagecc	Determines whether control characters will be evaluated.
Pname	The job name for the SPOOLOUT job.
Rotation	Allows page rotation for output on laser printers.
Rotation-loop	Enter the name of loop for output in landscape format.
Shift	Enter the number of columns by which the output text is to be indented.
Space	Determines the number of line feeds or the type of carriage control characters contained.
Text	This is stored in the SPOOL Control Block (SCB) for the processing of system exits.
Transl.Table	Enter the code translation table to be activated.
Tray	Enter the number of the tray from which to extract paper for printing.

SYSPRJES

Attribute	Explanation
Burst	This corresponds to theJCL parameter BURST.
Chars	Enter one or more 4-byte character set names as in JCL.
Ckptline	Enter the maximum lines in a logical page. This corresponds to the JCL parameter CKPTLINE.
Ckptpage	Enter the number of logical pages to be printed before JES takes a checkpoint. This corresponds to the JCL parameter CKPTPAGE.
Ckptsec	Specify how many seconds of printing are to elapse between each checkpoint for the SYSOUT file. This corresponds to the JCL parameter CKPTSEC.
Class	Enter a one-character JES output class for the printout.
Compact	This corresponds to the JCL parameter COMPACT.
Datack	This corresponds to the JCL parameter DATACK.
Dcb	This corresponds to the JCL parameter DCB.
Destination	Enter the JES destination parameter.
Fcb	This corresponds to the JCL parameter FCB (Forms Control Buffer).
Flash	This corresponds to the J CL parameter FLASH.
Formdef	Enter the name of the library member that PSF uses in printing on a page-mode printer.
Forms	Enter the name of the form. This corresponds to the JCL parameter FORMS.
Index	This corresponds to the JCL parameter INDEX.
Lindex	This corresponds to the JCL parameter LINDEX.
Lrecl	This corresponds to the JCL parameter LRECL.
Modify	This corresponds to the JCL parameter MODIFY.
Pagedef	Enter the name of the library member that PSF uses in printing on a page-mode printer.
Prmode	This corresponds to the JCL parameter PRMODE.
Recfm	This corresponds to the JCL parameter RECFM.
Trc	This corresponds to the JCL parameter TRC.
Ucs	This corresponds to the JCL parameter UCS.
Work file	This entry is made automatically according to the record format (RECFM) used. If RECFM is set to "V", work file number 01 will be used (this is the default); otherwise, work file number 02 will be used.

SYSPRPWR

Attribute	Explanation
Burst	This corresponds to the JCS parameter BURST.
Chars	Enter one or more 4-byte character set names as in the JCS.
Class	Enter a one-character POWER output class for the printout.
Cmpact	This corresponds to the JCS parameter CMPACT.
Destination	Enter the POWER destination parameter.
Delt	This corresponds to the JCS parameter DELT.
Disp	This corresponds to the JCS parameter DISP.
Fcb	This corresponds to the JCS parameter FCB (Forms Control Buffer).
Flash	This corresponds to the JCS parameter FLASH.
Form	Enter the name of the form on which the report or bundle is to be printed. This corresponds to the JCS parameter FORM.
Jsep	These correspond to the JCS parameters of the same names.
Modify	
Password	
Rbc	
Rbm	
Rbs	
Remote	
Sysid	
Ucs	
User	

TAPEMVS

Attribute	Explanation
Dataset	The file name to be used.
Disp	The Disposition parameter.
Blksize	The block size to be used.
Recfm	This corresponds to the JCL parameter RECFM.
Lrecl	The record length to be used.
Dcb	This corresponds to the JCL parameter DCB.
Label	This corresponds to the JCL parameter LABEL.
Unit	The unit type.
Volser	The volser where the file is located.

Attribute	Explanation
Work file	This entry is made automatically according to the record format (RECFM) used. If RECFM is set to "V", work file number 01 will be used (this is the default); otherwise, work file number 02 will be used.
Expiration	Enter the retention period for the file.

TAPEVSE

Attribute	Explanation
Dataset	Enter the file name to be used.
Volser	Enter the volser where the file is located.
Unit	Enter the Unit type.
Disp	Enter the Disposition parameter.
Recfm	This corresponds to the JCL parameter RECFM.
Work file	This entry is made automatically according to the record format (RECFM) used. If RECFM is set to "V", work file number 01 will be used (this is the default); otherwise, work file number 02 will be used.
Blksize	Enter the block size to be used.
Carriage control	Enter YES, if printing is to be done with carriage control. Enter NO, if not.
Expiration	Enter the retention period for the file.

VTAM

Attribute	Explanation
Carriage control	Enter YES, if printing is to be done with carriage control. Enter NO, if not.
Form feed before	Enter the number of form feeds to be performed at the beginning of a printout.
Form feed after	Enter the number of form feeds to be performed at the end of a printout.
Trace	Enter YES, if you want a trace to be written by Entire System Server.
Logmode	Enter a special log mode, if desired.

WRTSPOOL

Attribute	Explanation
Burst	The BURST option. Possible values: NO (default) and YES. (Used only for z/VSE.)
Chars	Four groups of 4-byte character-set names taken from the JCL. (Used only for z/OS.)
Class	A one-character output class for the printout. If this field is left blank, the print class of the monitor defaults will be used.
Compact	The name of the compaction table. (Used only for z/VSE.)
Copies	The number of SYSOUT copies.
CopyModModule	The module name for copy modification. (Used only for z/VSE.)
CopyModTable	The character arrangement table for copy modification. (Used only for z/VSE.)
Destination	The remote destination of the file.
Disposition	The disposition to be assigned to the spool output. (Used only for z/VSE.)
Fcb	The name of the Forms Control Buffer.
Flash	The Flash parameter for device type 3800.
Flash Count	The Flash count. (Used only for z/VSE.)
Form	Enter the SYSOUT form.
Hold	Determines whether the SYSOUT file is to be held (YES/NO). (Used only for z/OS.)
Job name	The name of the job under which the output is to be printed.(Used only for z/VSE.)
Node	The Entire System Server node which will be used to write to spool. If this field is left blank, the node number of the monitor will be used.
Password	The password of the job. (Used only for z/VSE.)
Program	The name of the writer program to process this file.
Segment size	The size (in lines) of each segment. (Used only for z/VSE.)
Sep pages copies	Determines whether the required separators are copied. Possible values: YES or NO (default). (Used only for z/VSE.)
Sep pages count	The number of separator pages. (Used only for z/VSE.)
Target node	The name of target node. (Used only for z/VSE.)
Ucs	The UCB name. (Used only for z/VSE.)
Ucs options	The UCB options. Possible values: B = block data check option; F = fold option. (Used only for z/VSE.)
User info	User information. (Used only for z/VSE.)

Attribute Symbols

For the printer types EMAIL, UNIXLP, NATUNIX and DISKUNIX, you can specify attribute symbols in their special attributes. At the time of printing, each of these will then be replaced by the value of the corresponding attribute.

Every attribute symbol begins with an ampersand (&) and ends with a period (.). Both characters are part of the symbol.

Three groups of attribute symbols are available:

- Common Attribute Symbols
- Printer-Type-Specific Attribute Symbols
- Spool Attribute Symbols

Common Attribute Symbols

For general attributes of active reports, which apply to all of the four printer types, the following attribute symbols are available:

Attribute	Symbol
Printout ID	`&PO.`
Program controlling the printout	`&PROG.`
Number of copies	`&COP.`
Printer exit program	`&MEM.`
Printer exit library	`&LIB.`
Report name	`&REP.`
Bundle name	`&BUN.`
Description	`&DESC.`
Record length	`&REC.`
CC type	`&CC.`
Number of lines	`&LIN.`
Printer type	`&PT.`
Type "AL" (Y/N)	`&TAL.`
Run number of the report	`&RRNB.`
Run number of the bundle	`&BRNB.`
4-digit random number	`&RND.`
Current date (in format *yy-mm-dd*)	`&DAT.`
Current time (in format *hhmmss*)	`&TIM.`

Attribute	Symbol
Current internal timestamp	&TMST.
Current process ID	&PID.

Printer-Type-Specific Attribute Symbols

The printer-type-specific attribute symbols are shown next to the corresponding printer attributes for these printer types:

- **EMAIL**
- **UNIXLP**
- **NATUNIX**
- **DISKUNIX**

Spool Attribute Symbols

For spool attributes of the active report, which apply to all of the four printer types, the following attribute symbols are available:

Spool Attribute	Explanation	Symbol
SPOOL-TYPE	Spool type of the report to be printed	&SPTYP.
CA Spool:		
EQNO	EQNO parameter	&CSEQNO.
OWNNM	OWNNM parameter	&COWNNM.
WTRNM	WTRNM parameter	&CWTRNM.
DSTNM	DSTNM parameter	&CDSTNM.
CLASS	CLASS parameter	&CCLASS.
COPYS	COPYS parameter	&CCOPYS.
PRIO	PRIO parameter	&CPRIO.
LINCT	LINCT parameter	&CLINCT.
RETAN	RETAN parameter	&CRETAN.
FORMS	FORMS parameter	&CFORMS.
FCB	FCB parameter	&CFCB.
PRMOD	PRMOD parameter	&CPRMOD.
FORMD	FORMD parameter	&CFORMD.
PAGED	PAGED parameter	&CPAGED.
CHARS	CHARS parameter	&CCHARS.
USRID	CA Spool user ID	&CUSRID.
ACTNO	ACTNO parameter	&CACTNO.

Spool Attribute	Explanation	Symbol
ROOM	ROOM parameter	&CROOM.
LNCNT	Linecount parameter	&CLNCNT.
PGCNT	Pagecount parameter	&CPGCNT.
SID	SID parameter	&CSID.
PGMNM	PGMNM parameter	&CPGMNM.
TRC	Trace (Y/N)	&CTRC.
CMP	CMP parameter	&CCMP.
FNAM	FNAM parameter	&CFNAM.
JES:		
NODE	NPR node number	&JNODE.
JOB-NAME	Name of the job which created the output	&JJOB.
JOB-NUMBER	Job number	&JJOBN.
DSTYPE	Type of the spool file	&JTYP.
DSNO-OLD	Old DS number	&JDSNO.
DATASET-KEY	Data set key	&JKEY.
GROUP-ID	Group ID	&JGRP.
PROCNAME	Name of the procedure	&JPROC.
STEPNAME	Name of the step	&JSTEP.
DDNAME	Name of the SYSOUT file	&JDD.
CHARS	CHARS parameter	&JCHARS.
FCB	FCB parameter	&JFCB.
FLASH	FLASH parameter	&JFLASH.
FORM	FORM parameter	&JFORM.
FORMDEF	FORMDEF parameter	&JFDEF.
PAGEDEF	PAGEDED parameter	&JPDEF.
TRC	Trace (Y/N)	&JTRC.
RECFM	RECFM parameter	&JRECFM.
COPIES	Number of copies	&JCOP.
UCS	UCS parameter	&JUCS.
BURST	BURST parameter	&JBURST.
COMPACT	COMPACT parameter	&JCOMP.
LINECT	Linecount parameter	&JLIN.
DESTINATION	Printout destination device	&JDEST.
TRIGGER-DSNAME	Trigger data set name	&JTRIG.
DSNO	DS number	&JDSNO.
Power:		

Spool Attribute	Explanation	Symbol
NODE	Entire System Server node number	&PNODE.
JOB-NAME	Name of the job	&PJOB.
JOB-NUMBER	Job number	&PJOBN.
TYPE	TYPE parameter	&PTYPE.
SEGMENTS	Number of segments	&PSEGM.
FLASH	FLASH parameter	&PFLASH.
FORM	FORM parameter	&PFORM.
COPIES	Number of copies	&PCOP.
DESTINATION	Printout destination device	&PDEST.
CHARS	Printout destination device	&PCHARS.
USER-INFORMATION	User information	&PUINF.
SPOOLED-PAGES	Spooled pages	&PPAG.
TRIGGER-DSNAME	Trigger data set name	&PTDSN.
TRIGGER-VOLSER	Trigger volser	&PTVOL.
Natural:		
USER-ID	Natural user ID who created the report	&NUSER.
PNR	Logical printer name	&NPNR.
TIME	Natural report creation time	&NTIME.
NATPGM	Natural program which created the report	&NPGM.
NATLIB	Natural library in which the program was executed	&NLIB.
FORM	FORM parameter	&NFORM.
PROFILE	PROFILE parameter	&NPROF.
COPIES	Number of copies	&NCOP.
NAME	NAME parameter	&NNAME.
DISP	Disposition	&NDISP.
ST-ID	Internal file number of the container file	&NID.
DBID	Database ID of the container file	&NDBID.
FNR	File number of the container file	&NFNR.
DEST	Destination	&NDEST.
BS2000:		
NODE	BS2000 node	&BNODE.
JOB-NAME	Name of the job	&BJOB.
USER-ID	User ID of the job	&BUSER.
JOB-ID	BS2000 job ID	&BJID.
ORIGINATOR-JOB-ID	Job ID of the originator	&BORIG.
COPIES	Copies to be printed	&BCOP.

Spool Attribute	Explanation	Symbol
FORM	FORM parameter	&BFORM.
CHARS	CHARS parameter	&BCHARS.
DSNAME	Name of the BS2000 file	&BDSN.
CONTROL-OPTION	Control Option parameter	&BCTRL.
DESTINATION	Printout destination	&BDEST.
DEVICE	Device parameter	&BDEV.
ROTATION	Rotation parameter	&BROT.
DIA	Dia parameter	&BDIA.
SIZE	Size of the report	&BSIZE.
RECFM	Recfm parameter	&BRECFM.
RECSIZE	Recsize parameter	&BRECS.
BLKSIZE	Block size parameter	&BBLKS.
SECONDARY	Secondary parameter	&BSEC.
ORIG-DSNAME	Original BS2000 file name	&BORDS.
CLASS	Class parameter	&BCLASS.
UNIX:		
NODE-NAME	Entire System Server UNIX node name of the source machine	&UNODE.
USERID	User of the source machine	&UUSER.
CIPHER-PASSWORD	Ciphered password of the user	&UPW.
GROUP	UNIX group or Windows domain	&UGROUP.
PATH	Path of the source file	&UPATH.
FILE-NAME	File name and file type of the source file	&UFNAM.
CONTAINER-DBID	Database ID of the container used	&UDBID.
CONTAINER-FNR	File number of the container used	&UFNR.
SIZE	Size of the report	&USIZE.
Direct Input:		
ST-ID	Internal number of the file in the container	&DID.
RPC-SERVER	Name of the RPC server for transmission	&DRPC.
USERID	User who has initiated the report	&DUSER.
PATH	Path of the source file	&DPATH.
FILENAME	File name of the source file	&DFNAM.
FILETYPE	File type of the source file	&DFTYP.
CONTAINER-DBID	Database ID of the container used	&DDBID.
CONTAINER-FNR	File number of the container used	&DFNR.
SIZE	Size of the report	&DSIZE.

8 Maintenance Functions for Physical Printers

The section describes the functions for the maintenance of physical printer definitions:

Listing Physical Printers

To define a physical printer:

- Enter 5 in the command line of the **System Administration** menu.

  The **Physical Printer Maintenance** screen is displayed:

```
 12:34:15            **** ENTIRE OUTPUT MANAGEMENT ****           2020-02-02
User ID XYZ           - Physical Printer Maintenance -                     ↩
                                                                           ↩
 Cmd Printer  Type     Location                      S Program  Skeleton
 ___ _______ ________ ______________________________ _ ________ ________
  __ BDE-XYZ  DISKMVS                                  RMPRWKF  DISKMVS
  __ CASPOOL  CASPOOL                                  RMPRCMA
  __ CSG4100S VTAM     SagUK Development               RMPRVTM
  __ DAECOP09 VTAM     Real printer in U12, Room 2     RMPRVTM
  __ DAEDC611 VTAM     Raum 117 on WK desk             RMPRVTM
  __ DAEFPR09 VTAM     VKA host printer                RMPRVTM
  __ DAEPRTCA VTAM     Printer in RM116                RMPRVTM
  __ DAUPRTED VTAM                                     RMPRVTM
  __ DAU063   UNIXLP                                   RMPRTCP
  __ DISKGGR  DISKMVS                                S RMPRWKF  GGDISK
  __ DISKMVS  DISKMVS                                  RMPRWKF  DISKMVS
  __ DISKSJU  DISKMVS                                  RMPRWKF  DISKSJU
  __ DISKUNIX DISKUNIX                                 RMPRSRV
  __ DY1SOBF  VTAM     XYZ                             RMPRVTM
Top Of Data                                                                ↩

 Command => _____________________________________________________________
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Add   Exit  Flip               -     +                      Menu
```

  This screen lists all defined physical printers which can be used in the system.

  For each printer, the following information is displayed:

Field	Explanation
Printer	The VTAM ID of the physical printer or SYSPRINT for a system printer, DISK for printing to disk.
Type	The printer type.
Location	The location of the physical printer.
S	The status of the physical printer: S = printer stopped; blank = printer active (started).
Program	The program which performs the actual printing.
Skeleton	The JCL skeleton used when printing in batch mode.

Line Commands

Command	Function
CO	Copy physical printer definition.
DE	Delete physical printer definition.
DI	Display physical printer definition.
MO	Modify physical printer definition.
ST	Start physical printer.
CL	Close physical printer.

Adding a Physical Printer

To add a physical printer:

1 Press PF2 (Add) on the **Physical Printer Maintenance** screen.

The **Physical Printer > General Attributes** screen is displayed:

```
 14:10:27            **** Entire Output Management ****           2020-02-02
User ID XYZ       - Physical Printer >General Attributes

Printer ID ........... ________
Location ............. _____________________________

Printer type ......... ________
Print program ........ ________
Job skeleton ......... ________
Escape character ..... _
Maximum lines ........ __________

Time windows
   From .............. _____  _____  _____  _____  _____  _____  _____  _____
   To ................ _____  _____  _____  _____  _____  _____  _____  _____



 Command => ____________________________________________________________________
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Add   Exit  Flip  Do    Undo             Attrb Edit        Menu
```

2 The fields are described under *General Attributes*. Specify the attributes as desired.

Special PF Keys

Key	Name	Function
PF2	Add	Add another physical printer.
PF9	Attrb	**Define special attributes for the printer**. This PF-key is available as soon as general attributes have been specified.
PF10	Edit	Edit the job skeleton.

Defining Special Attributes for a Physical Printer

To define special attributes for a physical printer:

- Press PF9 (Attrb) on the **Physical Printer > General Attributes** screen.

  The **Physical Printer > Special Attributes** screen is displayed.

  The fields are described under *Special Attributes*.

To display the corresponding substitution variables, press PF11 (Var). To revert to the original display, press PF10 (Promp).

For details on a special attribute, place the cursor on the appropriate line and press PF9 (Zoom). The following information is displayed for the attribute:

Field	Explanation
Subst. Variable	This is used if job skeletons are displayed.
No.	The error number from the SYSERR application used to determine the prompt text.
Field Prompt	This is used in the logical printer definition as well as in the printout definition screens.
Field Length	The length of the input field as used in the logical printer definition.
Default Value	The content of this field is used if nothing is specified in the logical printer definition.

Modifying a Physical Printer

To modify the attributes of a physical printer:

1 On the **Physical Printer Maintenance** screen, enter the line command `MO` next to the physical printer.

The **Physical Printer Definition** screen is displayed, showing the attributes of the selected physical printer. They are described under *Attributes of Physical Printers*.

2 Change the attributes as desired.

Then press ENTER to save your changes.

A message confirms the modification.

Deleting a Physical Printer

To delete a physical printer:

1 On the **Physical Printer Maintenance** screen, enter the line command `DE` next to the physical printer.

2 Depending on the `CONFIRM` option (see SET command), you may be prompted to confirm the deletion.

9 Special Printer Types

This section describes various special printer types and printing methods and covers the following topics:

UNIXLP – Direct TCP/IP Printing

What is Direct Printing?

See *TCP/IP Direct Printing* in the *Concepts and Facilities* documentation.

Prerequisites

The following prerequisite is required for using TCP/IP Direct Printing:

- A print service according to RFC1179 which "speaks" the LPD/LPR protocol. This can be a printer server that processes printer queues (field 'Dest') or a printer or a conversion box that is directly attached to TCP/IP "speaking" LPR/LPD.

Installation of Direct Printing

Note: for z/VSE installations: You have to position the TCP/IP library in front of the LE/VSE library in the phase search path. Otherwise, error message EDCV001I will be generated. Sample LIBDEF statement to run TCP/IP programs: `// LIBDEF PHASE,SEARCH=(PRD1.BASE,PRD2.SCEEBASE)`

1. Assemble the Natural batch driver with LE/370 option set to YES. This enables Entire Output Management to access POSIX functions.

   Note: Avoid slashes in your Natural parameters. The slash "/" is the escape character which passes the complete parameter block to LE/370 and Natural will not process any of these parameters.

2. Make module ESMLPR available to your ESY server. In z/OS, the data set in which it is contained (usually NOM.LOAD) must be APF-authorized and a PDSE data set.
3. Define a DD data set "SYSOUT" in your ESY startup job. This will be used for tracing and error messages of ESMLPR.

4. Start the Monitor and printer tasks with profile parameter RCA=(ESMLPR) (entered in the corresponding SATP*xxx* member in library SYSSATU) to ensure ESMLPR will be loaded dynamically.
5. Define physical printers of type UNIXLP and logical printers pointing to them.

   When you add a physical printer of type UNIXLP, a logical printer with the name DEFAULT*x* (*x* = A to Z) is added automatically. DEFAULT printers contains default values for UNIXLP printer parameters. If the Monitor detects an empty parameter value of a logical printer pointing to a physical UNIXLP printer, the corresponding value from the appropriate DEFAULT printer is taken. When you delete a physical UNIXLP printer, the corresponding logical DEFAULT printer is also deleted. DEFAULT printers can be modified like any other logical printer, but they cannot be renamed, deleted or copied.

   The following fields are available (besides the field Copies of the general print attributes):

Field	Explanation	Symbol
Destination	Name of the printer queue of the printer server.	`&UXLPDEST.`
Escape-before-1, -2, -3	Hexadecimal digits, sent as control bytes to the printer before printing.	`&BEF-1. &BEF-2. &BEF-3.`
Escape-after-1	Hexadecimal digits, sent as control bytes to the printer after printing.	`&AFT-1.`
Listname	The name of the listing (passed to the server).	`&LISTNAME.`
Port	Server port to be talked to; D default: port 515.	`&PORT.`
Server	The IP address or name of the printer server or the printer (if the printer has its own IP address). The IP address has to be in the format *nnn.nnn.nnn.nnn* (IPv4) or *hhhh:hhhh:hhhh:hhhh:hhhh:hhhh:hhhh:hhhh* (IPv6). If you enter a name, it has to be fully qualified, that is, including the DNS name.	`&SERVER.`
User	User ID that can be passed to the destination spooling system. If empty, the Entire Output Management user ID will be used.	`&USER.`
Formfeed	■ `BEFORE` - Entire Output Management performs no form feed, and Natural's form feed at the beginning is processed. ■ `AFTER` - Natural's form feed at the beginning is suppressed, and Entire Output Management generates a form feed after the document. ■ `NONE` - Natural's form feed at the beginning is suppressed, no form feed is generated after the document. ■ `BOTH` - Natural's form feed at the beginning is left untouched, and Entire Output Management generates an extra form feed after the document.	`&UXLPFFEED.`

Field	Explanation	Symbol
Spoolhost	Identifies the Entire Output Management source host, either by name or by IP address.	&SPHOST.
Spoolnumber	Unique number for "dest.spool". Random if empty.	&SPNO.
Table	Name of table in SYSNOMU for conversion.	&TBL.
Trace	0 or *blank* = no, 1 = yes.	&UXLPTR.

6. Print your reports on these logical printers. Entire Output Management will convert ASA or machine-code formatted reports into ASCII (where a skip to the next page is represented by *form feed and carriage return*, a line feed is done using *line feed and carriage return*, regarding the given ASA- or machine code control characters)
7. Send it to the desired printer as usual. The printer task will use low-level TCP communication and create entries such like print time and spool attributes.

Usage of Translation Tables

Entire Output Management itself performs EBCDIC-ASCII conversion using the Natural built-in conversion method, i.e the EBCDIC-ASCII table which can be altered using Natural profile parameter TABA1. This ensures that the conversion can be adapted to the country-specific code page desired.

Additionally the name of a translation table can be entered in the special attributes of a printer of type UNIXLP. This translation table is used subsequently, that is, its translation will be performed after the default translation has taken place.

The lines will be translated using Natural's internal EBCDIC-ASCII table, which can be altered with the Natural TABA1 profile parameter. However, if some more characters are to be altered depending on a printer, you can specify the name of a text object in the TABLE field; this will cause the printer task to read this text object from the library SYSNOMU. The text object has the following format:

```
aaxx
bbyy
...
```

where *aa* and *bb* are the characters that are to be converted (in hexadecimal representation), and *xx* and *yy* are the characters which are to replace them.

These values will be converted after the conversion of the default table has been done. This means, *aa* and *bb* are already ASCII values that are to be altered.

Example of a text object:

```
4145
4246
434A
```

This will translate the whole document into ASCII using the Natural table, then convert the following characters:

```
A to E
B to F
C to J
```

Do not use any comments in such an text object.

NATUNIX Printers

A printer of type NATUNIX works only if Entire Output Management runs under Natural for UNIX.

Natural for UNIX provides a print method which is stored in a Natural parameter file. NATUNIX overrides these definitions and gives the opportunity to address files or subsequent UNIX programs that receive the print data.

For example, if NATUNIX calls the print utility LPR, you can reach all destinations LPR can do.

NATUNIX uses the Natural application programming interface (API) `USR1069`, which changes the printout parameters. For further information, see the API description in the library `SYSEXT`, if the active report to be printed is a text report.

Binary reports are not printed using the print system of Natural. Instead, a temporary file will be written to directory `$EOM_WORK` and then printed using the command provided in the parameter Printer Name. If Output-Target `2` is specified, the NATUNIX printer expects a file name according to the rules below. The resulting temporary file is then moved to the target file. Therefore it is strongly recommended that DISKUNIX printers be used for binary reports instead.

See also *NATUNIX or DISKUNIX - Comparison of Characteristics*.

Attributes

Attribute	Explanation	Symbol
Formfeed	Determines whether and where a form feed is to be inserted: ■ `BEFORE` (or *blank*) - form feed before the document; this is the default. ■ `AFTER` - form feed after the document. ■ `BOTH` - form feed before and after the document.	`&NTUXFFEED.`

Attribute	Explanation	Symbol
	■ NONE - no form feed. This parameter applies to the printout as a whole. It does not affect form-feed specifications within the printout. A form feed is also inserted before each separator page. For binary reports, this parameter is ignored.	
Linesize	Number of characters per line. For binary reports, this parameter is ignored.	&LINE-S.
Max-Pages	Maximum number of pages to be printed. For binary reports, this parameter is ignored.	&MAXPAG.
Output-Target	To define a program to get control after printing, enter 1. To print into a file, enter 2.	&NTUXTARG.
Pagesize	Number of lines per page.	&PAGE-S.
Printer Name	The name of the program to get control after printing, the name of the printer or file which receives the output. Examples: ■ lpr -P *printserver*:*printer* and Output-Target 1: The printout will be routed to *printer* on *printserver* using the lpr command. ■ $EOM_WORK/&UFNAM.-&TMST. and Output-Target 2: If you have loaded a file print.out, a corresponding file will be created in Entire Output Management's work directory beginning with its name and a timestamp after the hyphen. ■ mail -s "NOM-Printout" *email@provider* and Output-Target 1: The printout will be routed to the specified email address; thus you can send an email, using the pipe mechanism. If this field is empty and Output-Target 2 is specified, the printout will be routed to the contents of the environment variable $EOM_WORK.	&PHYS.
Print Method	Always TTY.	&METH.
Profile	A printer profile; see the description of the API USR1069 in the Natural library SYSEXT.	&PROF.
Trace	Enter 0 (or *blank*) to switch tracing off. Enter 1 to start the tracing of the Monitor output (CMPRINT).	&NTUXTR.

DISKUNIX Printers

A printer of type DISKUNIX works if Entire Output Management runs under Natural for UNIX or Natural for mainframes. This printer type is designed to write the print output to a file in a UNIX or Windows file system.

The target system can be local or remote and must run a Entire System Server for UNIX node which is defined in the Entire Output Management UNIX defaults (menu 8.1, menu item 13). If this node is not intended to serve as input node it can be deactivated. DISKUNIX printouts will reach this node regardless of the node status.

After writing the printout file, a command can be executed on the target node that controls further processing. This feature can be used for printing on real printers, routing to other computers, converting the data, etc.

If the attribute symbol `&FNAM.` is not specified in any attribute field, the command line will be concatenated in the format:

```
<Command><Opt1><Opt2><Path>/<Filename>.<Filetype><Parm1><Parm2><Parm3>
```

If `&FNAM.` is specified in any attribute field, the command line will be concatenated as follows:

```
<Command><Opt1><Opt2><Parm1><Parm2><Parm3>
```

The resulting log output of this command will be written to the file `<Logpath>/<Filename>.log`.

See also *NATUNIX or DISKUNIX - Comparison of Characteristics*.

Attributes

Attribute	Explanation	Symbol
Command	If this field is not empty, a command or a script will be executed on the target system after the printout file has been written. The command will be executed asynchronously; Entire Output Management will not wait for a return code.	`&CMD.`
Filename	The name of the file to be written to the target system. If this field is empty, the original file name of the file will be used if available.	`&FNAM.`
Filetype	The file type of the file to be written to the target system. This does not contain the period character (.) between `filename` and `filetype`. If this field is empty, the original file type of the file will be used if available.	`&FTYP.`
Opt1 and Opt2	Command options before the file ID.	`&OPT1.` and `&OPT2.`

Attribute	Explanation	Symbol
Parm1 to Parm3	Parameters after the command and file ID.	&PARM1. to &PARM3.
Path	The path on the target system to which the file will be written. If this field is empty, the path will be determined by the contents of the environment variables $EOM_WORK on UNIX and %EOM_WORK% on Windows.	&PATH.
Logpath	The path of the output file which is created by <Command>. If this field is empty, <Path> will be used instead.	&LPATH.
Server	The node name of the Entire System Server service which is active on the target system. This has to be defined in the UNIX defaults (menu 8.1, item 13).	&SERV.
Trace	Enter 0 (or blank) to switch tracing off. Enter 1 to start the tracing of the Monitor output (CMPRINT).	&DSUXTR.

Formatting Attributes for File-Format Conversion

For general information on format conversion, see *Converting the Report Format* in the *Concepts and Facilities* documentation.

Field	Explanation		Symbol
Output Format	The desired output format. Predefined formats are available, which correspond to the following Ghostscript devices:		&OFO.
	Format	**Ghostscript device**	
	BMP	bmp16m	
	EPS	epswrite	
	FAX	faxg3	
	HTML	html	
	JPEG	jpeg	
	PCL	pxlcolor	
	PDF	pdfwrite	
	PNG	png16m	
	PS	ps2write	
	RTF	rtf	
	TIFF	tiff32nc	
	Any other value in this field will be interpreted as the name of a Ghostscript device which may be present in the specific user environment. See the *Ghostscript* documentation for details. If this field is empty, no file conversion will be performed.		
Enscript and Uniprint Attributes (optional)			

Field	Explanation	Symbol
Formatter	The utility which is to perform the rendering. Possible values: ■ `enscript` - The Enscript utility will be used (this is the default). ■ `uniprint` - The Uniprint utility will be used. ■ `auto` - Entire Output Management will choose the utility to be used: By default, Enscript will be used; however, if multibyte characters are detected in the print data, Uniprint will be used.	
Header	The name of the Enscript "fancy-header". If this field is empty, no header will be generated. If this field contains `DEFAULT`, the Enscript default fancy-header will be used. If Uniprint is used, this field will be ignored.	`&HDR.`
Header Font	Enscript: The font name of the header and footer, including the font size (in points); for example: `Courier10`. Uniprint: The font size of the header (in points).	`&HDRFNT.`
Footer	The Enscript footer definition. If Uniprint is used, this field will be ignored.	`&FOOT.`
Font	Enscript: The font name of the text report, including the font size (in points); for example: `Courier10` Uniprint: The file name of a truetype font. The font size (in points) can be specified as a separate number after the file name. The default is: `DejaVuSansMono.ttf 8`	`&FONT.`
Lines	Enscript: The number of lines per page for a text report. If Uniprint is used, this field will be ignored.	`&LPP.`
Landscape	If this field is empty, the pages will be created in portrait orientation. If you want landscape orientation, enter any character in this field.	`&LAND.`
Media	The paper size to be printed.	`&MED.`
Mask File	The name of a PDF file which can overlay all pages of a report that is in PDF format. This file is treated as a "stamp" on each page: Only the parts of the mask file which are transparent will show the original report. In this way, logos can be integrated in a report. If the mask file contains more than one page, the corresponding pages of the report will be overlaid. The use of mask files requires that the package "pdftk" (PDF Toolkit) is installed on the conversion node. A PDF file with transparent parts cannot be created with a Windows PDF printer; instead, you have to use the "export to PDF" function of a graphic application (for example, Photoshop or Gimp).	`&MASK.`
Code Page	Specify the code page in which the text report is to be stored. If this field is empty, the code page "latin1" (ISO-8859-1) will be used by default.	`&CODE.`

Field	Explanation	Symbol
Additional	In this field, you can specify any additional parameters.	&DSUXADD.
For details on the above Enscript and Uniprint attributes, see the *Enscript* and *Uniprint* documentation (man pages).		

NATUNIX or DISKUNIX - Comparison of Characteristics

On UNIX systems only the printer types NATUNIX and DISKUNIX are available. Which printer type you use depends on the intended purpose. To help you make this decision, the following table compares the characteristics of both printer types.

With this printer type, you can ...	NATUNIX	DISKUNIX
... use any printer type definable in the Natural parameter module.	Yes	No
... pass output to a receiving external process (conversion, e-mail, external printing).	Yes, but only with "Output Target = 1", using the pipe mechanism.	Yes, with an external command which uses the created file.
... pass output to a remote system.	No	Yes
... execute a command with the created file on a remote system (UNIX, Windows).	No	Yes
... avoid the use of any broker communication (to improve performance).	Yes	Yes, but only if the UNIX node is defined as "L" (local node).
... process binary files.	Yes, but not recommended.	Yes
... address any printer queue in the CUPS spooling system.	Yes, it is processed directly if "lpr" is the receiving program (faster).	Yes, "lpr" can handle the created file (slower).
... handle formfeeds before and after text document printing.	Yes (except for binary reports).	No
... limit the pages to be printed.	Yes (except for binary reports).	No
... handle Natural printer profiles.	Yes	No
... build the file name to be created with variables (for example, time-stamp, process ID).	Yes, a few.	Yes, many.

10 Monitor Management

This section covers the following topics:

What is the Monitor?

The Monitor is that component of Entire Output Management which performs all the work of generating, printing and distributing reports and bundles.

It runs as a Natural subtask under Entire System Server or as a batch job.

Invoking Monitor Management

To invoke Monitor Management:

- Enter 6 in the command line of the **System Administration** menu.

  The **Monitor Management** screen is displayed:

```
 17:01:46            **** ENTIRE OUTPUT MANAGEMENT ****           2018-11-20
User ID XYZ                - Monitor Management -

                              Status / Tasks active  Idle
                                                  at  17:00:12  2018-11-20
   S Start Monitor                              Section
   C Close Monitor
   L Display Monitor Log
   D Display Monitor Log by Date/Time
   P Purge Monitor Buffer Pool
   E Purge a single Buffer Pool Entry

             +-------------------------------------------------+
             :   ----------  Main Task Parameters  ----------- :
             :   Monitor Node ........ Monitor          40    :
             :   Minimum Wait ........ 2___  seconds           :
             :   Maximum Wait ........ 300_  seconds           :
             :   Wait Increment ...... 1___  seconds           :
             :   Current Wait ........ 169   seconds           :
             +-------------------------------------------------+

 Command => _____________________________________________________________
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help        Exit  Flip                    Tasks Stat  Wake        Menu
```

  It shows the Monitor status and the date/time when the Monitor was last active.

If more than one task is active, the **Status** field shows the task number which are currently active. For more task information, you press PF8 (see *Managing the Monitor Tasks)*

The available functions are described below.

You can change the **Main Task Parameters** as described under *Modifying the Monitor Parameters*.

Monitor Status

The Monitor status can be one of the following:

- Abended
- Analyzing report sources
- Analyzing Unix nodes
- Cataloging Natural srce.
- Checking defined events
- Closed
- Controlling print jobs
- Controlling print tasks
- Creating active reports
- Deleting report sources
- Exporting objects
- Idle
- Inactive
- Initializing
- Loading sources into DB
- Processing bundles
- Processing printouts
- Processing spool queue
- Purging expired archives
- Purging expired bundles
- Purging expired logs
- Purging exprd. printouts
- Purging expired reports
- Purging NAT buffer pool

- Reactivating susp. nodes
- Restaring after error
- Scheduler active
- Shutting down
- Starting archiving
- Starting condensing
- Starting monitor cycle
- Starting Natural subtask
- Starting reviving

Modifying the Monitor Parameters

To modify the monitor parameters:

1 Enter 6 in the command line of the **System Administration** menu.

The **Monitor Management** screen is displayed, showing the monitor parameter settings.

2 These main task parameters are explained below. You can change their settings as desired.

Main Task Parameters

Parameter	Explanation
Monitor Node	The node under which Entire Output Management is running.
Minimum Wait	The minimum time (in seconds) the Monitor is to wait between two consecutive monitoring cycles. You can modify this value by entering a new value.
Maximum Wait	The maximum time (in seconds) the Monitor is to wait between two consecutive monitoring cycles. You can modify this value by entering a new value.
Wait Increment	The number of seconds by which the wait time increases. If there is no activity during the minimum wait time, the wait time is increased by this value, until the maximum is reached. When activity occurs, the wait time returns to the minimum. You can modify this value by entering a new value.
Current Wait	The wait time in effect for the current cycle (in seconds).

See also **Wait Factor** under *Monitor Defaults*.

Starting the Monitor

To start the Monitor, the Entire System Server node specified for start must be active.

To start the Monitor:

- Enter S in the command line.

  A message confirms the start, and the Monitor status changes accordingly.

  The corresponding console messages will be displayed:

```
NOM1510 Monitor initialization completed successfully.
NOM1603 Monitor NOMXTS dbid fnr on node node started.
```

Waking the Monitor

To activate the Monitor before the next scheduled activity cycle, see **Wait** parameters under *Main Task Parameters*.

To activate the Monitor:

1. Press PF10 (Wake) on the **Monitor Management** screen.

   The Monitor is activated.
2. When you press ENTER, the **at** field (see above) displays the time when the Monitor became active.

If there was any pending work, the **Monitor status** changes. When the activity cycle is completed, the Monitor status changes back to "Idle".

Closing the Monitor

To close the Monitor:

1 Enter `C` in the command line of the **Monitor Management** screen.

2 A window is displayed, in which you enter `SHUTDOWN` to confirm the shutdown.

The Monitor status changes to "Shutdown In Progress". This means that the Monitor has not yet detected the close, since it is in wait status. The next time it is active, the Monitor detects the close and performs the normal close. The status then changes to "Closed".

The corresponding console message will be displayed:

```
NOM1515 Monitor shutdown completed.
```

Displaying the Monitor Log

Note: For a user without administrator status to use this function, the option "Display Monitor Log" must be set to "Y" on his/her User Profile Definition screen.

To display the monitor log:

1 Enter one of the following commands in the command line of the **Monitor Management** screen:

- `L` - to display the monitor log records in descending chronological order (most recent event first).
- `D` - to display the monitor log records in ascending chronological order (oldest event first).

A list of all monitor log records is displayed.

2 If you have invoked the list with `D`, you can make date/time specifications on the screen to restrict the range of records listed.

3 To display more information about a log entry, enter the command `IN` in the command line preceding the entry.

See also `LO` under *Commonly Used Line Commands* in the *User's Guide*.

Retrieving the Monitor Log in Batch Mode

The monitor log can also be retrieved in batch mode using the utility NOMLOG.

To do so:

1 Create a batch job, start Natural, and log on to the library SYSNOM.

2 Invoke the NOMLOG utility with the following parameters:

```
NOMLOG <yyyymmdd> <hhmm> <YYYYMMDD> <HHMM> <L> <T> <H> [<text>]
```

Parameter	Explanation
<yyyymmdd>	From year (yyyy) month (mm) day (dd).
<hhmm>	From hour (hh) minute (mm).
<YYYYMMDD>	To year (YYYY) month (MM) day (DD).
<HHMM>	To hour (HH) minute (MM).
<L>	Language (1 = English, 2 = German).
<T>	L = Log data only, T = Trace data only, B = Both log and trace data.
<H>	Write titles (Y/N). Specify N if you want to subsequently process the output with user utilities.
<text>	A word for full text research (optional); only the messages containing this word will be printed.

Purging the Monitor Buffer Pool

To purge the monitor buffer pool:

- Enter P in the command line of the **Monitor Management** screen.

  All entries in the Natural Buffer Pool are purged.

Purging a Single Buffer Pool Entry

To purge a single buffer pool entry:

1 Enter E in the command line of the **Monitor Management** screen.

  A window is displayed.

2 In this window, you enter the data for the object to be purged:

Field	Explanation
Library	Enter the name of the library where the object to be purged is located.
Object	Enter the name of the object to be purged.
DBID	Enter the ID of the database where the object to be purged is located.
FNR	Enter the file number of the object to be purged.

The object specified will be purged from the Monitor Buffer Pool.

Starting and Stopping the Monitor Trace

As monitor performance is significantly worse when tracing is active, you should only activate it under the direction of Software AG Support personnel.

To start the monitor activity trace:

- Enter the command `TRACE ON` or `T+` in the command line of the **Monitor Management** screen.

  A message is written to the monitor's output file to record that tracing was started.

The number of program levels to be traced is determined by the trace level specified in the job cards of the *Monitor Defaults*. If the job cards contain no level restriction, the trace activated by `TRACE ON` or `T+` will be across all levels.

To stop the monitor activity trace:

- Enter the command `TRACE OFF` or `T-` in the command line of the **Monitor Management** screen.

  A message is written to the monitor's output file to record that tracing was stopped.

Managing the Monitor Tasks

This function is used to see the current status of the monitor tasks.

To list the monitor tasks:

- Press PF8 (Tasks) on the **Monitor Management** screen.

  The **Monitor Task Management** screen will be displayed, showing the following information on the monitor tasks:

Field	Explanation
#	Task number.
Task Status	Current task status.
Action	Processing performed by the task.
Last Active	Date and time the task was last active.
Wait Factors (Min, Max, Incr, Curr)	The Minimum, Maximum, Increment and Current wait times for the task. You can change these values (except Current) by pressing PF8 and then overwriting the values.

See also ***Monitor Tasks*** under *Monitor Defaults*.

Line Commands

The following line commands can be entered in the **Cmd** field next to a task:

Command	Function
C	Close the task. If you close Task 1, all subtasks will be closed. If you close any other subtask, Task 1 will take over its work.
W	Wake the task to perform its processing cycle.
P	Purge the Natural buffer pool of the task.
E	Purge a single object from the Natural buffer pool of the task.
L	Display log entries for the task.
+	Activate monitor trace for the task.
-	Deactivate monitor trace for the task.

Displaying the Monitor Activities

This function is used to see the current activities of all monitor tasks.

To display the monitor activities:

- Press PF9 (Stat) on the **Monitor Management** screen.

  The **Monitor Activities** screen will be displayed, showing the following information on the monitor tasks

Field	Explanation
Monitor node / status / wait time / at	The node and status of the main task.
Current data node	The node from which the print data are read.
System / Spool type	The operating system and spool type of the current node.
NPR user ID (MF nodes)	The user ID which is logged on the Entire System Server node (if it is a mainframe node).
Next orders: Action	The current action which is active or queued.
Report	The report (or other object) processed by the action.
By	The number of the task which processes the action.
Schd.	The time when the action is scheduled.
Rtry	The number of retries if the action is executed repeatedly.

11 Task Management

This section covers the following topics:

Archiving Task

The automatic archiving defaults start archiving automatically. However, with the function **Start Archiving Task** you can also start it manually.

To start the archiving task manually:

1 Enter 7 in the command line of the **System Administration** menu.

2 A window is displayed, in which you specify the new starting date and time.

Field	Explanation
Scheduled next at	This is the next **starting date and time** according to the archiving schedule.
Reschedule for	The present date and time are displayed here. Specify a new starting date and time by changing these values. All reports marked for archiving are written to the archiving medium. If the report to be archived is *in use*, for example, if it is in the printout queue or in an open bundle, then it is not archived at this time, but only when printing is finished or the bundle closed and the next archiving session has begun.

For further information on archiving, see ***Automatic Archiving Defaults*** and ***Archive Administration***.

Reviving Task

The function **Start Reviving Task** is used to revive archived reports.

To start the reviving task:

1 Enter 8 in the command line of the **System Administration** menu.

2 A window is displayed, in which you specify the new starting date and time.

Field	Explanation
Scheduled next at	This is the next starting date and time according to the Reviving **Schedule**.
Reschedule for	The present date and time are displayed here. Specify a new starting date and time by changing these values. All reports marked for reviving appear on the **Active Reports** screen.

Condense Task

The function **Start Condense Task** is used to condense one or more marked archive data sets.

To start the condense task:

1 Enter 9 on the command line of the **System Administration** menu.

2 A window is displayed, in which you specify a date and time for the next condense task.

Field	Explanation
Scheduled at	This is the next starting date and time.
Reschedule for	The present date and time are displayed here. You can change these values to reschedule the next condense task.

12 Archive Administration

This section covers the following topics:

Archive Data Sets

Every time reports are archived to a tape, a data set is created on the tape volume containing all the archived reports. This is called an archive data set.

For each archive data set, an entry is made on the Entire Output Management archive catalog, which contains control information regarding each archive process. This information includes the date and time of the operation, the volser(s) on which the archive data set has been catalogued, and an indication of whether the data set still contains reports which must remain on archive.

When the reports contained in an archive data set are no longer required, a message is displayed to the right of the data set indicating that the volsers can be reused for other purposes.

For further information about archiving, see *Automatic Archiving Defaults* and *Archiving Task*.

Listing Archive Data Sets

To display the list of data sets which have been archived:

1 Enter 9 in the command line of the **Main Menu**.

The **Archive Data Sets** screen is displayed:

```
 17:31:17            **** ENTIRE OUTPUT MANAGEMENT ****           2018-11-11
User ID XYZ                 - Archive Data sets -                          ↩

                                                                           ↩

Cmd Data set                        NVol  NumRp Created        Msg          ↩

___ ____________________________ ____ ______ _____________ ________________
 __ NOM.ARC221.NOM0402                 1      1 03-03-03 09:00              ↩
 __ NOM.ARC221.NOM0401                 1        02-12-23 09:00 can be deleted ↩
 __ NOM.ARC221.NOM0400                 1        02-12-18 14:17 can be deleted ↩
 __ NOM.ARC221.NOM0399                 1        02-12-18 13:39 can be deleted ↩
 __ NOM.COND221.NOM0398                1        02-11-11 11:05 can be deleted ↩
 __ NOM.ARC221.NOM0397                 1        02-11-11 09:00 can be deleted ↩
 __ NOM.ARC221.NOM0396                 1        02-11-08 10:19 can be deleted ↩
 __ NOM.ARC221.NOM0393                 1        02-11-05 11:05 can be deleted ↩
 __ UKSJU.NOMUDA.NOM0392               1     11 02-11-01 16:10              ↩
 __ RDU.SJU.NOMUDA3.NOM0391            1        02-11-01 16:10 can be deleted ↩
 __ NOM.ARC221.NOM0390                 1        02-11-01 16:10 can be deleted ↩
 __ NOM.ARC221.NOM0389                 1        02-11-01 09:00 can be deleted ↩
 __ RDU.SJU.NOMUDA3.NOM0388            1        02-10-31 09:00 can be deleted ↩
 __ RDU.SJU.NOMUDA3.NOM0387            1        02-10-30 09:00 can be deleted ↩
 __ NOM.ARC221.NOM0386                 1        02-10-02 09:00 can be deleted ↩
Top Of Data                                                                ↩

 Command => ____________________________________________________________
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help        Exit  Flip              -     +          <     >    Menu ↩
```

The data sets are listed in alphabetical order.

2 The information displayed is spread over four screens. By repeatedly pressing PF11, you can display the information on the subsequent screens.

Fields

Field	Explanation
First Screen:	
Data set	The archived data set name.
NVol	The number of tape volumes the data set occupies.
NumRp	The number of archived reports contained on the data set.
Created	The date and time the data set was created.
Msg	When all reports archived on the data set are no longer required and have been deleted, the message "Delete" is displayed, advising you that the data set can be uncataloged and the volsers reused.
Second Screen:	
LogExpD	Logical Expiration Date. This is the date until which the data set is to be kept. This can differ from the Physical Expiration Date (see below), if the expiration date of one or more active reports is extended or shortened after archiving. If the Logical Expiration Date is *later* than the Physical Expiration Date, the line with the archive data set is *highlighted*. Run a condense to synchronize the two dates.
PhysExpD	Physical Expiration Date. This is the date until which the tape is to be kept and corresponds to the date supplied on the tape with the EXPDT parameter.
Third Screen:	
# Expired	The number of expired reports. This is calculated by subtracting the number of reports still active on this data set from the number of reports originally archived. This number will not be displayed for old archive data sets.
Cdns	This shows whether this archive is output from a condense or not.
Fourth Screen:	
Arc Type	Displays the archive type name, standard or user-defined.
Num	Internally allocated number for archive type.

Condensing an Archive Data Set

To condense an archive data set:

1 To mark an archive data set for condensing, mark it with the line command `CD` on the **Archive Data Sets** screen.

The message "condense" is displayed in the **Msg** column of the**Archive Data Sets** screen.

2 To start the condense task, enter the direct command `START CONDENSE` in the command line of any screen, or select option 9 on the **System Administration** menu (see *Condense Task*).

Note: The job skeleton used for condensing has to be saved in library SYSNOMU and must be named JCDNSKEL.

Renaming an Archive Data Set

This function renames the selected archive data set and updates all active reports contained on it so that they point to the new data set. Summary information on the results of this function is written to the monitor log.

To rename an archive data set:

1 Mark it with the line command RN on the **Archive Data Sets** screen.

The **Rename Archive Data Set** screen is displayed. It contains the following fields:

Field	Explanation
From data set name	The old name of the data set.
To data set name	Specify the new name of the data set.
Log modifications of reports	This field determines whether or not messages about changed reports of archive data set are written to the monitor log: ■ Y = Messages are written. ■ N = No messages are written (default).
Adabas calls between screen writes	The number of records to be updated between screen writes. The default value is 1000.
Adabas updates between End Transactions	The number of records to be updated between End-of-Transaction commands. The default value is 30.

2 Enter the new data set name, and press PF5 to perform the update.

Deleting an Archive Data Set

An archive data set can only be deleted when it contains no reports.

To delete an archive data set:

1 Mark it with the line command DE on the **Archive Data Sets** screen.

2 A window will be displayed in which you enter `DELETE` to confirm the deletion, and in which you also specify whether or not the data set is to be uncatalogued.

Listing the VOLSERs of an Archive Data Set

To list the VOLSERs spanned by an archive data set:

- On the **Archive Data Sets** screen, mark the data set with the line command `VO`.

  A list of the VOLSERs is displayed.

Modifying the VOLSER of an Archive Data Set

This function is used to change the VOLSER of an archive data set in and updates all active reports contained on it so that they point to the new VOLSER:

This function can only be used for single-volume data sets. For multi-volume data sets, you condense the archive data set to a new one; this which will also update the VOLSERs.

To modify the VOLSER of an archive data set:

1 On the **Archive Data Sets** screen, mark the data set with the line command `MV`.

  A screen containing the following fields is displayed:

Field	Explanation
Archive data set	The name of the data set whose VOLSER is to be modified.
Current VOLSER	The current VOLSER of the data set.
To volser	Here you specify the new VOLSER.
Log modifications of Reports	This field determines whether or not messages about changed reports of archive data set are written to the monitor log: ■ Y = Messages are written. ■ N = No messages are written (default).
Adabas calls between screen writes	The number of records to be updated between screen writes. The default value is 1000.
Adabas calls between End Transactions	The number of records to be updated between End-of-Transaction commands. The default value is 30.

2 Enter the new VOLSER, and press PF5.

Listing Archived Reports

To list the reports contained in an archive data set:

1 On the **Archive Data Sets** screen, mark the data set with the line command RP.

The **Reports in Archive Data Set** screen is diplayed.

The names of the reports deleted from active reports are marked with an asterisk (*).

2 With PF9 (Ext), you can toggle to short names display.

The screen contains the following information on each report:

Field	Explanation
Report	The name of the report archived.
Run-No	Unique number identifying the report.
ExpDate	Expiration date until which the report is to be kept.
OrigExp	Original expiration date until which the report was to be kept (if the original value of ExpDate has been modified or deleted).
Status	Report status.

Modifying the Expiration Date of an Archived Report

To modify the expiration data of a report in an archive data set:

1 On the **Reports in Archive Data Set** screen, mark the report with the line command MO.

A window containing the following fields is displayed:

Field	Explanation
Report	The report name.
Expiration Date	The current expiration date. This can differ from the original expiration date.
OrigExp Date	This is the first valid expiration date. If the original date has already been modified, the original date appears here and the current expiration date appears in the Expiration Date field.
New Expiration Date	Enter the new expiration date here.

2 Enter a new value in the field **New Expiration Date**.

Resetting the Expiration Date of an Archived Report

To reset the expiration date of a report in an archive data set:

- On the **Reports in Archive Data Set** screen, mark the data set with the line command `RS`.

  The expiration date of the report is reset to the original expiration date.

Deleting an Archived Report

To mark a report in an archive data set for deletion:

- On the **Reports in Archive Data Set** screen, mark the report with the line command `DE`.

  A "D" is displayed in the Status column of the report, and the report's expiration date (ExpDate) changes to the current date. Reports marked with "D" are automatically deleted on the following day.

Reviving an Archived Report

If an archived report was deleted manually from the active reports, but not deleted from the archive, the report is marked with a "D" on the **Reports in Archive Data Set** screen. Reports marked with "D" are automatically deleted on the following day.

To revive an archived report:

1 Reset the report's expiration date with the line command `RS` as described above.

2 On the **Reports in Archive Data Set** screen, mark the report with the line command `RV`.

3 A window is displayed, in which you specify where the report is to be revived to:

- the spool,
- the Entire Output Management database.

The report is marked accordingly for the next scheduled reviving (see *Reviving Task*).

In addition, you can specify the name of a bundle: when the report is revived, it is added to an open active bundle of that name. If there is no such open active bundle, one will be created from the bundle of the same name.

13 Separator Pages

This section covers the following topics:

Using Separator Pages

Separator pages can be created for reports or bundles. Different separator pages can be printed at the beginning and at the end of a report/bundle. This means that you can print separator pages between bundles and between the individual reports within a bundle.

The names of the separator pages to be printed are specified in the printing attributes of the report/bundle.

Separator pages are Natural members of type "text", which you create with the Natural editor. All separator pages must be stored as source members in the Entire Output Management user library `SYSNOMU`. Their names must start with one of the following prefixes: `RS` for reports, `BS` for bundles.

When a report/bundle is printed and a separator page specified in its printing attributes is not found at the time of printing, the report/bundle will be printed without that separator page, and an appropriate warning will be issued.

If you want no separator page to be printed, select/specify `NONE` as the separator page name in the printing attributes of the report/bundle.

Standard Separator Pages

If no separator page is specified in the printing attributes of a report/bundle, a standard separator page is used. The standard separator pages provided in the library `SYSNOMU` are:

Standard Separator Page for:	Name
beginning of a report	`RSNOMS-1` (English), `RSNOMS-2` (German)
end of a report	`RSNOME-1` (English), `RSNOME-2` (German)
beginning of a bundle	`BSNOMS-1` (English), `BSNOMS-2` (German)
end of a bundle	`BSNOME-1` (English), `BSNOME-2` (German)

Contents of Separator Pages

Apart from text - which is printed as it is - a source member used as a separator page can consist of the following:

- Carriage Control Characters
- Substitution Variables

- NOP Symbols

Carriage Control Characters

The first byte on every line of the text member is assumed to be a carriage control character (ANSI code).

Leave this byte empty if no carriage control is required for the line.

The special control character `K` can be specified in the first byte, to represent BLOCK LETTER character mode.

Substitution Variables

Substitution variables start with `@`. They are replaced by their current values at print time.

The following keywords can be specified as substitution variables anywhere in the source of the separator page:

Substitution Variable	Description
`@REPORT`	Report name
`@BUNDLE`	Bundle name
`@DATE`	Current date
`@TIME`	Current time
`@CDATE`	Report creation or bundle open date
`@CTIME`	Report creation or bundle open time
`@EXIT`	Exit name used for separating SYSOUT
`@DESCR`	Report or bundle description for a separator
`@JOBNAME`	Job name of SYSOUT
`@JOBNO`	Job number of SYSOUT
`@USER`	User ID
`@NAME`	User name (first and last name concatenated)
`@DEPTNO`	User's department number
`@DEPTNAME`	Name of user's department
`@LOCATION`	Location of user's department
`@ORGANIZATION`	Name of user's organization
`@ADDRESS1`	User's address, line 1
`@ADDRESS2`	User's address, line 2
`@ADDRESS3`	User's address, line 3
`@PHONE`	User's telephone number
`@COORDINATOR`	Coordinator ID

Substitution Variable	Description
@COORD-NAME	Coordinator name (first and last name concatenated)
@COORD-DEPTNO	Coordinator's department number
@COORD-DEPTNAME	Name of coordinator's department
@COORD-PHONE	Coordinator's telephone number
@COORD-LOCATION	Location of coordinator's department
@COORD-ORGANIZATION	Name of coordinator's organization
@COORD-ADDRESS1	Coordinator's address, line 1
@COORD-ADDRESS2	Coordinator's address, line 2
@COORD-ADDRESS3	Coordinator's address, line 3

NOP Symbols

NOP symbols start with @@. They are replaced by the appropriate NOP symbol values at print time.

NOP symbols are entered in the form:

- for master symbols: @@owner.symbol-table.symbol-name
- for active symbols: @@owner.symbol-table.symbol-name.network.run

where owner, symbol-table, network, run are values of predefined NOP symbols, and symbol-name is the name of a defined NOP symbol.

14 User Separation Routines

A user separation routine separates a SYSOUT file into several reports. A new report starts every time the routine detects a new value in a predefined line and column location on a SYSOUT page.

This section describes the user separation routine interface as well as some examples of supplied user separation routines. User separation routines determine the contents of a report. The contents of a report are a continuous part or parts in one SYSOUT file.

If user separation routines are defined for the report, they are called for each record in the identified SYSOUT file. However, the routine can direct the Monitor to position anywhere else on the SYSOUT file.

Creating User Separation Routines

User separation routines are normally coded in Natural. Other languages can be used as well, but they must follow the rules for interfacing with the Monitor.

The routine communicates with the Monitor by means of a parameter data area. This data area contains various parameters. Some can be modified by the routine and returned to the Monitor, others are read-only and cannot be modified.

The list of parameters is fixed. Their format, length, dimensions and position within the list must be adhered to.

A parameter data area called `P-UEXIT` is supplied and should be used when coding user separation routines.

Examples

Examples of the use of the "action" parameters described below can be found in the library `SYSNOMS`.

If you have not done so already, copy the examples to the library `SYSNOMU` (see *Adapting to an Existing Environment* in the *Installation* documentation).

You can try these examples by executing the program `UEXEMPL` in a batch job. Catalog the program first to point to the current `EMPLOYEES` file. The `TRACE` command can subsequently be used for testing.

The following programs are available:

Example Report	Exit	Description	Actions
UEX-ADDFP-OPEN	UEXAOP	Separates SYSOUT into several reports depending on break of main department.	FORW, ADDFP, OPEN
UEX-CREATE	UEXCRE	Separates SYSOUT into several reports depending on the break of department.	CREATE
---	UEXDEF	Separates SYSOUT into several reports depending on the spool attributes.	CREATE
UEX-FORW-BACKW	UEXFBT	Forward and backward positioning.	FORW, BACKW, GOTOP, NEXTP
UEX-GO	UEXGGN	Forward and backward positioning.	GOTO, GOTOP, NEXTP
UEX-UNSL-ADDP	UEXAPI	Replace first line of a page.	INSL, ADDP
---	UEXOPO	For Open Print Option (OPO) only. Separates SYSOUT into several reports depending on the report name or file name.	CREATE

Actions

The following actions may be invoked by a user exit to influence processing. Every action is based on various parameters, which are described below.

Miscellaneous Actions

Action	Description
CACHEON	Enable cacheing of source records. Entire Output Management will cache 126 records. This significantly improves performance, if the exit repositions on a page. This action is the default.
CACHEOFF	Disable cacheing of source records.
BUNDLE	Add report to an active bundle.

Positioning Actions

Action	Description
GOTOP	Reposition Monitor to top of current page. The next time the routine is called, it gets the record at the top of the current page. Page top is detected either by channel 1 ANSI or by machine code.
GOTO	Reposition to record number returned in parameter P-RECNO.
NEXTP	Go to top of next page.
FORW, BACKW	Number of lines in P-RECNO.

Inserting Text in a Report

Action	Description
INSL	Insert up to 10 lines at the current position. The number of lines to be inserted is returned in parameter P-RECNO and the text lines to be inserted are returned in the array parameter P-INSERT-LINES.

Including More Than One Line in One Routine Call

Action	Description
ADDR	*Add range of lines*, where the record number of the range to be included is returned in the parameters P-FROMLINE and P-TOLINE: The next call to the exit starts one line after the last record in the range specified (P-TOLINE + 1).
ADDP	*Add all records* from the current line until end of current page to the current report. The next call to the exit starts at the top of the next page.
ADDFP	*Add full page*. All of the current page is added to the current report. The next call to the exit starts at the top of the next page.
CREATE	*Create report* from a range of record numbers supplied in the parameters P-FROMLINE and P-TOLINE. The report number to be created must be returned in P-REPNAME. If the report is not defined in the master database, it is created dynamically in the master database using the parameters returned by the exit. When this action is specified and there is an opened report, the report is closed first. The next call to the exit starts one line after the last record in the range specified (P-TOLINE + 1).
OPEN	*Close current report* and *open new report*. The new report to be opened must be returned in P-REPNAME.
CLOSE	*Close current report*. Report processing parameters can be overwritten, if supplied in the exit parameters.

Parameters

This section describes the parameters for user separation routines:

General Parameters

Parameter	Description
P-RC	A return code which tells whether to include the current record in the report or not. The return code is returned by the exit to the Monitor and can contain the following values: 0 = Include current record in report; 1 = Ignore the current record; 3 = End of processing, close current report.
P-ACTION	An action code which tells the Monitor to perform a specific action (see **Actions**).
P-MASTER	Name of the master or default report definition currently processed.
P-UPARM1	An array of five parameters supplied by the monitor to the routine. The values are defined in the appropriate master or default report definitions. Evaluate or save these parameters upon the first call to the exit.
P-RECNO	Current record number within the source being processed.
P-RECORD	Contents of the current record.
P-INSERT-LINES	An array of ten lines which may be inserted with action INSL.
P-FROMLINE	Start record number of a range of lines referenced by actions which add lines to the current active report.
P-TOLINE	End record number of a range of lines referenced by actions which add lines to the current active report.
P-WORK	Work area for the user separation routines to save data for subsequent calls.

Source Parameters

- Parameters for Source Type "Sequential File z/VSE"

Parameters Common to All Source Types

Parameter	Description	
P-SOURCE-TYPE	Indicates the type of source being processed.	
	1	JES2
	2	JES3
	3	POWER
	4	Entire Output Management database (container file)
	5	Sequential file (z/OS)
	6	Sequential file (z/VSE)
	7	BS2000
	11	Natural Advanced Facilities
	14	CA Spool
P-SOURCE-CC-TYPE	Indicates the type of carriage control characters.	
	1	ASA
	2	Machine
	3	Reserved for BS2000
	4	No carriage control.
P-SOURCE-NUMBER-OF-LINES	Total number of lines in the source.	
P-MAXREC	See P-SOURCE-NUMBER-OF-LINES above. This field is still available for compatibility reasons but will be deleted with the next version.	
P-SOURCE-RECORD-LENGTH	The current record length in bytes including carriage control characters, if present. It should not be modified.	
P-RECLEN	See P-SOURCE-RECORD-LENGTH above. This field is still available for compatibility reasons but will be deleted with the next version.	
P-SOURCE-ATTRIBUTES	Source-specific attributes which are redefined depending on P-SOURCE-TYPE are described below.	

Parameters for Source Type POWER

Parameter	Description
P-POWER-NODE	Entire System Server node by which the source is being read.
P-POWER-JOB-NAME	The job name of the SYSOUT file currently being processed.
P-POWER-JOB-NUMBER	The POWER job number of the SYSOUT file currently being processed.
P-POWER-TYPE	Always LS for POWER list queue.
P-POWER-SEGMENTS	The number of segments.
P-POWER-SEG-LASTLINE	An array of up to 40 occurrences indicating the last logical line for each segment.

Parameters for Source Type "Sequential File z/VSE"

Parameter	Description
P-FVSE-NODE	The Entire System Server node by which the current source is being read.
P-FVSE-VOLSER	The volume serial number on which the file resides.
P-FVSE-DSNAME	The data set name.
P-FVSE-RECFM	The record format of the data set.
P-FVSE-LRECL	The record length of the data set.
P-FVSE-BLKSIZE	The block size of the data set.

Bundle Parameters

These parameters are used to put reports into bundles dynamically.

Parameter	Description
P-BUNDLE	An array of up to 5 bundles into which the report is put.
P-BUNDLE-COORDINATOR	User ID of the bundle coordinator.
P-FLUSH-TIME	Time when the bundle is to be closed and printed.
P-BUNDLE-FLUSH-LINES	Number of lines at which the bundle is to be closed and printed.
P-BUNDLE-SEPSTART	Bundle start separator.
P-BUNDLE-SEPEND	Bundle end separator.
P-BUNDLE-SEPNO	Number of separator copies.
P-BUNDLE-PRINTER	Printer on which the bundle is to be printed.
P-BUNDLE-JOBCARDS	Up to 3 job cards used when printing bundle in batch mode.
P-BUNDLE-GROUP	Up to 5 bundle groups.
P-BUNDLE-SEQUENCE-NR	Up to 5 sequence numbers.
P-BUNDLE-REPORT-SEPARATORS	Bundle report separator.
P-BUNDLE-PRINTERS	Up to 20 bundle printers.

Parameter	Description
P-BUNDLE-PRINTERS-COPY	Up to 20 bundle printer copies.
P-BUNDLE-HOLD	Bundle hold status.
P-BUNDLE-GRANT	Up to 6 granted users (P-BUNDLE-GRANTED-USER) for the bundles created by this exit. Each specification consists of a user ID and its granting options (P-BUNDLE-GRANT-OWNER, -MODIFY, -PURGE, -DISPLAY, -ARCHIVE, -REVIVE). Grant options should be set to "Y" or "N".
P-BUNDLE-DESCRIPTION	Bundle description.
P-CONTROL-EXIT-LIBRARY	Natural library containing bundle print control exit.
P-CONTROL-EXIT-MEMBER	Name of bundle print control exit.
P-BUNDLE-FLUSH-REPORT	Up to 4 report names which will cause the bundle to flush.
P-BUNDLE-FLUSH-START	Scheduled flush start time in format HHII (hours and minutes).
P-BUNDLE-FLUSH-END	Scheduled flush end time in format HHII (hours and minutes). Must be greater than P-BUNDLE-FLUSH-START.
P-BUNDLE-FLUSH-INT	Scheduled flush time interval in format HHII (hours and minutes).
	All 3 of the above parameters must be supplied, or the flush schedule is ignored.
P-BUNDLE-FLUSH-DAYS	Days of the month when the bundle should be flushed. Must be in the range 1-31, ALL or LD.
P-BUNDLE-FLUSH-WEEK-DAYS	Days of the week when the bundle should be flushed. Must specify the first two letters of the day name. English: SA, SU, MO, TU, WE, TH, FR. German: SA, SO, MO, DI, MI, DO, FR.
P-BUNDLE-FLUSH-CALENDAR	Calendar to be used for distinguishing holidays from working days - must be specified if P-BUNDLE-FLUSH-BEFORE-AFTER is specified.
P-BUNDLE-FLUSH-BEFORE-AFTER	A or B to flush the bundle after or before a day defined as a holiday in the specified calendar.

If any of the bundle flush parameters are invalid, they are all ignored and an error message is written to the monitor output listing.

Report Parameters

Parameter	Description
P-REPNAME	Used in OPEN and CREATE actions to specify the report to be opened or created.
P-REPORT-DESCRIPTION	Long description of the report.
P-OWNER	Master owner of the report.
P-KEYWORDS	An array of up to 6 keywords which are used when creating the report or overwriting at close time.
P-STORE-NRM	"Y" means store report in Entire Output Management database. Used only when opening or creating new reports.

Parameter	Description
P-DISTRIBUTION	An array of up to 10 members for distribution. Used at create and open.
P-PRINTERS	An array of up to 20 logical printers to print the report. Used to overwrite with CREATE, OPEN or CLOSE actions.
P-COPIES	The number of copies of the report to be printed on each printer specified with P-PRINTERS.
P-HOLD	Hold status to queue printouts. Used to overwrite with CREATE, OPEN or CLOSE actions. Possible values: H = Hold printout. R = Release printout. C = Confirm all users in the distribution to release.
P-REPORT-SEPSTART	Report start separator.
P-REPORT-SEPEND	Report end separator.
P-REPORT-SEPNO	Number of separator copies.
P-REPORT-JOBCARDS	Up to 3 job cards used when printing reports in batch mode.
P-ARCHIVE	Y = Report is marked for archiving upon creation.
P-RETENTION-NUM	The number of retention period units the report contents is available online.
P-RETENTION-UNIT	Unit for retention period: W = Working days. A = Absolute days. V = Weeks. M = Months.
P-RETENTION-CALENDAR	The name of the calendar used to calculate working days.
P-RETENTION-ACTION	Used to overwrite with CREATE, OPEN or CLOSE actions. P = Purge report after expiration. A = Archive report after expiration.

15 Printer Exits

If a printer exit is specified in the logical printer definition, control is passed to this exit at print time for each record to be printed. Here you can insert, modify or suppress records.

Usually a printer exit is used to insert escape sequences, so that the printer can select special print styles.

As in the examples PRCANON and PRKYOCER in the library SYSNOMS, this could be an escape sequence at the beginning of the printout to switch to landscape mode.

Ideally, the printout should contain mnemonics for all kinds of print attributes (highlighting, underscoring, etc.) which are translated into escape sequences depending on the physical printer to be used. In this way, the printout is independent of any physical printer type.

Printer Exit Interface

Parameter	Format/Length	Description
PRT-RC	B2	Return code to be set by the exit: 0 = No modification 4 = Record was modified 8 = Record to be inserted 12 = Record to be suppressed 97 = Do not call the exit again until the next report separator start. On the next call, the exit PRT-WORK will be reset. 98 = Stop printing immediately. 99 = Do not call the exit again, but carry on printing. *n* = All other codes are reserved for future use. When a report is printed, 97 and 99 have the same effect.
PRT-RECORD	A251	The record to be printed.
PRT-RECNO	P7	The current record number.
PRT-FLAG	A1	Flag with the following meaning: F = First record, M = in the Middle of the printout, L = Last record.
PRT-WORK	A250	Work area for the printer exit.
PRT-REPORT	A25	The name of the report being printed.
PRT-BUNDLE	A25	The name of the bundle being printed.
PRT-RECFM	A3	The record format of the printout.

16 Application Programming Interfaces

Several application programming interfaces (APIs) are provided in the library SYSNOMS. These are subprograms which may be used to invoke Entire Output Management functions from outside of Entire Output Management.

To list the APIs available for Entire Output Management:

1 Enter the command SYSAPI in the command line.

The Natural utility SYSAPI will be invoked, displaying a list of products.

2 Select **Entire Output Management**.

The available APIs will be listed.

17 Setting Up Environments for Binary Documents

This document describes various Entire Output Managements setups for the processing of binary documents - with and without the Open Print Option (OPO). It covers the following topics:

General Information on Binary Documents

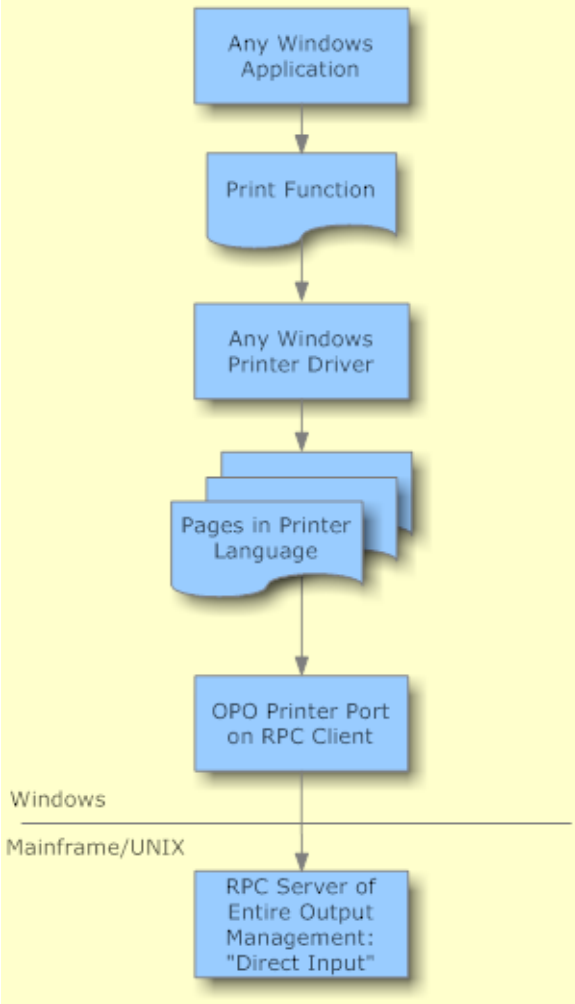
For general information on the processing of binary documents, see the section *Processing of Binary Data* in the *Concepts and Facilities* documentation.

Environments for Binary Data Processing

There are three possible ways of setting up an environment that integrates binary data of UNIX and Windows computers with Entire Output Management:

- using OPO with a Windows printer driver,
- using OPO without a Windows printer driver,
- using the file system without OPO.

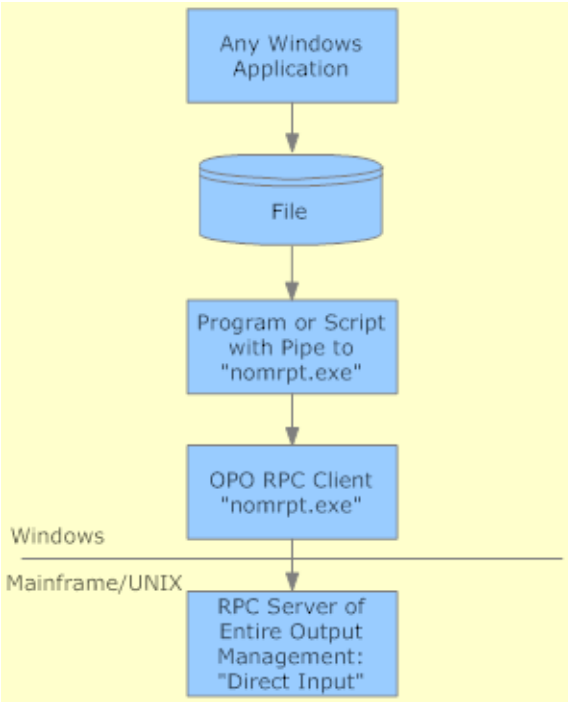
1 - Using OPO With a Windows Printer Driver



The above diagram shows that any Windows application can produce any output that is bound to a printer destination using a Windows printer driver. OPO can be put “behind” this printer driver acting as a Windows printer port monitor to redirect these outputs to Entire Output Management. No user script is required; the Entire Output Management monitor does not even need to know the machine. No further Software AG runtime environment (besides the EntireX mini-runtime) is required on the Windows computer.

2 - Using OPO Without a Windows Printer Driver

The second way to use OPO for routing data to Entire Output Management is to forward data from files to OPO directly, that is, without using a printer driver. In this case, instead of printout pages in the hardware-dependent printer language, the file format itself is transferred to Entire Output Management:



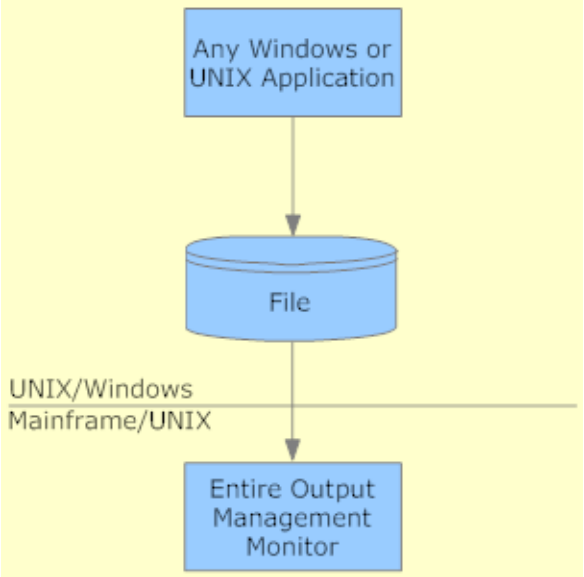
This construction will take a file and forward it to the OPO client, which will encode the data and send them to Entire Output Management as a binary file of the original type. The pipe function of Windows is used to pass the data to the OPO client `nomrpt.exe`.

The script can be part of a Windows user application, a Microsoft Word macro, or a simple command line like:

```
type filename.filetype | nomrpt.exe
```

3 - Using the File System Without OPO

The third setup is to omit OPO completely if binary files are to be transferred to Entire Output Management which are filed to a UNIX or Windows directory that is owned by Entire Output Management:



This requires a UNIX node and predefined report definitions in Entire Output Management depicting which directories are to be viewed and handled by the monitor of the respective source system. The directories will be scanned synchronously in each Entire Output Management monitor cycle.

The first two setups are asynchronous. Even if the Entire Output Management monitor is not active, the data will be transferred to an Entire Output Management container file from which the Entire Output Management monitor will then receive the documents. The only prerequisite is that the Entire Output Management RPC server is active. The first setup will not require any intermediate files. Even the second setup will put the data into the Entire Output Management container directly without the requirement to manage the files on Entire Output Management-owned directories of the source system.

The main difference is that the first setup will store formatted printout pages with all device-dependent properties in Entire Output Management, whereas the second and third setups will forward the original file to Entire Output Management which can be automatically archived/distributed as required. Each document can then be reprinted using the corresponding application on the target system (which in fact could also be the source system).

The first setup requires the layout of the printout and the used hardware to be defined before the document is transferred to Entire Output Management. This cannot be changed afterwards, because the printout data contain all formatting commands of the Windows printer driver. The other setups can be used to store files in Entire Output Management with the ability to decide where to print and which layout is to be used at the time when the document is printed out of Entire Output Management.

If the second or third setup is used, it will not be possible to printout a binary file to a printer directly, because Entire Output Management does not know the binary format of the file. However, the output converter function (see the description of printer type DISKUNIX) of Entire Output

Management is able to invoke the print function of an application on the target system which can do the job. This is the way to have the printout of binary files controlled by Entire Output Management, or to convert binary data on the target system for subsequent processing.

Examples of Converting Binary Document

The following examples are all based on the following assumptions:

- An Entire Output Management installation is active on a mainframe or a UNIX system.
- The source system of the documents is a Windows PC called "win" with Entire System Server UNIX installed and a service `npr_win` being active.
- The target system for the output of documents is a UNIX sample system called "unix" where the Entire System Server UNIX service `npr_unix` is active.

The following cases are covered:

Example 1 - Convert Any Windows Printouts to PDF

Task:

Convert any Windows printouts to PDF and store them as PDF files in Entire Output Management.

Possible solution:

Entire Output Management can read binary files from UNIX or Windows directories. This feature can be used to fetch all PDF files from a directory owned by Entire Output Management.

Define a report as follows:

```
                      **** ENTIRE OUTPUT MANAGEMENT ****
User ID XYZ       - Report Definition >Unix Identification -

Report
   Name ............... GET-PDF____________________

Unix Attributes
   Node Name ......... npr_win_____ Read-binary... B
   Path:
   /output/
   and Files ......... *.pdf_____________________________________________
                       _____________________________________________________
                       _____________________________________________________
                       _____________________________________________________
                       _____________________________________________________
```

By using this report definition the Entire Output Management monitor will look for PDF files in `c:\output` of the specified Windows PC regardless of whether Entire Output Management runs in a mainframe or a UNIX environment.

In order to convert the required printouts to PDF format, a PDF converter must be used. Customize a PDF converter which is installed as a virtual printer and which writes the resulting PDF file to the directory `c:\output`.

Now you can use the print function of any Windows application by printing on the created printer. The output will be converted to PDF, and the Entire Output Management monitor will load the PDF files for further processing.

Example 2 - Convert Word Documents to PDF

Task:

Microsoft Word documents are saved to the directory `c:\output`. They have to be converted to PDF and then transferred to Entire Output Management as PDF files.

Possible solution:

Use the input converter feature of Entire Output Management. Assuming the PDF converter printer profile "NOM-Printing" is available and the Entire Output Management report "GET-PDF" (as defined in Example 1) is active, the following report will instruct the Entire Output Management monitor to convert Word documents to PDF and load them into Entire Output Management:

```
                      **** ENTIRE OUTPUT MANAGEMENT ****
 User ID XYZ       - Report Definition >Unix Identification -

 Report
    Name .............. DOC2PDF____________________

 Unix Attributes
    Node Name ......... npr_win_____ Read-binary... B
    Path:
    /output/
    and Files ......... *.doc_____________________________________________
                        _____________________________________________________
                        _____________________________________________________
                        _____________________________________________________
```

Enter the following jobcards:

```
                      **** ENTIRE OUTPUT MANAGEMENT ****
User ID XYZ       - Report Definition >Printing Attributes -

Report
   Name .............. DOC2PDF____________________

Hold Logic ........... _

Printers ............. ________ ________ ________ ________ ________
Copies ............... ___      ___      ___      ___      ___
Separator Pages
   Start ............. ________
   End ............... ________
   Copies ............ ___
   Length ............ ___
Style.. ____________________________________________________________________
Jobcards
   input-cmd=""C:\Program Files\Microsoft Office\OFFICE11\WINWORD.EXE"
   &f /q /n /mNOMPrinting"_____________________________________________________
   ____________________________________________________________________________
```

Add the following macro "NOM-Printing" to Microsoft Word, using the Visual Basic editor:

```
Sub NOMPrinting()
Dim printerName As String
Dim CurrentDoc  As Word.Document

Set CurrentDoc = ActiveDocument
Set printerName = Trim$(Left$(ActivePrinter, _
  InStr(ActivePrinter, " on ")))
ActivePrinter = "NOMPrinting"
ActiveDocument.PrintOut
ActiveDocument.Close
```

```
ActivePrinter = printerName
End Sub
```

The following will happen:

- Entire Output Management will recognize the ".doc" file in the directory `c:\output`.
- The monitor will activate the report DOC2PDF and execute the input command in the jobcards fields. Afterwards the ".doc" file will be deleted and not processed further by Entire Output Management.
- The command (without the outer quotation marks) will be executed on the Windows source system "win" (where the `c:\output` directory resides).
- There Microsoft Word will be invoked without splash screen (/q), without opening a new document (/n) but opening the recognized ".doc" file (&f) and executing the macro "NOM-Printing" (/m). If it is called using a batch user of this Windows system, the user will not see any part of the execution of this function.
- The Microsoft Word macro will set the current default printer to "NOM-Printing" and print the document using the PDF converter. Then the former default printer will be restored.
- Entire Output Management will get the created PDF file with the report "GET-PDF" from Example 1.

Entire Output Management will replace "&f" with the current file name.

No user intervention is required, and the procedure will be carried out for all Word documents that have been filed in `c:\output`. Everything is triggered by the Entire Output Management monitor on a mainframe or on UNIX.

Example 3 - Print a PDF File

Task:

Print a PDF file that has been stored in Entire Output Management on a real printer.

Possible solution if Entire Output Management runs on a UNIX system:

Ensure that the product Ghostscript is installed.

Create a logical printer "PRTPDF" of type NATUNIX with the following special attributes:

```
                      **** ENTIRE OUTPUT MANAGEMENT ****
User ID XYZ       - Logical Printer >Special Attributes -

Logical Printer
   Name ............. PRTPDF__
   Description ...... Print a PDF file

Attributes

  Formfeed ..........
  Linesize ..........
  Max-Pages .........
  Output-Target ..... 1
  Pagesize ..........
  Printer-Name ...... gs -sDEVICE=printserver01:printer09
  Print Method ...... tty
  Profile ...........
  Trace ............. 0
```

Possible solution if Entire Output Management runs on a mainframe system:

Ensure that the product Ghostscript is installed on the target system "unix".

Create a logical printer "PRTPDF" of type DISKUNIX with the following special attributes:

```
                      **** ENTIRE OUTPUT MANAGEMENT ****
 User ID XYZ       - Logical Printer >Special Attributes -

 Logical Printer
    Name ............. PRTPDF__
    Description ...... Print a PDF file_______________

 Attributes

   command ........... gs
   filename ..........
   filetype ..........
   logpath ...........
   Opt1 .............. -sDEVICE=printserver01:printer09
   Opt2 ..............
   Parm1 .............
   Parm2 .............
   Parm3 .............
   Path .............. /tmp
   Server ............ npr_unix
   Trace ............. 0
```

If a binary active report containing a PDF file is printed on the printer PRTPDF, a file *filename*`.pdf` will be written to the directory `/tmp` of the UNIX computer on which the Entire System Server

UNIX node `npr_unix` is active, where *`filename`* is the origin file name of the file. Ghostscript will send the printout to the printer `printer09` on the printer server `printserver01`.

Example 4 - Store Word Documents for Later Printing

Task:

Print Microsoft Word documents on a virtual printer which stores the printed pages (not the file) in Entire Output Management for later printing on a real printer. Pass the document properties to Entire Output Management for viewing with the meta data key (PF2).

Possible solution:

Use OPO to collect the data. As the collection is not triggered by the Entire Output Management monitor, the printout will be asynchronously transferred and saved in the defined Entire Output Management container file, regardless of whether the Entire Output Management monitor is active or not.

The advantage of storing printouts rather than files is that the decision as to how the printout is to be formatted, which printer tray is to be used, whether the printout should be printed in colour etc. can be made at initiation time of the printouts (on the client side).

The disadvantage is that after this decision has been made, the printout and its attributes can no longer be changed. For instance, the printer type has to be the same as requested by the client.

OPO can transfer meta data (in this case the properties of a Word document) using XML files. The following Word macro reads the properties, creates an XML file that complies with OPO and saves it as `word.xml` in the Windows temp directory. Then it prints the document on the printer "Print-ToNOM" which is defined as any printer with a printer port of type OPO (see *Installing the Open Print Option* for details):

```
Sub PrintToNOM()
Dim prop        As DocumentProperty
Dim propName    As String
Dim propString  As String
Dim CurrentDoc  As Word.Document
Dim DocName     As String
Dim DocType     As String
Dim DocPath     As String
Dim printerName As String
Set CurrentDoc = ActiveDocument
Documents.Add
If InStr(CurrentDoc.Name, ".") > 1 Then
  DocName = Left(CurrentDoc.Name, InStr(CurrentDoc.Name, ".") - 1)
  DocType = Mid(CurrentDoc.Name, InStr(CurrentDoc.Name, ".") + 1)
Else
  DocName = CurrentDoc.Name
  DocType = ""
End If
```

```
  DocPath = Replace(CurrentDoc.Path, "\", "/")
With Selection
  .InsertAfter "<?xml version='1.0'  ?>"
  .InsertParagraphAfter
  .InsertAfter "<metadata>"
  .InsertParagraphAfter
  .InsertAfter "  <filename>" & DocName & "</filename>"
  If DocType <> "" Then
    .InsertParagraphAfter
    .InsertAfter "  <filetype>" & DocType & "</filetype>"
  End If
  If DocPath <> "" Then
    .InsertParagraphAfter
    .InsertAfter "  <path>" & DocPath & "</path>"
  End If
End With
On Error Resume Next
For Each prop In CurrentDoc.BuiltInDocumentProperties
  propString = ""
  On Error Resume Next
  propString = prop.Value
  On Error GoTo skip1
  propName = Replace(prop.Name, "Number of ", vbNullString)
  If InStr(propName, "(") > 1 Then
    propName = Left(propName, InStr(propName, "(") - 1)
  End If
  propName = Replace(propName, " ", "_")
  propString = Replace(propString, "<", "-")
  propString = Replace(propString, ">", "-")
  propString = Replace(propString, """", vbNullString)
  propString = Replace(propString, "'", vbNullString)
  propString = Replace(propString, "\", "/")
  Trim (propString)
  If Len(propString) > 0 Then
    With Selection
        .InsertParagraphAfter
        .InsertAfter "  <" & propName & ">"
        .InsertAfter propString
        .InsertAfter "  </" & propName & ">"
    End With
  End If
skip1:
Next prop
On Error Resume Next
For Each prop In CurrentDoc.CustomDocumentProperties
  propString = ""
  On Error Resume Next
  propString = prop.Value
  On Error GoTo skip2
  propName = Replace(prop.Name, "Number of ", vbNullString)
  If InStr(propName, "(") > 1 Then
    propName = Left(propName, InStr(propName, "(") - 1)
```

```
  End If
  propName = Replace(propName, " ", "_")
  propString = Replace(propString, "<", "-")
  propString = Replace(propString, ">", "-")
  propString = Replace(propString, """", vbNullString)
  propString = Replace(propString, "'", vbNullString)
  propString = Replace(propString, "\", "/")
  Trim (propString)
  If Len(propString) > 0 Then
    With Selection
        .InsertParagraphAfter
        .InsertAfter "  <" & propName & ">"
        .InsertAfter propString
        .InsertAfter "  </" & propName & ">"
    End With
  End If
skip2:
Next prop
With Selection
  .InsertParagraphAfter
  .InsertAfter "</metadata>"
End With
ActiveDocument.SaveAs _
FileName:="C:\Program Files\Software AG\Open Print Option 3.2.0\word.xml", _
    FileFormat:=wdFormatText
ActiveDocument.Close
Set printerName = Trim$(Left$(ActivePrinter, _
  InStr(ActivePrinter, " on ")))
ActivePrinter = "PrintToNOM"
ActiveDocument.PrintOut
ActivePrinter = printerName
End Sub
```

Save this macro "PrintToNOM" using Microsoft Word's Visual Basic editor.

This macro prints on the printer "PrintToNOM".

In Windows, create a printer "PrintToNOM" which is linked to OPO, and configure the OPO port to use `word.xml` as the XML file for meta data.

Executing the macro will collect all meta data Microsoft Word supplies, write them into `word.xml`, and print them on the printer "PrintToNOM", which will pass the printed pages and the meta data to Entire Output Management.

Example 5 - Store AFP Data for Later Printing

Task:

Use the print function of any Windows application to create AFP data. Store these data in Entire Output Management for later printing on AFP printers.

Possible solution:

1. Install a Windows AFP printer, such as the IBM AFP driver for Windows.
2. Link it to an OPO printer port (according to the OPO documentation).

This will store AFP data in Entire Output Management which can be sent to an AFP printer.

Example 6 - XML Documents

Task:

Store XML documents in Entire Output Management; at printing time, these documents are to be formatted and rendered to several different documents.

Possible solution:

1. Create the desired XML documents with any application.
2. Transfer them to Entire Output Management, using the UNIX identification feature as text files.
3. Create several printers of type DISKUNIX that forward the documents to an XML renderer which takes care of the final formatting. You may consider using the Apache Formatting Objects Processor (Apache FOP) for the final formatting.

18 Transferring Objects

To transfer Entire Output Management objects from one environment to another (for example, from a mainframe to a UNIX system), you can export them from the originating environment to an XML file, and then import this XML file into the target environment.

Or you can transfer objects directly within you network environment from one Entire Output Management system file to another, using the Transfer Object Facility.

This section covers the following topics:

Note: Active data (active reports, active bundles, printout-queue elements, default definitions) cannot be transferred.

Exporting Objects

To export objects, you define an export task in the originating environment. This task creates an XML file and writes the data to be exported to this file. In the export task, you specify which objects are to be written to which export file and when.

From an export file, the data can then be loaded into the target environment, as described below under ***Importing Objects***.

This section covers the following topics:

Creating an Export Task

To create an export task:

1 Enter the direct command `EXPORT` in the command line.

The **Object Export** screen will be displayed.

2 On this screen, you specify which objects are to be exported. The fields are described below.

3 When you have made the specifications, press PF5.

Field	Explanation
Object type	Specify the type of object to be exported: ■ `BU` = bundles, ■ `CA` = calendars, ■ `DL` = distribution lists, ■ `NO` = mainframe nodes,

Field	Explanation
	■ PH = physical printers, ■ PR = logical printers, ■ RP = reports, ■ US = user profiles, ■ UX = UNIX nodes.
Object prefix	Specify a character string, optionally with the wildcards "*" (for any number of characters) and "?" (for a single character), to export all objects of the specified type whose names contain this character string.
Export node	Specify the destination of the export file. For a mainframe node, enter a node number; for a UNIX node (as defined in the UNIX defaults) enter a node name.
Export file	Specify a name for the file.
Execution time	Specify a date and time for the export to be performed by the monitor. The monitor will then end its cycle and start the export function as soon as all monitor tasks are idle.
Write detailed log	Set this field to "Y" if you wish the execution of each object to be logged in the monitor log.

Alternatively, you can create an export task in batch mode in the Entire Output Management server environment.

To export objects in batch mode:

- Execute a batch job which invokes the program REXPORT with the following parameters (using the current input delimiter):

  object-type,prefix,log-Y/N,schedule-date (YYYY-MM-DD),schedule-time (HH:MM),export-node,export-file

  Enter a line for each object type, and after that a line with a period (.).

  Example for z/OS:

```
//CMSYNIN  DD  *
SYSNOM;user-ID;password
REXPORT
PR,PRINTER*,N,2014-12-12,11:28,npr_unix,$SAG/exppr.xml
US,USER*,N,2014-12-12,11:30,npr_unix;$SAG/expus.xml
CA,*,N,2014-12-12,11:30,148,ESM.NOM.EXPORT.CALENDAR
.
FIN
/*
```

Importing Objects

The importing has to be done in the Entire Output Management server environment.

To import objects:

- In the target environment, execute a batch job which invokes the program `RMIMPORT` in the library `SYSNOM`.

  On UNIX systems, you can use the script `nomimport.bsh` as a template for invoking `RMIMPORT`.

  `RMIMPORT` must be invoked with the parameters described below, and the export file must be assigned to Work File 1.

  `RMIMPORT` reads all object data from Work File 1 and imports them into the target environment.

RMIMPORT Parameters

Parameter	Possible Values	Function
1st parameter: Overwrite objects	`Y` or `N`	Determines whether or not existing objects in the target environment are to be overwritten by objects of the same names loaded from the export file.
2nd parameter: Trace	`Y` or `N`	Determines whether a trace is to be written or not.
3rd parameter: Container file database ID	*`dbid`* or `0`	Specify the database ID of the container file to be used. Specify `0` if the database ID is to be the same as the one from which the objects were exported.
4th parameter: Container file number	*`fnr`* or `0`	Specify the file number of the container file to be used. Specify `0` if the file number is to be the same as the one from which the objects were exported.

Transferring Objects Directly

This section covers the following topics:

- Invoking the Transfer Object Facility
- Related Objects
- Fields Common to All Screens
- Transferring Bundles
- Transferring Calendars
- Transferring Distribution Lists

- Transferring Logical Printers
- Transferring Physical Printers
- Transferring Reports
- Transferring Users
- Transferring Folders

Invoking the Transfer Object Facility

To invoke the Transfer Object facility:

1 Enter `10` in the command line of the **System Administration** menu.

The **Transfer Object Menu** is displayed.

2 On this menu, you select the object type to be copied:

```
1 Bundle Definitions
2 Calendar Definitions
3 Distribution List Definitions
4 Logical Printer Definitions
5 Physical Printer Definitions
6 Report Definitions
7 User Definitions
8 Folder Definitions
```

Related Objects

Some objects have so-called "related" (that is, dependent) objects. Before you copy an object, you have to first copy its related objects into the target environment.

To see which are the related objects of an object, you mark it with the line command `XR` on the **Copy ... to a Target Environment** screen.

The related objects are different for each object type, as indicated in the function-specific descriptions below.

Fields Common to All Screens

The following fields are common to all **Copy ... to a Target Environment** screens of the Transfer Object facility:

Field	Explanation
Source NOM-DB/FILE	These fields display the database ID and file number of the file from which the objects will be copied.
Target NOM-DB/FILE	In these fields, you specify the database ID and file number of the file to which the objects are to be copied.
Authorization (Y/N)	This field only applies to the following objects: bundles, distribution lists, logical printers, reports, folders. You can copy an object with or without its authorization list. To also copy the authorization list, you enter a `Y` in this field. The copying of an authorization list requires that all users who are on the authorization list exist in the target environment. To see which users are on the authorization list, mark the object with the line command `AU` on the **Copy ... to a Target Environment** screen.
exist (yes/no)	This field indicates whether the object already exists in the target environment. To display the information in this field, you have to specify the **Target** file (see above) first.
Msg	Possible values: "copied", "replaced", "error".

Transferring Bundles

Related Objects

The related objects of a bundle, as shown with the line command `XR`, are:

Field	Explanation
First Window:	
Coordinator	Name of the bundle coordinator.
Trigger Reports	Reports specified to trigger automatic bundle printing.
Printer	Printer(s) specified for automatic printing.
Second Window:	
Seq	Sequence in which the report is printed within the specified group or bundle.
Report	Report name.

To copy a bundle to another environment:

1 Enter `1` in the command line of the **Transfer Object Menu**.

The **Copy Bundle to a Target Environment** screen is displayed, listing all bundles which exist in the source environment:

```
 15:04:42            **** ENTIRE OUTPUT MANAGEMENT ****           2018-11-11
User ID XYZ         - Copy Bundle to a Target Environment -                ↩
                                                                           ↩
                                                                           ↩
Source NOM-DB/FILE ...      9 (DB)   247 (FILE)                           ↩
                                                                           ↩
Target NOM-DB/FILE ...  _____9      __250               Authorization N (Y/N)
                                                                           ↩
                                                                           ↩
Cmd Bundle                     Description                  NumRep exist Msg ↩
                                                                           ↩
___ XSETG*_____________________ _____________________________ _____ ____ _______
 __ XSETGGR-B                                                      yes       ↩
                                                                           ↩
 __ XSETGGR-BUNDLE             Bundle definition added by NO     2 yes       ↩
                                                                           ↩
 __ XSETGGR-BUNDLE1            Bundle definition added by NO       yes       ↩
                                                                           ↩
 __ XSETGGR-BUNDLE2                                                yes       ↩
                                                                           ↩
 __ XSETGGR-BUNDLE5                                                no
 __ XSETGGR-BUNDL2                                                 yes       ↩
                                                                           ↩
 __ XSETGGR-BUNLE2                                                 yes       ↩
                                                                           ↩
 __ XSETGGR-B5                                                     yes       ↩
                                                                           ↩
 __ XSETGGR-SEP-EX-BUNDLE      Created by XYZ                      yes       ↩
                                                                           ↩
 __ XSETGGR-TEST-BU                                                yes       ↩
                                                                           ↩
 __ XSETGGR-TEST-BU2                                               yes       ↩
                                                                           ↩
 __ XSETGGRBU2                                                   1 yes       ↩
                                                                           ↩
Top Of Data                                                                ↩
                                                                           ↩
 Command => ___________________________________________________________________
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help        Exit  Flip               -     +    Ext               Menu
```

For every bundle, its name, its description and the number of reports contained in the bundle are displayed. With PF9 (Ext) you can switch to short names display.

By using asterisk notation in the field above the names, you can restrict the list to contain only certain bundles.

2 Enter the line command `CO` next to the bundle to be copied.

The bundle - and, if specified, its authorization list - will be copied to the specified target file.

Transferring Calendars

To copy a calendar to another environment:

1 Enter `2` in the command line of the **Transfer Object Menu**.

The **Copy Calendar to a Target Environment** screen is displayed, listing all calendars which exist in the source environment:

```
 13:19:14            **** ENTIRE OUTPUT MANAGEMENT *****          2018-11-11
User ID XYZ        - Copy Calendar to a Target Environment -

Source NOM-DB/FILE ...   88 (DB)    51 (File)
Target NOM-DB/FILE ...  _88        _14

Cmd Calendar  Year  exist  Msg
___ ________  ____  _____  _______
 __ ABC       2011  yes
 __ DEMO-CAL  2012  yes
 __ X-CAL     2013  no
 __
 __
 __
 __
 __
 __
 __
 __
 __
All
 Command => _____________________________________________________________
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help        Exit  Flip               -     +                      Menu
```

For every calendar, its name and year are displayed.

By using asterisk notation in the input field above the names, you can restrict the list to contain only certain calendars.

2 Enter the line command `CO` next to the calendar to be copied.

The calendar will be copied to the specified target file.

Transferring Distribution Lists

Related Objects

The related objects of a distribution list are its members, that is, the users and distribution lists it contains.

To copy a distribution list to another environment:

1 Enter 3 in the command line of the **Transfer Object Menu**.

The **Copy Distribution List to a Target Environment** screen is displayed, listing all distribution lists which exist in the source environment:

```
 15:07:41            **** ENTIRE OUTPUT MANAGEMENT ****           2018-11-11
User ID XYZ      - Copy Distribution List to a Target Environment -         ↩
                                                                            ↩
Source NOM-DB/FILE ...      9 (DB)   247 (FILE)                            ↩
Target NOM-DB/FILE ...  ____9      __250              Authorization N (Y/N)
                                                                            ↩
Cmd List     Description                           Member Part of exist  Msg ↩
___ ________ ____________________________________ ______ _______ _____ _______
  __ ALLUSERS Reports for all users+                    5           yes       ↩
  __ APILIST1 Test API distribution list 1              2           yes       ↩
  __ ATESHH                                             1           yes       ↩
  __ BBB1     bbbBBb                                    8           yes       ↩
  __ BBB3                                                     *     yes       ↩
  __ BRY-LIST General                                   2           yes       ↩
  __ EVI-DL1                                            2           no        ↩
  __ FHITST   Distribution list for testing printe      2           yes       ↩
  __ FINANCE  Reports for Finance Department            6       *   yes       ↩
  __ LIST-1   list 11                                   6           yes       ↩
  __ NOM141   Test list for NOM141                      6       *   yes       ↩
  __ NOM211   Test list for NOM211                      6       *   yes       ↩
Top Of Data                                                                 ↩
 Command => ____________________________________________________________________
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help        Exit  Flip               -     +                      Menu
```

For every distribution list, the following is displayed: its name, a short description, the number of its members. An asterisk (*) in the field "Part of" indicates that the distribution list is part of another distribution list.

By using asterisk notation in the input field above the names, you can restrict the list to contain only certain distribution lists.

2 Enter the line command `CO` next to the distribution list to be copied.

The distribution list - and, if specified, its authorization list - will be copied to the specified target file.

Transferring Logical Printers

Related Objects

The related object of a logical printer is the physical printer associated with it.

To copy a logical printer to another environment:

1 Enter 4 in the command line of the **Transfer Object Men**u.

The **Copy Printer to a Target Environment** screen is displayed, listing all logical printers which exist in the source environment:

```
 15:10:10            **** ENTIRE OUTPUT MANAGEMENT ****           2018-11-11
User ID XYZ         - Copy Printer to a target Environment -                ↩
                                                                            ↩
Source NOM-DB/FILE ...      9 (DB)   247 (FILE)                            ↩
Target NOM-DB/FILE ...  ____9      __250              Authorization N (Y/N)
                                                                            ↩
Cmd Printer  Description          Location                       exist Msg  ↩
___ SGGR*___ _____________________ ______________________________ _____ _______
 __ SGGRBS2  MODIFIED BY API      XSETGGR MODIFY                  yes        ↩
 __ SGGREM1                       Created after p240452 fixes     yes        ↩
 __ SGGRJES  xsetggr virtual prin                                 yes        ↩
 __ SGGRJES1 ADDED BY API         ADDED BY API                    yes        ↩
 __ SGGRLPR  Print to MOCHA on PC                                 yes        ↩
 __ SGGRLPU1                      test printer                    yes        ↩
 __ SGGRMAIL xsetggr test mail pr xsetggr test printer to e-mail  yes        ↩
 __ SGGRPWR  xsetggr test power p                                 yes        ↩
 __ SGGRUX                        Natparm Output on Unix          yes        ↩
 __                                                                          ↩
 __                                                                          ↩
 __                                                                          ↩
All                                                                         ↩
 Command => _____________________________________________________________
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help        Exit  Flip               -     +                      Menu
```

For every logical printer, its ID, its description, and the location of the associated physical printer (as taken from the definition of the physical printer) are displayed.

By using asterisk notation in the input field above the printer IDs, you can restrict the list to contain only certain printers.

2 Enter the line command `CO` next to the logical printer to be copied.

The printer - and, if specified, its authorization list - will be copied to the specified target file.

Transferring Physical Printers

To copy a physical printer to another environment:

1 Enter `5` in the command line of the **Transfer Object Menu**.

The **Copy Physical Printer to a Target Environment** screen is displayed, listing all physical printers which exist in the source environment:.

```
 13:26:58            **** ENTIRE OUTPUT MANAGEMENT *****          2018-11-11
User ID XYZ      - Copy Physical-Printer to a target Environment -

Source NOM-DB/FILE ...   88 (DB)    51 (File)
Target NOM-DB/FILE ...  _88        _14

Cmd Vtam ID   Location                                            exist  Msg
___ ________ ____________________________________________________ _____ _______
  __ DAEPRT01                                                     yes
  __ DAEPRT02                                                     no
  __ DAEPRT03                                                     no
  __ DAEPRT04                                                     no
  __ DAEPRT12                                                     no
  __ DAEPRT14 VTAM Printer DAEPRT14                               no
  __ HPSPOOL                                                      no
  __ MRSPRPWR Print to Power                                      no
  __ SYSPRJES                                                     yes
  __ SYSPRPWR                                                     yes
  __ TAPEVSE                                                      yes
  __
All
 Command => ____________________________________________________________
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help        Exit  Flip              -     +                     Menu
```

For every physical printer, its VTAM ID (or SYSPRINT for system printers, or DISK for printing to disk) and its location are displayed.

By using asterisk notation in the input field above the VTAM IDs, you can restrict the list to contain only certain printers.

2 Enter the line command `CO` next to the printer to be copied.

The printer will be copied to the specified target file.

Transferring Reports

Related Objects

The related objects of a report, as shown with the line command XR, are:

Field	Explanation
User/List	User or distribution list in the **Distribute to ...** field of the report definition.
Printer	Logical printer defined for automatic printing of the report.

To copy a report to another environment:

1 Enter 6 in the command line of the **Transfer Object Menu**.

The **Copy Report to a Target Environment** screen is displayed, listing all reports which exist in the source environment:

```
 15:11:29            **** ENTIRE OUTPUT MANAGEMENT ****           2018-11-11
User ID XYZ         - Copy Report to a Target Environment -                ↩
                                                                           ↩
                                                                           ↩
Source NOM-DB/FILE ...      9 (DB)   247 (FILE)                           ↩
                                                                           ↩
Target NOM-DB/FILE ...  ____9      __250              Authorization N (Y/N)
                                                                           ↩
                                                                           ↩
Cmd Report                    Description                         exist Msg  ↩
                                                                           ↩
___ UEX*_____________________ ___________________________________ _____ _______
 __ UEX-CARS-STD1             Standard Exit 1 example             no         ↩
                                                                           ↩
 __ UEX-CREATE                Exit CREATE report                  no         ↩
                                                                           ↩
 __ UEX-DEFAULT               Report definition for undefined SY  no         ↩
                                                                           ↩
 __ UEX-EMPL-STD1-ASA         Standard Exit 1 Example             no         ↩
                                                                           ↩
 __ UEX-EMPL-STD1-MCC         Standard Exit 1 Example             no         ↩
                                                                           ↩
 __ UEX-EMPL-STD2-ASA         Standard Exit 2 example             no         ↩
                                                                           ↩
 __ UEX-EMPL-STD2-MCC         Standard Exit 2 example             no         ↩
                                                                           ↩
 __ UEX-EMPL-STD31ASA         Standard Exit 3 example             no         ↩
                                                                           ↩
 __ UEX-EMPL-STD31MCC         Standard Exit 3 example             no         ↩
                                                                           ↩
 __ UEX-EMPL-STD32ASA         Standard Exit 3 example             no         ↩
                                                                           ↩
 __ UEX-EMPL-STD32MCC         Standard Exit 3 example             no         ↩
                                                                           ↩
 __ UEX-EMPL-STD33ASA         Standard exit 3 example             no         ↩
                                                                           ↩
Top Of Data                                                                ↩
                                                                           ↩
 Command => ___________________________________________________________________
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help        Exit  Flip               -     +    Ext               Menu
```

For every report, its name and description are displayed. With PF9 (Ext), you can toggle to short names display.

By using asterisk notation in the input field above the report names, you can restrict the list to contain only certain reports.

2 Enter the line command `CO` next to the report to be copied.

The report - and, if specified, its authorization list - will be copied to the specified target file.

Transferring Users

To copy a user to another environment:

1 Enter `7` in the command line of the **Transfer Object Menu**.

The **Copy User to a Target Environment** screen is displayed, listing all users which exist in the source environment:

```
 13:31:30            **** ENTIRE OUTPUT MANAGEMENT *****          2018-11-11
User ID XYZ          - Copy User to a Target Environment -

Source NOM-DB/FILE ...   88 (DB)    51 (File)
Target NOM-DB/FILE ...  _88        _14

Cmd User ID  Name                                                exist Msg
___ ________ ____________________________________________________ _____ _______
  __ BROW     Brown, Hollis                                      yes
  __ DUPR     Dupree, Mitzi                                      no
  __ ECCL     Eccles, Jennifer                                   no
  __ GOOD     Goode, Johnny B.                                   no
  __ LAYN     Layne, Arnold                                      no
  __ LONG     Long, Mary                                         no
  __ MCGE     McGee, Bobby                                       no
  __ RACC     Raccoon, Rocky                                     no
  __ RATL     Ratlos, Rudi                                       no
  __ RIGB     Rigby, Eleanor                                     no
  __ STAR     Stardust, Ziggy                                    yes
  __ WILD     Wilde, Irene                                       no
Top Of Data
 Command => ____________________________________________________________________
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help        Exit  Flip               -     +                      Menu
```

For every user, the user ID and name are displayed.

By using asterisk notation in the input field above the user IDs, you can restrict the list to contain only certain users.

2 Enter the line command `CO` next to the user to be copied.

The user will be copied to the specified target file.

Transferring Folders

Related Objects

The related objects of a folder are the folders which are linked to it.

To copy a folder to another environment:

1 Enter 8 in the command line of the **Transfer Object Menu**.

The **Copy Folder to a Target Environment** screen is displayed.

2 In the **For User ID** field, enter the ID of the user whose folders are to be copied. By default, the field contains your own user ID.

All folders of the specified user which exist in the source environment will be listed:

```
 13:40:50            **** ENTIRE OUTPUT MANAGEMENT ****           2018-11-11
User ID XYZ          - Copy Folder to a Target Environment -               ↩

                                                                           ↩

Source NOM-DB/FILE ...      9 (DB) 247 (FILE) For User ID ........  XYZ_____
Target NOM-DB/FILE ...  ____9      __250      Authorization ....... N (Y/N)
                                                                           ↩

Cmd Folder name      Description                          exist Msg
___ _______________ ____________________________________ _____ ______
 __ #another_XSETGGR                                      no
 __ #Another-folder                                       no
 __ #Another-folder                                       yes
 __ #FHI-inbasket                                         no
 __ #Inbasket                                             yes
 __ #Mybasket                                             no
 __ #XSETAT-basket                                        yes
 __ #XSETAT-inbasket                                      yes
 __ #XSETHZ-inbasket                                      no
 __ #XSETHZ-inbasket                                      yes
 __                                                                        ↩

 __                                                                        ↩

All                                                                        ↩

 Command => _____________________________________________________________
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12--
      Help        Exit  Flip               -     +                     Menu
```

For every folder, its name and description are displayed.

By using asterisk notation in the input field above the folder names, you can restrict the list to contain only certain folders.

3 Enter the line command `CO` next to the folder to be copied.

The folder - and, if specified, its authorization list - will be copied to the specified target file.

19 Transferring the Whole Environment

This sections describes what you have to do before and after you transfer the whole Entire Output Management environment with all its data from one system file to another. It covers the following topics:

Before Transferring the Environment

Before you transfer the Entire Output Management environment, perform the following steps:

- Close all active bundles.
- Complete all print tasks.
- Start the Revive task to ensure that there are no reports pending to be revived.
- Start the Cleanup task.
- Shut down the monitor.
- Create a backup copy of you Entire Output Management environment.

Transferring the Environment

Transfer the Entire Output Management environment to the desired new system file, using the appropriate Adabas utilities.

After Transferring the Environment

After the transfer, the database IDs and file numbers used internally by Entire Output Management still point to locations in the old environment. To adjust these, you use the Entire Output Management utility NOMMOVE. With NOMMOVE, you specify the corresponding locations in the new environment. NOMMOVE has to be executed in batch mode. It invokes the utilities NOMNODE and NOMCONT and writes the specified new locations to all relevant default values and objects in Entire Output Management.

All parameters of NOMMOVE are mandatory. For information on how to specify them correctly, you execute the program NOMMOVE online.

20 VTAM NOMVPRNT Management

This section describes the functions available for the management of NOMVPRNT, the VTAM virtual-printer application.

For information on NOMVPRNT, see *Re-Routing VTAM Output to Entire Output Management* in the *Installation and Customization* documentation

Invoking VTAM NOMVPRNT Management

To invoke VTAM NOMVPRNT Management:

- Enter 11 in the command line of the **System Administration** menu, or enter the direct command VTAM in the command line of any Entire Output Management screen.

  The **VTAM NOMVPRNT Management** screen is displayed:

```
 12:44:29             **** ENTIRE OUTPUT MANAGEMENT ****            2018-11-11
User ID XYZ               - VTAM NOMVPRNT Management -


      S    Start server

      C    Close server

      D    Display parameters in Data set

      M    Modify parameters in Data set

     Parameter data set :

     Entire System Server job name (node)..: NOMX040(40)

  Status  NOT ACTIVE


Command => _____________________________________________________________________
```

The field **Entire System Server job name (node)** displays the **System Server Job Name** and **Node** as specified in the ***Monitor Defaults***.

Start Server

This function is used to start the NOMVPRNT server.

Close Server

This function is used to close the NOMVPRNT server.

Display Parameters in Data Set

This function is used to display the data set which contains the NOMVPRNT parameters.

Modify Parameters in Data Set

This function is used to modify the data set which contains the NOMVPRNT parameters.

21 Using Adabas Vista

You can use Adabas Vista to distribute Entire Output Management data to multiple Adabas files.

For this purpose, Entire Output Management provides a descriptor with the Adabas short name `XH` (format/length T12 in Natural and P13 in Adabas). It contains the time-stamp of the creation of the object/record.

The following example shows how to use the Adabas utility ADAULD for unloading:

```
ADAULD SELCRIT='XH,7,P,S,XH,7,P.'
ADAULD SELVAL=X'0635556672000F'
ADAULD SELVAL=X'0636187391999F'
```

or

```
ADAULD SELCRIT='XH,13,P,S,XH,13,P.'
ADAULD SELVAL=X'00000000000000635556672000F'
ADAULD SELVAL=X'00000000000000635872031990F'
```

The first seven/thirteen bytes represent the time-stamp (in this case `0635556672000F = 00000000000000635556672000F = 2014-01-01 00:00:00`).

The program `NOMVIST2` in the library `SYSNOM` can be used to show the existing data: the number of records within the entered time-stamp, and the values of the first and last records in the range.

Prerequisites

If you use Adabas Vista in conjunction with Entire Output Management, the following parameters have to be set:

Product	Parameter	Value
Adabas	VISTA in ADARUN	YES
Adabas Vista	Store Control Option	L

If you migrate from a previous version to the current version of Entire Output Management, make sure that the appropriate migration step for the use of Adabas Vista has been executed; see *Migration from Previous Versions*.