Output Management GUI Client

System Administration

Version 3.4.3

November 2016

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System Administration

This document covers the following topics:

Defaults	Describes the defaults you can set for various objects and functions.
Users	Describes how to define Entire Output Management users.
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.
Monitor Management	Describes the functions to control the Entire Ouput Management monitor.
Task Management	Describes how to start various tasks.
Archive Administration	Describes the archiving functions.
Separator Pages	Describes the use of separator pages.
User Separation Routines	Describes the use of user separation routines.
Printer Exits	Describes the use of printer exits.
Application Programming Interfaces	Describes the application programming interfaces (APIs) available for Entire Output Management.
Setting Up Environments for Binary Documents	Describes various setups for the processing of binary documents.
Transferring Objects	Describes how to transfer Entire Output Management objects from one environment to another.
VTAM NOMVPRNT Management	Describes the management of the VTAM virtual-printer application NOMVPRNT.
Using Adabas Vista	Describes considerations for the use of Adabas Vista.

1 Defaults

- System Defaults 2
- Monitor Defaults 7
- Report Defaults 14
- Bundle Defaults 16
- Automatic Archiving Defaults 18
- User-Defined Archives 22
- Automatic Reviving Defaults 25
- Automatic Cleanup Defaults 27
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As a system administrator, you can set system-wide defaults for various objects and functions.

This section covers the following topics:

System Defaults

This section covers the following topics:

- Modifying System Defaults
- Displaying System Defaults
- Components of System Defaults
- Integrating Natural Applications

Modifying System Defaults

To modify the system defaults:

1 Select the System Administration > Defaults > System node in the object workspace.

2 Invoke the context menu and choose **Open**.

3 The **System Defaults** are displayed, and you can change them. The fields are described under *Components of System Defaults*.

4 Choose **OK** to save your changes.

Displaying System Defaults

To display the system defaults:

1 Select the System Administration > Defaults > System node in the object workspace.

2 Invoke the context menu and choose **Display**.

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

4 Select **Cancel** to close the window.

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>Use owner ID</td><td>If selected: 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/OSD user ID, etc.) to use Entire Output Management.

If not selected: 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">Selected</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">Not selected</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>■ If selected: Report names and bundle names may consist of up to 25 alphanumeric characters.
■ If not selected: 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:

■ American (MM/DD/YY)
■ American (MM/DD/YYYY)
■ European (DD/MM/YY)
■ European (DD/MM/YYYY)
■ German (DD.MM.YY)
■ German (DD.MM.YYYY)
■ International (YY-MM-DD)
■ International (YYYY-MM-DD)</td></tr>
<tr><td>Automatic user definition</td><td>■ Automatic creation not allowed: User IDs must be defined manually with the Users function. This is the default.</td></tr>
</table>

Field	Explanation	
	■ Automatic creation: 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`. ■ Show window to decide: 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.
Applications	See ***Integrating Natural Applications*** below.	

Log/Printouts

Field	Explanation
Log	
Types	Select the types of information to be logged. You can log maintenance information for reports, bundles, logical printers, distribution lists, and information about logon/logoff activities of users.
Retention	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 specifying a number and a unit of time (days, weeks or months).
Printouts	
Types	Specify the type(s) of printouts to be deleted automatically at the end of the printout Retention period: ■ Printed successfully. ■ Printing error. ■ Printing failed.
Retention	Specify the default retention period for printouts. This is the period of time that printouts are kept in the Entire Output Management database.

Field	Explanation
	You set this period by specifying a number and a unit of time (days, weeks or months).
Type: Print on hold	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 specifying a number and a unit of time (days, weeks or months).

Interval/Timeout

These settings apply to the expansion of the treeview. If a treeview node is expanded and the number of records to be listed is very large, the expansion may take very long. In this case, you can expand a treeview node not all at once but in intervals (portions). This form of treeview expansion is controlled by the following fields.

Field	Explanation
Use standard interval settings for all users	If selected, these settings apply to all users and cannot be changed by a user individually. If not selected, every user can set his/her own treeview intervals (via **Options** in the Menu Bar).
	Use intervals to display large amounts of data: If selected, intervals are used for treeview expansion; if not selected, intervals are not used. If intervals are used, they are controlled by the following options: ■ **Number of intervals for splitting:** The number of "portions" into which the records will be split when the treeview is expanded. ■ **Number of records without displaying intervals:** If the number of records does not exceed this value, the treeview expansion will not be in intervals. ■ **Abort if the number of records processed is greater than:** If the number of records processed exceeds this value, the treeview expansion will be aborted.
Use standard timeout settings for all users	If selected, the timeout setting specified in the field below applies to all users and cannot be changed by a user individually. If not selected, every user can set his/her own timeout interval (via **Options** in the Menu Bar). ■ **Abort if processing takes longer than:** The procedure triggering the abortion of the treeview expansion will be started if the communication with the server in conjunction with treeview splitting exceeds the specified number of seconds. The specified value must be smaller than the RPC timeout value.

Field	Explanation
Perform search in advance when opening the search dialog	This option applies to the search for active reports in a folder. If this option is not selected, the **Search** dialog initially displays an empty result list. This prevents a search with unknown search criteria, as this might cause a system time-out in environments with a large number of active reports. If this option is selected, the **Search** dialog initially displays the result list of active reports based on the current search criteria.

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:

- In the **Applications** section of the **System Defaults** window, 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:

- Modifying Monitor Defaults
- Displaying Monitor Defaults
- Components of Monitor Defaults

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/OSD, one batch job is run for each Monitor task. In UNIX, each Monitor task uses a separate process.

Modifying Monitor Defaults

To modify the monitor defaults:

1 Select the System Administration > Defaults > Monitor node in the object workspace.

2 Invoke the context menu and choose **Open**.

3 The **Monitor Defaults** are displayed, and you can change them.

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

4 When you have finished making changes, choose **OK** to save them.

To define container files for the Entire Output Management monitor:

1 In the **Monitor Defaults** window, select the **Copy to DB Files** button.

A window is displayed, in which you can add, modify, delete, reset or pass the container files to your selected destination.

Container files should be used, if separation processing is defined for the SYSOUT, and/or if SYSOUT is to be browsed online. Data are compressed in the specified files. For further information, see *Defining Container Files*.

2 Choose **OK** to save your changes.

To modify the Monitor Task Profile:

1 In the **Monitor Defaults** window, select the **Monitor Task Profile** button.

The **Monitor Task Profile** is displayed, allowing you to define subtask processing for the Entire Output Management Monitor.

For further information, see ***Subtask Processing***.

2 Modify, reset or store the monitor tasks to a list.

3 Choose **OK** to save your changes.

Displaying Monitor Defaults

To display the monitor defaults:

1 Select the System Administration > Defaults > Monitor node in the object workspace.

2 Invoke the context menu and choose **Display**.

3 The monitor defaults are displayed. The fields are described under ***Components of Monitor Defaults***.

4 Select **Cancel** to close the window.

Components of Monitor Defaults

- POWER/JES2
- JES3
- BS2000/OSD
- Defining Container Files
- Subtask Processing

POWER/JES2

Field	Explanation
Node	Enter the Entire System Server node number under which the Entire Output Management Monitor is run as a subtask or batch job.
System	System type (e.g. z/OS, z/VSE).
Spool Type	Spool type (POWR, JES2, JES3).
Batch module	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.

Field	Explanation	
System Server Job Name	Enter the name of the Entire System Server job.	
Printer Tasks	The number of tasks attached to print reports and bundles in VTAM and Con-nect (maximum 10). See also the recommendations under ***Subtask Processing***.	
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.
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.
	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.
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 data sets in these classes are processed.
	Internal	Define one SYSOUT class to hold temporary SYSOUT data sets. 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 data sets which cause an error during processing. This class *must not* be one of the classes defined in the**Sysout** field above
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:**	

Field	Explanation
	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). ■ 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***.

JES3

JES3 has an additional field:

Field	Explanation
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. 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 data set are not logged.

BS2000/OSD

BS2000/OSD has three additional fields:

Field	Explanation
Rename files	Entire Output Management usually renames print files during processing by adding an internal ID to make them unique. Enter "Y" (yes) to rename files, or "N" (no) not to rename files. **Caution:** Rename=N and changing the contents of input files will lead to inconsistent reports unless they are all kept in the database. For this reason, reports resulting out of BS2000/OSD data sets with changing contents must always be created with "Store in NOM DB = Y"; otherwise the source has to be copied to a container file before processing.
Copy files	Enter "Y" to copy BS2000/OSD files to an Entire Output Management container file; or "N" to not copy them. At least one destination has to be defined; see *Defining Container Files* below. When this option is active, the original BS2000/OSD 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/OSD. 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/OSD 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/OSD ID. In this case, enter *V in the "recform" field and leave the rest empty.

Defining Container Files

This function is used to define container files for the Entire Output Management Monitor. Container files should be used if separation processing is defined for the SYSOUT and/or if SYSOUT is to be browsed online. Data are compressed in the specified files.

To invoke this function:

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

2 A window is displayed, in which you specify:

- the destination as specified in the `DEST=(,...)` parameter of the $$LST (POWER) or of the DD statement (JES);
- the database ID and file number of the container file.

Subtask Processing

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

To invoke this function:

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

The following screen is displayed:

```
 12:12:34            **** ENTIRE OUTPUT MANAGEMENT ****            2015-09-30
UserId XYZ                  - Monitor Task Profile -

 Task    Scan       Copy       Create      Manage            Wait Factors
Number  Queues     Source      Reports    Printout      Min   Max   Increment

  1       _          _           _           _          30    120      1__

  2       X          _           _           _          60__  300_     1__

  3       _          X           _           _          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 Here you can split the workload of the monitor between up to 5 different tasks, each with their own wait factors.

The management functions of the monitor (for example, cleanup, active bundle flushing) are always done by Task 1. Task 1 will also take over work for any subtask that fails.

Recommendations

The number of additional monitor tasks to be defined depends on your execution environment. The following table gives some recommendations:

Environment	Total Number of Monitor Tasks	Additional Tasks for	Wait Factors (in seconds)			Number of Printer Tasks
			Min	Max	Increment	
General recommendation	2	Manage Printout	5	30	1	2
Many short printouts	2	Manage Printout	1	20	1	4 - 10
Few large printouts	3	Copy Source, Manage Printout	10	30	1	2 - 4
Many short printouts as well as a few large printouts	3	Copy Source, Manage Printout	1	20	1	4 - 10

Under UNIX, **Scan Queues** and **Copy Source** must be executed by the same monitor task.

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:

- Modifying Report Defaults
- Displaying Report Defaults
- Components of Report Defaults

Modifying Report Defaults

To modify the report defaults:

1 Select the System Administration > Defaults > Report node in the object workspace.

2 Invoke the context menu and choose **Open**.

3 The **Report Processing Defaults** are displayed, and you can change them.

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

The **Action** options correspond to those described in the *General Attributes* of a report.

4 Choose **OK** to save your changes.

Displaying Report Defaults

To display the report defaults:

1 Select the System Administration > Defaults > Report node in the object workspace.

2 Invoke the context menu and choose **Display**.

3 The **Report Processing Defaults** are displayed.

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

The **Action** options correspond to those described in the *General Attributes* of a report.

4 Select **Cancel** to close the window.

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	Possible actions: ■ **Purge report after** = The report will be purged when the retention period expires. It will not be archived. ■ **Archive report after** = The report will be archived when the retention period expires. ■ **Archive report directly and keep online** = The report will be archived the next time the archive job runs, but its content is still available for online viewing until the retention period expires. ■ **Archive report directly, purge online immediately** = The report will be archived the next time the archive job runs, it will be purged when its processing is completed. ■ **(none)** = No default is set for new reports. When an active report is archived, its content is no longer available online. After this, it only exists in the 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 ■ Absolute days ■ Weeks ■ Months 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*.

Field	Explanation	
	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.	
Copy report content to NOM database	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. To set no default for new reports, select **(none)**.	
Create report definitions for active reports by separation	With this option, you can have report definitions created automatically for reports produced as a result of separation. To set no default for new reports, select **(none)**.	
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.	

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*.

Modifying Bundle Defaults

To modify the bundle defaults:

1 Select the System Administration > Defaults > Bundle node in the object workspace.

2 Invoke the context menu and choose **Open**.

3 The **Bundle Processing Defaults** are displayed, and you can change them.

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

4 Choose **OK** to save your changes.

Displaying Bundle Defaults

To display the bundle defaults:

1 Select the System Administration > Defaults > Bundle node in the object workspace.

2 Invoke the context menu and choose **Display**.

3 The **Bundle Processing Defaults** are displayed.

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

4 Select **Cancel** to close the window.

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 ■ Absolute days ■ Weeks ■ Months If you select "working days", you have to select a calendar which distinguishes between working and non-working days.
	Calendar	Select 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.	
Bundle separator pages	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.	

Field	Explanation	
Printers	Printer	You can enter up to 5 logical printer names. These are the printers on which the bundle will be printed. The select a printer, use the Select button on the right. For further information, see *Selecting Printers for a Bundle*.
	Copies	Specify the number of copies to be printed on the respective printer. See *Setting the Number of Copies for a Printer*.
Report separator pages	■ If this option is selected, the report separator pages are printed. This is the default. ■ If this option is not selected, the report separator page are not printed. The number of separator pages can be defined for each report in the bundle. See *Attributes of a Bundle* in the *User's Guide*.	
Hold before print	■ If this option is selected, the bundle is placed in Hold status in the printout queue until it is released manually for printing. ■ If this option is not selected, 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:

- Modifying Parameters for Archiving
- Displaying Parameters for Archiving
- Archiving Parameters

- Archiving Schedule Parameters

Modifying Parameters for Archiving

To modify the archiving parameters:

1 Select the System Administration > Defaults > Archiving node in the object workspace.

2 Invoke the context menu and choose **Open Parameters**.

3 The **Archiving Parameters** window is displayed, and you change the data.

The fields are described under *Archiving Parameters* below.

4 Choose **OK** to save your changes.

Displaying Parameters for Archiving

To display the archiving parameters defaults:

1 Select the System Administration > Defaults > Archiving node in the object workspace.

2 Invoke the context menu and choose **Display Parameters**.

3 The archiving defaults are displayed. The fields are described under *Archiving Parameters* below.

4 Select **Cancel** to close the window.

Archiving Parameters

- Fields - All Operating Systems
- Fields - z/OS only
- Fields - z/VSE only
- Fields - BS2000/OSD only

Fields - All Operating Systems

The following fields are common to all operating systems.

Field	Explanation	
Default Retention	The parameters entered in the following two fields determine where the archive data sets are to be created, their prefix and how long they are to be retained. 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.

Field	Explanation	
	Unit	D = days, W = weeks, M = months, Y = years. For example 3D (3days), 5M (5 months) etc.
Schedule	These two fields define automatic scheduling of the archiving process:	
	Time scheduled	Enter `Y` to activate the automatic time schedule, which you define below.
	Next run	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.
Skeleton	Enter the name of the job skeleton to be used for the archive task. You can edit this member by pressing PF10 (Edit). The job skeleton with this name can be found in the library `SYSNOMU`. The job skeleton used for condensing has to be saved in library `SYSNOMU` and must be named `JCDNSKEL`.	
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/OSD 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.
	EXPDT	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. Enter "Y" to provide the expiry date on every condense step. Entering "Y" here will cause operating-system messages to be issued for the second and subsequent steps and these might require operator intervention.
Condense Threshold	Numbers of active reports in an archive that will cause automatic condense marking of this archive.	
Delete empty	Automatic deletion of empty archive data sets. Enter "Y" or "N".	
Jobcards	Enter the job cards to be used for archiving with a batch job.	

Fields - z/OS only

Field	Explanation
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.
Predefined Volsers	Enter up to 5 volsers to be used for archiving.

Fields - z/VSE only

Field	Explanation
SYS(nnn)	Enter a number to specify the z/VSE system file to be used for archiving.

Fields - BS2000/OSD only

Field	Explanation
Device	The medium to which archiving is performed (tape, cassette, e.g. T9P, T9G, T-C1 ...).

Archiving Schedule Parameters

Field	Explanation
Next run	Date and time for which the next archive run is scheduled. This field is write-protected. The values are calculated automatically if the parameter in the **Time scheduled** field is set to Y.
Start Time	If archiving is to be performed automatically according to a schedule, enter the time at which the archiving should start. The default is 24:00, midnight. The format is *hh*:*ii* (hours:minutes), for example: 18:00. The archiving process can be scheduled for days in the week or days in the month. Enter data *either* for Weekdays *or* for Monthly days, but not for both.
Weekdays	Enter the day(s) in the week on which to perform archiving: ■ SU = Sunday ■ MO = Monday ■ TU = Tuesday ■ WE = Wednesday

Field	Explanation
	■ TH = Thursday ■ FR = Friday ■ SA = Saturday
Or Monthly Days	Enter the dates in the month on which to perform archiving, for example: 01, 05, 23, etc. Or enter `ALL` for all days in the month or `LD` for the last day of the month.
Calendar	If you specify a calendar, archiving is performed only on days defined as *working days* in the calendar, but not on days defined as *holidays*. To select a calendar from a list of defined calendars, enter an asterisk (*). See also ***Calendars***.
Before/After Holiday(s)	Should an archiving date fall on a calendar holiday, enter "A" to archive on the first workday *after* the holiday, enter "B" to archive 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:

- Listing the Archives
- Creating a New Archive
- Components of User-Defined Archives
- Modifying an Archive
- Displaying an Archive
- Renaming an Archive

- Cross-Referencing an Archive
- Deleting an Archive

Listing the Archives

To list the archives:

1 Select the System Administration > Defaults > Archiving node in the object workspace.

2 Invoke the context menu and choose **List**.

A list of all user-defined archives is displayed.

Creating a New Archive

To create a new user-defined archive:

1 Select the **Archive** folder in the object workspace.

2 Invoke the context menu and choose **New**.

3 The **New User-Defined Archive** window is displayed in the content pane. The fields are described under **Components of User-Defined Archives**.

4 Choose **OK** to save your data.

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. Select an instance of the System Administration > Defaults > Archiving node in the object workspace.
2. Invoke the context menu and choose **Open**.
3. The **User-Defined Archive Type** window for the selected instance is displayed, and you can change it. The fields are described under *Components of User-Defined Archives*.
4. Choose **OK** to save your changes.

Displaying an Archive

To display a user-defined archive:

1. Select an instance of the System Administration > Defaults > Archive node in the object workspace.
2. Invoke the context menu and choose **Display**.
3. The selected archive is displayed. The fields are described under *Components of User-Defined Archives*.
4. Select **Cancel** to close the window.

Renaming an Archive

To rename a user-defined archive:

1. Select an instance of the System Administration > Defaults > Archive node in the object workspace.
2. Invoke the context menu and choose **Rename**.

   A window is displayed.
3. Enter the new name, and select **OK**.

Cross-Referencing an Archive

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

1 Select an instance of the System Administration > Defaults > Archive node in the object workspace.

2 Invoke the context menu and choose **XREF**.

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

3 Select the relation type to display the object list.

4 Select **OK**.

Deleting an Archive

To delete a user-defined archive:

1 Select an instance of the System Administration > Defaults > Archive node in the object workspace.

2 Invoke the context menu and choose **Delete**.

3 Confirm your choice.

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:

- Modifying Reviving Defaults
- Displaying Reviving Defaults

- Reviving Parameters

Modifying Reviving Defaults

To modify the reviving parameters:

1 Select the System Administration > Defaults > Reviving node in the object workspace.

2 Invoke the context menu and choose **Open**.

3 The **Reviving Parameters** are displayed, and you can change them.

The fields are described under *Reviving Parameters* below.

4 Choose **OK** to save your changes.

Displaying Reviving Defaults

To display the reviving parameters:

1 Select the System Administration > Defaults > Reviving node in the object workspace.

2 Invoke the context menu and choose **Display**.

3 The reviving defaults are displayed. The fields are described under *Reviving Parameters* below.

4 Select **Cancel** to close the window.

Reviving Parameters

Field	Explanation
Skeleton	Name of the Job Skeleton. The member resides in the library SYSNOMU.
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	Date and time for which the next revive run is scheduled. The values in this field are calculated from the parameters entered below and are not modifiable here.
not before	Enter the time for the first reviving of the day to be performed. For example, 7:00.
every	Enter a time interval here. For example, if you enter 6 here, reviving is performed at 7:00, 13:00, and 19:00 hours.
not later	Enter the time for the last reviving of the day to be performed. For example, 19.00.
Weekdays	Enter the two-character abbreviation for the day(s) in the week on which to perform reviving: ■ SU = Sunday ■ MO = Monday

Field	Explanation
	■ TU = Tuesday ■ WE = Wednesday ■ TH = Thursday ■ FR = Friday ■ SA = Saturday
Or Monthly Days	Enter the dates in the month on which to perform reviving, for example: 01, 05, 23, etc. Or enter `ALL` for all days in the month or `LD` for the last day of the month.
Calendar ID	If you specify a calendar here, reviving is performed only on days defined as *working days* in the calenda, 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 revive on the first workday *after* the holiday, enter `B` to revive on the last workday *before* the holiday.
Jobcards	Enter the job cards to be used for reviving.

Automatic Cleanup Defaults

The cleanup parameters enable you to schedule automatic cleanup.

This section covers the following topics:

- Modifying Cleanup Defaults
- Displaying Cleanup Defaults
- Cleanup Parameters

Modifying Cleanup Defaults

To modify the cleanup parameters:

1 Select the System Administration > Defaults > Cleanup node in the object workspace.

2 Invoke the context menu and choose **Open**.

3 The **Cleanup Parameters** are displayed, and you can change them.

The fields are described under ***Cleanup Parameters*** below.

4 Choose **OK** to save your changes.

Displaying Cleanup Defaults

To display the cleanup parameters:

1 Select the System Administration > Defaults > Cleanup node in the object workspace.

2 Invoke the context menu and choose **Display**.

3 The cleanup defaults are displayed. The fields are described under *Cleanup Parameters* below.

4 Select **Cancel** to close the window.

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.
not before	Enter time to perform the first cleanup of the day. For example, 7:00.
every	Enter a time interval here. For example, if you enter `6` here, cleanup is performed at 7:00, 13:00, and 19:00 hours.
not later	Enter time to perform the last cleanup of the day. For example, 19.00.
Weekdays	Enter the two-character abbreviation for the day(s) in the week on which to perform cleanup: ■ SU = Sunday ■ MO = Monday ■ TU = Tuesday ■ WE = Wednesday ■ TH = Thursday ■ FR = Friday ■ SA = Saturday
Or Monthly Days	Enter the dates in the month on which to perform cleanup, for example: 01, 05, 23, etc. Or enter `ALL` for all days in the month or `LD` for the last day of the month.
Calendar ID	If you specify a calendar here, cleanup is performed only on days defined as *working days* in the calendar, but not on days defined as *holidays*. To select a calendar from a list, you enter an asterisk (*) in this field.

Field	Explanation
	See also *Calendars*.
Before/After Holiday(s)	Should a cleanup date fall on a calendar holiday, enter `A` to cleanup on the first workday *after* the holiday, enter `B` to cleanup on the last workday *before* the holiday.
Scheduled next	Date and time for which the next cleanup run is scheduled.

CA Spool Defaults

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:

- Modifying CA Spool Defaults
- Displaying CA Spool Defaults
- CA Spool Defaults

Modifying CA Spool Defaults

To modify the CA Spool defaults:

1 Select the System Administration > Defaults > CA Spool node in the object workspace.

2 Invoke the context menu and choose **Open**.

3 The **CA Spool Defaults** are displayed, and you can change them.

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

4 Choose **OK** to save your changes.

Displaying CA Spool Defaults

To display the CA Spool defaults:

1 Select the System Administration > Defaults > CA Spool node in the object workspace.

2 Invoke the context menu and choose **Display**.

3 The CA Spool defaults are displayed. The fields are described under *CA Spool Defaults* below.

4 Select **Cancel** to close the window.

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`.
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:

- Modifying Natural Advanced Facilities Defaults
- Displaying Natural Advanced Facilities Defaults

- Natural Advanced Facilities Defaults

Modifying Natural Advanced Facilities Defaults

To modify the Natural Advanced Facilities parameters:

1 Select the System Administration > Defaults > NAF node in the object workspace.

2 Invoke the context menu and choose **Open**.

3 The **Natural Advanced Facilities Defaults** are displayed, and you can change them.

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

4 Choose **OK** to save your changes.

Displaying Natural Advanced Facilities Defaults

To display the Natural Advanced Facilities parameters:

1 Select the System Administration > Defaults > NAF node in the object workspace.

2 Invoke the context menu and choose **Display**.

3 The Natural Advanced Facilities defaults are displayed. The fields are described under *Natural Advanced Facilities Defaults* below.

4 Select **Cancel** to close the window.

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.

NOM API and User-Exit Defaults

This section covers the following topics:

- Modifying API and User Exit Defaults
- Displaying API and User Exit Defaults
- API and User-Exit Defaults

Modifying API and User Exit Defaults

To modify the API and user exit defaults:

1 Select the System Administration > Defaults > API and User Exit node in the object workspace.

2 Invoke the context menu and choose **Open**.

3 The **API Defaults** are displayed, and you can change them.

The fields are described under *API and User-Exit Defaults* below.

4 Choose **OK** to save your changes.

Displaying API and User Exit Defaults

To display the API and user exit defaults:

1 Select the System Administration > Defaults > API and User Exit node in the object workspace.

2 Invoke the context menu and choose **Display**.

3 The API and user exit defaults are displayed. The fields are described under *API and User-Exit Defaults* below.

4 Select **Cancel** to close the window.

API and User-Exit Defaults

Field	Explanation
NOM trigger container file	This API can be used to explicitly trigger the processing of an output file by Entire Output Management. In JES and POWER this output file can belong to any output class. Documents on UNIX or loaded with the Open Print Option (OPO) will also be processed using the Entire Output Management trigger queue. For further information, see the members `NOMTP-D` and `NOMTP` in the libraries `SYSNOMU` and `SYSNOMS` respectively.

Field	Explanation
Scan trigger queue	Process the Entire Output Management trigger queue? Enter "Y" to activate this interface. "N" = no. For this setting to take effect, you have to restart your monitor.
DBID / FNR	Enter the database ID and file number of the container file in which the trigger data are to be stored. **Note:** If you use a container file for Natural Advanced Facilities printing, it has to be the same file as defined for the trigger queue.

User Exits

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

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 init values for the fields and prohibit modification.
NOMEX008	This exit is called by Entire Output Management to allow integration of user-written application logic with Entire Output Management, allowing to store 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`. The exit is invoked using two different functions: GET-STATUS: to return status information (containing 10 bytes) of an active report to be displayed in the list of active reports (notes field). INTEGRATION-EVENT: invoked by the report browser, if PF2 is pressed, to store environment-site and user-specific data (i.e., notes) for an active report or a specific line of an active report.

User Exit	Explanation
NOMEX009	This exit is called by Entire Output Management to suppress optimization for counting lines of BS2000/OSD input data sets. Assuming 'Rename=N' (BS2000/OSD files will not be renamed). Normally, when a BS2000/OSD data set is printed more than once by Entire Output Management, Entire Output Management will count the records in the data set only once and pass this record count on for further processing. This makes sense, because Entire Output Management assumes that the contents of the data set 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 data set is counted again, the reason being that the data set can change its contents and length. In this case, the flag `NOMEX009-COUNT-OPTIMIZE` should be set to false. **Caution:** Rename=N and changing contents of input files will lead to inconsistent reports unless they are all kept in the database. For this reason, reports resulting out of BS2000/OSD data sets with changing contents must always be created with Store in NOM DB = Y; otherwise the source must be copied to a container file before processing.
NOMEX010	This exit is called by Entire Output Management to get 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 or Con-nect) and allows modification of browsed active report data as well as suppression and insertion of records. The exit is activated by setting active reports export exit to "Y" (in NOM API and User-Exit Defaults). 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.
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.
NOMEX014	If data are transferred to Entire Output Management using the Open Print Option, not only print data can be transferred but also meta data. These meta data are properties of the print data. They are stored in the field `#SPOOL-ATTR-EXTENDED`. NOMEX014 will be 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.

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.

Parameters for NOMEX014

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.

SAP-Spool Defaults

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

Reports can be transferred via SAP exits to Entire Output Management for further processing, instead of being printed by the SAP Spooling system. The data are stored in the specified Adabas file (Entire Output Management container file) and an entry is created for each report in an internal queue. These jobs are run if SAP-Spool interface active is set to Y.

This section covers the following topics:

- Modifying SAP Spool Defaults

- Displaying SAP Spool Defaults
- SAP-Spool Defaults

Modifying SAP Spool Defaults

To modify the SAP Spool defaults:

1 Select the System Administration > Defaults > SAP Spool node in the object workspace.

2 Invoke the context menu and choose **Open**.

3 The **SAP Spool Defaults** are displayed, and you can change them. The fields are described under *SAP-Spool Defaults* below.

4 Choose **OK** to save your changes.

Displaying SAP Spool Defaults

To display the SAP Spool defaults:

1 Select the System Administration > Defaults > SAP Spool node in the object workspace.

2 Invoke the context menu and choose **Display**.

3 The SAP Spool defaults are displayed. The fields are described under *SAP-Spool Defaults* below.

4 Select **Cancel** to close the window.

SAP-Spool Defaults

Field		Explanation
SAP-Spool interface	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 SAP interface in one cycle. A value of 0 means no limit.
NOM Container File (DBID/FNR)		Enter the database ID and file number of the Adabas file to be used as spool container.

UNIX Defaults

You can treat any supported UNIX or Windows platform as a source of output data. Thus it is possible to get the output of any UNIX or Windows application to a container file and process it as usual, including archiving, distribution, printing on a mainframe printer, bundling, and so on.

This is done via an Entire Broker communication using Entire System Server UNIX, which both have to be installed.

This section covers the following topics:

- Creating New UNIX Defaults
- Listing All UNIX Defaults
- Modifying UNIX Defaults
- Displaying UNIX Defaults
- Deleting UNIX Defaults
- UNIX Defaults

Creating New UNIX Defaults

To create new UNIX defaults:

1 Select the **UNIX** folder in the object workspace and invoke the context menu.

2 Choose **New**.

The **New UNIX Defaults** window is displayed in the content pane.

3 The fields are described under ***UNIX Defaults***.

4 Choose **OK** to save your data.

Listing All UNIX Defaults

With this function, you can list all nodes defined for UNIX.

To list all UNIX nodes:

1 Select the System Administration > Defaults > UNIX node in the object workspace.

2 Invoke the context menu and choose **List**.

A window is displayed listing all user-defined UNIX nodes.

Modifying UNIX Defaults

To modify the UNIX defaults:

1 Select an instance of the System Administration > Defaults > UNIX node in the object workspace.

2 Invoke the context menu and choose **Open**.

3 The **UNIX Node Definition** for the selected instance is displayed, and you can change it.

The fields are described under *UNIX Defaults*.

4 Choose **OK** to save your changes.

Displaying UNIX Defaults

To display the UNIX defaults:

1 Select an instance of the System Administration > Defaults > UNIX node in the object workspace.

2 Invoke the context menu and choose **Display**.

3 The UNIX defaults are displayed. The fields are described under *UNIX Defaults*.

4 Select **Cancel** to close the window.

Deleting UNIX Defaults

To delete UNIX defaults:

1 Select an instance of the System Administration > Defaults > UNIX node in the object workspace.

2 Invoke the context menu and choose **Delete**.

3 Confirm your choice.

UNIX Defaults

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 member `SATSRV` of library SYSSATU in a section like this:

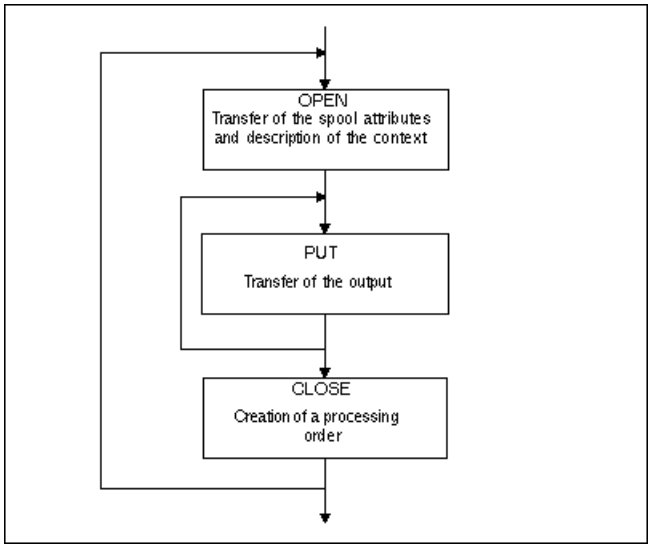
Field	Explanation
	``` node_name SATSRV TYPE=ACI BROKER-ID=... SERVER-CLASS=NPR SERVER-NAME=... SERVICE=node_name USER-ID=... WAIT-TIME=30S ``` For details, see the *Entire System Server UNIX Installation* documentation. This field is case-sensitive.
Status	If UNIX nodes are defined, the Entire Output 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 this field to "S" to indicate that the node has been 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. Possible values: ■ `A` = Active node: the node is scanned to get output to Entire Output Management. ■ `S` = Suspended node: a logon to this node is currently not possible; it is reactivated by the monitor as soon as a logon is possible again. ■ `D` = Deactived node: a logon to this node is not possible. ■ `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. ■ `L` = Local monitor: the node is defined as monitor, it invokes Entire System Server as a subprogram without using EntireX. Used on UNIX systems.
Descr	This field describes the node definition (display only).
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	This is the user ID on the target node, used to logon to the machine. Entire Output Management will get exactly the rights this user ID has got on the specified node. This field is case-sensitive.
Passw	This is the password on the target node, used to logon to the machine. It is stored and sent across the network in an encrypted format. This field is case-sensitive.

Field	Explanation	
Confirm	Since the password is entered without display, 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 (eg. '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. 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.

3GL Interface

- Control Block
- Data Field
- Work Area
- Transaction Logic

The 3GL interface can transfer output line by line to Entire Output Management for further processing. The interface provides the functions OPEN, PUT, CLOSE, which must be used as follows:



The interface 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, however each list must have its own control block and work area.

Control Block

Field	Offset	Length	Explanation
Function code	0	2	1 = OPEN
			2 = PUT
			3 = CLOSE
			5 = End transaction
			6 = Backout transaction
Carriage control character	2	2	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	0 = No OPEN has been performed for this control block.
			1 = A report has been opened for this control block.

Field	Offset	Length	Explanation
Execute ET	16	2	Reserved for internal use.
Automatic ET	18	2	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.
Defaults at OPEN	28	2	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.

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

3GL Interface Maintenance

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.

Listing All 3GL Interfaces Defaults

To list all 3GL interfaces:

1 Select the System Administration > Defaults > 3GL Interfaces node in the object workspace.

2 Invoke the context menu and choose **List**.

A window listing all user-defined interfaces is displayed.

Creating New 3GL Interface Defaults

To create new 3GL interface defaults:

1 Select the **3GL Interface** folder in the object workspace.

2 Invoke the context menu and choose **New**.

3 The **New 3GL Interface Defaults** window is displayed in the content pane, and you can enter data. The fields are described under *3GL Interface Defaults*.

4 Choose **OK** to save your data.

Modifying 3GL Interface Defaults

To modify 3GL Interface defaults:

1 Select an instance of the System Administration > Defaults > 3GL Interface node in the object workspace.

2 Invoke the context menu and choose **Open**.

3 The **3GL Interface Defaults** for the selected instance are displayed, and you can change them.

The fields are described under *3GL Interface Defaults*.

4 Choose **OK** to save your changes.

Displaying 3GL Interface Defaults

To display 3GL Interface defaults:

1 Select an instance of the System Administration > Defaults > 3GL Interface node in the object workspace.

2 Invoke the context menu and choose **Display**.

3 The 3GL Interface defaults are displayed. The fields are described under *3GL Interface Defaults*.

4 Select **Cancel** to close the window.

Deleting 3GL Interface Defaults

To delete 3GL Interface defaults:

1 Select an instance of the System Administration > Defaults > 3GL Interface node in the object workspace.

2 Invoke the context menu and choose **Delete**.

3 Confirm your choice.

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.
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.

2 Users

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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:

- General
- Options
- Access Rights
- NOM Options

General

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. If the option **Use user identification for external security system** (see below) is set, the user ID must be identified to the security system in your installation.
First name / Last name	Enter the user's first name and last name.
Title	You can enter the user's title (optional)
In addition, you can enter - optionally - the following information on the user: ■ address information, ■ office and departmental information, ■ telephone numbers.	

Options

Field	Explanation
User type	Select the user type for the user to determine his/her access rights: ■ **Administrator** - The user has all access rights. ■ **General user** - The user has the access rights for the objects and functions as set under **Access Rights** (see below). ■ **Operator** - Same as General user, plus full maintenance rights for the entire printout queue. ■ **Limited operator** - Same as General user, plus full access to all printouts of the assigned printers. Entire Output Management will display to a user only those object he/she is allowed to access.
Language	Select the language for the user interface: **English** or **German.**
Use user identification for external security system	If you mark this field, the user's Entire Output Management user ID will be used as Entire System Server user ID. This requires that the user is defined in the external security system (e. g. Natural Security or RACF). Otherwise, the identification of the Entire Output Management monitor will be used.
Sort active reports (if filtered by report name)	Select whether active reports which are filtered by report name are to be sorted **by date/time** or **by report name**. This default setting only applies to active reports filtered by report name, and it can be changed individually when a **Filter** function is invoked. Active reports filtered by other criteria are always sorted by date/time.
Set default filter for active reports	This sets the default for various functions used to filter active 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.

Access Rights

Field	Explanation
Display, Modify, Purge	In the left-hand section of the screen, you can allow/disallow the user to perform the functions Display, Modify or Purge (Delete). You can allow these functions separately for every Entire Output Management object type.
Other functions	In the right-hand section of the screen, you can allow/disallow the user to perform various Entire Output Management functions.

NOM Options

These option only apply to the character-based user interface of Entire Output Management.

Field	Explanation	
Active bundle list	This option controls the behaviour of the active bundle list if wildcard selection is used:	
	Format 1	The user gets a list of matching active bundle names from which he/she may select one; active bundles with the selected name are then listed.
	Format 2	The user gets a list of all matching active bundle names.
Show modify confirmation window	Determines whether a Modify operation is executed immediately or needs to be explicitly confirmed in an additional window.	
Show delete confirmation window	Determines whether a Delete operation is executed immediately or needs to be explicitly confirmed in an additional window.	
Show line number when browsing active reports	Determines whether or not the 6-digit line numbers are displayed before each line of the Editor screen when browsing active reports.	
Show PF-key assignments when browsing active reports	Determines whether or not the PF-key assignments are displayed at the bottom of the Editor screen when browsing active reports.	
Display long names	Determines whether or not long report and bundle names consisting of up to 25 characters are displayed. If long-name display is not supported by the system, this option cannot be set.	

Listing All User Definitions

To list all user definitions:

1 Select the System Administration > Users node in the object workspace.

2 Invoke the context menu and choose **List**.

A user list is displayed in the content pane. You can sort this list by user ID or name.

Listing Selected User Definitions

To list selected user definitions:

1 Select the System Administration > Users node in the object workspace.

2 Invoke the context menu and choose **Filter**.

The **Filter Users** window is displayed.

3 Enter your selection criterion (part of a user ID), and select **OK**.

Only user IDs that start with the specified string are listed under the **Users** node.

Creating a New User Definition

To create a new user definition:

1 Select the **User** folder in the object workspace.

2 Invoke the context menu and choose **New**.

The **New User** window is displayed.

3 The fields are described under *Components of a User Definition*. Enter data as required.

4 Choose **OK** to save your data.

Copying a User Definition

To copy a user definition:

1 Select an instance of the System Administration > Users node in the object workspace.

2 Invoke the context menu and choose **Copy**.

A window is diplayed.

3 Enter the name of the target user, and select **OK**.

The user definition is copied and can be adapted to your requirements.

Modifying a User Definition

To modify a user definition:

1 Select an instance of the System Administration > Users node in the object workspace.

2 Invoke the context menu and choose **Open**.

The user definition is displayed.

3 The fields are described under *Components of a User Definition*. Change the specifications as required.

4 Select**OK** to save your changes.

Displaying a User Definition

To display a user definition:

1 Select an instance of the System Administration > Users node in the object workspace.

2 Invoke the context menu and choose **Display**.

3 The user definition is displayed. The fields are described under *Components of a User Definition*.

4 Select **Cancel** to close the window.

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 Select an instance of the System Administration > Users node in the object workspace.

2 Invoke the context menu and choose **Delete**.

3 Confirm your choice.

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. Select an instance of the System Administration > Users node in the object workspace.
2. Invoke the context menu and choose **XREF**.

   A window is displayed, listing the numbers of objects related to the user, grouped by object type.
3. Select an object type.

   A list of all objects of the selected type which are related to the user is displayed.

Displaying Log Information About a User

To display log information about a user:

1. In the object workspace or in the user list, select the desired user.
2. To list all events, proceed directly with the next step.

   To list only selected events, first invoke the context menu and choose **Filter Log**. A window is displayed in which you specify your selection criteria, and choose **OK**.
3. Invoke the context menu and choose **Display Log**.

   The **Log Information** for the user is displayed.
4. To display more detailed log information, select an entry from the log information list, and choose **Info** from the context menu.

   The **Log Message** for the selected entry is displayed.

Displaying a User's Activity Log

To display log information about a user's activities:

1 Select a user from the user list.

2 To list all events, proceed directly with the next step.

To list only selected events, first invoke the context menu and choose **Filter Log**. A window is displayed in which you specify your selection criteria, and choose **OK**.

3 Invoke the context menu and choose **Display User Log**.

The **User Log** for the selected user is displayed in the content pane. For each event, it displays the date and time when it occurred, the object where it occurred (if available), and a message explaining the event.

4 To display more detailed information for an entry, select the entry in the user log, and choose **Info** from the context menu.

The **Log Message** for the selected user entry is displayed.

Listing Folders for a User

To list the folders for a user:

1 Select an instance of the System Administration > Users node in the object workspace.

2 Invoke the context menu and choose **List Folders**.

All folders for the respective user are displayed.

Copying Natural Security Users

This function makes it easier for you to define users in Entire Output Management, as it allows you to create multiple new user profiles simultaneously. At the same time, it provides for consistency between Entire Output Management and Natural Security, as it allows you to create user profiles in Entire Output Management only for those users who are defined in Natural Security.

To create new user profiles with this function:

1 Select an instance of the System Administration > Copy NSC Users node in the object workspace.

2 Invoke the context menu and choose **Copy NSC**.

A list of users is displayed, containing all users who are defined in Natural Security. For every user, it indicates if a user profile already exists in Entire Output Management.

3 Mark the users for whom you wish user profiles in Entire Output Management to be created.

4 You have the option to use an already existing user profile as a template for the new user profiles:

- If you select **Select a profile template**, a window is displayed, listing all Entire Output Management user profiles. On the list, you mark the profile to be used as a template for the new user profiles, and select **OK**.
- If you decide to use no template, the user profiles will be created based on a default profile (that is, using the default values for all user-profile fields).

5 Select **Copy selected users** to confirm your selection.

For all selected users, user profiles will be created in Entire Output Management.

Once the user profiles have been created, you can modify them individually; see *Modifying a User Definition*.

3 Calendars

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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:

Listing All Calendars

To list all calendars:

1 Select the System Administration > Calendars node in the object workspace.

2 Invoke the context menu and choose **List**.

A calendar list is displayed in the content pane. You can sort the list by calendar name or year.

Listing Selected Calendars

To list selected calendars:

1 Select the System Administration > Calendars node in the object workspace.

2 Invoke the context menu and choose **Filter**.

The **Filter Calendars** window is displayed.

3 Enter your selection criteria, and choose **OK**.

Only calendars which satisfy the selection criteria are listed under the **Calendars** node.

Creating a New Calendar

To create a new calendar:

1 Select the **Calendar** folder in the object workspace and invoke the context menu.

2 Choose **New**.

The **New Calendar** window is displayed in the content pane.

3 Enter the **Name** of the new calendar and the **Year** to which it is to apply.

If you wish to use an already existing calendar as a template for the new calendar, you can select one from the same year from the **Template for Year** drop-down list.

4 Choose **OK** to save your data.

Modifying a Calendar

To modify a calendar:

1 Select an instance of the System Administration > Calendar in the object workspace.

2 Invoke the context menu and choose **Open**.

The calendar is displayed. Non-working days (annual holidays and weekly holidays) are highlighted in the calendar, working days are shown without highlighting.

3 To change a working day to an annual holiday or vice versa, you double-click on the respective date.

To define a week day as a weekly holiday, select the respective check box. To define it as a working day again, deselect the check box.

You can also use the context menu to set and reset holidays with the following functions:

- **Toggle Holiday** changes a working day to an annual holiday, or vice versa.
- **Set Holidays** changes the selected day(s) to holiday(s).
- **Reset Holidays** changes the selected day(s) to working day(s).
- **Remove All Holidays** changes all holidays to working days.

4 Choose **OK** to save your changes.

Displaying a Calendar

To display a calendar:

1 Select an instance of the System Administration > Calendar node in the object workspace.

2 Invoke the context menu and choose **Display**.

The calendar is displayed.

3 Select **Cancel** to close the window.

Deleting a Calendar

To delete a calendar:

1 Select an instance of the System Administration > Calendar node in the object workspace.

2 Invoke the context menu and choose **Delete**.

3 Confirm your choice.

The calendar will be deleted.

4 Physical Printers

A physical printer is a VTAM printer, a system printer or a data set, when printing to disk, to tape or to Con-nect.

This section covers the following topics:

Attributes of Physical Printers

Maintenance Functions for Physical Printers

Special Printer Types

5 Attributes of Physical Printers

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This section describes the attributes of a physical printer definition:

General Attributes

Field	Explanation
Printer ID	Enter the ID of the physical printer.
Location	Enter the location of the physical printer. For example: 2nd floor, room 216.
Monitor	The name of the monitor controlling this physical printer. In a single-mode environment, the name will always be `MAIN`.
Printer type	The following printer types are supported by Entire Output Management: ■ **CASPOOL** - Print to CA Spool. ■ **CON-NECT** - Print to Con-nect. ■ **DISKMVS** - Print data to disk (z/OS). ■ **ECL** - Entire Output Management PC Link from Version 2.1.1. ■ **EMAIL** - Physical printer representing one or more email addresses. ■ **NAF** - Print on Natural Advanced Facilities logical printer. ■ **SYSPRBS2** - System printer in BS2000/OSD. ■ **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). ■ **XML** - XML printer. ■ **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.
Print program	Name of the program which does the actual printing.
Job skeleton	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	Special character used to identify substitution variables.
Maximum lines	Enter the maximum number of lines allowed to be printed on this printer.

Field	Explanation
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
- CON-NECT
- DISKMVS
- ECL 2.1.1
- 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, 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.

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

CON-NECT

Attribute	Explanation
DBID	Database ID of the Con-nect system file.
FNR	File number of the Con-nect system file.
Cabinet	Name of the Con-nect cabinet. You can leave this field blank. In this case, the document is created in the cabinet of the user who issued the printout.
Document name	Name of the Con-nect document. In this case, the document name is constructed from the report/bundle name, the run number of the object to be printed and the run number of the printout.
Document format	Enter the document format to be used: 0 = text document, 1 = Con-form document (default).
Description	Enter up to four lines of document description.
Keywords	Enter up to six keywords for the document.

DISKMVS

Attribute	Explanation
Dataset	Enter the data set name to be used.
Member	Enter the member name to be used.
Dataclas	Enter the DATACLAS parameter. This corresponds to the DATACLAS JCL parameter.
Dcb	Enter the DCB parameter. This corresponds to the DCB JCL parameter.
Disp	Enter the Disposition parameter.
Expdt	Enter the EXPDT parameter. This corresponds to the EXPDT JCL parameter.
Like	Enter the LIKE parameter. This corresponds to the LIKE JCL parameter.
Lrecl	Enter the record length to be used (for records of variable length, this is the maximum record length + record length field).
Mgmtclas	Enter the MGMTCLAS parameter. This corresponds to the MGMTCLAS JCL parameter.

Attribute	Explanation
Msvgp	Enter the MSVGP parameter. This corresponds to the MSVGP JCL parameter.
Recfm	Enter 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	Enter the RETPD parameter. This corresponds to the RETPD JCL parameter.
Space	Enter the SPACE parameter. This corresponds to the SPACE JCL parameter.
Storclas	Enter the STORCLAS parameter. This corresponds to the STORCLAS JCL parameter.
Unit	Enter the unit type.
Volser	Enter the volser where the data set 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.

ECL 2.1.1

Attribute	Explanation
Service	Enter the name of the label in member SATSRV in library SYSSATU which identifies the set of attributes needed for client/server communication with the print server running under OS/2 or Windows. To use different members specify <member.label>.
Barcode	Enter the name of the BARCODE resource to be used.
Cond. processing	Specifies the maximum nesting level for conditional processing. If it is AFP, this value is always 1. With PFM, the maximum value is 32767.
Destination	Name of a logical destination as defined in ECL.
Disposition	■ Hold - Hold before print. ■ Keep - Keep after print. ■ Delete - Delete after print.
Formdef	Enter the name of the FORMDEF resource if the output is to be formatted.
Pagedef	Enter the name of the PAGEDEF resource if the output is to be formatted.
Trc	Enter YES if your print file contains font indices.
Trace	Enter YES to activate the trace facility. The trace output will be written to the ESY log.

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 should 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 should 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 should be evaluated.
Pname	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 should 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	Enter the BURST parameter. This corresponds to the BURST JCL parameter.
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 CKPTLINE JCL parameter.
Ckptpage	Enter the number of logical pages to be printed before JES takes a checkpoint. This corresponds to the CKPTPAGE JCL parameter.
Ckptsec	Specify how many seconds of printing are to elapse between each checkpoint for the SYSOUT data set. This corresponds to the CKPTSEC JCL parameter.
Class	Enter a one-character JES output class for the printout.
Compact	Enter the COMPACT parameter. This corresponds to the COMPACT JCL parameter.
Datack	Enter the DATACK parameter. This corresponds to the DATACK JCL parameter.
Dcb	Enter the DCB parameter. This corresponds to the DCB JCL parameter.
Destination	Enter the JES destination parameter.
Fcb	Enter the Forms Control Buffer. This corresponds to the FCB JCL parameter.
Flash	Enter the FLASH parameter. This corresponds to the FLASH JCL parameter.
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 FORMS JCL parameter.
Index	Enter the INDEX parameter. This corresponds to the INDEX JCL parameter.
Lindex	Enter the LINDEX parameter. This corresponds to the LINDEX JCL parameter.
Lrecl	Enter the LRECL parameter. This corresponds to the LRECL JCL parameter.
Modify	Enter the MODIFY parameter. This corresponds to the MODIFY JCL parameter.
Pagedef	Enter the name of the library member that PSF uses in printing on a page-mode printer.
Prmode	Enter the PRMODE parameter. This corresponds to the PRMODE JCL parameter.
Recfm	Enter the RECFM parameter. This corresponds to the RECFM JCL parameter.
Trc	Enter the TRC parameter. This corresponds to the TRC JCL parameter.
Ucs	Enter the UCS parameter. This corresponds to the UCS JCL parameter.
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	Enter the BURST parameter. This corresponds to the BURST JCS parameter.
Chars	Enter one or more 4-byte character set names as in JCS.
Class	Enter a one-character POWER output class for the printout.
Cmpact	Enter the CMPACT parameter. This corresponds to the CMPACT JCS parameter.
Destination	Enter the POWER destination parameter.
Delt	Enter the DELT parameter. This corresponds to the DELT JCS parameter.
Disp	Enter the DISP parameter. This corresponds to the DISP JCS parameter.
Fcb	Enter the Forms Control Buffer. This corresponds to the FCB JCS parameter.
Flash	Enter the FLASH parameter. This corresponds to the FLASH JCS parameter.
Form	Enter the name of the form on which the report or bundle is to be printed. This corresponds to the FORM JCS parameter.
Jsep	Enter the JSEP parameter. This corresponds to the JSEP JCS parameter.
Modify	Enter the MODIFY parameter. This corresponds to the MODIFY JCS parameter.
Password	Enter the PWD parameter. This corresponds to the PWD JCS parameter.
Rbc	Enter the RBC parameter. This corresponds to the RBC JCS parameter.
Rbm	Enter the RBM parameter. This corresponds to the RBM JCS parameter.
Rbs	Enter the RBS parameter. This corresponds to the RBS JCS parameter.
Remote	Enter the REMOTE parameter. This corresponds to the REMOTE JCS parameter.
Sysid	Enter the SYSID parameter. This corresponds to the SYSID JCS parameter.
Ucs	Enter the UCS parameter. This corresponds to the UCS JCS parameter.
User	Enter the USER parameter. This corresponds to the USER JCS parameter.

TAPEMVS

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

TAPEVSE

Attribute	Explanation
Dataset	Enter the data set name to be used.
Volser	Enter the volser where the data set is located.
Unit	Enter the Unit type.
Disp	Enter the Disposition parameter.
Recfm	Enter the RECFM parameter. This corresponds to the RECFM JCL parameter.
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 data set.

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.

Attribute	Explanation
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 dataset.
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 dataset 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 dataset.
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.
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.
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 dataset	&JTYP.

Spool Attribute	Explanation	Symbol
DSNO-OLD	Old DS number	&JDSNO.
DATASET-KEY	Dataset 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 dataset name	&JTRIG.
DSNO	DS number	&JDSNO.
Power:		
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 dataset name	&PTDSN.

Spool Attribute	Explanation	Symbol
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/OSD:		
NODE	OSD node	&BNODE.
JOB-NAME	Name of the job	&BJOB.
USER-ID	User ID of the job	&BUSER.
JOB-ID	OSD job ID	&BJID.
ORIGINATOR-JOB-ID	Job ID of the originator	&BORIG.
COPIES	Copies to be printed	&BCOP.
FORM	FORM parameter	&BFORM.
CHARS	CHARS parameter	&BCHARS.
DSNAME	Name of the OSD 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.

Spool Attribute	Explanation	Symbol
ORIG-DSNAME	Original OSD 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.

6 Maintenance Functions for Physical Printers

- Listing All Physical Printers 80
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- Displaying a Physical Printer 81
- Deleting a Physical Printer 82
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The section describes the functions for the maintenance of physical printer definitions:

Listing All Physical Printers

To list all physical printers:

1 Select the System Administration > Physical Printers node in the object workspace.

2 Invoke the context menu and choose **List**.

All defined physical printers which can be used in the system are displayed in the content pane.

Listing Selected Physical Printers

To list selected physical printers:

1 Select the System Administration > Physical Printers node in the object workspace.

2 Invoke the context menu and choose **Filter**.

The **Filter Physical Printers** window is displayed.

3 Enter a part of a printer name in the input field, and select **OK**.

Only printers that start with the specified string are listed under the **Physical Printers** node.

Creating a New Physical Printer

To create a new physical printer:

1 Select the **Physical Printer** folder in the object workspace.

2 Invoke the context menu and choose **New**.

The **New Physical Printer** window is displayed in the content pane.

3 The attributes you can specify as part of a physical printer definition are described under *Attributes of Physical Printers*. Specify the attributes as desired.

4 Choose **OK** to save the printer definition.

Modifying a Physical Printer

To modify the attributes of a physical printer:

1 Select an instance of the System Administration > Physical Printer in the object workspace.

2 Invoke the context menu and choose **Open**.

The attributes of the selected physical printer are displayed. They are described under *Attributes of Physical Printers*.

3 Change the attributes as desired.

4 Choose **OK** to save your changes.

Copying a Physical Printer

To copy the definitions for a physical printer:

1 Select an instance of the System Administration > Physical Printers node in the object workspace.

2 Invoke the context menu and choose **Copy**.

A window is displayed.

3 Enter the target destination for the printer definition in the input field provided.

4 Confirm your choice.

The printer definitions have been copied.

Displaying a Physical Printer

To display a physical printer:

1 Select an instance of the System Administration > Physical Printers node in the object workspace.

2 Invoke the context menu and choose **Display**.

3 The physical printer definition is displayed. The settings are described under *Attributes of Physical Printers*.

4 Select **Cancel** to close the window.

Deleting a Physical Printer

To delete a physical printer:

1 Select an instance of the System Administration > Physical Printers node in the object workspace.
2 Invoke the context menu and choose **Delete**.
3 Confirm your choice.

The printer will be deleted system-wide.

Stopping a Physical Printer

To stop a physical printer:

1 Select an instance of the System Administration > Physical Printers node in the object workspace.
2 Invoke the context menu and choose **Stop**.

Or:

Enter the direct command `STOP PHYSICAL printer-name`. You can specify the *printer-name* with asterisk selection (*) to stop a group of physical printers.

To stop a group of physical printers:

1 Select an instance of the System Administration > Physical Printers node in the object workspace.
2 Invoke the context menu and choose **List**.
3 Select the printers to be stopped.
4 Invoke the context menu and choose **Stop**.

The selected printer(s) will be stopped. All printouts which point to logical printers associated with the stopped physical printer(s) are put on hold.

Starting a Physical Printer

To start a physical printer which was stopped:

1 Select an instance of the System Administration > Physical Printers node in the object workspace.

2 Invoke the context menu and choose **Start**.

Or:

Enter the direct command `START PHYSICAL printer-name`. You can specify the *printer-name* with asterisk selection (*) to start a group of physical printers.

To start a group of physical printers which were stopped:

1 Select an instance of the System Administration > Physical Printers node in the object workspace.

2 Invoke the context menu and choose **List**.

3 Select the printers to be started.

4 Invoke the context menu and choose **Start**.

The printer(s) which were stopped are started again. All printouts that were put on hold when the printer(s) was/were stopped will get the status they had before they were put on hold.

7 Special Printer Types

- XML Printers 86
- UNIXLP – Direct TCP/IP Printing 87
- NATUNIX Printers 90
- DISKUNIX Printers 92
- NATUNIX or DISKUNIX - Comparison of Characteristics 95

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

XML Printers

Physical (and logical) printers of type XML allow XML stylesheets to be merged with XML documents at print time. The output of an XML printer is always a data set. On z/OS and compatible systems it is a disk file; on z/VSE it is a tape file; on BS2000/OSD it is a print file. An XML printer has the same attributes as its equivalent data set printer (**DISKMVS**, **TAPEVSE** or **SYSPRBS2**).

Stylesheet in Report Definition

The stylesheet is resolved at print time as follows. If the document contains:

```
<?xml-stylesheet href="[file://EOM/*]">
```

the default stylesheet is taken from the definition of the report being printed. For example, if the report is defined with a stylesheet of

```
HTTP://SERVER1/MYSTYLE.XLS
```

the document is adjusted at print time to contain:

```
<?xml-stylesheet href="[HTTP://SERVER1/MYSTYLE.XLS]">
```

Stylesheet in SYSNOMU

Stylesheets may also be stored as text objects in SYSNOMU. In this case the document (or report definition) may specify something like:

```
<?xml-stylesheet href="[file://EOM/SYSNOMU/MYSTYLE]">
```

This print line is suppressed and the contents of MYSTYLE from the library SYSNOMU are inserted in its place. This implies that, for this method of inserting a stylesheet, the `<?xml-stylesheet…>` must be on a line of its own.

Combined Method

The two methods can be combined, so that the document itself refers to `file://EOM/*`, which instructs the print task to take the stylesheet URL from the report definition. The report definition then specifies `FILE://EOM/SYSNOMU/MYSTYLE`, which instructs the print task to suppress the `<?xml-stylesheet…>` and insert the contents of MYSTYLE.

Additionally, a printer exit can specify the stylesheet by inserting a record containing the URL of the stylesheet to be used. The printer exit must not specify `file://EOM/*` but it can specify `FILE://EOM/SYSNOMU/MYSTYLE`. The contents of any inserted stylesheet are not passed to the printer exit. No stylesheet interpretation is performed.

UNIXLP – Direct TCP/IP Printing

- What is Direct Printing?
- Prerequisites
- Installation of Direct Printing
- Usage of Translation Tables

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.	`&UXLPFFEED.`

Field	Explanation	Symbol
	■ 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.	
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.

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. ■ 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.	&NTUXFFEED.
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	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	No
... limit the pages to be printed.	Yes	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.

8 Monitor Management

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- Monitor Tasks 102

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.

Monitor Status

The monitor status can be one of the following:

- Abended
- Analyse Report Sources
- Closed
- Create Active Reports
- Delete Active Reports
- Export Objects
- Idle
- Inactive
- Initializing
- Load Source into NOM DB
- Process bundles
- Process printouts
- Process SPOOL queue
- Purge expired archive
- Purge expired bundles
- Purge expired logs
- Purge expired printouts
- Purge expired reports
- Recovering from Error
- Shutdown in progress
- Start ARCHIVE

- Start CONDENSE
- Start REVIVE

Modifying the Monitor Parameters

To modify the monitor parameters:

1 Select an instance of the System Administration > Monitor Management > Monitor in the object workspace.

2 Invoke the context menu and choose **Open Parameters**.

The monitor parameter settings are displayed.

3 The parameters are explained below. You can change their settings as desired.

4 Choose **OK** to save your changes.

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*.

Displaying the Monitor Parameters

To display the monitor parameters:

1 Select an instance of the System Administration > Monitor Management > Monitor node in the object workspace.

2 Invoke the context menu and choose **Display**.

3 The monitor parameters are displayed. They are described under *Main Task Parameters*.

4 Select **Cancel** to close the window.

Starting the Monitor

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

To start the Monitor:

1 Select an instance of the System Administration > Monitor Management > Monitor node in the object workspace.

2 Invoke the context menu and choose **Start**.

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

Waking the Monitor

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

To wake the Monitor:

1 Select an instance of the System Administration > Monitor Management > Monitor node in the object workspace.

2 Invoke the context menu and choose **Wake**.

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 Select an instance of the System Administration > Monitor Management > Monitor node in the object workspace.

2 Invoke the context menu and choose **Close**.

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".

Displaying the Monitor Status

To display the status of the monitor:

1 Select an instance of the System Administration > Monitor Management > Monitor node in the object workspace.

2 Invoke the context menu and choose **Status**.

The status of the Monitor is displayed. The possible values are listed under *Monitor Status*.

Displaying the Monitor Log

To display the monitor log:

1 Select an instance of the System Administration > Monitor Management > Monitor node in the object workspace.

2 To list all events, proceed directly with the next step.

To list selected events, first invoke the context menu and choose **Filter Log**. A window is displayed in which you specify your selection criteria, and choose **OK**

3 Invoke the context menu and choose **Display Log**.

The monitor log is displayed.

You can sort the log entries by date (ascending or descending).

Purging the Monitor Buffer Pool

To purge the monitor buffer pool:

1 Select an instance of the System Administration > Monitor Management > Monitor node in the object workspace.

2 Invoke the context menu and choose **Purge Buffer**.

All entries in the Natural Buffer Pool are purged.

Purging a Single Buffer Pool Entry

To purge a single buffer pool entry:

1. Select an instance of the System Administration > Monitor Management > Monitor node in the object workspace.
2. Invoke the context menu and choose **Purge Single**.
3. Enter data for the object to be purged and select **OK**.

   The object specified is purged from the Monitor Buffer Pool.

Monitor Tasks

Listing Monitor Subtasks

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

To list the monitor subtasks:

1. Select an instance of the System Administration > Monitor Management > Tasks node in the object workspace.
2. Invoke the context menu and choose **List**.

   The **Monitor Task List** is displayed.
3. To refresh the list, you select the **Refresh** button.

   To refresh the list automatically at regular intervals (every *n* seconds), you select **Refresh every** and specify a period of time.
4. To perform a function for one of the tasks listed, you select the task, invoke the context menu, and choose the desired function.

9 Task Management

- Archiving Task 104
- Reviving Task 104
- Condense Task 105

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 Select an instance of the System Administration > Archiving Task node in the object workspace.

2 Invoke the context menu and choose **Start**.

A window is displayed, showing the scheduled date and time, and input fields for you to specify a different date and time.

3 These input fields contain the present date and time. To reschedule the task, overwrite these values.

All Reports marked for archiving are written to the archiving medium.

Note: 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 Select an instance of the System Administration > Reviving Task node in the object workspace.

2 Invoke the context menu and choose **Start**.

A window is displayed, showing the scheduled date and time, and input fields for you to specify a different date and time.

3 These input fields contain the present date and time. To reschedule the task, overwrite 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 Select an instance of the System Administration > Condense Task node in the object workspace.

2 Invoke the context menu and choose **Start**.

A window is displayed, showing the scheduled date and time, and input fields for you to specify a different date and time.

3 These input fields contain the present date and time. To reschedule the task, overwrite these values.

10 Archive Administration

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- Deleting an Archived Report 112
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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 All Archive Data Sets

To list all archive data sets:

1 Select the Archive Administration > Archive Data Sets node in the object workspace.

2 Invoke the context menu and choose **List**.

A list of all defined archive data sets is displayed in the content pane.

Listing Selected Archive Data Sets

To list selected archive data sets:

1 Select the Archive Administration > Archive Data Sets node in the object workspace.

2 Invoke the context menu and choose **Filter**.

The **Filter Archive Data Sets** window is displayed.

3 Enter a part of a data set name in the input field, and select **OK**.

Only data sets that start with the specified string are listed under the **Archive Data Sets** node.

Condensing an Archive Data Set

To condense an archive data set:

1 Select the Archive Administration > Archive Data Sets node in the object workspace.

2 Invoke the context menu and choose **Condense**.

3 Enter the schedule for condensing, and select **OK**.

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 Select the Archive Administration > Archive Data Sets node in the object workspace.

2 Invoke the context menu and choose **Rename**.

3 A window is displayed in which you can specify the following:

Field	Explanation
To data set name	Specify the new name of the data set.
Log modifications of reports	Mark this field if you want messages about changed reports of the archive data set to be written to the monitor log. Leave it empty if you do not want such messages to be written.

Make your specifications, and confirm them by selecting **OK**.

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 Select the Archive Administration > Archive Data Sets node in the object workspace.

2 Invoke the context menu and choose **Delete**.

3 Confirm the deletion by selecting **OK**.

Listing the VOLSERs of an Archive Data Set

To list the VOLSERs spanned by an archive data set:

1 Select the Archive Administration > Archive Data Sets node in the object workspace.

2 Invoke the context menu and choose **List VOLSERs**.

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 Select the Archive Administration > Archive Data Sets node in the object workspace.

2 Invoke the context menu and choose **Modify VOLSER**.

3 A window is displayed in which you can specify the following:

Field	Explanation
To VOLSER	Here you specify the new VOLSER.
Log modifications of reports	Mark this field if you want messages about changed reports of the archive data set to be written to the monitor log. Leave it empty if you do not want such messages to be written.

Make your specifications, and confirm them by selecting **OK**.

Listing Archived Reports

To list all reports contained in an archive data set:

1 Select the Archive Administration > Archive Data Sets node in the object workspace.

2 Invoke the context menu and choose **List Reports**.

A list of all reports contained in the archive data set is displayed.

3 You can select a report and perform an action on it by invoking the context menu, which displays the commands available.

To list only selected reports in an archive data set:

1 Select the Archive Administration > Archive Data Sets > Reports node in the object workspace.

2 Invoke the context menu and choose **Filter**.

The **Filter Reports in Archive Data Set** window is displayed.

3 Enter a character string, and select **OK**.

Only reports whose names begin with that character string will be listed.

Displaying an Archived Report

To display a report in an archive data set:

1 Select the Archive Administration > Archive Data Sets > Reports node in the object workspace.

2 Invoke the context menu and choose **Display**.

The report is displayed.

Modifying the Expiration Date of an Archived Report

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

1 Select the Archive Administration > Archive Data Sets > Reports node in the object workspace.
2 Invoke the context menu and choose **Open**.
3 Enter a new value in the **New Expiration Date** field, and select **OK**.

Resetting the Expiration Date of an Archived Report

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

1 Select the Archive Administration > Archive Data Sets > Reports node in the object workspace.
2 Invoke the context menu and choose **Reset**.

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:

1 Select the Archive Administration > Archive Data Sets > Reports node in the object workspace.
2 Invoke the context menu and choose **Delete**.

Reports marked for deletion are automatically deleted on the following day.

Reviving an Archived Report

If an archived report was deleted from active reports manually, 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 deleted from active reports:

1 Select the Archive Administration > Archive Data Sets > Reports node in the object workspace.

2 Invoke the context menu and choose **Revive**.

11 Separator Pages

- Using Separator Pages 116
- Contents of Separator Pages 116

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.

12 User Separation Routines

- Creating User Separation Routines 120
- Examples 120
- Actions 121
- Parameters 122

A user separation routine separates a SYSOUT data set 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 data set.

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

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 `SYSNOMS` library.

If you have not done so already, copy the examples to the `SYSNOMU` library.

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:

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.
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.

Actions

- Miscellaneous Actions
- Positioning Actions
- Inserting Text in a Report
- Including More Than One Line in One Routine Call

The following actions may be invoked by a user exit to influence processing. Each 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
- Source Parameters
- Bundle Parameters

- Report Parameters

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 Common to All Source Types
- Parameters for Source Type POWER
- 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/OSD

Parameter	Description	
	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/OSD
	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 currently being processed.
P-POWER-JOB-NUMBER	The POWER job number of the SYSOUT 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.
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.

Parameter	Description
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.
P-DISTRIBUTION	An array of up to 10 members for distribution. Used at create and open.
P-STORE-CONNECT	Con-nect cabinet. Used only when opening or creating new reports.
P-CONNECT-SUBJECT	Document subject in Con-nect.
P-CONNECT-DISTRIBUTION	Con-nect distribution list. Used only when opening or creating new reports.
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.

Parameter	Description
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.

13 Printer Exits

- Printer Exit Interface 130

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.

14 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.

15 Setting Up Environments for Binary Documents

- General Information on Binary Documents 134
- Environments for Binary Data Processing 134
- Examples of Converting Binary Document 138

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

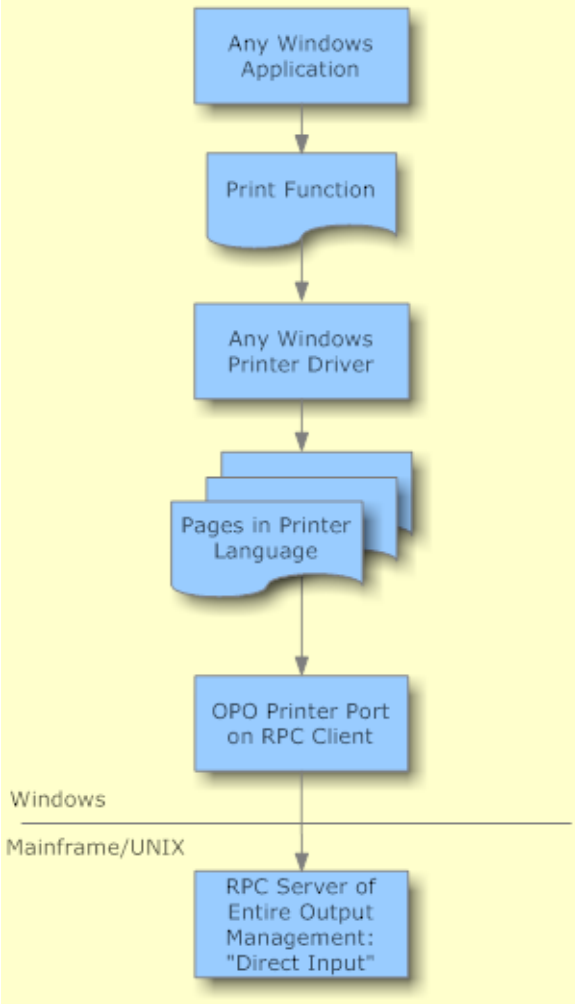
For general information on the processing of binary documents, see the section *Processing of Binary Data* in the *Concepts and Facilities* documentation.

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.

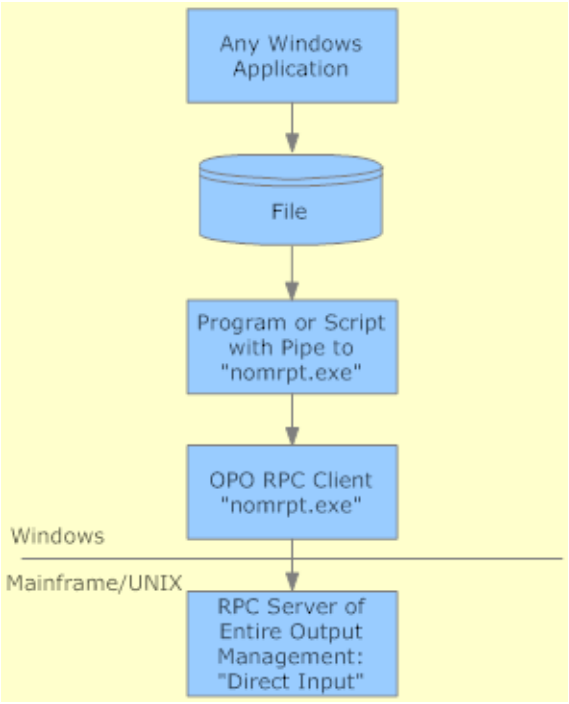
1 - Using OPO With a Windows Printer Driver



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:



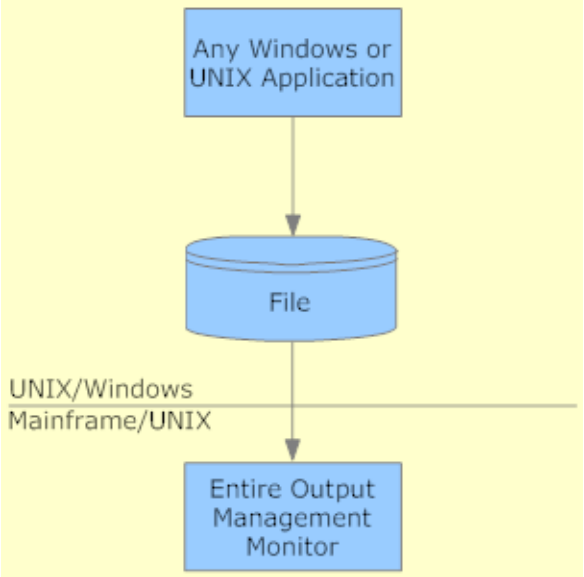
This construction will take a file and forward it to the OPO client, which will encode the data and send them to Entire Output Management as a binary file of the original type. The pipe function of Windows is used to pass the data to the OPO client `nomrpt.exe`.

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
- Example 2 - Convert Word Documents to PDF
- Example 3 - Print a PDF File
- Example 4 - Store Word Documents for Later Printing
- Example 5 - Store AFP Data for Later Printing
- Example 6 - XML Documents

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:

```
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.

16 Transferring Objects

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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.

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
- Modifying an Export Task
- Deleting an Export Task
- Browsing an Export File

Creating an Export Task

To create a new export task:

1 Select the System Administration > Export Task node in the object workspace.

2 Invoke the context menu and choose **Maintain**.

A list of all export tasks which have been created but have not yet been executed is displayed.

3 Invoke the context menu and choose **New**.

A window is displayed in which you can specify the task details. The fields are described below.

Field	Explanation
Object type	Select the type of object to be exported: ■ bundles, ■ calendars, ■ distribution lists, ■ physical printers, ■ logical printers, ■ reports, ■ user profiles, ■ 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	Select this field 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
/*
```

Modifying an Export Task

To modify an export task:

1 Select the System Administration > Export Task node in the object workspace.

2 Invoke the context menu and choose **Maintain**.

A list of all export tasks which have been created but have not yet been executed is displayed.

3 Select the desired export task, invoke the context menu and choose **Open**.

A window is displayed in which you can change the task specifications. The fields are described under *Creating an Export Task* above.

Deleting an Export Task

To delete an export task:

1 Select the System Administration > Export Task node in the object workspace.

2 Invoke the context menu and choose **Maintain**.

A list of all export tasks which have been created but have not yet been executed is displayed.

3 Select the desired export task, invoke the context menu and choose **Delete**.

The task will be deleted.

Browsing an Export File

This function is used to see which data are contained in an export file.

To browse an export file:

1 Select the System Administration > Export Task node in the object workspace.

2 Invoke the context menu and choose **Browse export file**.

3 A window is displayed, in which you enter the name and path of the desired file.

The contents of the file will be displayed.

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.

Parameter	Possible Values	Function
5th parameter: Node number	*node-number* or 0	Specify the node number to be used. Specify 0 if the node number is to be the same as the one from which the objects were exported.

Transferring Objects Directly

With this function, you can copy objects to a target environment on another database, for example, to transfer objects from a test environment to a production environment.

You can transfer the following objects:

- bundles,
- calendars,
- distribution lists,
- folders,
- logical printers,
- physical printers,
- reports,
- users.

The transfer procedure is the same for all types of objects.

To transfer objects:

1 Select the System Administration > Transfer Objects node in the object workspace.

2 Invoke the context menu and choose **Transfer**.

The **Transfer Objects to a Target Environment** window is displayed.

3 Select an object type.

The transfer dialog for that object type is displayed, listing all objects of the selected type, and offering the appropriate options and filter possibilities.

4 In the **to target DBID / FNR** fields, enter the database ID and file number of the Entire Output Management file to which the objects are to be copied.

5 In addition, you can select the following options:

Option	Explanation
Overwrite objects if they already exist in target environment	If an object is copied and an object of the same name already exists in the target environment, the copied object will replace the existing object.
Copy with authorization	If an object has an authorization list, this will also be copied (not applicable to users, calendars and physical printers).
Copy report in bundle if report not defined in target environment	This option is only available for bundles: If a report contained in a bundle does not yet exist in the target environment, this report will also be copied.

Select the desired options.

6 If you do not want to transfer all objects, specify selection criteria in the **Filter** fields, and then choose the **Search** button.

Now only the objects which satisfy the selection criteria are listed, and only these will be copied.

7 Choose the **Transfer** button.

The selected objects are copied to the specified target environment.

If any objects could not be copied, these will be listed, also stating the reason why they could not be copied.

8 To copy further objects, choose the **Further selection** button.

Then repeat Steps 4 to 7.

17 VTAM NOMVPRNT Management

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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 ****            30.10.2015
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.

18 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.