



NATURAL

Entire System Server

Installation and Customization

Version 3.1.2 for Mainframes



This document applies to Version 3.1.2 for Mainframes and to all subsequent releases. Specifications contained herein are subject to change and these changes will be reported in subsequent release notes or new editions.

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Table of Contents

Installation and Customization Documentation - Overview	1
Installation and Customization Documentation - Overview	1
Introduction	2
Introduction	2
Installation Jobs	2
Prerequisites	2
Using System Maintenance Aid	3
Installation for OS/390	4
Installation for OS/390	4
Installation Tape	4
Storage Requirements	4
Copying the Tape Contents to Disk	4
Installation Procedure	5
Step 1: Scratch Libraries SYSNPE and SYSNPR	5
Step 2: Load the INPL File and the ERRN File	5
Step 3: Change the NATPARM Module	6
Step 4: Change Defaults	6
Step 5: Load the DATA File (optional)	7
Step 6: Natural Security Considerations	7
Step 7: Define APF Authorization	7
Step 8: Edit the Parameter Module XCOMPARM	8
Step 9: Edit the Entire System Server Started Task	8
Step 10: Create the JCL for the Entire System Server Trace Program	8
	9
Step 11: Activating the VTAM Interface	9
Step 12: Assemble and Link Security Exits (Optional)	9
General Linkage Conventions	10
Step 13: Assemble and Link the Adabas Linkage Routine ADALNA5	12
Step 14: Com-plete Considerations	12
Step 15: Additional Notes	12
Installation for VSE/ESA	14
Installation for VSE/ESA	14
Installation Tape	14
Storage Requirements	14
Copying the Tape Contents to Disk	14
Installation Procedure	16
Step 1: Scratch libraries SYSNPE and SYSNPR	16
Step 2: Load the INPL File and the ERRN File	16
Step 3: Change the NATPARM Module	16
Step 4: Change Defaults	17
Step 5: Load the DATA File	18
Step 6: Natural Security Considerations	18
Step 7: Create / Modify Entire System Server JCS Procedure	18
Step 8: Create the JCS for the Entire System Server Trace Program	19
Step 9 (Optional): Load NPRSTUB for ESYTRACE MONITOR-MODE	19
Step 10: Activating the VTAM Interface	20
Step 11: Additional Notes	20
Step 12: Com-plete Considerations	20
Installation for BS2000/OSD	21
Installation for BS2000/OSD	21
Installation Tape	21
Storage Requirements	21
Copying the Datasets from Tape to Disk	21

- Step 1 22
- Step 2 22
- Step 3 22
- Installation Procedure 22
 - Step 1: Scratch libraries SYSNPE and SYSNPR 22
 - Step 2: Load the INPL File and the ERRN File 23
 - Step 3: Change the NATPARM Module 23
 - Step 4: Change Defaults 23
 - Step 5: Load the DATA File 24
 - Step 6: Natural Security Considerations 25
 - Step 7: Customize Startup Parameters 25
 - Step 8: Edit the Entire System Server Jobs 25

Installation and Customization Documentation - Overview

This documentation covers the following topics:

- Introduction Provides information on installation jobs, prerequisites for installation and a reference to System Maintenance Aid (SMA).
- Installation for OS/390 Describes how to install the Entire System Server under the OS/390 operating system.
- Installation for VSE/ESA Describes how to install the Entire System Server under the VSE/ESA operating system.
- Installation for BS2000/OSD Describes how to install the Entire System Server under the BS2000/OSD operating system.

Introduction

This document covers the following topics:

- Installation Jobs
 - Prerequisites
 - Using System Maintenance Aid
-

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 in the following sections, 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 System Server installation tape; you must adapt this example job to your requirements.

Note:

The job numbers on the tape are preceded by a product code (for example, NPRI061).

Prerequisites

Before you can install the Entire System Server, the following Software AG products must already be installed at your site:

- Natural Version 3.1.3 or above;
- Adabas Version 6.2.1 or above;
- Entire System Server Interface (provided with Natural);
- Entire Net-Work Version 5.4.1 (optional, for multi-CPU Support);
- Predict Version 3.4.2 or above (optional).

The Entire System Server Services are available in any Natural environment that runs any or a combination of the following operating systems:

- OS/390 Version 2.6 or above;
- VSE/ESA Version 1.4.4 or above;
- BS2000/OSD Version 2 or above.

For OS/390 JES2, the PTF's for APAR's OW35104, OW36019 and OW44349 must be applied.

For OS/390 JES3, the PTF's for APAR's OW34753, OW36019, OW36022 and OW44298 must be applied. See also Information APAR III11784 for recommended JES3 SAPI maintenance.

Since Entire System Server on BS2000/OSD uses operating system interfaces introduced with BS2000/OSD Version 2, it cannot run on earlier versions of the operating system.

If Natural ISPF is used, Version 2.4.3 is required to support the new Entire System Server version.

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**.

Installation for OS/390

It is recommended that you read this section from beginning to end before starting the installation process.

This document covers the following topics:

- Installation Tape
- Storage Requirements
- Copying the Tape Contents to Disk
- Installation Procedure

Installation Tape

The installation tape contains the datasets listed in the table below. The sequence of the datasets is shown in the **Report of Tape Creation** which accompanies the installation tape.

The notation *nnn* in dataset names represents the version number of the product.

Dataset Name	Contents
NPR <i>nnn</i> .JOBS	Entire System Server Installation Jobs.
NPR <i>nnn</i> .LOAD	Entire System Server Load Library.
NPR <i>nnn</i> .SRCE	Entire System Server Source Library
NPR <i>nnn</i> .INPL	Entire System Server DDM's and tutorial.
NPR <i>nnn</i> .ERRN	Entire System Server Error Messages
NPR <i>nnn</i> .DATA	Predict data for the Entire System Server.

Storage Requirements

During installation, the following files are loaded from the installation tape:

File Name	Type	Cylinders	Disk Type
NPR <i>nnn</i> .JOBS	PDS	1	3380 / 3390
NPR <i>nnn</i> .LOAD	PDS	2	3380 / 3390
NPR <i>nnn</i> .SRCE	PDS	5	3380 / 3390
NPR <i>nnn</i> .INPL	SEQ	7	3380 / 3390
NPR <i>nnn</i> .ERRN	SEQ	1	3380 / 3390
NPR <i>nnn</i> .DATA	SEQ	7	3380 / 3390

Copying the Tape Contents to Disk

If you are not using SMA, copy the job dataset NPR*nnn*.JOBS from tape to disk using the sample JCL below. The following values must be supplied in the JCL:

- In the dataset names, replace *nnn* with the current version number of the datasets.
- With the SER parameter, replace XXXXXX with the volume serial number of the tape.
- With the LABEL parameter, replace *x* with the sequential number of the tape dataset (see **Report of Tape Creation**).
- With the VOL=SER parameter, replace YYYYYY with the volume serial number of the disk pack.
- With the SPACE parameter, specify the device type being used.

```
// JOB CARD
//V2COPY EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=A
//IN1 DD DSN=NPRnnn.JOBS,DISP=OLD,UNIT=TAPE,
// VOL=(,RETAIN,SER=XXXXXX),LABEL=(x,SL)
//OUT1 DD DSN=SAGLIB.NPRnnn.JOBS,DISP=(NEW,CATLG,DELETE),
// UNIT=SYSDA,VOL=SER=YYYYYY,SPACE=(CYL,(1,1,10))
//SYSIN DD *
C I=IN1,O=OUT1
/*
```

Then adapt and run job NPRTAPE from the job dataset to copy the load and source libraries from tape to disk. The sample jobs directly use the sequential datasets from tape.

The dataset type and the space each dataset requires on disk are shown in the **Report of Tape Creation**.

Installation Procedure

Step 1: Scratch Libraries SYSNPE and SYSNPR

(Job I051, Step 1100)

If you are upgrading from a previous version of the Entire System Server, scratch libraries SYSNPE and SYSNPR from your existing installation. Otherwise, skip this step.

Step 2: Load the INPL File and the ERRN File

(Job I061, Steps 1100 and 1102)

1. Use the Natural system command INPL (which is described in the Natural Reference documentation) in order to load the Entire System Server system objects (dataset NPR*nnn*.INPL).

This loads the following libraries:

Library	File	Contents
SYSNPR	FNAT	Installation aid (define DBIDs and define views to Natural Security)
SYSNPE	FNAT	Online tutorial
SYSNPEH1	FNAT	Help texts (English)
SYSNPEH2	FNAT	Help texts (German)

2. Load the Entire System Server error messages file (dataset NPR*nnn*.ERRN) using the ERRLODUS utility. The ERRLODUS utility is described in the Natural Utilities documentation.

Step 3: Change the NATPARM Module

Add the ASIZE parameter and the following macro to the NATPARM module; then assemble and link it. For information on how to activate this NATPARM module for your Natural environment, refer to the Natural Installation Guide for Mainframes.

```
ASIZE=48
NTDB PROCESS,148
```

ASIZE specifies the size of the auxiliary buffer. The minimum value is 36K and the maximum value is 64K. A value of at least 48 is recommended.

148 is the database ID with which the Entire System Server DDMs are cataloged. This does not affect the use of additional Entire System Server nodes with different node IDs, since these can be addressed via the NODE field in each Entire System Server view. See also the subsection Multiple Entire System Server Node Support in the Section Using the Entire System Server of the Entire System Server Administration Documentation

Note:

If you are upgrading from a previous version of Entire System Server, use the startup parameter NODE to assign different node IDs to different versions of Entire System Server running on the same system. You may, for instance, have an Entire System Server Version 2.2.2 running in production using node ID 148, and specify NODE=168 in the startup parameter for Version 3.1.1 during installation and test.

Ensure the Natural session parameter LE is set to OFF, otherwise you may experience problems with the Online Tutorial.

Step 4: Change Defaults

1. If you want to change default values, edit modules NATPNIP and ESYNODTB.

Assemble both and link them as described in the section Installing the Entire System Server Interface in the Natural Installation Guide for Mainframes.

- NATPNIP contains the following parameters and defaults:

BUFLEN=8192	Length of all Adabas buffers.
NUMREQ=5	Number of parallel requests.
MAXCBL=3000	Complex FIND buffer length.
MAXEDL=3000	Editor session buffer length.
EXTUSER=INIT-USER	When running under CICS or IMS, which user ID should be fetched to be shipped to RACF/ACF2/TSS (*INIT-USER or *USER in Natural).

- ESYNODTB contains the following parameters and defaults:

This module contains mnemonic names for Entire System Server nodes. In the DDMs, there are fields called NODE and NODE-NAME. The field NODE directs a call directly to this Entire System Server. The field NODE-NAME is translated into a node number depending on the contents of this table. We recommend, that you use your system ID as name.

The macro NAMXNOD generates table entries. The last macro call must be used with parameter LAST=Y to set end-of-table identifier.

Example:

```
NAMXNOD ID=148,NAME=PRODUCTION-1
NAMXNOD ID=149,NAME=PRODUCTION-2, LAST=Y
```

2. The module ESYNODTB must also be linked to module XCOMV026 from NPR222-LOAD-LIB to SMA-LOAD-LIB. (SMA Job I055, Step 1108).
3. If default values are changed, relink Natural as described in the section Installing the Entire System Server Interface in the Natural Installation Guide for Mainframes.

Step 5: Load the DATA File (optional)

(Job I200, Step 1100)

All Entire System Server views have been documented in Software AG's repository Predict. The NPR*nnn*.DATA dataset on the installation tape contains these Predict view descriptions that can be loaded with the MIGRATE / COORDINATOR utility in Predict (Job I200, Step 1100). This is optional and applies to Predict Version 3.4.2 or above.

The MIGRATE / COORDINATOR utility is described in the Predict Reference documentation.

If, however, you have already loaded these descriptions from any previous of the Entire System Server (or Natural Process), you must also logon to Predict's online system to check the database name of DBID **148**, to which the views are linked. Its name must be ENTIRE-SYSTEM-SERVER. If it is not, change the database name before running Job I200, Step 1100 to load the dataset NPR*nnn*.DATA.

Step 6: Natural Security Considerations

If Natural Security is installed, define libraries SYSNPE, SYSNPR, SYSNPEH1 and SYSNPEH2 to Natural Security. If these applications are to be people-protected, link to them those user IDs that require authorization. Define libraries without "XREF = YES" to load all objects.

- SYSNPE contains the online tutorial;
- SYSNPEH1 and SYSNPEH2 contain online help information;
- the installation aid in library SYSNPR can be used to apply initial security definitions for the Entire System Server views.

Step 7: Define APF Authorization

Define APF authorization for the Entire System Server Load Library by updating the member IEAAPF*xx* in library SYS1.PARMLIB. You may also use the APF statement in a PROG*xx* parmlib member to define the Load Library in the APF-authorized list.

Ensure that all libraries in the STEPLIB concatenation of the Entire System Server started task in Step 12 are APF-authorized.

Note:

If the library is not authorized, certain Entire System Server functions return an appropriate response code, and at start-up time the following message appears on the console:

```
ESY0050W ENTIRE SYSTEM SERVER IS NOT APF AUTHORIZED
```

Step 8: Edit the Parameter Module XCOMPARM

(Job I070, Step 1100)

Edit the parameter module XCOMPARM to set the correct startup parameters. This member is created with Job I070, Step 1100 and contains some default values. New parameters are CONSNAME, ESYTRACE, SHUTDOWN-MAX-DELAY, SYSTEMCONS, TRACE, TRACE-LEN and TRACE-SAV; the parameters MIGRAID and SYSLOG-REFRESH are no longer supported.

For a description of the parameters and an example, see the section Startup Parameters of the Entire System Server Administration Documentation.

Step 9: Edit the Entire System Server Started Task

(Job I070, Step 1101)

Edit the example member XCOMSTC (Entire System Server's started task). This member is created with Job I070, Step 1101.

The following is an example of Entire System Server subtask JCL. Note that the Adabas Load Library must be concatenated and APF-authorized:

```
//NATPROCS PROC
//*****
/** Entire System Server Start-up Procedure
/**
/** Make the following substitutions
/**
/** &NPRSRCE - Entire System Server source library
/** &NPRLLOAD - Entire System Server load library (APF authorized)
/** &ADALOAD - Adabas load library (APF authorized)
/**
//*****
// EXEC PGM=NPRINIT,REGION=3M,TIME=1440
//STEPLIB DD DSN=&NPRLLOAD,DISP=SHR
// DD DSN=&ADALOAD,DISP=SHR
//SYSPRINT DD SYSOUT=*
//SYSUDUMP DD SYSOUT=*
/**
//PARMS DD DSN=&NPRSRCE(XCOMPARM),DISP=SHR
/**
```

In the above example, member XCOMPARM in the Source Library referenced by the PARMS DD statement contains the Entire System Server startup parameters. For a description, see the section Startup Parameters of the Entire System Server Administration Documentation.

This started task starts the Entire System Server.

Step 10: Create the JCL for the Entire System Server Trace Program

Example:

```
//JOB card
//ESYTRACE EXEC PGM=ESYTRACE,PARM='199 --DISPL --NTROUT --POLL'
//STEPLIB DD DSN=your.load.library,DISP=SHR
//SYSPRINT DD SYSOUT=*
//
```

Installation for OS/390

Create the JCL to execute the program ESYTRACE. It analyzes the TRACE data of Entire System Server, if the startup parameter "TRACE=YES" is defined.

In order to start ESYTRACE in Monitor mode, the PARM "199 --POLL" is specified. The assignment of DDNAME TRACEIN is not needed here, because all data are read from the memory pool only. The analyzed and edited TRACE data will be written to SYSPRINT due the --DISPL parameter. It may also optionally be written to a file identified by the DDNAME TRACEOUT, however, in the above example this is suppressed by the --NTROUT parameter.

This task must be stopped explicitly with the operator command

```
F jobname,QUIT
```

due to the argument "--POLL".

For more information, see the subsection Creating Trace Data in the Entire System Server in the section Common Entire System Server Features of the Entire System Server Administration Documentation.



Step 11: Activating the VTAM Interface

Edit member VTAMNATP and save it in VTAM's online Source Library SYS1.VTAMLST.

The name specified in the ACBNAME parameter should be identical to Entire System Server's VTAMACB startup parameter. (This can be skipped if VTAMACB=NONE is specified.)

Notes:

1. The VTAM interface is used in the view NET-OPER to enable VTAM commands. By means of the view NET-OPER, you may send any VTAM command to VTAM without using the system console.
2. Another VTAM interface is used inside Entire System Server, which prints data to any VTAM printer; this feature is available with Entire Output Management.
3. Ensure that the major name is different from the minor name.

Step 12: Assemble and Link Security Exits (Optional)

To simplify installation, the sample security exits from the distributed source library have already been assembled and linked into the distributed load library. If no modifications to these exits are needed to satisfy special security requirements, this step can be skipped.

(Job I055 Steps 1110-1116)

- Steps 1110-1116 delete the pre-linked load-modules with the suffix RACF and are necessary if you want to execute steps 1120-1126. Note that you must edit steps 1110-1116 specifying the volume where the Entire System Server load lib is allocated, and the volume type (3380, 3390 ...).

(Job I055 Steps 1120-1126)

- Steps 1120-1126 assemble and link all exits with suffix RACF for RACF, CA-ACF2 Version 4.2 and above, or CA-TOP SECRET.
- When assembling the LOGVRACF exit, be sure to include your current Adabas source library in the Assembler SYSLIB DD statements.

Security exit modules are loaded at Entire System Server startup and are used by various view processors. The names of the security modules loaded are determined by the specification of the Entire System Server SECURITY parameter which consists of a 4-byte suffix (see the section Startup Parameters of the Entire System Server Administration Documentation).

Sample security exits for CA-ACF2, CA-TOP SECRET and RACF installations are contained in the distributed Source Library. You may assemble and link these using Job I055 as described above. These exits are intended as examples and may require modification to meet your site requirements. The following table lists the sample security exits provided together with the relevant view names:

Exit Name	Views
DSNVRACF	ACCOUNTING CATALOG-UPDATE CHECK-SECURITY COPY-FILE FILE-ALLOCATE FILE-MAINTENANCE IEBCOPY LIB-DIRECTORY LIB-UPDATE LIB-ZAP LIST-VTOC READ-FILE SUBMIT VTOC-UPDATE WRITE-FILE
IDCVRACF	IDCAMS
JESVRACF	CONSOLE-LOG READ-SPOOL SPOOL-UPDATE SPOOL-FILES SPOOL UPDATE
LOGVRACF	NATPROC-LOGON
OPRVRACF	ALLOCATIONS CONSOLE LOADED-MODULES MAIN-STORAGE SPOOL-UPDATE TCB
SUBVRACF	SUBMIT
VTMVRACF	NET-OPER

General Linkage Conventions

The following table shows the register settings on entry:

Register	Convention
R1	Exit parameter list (see below for examples)
R13	18-full word save area
R14	Return address
R15	Entry point address

Below are parameter lists of the example user exits provided in source form in the distributed Source Library. They can be changed to suit your site requirements:

Exit Name	Description	Parameters	Upon Return:
DSNVRACF	Dataset verification	<ol style="list-style-type: none"> ACCESS TYPE (A1) A=Alter W=Write R=Read F=Allocate A (TASK ENTRY) DYNAMIC WORK AREA 	If R15=0, access allowed. Else, R15 ==> error text.
IDCVRACF	IDCAMS verification	<ol style="list-style-type: none"> COMMAND (A80) DYNAMIC WORK AREA 	If R15=0, access allowed. Else, R15 ==> error text.
JESVRACF	Spool interface	<ol style="list-style-type: none"> requested authority: - X'02' READ - X'04' UPDATE address of resource name for JESSPOOL resource class address of user id address of dynamic work area 	If R15=0, access allowed. Else, access denied.
LOGVRACF	Logon/logoff procedure	<ol style="list-style-type: none"> FUNCTION (logon/logoff) USER ID (A8) PASSWORD DYNAMIC WORK AREA 	If R15=0, logon OK. Else, R15 ==> error text.
OPRVRACF	<ol style="list-style-type: none"> Operator command validation. Address space authorization 	<ol style="list-style-type: none"> COMMAND (A80) JOB NAME (A8) JOB NR. (N5) DYNAMIC WORK AREA 	If R15=0, logon OK. Else, R15 ==> error text.
SUBVRACF	Submit exit	<ol style="list-style-type: none"> USER ID (A8) A (job card buffer) DYNAMIC WORK AREA 	If R15=0, logon OK. Else, R15 ==> error text.
VTMVRACF	VTAM command validation	<ol style="list-style-type: none"> COMMAND (A80) DYNAMIC WORK AREA 	If R15=0, logon OK. Else, R15 ==> error text.

Note:

All user exits must be reentrant. The Entire System Server dynamic work area is accessible by all user exits. A copy book containing the layout of this work area is also contained in the distributed Source Library under the name VIEWWK. The task table is in XCOMTSDS.

See also the subsection Setting Up RACF Security for Operator Commands on OS/390 in Section OS/390 Considerations of the Entire System Server Administration Documentation.

Step 13: Assemble and Link the Adabas Linkage Routine ADALNA5

Job I055 Step 1109 assembles and links the Adabas linkage routine ADALNA5. Make sure that the Assembler SYSIN DD statement specifies your current Adabas source library. This routine is needed to communicate from Entire System Server to Adabas databases as well as to other Entire System Servers in the network. Monitors such as Entire Output Management or Entire Operations and also the view COPY-FILE use this link routine.

Step 14: Com-plete Considerations

1. If you intend to use the Entire System Server under Com-plete, you may have to adjust the setting of the ADAROLL, ADACALLS and ADASVC5 parameters (see the **Com-plete System Programmer's Manual**).
2. In order to use the SEND-MESSAGE function to users of Com-plete, the Entire System Server must be treated as a batch job from Com-plete's point of view. The subsection Batch in the section Software Interfaces in the **Com-plete System Programmer's Manual** applies here. Note the following:
 - Link the COMPBTCH module to the Entire System Server library and link the module XCOMV019 to COMPBTCH using Job I055, Step 1105.
 - The following DD card must be added to the Entire System Server JCL:

```
COMBTCH DD DSN=NODE $nnn$ .SVC $sss$ ,DISP=SHR
```

where nnn is the Com-plete node number given by the (Com-plete) ACCESS-ID sysparm, and sss is the Adabas SVC number given by the ACCESS-SVC sysparm.

- The TUBATCH module must be included in the STEPLIB concatenation of the Entire System Server JCL.

The Entire System Server logs on to Com-plete with the name of its started task and sends the message(s).

Note:

One Entire System Server can send to only one Com-plete.

Step 15: Additional Notes

1. An installation aid is contained in library SYSNPR. This installation aid can be used to change the DBIDs (node numbers) of Entire System Server views, and to define views to Natural Security.
2. For sites running Software AG's data center products: for all users running as subtask in Entire System Server address space who logon to Adabas, ETID=<blank> must be set in the Natural Security profile. This also applies to standard users NOPMON, NOMMON, NCLMON, NOMARC, NOMREV, NOMPRT.
3. To use System Automation Tools (SAT), Entire Output Management (NOM), Entire Operations (NOP), or Entire Event Management (NCL), Natural 3.1.3 or above must be installed.
 - Assemble and link NATOS from Natural Source Library (this is usually done with the installation of Natural Job I055, Steps 0100 to 0103). Module NATOS replaces the module NATPNTD2 from previous Entire System Server (or Natural Process) versions.
 - Link a Natural subtask as follows:

```
MODE RMODE(ANY)
INCLUDE SMALIB(NATOS)           Natural driver
INCLUDE ...
INCLUDE NPRLIB(ADANPR)         Adabas-NPR-interface
INCLUDE ...
NAME NATSUB22(R)               Example of Natural's name
```

4. If you experience a security message during startup like:

```
ICH408I USER(SAG2 ) GROUP(SAGTEST ) NAME(TEST ID )
MVS.MCSOPER.ESY148CO CL(OPERCMD5)
WARNING: INSUFFICIENT AUTHORITY - TEMPORARY ACCESS ALLOWED
FROM MVS.MCSOPER.* (G)
ACCESS INTENT(READ ) ACCESS ALLOWED(NONE )
```

then you have to give READ access to the MCS console for the NPR started task in your Security system. Contact your RACF/ACF2/TOP-SECRET administrator for assistance.

Installation for VSE/ESA

You are recommended to read this section from beginning to end before starting the installation process.

This document covers the following topics:

- Installation Tape
- Storage Requirements
- Copying the Tape Contents to Disk
- Installation Procedure

Installation Tape

The installation tape contains the datasets listed in the table below. The sequence of the datasets is shown in the **Report of Tape Creation** which accompanies the installation tape.

The notation *nnn* in dataset names represents the version number of the product.

Dataset Name	Contents
NPR <i>nnn</i> .LIBR	VSE/ESA Library for Entire System Server
NPR <i>nnn</i> .INPL	Entire System Server System Libraries
NPR <i>nnn</i> .ERRN	Entire System Server Error Messages
NPR <i>nnn</i> .DATA	Predict View Descriptions

Storage Requirements

During installation, the following files are loaded from the installation tape:

File Name	Type	Cylinders	Disk Type
NPR <i>nnn</i> .LIBR	SUBLIB	3	3380 / 3390
NPR <i>nnn</i> .INPL	SEQ	7	3380 / 3390
NPR <i>nnn</i> .ERRN	SEQ	1	3380 / 3390
NPR <i>nnn</i> .DATA	SEQ	6	3380 / 3390

Copying the Tape Contents to Disk

The sample JCS supplied on tape for the installation of Entire System Server assumes one library, which has installation sublibraries per Software AG product. In addition to these sublibraries, you need a work sublibrary and a sublibrary for sample installation jobs for Entire System Server. It is recommended that you create this library and the work sublibrary now.

The following job creates this library. The size needed for the library depends on the number of products and versions which are to be loaded into this library later on; the following example uses 1200 tracks of a 3380 device as a recommended size:

In the // EXTENT statement, replace *vvvvvv* with the VOLSER of the pack where the dataset is to reside, and *nnnn* with the starting track of the dataset.

```
* $$ JOB JNM=SMADEF,CLASS=0,DISP=D,LDEST=(,...)
* $$ LST CLASS=A,DISP=D
// JOB SMADEF
// DLBL SAGLIB,'INSTALL.SMALIB',99/365,SD
// EXTENT ,vvvvvv,1,0,nnnn,1200
// EXEC LIBR,PARM='MSHP'
  DEFINE LIB=SAGLIB
  DEFINE SUB=SAGLIB.USRLIB,REUSE=AUTO,R=Y
/*
/ &
* $$ EOJ
```

The sample job assumes that the standard label SAGLIB is defined for this library. You can use the following job to add this label to the standard label area:

In the // EXTENT statement, replace *vvvvvv* with the VOLSER of the pack where the dataset is to reside.

```
* $$ JOB JNM=STDLABEL,CLASS=A,DISP=D
* $$ LST CLASS=A,DISP=D
// JOB STDLABEL
// OPTION STDLABEL=DELETE
  SAGLIB
/*
// OPTION STDLABEL=ADD
// DLBL SAGLIB,'INSTALL.SMALIB'
// EXTENT ,vvvvvv
/*
/ &
* $$ EOJ
```

Now copy the sublibrary containing the sample installation jobs from tape using the following JCS:

```
* $$ JOB JNM=NPRJOBS,CLASS=0,DISP=D,LDEST=*,SYSID=1
* $$ LST CLASS=A,DISP=D
// JOB NPRJOBS
// ASSGN SYS005,IGN
// ASSGN SYS006,cuu,VOL=NPRnnn
// MTC REW,cuu
// MTC FSF,SYS006,nn
* Tape positioned at file ?, tape mark nn
* *** Now process NPRnnn.LIBR - JOBS ***
// EXEC LIBR,PARM='MSHP'
  RESTORE SUBLIB=SAGLIB.NPRnnnJ:SAGLIB.NPRnnnJ -
    TAPE=SYS006 -
    LIST=YES -
    REPLACE=NO
/*
// MTC REW,SYS006
/*
/ &
* $$ EOJ
```

Notation:

cuu represents the physical unit address of the tape drive.

nn represents the file sequence number as shown in the Report of Tape Creation.

nnn represents the version number of the product.

Now use job NPRTAPE from this job library to restore the Entire System Server sublibrary from tape and make Entire System Server known to MSHP.

All further datasets will be directly used from tape by the installation jobs.

Installation Procedure

Step 1: Scratch libraries SYSNPE and SYSNPR

(Job I051, Step 1100)

If you are upgrading from a previous version of the Entire System Server, scratch libraries SYSNPE and SYSNPR from your existing installation. Otherwise, skip this step.

Step 2: Load the INPL File and the ERRN File

(Job I061, Steps 1100 and 1102)

1. Use the Natural system command INPL (which is described in the Natural Reference documentation) in order to load the Entire System Server system objects (dataset NPR nnn .INPL).

This loads the following libraries:

Library	File	Contents
SYSNPR	FNAT	Installation aid (define DBIDs and define views to Natural Security)
SYSNPE	FNAT	Online tutorial
SYSNPEH1	FNAT	Help texts (English)
SYSNPEH2	FNAT	Help texts (German)

2. Load the Entire System Server error messages file (dataset NPR nnn .ERRN) using the ERRLODUS utility. The ERRLODUS utility is described in the Natural Utilities documentation.

Step 3: Change the NATPARM Module

Add the ASIZE parameter and the following macro to the NATPARM module; then assemble and link it. For information on how to activate this NATPARM module for your Natural environment, refer to the Natural Installation Guide for Mainframes.

```
ASIZE=48
NTDB PROCESS,148
```

ASIZE specifies the size of the auxiliary buffer. The minimum value is 36K and the maximum value is 64K. A value of at least 48 is recommended.

148 is the database ID with which the Entire System Server DDMs are cataloged. This does not affect the use of additional Entire System Server nodes with different node IDs, since these can be addressed via the NODE field in each Entire System Server view. See also the subsection Multiple Entire System Server Node Support in the Section Using the Entire System Server of the Entire System Server Administration Documentation.

Important: If you are upgrading from a previous version of Entire System Server, use the startup parameter NODE to assign different node IDs to different versions of Entire System Server running on the same system. You may, for instance, have an Entire System Server Version 2.2.2 running in production using node ID 148, and specify NODE=168 in the startup parameter for Version 3.1.1 during installation and test.

Ensure the Natural session parameter LE is set to OFF, otherwise you may experience problems with the Online Tutorial.

Step 4: Change Defaults

Note:

If you are using Natural under CMS and wish to access an Entire System Server node under VSE/ESA, you must install the Entire System Server Interface as described in the section Installing the Entire System Server Interface in the Natural Installation Guide for Mainframes.

1. Modules NATPNIP and ESYNODTB:

- If you want to change defaults in parameter module NATPNIP, edit source member NATPNIP.A.

Assemble it as described in the section Installing the Entire System Server Interface in the Natural Installation Guide for Mainframes.

NATPNIP contains the following parameters and defaults:

Parameter	Explanation
BUFLEN=8192	Length of all Adabas buffers.
NUMREQ=5	Number of parallel requests.
MAXCBL=3000	Complex FIND buffer length.
MAXEDL=3000	Editor session buffer length.
EXTUSER=INIT-USER	When running under CICS, which user ID should be fetched to be shipped to Entire System Server (*INIT-USER or *USER in Natural).

- If you want to use field NODE-NAME instead of NODE to address an Entire System Server via logical names, edit the source member ESYNODTB.A.

Assemble it as described in the section Installing the Entire System Server Interface in the Natural Installation Guide for Mainframes.

Module ESYNODTB contains mnemonic names for Entire System Server nodes. In the DDMs, there are fields called NODE and NODE-NAME. The field NODE directs a call directly to this Entire System Server. The field NODE-NAME is translated into a node number depending of the contents of this table. We recommend, that you use your system ID as name.

The macro NAMXNOD generates table entries. The last macro call must be used with parameter LAST=Y to set end-of-table identifier.

Example:

```
NAMXNOD ID=198 ,NAME=PRODUCTION-1
NAMXNOD ID=199 ,NAME=PRODUCTION-2 ,LAST=Y
```

2. The module must also be linked to view processor XCOMV026 (in NPR nnn .LIBR) with job LNKV026 (SMA Job I055, Step 1108).
3. If you have changed any defaults, relink Natural as described in the section Installing the Entire System Server Interface in the Natural Installation Guide for Mainframes.

Step 5: Load the DATA File

(Job I200, Step 1100)

All Entire System Server views have been documented in Software AG's repository Predict. The NPR nnn .DATA dataset on the installation tape contains these Predict view descriptions that can be loaded with the MIGRATE / COORDINATOR utility in Predict (Job I200, Step 1100). This is optional and applies to Predict Version 3.4.2 or above.

The MIGRATE / COORDINATOR utility is described in the Predict Reference documentation.

If, however, you have already loaded these descriptions from Version 1.2 of Entire System Server (or Natural Process), you must also logon to Predict's online system to check the database name of DBID **148**, to which the views are linked. Its name must be ENTIRE-SYSTEM-SERVER. If it is not, change the database name before running Job I200, Step 1100 to load the dataset NPR nnn .DATA.

Step 6: Natural Security Considerations

If Natural Security is installed, define libraries SYSNPE, SYSNPR, SYSNPEH1 and SYSNPEH2 to Natural Security. If these applications are to be people-protected, link those user IDs to them that require authorization. Define libraries without "XREF = YES" to load all objects.

- SYSNPE contains the online tutorial;
- the installation aid in library SYSNPR can be used to apply initial security definitions for the Entire System Server views.

Step 7: Create / Modify Entire System Server JCS Procedure

```
* $$ JOB JNM=ESY21x,CLASS=6,DISP=D
* $$ LST CLASS=A,DISP=H,RBS=500
// JOB ESY221
// OPTION LOG,DUMP
* *****
* Entire System Server 2.2.x *
* *****
// LIBDEF *,SEARCH=(SAGLIB.ADA62x,SAGLIB.NPR22x)
// EXEC NPRINIT,SIZE=3072K
ADAVERS=5
ADA5SVC=45                <- INSTALLATION DEPENDENT
AUTOLOG=YES
FORCE=NO                  <- CAN ALSO BE 'YES'
SPOOL=POWR
LOCAL=NO                  <- CAN ALSO BE 'YES' IF ENTIRE NET-WORK
NABS=10
NODE=148                  <- INSTALLATION DEPENDENT
NONACT=30
NUMLIBS=300               <- # LIBRARIES TO BE ACCESSED
NUMTASK=5                 <- # WORKER TASKS TO BE STARTED
VTAMACB=ESYACB1          <- 'NONE' IF NET-OPER VIEW NOT USED
VSAMLABELS=YES           <- PROCESS VSAMLABELS (DEFAULT)
CONSTAB=1000              <- SIZE OF CONSOLE TABLE (VSE/ESA2.1)
/*
// EXEC LISTLOG
/*
/&
* $$ EOJ
```

As Entire System Server uses VSE Librarian services, do not use SIZE=parameters in the EXEC statement that calculates size (such as AUTO), as this may lead to errors when accessing library members. Please see the discussion of the LIBR program in the **IBM VSE/ESA System Control Statements Manual** for more details. 3072K is an arbitrary number; it may need to be higher or may be reduced depending on your system.

If CA-DYNAM/D is installed, the LIBDEF SEARCH,PHASE= statement should include a library where the DYNACC API module is located. DYNACC.PHASE is usually found in the library CALIB1.DYN2PROD, however, it may be in a different location on your system.

See the section Startup Parameters of the Entire System Server Administration Documentation for a list of all available startup parameters.

Step 8: Create the JCS for the Entire System Server Trace Program

Example:

```
* $$ JOB JNM=jobname,CLASS=8,DISP=D,LDEST=(,id),PDEST=(,id)
* $$ LST CLASS=A,DISP=D
* $$ PUN CLASS=A,DISP=D
// JOB jobname comment
// LIBDEF PHASE,SEARCH=(NPRSYS.NPR311)
// OPTION LOG,LOGSRC,DUMP,NOSYSDUMP
// EXEC ESYTRACE,PARM='199 --DISPL --NTROUT --POLL'
// EXEC LISTLOG
/*
/&
* $$ EOJ
```

Create the JCS to execute the program ESYTRACE. It analyzes the TRACE data of Entire System Server, if the startup parameter "TRACE=YES" is defined.

In order to start ESYTRACE in Monitor mode, the parameter "199 --POLL" is specified, and the module NPRSTUB must be loaded into the SVA (see Step 9). The assignment of DLBL TRACIN/SYS001 is not needed here, because all data are read from the memory pool only. The analyzed and edited TRACE data will be written to SYSLST due to the --DISPL parameter. It may also optionally be written to a file identified by DLBL TRACOUT/SYS002, however, in the above example this is suppressed by the --NTROUT parameter.

This task must be stopped explicitly with the operator command

```
MSG xx,DATA=QUIT
```

due to the argument "--POLL".

For more information, see the subsection Creating Trace Data in the Entire System Server in the section Common Entire System Server Features of the Entire System Server Administration Documentation.

Step 9 (Optional): Load NPRSTUB for ESYTRACE MONITOR-MODE

If you wish to use the MONITOR-MODE of the ESYTRACE program, you must first install the NPRSTUB module in the SVA. This may be done at IPL time, or before you bring up the Entire System Server session that will be monitored. **You cannot monitor a running ESY session if the NPRSTUB module has not been previously loaded.** The following is a sample job to load the NPRSTUB module in the SVA; it must be run in the BG partition:

```

* $$ JOB JNM=NPRSTUB,CLASS=0,DISP=D,LDEST=(,USER)
* $$ LST DISP=D,CLASS=A
// JOB NPRSTUB
// LIBDEF *,SEARCH=(SAGLIB.NPR311)
SET SDL
NPRSTUB,SVA
/*
/&
* $$ EOJ

```

Alternatively, you may add the NPRSTUB,SVA statement to the ADASIP job that runs at IPL.

The module is slightly over 2K in length and is loaded above the 16M line.

Step 10: Activating the VTAM Interface

To enable the Entire System Server view NET-OPER to function correctly, the application name specified in the VTAMACB system parameter must be defined to VTAM and activated:

```

VTMAPPL VBUILD TYPE=APPL
VESYACB1 APPL AUTH=(SPO,CNM),EAS=1,ACBNAME=ESYACB1

```

This definition can also be found in the member VTAMNATP.B of the Entire System Server sublibrary.

Step 11: Additional Notes

1. An installation aid is contained in library SYSNPR. This installation aid can be used to change the DBIDs (node numbers) of Entire System Server views, and to define views to Natural Security (see also Step 6).
2. For sites running Software AG's data center products: for all users running as subtask in Entire System Server address space who logon to Adabas, ETID=<blank> must be set in the Natural Security profile. This also applies to standard users NOPMON, NOMMON, NCLMON, NOMARC, NOMREV, NOMPRT.

Step 12: Com-plete Considerations

1. If you intend to use the Entire System Server under Com-plete, you may have to adjust the setting of the ADAROLL and ADACALLS parameters, and also specify the NODE in the ADASVC5 parameters (see **Com-plete System Programmer's Documentation**).
2. In order to use the SEND-MESSAGE function to users of Com-plete, the Entire System Server must be treated as a batch job from Com-plete's point of view. The subsection Batch in the section Software Interfaces of the **Com-plete System Programmer's Documentation** applies here.

Note the following:

- The COMPBTCH module must be linked to the module XCOMV019 to create a new phase XCOMV019. See the sample job LNKMV019.OBJ to create a new phase XCOMV019.
- The following DD card must be added to the Entire System Server JCS:

```
// DLBL COMBTCH, 'NODEnnn.SVCsss'
```

where *nnn* is the Com-plete node number given by the (Com-plete) ACCESS-IDsysparm, and *sss* is the Adabas SVC number given by the ACCESS-SVC sysparm.

Entire System Server logs on to Com-plete with the name of its started task and sends the message(s).

Note:

One Entire System Server can send to only one Com-plete.

Installation for BS2000/OSD

You are recommended to read this section from beginning to end before starting the installation process.

This section covers the following topics:

- Installation Tape
- Storage Requirements
- Copying the Datasets from Tape to Disk
- Installation Procedure

Installation Tape

The installation tape contains the datasets listed in the table below. The sequence of the datasets is shown in the **Report of Tape Creation** which accompanies the installation tape.

The notation *nnn* in dataset names represents the version number of the product.

Dataset Name	Contents
NPR <i>nnn</i> .JOBS	Entire System Server Installation Jobs.
NPR <i>nnn</i> .PAMS	Entire System Server Load Library.
NPR <i>nnn</i> .SRCE	Entire System Server Source Library
NPR <i>nnn</i> .INPL	Entire System Server DDM's and tutorial.
NPR <i>nnn</i> .ERRN	Entire System Server Error Messages
NPR <i>nnn</i> .DATA	Predict data for the Entire System Server.

Storage Requirements

File Name	Type	Disk PAM Pages
NPR <i>nnn</i> .JOBS	PAM	84
NPR <i>nnn</i> .MOD	PAM	864
NPR <i>nnn</i> .SRC	PAM	48
NPR <i>nnn</i> .INPL	SAM	2064
NPR <i>nnn</i> .ERRN	SAM	192
NPR <i>nnn</i> .DATA	SAM	2112

Copying the Datasets from Tape to Disk

If you are not using SMA, copy the datasets from tape to disk using the procedure described below. In this procedure, you must supply the following values:

- In the dataset names, replace *nnn* with the current version number of the datasets.
- Replace all occurrences of *xxxxxx* with the volume serial number of the tape.
- Replace *ttt* with the proper device type.

Step 1

Copy the job dataset `NPRnnn.JOBS` from tape to disk using the BS2000/OSD utility PERCON or EDT.

If you use \$PERCON, issue the following commands:

```

/FILE NPRnnn.JOBS,VOL=xxxxxxx,DEV=ttt          -
      ,BLKSIZE=,RECFORM=,RECSIZE=,FCBTYPE=      -
      ,STATE=FOREIGN,FSEQ=UNK,LINK=PCIN
/FILE P.NPRnnn,LINK=PCOUT
/EXEC $PERCON
END

```

If you use \$EDT, issue the following commands:

```

/FILE NPRnnn.JOBS,VOL=xxxxxxx,DEV=ttt          -
      ,BLKSIZE=,RECFORM=,RECSIZE=              -
      ,STATE=FOREIGN,FSEQ=UNK,LINK=EDTSAM
/EXEC $EDT
§ READ ' / '
§ SY '/REL EDTSAM'
§ WRITE 'P.NPRnnn'
§ HALT

```

Step 2

Then issue the command:

```
/CALL P.NPRnnn,PRODUCT=NPRnnn
```

This creates an example job library `LIB.NPRnnn` from the procedure dataset.

Step 3

Adapt job `E.NPRTAPE` from the example job library.

Then issue the following command to run the job, which copies all datasets from tape to disk:

```
/E LIB.NPRnnn(E.NPRTAPE)
```

Installation Procedure

Step 1: Scratch libraries SYSNPE and SYSNPR

(Job I051, Step 1100)

If you are upgrading from a previous version of the Entire System Server, scratch libraries SYSNPE and SYSNPR from your existing installation. Otherwise, skip this step.

Step 2: Load the INPL File and the ERRN File

(Job I061, Steps 1100 and 1102)

1. Use the Natural system command INPL (which is described in the Natural Reference documentation) in order to load the Entire System Server system objects (dataset NPR nnn .INPL).

This loads the following libraries:

Library	File	Contents
SYSNPR	FNAT	Installation aid (define DBIDs and define views to Natural Security)
SYSNPE	FNAT	Online tutorial
SYSNPEH1	FNAT	Help texts (English)
SYSNPEH2	FNAT	Help texts (German)

2. Load the Entire System Server error messages file (the dataset NPR nnn .ERRN) using the ERRLODUS utility. The ERRLODUS utility is described in the Natural Utilities documentation.

Step 3: Change the NATPARM Module

Add the ASIZE parameter and the following macro to the NATPARM module; then assemble and link it. For information on how to activate this NATPARM module for your Natural environment, refer to the Natural Installation Documentation for Mainframes.

```
ASIZE=48
NTDB PROCESS,148
```

ASIZE specifies the size of the auxiliary buffer. The minimum value is 36K and the maximum value is 64K. A value of at least 48 is recommended.

148 is the database ID with which the Entire System Server DDMs are cataloged. This does not affect the use of additional Entire System Server nodes with different node IDs, since these can be addressed via the NODE field in each Entire System Server view. See also the subsection Multiple Entire System Server Node Support in the Section Using the Entire System Server of the Entire System Server Administration Documentation.

Note:

If you are upgrading from a previous version of Entire System Server, use the startup parameter NODE to assign different node IDs to different versions of Entire System Server running on the same system. You may, for instance, have an Entire System Server Version 2.2.2 running in production using node ID 148, and specify NODE=168 in the startup parameter for Version 3.1.1 during installation and test.

Ensure the Natural session parameter LE is set to OFF, otherwise you may experience problems with the Online Tutorial.

Step 4: Change Defaults

1. Module NATPNIP:
 - To change defaults in the parameter module NATPNIP, edit the source member NATPNIP (in the Natural source library).

Assemble it as described in Section Installing the Entire System Server Interface in the Natural Installation Guide for Mainframes.

NATPNIP contains the following parameters and defaults:

Parameter	Explanation
BUFLEN=8192	Length of all Adabas buffers.
NUMREQ=5	Number of parallel requests.
MAXCBL=3000	Complex FIND buffer length.
MAXEDL=3000	Editor session buffer length.
EXTUSER=USER	When running under UTM, value USER should be used to ship Natural's *USER to Entire System Server. When running under BATCH or TIAM, value ADDRESS-SPACE should be fetched to ship the User ID of the task to Entire System Server.

2. Assemble this module as described in the section Installing the Entire System Server Interface in the Natural Installation Guide for Mainframes.
3. The Entire System Server Interface (ESX) has been an integrated part of Natural since Version 2.3.4. All ESX modules will be automatically linked to the front-end part of Natural in Version NAT 2.3.4 and above. For further information, see Installing the Entire System Server Interface in the Natural Installation Guide for Mainframes.

Step 5: Load the DATA File

(Job I200, Step 1100)

All Entire System Server views have been documented in Software AG's repository Predict. The NPR nnn .DATA dataset on the installation tape contains these Predict view descriptions that can be loaded with the MIGRATE / COORDINATOR utility in Predict (Job I200, Step 1100). This is optional and applies to Predict Version 3.2 or above.

The MIGRATE / COORDINATOR utility is described in the Predict Reference documentation.

If, however, you have already loaded these descriptions from earlier versions of the Entire System Server (or Natural Process), you must also logon to Predict's online system to check the database name of DBID 148, to which the views are linked.

Its name must be ENTIRE-SYSTEM-SERVER. If it is not, change the database name before running Job I200, Step 1100 to load the dataset NPR nnn .DATA.

Note:

For Predict 3.2 and above: you can also ignore the message "Attribute OPSYS lost".

Step 6: Natural Security Considerations

If Natural Security is installed, define libraries SYSNPE, SYSNPR, SYSNPEH1 and SYSNPEH2 to Natural Security. If these applications are to be people-protected, link those user IDs to them that require authorization. Define libraries without "XREF = YES" to load all objects.

- SYSNPE contains the online tutorial;
- the installation aid in library SYSNPR can be used to apply initial security definitions for the Entire System Server views.

Step 7: Customize Startup Parameters

1. Copy member NPRPARMS from the library NPR*nnn*.SRCE to a SAM or ISAM file.
2. Edit this parameter file to set the correct startup parameters according to the requirements of your site.

For a description of the parameters and an example, see the section Startup Parameters of the Entire System Server Administration Documentation.

Step 8: Edit the Entire System Server Jobs

- Adjust job control for the Entire System Server MAIN Task.

Edit the example Element E.ESYMAIN and adjust the library and file names used in it.

```

/.XCOM199          SET-LOGON-PARAMETERS
/ SKIP-COMMANDS   TO-LABEL=START

*-----*
* Run Entire System Server MAIN Task.          *
*-----*

/.START           REMARK
/ MODIFY-JOB-OPTIONS INFORMATION-LEVEL=*MEDIUM, -
/                 OPERATOR-INTERACTION=*YES, -
/                 LOGGING=*PARAMETERS(LISTING=*YES)
/ MODIFY-TEST-OPTIONS DUMP=*YES
/ ASSIGN-SYSLST    TO=$SAG.LST.ESYMAIN.199.&($SYSJV.TSN)
/ ASSIGN-SYSLST    TO=$SAG.LST.ESYMAIN.199.&($SYSJV.TSN).ZAPS, -
/                 SYSLST-NUMBER=1
/ SHOW-JOB-STATUS JOB-IDENTIFICATION=*OWN

/ CREATE-FILE      FILE-NAME=$SAG.NPRnnn.CLOG.199, -
/                 SUPPORT=*PUBLIC-DISK -
/                 ( SPACE=*RELATIVE -
/                 ( PRIMARY-ALLOCATION = 12, -
/                 SECONDARY-ALLOCATION = 12 ) )
/ SET-JOB-STEP
/ CREATE-FILE      FILE-NAME=$SAG.NPRnnn.TRAC.199, -
/                 SUPPORT=*PUBLIC-DISK -
/                 ( SPACE=*RELATIVE -
/                 ( PRIMARY-ALLOCATION = 12, -
/                 SECONDARY-ALLOCATION = 12 ) )
/ SET-JOB-STEP
/ ADD-FILE-LINK    LINK-NAME=PARMS      ,FILE-NAME=$SAG.NPRnnn.PARM.199
/ ADD-FILE-LINK    LINK-NAME=CLOG       ,FILE-NAME=$SAG.NPRnnn.CLOG.199
/ ADD-FILE-LINK    LINK-NAME=TRACE     ,FILE-NAME=$SAG.NPRnnn.TRAC.199
/ ADD-FILE-LINK    LINK-NAME=DDLIB     ,FILE-NAME=$SAG.ADAnnn.MOD
/ ADD-FILE-LINK    LINK-NAME=DDLIB2    ,FILE-NAME=$SAG.NPRnnn.MOD
/ ADD-FILE-LINK    LINK-NAME=BLSLIB00 ,FILE-NAME=$SAG.NPRnnn.USER.MOD
/ START-PROGRAM    FROM-FILE=*MODULE -
/                 ( LIBRARY=$SAG.NPRnnn.MOD, -
/                 ELEMENT=ESYMAIN, -
/                 PROGRAM-MODE=*ANY, -
/                 RUN-MODE=*ADVANCED ), -
/                 MONJV=#ESYMAIN.&($SYSJV.TSN)
/ SET-JOB-STEP
/ SHOW-JOB-STATUS JOB-IDENTIFICATION=*OWN
/ SKIP-COMMANDS   TO-LABEL=OKAY, -
/                 IF=JV(COND=(#ESYMAIN.&($SYSJV.TSN),1,2) EQ '$T')
/ WRITE-TEXT      TEXT='***** ESYMAIN failed *****'
/ SKIP-COMMANDS   TO-LABEL=STOP

/.OKAY           REMARK
/ WRITE-TEXT      TEXT='***** ESYMAIN successfully executed *****'
/ SKIP-COMMANDS   TO-LABEL=STOP

/.STOP           REMARK
/ EXIT-JOB        MODE=*NORMAL,SYSTEM-OUTPUT=*NONE

```

This job is used to start the Entire System Server. The file referenced by the link name PARMS contains the Entire System Server startup parameters. For a description of startup parameters, see the section Startup Parameters of the Entire System Server Administration Documentation.

The ADD-FILE-LINK statement to assign link name CLOG is only needed if the logging facility of Entire System Server is activated by setting the appropriate parameter LOGGING=YES in the startup parameter file or dynamically via operator command interface:

```
/INTR <tsn>, LOGGING=YES
```

where <tsn> is the TSN assigned to the MAIN task.

The file assigned by link name TRACE is needed to save the TRACE data buffer at exit of the ESY MAIN Task. The assignment is not required if startup parameter TRACE-SAV=NO was specified.

The library concept of Entire System Server is described in detail in the section Library Concept on BS2000/OSD for Entire System Server in the Section BS2000/OSD Considerations of the Entire System Server Administration Documentation.

More information about running ESY on BS2000/OSD is available in the section Details for Running Entire System Server on BS2000/OSD in BS2000/OSD Considerations of the Entire System Server Administration Documentation.

- Adjust job control for the Entire System Server SERVER Task.

Edit the example element E.ESYSERV and adjust the library and file names used in it.

```

/.XSRV199          SET-LOGON-PARAMETERS
/ SKIP-COMMANDS   TO-LABEL=START
*-----*
* Run Entire System Server SERVER Task.
*
* Filename / LMS-element-name of this job must be specified in
* startup parameters. It will be started automatically at startup
* of Entire System Server by MAIN Task.
* If Dynamic Server Management is enabled, SERVER Tasks will be
* started dynamically during runtime to handle increasing work
* load.
*-----*
/.START           REMARK
/ MODIFY-JOB-OPTIONS INFORMATION-LEVEL=*MEDIUM, -
/
/ OPERATOR-INTERACTION=*YES, -
/ LOGGING=*PARAMETERS(LISTING=*YES)
/ MODIFY-TEST-OPTIONS DUMP=*YES
/ ASSIGN-SYSLST    TO=$SAG.LST.ESYSERV.199.&($SYSJV.TSN)
/ ASSIGN-SYSLST    TO=$SAG.LST.ESYSERV.199.&($SYSJV.TSN).ZAPS, -
/ SYSLST-NUMBER=1
/ SHOW-JOB-STATUS  JOB-IDENTIFICATION=*OWN
/ ADD-FILE-LINK    LINK-NAME=DDLIB2 ,FILE-NAME=$SAG.NPRnnn.MOD
/ ADD-FILE-LINK    LINK-NAME=BLSLIB00,FILE-NAME=$SAG.NPRnnn.USER.MOD
/ START-PROGRAM    FROM-FILE=*MODULE -
/
/ ( LIBRARY=$SAG.NPRnnn.MOD, -
/ ELEMENT=ESYSERV, -
/ PROGRAM-MODE=*ANY, -
/ RUN-MODE=*ADVANCED ), -
/ MONJV=#ESYSERV.&($SYSJV.TSN)
/ SET-JOB-STEP
/ SHOW-JOB-STATUS  JOB-IDENTIFICATION=*OWN
/ SKIP-COMMANDS   TO-LABEL=OKAY, -
/ IF=JV(COND=(#ESYSERV.&($SYSJV.TSN),1,2) EQ '$T')
/ WRITE-TEXT       TEXT='***** ESYSERV failed *****'
/ SKIP-COMMANDS   TO-LABEL=STOP
/.OKAY            REMARK
/ WRITE-TEXT       TEXT='***** ESYSERV successfully executed *****'
/ SKIP-COMMANDS   TO-LABEL=STOP
/.STOP           REMARK
/ EXIT-JOB        MODE=*NORMAL,SYSTEM-OUTPUT=*NONE

```

This job is used to start the Entire System Server SERVER Tasks. They will be started automatically by the ESY MAIN Task. The location of this job (file or LMS element) and the number of server tasks to be started are specified in startup parameters JOBSERVER and NUMTASK. For a description, see the section Startup Parameters of the Entire System Server Administration Documentation.

It is also possible to run a Dynamic Server Management with ESY. For detailed information, see the section Dynamic Server Management for Entire System Server in the Section Common Entire System Server Features of the Entire System Server Administration Documentation.

- Adjust job control for the Entire System Server Eventing Manager Task.

Edit the example element E.ESYEVTM and adjust the library and file names used in it.

```

/.XEVE199          SET-LOGON-PARAMETERS
/ SKIP-COMMANDS   TO-LABEL=START
*-----*
* Run Entire System Server Eventing Manager Task.          *
*                                                         *
* Filename / LMS-element-name of this job must be specified in *
* startup parameters. It will be started automatically at startup *
* of Entire System Server by MAIN Task.                   *
*-----*
/.START           REMARK
/ MODIFY-JOB-OPTIONS INFORMATION-LEVEL=*MEDIUM, -
/                                                         OPERATOR-INTERACTION=*YES, -
/                                                         LOGGING=*PARAMETERS(LISTING=*YES)
/ MODIFY-TEST-OPTIONS DUMP=*YES
/ ASSIGN-SYSLST   TO=$SAG.LST.ESYEVTM.199.&($SYSJV.TSN)
/ ASSIGN-SYSLST   TO=$SAG.LST.ESYEVTM.199.&($SYSJV.TSN).ZAPS, -
/                                                         SYSLST-NUMBER=1
/ SHOW-JOB-STATUS JOB-IDENTIFICATION=*OWN
/ ADD-FILE-LINK   LINK-NAME=DDLIB2 ,FILE-NAME=$SAG.NPRnnn.MOD
/ ADD-FILE-LINK   LINK-NAME=BLSLIB00,FILE-NAME=$SAG.NPRnnn.USER.MOD
/ START-PROGRAM   FROM-FILE=*MODULE -
/                                                         ( LIBRARY=$SAG.NPRnnn.MOD, -
/                                                         ELEMENT=ESYEVTM, -
/                                                         PROGRAM-MODE=*ANY, -
/                                                         RUN-MODE=*ADVANCED ), -
/                                                         MONJV=#ESYEVTM.&($SYSJV.TSN)
/ SET-JOB-STEP
/ SHOW-JOB-STATUS JOB-IDENTIFICATION=*OWN
/ SKIP-COMMANDS   TO-LABEL=OKAY, -
/                                                         IF=JV(COND=(#ESYEVTM.&($SYSJV.TSN),1,2) EQ '$T')
/ WRITE-TEXT      TEXT='***** ESYEVTM failed *****'
/ SKIP-COMMANDS   TO-LABEL=STOP
/.OKAY           REMARK
/ WRITE-TEXT      TEXT='***** ESYEVTM successfully executed *****'
/ SKIP-COMMANDS   TO-LABEL=STOP
/.STOP          REMARK
/ EXIT-JOB       MODE=*NORMAL,SYSTEM-OUTPUT=*NONE

```

This job is used to start the Entire System Server Eventing Manager Task. It will be started automatically by the MAIN Task at Entire System Server startup if startup parameter EVENTLEN is not 0. The location of this job (file or LMS element) is specified in the startup parameter JOBEVENT. For a description of startup parameters, see the section Startup Parameters of the Entire System Server Administration Documentation.

- Adjust job control for the Entire System Server CONSOLE Task.

Edit the example element E.ESYCONS and adjust the library and file names used in it. With parameter APPL-NAME of the SET-DCAM-APPL-LINK statement in the example job, the name of the DCAM application which will connect to UCON (application \$CONSOLE) is defined. This name must be specified in the BCAM command BCLOSE to end the UCON interface task.

```

/.XCON199          SET-LOGON-PARAMETERS
/ SKIP-COMMANDS   TO-LABEL=START
*-----*
* Run Entire System Server CONSOLE Task.
*
* Filename / LMS-element-name of this job must be specified in
* startup parameters. It will be started automatically at startup
* of Entire System Server by MAIN Task if not running yet.
*
* This service task can be shared by all Entire System Server
* nodes with version ESY 3.1.1 and above running on the same
* BS2000/OSD.
*-----*
/.START          REMARK
/ MODIFY-JOB-OPTIONS INFORMATION-LEVEL=*MEDIUM, -
/
/ OPERATOR-INTERACTION=*YES, -
/ LOGGING=*PARAMETERS(LISTING=*YES)
/ MODIFY-TEST-OPTIONS DUMP=*YES
/ ASSIGN-SYSDTA     TO=*SYSCMD
/ ASSIGN-SYSLST    TO=$SAG.LST.ESYCONS.199.&($SYSJV.TSN)
/ SHOW-JOB-STATUS  JOB-IDENTIFICATION=*OWN
/ SET-DCAM-APPL-LINK LINK-NAME=ESYCONAP,          "must not be changed" -
/ APPLICATION-NAME=ESYCONS2 "may be changed"
/ START-PROGRAM    FROM-FILE=*MODULE -
/                  ( LIBRARY=$SAG.NPRnnn.MOD, -
/                    ELEMENT=ESYCONS, -
/                    PROGRAM-MODE=*ANY, -
/                    RUN-MODE=*ADVANCED ), -
/                  MONJV=#ESYCONS.&($SYSJV.TSN)
CON6,C'CON6'
1009
/ SET-JOB-STEP
/ SHOW-JOB-STATUS  JOB-IDENTIFICATION=*OWN
/ SKIP-COMMANDS    TO-LABEL=OKAY, -
/                  IF=JV(COND=(#ESYCONS.&($SYSJV.TSN),1,2) EQ '$T')
/ WRITE-TEXT       TEXT='***** ESYCONS failed *****'
/ SKIP-COMMANDS    TO-LABEL=STOP
/.OKAY            REMARK
/ WRITE-TEXT       TEXT='***** ESYCONS successfully executed *****'
/ SKIP-COMMANDS    TO-LABEL=STOP
/.STOP           REMARK
/ EXIT-JOB         MODE=*NORMAL,SYSTEM-OUTPUT=*NONE

```

This job is used to start the UCON interface task (CONSOLE Task) of Entire System Server. It will be started automatically by the MAIN Task at Entire System Server startup, if it is not yet active in the system and if startup parameter CONACCESS is not NONE. The location of this job (file or LMS element) is specified in the startup parameter JOBCONS. For a description of startup parameters, see the section Startup Parameters of the Entire System Server Administration Documentation.

The parameters of program ESYCONS must be specified in the following order:

- Authorization for connection to UCON (connection message)
- Size of table for collecting console messages in number of messages.

You are recommended to use one of the following values as number of messages in order to optimize memory usage: 132 (64K), 424 (128K), 717 (192K), 1009 (256K).

- Adjust job control for the Entire System Server Shutdown Program.

Edit the example element E.ESYSTOP and adjust the library and file names used in it.

```

/.ESYSTOP          SET-LOGON-PARAMETERS
/ SKIP-COMMANDS    TO-LABEL=START
*-----*
* Execute ESYSTOP to shutdown Entire System Server.          *
*-----*

/.START REMARK
/ MODIFY-JOB-OPTIONS INFORMATION-LEVEL=*MEDIUM, -
/                      OPERATOR-INTERACTION=*YES, -
/                      LOGGING=*PARAMETERS(LISTING=*YES)
/ MODIFY-TEST-OPTIONS DUMP=*YES
/ ASSIGN-SYSDTA       TO=*SYSCMD
/ ASSIGN-SYSLST       TO=$SAG.LST.ESYSTOP.199.&($SYSJV.TSN)
/ SHOW-JOB-STATUS     JOB-IDENTIFICATION=*OWN
/ ADD-FILE-LINK       LINK-NAME=DDLIB2 ,FILE-NAME=$SAG.NPRnnn.MOD
/ ADD-FILE-LINK       LINK-NAME=BLSLIB00,FILE-NAME=$SAG.NPRnnn.USER.MOD
/ START-PROGRAM       FROM-FILE=*MODULE -
/                      ( LIBRARY=$SAG.NPRnnn.MOD, -
/                      ELEMENT=ESYSTOP, -
/                      PROGRAM-MODE=*ANY, -
/                      RUN-MODE=*ADVANCED ), -
/                      MONJV=#ESYSTOP.&($SYSJV.TSN)
--JNAME XCOM199
/ SET-JOB-STEP
/ SHOW-JOB-STATUS     JOB-IDENTIFICATION=*OWN
/ SKIP-COMMANDS       TO-LABEL=OKAY, -
/                      IF=JV(COND=(#ESYSTOP.&($SYSJV.TSN),1,2) EQ '$T')
/ WRITE-TEXT          TEXT='***** ESYSTOP failed *****'
/ SKIP-COMMANDS       TO-LABEL=STOP
/ .OKAY               REMARK
/ WRITE-TEXT          TEXT='***** ESYSTOP successfully executed *****'
/ SKIP-COMMANDS       TO-LABEL=STOP
/ .STOP               REMARK
/ EXIT-JOB            MODE=*NORMAL,SYSTEM-OUTPUT=*NONE

```

This job should be used to shutdown the Entire System Server.

See the subsection Shutdown of Entire System Server on BS2000/OSD in the Section BS2000/OSD Considerations of the Entire System Server Administration Documentation for more details.

- Adjust job control for the Entire System Server Trace Program.

Edit the example element E.ESYTRACE and adjust the library and file names used in it.

```

/.ESYTRACE          SET-LOGON-PARAMETERS
/ SKIP-COMMANDS     TO-LABEL=START
*-----*
* Execute ESYTRACE to run Entire System Server TRACE analyzer. *
*-----*
/.START             REMARK
/ MODIFY-JOB-OPTIONS INFORMATION-LEVEL=*MEDIUM, -
/                  OPERATOR-INTERACTION=*YES, -
/                  LOGGING=*PARAMETERS(LISTING=*YES)
/ MODIFY-TEST-OPTIONS DUMP=*YES
/ ASSIGN-SYSDTA     TO=*SYSCMD
/ ASSIGN-SYSLST     TO=$SAG.LST.ESYTRACE.199.&($SYSJV.TSN)
/ SHOW-JOB-STATUS  JOB-IDENTIFICATION=*OWN
/ CREATE-FILE       FILE-NAME=$SAG.NPRnnn.TROU.199, -
/                  SUPPORT=*PUBLIC-DISK -
/                  ( SPACE=*RELATIVE -
/                    ( PRIMARY-ALLOCATION = 12, -
/                      SECONDARY-ALLOCATION = 12 ) )
/ SET-JOB-STEP
/ ADD-FILE-LINK     LINK-NAME=TRIN      ,FILE-NAME=$SAG.NPRnnn.TRAC.199
/ ADD-FILE-LINK     LINK-NAME=TROUT    ,FILE-NAME=$SAG.NPRnnn.TROU.199
/ ADD-FILE-LINK     LINK-NAME=DDLIB2   ,FILE-NAME=$SAG.NPRnnn.MOD
/ ADD-FILE-LINK     LINK-NAME=BSLIB00  ,FILE-NAME=$SAG.NPRnnn.USER.MOD
/ START-PROGRAM     FROM-FILE=*MODULE -
/                  ( LIBRARY=$SAG.NPRnnn.MOD, -
/                    ELEMENT=ESYTRACE, -
/                    PROGRAM-MODE=*ANY, -
/                    RUN-MODE=*ADVANCED ), -
/                  MONJV=#ESYTRACE.&($SYSJV.TSN)
199 --POLL
/ SET-JOB-STEP
/ SHOW-JOB-STATUS  JOB-IDENTIFICATION=*OWN
/ SKIP-COMMANDS     TO-LABEL=OKAY, -
/                  IF=JV(COND=(#ESYTRACE.&($SYSJV.TSN),1,2) EQ '$T')
/ WRITE-TEXT        TEXT='***** ESYTRACE failed *****'
/ SKIP-COMMANDS     TO-LABEL=STOP
/.OKAY              REMARK
/ WRITE-TEXT        TEXT='***** ESYTRACE successfully executed *****'
/ SKIP-COMMANDS     TO-LABEL=STOP
/.STOP              REMARK
/ EXIT-JOB          MODE=*NORMAL,SYSTEM-OUTPUT=*NONE

```

This job is used to run program ESYTRACE. It analyzes the TRACE data of Entire System Server if startup parameter "TRACE = YES" is defined. In order to start ESYTRACE in Monitor mode, parameter line "199 --POLL" is specified. The assignment of LINK-NAME TRIN is not needed here, because all data are read from memory pool only. The analyzed and edited TRACE data will be written to the file assigned by LINK-NAME TROUT.

This task must be stopped explicitly with operator command QUIT due to argument "--POLL".

For more information, see section Creating Trace Data in the Entire System Server in the Section Common Entire System Server Features of the Entire System Server Administration Documentation.