

Entire System Server

Installation and Customization

Version 3.7.1

October 2022

This document applies to Entire System Server Version 3.7.1 and all subsequent releases.

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

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1 About this Documentation

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Document Conventions

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

Online Information and Support

Software AG Documentation Website

You can find documentation on the Software AG Documentation website at <https://documentation.softwareag.com>.

Software AG Empower Product Support Website

If you do not yet have an account for Empower, send an email to empower@softwareag.com with your name, company, and company email address and request an account.

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- Access articles, code samples, demos, and tutorials.
- Use the online discussion forums, moderated by Software AG professionals, to ask questions, discuss best practices, and learn how other customers are using Software AG technology.
- Link to external websites that discuss open standards and web technology.

Data Protection

Software AG products provide functionality with respect to processing of personal data according to the EU General Data Protection Regulation (GDPR). Where applicable, appropriate steps are documented in the respective administration documentation.

2 Installation and Customization

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 z/OS* Describes how to install the Entire System Server under the z/OS operating system.
- Installation for z/VSE* Describes how to install the Entire System Server under the z/VSE operating systems.
- Installation for BS2000* Describes how to install the Entire System Server under the BS2000 operating system.

3 Introduction

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

- Natural version 8.2.7 or above;
- Adabas version 8.4.2 or above;
- Entire System Server Interface (provided with Natural);
- Entire Net-Work Version 6.4.1 or above (optional, for multi-CPU Support);
- Natural ISPF Version 8.2.7 or above (optional);
- Predict Version 8.4.2 or above (optional).

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

- z/OS Version 2.3 or above;
- BS2000 Version 10 or above.

Notes:

- Software AG provides Entire System Server support for the operating system versions supported by their respective manufacturers. Generally, when an operating system provider stops supporting a version of an operating system, Software AG will stop supporting that operating system version.

- Although it may be technically possible to run a new version of Entire System Server on an old operating system, Software AG cannot continue to support operating system versions that are no longer supported by the system's provider.

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.

4 Installation for z/OS

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

Installation Medium

The installation medium contains the datasets listed in the table below. The sequence of the datasets is shown in the **Software AG Product Delivery Report** which accompanies the installation tape.

If used in the following document, the notation *vrs* or *vr* stands for the relevant **version, release, system maintenance level number** of the product.

Dataset Name	Contents
MLC <i>vrs</i> .JOBS	Sample job library for Software AG's mainframe license check software Note: 1. The acronym <i>vrs</i> in the library name represents the version of the license check software, not the version of the Entire System Server. 2. For more information on the license check software, see <i>Software AG Mainframe Product Licensing</i> .
MLC <i>vrs</i> .LOAD	Load library for Software AG's mainframe license check software including the LICUTIL license utility Note: 1. The acronym <i>vrs</i> in the library name represents the version of the license check software, not the version of the Entire System Server. 2. For more information on the license check software, see <i>Software AG Mainframe Product Licensing</i> .
NPR <i>vrs</i> .JOBS	Entire System Server installation jobs
NPR <i>vrs</i> .LOAD	Entire System Server load library
NPR <i>vrs</i> .SRCE	Entire System Server source library
NPR <i>vrs</i> .INPL	Entire System Server DDMs, a tutorial and error messages
NPR <i>vrs</i> .DATA	Predict data for the Entire System Server
NPR <i>vrs</i> .LICS	Product license file For more information on the license check software, see <i>Software AG Mainframe Product Licensing</i> .

How to Copy Data Sets from Tape to Disk

Copy the data sets from the supplied installation medium to your disk before you perform the individual installation procedure for each component to be installed.

The way you copy the data sets depends on the installation method and the medium used:

- If you use System Maintenance Aid (SMA), refer to the copy job instructions provided in the *System Maintenance Aid* documentation.
- If you are not using SMA and want to copy the data sets from CD-ROM, refer to the README.TXT file on the CD-ROM.
- If you are not using SMA and want to copy the data sets from tape, follow the instructions in this section.

This section explains how to copy all data sets from tape to disk.

- [Step 1: Copy Data Set COPY.JOB from Tape to Disk](#)
- [Step 2: Modify hilev.COPY.JOB on Your Disk](#)
- [Step 3: Submit COPY.JOB](#)

Step 1: Copy Data Set COPY.JOB from Tape to Disk

- Modify the following sample job according to your requirements:

```
//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-volser),
// LABEL=(2,SL)
//SYSUT2 DD DSN=hilev.COPY.JOB,
// DISP=(NEW,CATLG,DELETE),
// UNIT=3390,VOL=SER=disk-volser,
// SPACE=(TRK,(1,1),RLSE),
// DCB=*.SYSUT1
//SYSPRINT DD SYSOUT=*
//SYSIN DD DUMMY
//
```

where:

tape-volser is the VOLSER of the tape, for example: T12345,
hilev is a valid high-level qualifier, and
disk-volser is the VOLSER of the disk.

- Execute the job to copy the data set COPY.JOB to your disk.

Step 2: Modify hilev.COPY.JOB on Your Disk

- Modify *hilev.COPY.JOB* according to your requirements:

Set EXPDT to a valid expiration date, for example, 99365.

Set HILEV to a valid high-level qualifier, for example, USERLIB.

Set LOCATION to a storage location, for example, STORCLAS=ABC or UNIT=3390 ,VOL=SER=USR123.

Step 3: Submit COPY.JOB

- Execute *hilev.COPY.JOB* to copy single, multiple, or all data sets to your disk.

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

(Job I061, Step 1100)

Use the Natural system command INPL (which is described in the Natural System Commands documentation) in order to load the Entire System Server system objects (dataset *NPRvrs.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)

Step 3: Change the Natural Parameter Module

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

```
ASIZE=64
NTDB PROCESS,148
```

`ASIZE` specifies the size of the auxiliary buffer. The range of possible values for this parameter depends on the version of Natural. For example, for version 4.2 and below the minimum value is 36 KB and the maximum value is 64 KB (but you are recommended to specify a value of at least 48 KB). For version 8.2 the minimum value is 64 KB and the maximum value is 512 KB. For other versions, see section *ASIZE - Entire System Server Auxiliary Buffer* in the *Parameter Reference* chapter of the current Natural for Mainframes documentation.

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 *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 earlier Entire System Server version running in production using node ID 148, and specify `NODE=199` in the startup parameter for the current version during installation and test.

Ensure the Natural profile/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 documentation for mainframes.

- `NATPNIP` contains the following parameters and defaults:

BUFLen=8192	Length of <i>all</i> 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` into the Entire System Server target library. (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 documentation for mainframes.

Step 5: Load the Predict DATA File

(Job I200, Step 1100)

This step is optional.

All Entire System Server views have been documented in Software AG's repository Predict. The `NPRvrs.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).

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 `NPRvrs.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 `IEAAPFxx` in library `SYS1.PARMLIB`. You may also use the `APF` statement in a `PROGxx` `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 startup time the following message appears on the console:

```
ESY0050W ENTIRE SYSTEM SERVER IS N O T 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.

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 load libraries must be concatenated and APF-authorized:

```
//NATPROCS PROC
//*****
//* Entire System Server Start-up Procedure
//*
//* Make the following substitutions
//*
//*   &NPRSRCE - Entire System Server source library
//*   &NPRLOAD - Entire System Server load library
//*   &ADALOAD - Adabas load library
//*   &MLCLOAD - Mainframe license check load library
//*   &NPRLICS - License Key File
//*
//* Define the libraries in the steplib as APF authorized.
//* Adapt all necessary parameters (see DD-CARD 'PARMS').
//*
//*****
//          EXEC PGM=NPRINIT,REGION=3M,TIME=1440
//STEPLIB DD DSN=&NPRLOAD,DISP=SHR
//          DD DSN=&ADALOAD,DISP=SHR
//          DD DSN=&MLCLOAD,DISP=SHR
//LICENSE DD DSN=&NPRLICS,DISP=SHR
//LICREP  DD SYSOUT=X
//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.

Also, the license necessary to run the Entire System Server is verified.

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=*
//
```

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 parameter `199 --POLL` is specified. The assignment of `DDNAME TRACEIN` is not needed here, because all data is 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 *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, 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.

Exit Name	Description	Parameters	Upon Return:
VTMVRACF	VTAM command validation	1. COMMAND (A80) 2. 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 copybook 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 *Setting Up RACF Security for Operator Commands on z/OS* in the section *z/OS Considerations* of the Entire System Server *Administration* documentation.

Step 13: 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=NODEvrs.SVCsss,DISP=SHR
```

where *vrs* 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 14: E-Mail Client Requirements

SEND-EMAIL view requires Domain Naming Services to resolve the local host name and the E-Mail target host. In order to get the required Domain Naming Service running properly, a SYSTCPD DD card may be required in the Entire System Server started task to specify your installation TCPIP.DATA data set. Contact your network administrator to determine if and how the SYSTCPD DD statement should be coded in order to run DNS properly.

The Entire System Server Started Task and all users requesting SEND-EMAIL view must be defined with a proper user ID for z/OS UNIX. Error message *ESY5897 Mailer response: errno 0156 in EZASMI INITAPI* reporting errno 156 (EMVSINITIAL) is returned as ERROR-TEXT if the requesting user ID is not properly defined for z/OS UNIX. This error message is also issued if the MAXPROCUSER limit of z/OS Unix has been exceeded. In this case a higher value for MAXPROCUSER needs to be specified in the BPXPRMxx parmlib member.

For more information about E-Mail administration, see the *Run E-Mail Client* in the section *Common Entire System Server Features* in the *Entire System Server Administration* documentation.

Step 15: Requirements for View SYSTEM-COMMAND

TSO/E commands issued by the SYSTEM-COMMAND view are now executed in an APPC/MVS transaction outside the Entire System Server address space. This transaction, its associated resources and their properties must be defined to APPC/MVS and VTAM.

For details of the required APPC/MVS definitions, see *APPC/MVS Definitions for the SYSTEM-COMMAND View* in the section *z/OS Considerations* in the *Entire System Server Administration* documentation.

Step 16: 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. 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 task started by the Entire System Server in your

Security system. Contact your RACF/ACF2/TOP-SECRET administrator for assistance.

4. Check the RMODE of ADALNK in Adabas load lib which is used in Started Task JCL (see step 9). The RMODE must be RMODE(24).

5 Installation for z/VSE

- Installation Tape 26
- Installation Procedure 28

We recommend reading this section from beginning to end before starting the installation process.

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.

If used in the following document, the notation *vrs* or *vr* stands for the relevant version, release, system maintenance level number of the product.

Dataset Name	Contents
MLC <i>vrs</i> .LIBJ	Sample job library for Software AG's mainframe license check software. Note: 1. The acronym <i>vrs</i> in the library name represents the version of the license check software, not the version of the Entire System Server. 2. For more information on the license check software, see <i>Software AG Mainframe Product Licensing</i> .
MLC <i>vrs</i> .LIBR	Load library for Software AG's mainframe license check software including the LICUTIL license utility Note: 1. The acronym <i>vrs</i> in the library name represents the version of the license check software, not the version of the Entire System Server. 2. For more information on the license check software, see <i>Software AG Mainframe Product Licensing</i> .
NPR <i>vrs</i> .LIBJ	Entire System Server installation jobs.
NPR <i>vrs</i> .LIBR	Entire System Server load library.
NPR <i>vrs</i> .INPL	Entire System Server DDMs, a tutorial and error messages.
NPR <i>vrs</i> .DATA	Predict data for the Entire System Server.
NPR <i>vrs</i> .LICS	Product license file. For more information on the license check software, see <i>Software AG Mainframe Product Licensing</i> .

How to Copy Data Sets from Tape to Disk

Copy the data sets from the supplied installation medium to your disk before you perform the individual installation procedure for each component to be installed.

The way you copy the data sets depends on the installation method and the medium used:

- If you use System Maintenance Aid (SMA), refer to the copy job instructions provided in the *System Maintenance Aid* documentation.
- If you are not using SMA and want to copy the data sets from CD-ROM, refer to the README.TXT file on the CD-ROM.
- If you are not using SMA and want to copy the data sets from tape, follow the instructions in this section.

This section explains how to copy the data sets .LIBJ, .LIBR and .LICS (if supplied) from tape to disk. All other data sets can be installed directly from the tape.

- [Step 1: Copy Data Set COPYTAPE.JOB to Disk](#)
- [Step 2: Modify COPYTAPE.JOB on Your Disk](#)
- [Step 3: Submit COPYTAPE.JOB](#)

Step 1: Copy Data Set COPYTAPE.JOB to Disk

- Modify the following sample job according to your requirements:

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

where:

nnn is the tape address, and

lib.sublib is the library and sublibrary in which the data set `COPYTAPE.JOB` is to be stored.

- Execute the job to copy the data set `COPYTAPE.JOB` to disk.

`COPYTAPE.JOB` contains the JCL required to copy the data sets `.LIBJ`, `.LIBR` and `.LICS` from tape to disk.

Step 2: Modify `COPYTAPE.JOB` on Your Disk

- Modify `COPYTAPE.JOB` according to your requirements and set the disk space parameters as appropriate.

Step 3: Submit `COPYTAPE.JOB`

- Execute `COPYTAPE.JOB` to copy the data sets `.LIBJ`, `.LIBR` and `.LICS` to your disk.

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

(Job I061, Step 1100)

Use the Natural system command `INPL` (which is described in the Natural System Command Reference documentation) in order to load the Entire System Server system objects (dataset `NPRvrs.INPL`).

This loads the following libraries:

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

Step 3: Change the Natural Parameter Module

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

```
ASIZE=64
NTDB PROCESS,148
```

`ASIZE` specifies the size of the auxiliary buffer. The range of possible values for this parameter depends on the version of Natural. For example, for version 4.2 and below the minimum value is 36 KB and the maximum value is 64 KB (but you are recommended to specify a value of at least 48 KB). For version 8.2 the minimum value is 64 KB and the maximum value is 512 KB. For other versions, see section *ASIZE - Entire System Server Auxiliary Buffer* in the *Parameter Reference* chapter of the current Natural for Mainframes documentation.

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 earlier Entire System Server version running in production using node ID 148, and specify `NODE=199` in the startup parameter for the current version 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 z/VSE, you must install the Entire System Server Interface as described in the section *Installing the Entire System Server Interface* in the Natural Installation documentation 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 documentation for mainframes.

`NATPNIP` contains the following parameters and defaults:

Parameter	Explanation
BUFLN=8192	Length of <i>all</i> 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* documentation 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 `NPRvrs.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* documentation for mainframes.

Step 5: Load the Predict DATA File

(Job I200, Step 1100)

This step is optional.

All Entire System Server views have been documented in Software AG's repository Predict. The `NPRvrs.DATA` dataset on the installation tape contains these Predict view descriptions that can be loaded with the `MIGRATE/COORDINATOR` utility in Predict.

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

If, however, you have already loaded these descriptions from an earlier version 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 to load the dataset NPRvrs.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: Edit Entire System Server JCL Procedure

```
* $$ JOB JNM=ESY,CLASS=6,DISP=D
* $$ LST CLASS=A,DISP=H,RBS=500
// JOB ESYvrs
// OPTION LOG,DUMP
* *****
* Entire System Server v.r.s *
* *****
// LIBDEF PHASE,SEARCH=(SAGLIB.ADA,SAGLIB.NPR,SAGLIB.MLCvrs)
// DLBL LICENSE,'/SAGLIB/USERLIB/NPRvrs.LICS'
// EXEC NPRINIT,SIZE=3072K
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 (z/VSE)
/*
// EXEC LISTLOG
/*
/&
* $$ EOJ
```

As Entire System Server uses z/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 z/VSE 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* in the *Entire System Server Administration* documentation for a list of all available startup parameters.

Also, the license necessary to run the Entire System Server is verified.

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
* $$ PUN CLASS=A,DISP=D
// JOB jobname comment
// LIBDEF PHASE,SEARCH=(NPRSYS.NPRvrs)
// OPTION LOG,LOGSRC,DUMP,NOSYSDUMP
// EXEC ESYTRACE,PARM='199 --DISPL --NTROUT --POLL'
// EXEC LISTLOG
/*
/&
* $$ 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 `NPRSTUB2` must be loaded into the SVA; see [Step 9 \(Optional\): Load NPRSTUB2 for ESYTRACE MONITOR-MODE](#)). The assignment of `DLBL TRACIN/SYS001` is not needed here, because all data is 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 NPRSTUB2 for ESYTRACE MONITOR-MODE

If you wish to use the MONITOR-MODE of the ESYTRACE program, you must first install the NPRSTUB2 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.

 **Important:** You cannot monitor a running ESY session if the NPRSTUB2 module has not been previously loaded.

The following is a sample job to load the NPRSTUB2 module in the SVA; it must be run in the BG partition:

```
* $$ JOB JNM=NPRSTUB2,CLASS=0,DISP=D,LDEST=(,USER)
* $$ LST DISP=D,CLASS=A
// JOB NPRSTUB2
// LIBDEF *,SEARCH=(SAGLIB.NPRvrs)
SET SDL
NPRSTUB2,SVA
/*
/&
* $$ EOJ
```

Alternatively, you may add the NPRSTUB2,SVA statement to the ADASIP job that runs at IPL.

The module is slightly over 2 KB in length and is loaded above the 16 MB 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: 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 the 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` in the Com-plete *System Programmer's* documentation applies here.

Note the following:

- The `COMBTCH` 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, 'NODEvrs.SVCsss'
```

where `vrs` 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.

Step 12: E-Mail Client Requirements

`SEND-EMAIL` view requires Domain Naming Services to resolve the local host name and the E-Mail target host. In addition, the `EZASMI` interface used requires that a `DEFINE NAME` parameter be specified in the startup parameters for CSI's (and IBM's) TCP/IP stack.

If the TCP/IP job uses an ID which is not equal 00 like:

```
// EXEC IPNET,SIZE=IPNET,PARM='ID=nn,...'
```

the JCL of the Entire System Server requires the statement:

```
// OPTION SYSPARM='nn'
```

where `nn` is the ID specified in the TCP/IP job.

For more information about E-Mail administration, see *Run E-Mail Client* in the section *Common Entire System Server Features* in the *Entire System Server Administration* documentation.

Step 13: Dataspace Requirements

The following information is required only if CA-Dynam/D is active.

To minimize VTOC resource conflict, Entire System Server will now use a dataspace for every VTOC view request. This may require updating to the `VSIZE` and `SYSDEF` statements.

For each active VTOC user, a minimum of 256 KB per data space is required, which allows for approximately 1820 VTOC entries per disk volume. If this number is exceeded, then another 256 KB is obtained. Use these figures to modify the `VSIZE` and `SYSDEF` statements as needed.

Step 14: 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: Natural Security Considerations](#)).
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. During initialization, after message `ESYI0020 INITIALIZATION STARTED FOR FILEID TABLE` has been issued, message `4228I` may be issued against VSAM files defined in labels, with various reason texts. This behavior is normal, and is caused by a VSE Librarian test. These messages may be safely ignored.

6 Installation for BS2000

- Installation Tape 38
- Installation Procedure 40

We recommend reading this section from beginning to end before starting the installation process.

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.

If used in the following document, the notation *vrs* or *vr* stands for the relevant version, release, system maintenance level number of the product.

Dataset Name	Contents
MLC <i>vrs</i> .JOBS	<p>Sample job library for Software AG's mainframe license check software.</p> <p>Note:</p> <ol style="list-style-type: none"> 1. The acronym <i>vrs</i> in the library name represents the version of the license check software, not the version of the Entire System Server. 2. For more information on the license check software, see <i>Software AG Mainframe Product Licensing</i>.
MLC <i>vrs</i> .MOD	<p>Load library for Software AG's mainframe license check software including the LICUTIL license utility</p> <p>Note:</p> <ol style="list-style-type: none"> 1. The acronym <i>vrs</i> in the library name represents the version of the license check software, not the version of the Entire System Server. 2. For more information on the license check software, see <i>Software AG Mainframe Product Licensing</i>.
NPR <i>vrs</i> .JOBS	Entire System Server installation jobs.
NPR <i>vrs</i> .MOD	Entire System Server load library.
NPR <i>vrs</i> .SRC	Entire System Server source library.
NPR <i>vrs</i> .INPL	Entire System Server DDMs, a tutorial and error messages.
NPR <i>vrs</i> .DATA	Predict data for the Entire System Server.
NPR <i>vrs</i> .LICS	<p>Product license file</p> <p>For more information on the license check software, see <i>Software AG Mainframe Product Licensing</i>.</p>

How to Copy Data Sets from Tape to Disk

Copy the files (data sets) from the supplied installation medium to your disk before you perform the individual installation procedure for each component to be installed.

The way you copy the files depends on the installation method and the medium used:

- If you want to copy the files from CD-ROM, refer to the *README.TXT* file on the CD-ROM.
- If you want to copy the files from tape, follow the instructions in this section.

This section explains how to copy all files from tape to disk.

- [Step 1: Copy Library SRVvrs.LIB from Tape to Disk](#)
- [Step 2: Copy the Procedure COPY.PROC from Tape to Disk](#)
- [Step 3: Copy all Product Files from Tape to Disk](#)

Step 1: Copy 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 *Software AG Product Delivery Report*.

- Execute the following commands to convert *SRVvrs.LIBS* into an LMS library:

```
/IMPORT-FILE  SUPPORT=*TAPE(FILE-NAME=SRVvrs.LIBS,-
/  VOLUME=volses, 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, and
volses is the VOLSER of the tape (see the *Software AG Product Delivery Report*).

Step 2: Copy the Procedure COPY.PROC from Tape to Disk

- Call the procedure P.COPYTAPE in the library SRVvrs.LIB to copy the procedure COPY.PROC to disk:

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

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

Step 3: Copy all Product Files from Tape to Disk

- Enter the procedure COPY.PROC to copy all product files to disk:

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

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

The result of this procedure is written to the file L.REPORT.SRV.

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 the libraries SYSNPE and SYSNPR from your existing installation. Otherwise, skip this step.

Step 2: Load the INPL File

(Job I061, Step 1100)

Use the Natural system command INPL (which is described in the *Natural System Commands* documentation) in order to load the Entire System Server system objects (dataset NPRvrs.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)

Step 3: Change the Natural Parameter Module

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

```
ASIZE=64
NTDB PROCESS,148
```

`ASIZE` specifies the size of the auxiliary buffer. The range of possible values for this parameter depends on the version of Natural. For example, for version 4.2 and below the minimum value is 36 KB and the maximum value is 64 KB (but you are recommended to specify a value of at least 48 KB). For version 8.2 the minimum value is 64 KB and the maximum value is 512 KB. For other versions, see section *ASIZE - Entire System Server Auxiliary Buffer* in the *Parameter Reference* chapter of the current Natural for Mainframes documentation.

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 *Multiple Entire System Server Node Support* in the section *Using the Entire System Server* in 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 earlier Entire System Server Version running in production using node ID 148, and specify `NODE=199` in the startup parameter for the current version 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 documentation for mainframes.

NATPNIP contains the following parameters and defaults:

Parameter	Explanation
BUFL EN=8192	Length of <i>all</i> 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 <i>openUTM</i> , value USER should be used to ship Natural's *USER to Entire System Server. When running in BATCH mode or under 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* documentation 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 2.3.4 and above. For further information, see Installing the Entire System Server Interface in the Natural Installation documentation for mainframes.

Step 5: Load the Predict DATA File

(Job I200, Step 1100)

This step is optional.

All Entire System Server views have been documented in Software AG's repository Predict. The `NPRvrs.DATA` dataset on the installation medium contains these Predict view descriptions that can be loaded with the `MIGRATE/COORDINATOR` utility in Predict.

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 to load the dataset NPRvrs.DATA.

Step 6: Natural Security Considerations

If Natural Security is installed, define the 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 NPRvrs.SRC 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* in the Entire System Server *Administration* documentation.

Step 8: Edit the Entire System Server Jobs

1. Adjust job control for the Entire System Server ESYMAIN 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 ESYMAIN 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.NPRvrs.CLOG.199, -
/                SUPPORT=*PUBLIC-DISK -
/                ( SPACE=*RELATIVE -

```

```

/          ( PRIMARY-ALLOCATION  = 12, -
/          SECONDARY-ALLOCATION = 12 ) )
/ SET-JOB-STEP
/ CREATE-FILE      FILE-NAME=$SAG.NPRvrs.LICREP.199, -
/                  SUPPORT=*PUBLIC-DISK -
/                  ( SPACE=*RELATIVE -
/                  ( PRIMARY-ALLOCATION  = 12, -
/                  SECONDARY-ALLOCATION = 12 ) )
/ SET-JOB-STEP
/ CREATE-FILE      FILE-NAME=$SAG.NPRvrs.TRAC.199, -
/                  SUPPORT=*PUBLIC-DISK -
/                  ( SPACE=*RELATIVE -
/                  ( PRIMARY-ALLOCATION  = 12, -
/                  SECONDARY-ALLOCATION = 12 ) )
/ SET-JOB-STEP
/ ADD-FILE-LINK    LINK-NAME=BLSLIB00,FILE-NAME=$SAG.NPRvrs.USER.MOD
/ ADD-FILE-LINK    LINK-NAME=CLOG      ,FILE-NAME=$SAG.NPRvrs.CLOG.199
/ ADD-FILE-LINK    LINK-NAME=DDLIB     ,FILE-NAME=$SAG.ADAvrs.MOD
/ ADD-FILE-LINK    LINK-NAME=DDLIB2    ,FILE-NAME=$SAG.NPRvrs.MOD
/ ADD-FILE-LINK    LINK-NAME=LICENSE   ,FILE-NAME=$SAG.NPRvrs.LICS
/ ADD-FILE-LINK    LINK-NAME=LICREP    ,FILE-NAME=$SAG.NPRvrs.LICREP.199
/ ADD-FILE-LINK    LINK-NAME=MLCLIB    ,FILE-NAME=$SAG.MLCvrs.MOD
/ ADD-FILE-LINK    LINK-NAME=PARMS     ,FILE-NAME=$SAG.NPRvrs.PARM.199
/ ADD-FILE-LINK    LINK-NAME=TRACE     ,FILE-NAME=$SAG.NPRvrs.TRAC.199
/ START-PROGRAM    FROM-FILE=*MODULE -
/                  ( LIBRARY=$SAG.NPRvrs.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* in the *Entire System Server Administration* documentation.

Also, the license necessary to run the Entire System Server is verified.

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 `ESYMAIN` 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 under *Library Concept on BS2000 for Entire System Server* in the section *BS2000 Considerations* in the *Entire System Server Administration* documentation.

More information about running Entire System Server on BS2000 is available under *Details for Running Entire System Server on BS2000* in the section *BS2000 Considerations* in the *Entire System Server Administration* documentation.

2. Adjust job control for the Entire System Server `ESYSERV` 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 ESYSERV 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 ESYMAIN Task.                *
* If Dynamic Server Management is enabled, ESYSERV 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=LST.ESYSERV.199.&($SYSJV.TSN)
/ ASSIGN-SYSLST    TO=LST.ESYSERV.199.&($SYSJV.TSN).ZAPS, -
/                                                         SYSLST-NUMBER=1
/ SHOW-JOB-STATUS JOB-IDENTIFICATION=*OWN
/ ADD-FILE-LINK    LINK-NAME=DDLIB2 ,FILE-NAME=$SAG.NPRvrs.MOD
/ ADD-FILE-LINK    LINK-NAME=BLSLIB00,FILE-NAME=$SAG.NPRvrs.USER.MOD
/ START-PROGRAM    FROM-FILE=*MODULE -
/                                                         ( LIBRARY=$SAG.NPRvrs.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 ESYSERV Tasks. They will be started automatically by the ESYMAIN 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* in the Entire System Server *Administration* documentation.

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

3. 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=$SAG.NPRvrs.MOD
/ ADD-FILE-LINK    LINK-NAME=BLSLIB00,FILE-NAME=$SAG.NPRvrs.USER.MOD
/ START-PROGRAM    FROM-FILE=*MODULE -
/                ( LIBRARY=$SAG.NPRvrs.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` in the Entire System Server *Administration* documentation.

4. 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 uniquely defined for every Entire System Server running in the same host.

```

/.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.          *
*-----*
/.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)
/ ASSIGN-SYSLST      TO=$SAG.LST.ESYCONS.199.&($SYSJV.TSN).ZAPS, -
/                SYSLST-NUMBER=1
/ SHOW-JOB-STATUS    JOB-IDENTIFICATION=*OWN
/ ADD-FILE-LINK      LINK-NAME=DDLIB2 ,FILE-NAME=$SAG.NPRvrs.MOD
/ SET-DCAM-APPL-LINK LINK-NAME=ESYCONAP,          "must not be changed" -
/                APPLICATION-NAME=ESYCONS2 "may be changed"

```

```

/ START-PROGRAM      FROM-FILE=*MODULE -
/                   ( LIBRARY=$SAG.NPRvrs.MOD, -
/                   ELEMENT=ESYCONS, -
/                   PROGRAM-MODE=*ANY, -
/                   RUN-MODE=*ADVANCED ), -
/                   MONJV=#ESYCONS.&($SYSJV.TSN)CON6,C'CON6'
/ 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

```

5. 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 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 *Startup Parameters* in the Entire System Server *Administration* documentation.

Authorization for connection to UCON (connection message) must be specified as parameter of the program ESYCONS.

6. 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=$SAG.NPRvrs.MOD
/ ADD-FILE-LINK      LINK-NAME=BLSLIB00,FILE-NAME=$SAG.NPRvrs.USER.MOD
/ START-PROGRAM      FROM-FILE=*MODULE -
/                   ( LIBRARY=$SAG.NPRvrs.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. For further information,

see *Shutdown of Entire System Server on BS2000* in the section *BS2000 Considerations* in the *Entire System Server Administration* documentation.

7. 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=$SAG.NPRvrs.TROU.199, -
/ SUPPORT=*PUBLIC-DISK -
/ ( SPACE=*RELATIVE -
/ ( PRIMARY-ALLOCATION = 12, -
/ SECONDARY-ALLOCATION = 12 ) )
/ SET-JOB-STEP
/ ADD-FILE-LINK LINK-NAME=TRIN ,FILE-NAME=$SAG.NPRvrs.TRAC.199
/ ADD-FILE-LINK LINK-NAME=TROUT ,FILE-NAME=$SAG.NPRvrs.TROU.199
/ ADD-FILE-LINK LINK-NAME=DDLIB2 ,FILE-NAME=$SAG.NPRvrs.MOD
/ ADD-FILE-LINK LINK-NAME=BLSLIB00,FILE-NAME=$SAG.NPRvrs.USER.MOD
/ START-PROGRAM FROM-FILE=*MODULE -
/ ( LIBRARY=$SAG.NPRvrs.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 is 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 further information, see *Creating Trace Data in the Entire System Server* in the section *Common Entire System Server Features* in the *Entire System Server Administration* documentation.

8. Adjust job control for the Entire System Server E-Mail Manager Task

There are job control examples to run the Entire System Server E-Mail Manager Task based on IP Version 4 or IP Version 6. Please contact your network administrator to determine which IP version is used. The job control for the Entire System Server E-Mail Manager Task based on IP Version 4 is available in the sample element E.ESYMAIL4, the job control for the Entire System Server E-Mail Manager Task based on IP Version 6 is available in the sample element E.ESYMAIL. This allows defining the required IP version in the Entire System Server startup parameter file by specifying E.ESYMAIL4 or E.ESYMAIL as value for parameter JOBEEMAIL.

Edit the example element E.ESYMAIL4 or E.ESYMAIL and adjust the library and file names used in it. Element E.ESYMAIL is listed below.

```

/.XEML199              SET-LOGON-PARAMETERS
/ SKIP-COMMANDS        TO-LABEL=START
*-----*
* Run Entire System Server E-Mail 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=$SAG.LST.ESYMAIL.199.&($SYSJV.TSN)
/ ASSIGN-SYSLST      TO=$SAG.LST.ESYMAIL.199.&($SYSJV.TSN).ZAPS, -
/                   SYSLST-NUMBER=1
/ SHOW-JOB-STATUS    JOB-IDENTIFICATION=*OWN
/ ADD-FILE-LINK      LINK-NAME=DDLIB2 ,FILE-NAME=$SAG.NPRvrs.MOD
/ ADD-FILE-LINK      LINK-NAME=BLSLIB00,FILE-NAME=$SAG.NPRvrs.USER.MOD
/ START-PROGRAM      FROM-FILE=*MODULE -
/                   ( LIBRARY=$SAG.NPRvrs.MOD, -
/                   ELEMENT=ESYMAIL, -
/                   PROGRAM-MODE=*ANY, -
/                   RUN-MODE=*ADVANCED ), -
/                   MONJV=#ESYMAIL.&($SYSJV.TSN)
/ SET-JOB-STEP
/ SHOW-JOB-STATUS    JOB-IDENTIFICATION=*OWN
/ SKIP-COMMANDS      TO-LABEL=OKAY, -
/                   IF=JV(COND=(#ESYMAIL.&($SYSJV.TSN),1,2) EQ '$T')
/ WRITE-TEXT         TEXT='***** ESYMAIL failed *****'
/ SKIP-COMMANDS      TO-LABEL=STOP
/ .OKAY              REMARK
/ WRITE-TEXT         TEXT='***** ESYMAIL 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 E-Mail Manager Task based on IP Version 6. It will be started automatically by the MAIN Task at Entire System Server startup if startup parameter NUMMAIL is not 0. The location of this job (file or LMS element) is specified in the startup parameter JOBEMAIL. For a description of startup parameters, see the section *Startup Parameters* in the *Entire System Server Administration* documentation.

For further information about E-Mail administration, see *Run E-Mail Client* in the section *Common Entire System Server Features* in the *Entire System Server Administration* documentation.

Step 9: Edit the Entire System Server Procedures

As an alternative to the delivered start up jobs, you may run Entire System Server by an SDF-P procedure. All tasks can be managed via SDF-P procedure P.ESY.

```

/ " -----"
/ " PROC-NAME: P.ESY"
/ " FUNCTION : Run Entire System Server Tasks"
/ " "
/ " Parameter Description"
/ " -----"
/ " PGM Program to be executed"
/ " ESYCONS - Run CONSOLE Task"
/ " ESYEVTM - Run Eventing Manager Task"
/ " ESYMAIL - Run E-Mail Manager Task"
/ " ESYMAIN - Run MAIN Task"

```

```

/ "          EYSERV  - Run SERVER Task                "
/ "          ESYSTOP - Run ESY Shutdown              "
/ "          ESYTRACE - Run TRACE analyzer           "
/ "          "                                         "
/ " ADA-MOD   Name of the Adabas module library      "
/ " APPL-NAME DCAM name of the CONSOLE application  "
/ " CONS-AUTH Console authorization name            "
/ " CONS-PASS Console password                     "
/ " NODE     Entire System Server node number      "
/ " NPR-JOBS  Name of the Entire System Server jobs library "
/ "          containing Entire System Server startup parameters "
/ " NPR-MOD   Name of the Entire System Server module library "
/ " NPRPARMS  Name of LMS-element in library &(NPR-JOBS) "
/ " USER-ID  User Id for files                     "
/ " USER-MOD  Name of the Entire System Server user library "
/ "-----"
/ SET-PROCEDURE-OPTIONS DATA-ESCAPE-CHAR = *STD
/
/ BEGIN-PARAMETER-DECLARATION
/ DECLARE-PARAMETER PGM          (*PROMPT)
/ DECLARE-PARAMETER ADA-MOD      ('$SAG.ADAvrs.MOD')
/ DECLARE-PARAMETER APPL-NAME    ('ESYCONS2')
/ DECLARE-PARAMETER CONS-AUTH    ('CON6')
/ DECLARE-PARAMETER CONS-PASS    ('CON6')
/ DECLARE-PARAMETER NODE         ('199')
/ DECLARE-PARAMETER NPR-JOBS     ('$SAG.NPRvrs.JOBS')
/ DECLARE-PARAMETER NPR-MOD      ('$SAG.NPRvrs.MOD')
/ DECLARE-PARAMETER NPR-PARMS-ELEM ('NPRPARMS')
/ DECLARE-PARAMETER NPR-USER-MOD ('$SAG.NPRvrs.USER.MOD')
/ DECLARE-PARAMETER USER-ID     ('$SAG')
/ END-PARAMETER-DECLARATION
/
/ "-----"
/ " Procedure Initialization                          "
/ "-----"
/ " 1. Set variables                                  "
/ "   o DATA - Data for ESY-programs                "
/ "   o LST - Name of SYSLST file                    "
/ "   o TSN - BS2000 task sequence number           "
/ "   o PFX - Prefix of the logging files           "
/ " 2. Assign SYSLST                                 "
/ " 3. Modify job and test options                   "
/ "-----"
/ DATA      = ' '
/ PFX        = '&(PGM).&(NODE)'
/ TSN        = JV('$SYSJV.TSN')
/ UTILITY    = 'NO'
/ LST        = '&(USER-ID).LST.&(PFX).&(TSN)'
/
/ IF (PGM = 'ESYSTOP')
/   UTILITY = 'YES'
/ END-IF

```

```

/
/ IF (PGM = 'ESYTRACE')
/   UTILITY = 'YES'
/ END-IF
/
/ 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=&(LST)
/
/ IF (UTILITY = 'NO')
/   ASSIGN-SYSLST     TO=&(LST).ZAPS,SYSLST-NUMBER=1
/ END-IF
/
/ SHOW-JOB-STATUS
/
/ "-----"
/ "  CONSOLE Task specific actions                "
/ "-----"
/ IF (PGM = 'ESYCONS')
/   SET-DCAM-APPL-LINK LINK-NAME = ESYCONAP, -
/                       APPL-NAME = &(APPL-NAME)
/   DATA = '&(CONS-AUTH),C'&(CONS-PASS)''
/ END-IF
/
/ "-----"
/ "  MAIN Task specific actions                    "
/ "-----"
/ IF (PGM = 'ESYMAIN')
/   START-LMS
//   MOD-LMS-DEFAULTS MAX-ERROR-WEIGHT=*RECOVERABLE
//   EXTRACT-ELEMENT *LIB(&(NPR-JOBS),&(NPR-PARMS-ELEM),S), -
//   TO-FILE = #NPRPARMS, -
//   FILE-ATTR = (ACCESS-METHOD=*SAM), -
//   WRITE-MODE = *ANY
//   END
/   CREATE-FILE FILE-NAME=&(USER-ID).CLOG.&(NODE), -
/               SUPPORT=*PUBLIC-DISK -
/               ( SPACE=*RELATIVE -
/                 ( PRIMARY-ALLOCATION   = 12, -
/                   SECONDARY-ALLOCATION = 12 ) ), -
/               SUPPRESS-ERROR = *FILE-EXIST
/   CREATE-FILE FILE-NAME=&(USER-ID).TRACE.&(NODE), -
/               SUPPORT=*PUBLIC-DISK -
/               ( SPACE=*RELATIVE -
/                 ( PRIMARY-ALLOCATION   = 12, -
/                   SECONDARY-ALLOCATION = 12 ) ), -
/               SUPPRESS-ERROR = *FILE-EXIST
/   ADD-FILE-LINK LINK=PARMS,FILE-NAME=#NPRPARMS
/   ADD-FILE-LINK LINK=CLOG, FILE-NAME=&(USER-ID).CLOG.&(NODE)

```

```

/   ADD-FILE-LINK LINK=TRACE,FILE-NAME=&(USER-ID).TRACE.&(NODE)
/   ADD-FILE-LINK LINK=DDLIB,FILE-NAME=&(ADA-MOD)
/ END-IF
/
/ "-----"
/ " ESY Shutdown specific actions "
/ "-----"
/ IF (PGM = 'ESYSTOP')
/   DATA = '--JNAME XCOM&(NODE) '
/ END-IF
/
/ "-----"
/ " TRACE analyzer specific actions "
/ "-----"
/ IF (PGM = 'ESYTRACE')
/   CREATE-FILE FILE-NAME=&(USER-ID).TROUT.&(NODE), -
/             SUPPORT=*PUBLIC-DISK -
/             ( SPACE=*RELATIVE -
/               ( PRIMARY-ALLOCATION = 12, -
/                 SECONDARY-ALLOCATION = 12 ) ), -
/             SUPPRESS-ERROR = *FILE-EXIST
/   ADD-FILE-LINK LINK=TRIN, FILE-NAME=&(USER-ID).TRACE.&(NODE)
/   ADD-FILE-LINK LINK=TROUT,FILE-NAME=&(USER-ID).TROUT.&(NODE)
/   DATA = '&(NODE) --POLL '
/ END-IF
/
/ "-----"
/ " Start Program "
/ "-----"
/ ADD-FILE-LINK LINK=DDLIB2, FILE-NAME=&(NPR-MOD)
/ ADD-FILE-LINK LINK=BLSLIB00,FILE-NAME=&(NPR-USER-MOD)
/
/ IF (DATA = ' ')
/   START-EXEC-PROG (&(NPR-MOD),&(PGM))
/ ELSE
/   START-EXEC-PROG (&(NPR-MOD),&(PGM))
&(DATA)
/ END-IF
/
/ "-----"
/ " Exit Procedure "
/ "-----"
/ IF-BLOCK-ERROR
/   SHOW-JOB-STATUS
/   WRITE-TEXT '***** &(PGM) failed *****'
/ ELSE
/   SHOW-JOB-STATUS
/   WRITE-TEXT '***** &(PGM) successfully executed *****'
/ END-IF
/
/ EXIT-PROCEDURE

```

1. Customize the values in the parameter declaration section according to your site's specific needs and use the delivered procedures P.ESYMAIN, P.ESYSTOP and P.ESYTRACE to run the Entire System Server, to stop it, and to retrieve trace data from the node.
2. Adjust job control for the Entire System Server MAIN Task.

Edit the example Element P.ESYMAIN and adjust the parameters used in it.

```
/.ESYMAIN BEGIN-PROC  LOGGING=*NO, -
/                      PARAMETERS=*NO
/  ENTER-PROCEDURE   FROM-FILE=*LIBRARY-ELEMENT -
/                      ( LIBRARY=$SAG.NPRvrs.JOBS, -
/                        ELEMENT=P.ESY ), -
/                      PROCEDURE-PARAMETERS=(PGM=ESYMAIN), -
/                      PROCESSING-ADMISSION=*PARAMETERS -
/                      ( USER-IDENTIFICATION=TSOS, -
/                        PASSWORD=C'pwd' ), -
/                      JOB-CLASS=TSOSBAT, -
/                      JOB-NAME=XCOM199, -
/                      RESOURCES=*PARAMETERS -
/                      ( CPU-LIMIT=*NO, -
/                        RUN-PRIORITY=255 ), -
/                      SCHEDULING-TIME=*PARAMETERS -
/                      ( START=*IMMEDIATELY )
/.ESYMAIN END-PROC
```

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

Edit the example element P.ESYSTOP and adjust the parameters used in it.

```
/.ESYSTOP BEGIN-PROC LOGGING=*NO, -
/                      PARAMETERS=*NO
/  ENTER-PROCEDURE   FROM-FILE=*LIBRARY-ELEMENT -
/                      ( LIBRARY=$SAG.NPRvrs.JOBS, -
/                        ELEMENT=P.ESY ), -
/                      PROCEDURE-PARAMETERS=(PGM=ESYSTOP), -
/                      PROCESSING-ADMISSION=*PARAMETERS -
/                      ( USER-IDENTIFICATION=TSOS, -
/                        PASSWORD=C'pwd' ), -
/                      JOB-CLASS=TSOSBAT, -
/                      JOB-NAME=ESYSTOP, -
/                      RESOURCES=*PARAMETERS -
/                      ( CPU-LIMIT=*NO, -
/                        RUN-PRIORITY=255 ), -
/                      SCHEDULING-TIME=*PARAMETERS -
/                      ( START=*IMMEDIATELY )
/.ESYSTOP END-PROC
```

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

Edit the example element P.ESYTRACE and adjust the parameters used in it.

```
/.ESYTRACE BEGIN-PROC LOGGING=*NO, -  
/ PARAMETERS=*NO  
/ ENTER-PROCEDURE FROM-FILE=*LIBRARY-ELEMENT -  
/ ( LIBRARY=$SAG.NPRvrs.JOBS, -  
/ ELEMENT=P.ESY ), -  
/ PROCEDURE-PARAMETERS=(PGM=ESYTRACE), -  
/ PROCESSING-ADMISSION=*PARAMETERS -  
/ ( USER-IDENTIFICATION=TSOS, -  
/ PASSWORD=C'pwd' ), -  
/ JOB-CLASS=TSOSBAT, -  
/ JOB-NAME=ESYTRACE, -  
/ RESOURCES=*PARAMETERS -  
/ ( CPU-LIMIT=*NO, -  
/ RUN-PRIORITY=255 ), -  
/ SCHEDULING-TIME=*PARAMETERS -  
/ ( START=*IMMEDIATELY )  
/.ESYTRACE END-PROC
```

Step 10: E-Mail Client Requirements

SEND-EMAIL view requires the Entire System Server E-Mail Manager Task active to work properly. See the subsection Adjust job control for the Entire System Server E-Mail Manager Task in [Step 8: Edit the Entire System Server Jobs](#) for necessary changes to the job control.

For more information about E-Mail administration, see *Run E-Mail Client* in the section *Common Entire System Server Features* in the *Entire System Server Administration* documentation.