

# Installing and Customizing Entire Output Management

This document describes step-by-step how to install Entire Output Management for BS2000/OSD, z/OS and z/VSE.

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## Installation Jobs

The installation of Software AG products is performed by installation jobs. These jobs are either created manually or generated by System Maintenance Aid (SMA).

For each step of the installation procedure described below, the job number of a job performing the respective task is indicated. This job number refers to an installation job generated by SMA. If you are not using SMA, an example installation job of the same number is provided in the job library on the Entire Output Management installation tape; you must adapt this example job to your requirements.

**Note:**

The job numbers on the tape are preceded by the product code (for example, NOMI060).

## Using System Maintenance Aid

For information on using Software AG's System Maintenance Aid (SMA) for the installation process, refer to the *System Maintenance Aid* documentation.

## Prerequisites

Before you can install Entire Output Management, certain prerequisite products must be installed at your site. For detailed information on these products, please refer to the section *Prerequisites* in the *Release Notes* documentation.

## Contents of Installation Tape

The installation tape contains the files listed below.

The sequence of the files is shown in the *Report of Tape Creation* which accompanies the installation tape.

**Notation vrs or vr:** If used in the following document, the notation *vrs* or *vr* stands for the relevant version, release, system maintenance level numbers. For further information on product versions, refer to the entry *Version* in the *Glossary* of the *Natural* documentation.

- z/VSE
- z/OS
- BS2000/OSD

### z/VSE

| File Name                | Contents   |
|--------------------------|--|
| NOM <sub>vrs</sub> .LIBJ | Entire Output Management installation jobs.          |
| NOM <sub>vrs</sub> .LIBR | Entire Output Management source and load library.    |
| NOM <sub>vrs</sub> .INPL | Entire Output Management system libraries (Natural). |
| NOM <sub>vrs</sub> .SYSF | Entire Output Management data file (Adabas).         |
| NOM <sub>vrs</sub> .SYS2 | Entire Output Management container file (Adabas).    |

### z/OS

| File Name   | Contents   |
|-------------|--|
| NOMvrs.JOBS | Entire Output Management installation jobs.          |
| NOMvrs.SRCE | Entire Output Management source library.             |
| NOMvrs.LOAD | Entire Output Management load library.               |
| NOMvrs.INPL | Entire Output Management system libraries (Natural). |
| NOMvrs.SYSF | Entire Output Management data file (Adabas).         |
| NOMvrs.SYS2 | Entire Output Management container file.             |

## BS2000/OSD

| File Name   | Contents   |
|-------------|--|
| NOMvrs.JOBS | Entire Output Management installation jobs.          |
| NOMvrs.SRC  | Entire Output Management source library.             |
| NOMvrs.MOD  | Entire Output Management module library.             |
| NOMvrs.INPL | Entire Output Management system libraries (Natural). |
| NOMvrs.SYSF | Entire Output Management data file (Adabas).         |
| NOMvrs.SYS2 | Entire Output Management container file.             |

## Copying the Tape Contents to Disk

- Copying the Tape Contents to a z/VSE Disk
- Copying the Tape Contents to a z/OS Disk
- Copying the Tape Contents to a BS2000/OSD Disk

### Copying the Tape Contents to a z/VSE Disk

If you are using SMA, refer to the *System Maintenance Aid* documentation (included in the current edition of the Natural documentation CD).

If you are *not* using SMA, follow the instructions below.

This section explains how to:

- Copy dataset COPY.JOB from tape to disk.
- Modify this dataset to conform with your local naming conventions.

The JCL in this member is then used to copy all datasets from tape to disk.

If the datasets for more than one product are delivered on the tape, the member COPYTAPE.JOB contains the JCL to unload the datasets for all delivered products from the tape to your disk, except the datasets that you can directly install from tape, for example, Natural INPL objects.

After that, you will have to perform the individual install procedure for each component.

- Step 1 - Copy Dataset COPYTAPE.JOB from Tape to Disk
- Step 2 - Modify COPYTAPE.JOB
- Step 3 - Submit COPYTAPE.JOB

### Step 1 - Copy Dataset COPYTAPE.JOB from Tape to Disk

The dataset COPYTAPE . JOB (File 5) contains the JCL to unload all other existing datasets from tape to disk. To unload COPYTAPE . JOB, use the following sample JCL:

```
* $$ JOB JNM=LIBRCAT,CLASS=0,                                     +
* $$ DISP=D,LDEST=(*,UID),SYSID=1
* $$ LST CLASS=A,DISP=D
// JOB LIBRCAT
* *****
*       CATALOG COPYTAPE.JOB TO LIBRARY
* *****
// ASSGN SYS004,nnn                                           <----- tape address
// MTC REW,SYS004
// MTC FSF,SYS004,4
ASSGN SYSIPT,SYS004
// TLBL IJSYSIN,'COPYTAPE.JOB'
// EXEC LIBR,PARM='MSHP; ACC S=lib.sublib'                   <----- for catalog
/*
// MTC REW,SYS004
ASSGN SYSIPT,FEC
/*
/&
* $$ EOJ
```

where:

*nnn* is the tape address

*lib.sublib* is the library and sublibrary of the catalog

### Step 2 - Modify COPYTAPE.JOB

Modify COPYTAPE . JOB to conform to your local naming conventions and set the disk space parameters before submitting this job.

### Step 3 - Submit COPYTAPE.JOB

Submit COPYTAPE . JOB to unload all other datasets from the tape to your disk.

## Copying the Tape Contents to a z/OS Disk

If you are using SMA, refer to the *System Maintenance Aid* documentation (included in the current edition of the Natural documentation CD).

If you are *not* using SMA, follow the instructions below.

This section explains how to:

- Copy dataset COPY.JOB from tape to disk.
- Modify this dataset to conform to your local naming conventions.

The JCL in this dataset is then used to copy all datasets from tape to disk.

If the datasets for more than one product are delivered on the tape, the dataset COPY.JOB contains the JCL to unload the datasets for all delivered products from the tape to your disk.

After that, you will have to perform the individual install procedure for each component.

- Step 1 - Copy Dataset COPY.JOB from Tape to Disk
- Step 2 - Modify COPY.JOB on Your Disk
- Step 3 - Submit COPY.JOB

### Step 1 - Copy Dataset COPY.JOB from Tape to Disk

The dataset COPY.JOB (Label 2) contains the JCL to unload all other existing datasets from tape to disk. To unload COPY.JOB, use the following sample JCL:

```
//SAGTAPE JOB SAG,CLASS=1,MSGCLASS=X
//* -----
//COPY EXEC PGM=IEBGENER
//SYSUT1 DD DSN=COPY.JOB,
// DISP=(OLD,PASS),
// UNIT=(CASS,,DEFER),
// VOL=(,RETAIN,SER=tape-volume),
// LABEL=(2,SL)
//SYSUT2 DD DSN=hilev.COPY.JOB,
// DISP=(NEW,CATLG,DELETE),
// UNIT=3390,VOL=SER=volume,
// SPACE=(TRK,(1,1),RLSE),
// DCB=*.SYSUT1
//SYSPRINT DD SYSOUT=*
//SYSIN DD DUMMY
//
```

where:

*hilev* is a valid high level qualifier

*tape-volume* is the tape volume name, for example: T12345

*volume* is the disk volume name

### Step 2 - Modify COPY.JOB on Your Disk

Modify the COPY.JOB on your disk to conform to your local naming conventions and set the disk space parameters before submitting this job:

- Set *HILEV* to a valid high level qualifier.
- Set *LOCATION* to a storage location.
- Set *EXPDT* to a valid expiration date.

### Step 3 - Submit COPY.JOB

Submit COPY .JOB to unload all other datasets from the tape to your disk.

## Copying the Tape Contents to a BS2000/OSD Disk

If you are not using System Maintenance Aid (SMA), use the procedure described below. In this procedure, the values specified below must be supplied.

To copy the datasets from tape to disk, perform the following steps:

- 1. Copy the Library SRVvrs.LIB from Tape to Disk
- 2. Copy the Procedure COPY.PROC from Tape to Disk
- 3. Copy all Product Files from Tape to Disk

### 1. Copy the Library SRVvrs.LIB from Tape to Disk

This step is not necessary if you have already copied the library SRVvrs . LIB from another Software AG installation tape. For further information, refer to the element #READ-ME in this library. The library SRVvrs . LIB is stored on the tape as a sequential file named SRVvrs . LIBS containing LMS commands. The current version vrs can be obtained from the *Report of Tape Creation*. To convert this sequential file into an LMS-library, execute the following commands:

```
/IMPORT-FILE  SUPPORT=*TAPE(FILE-NAME=SRVvrs.LIBS,      -
/  VOLUME=volser, DEV-TYPE=tape-device)
/ADD-FILE-LINK LINK-NAME=EDTSAM, FILE-NAME=SRVvrs.LIBS, -
/  SUPPORT=*TAPE(FILE-SEQ=3), ACC-METH=*BY-CAT,         -
/  BUF-LEN=*BY-CAT, REC-FORM=*BY-CAT, REC-SIZE=*BY-CAT
/START-EDT
@READ  '/'
@SYSTEM 'REMOVE-FILE-LINK  EDTSAM'
@SYSTEM 'EXPORT-FILE  FILE-NAME=SRVvrs.LIBS'
@WRITE  'SRVvrs.LIBS'
@HALT
/ASS-SYSDTA  SRVvrs.LIBS
/MOD-JOB-SW  ON=1
/START-PROG  $LMS
/MOD-JOB-SW  OFF=1
/ASS-SYSDTA  *PRIMARY
```

where:

*tape-device* is the device-type of the tape, for example: TAPE-C4

*volser* is the VOLSER of the tape (see *Report of Tape Creation*)

### 2. Copy the Procedure COPY.PROC from Tape to Disk

To copy the procedure COPY . PROC to disk, call the procedure P . COPYTAPE in the library SRVvrs . LIB:

```
/CALL-PROCEDURE  (SRVvrs.LIB,P.COPYTAPE), -
/  (VSNT=volser, DEVT=tape-device)
```

If you use a TAPE-C4 device, you may omit the parameter DEVT.

### 3. Copy all Product Files from Tape to Disk

To copy all Software AG product files from tape to disk, enter the procedure COPY . PROC:

```
/ENTER-PROCEDURE COPY.PROC, DEVT=tape-device
```

If you use a TAPE-C4 device, you may omit the parameter DEVT. The result of this procedure is written to the file L.REPORT . SRV.

## First-Time Installation of Entire Output Management

- Step 1: Load the Data File
- Step 2: Load the Container File
- Step 3: Splitting the Data File Into Two Files
- Step 4: Scratch NOM Libraries
- Step 5: Adapt Parameter Modules and Link Jobs for Batch and Online Natural
- Step 6: Load the INPL File
- Step 7: Using UNIX or Windows Platforms as External Spooling System Source

### Step 1: Load the Data File

#### (Job I050, Step 2800)

If you are installing Entire Output Management for the first time, use the Adabas load utility to load the NOMvrs.SYSF file. The data file is in Version 7 format and contains some examples and initializations.

### Step 2: Load the Container File

#### (Job I050, Step 2801)

When working with container files, load one or more files using NOMvrs.SYS2 with NUMREC=0. For more information on how to use container files, see *Defining Container Files* in the *System Administration* documentation.

### Step 3: Splitting the Data File Into Two Files

#### (Job I050, Step 2801)

To split the NOM system file into two files: one with NOM definitions (data file) and the other with active data (active data file), use the Adabas load utility to load the NOMvrs.SYSF file.

If you are migrating from a previous version, refer to the section *Migrating from Previous Versions*.

## Step 4: Scratch NOM Libraries

### (Job I050, Step 2800)

If Entire Output Management has been installed before, scratch all objects from the libraries SYSNOM, SYSNOMS, SYSNOMH1 and SYSNOMH2.

## Step 5: Adapt Parameter Modules and Link Jobs for Batch and Online Natural

Monitors of the SAT product family can run as either a Natural subtask or a Natural batch job. For further information, see the *System Automation Tools* documentation, section *Installing System Automation Tools*.

### Note:

In online and in batch modules, EOMVOLID, EOMSPL (for z/VSE), EOMTFT (for Siemens OSD) must be linked with the Natural shared nucleus. In this case the NATPARM with CSTATIC=(ESF..) must be linked to the shared and dependent parts. For 3GL programs, NOMPUR, NOMADA and NOMCOMPR have to be linked to the 3GL program itself.

In addition to the specifications described in the *System Automation Tools Installation* documentation, you must also adapt the following:

#### 1. Adapt the Natural Parameter Module (Job I060)

Add or change the following parameters in your NATPARM module, the NTFILE definitions can also be overridden by the dynamic parameter LFILE:

|   |   |   |
|---|---|---|
| CSTATIC=( . . . ,                             | ESFCLOS,<br>ESFOPEN,<br>ESFPURG,<br>ESFREAD,<br>ESFROUT,<br>ESFSTAT,<br>ESFWRITE, . . . ) | Optional; required only if CMA-SPOOL is installed.  |
| NTLFILE 91 , <dbid> , <fnr>                   |   | The database ID and file number of the Entire Output Management active data file (optional, only if the Entire Output Management data file is to be split). |
| NTLFILE 206 , <dbid> , <fnr>                  |   | The database ID and file number of the Entire Output Management data file.  |
| NTLFILE 251 , <dbid> , <fnr>                  |   | Optional; required only if Con-nect is installed.   |
| NTLFILE 131 , <dbid> , <fnr>                  |   | The database ID and file number of the SAT system file (mandatory).   |
| NTSORT<br>WRKSIZE=30 , STORAGE=MAIN , EXT=OFF |   | NTSORT is a NATPARM module macro.   |
| RUNSIZE=64                                    |   | Required for the correct execution of the NOM monitor.  |

#### 2. Link Natural Module



**z/VSE:**

Take the link job as described in the *System Automation Tools Installation* documentation and adapt the following:

- Include the library definitions for NOMLIB in your LNKEDT procedure: (LIBDEF chain).

```
INCLUDE NOMCOMPR
INCLUDE NOMPUT
INCLUDE NOMADA
INCLUDE NATAM12
```

**Note:**

The Natural SORT statement may optionally invoke an external SORT program that carries out the actual sorting. An external SORT program is used if the Natural profile parameter EXT of the macro NTSORT is set to "on". Natural supports all external SORT programs that comply with the SORT interface documented in relevant IBM manuals (for z/VSE). For further information, refer to the *Natural Operations* documentation, section *Operating Natural - General Information*, subsection *Support of External SORT - Special Considerations for z/VSE*. If you want to access TCP/IP printers directly, you have to make module ESMLPR available, dynamically loaded. See the section *TCP/IP direct printing*.

**z/OS:**

Take the link job as described in the *System Automation Tools Installation* documentation and adapt the following libraries for the linkage:

|  |   |
|--|---|
| //NOMLIB DD<br>DISP=SHR,DSN=SAGLIB.NOMvrs.LOAD | Supplied Entire Output Management load library. |
| //CMALIB DD DISP=SHR,DSN=CMASPOOL.LOAD         | Supplied CMA-SPOOL load library (optional).     |

|                          |   |
|--------------------------|---|
| INCLUDE NOMLIB(NOMCOMPR) | Compression                               |
| INCLUDE NOMLIB(NOMPUT)   | Install NAF printer type 'NOM'            |
| INCLUDE NOMLIB(NOMADA)   | Install NAF printer type 'NOM'            |
| INCLUDE NOMLIB(NATAM12)  | Install NAT printer type 'NOM'            |
| INCLUDE CMALIB(AESFPRIV) | Optional. Only if CMA-SPOOL is installed. |

**BS2000/OSD:**

Take the link job as described in the *System Automation Tools Installation* documentation and adapt the following libraries for the linkage:

- Use the library NOMvrs.MOD for the linkage.

```
INCLUDE NOMCOMPR
INCLUDE NOMPUT 1
INCLUDE NOMADA 1
INCLUDE NATAM12 2
```

<sup>1</sup> = Only if printing from Natural Advanced Facilities to a printer of type NOM is desired. See the section *Using NOMPUT*.

<sup>2</sup> = If you want Natural to print directly to an Entire Output Management container file (AM=NOM in printer definitions), you have to make module NATAM12 available. See the section *Support for AM=NOM*.

### 3. Adapt the Batch Natural Parameter Module (Job I060)

Add or change the following parameters in your NATPARM module:

|   |   |   |
|---|---|---|
| CSTATIC=( . . . ,                         | ESFCLOS,<br>ESFOPEN,<br>ESFPURG,<br>ESFREAD,<br>ESFROUT,<br>ESFSTAT,<br>ESFWRITE, . . . ) | Optional; required only if CMA-SPOOL is installed.  |
| NTLFILE 91,<dbid>,<fnr>                   |   | The database ID and file number of the Entire Output Management active data file (optional, only if the Entire Output Management data file is to be split). |
| NTLFILE 206,<dbid>,<fnr>                  |   | The database ID and file number of the Entire Output Management data file.  |
| NTLFILE 251,<dbid>,<fnr>                  |   | Optional; required only if Con-nect is installed.   |
| NTSORT<br>WRKSIZE=30,STORAGE=MAIN,EXT=OFF |   | NTSORT is a NATPARM module macro.   |
| RUNSIZE=64                                |   | Required for the correct execution of the NOM monitor.  |

### 4. Link the Natural Batch Module

Take the link job as described in the *System Automation Tools Installation* documentation and adapt the following:

#### z/VSE:

- Include the library definitions for NOMLIB in your LNKEDT procedure: (LIBDEF chain).

```
INCLUDE NOMCOMPR
INCLUDE EOMVOLID
INCLUDE EOMSPL
INCLUDE NOMPUT
INCLUDE NOMADA
INCLUDE NATAM12
```

#### z/OS:

- Take the link job as described in the *System Automation Tools Installation* documentation and adapt the following libraries for the linkage:

|   |   |
|---|---|
| //NOMLIB DD DISP=SHR,DSN=SAGLIB.NOM<br>vrs.LOAD | Supplied Entire Output Management load library. |
|---|---|

|                               |  |
|-------------------------------|--|
| INCLUDE<br>NOMLIB (NOMCOMPR ) | Compression. If you have a shared nucleus, omit this statement here and add it to the link job of your shared nucleus. |
| INCLUDE<br>NOMLIB (NATAM12 )  | AM=NOM   |

**BS2000/OSD:**

Take the link job as described in the *System Automation Tools Installation* documentation and adapt the following libraries for the linkage:

- Use the library `NOMvrs .MOD` for the linkage.

```
INCLUDE NOMCOMPR
INCLUDE EOMTFT
INCLUDE NOMPOT
INCLUDE NOMADA
INCLUDE NATAM12
```

**5. Adapt the Online Natural Parameter Module (Job I080)**

Add or change the following parameters in your NATPARM module. The NTFILE definitions can also be overridden by dynamic parameter LFILE:

|   |   |
|---|---|
| NTLFILE 91 , <dbid> , <fnr>                   | The database ID and file number of the Entire Output Management active data file (optional, only if the Entire Output Management data file is to be split). |
| NTLFILE 206 , <dbid> , <fnr>                  | The database ID and file number of the Entire Output Management data file.  |
| NTLFILE 251 , <dbid> , <fnr>                  | Optional; required only if Con-nect is installed.   |
| NTLFILE 131 , <dbid> , <fnr>                  | The database ID and file number of the SAT system file (mandatory)  |
| NTSORT<br>WRKSIZE=30 , STORAGE=MAIN , EXT=OFF | NTSORT is a NATPARM module macro.   |

**6. Link the Online Natural Module**

Take the link job as described in the *System Automation Tools Installation* documentation and adapt the following:

**z/VSE:**

- Include the library definitions for NOMLIB in your LNKEDT procedure: (LIBDEF chain).

```
INCLUDE NOMCOMPR
INCLUDE NOMPUS
INCLUDE NOMADA
INCLUDE NATAM12
```

**z/OS:**

- Take the link job as described in the *System Automation Tools Installation* documentation and adapt the following libraries for the linkage:

|  |   |
|--|---|
| //NOMLIB DD<br>DISP=SHR , DSN=SAGLIB . NOMvrs . LOAD | Supplied Entire Output Management load library. |
|--|---|

|                               |  |
|-------------------------------|--|
| INCLUDE<br>NOMLIB ( NOMCOMR ) | Compression. If you have a shared nucleus, omit this statement here and add it to the link job of your shared nucleus. |
| INCLUDE<br>NOMLIB ( NOMPUT )  | Install NAF printer type 'NOM'   |
| INCLUDE<br>NOMLIB ( NOMADA )  | Install NAF printer type 'NOM'   |
| INCLUDE<br>NOMLIB ( NATAM12 ) | AM=NOM   |

**Note:**

The Natural SORT statement may optionally invoke an external SORT program that carries out the actual sorting. An external SORT program is used if the Natural profile parameter EXT of the macro NTSORT is set to "on". Natural supports all external SORT programs that comply with the SORT interface documented in relevant IBM manuals (for z/OS). For further information, refer to the *Natural Operations* documentation, section *Operating Natural - General Information*, subsection *Support of External SORT - Special Considerations for z/OS*.

**BS2000/OSD:**

Take the link job as described in the *System Automation Tools Installation* documentation and adapt the following libraries for the linkage:

- Use the library NOMvrs . MOD for the linkage (reentrant part of Natural).

|                            |                                     |
|----------------------------|-------------------------------------|
| INCLUDE NOMLIB ( NOMPUT )  | Install NAF printer type 'NOM'      |
| INCLUDE NOMLIB ( NOMADA )  | Install NAF printer type 'NOM'      |
| INCLUDE NOMLIB ( NATAM12 ) | Install Natural Access Method 'NOM' |
| INCLUDE NOMCOMPR           | Install Compression                 |

**Note:**

The Natural SORT statement may optionally invoke an external SORT program that carries out the actual sorting. An external SORT program is used if the Natural profile parameter EXT of the macro NTSORT is set to "on". Natural supports all external SORT programs that comply with the SORT interface documented in relevant Siemens manuals (for BS2000/OSD). For further information, refer to the *Natural Operations* documentation, section *Operating Natural - General Information*, subsection *Support of External SORT - Special Considerations for BS2000/OSD*.

**Notes:**

1. If you want to print from Natural to Entire Output Management directly (without a spooling system), additional steps are required. See the section *Support for AM=NOM*.
2. If you want to access TCP/IP printers directly, additional steps are required. See the section *TCP/IP direct printing*.
3. If you want to print from Natural Advanced Facilities to Entire Output Management directly, additional steps are required. See the section *Using NOMPUT*.

**Step 6: Load the INPL File****(Job I061, Step 2800)**

Load the INPL file. The following libraries are loaded:

| Library  | File | Contents  |
|----------|------|---|
| SYSNOM   | FNAT | Entire Output Management application.           |
| SYSNOMH1 | FNAT | Entire Output Management help system (English). |
| SYSNOMH2 | FNAT | Entire Output Management help system (German).  |
| SYSNOMS  | FNAT | JCL skeletons and separator examples.           |

**Step 7: Using UNIX or Windows Platforms as External Spooling System Source**

If UNIX or Windows platforms are to be used as external spooling system source, Entire System Server for UNIX has to be installed on each UNIX/Windows system. For further details, see the section *Installation and Operations of Entire System Server / UNIX and Windows* in the *System Automation Tools* documentation.

**Adapting to an Existing Environment**

- Step 1: Create a User Library
- Step 2: Modify the Job Skeletons
- Step 3: VTAM Definitions
- Step 4: Entire System Server Parameters

**Step 1: Create a User Library**

The SYSNOMS library contains examples of Separator Pages for Reports and Bundles. It also contains job skeletons which have to be modified to reflect the site's special requirements. As the contents of SYSNOMS is overwritten by every new product release, copy the job skeletons you wish to modify from SYSNOMS to the library SYSNOMU, and make your changes to them there.

Always copy the following three parameter data areas with the REPLACE option to the library SYSNOMU:

- P-UEXIT (for separation exits)
- P-EXIT and P-PEXITN (for printing exits).

To use these new parameter data areas, recatalog your user exits.

In former versions a parameter data area UEX---P was used for the example exits UEX\* in library SYSNOMS. This parameter data area is no longer used; the exits have been changed to use standard parameter data area P-UEXIT and exit-related redefinitions are included in the user exit.

It is strongly recommended that you change your own user exits in the same way. Using your own parameter data area including the printer exit parameters, you will not get new fields and changes for new versions of Entire Output Management.

### Example:

1. Change UEX---P to P-UEXIT.
2. Define your local data.
3. Assign P-WORK to local data at the start of the exit.
4. Assign local data to P-WORK before leaving the exit.

For further information, see example SYSNOMS(UEXFRAME).

## Step 2: Modify the Job Skeletons

The following tasks require job skeletons which must be adapted to your site's requirements. You should adapt the sources in the SYSNOMU library which are specified in the Source column and make them available under the Target name:

| Task    | Environment                         | Source   | Target   |
|---------|-------------------------------------|----------|----------|
| ARCHIVE | z/VSE Tape                          | JARCVTAP | JARCSKEL |
|         | z/VSE with DYNAM-T                  | JARCVCAT | JARCSKEL |
|         | z/OS Tape                           | JARCMTAP | JARCSKEL |
|         | z/OS GDG or predefined Disk VOLSERS | JARCMDSK | JARCSKEL |
|         | z/OS, SMS                           | JARCMSMS | JARCSKEL |
|         | BS2000/OSD Tape                     | JARCBTAP | JARCSKEL |
|         | BS2000/OSD with job variables       | JARCBTJV | JARCSKEL |

| Task     | Environment                                | Source     | Target                   |
|----------|--|------------|--------------------------|
| REVIVE   | z/VSE Tape                                 | JREVV TAP  | JREVS KEL                |
|          | z/VSE with DYNAM-T                         | JREVVCAT   | JREVS KEL                |
|          | z/OS Tape                                  | JREVM TAP  | JREVS KEL                |
|          | z/OS GDG or predefined Disk VOLSERs or SMS | JREVMDSK   | JREVS KEL                |
|          | BS2000/OSD Tape                            | JREVB TAP  | JREVS KEL                |
|          | BS2000/OSD with job variables              | JREVB T JV | JREVS KEL                |
| CONDENSE | z/VSE Tape                                 | JCDNV TAP  | JCDNS KEL                |
|          | z/VSE with DYNAM-T                         | JCDNV CAT  | JCDNS KEL                |
|          | z/OS Tape                                  | JCDNM TAP  | JCDNS KEL                |
|          | z/OS GDG or predefined Disk VOLSERs        | JCDNMDSK   | JCDNS KEL                |
|          | z/OS, SMS                                  | JCDNM SMS  | JCDNS KEL                |
|          | BS2000/OSD Tape                            | JCDNB TAP  | JCDNS KEL                |
|          | BS2000/OSD with job variables              | JCDNB T JV | JCDNS KEL                |
| PRINT    | POWER                                      | SYSRPWR    | SYSRPWR or user-defined  |
|          | z/VSE Tape                                 | TAPEVSE    | TAPEVSE or user-defined  |
|          | JES  | SYSRJES    | SYSRJES or user-defined  |
|          | z/OS Disk                                  | DISKMVS    | DISKMVS or user-defined  |
|          | z/OS Tape                                  | TAPEMVS    | TAPEMVS or user-defined  |
|          | BS2000/OSD                                 | SYSRBS2    | SYSRBS2 or user-defined  |
|          | BS2000/OSD with job variables              | SYSRBJV    | SYSRBJV or user-defined  |
|          | BS2000/OSD for binary printing             | SYSPBBS2   | SYSPBBS2 or user-defined |

### Step 3: VTAM Definitions

To enable Entire Output Management to print to VTAM printers, add the definition from the member NOMVTAM in the Entire Output Management source library to your SYS1.VTAMLST library and activate it. If your SYS1.VTAMLST already contains a definition for Entire System Server, include only the definition for Entire Output Management in it.

In the Entire System Server parameters, assign the value for SPOOLACB as defined in your SYS1.VTAMLST.

## Step 4: Entire System Server Parameters

To activate the common data pool, assign a value of at least "1" to the CDATELEN parameter.

## Natural Security Definitions

If Natural Security is installed at your site, you have to create the following definitions for:

- Libraries
- Users

### Libraries

| Library  | Description                                     | with Steplibs   |
|----------|---|---|
| SYSNOM   | Entire Output Management online application.    | SYSSAT, SYSEXT, SYSLIBS, SYSNOMU, SYSNOMS, SYSSEC (optional), SYSCNT2, and (optionally) any other library containing user routines. |
| SYSNOMH1 | Entire Output Management help system (English). | -   |
| SYSNOMH2 | Entire Output Management help system (German).  | -   |
| SYSNOMS  | JCL skeletons and separator examples.           | -   |
| SYSNOMU  | User copy of SYSNOMS library.                   | -   |



#### Warning:

**Order of steplibs: SYSSAT must precede SYSEXT. Otherwise, the program menu will not be found.**

### Users

Define the Natural Security user representing the Entire Output Management Server as person with user ID and password identical to <NSCUSER> and <NSCPSWD> parameters taken from the main member SATPnnn or SPnnnnn.

You can use one user ID for all or different user IDs for each server type. For more information, see the *example for SAT parameters*.



**Note:**

Natural Security requires a change of password, if a newly defined user logs on. Use this user ID to log on online to the system and change the password once.

## Entire Output Management in a Non-Security Environment

Entire Output Management's start program MENU is executed from SYSSAT. This means that in a non-security environment MENU will not be found as start program. You must perform one of the following actions:

- Rename program MENUNOM of library SYSNOM to MENU, or
- Copy program MENU of library SYSSAT into library SYSTEM.

**Warning:**

**The second solution may have the disadvantage of causing other applications to erroneously find the program MENU in the library SYSTEM, and this could produce undesired results.**

If Natural Security is not installed at your site, the following steplib are automatically assigned to SYSNOM:

- SYSSAT
- SYSEXT
- SYSNOMU
- SYSNOMS
- SYSLIB
- SYSLIBS
- SYSCNT2 (optional)

## Define Environment for Entire Output Management Server

- General Layout of a Parameter Block
- Parameter Blocks and Parameters for Entire Output Management

See also the section *Defining SAT, Natural and Product Parameters* in the *System Automation Tools Installation* documentation.

For each Entire Output Management Server you must define the run-time environment in one or more Natural members in the SAT user library SYSSATU.

If you want to run various Entire Output Management Servers under different Entire System Server nodes *nnn*, you must provide startup parameters at least in the related 'main' members. These must conform to the following naming convention: SATP*nnn* or SP*nnnnn*. In addition, you can provide further Entire

Output Management-specific parameters in a second member, whose name must not match the naming convention for the main members.

## General Layout of a Parameter Block

<Prefix> <block-identifier>[<keyword>=<value>,...]

where:

| Parameter               | Description   |
|-------------------------|---|
| <Prefix>                | SAT or compressed product code + prefix as specified in the SATSTART instruction. |
| <block-identifier>      | SATENV/NATENV/SATSTART or product block identifier.                               |
| [<keyword>=<value>,...] | Block-specific parameter.   |

## Parameter Blocks and Parameters for Entire Output Management

### Mandatory

| Parameter Block | Parameter  | Description  |
|-----------------|------------|--|
| SATENV          | NSC=YES/NO | Indicates whether Natural Security is installed or not.  |
|                 | NSCUSER=   | If Natural Security is installed, this is the user ID for logging on to it.  |
|                 | NSCPSWD=   | Password for logging on to Natural Security.   |
|                 | ESYUSER=   | User ID for logging on to Entire System Server, if it is installed and an interface to an external security system is activated. |
|                 | NATTASK=   | Name of the Natural subtask module for starting a server as a subtask.   |

| Parameter Block | Parameter          | Description   |
|-----------------|--------------------|---|
| SATSTART        | SATVERS=32         | SAT version required by Entire Output Management Server startup program.  |
|                 | PRODUCT=NOM        | 3-byte product code.  |
|                 | PREFIX=            | PRODUCT and PREFIX are compressed into a prefix which identifies the Server-specific parameters.                  |
|                 | TYPE=SUBTASK/BATCH | Entire Output Management Servers are always started as subtasks.  |
|                 | APPLIB=SYSNOM      | Name of the Natural library where Entire Output Management Server is installed.                                   |
|                 | SERVSYSF=          | Pointer to the Entire Output Management data file (must be unique within all SATSTART instructions of this node). |
| NOMENV          | BS2USER=           | BS2000/OSD user ID under which the Monitor, Archive, Revive and Condense jobs are submitted. Default: ESYUSER.    |
|                 | ETID=*             | Generate unique ETIDs for tasks.  |
|                 | ETIDPREF=          | 6-byte prefix for ETIDs.  |

| Parameter Block | Parameter  | Description  |
|-----------------|--|--|
| NATENV          | LFILE=(206,<NOMSYSF-DBID>,<NOMSYSF-FNR>) or<br>LFILE=(131,<SATSYSF-DBID>,<SATSYSF-FNR>)<br>LFILE=(91,<NOMACTDATA-DBID>,<NOMACTDATA-FNR>) | These pointers can be set either in the common NATPARM module created for the SAT products or in a Natural parameter profile indicated by the Natural parameter PROFILE. Make sure that the system-file pointer coincides with the pointer to the Entire Output Management system file 1 provided with the SERVSYSF parameter in the SATSTART block. |

## Optional

Furthermore, you can overwrite the SATENV and NATENV parameters with Entire Output Management-specific or even Entire Output Management-subtask-specific assignments. The naming convention for the prefix which identifies the parameter block is:

(PRT for Print Task)

<Prefix> = NOM + <PREFIX> + (ARC for Archive Task)

(REV for Revive Task)

| Parameter Block | Parameter           |   |
|-----------------|---------------------|---|
| SATSTART        | MEMBER= <i>name</i> | You can specify a member in which Entire Output Management-specific parameters are located. |

## Example - Contents of the 'Main' Member for Node 148 - SATP148 or SP00148 in SYSSATU

The member SATP148 in SYSSAT provides an example of a 'main' member. You can take this as the basis for your own member: Copy it to SYSSATU and adapt it.

In the example below it is assumed that you are running three products of the SAT product family (Entire Event Management, Entire Output Management and Entire Operations) as subtasks on Node 148.

|                        |          |   |  |
|------------------------|----------|---|--|
| SAT                    | SATENV   | NATTASK=SAT3ST,<br>NSC=YES,<br>NSCUSER=SATMON,<br>NSCPSWD=SATMON                                  | Sets the SAT defaults for all SAT products, here: Entire Event Management, Entire Operations and Entire Output Management. |
| NOM <sub>vrs</sub> PRT | SATENV   | NSCUSER=NOMPRT<br>NSCPSWD=NOMPRT  | Indicates that a separate user ID/password can be used for Entire Output Management's PRINT, ARCHIVE or REVIVE task.       |
| NOM <sub>vrs</sub> ARC | SATENV   | NSCUSER=NOMARC<br>NSCPSWD=NOMARC  | Indicates that a separate user ID/password can be used for Entire Output Management's PRINT, ARCHIVE or REVIVE task.       |
| NOM <sub>vrs</sub> REV | SATENV   | NSCUSER=NOMREV<br>NSCPSWD=NOMREV  | Indicates that a separate user ID/password can be used for Entire Output Management's PRINT, ARCHIVE or REVIVE task.       |
| SAT                    | NATENV   | DU=OFF,<br>PROFILE=SATMON   | Sets the Natural defaults for all SAT products: the Natural profile parameters are provided in the profile SATMON.         |
| SAT                    | SATSTART | SATVERS=32,<br>PRODUCT=NOM,<br>PREFIX=321,<br>TYPE=SUBTASK,<br>APPLIB=SYSNOM,<br>SERVSYSF=(88,51) | Specifies that the server for Entire Output Management should be started as a subtask.                                     |
| SAT                    | SATSTART | SATVERS=32,<br>PRODUCT=NOP,<br>PREFIX=521,<br>TYPE=SUBTASK,<br>APPLIB=SYSEOR,<br>SERVSYSF=(88,52) | Specifies that the server for Entire Operations should be started as a subtask.  |

|     |          |   |   |
|-----|----------|---|---|
| SAT | SATSTART | SATVERS=31,<br>PRODUCT=NCL,<br>PREFIX=221,<br>TYPE=SUBTASK,<br>APPLIB=SYSNCLSV,<br>SERVSYSF=(88,54) | Specifies that the server for Entire Event Management should be started as a subtask. |
|-----|----------|---|---|

## Migrating from Previous Versions

- Migration from Version 3.1

Migrations from versions earlier than 3.1 are not supported.

### Important:

Before attempting to migrate, restart the Entire System Server node and ensure that the Entire Output Management Monitor is inactive. Use the job examples in your job library file as templates.

### Migration from Version 3.1

#### Using a Single Data File

If you wish to keep all data in a single Entire Output Management data file, execute the following jobs:

| Job  | Step(s)      | Action   |
|------|--------------|--|
| I082 | 2817 to 2820 | Migrations of system file structure.                 |
|      | 2842         | Creation of new Adabas field for the container file. |
| I200 | 2812         | Setting of current system file version (MIGEND).     |

#### Using Two Data Files

If you wish to split the Entire Output Management data file - with one file containing definition data, and another file containing active data - execute the following jobs:

| Job  | Step(s)      | Action   |
|------|--------------|--|
| I082 | 2827 to 2840 | Migrations of system file structure.                 |
|      | 2842         | Creation of new Adabas field for the container file. |
|      | 2812         | Setting of current system file version (MIGEND).     |

## Using Two Data Files for the First Time

When splitting the Entire Output Management data file into two files for the first time - with one file containing definition data, and another file containing active data - you are recommended to renumber and rename your existing Entire Output Management environment. Execute the following jobs:

| Job  | Step(s)      | Action  |
|------|--------------|---|
| I050 | 2802         | ADADBS: Renaming/renumbering of data file (SYSF) to "active data file". |
|      | 2803         | ADALOD: Loading of new data file.                                       |
| I082 | 2837 to 2840 | Migrations of system file structure.                                    |
|      | 2842         | Creation of new Adabas field for the container file.                    |
| I200 | 2810         | Migration of active data file (MIGDEF MIGRATE).                         |
|      | 2812         | Setting of current system file version (MIGEND).                        |

## Starting Entire Output Management for the First Time

Before you start the subtask Monitor for the first time, log on to the SYSNOM library.

Then restart the Entire Output Management Monitor.

### 1. Execute the INSTALL Program

Be certain that the Entire System Server node under which the Monitor runs is active.

The INSTALL program adds the first user ID, modifies some example definitions and asks you to specify various Entire Output Management parameters. When you have successfully completed this installation procedure, the Entire Output Management Main Menu appears on your screen.

### 2. Online Start of Entire Output Management Monitor

Enter the command START MONITOR in the Entire Output Management command line.

### 3. Automatic Start of Entire Output Management Monitor

For information on how to automatically start the Entire Output Management Monitor when bringing up Entire System Server, see the section *AUTO-START* in the *System Automation Tools Installation* documentation.

## Installation Verification

 To verify that Entire Output Management has been installed correctly, proceed as follows:

1. Check the environment defined for Entire Output Management:
  - Verify the startup parameters defined in the library SYSSATU.
    - Logon to the library SYSSATU where you keep your master definitions for all servers of the SAT family.

- Check that the SAT $nnnnn$  entry in the member SATDIR points to the correct FNAT for the application SYSSAT.
- Check member SATP $nnn$  for the SATSTART entry with PRODUCT=NOM. The TYPE parameter should have the value SUBTASK; the APPLLIB parameter must have the value SYSNOM, and the SERVSYSF parameter must point to the correct Entire Output Management system file where the object definitions are kept.
- Check member SATP $nnn$  or SP $nnnnn$  for the SATENV parameter NATTASK. The value in effect for Entire Output Management must indicate the correct Natural subtask module.

This Natural module must be correctly linked and accessible in the run-time environment of the Entire System Server node  $nnn$ .

- Check the member SATP $nnn$  or SP $nnnnn$  for the SATENV parameters NSCUSER, NSCPSWD and ESYUSER. If you use Natural Security, <NSCUSER> must be defined as user and must have access to the libraries SYSNOM and SYSNOMU.

If Entire System Server is running with security, (i.e.: SECURITY<>NONE), the user ID indicated by <ESYUSER> must be defined in the external security system and have sufficient authorization.

- Verify the Monitor Defaults:

- Log on to the library SYSNOM and invoke the MENU program.
- Enter the direct command 8.1. On the Default Definition Menu select option 1 to verify that System Default parameters DBID and FNR parameters point to the correct Entire Output Management system file.
- Return to the menu by pressing PF3, and then select Option 2 to verify Monitor Defaults:

- node, batch module and system server jobname should be correct;
- at least 1 printer task should be specified;
- at least 1 output class reserved for Entire Output Management is specified (z/OS/z/VSE);

**Note:**

For JES3 these classes must be defined as HOLD=EXTWTR

- temporary class is specified;
- a reserved virtual printer must be specified (BS2000/OSD).

2. Start the Entire Output Management Server automatically with Entire System Server.

If the Entire System Server is active, proceed with step 3, below, to start the Entire Output Management Server online.

If the SATSTART block for the Entire Output Management Server in the SYSSATU member SATP $nnn$  or SP $nnnnn$  is provided correctly, the Server is started automatically with the Entire System Server node  $nnn$ .



- Start Entire System Server node *nnn*.

- The successful start of the Entire System Server is indicated by the console message:

```
Entire System Server IS READY - X-COM NODE nnn IS INITIALIZED
```

- The successful start of the Entire Output Management Server is indicated in the NOM log (direct command DLOG MON):

```
NOM1522 Monitor logged on to NPR UserId = NOMMON.
NOM1510 Monitor initialization completed successfully.
NOM1524 Number of Printer Tasks 2.
NOM1525 Printer task Type ..... SUBTASK.
NOM1503 Monitor minimum wait .. 30.
NOM1504 Monitor maximum wait .. 30 .
NOM1505 Monitor increment ..... 5.
NOM1506 Monitor node ..... 144.
NOM1507 Monitor DBID ..... 9.
NOM1508 Monitor FNR ..... 141.
NOM1527 Operating System Type . MVS/ESA.
NOM1528 Spool Type ..... JES2.
NOM1509 Start monitor initialization.
NOM1511 Monitor startup.
```

- If this sequence does not appear after a while:

- Check the SYSOUT datasets of the Entire System Server node if it is running under a z/OS operating system. Check the LST dataset of the Entire System Server node if it is running under a z/VSE operating system.
- If the Entire Output Management Server is running under BS2000/OSD, check the SYSLST protocol files matching the following naming convention - the file name must contain the substring:

```
L.NOMxxnnn
```

where *xx* stands for the Entire Output Management subtask and *nnn* for the server number.  
*xx* = XT for the Main Task and 02-05 for subtasks

- Proceed with Step 4.

### 3. Start the Entire Output Management Server online.

- In the Entire Output Management online system, enter the direct command START MON

### 4. Produce sample output in one of Entire Output Management's reserved classes:

- Run any job which produces output in one of the classes defined as reserved for Entire Output Management.
- When the job has finished, go to the Monitor Management screen to wake up the monitor by pressing PF10. The Monitor should now start creating reports derived from the Report definition UEX-DEFAULT.

- Issue the direct command LIST AREP and then enter the line command LI for the Folder #Inbasket to list the Active Reports contained in it. Issue the line command BR to browse the arrived Reports.

## 3GL Interface Installation and Verification

- 3GL Interface Defaults (1)
- 3GL Interface Defaults (2)
- SYSERR - Display Short Messages
- Report Definition - General Attributes
- Report Definition - 3GL ID (3)
- Using NOMPUT

This section describes how to define a 3GL interface and how to test it with the supplied sample programs.

1. Load a container file (SYS2) with no records. The output will be stored in this file.
2. Define the 3GL interface defaults, as described under *3GL Interface Maintenance* in the *System Administration* documentation:

### 3GL Interface Defaults (1)

```

11:40:31          **** Entire Output Management ****          08/08/1999
UserId GHH          - 3GL Interface Defaults -

3GL Interface 104

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

NOM container file
DBID ..... 9__
FNR ..... 212

Identifying Attributes
Prompt          Offset  Length  Order  Generic (*)
1040_____    1__    8__    1__    Y
1041_____    9__    8__    2__    N
1042_____   17__   8__    3__    N
_____        _     _     _     -

File identification
1043_____    33__   8__

Command => _____

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

**3GL Interface Defaults (2)**

```

11:45:54          **** Entire Output Management ****          08/08/1999
UserId GHH          - 3GL Interface Defaults -

3GL Interface 104

active ..... Y
Description ..... User-defined Spool (3GL Interface 104)_____

Attributes
Prompt          Offset  Length
1045_____      25_    8_
1044_____      41_    50_
_____          ____  ____
_____          ____  ____
_____          ____  ____
_____          ____  ____
_____          ____  ____
_____          ____  ____
_____          ____  ____
_____          ____  ____

Command => _____

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help      Exit  Flip  Do    Undo          Ident          Menu

```

3. In SYSERR, enter the prompt texts under the defined numbers (SYSNOMU library). If both the English and the German version of Entire Output Management are being used, you must enter the texts for both languages.

**SYSERR - Display Short Messages**

```

11:55:13          ***** NATURAL SYSERR Utility *****          08/08/1999

                    - Display Short Messages -

Number           Short Message (English)
-----
SYSNOMU0001     User Id
SYSNOMU0002     Name
SYSNOMU0003     First Name
SYSNOMU0004     Birth date
SYSNOMU1040     User ID
SYSNOMU1041     Terminal ID
SYSNOMU1042     Program
SYSNOMU1043     List-Name
SYSNOMU1044     Description
SYSNOMU1045     List ID
SYSNOMU1234     testprompt

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---

+                               +                               Canc
    
```

4. Create a default Report for your 3GL interface. Enter an asterisk (\*) for the identifying attribute that you defined with Generic=Y in the definition. For further information see *Report Identification for 3GL Interface* in the section *Defining a Report* of the *User's Guide*.

**Report Definition - General Attributes**

```

12:12:40          **** Entire Output Management ****          08/08/1999

User ID GHH      - Report Definition >General Attributes -

Report
Name ..... USR104-DEFAULT__
Description ..... Default definition for 3GL interface 104_____
Type ..... D

Keywords ..... _____

Master Owner ..... MRS_____
Store in NOM DB ..... N
Archive directly ..... N

Retention          Report      Archive      Revive
Number ..... 1_____
Unit ..... A          -          -
Calendar ..... _____
Action ..... P

Command => _____

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
    Help Add  Exit Flip Do      Undo Ident Print Dist Separ      Menu
    
```

**Report Definition - 3GL ID (3)**

```

15:13:43          **** Entire Output Management ****          14/06/1999
User ID GHH      - Report Definition >3GL Identification -
Report
  Name ..... USR100-DEFAULT___
3GL Interface 100 Attributes

and

_____
_____
_____
_____
_____
_____
_____
_____
_____

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

```

5. Enter the database ID and file number of your container file in the module NOMADA. These are simply defaults that can be overwritten in the 3GL program.
6. SHUTDOWN and START the Monitor.
7. Modify the supplied member ASMNOM and assemble the module NOMADA.

To execute the COBOL example, continue with Step 13 below.

8. Modify the supplied module NOMEX3GL. O\$ATTR must contain the spool attributes (identifying attributes, file identification and other attributes) as defined in the interface. N\$SRCTYP must contain the interface number at OPEN. N\$DBID and N\$FNR must contain the database ID and file number respectively.
9. Assemble the module NOMEX3GL.
10. Modify the member LNKEX3GL and link the sample program.
11. Modify the member RUNEX3GL and run the sample program.
12. Check the Monitor Log to see whether a report has been created.
13. Modify the supplied module NOMEX3CO. NOMPUT-ATTRIBUTES must contain the spool attributes as defined in the interface. In the subsection BA-INITIALISE, the interface number must be assigned to the field NOMPUT-CB-SOURCE-TYPE, the database number to the field NOMPUT-CB-CONT-DBID and the file number of the container file to field NOMPUT-CB-CONT-FNR.
14. Modify the member COBNOM and compile the module NOMEX3CO.

15. Modify the member LNKEX3CO and link the sample program.
16. Modify the member RUNEX3CO and run the sample program.
17. Check the Monitor Log to see whether a report has been created.

## Using NOMPUT

### Installing Logical NOM Printer in Natural Advanced Facilities

1. The delivered module NOMADA is assembled with the following parameters and will be valid for use with Natural and Natural Advanced Facilities. If you want to use NOMPUT with Natural, proceed with Step 4. If you are using 3GL languages, and adapt the parameters for your needs:

| Parameter    | Explanation  |
|--------------|--|
| AUTOET=0,    | Do not perform ETs.                                  |
| CICS=NO,     | CICS environment not required.                       |
| NATURAL=YES, | Natural/Adabas not required.                         |
| NATVERS=41   | Version of Natural.                                  |
| NOMDBID=0,   | DBID of NOM container file ('0' = taken from LFILE). |
| NOMFNR=0     | FNR of NOM container file ('0' = taken from LFILE).  |

#### Note:

NOMADA is the interface between NOMPUT and Adabas, and it can be used by:

- batch 3GL programs, in which case CICS=NO and NATURAL=NO must be set;
  - 3GL programs running under CICS, in which case CICS=YES and NATURAL=NO must be set;
  - Natural Advanced Facilities running in any environment, in which case CICS=NO and NATURAL=YES must be set (so even if Natural Advanced Facilities is running under CICS you must still set CICS=NO; see Note 2 in the NOMADA description).
2. Assemble NOMADA using NOM, Natural, and Adabas source libraries as steplib, for instance see z/OS sample job:

```
//OPN31AOM JOB ( , , , 99) , 'ASM COMP' , CLASS=P , MSGCLASS=X

//*****

//*          Assemble & Link Edit NOMADA with Maclib          *
//*****

//*
//UPDNOM EXEC PGM=IEBUPDTE , PARM=MOD
//SYSPRINT DD SYSOUT=X
//SYSUT1 DD DSN=SYSINT.DAEA.NATURAL.N413.DEMO.CNTL , DISP=SHR
//SYSUT2 DD DSN=SYSINT.DAEA.NATURAL.N413.DEMO.CNTL , DISP=SHR
//SYSIN DD *
./ CHANGE NAME=NOMADAR
./ NUMBER SEQ1=ALL , NEW1=100 , INCR=100
```

```

./ CHANGE NAME=NOMADAR

        &AUTOET=0,           Do not perform ETs           X00000500
        &CICS=NO,            CICS Interface required      X00000600
        &NATURAL=YES,        NATURAL/ADABAS Interface reqd X00000700
        &NATVERS=31,         NATURAL Version              .UKSJU.  X00000800
        &NOMDBID=204,        DBID of NOM container file    X00000900
        &NOMFNR=9            FNR of NOM container file     00001000

./ ENDUP
/*
/**
//NOMADA EXEC COMAL,
//      N=NOMADAR,
//      SLIB='SYSINT.DAEA.NATURAL.N316.DEMO.CNTL',
//      LLIB='PPEX.DAEA.NATURAL.N316.DEMO.LOAD',
//      NCAL=NCAL,
//      MAC1='PTST.NAT413.MVSSRCE',
//      MAC2='PTST.NOM311.MVSSRCE',
//      MAC3='PTST.ADA741.SRCE'
/**

```

3. INCLUDE the modules NOMPUT and NOMADA to the nucleus where NAFNUC is included (usually the shared nucleus):

4. For printing from Natural Advanced Facilities, define the NAF printers as follows:

```
NTPRINT(m-n),AM=NAF
```

5. Define a logical printer in NAF with type NOM.

6. Edit the NAF defaults in NOM to link NAF spool file and NOM container file and activate the NAF interface with "Y".

7. Direct the output of your Natural program to NOM using

```
DEFINE PRINTER (n) OUTPUT logical NAF printer name
```

Outputs of this type are stored in the specified NOM container file.

## SAP Interface Installation and Verification

This section describes how to define and test the SAP interface.

1. Load a container file (SYS2) with no records. The output will be stored in this file.
2. Define the SAP-Spool interface defaults, as described under *SAP-Spool Defaults* in the *System Administration* documentation:

### SAP-Spool Defaults Screen

```

14:56:26          **** Entire Output Management ****          08/08/1999
UserId GHH          - SAP-Spool Defaults -

SAP-Spool interface
  active ..... Y
  Time Limit ..... 1_

NOM container file
  DBID ..... 9__
  FNR ..... 212

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

```

3. Create a default report for your SAP interface. Enter an asterisk \* for the identifying attribute destination. For further information, see *Report Identification for SAP Spool* in the section *Defining a Report* of the *User's Guide*:

#### Report Definition - SAP-Spool ID Screen

```

15:02:29          **** Entire Output Management ****          08/08/1999
User ID GHH          - Report Definition >SAP-Spool Identification -

Report
  Name ..... A-SAP-DEFAULT____

SAP-Spool Attributes
  Destination ..... *__ or
  User ID ..... *__

and List IDs ..... _____
                    _____
                    _____
                    _____
                    _____
                    _____
                    _____
                    _____
                    _____

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

```

4. SHUTDOWN and START the Monitor.
5. Enter the database ID and file number of your container file in the module NOMADA.



6. Assemble the modules NOMADA and NOMSPEI with the appropriate SAP procedure (SAPASML).
7. Assemble the module NOMSPEX with the appropriate SAP procedure (SAPEXAL)
8. Link the programs NOMSPEX, NOMPUT, NOMADA and NOMCOMPR to the program SAPSPWR. For more detailed information, see the *SAP* documentation.
9. Create a printout in SAP.
10. Check the Monitor Log to see whether a Report has been created.

## Natural Advanced Facilities

This section covers the following topics:

- Printing from Natural Advanced Facilities to Entire Output Management
- Printing from Entire Output Management to Natural Advanced Facilities

### Printing from Natural Advanced Facilities to Entire Output Management

Instead of printing output from Natural programs in the Natural Advanced Facilities (NAF) spool file (FSPOOL), you can route it to a NOM 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 NAF environments output is to be processed. A separate NOM file can be assigned to each FSPOOL file. However, you can also assign the same NOM file to all FSPOOL files.

To define default parameters for Natural Advanced Facilities for printing to Entire Output Management, see *Natural Advanced Facilities Defaults* in the *System Administration* documentation for further information.

NOMADA and NOMPUT :

\* -----

1. Assemble NOMADA with the appropriate parameters set: :

```

NOMADA      ,                               X
      AUTOET=0,                             Do not perform ETs           X
      CICS=NO,                               CICS environment not required    X
      NATURAL=YES,                           Natural/Adabas not required      X
      NATVERS=41                             Version of Natural (22/23/31)    X
      NOMDBID=nnnnn,

      DBID of NOM container file                X

      NOMFNR=nnnnn

      FNR of NOM container file

```

2. Then link NOMPUT, NOMADA and NOMCOMPR into the NAF nucleus

\*

## Printing from Entire Output Management to Natural Advanced Facilities

To print from Entire Output Management to Natural Advanced Facilities:

- Natural Advanced Facilities must be installed in the Natural nuclei used by the monitor and for batch printing.
- The necessary Natural Advanced Facilities modules must be linked.
- The parameter modules must define printers 3 and 4 as type NAF, as well as specifying any site-specific parameters such as NAFSIZE, NAFUPF and FSPOOL.

For further information, refer to the *Natural Advanced Facilities* documentation.

## Printing from Natural to Entire Output Management Directly

Instead of printing output from Natural programs in a spooling system, you can route it to a NOM file (SYS2), from which it can be distributed, bundled or separated. On the NOM side, NAT reports are handled exactly the same as NAF reports (same report identification attributes, same spool attributes except source type is 10 for NAT, 11 for NAF).

In order to create NAT reports, NOMPUT, NOMADA and NOMCOMPR must be linked with Natural (NOMADA has to be assembled the same as for NAF) and lfile 206 must specify the appropriate NOM system file. The report data is written into the container file defined in "NOM API and User-Exit Defaults" (8.1.10) and "Scan trigger queue" must be set to "Y" (otherwise active reports will not be created).

To install the access method, you have to link the following modules to your Natural nucleus:

- NATAM12
- NOMADA
- NOMCOMPR
- NOMPUT

Include the modules in your operating-system environment as described above.

### Example - Writing Data to Entire Output Management, where Printer 2 is Defined as NOM Printer:

Start Natural with the profile parameter PRINT=(2,AM=NOM).

Then execute the following program:

```

DEFINE PRINTER (2) OUTPUT 'NOM'
PROFILE 'PROF'
FORMS 'FORM'
NAME 'LISTNAME'
DISP 'D'
CLASS 'X'
COPIES 3

WRITE (2) 'HELLO, THIS IS PRINTER 2.'
CLOSE PRINTER (2)
END

```

Your output will be written to the defined Entire Output Management container file directly, without using any spooling system.

## Binary Printing under BS2000/OSD

This section is only relevant under BS2000/OSD. It covers the following topics.

- BS2000/OSD File Attributes
- Physical Printer Definition in BS2000/OSD
- Error Corrections
- Using Binary FTP Outside of Entire Output Management

### BS2000/OSD File Attributes

To print binary data transparently without changing the data, some prerequisites are necessary in BS2000/OSD.

In addition, the format of the work file has to be "SAM".

Ensure that the format in the appropriate file command (the example, the JCL for binary printing is contained in SYSPBBS2 in the library SYSNOMS) is set correctly:

```
/FILE TEST.PRN,FCBTYPE=SAM
```

The code-character-set has to be ISO 7 Bit:

```
/MODIFY-FILE-ATT FILE-NAME=TEST.PRN,COD-CHAR-SET=ISO88591<
```

### Physical Printer Definition in BS2000/OSD

When you define a physical printer in BS2000/OSD, you have to set the following parameters for the printing of binary data:

```
SHIFT: 0
```

```
SYNCHRONIZATION: NETWORK
```

## Error Corrections

The following measures should be taken when RSO issues one of the following errors:

- Error SRO0153 or Corrupted Printout
- Error SRO0154
- Spool Error SPS0502

### Error SRO0153 or Corrupted Printout

Apply the following REPs:

- A0563087-002 for SPOOL 4.8A,
- A0563087-003 for RSO 3.5A.

### Error SRO0154

For Spool Version 4.8 and XHCS Version 1.5, apply REPs A0560036 in the SPOOL Repfile using RMS.

For XHCS Version 2.0 and above, no change is necessary.

### Spool Error SPS0502

Apply the optional REPs A0547164 if SNS (Spool Notification Service) is unused, for all Spool versions.

## Using Binary FTP Outside of Entire Output Management

Entire Output Management uses a JCL skeleton to operate printouts. If you wish to pass the data to another system for further processing, please consider the following hints for binary FTP.

The commands below can be entered if you are logged in to your BS2000/OSD account via FTP.

### Prepare an SAM File for Binary Processing

```
ftp> quote file <yourfilename>,fcbtype=sam
```

### Set Transfer of SAM Files to Binary Format

```
ftp> quote site ftyp binary
```

```
ftp> bin
```

### Set Code Character Set to ISO88591

```
ftp> quote site MOD-FI-AT FILE-NAME=<yourfilename>,C-C-SET=ISO88591
```

## **PRINT-DOCUMENT Command for Binary Printing**

The document must be printed with the \*SPECIAL-FORMAT parameter:

```
/PRINT-DOCUMENT FROM-FILE=<yourfilename>,  
DOCUMENT-FORMAT=*SPECIALFORMAT,  
TO-PRINTER=*PARAMETERS (PRINTER-NAME=<yourprinter>)
```