

Installing Natural for VSAM

This section describes how to install Natural for VSAM (also referred to as NVS) in the various environments supported. The installation procedure depends on the TP monitor being used.

- General Information
 - Prerequisites
 - Installation Tape - OS/390 Systems
 - Installation Tape - VSE/ESA Systems
 - Installation Procedure - OS/390 and VSE/ESA
 - Installation Verification - OS/390 and VSE/ESA
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General Information

Below is information on:

- Installation Jobs
- 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 under OS/390 and VSE/ESA, 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 NVS installation tape; you must adapt this example job to your requirements. Note that the job numbers on the tape are preceded by the product code (for example, NVSI070).

Using System Maintenance Aid

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

Prerequisites

Products and versions are specified under Natural and Other Software AG Products and Operating/Teleprocessing Systems Required in the current Natural Release Notes for Mainframes.

Installation Tape - OS/390 Systems

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.

Dataset Name	Contents
NVS <i>nnn</i> .SRCE	NVS source modules.
NVS <i>nnn</i> .LOAD	NVS load modules.
NVS <i>nnn</i> .EXPL	NVS sample programs.
NVS <i>nnn</i> .EMPL	VSAM EMPLOYEES demo file.
NVS <i>nnn</i> .JOBS	NVS installation jobs.

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

Copying the Tape Contents to Disk

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

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

This section explains how to:

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

The JCL in this data set is then used to copy all data sets from tape to disk.

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

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

Step 1 - Copy data set COPY.JOB from tape to disk

The data set COPY.JOB (label 2) contains the JCL to unload all other existing data sets from tape to disk. To unload COPY.JOB, use the following sample JCL:

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

Where:

<hilev> is a valid high level qualifier

<Tnnnnn> is the tape number

<vvvvvv> is the desired volser

Step 2 - Modify COPY.JOB to conform with your local naming conventions

There are three parameters you have to set before you can submit this job:

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

Step 3 - Submit COPY.JOB

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

Installation Tape - VSE/ESA Systems

The installation tape contains the datasets listed in the table below. The sequence of the datasets and the type and space they require on disk is shown in the Report of Tape Creation which accompanies the installation tape.

Dataset Name	Contents
NVS <i>nnn</i> .LIBR	NVS source modules, macros and relocatable modules.
NVS <i>nnn</i> .EXPL	NVS example programs.
NVS <i>nnn</i> .EMPL	VSAM EMPLOYEES demo file.

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

Copying the Tape Contents to Disk

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

```
* $$ JOB JNM=NATJOBS ,CLASS=0 ,DISP=D ,LDEST=* ,SYSID=1
* $$ LST CLASS=A,DISP=D
// JOB NATJOBS
// ASSGN SYS005,IGN
// ASSGN SYS006 ,cuu ,VOL=Tnnnnn
// MTC REW ,cuu
// MTC FSF,SYS006 ,nn
* Tape positioned at tape mark nn
* *** NOW PROCESSING NVSnnn.LIBR - SUBLIBRARY NVSnnnJ ***
// EXEC LIBR,PARM='MSHP'
RESTORE SUBLIB=SAGLIB.NVSnnnJ : SAGLIB.NVSnnnJ -
TAPE=SYS006 -
LIST=YES -
REPLACE=NO
/*
// MTC REW ,SYS006
/*
/&
* $$ EOJ
```

Notation:

<i>cuu</i>	represents the physical unit address of the tape drive.
<i>nn</i>	represents the file sequence number as shown in the Report of Tape Creation.
<i>nnn</i>	represents the version number of the product.

If you are not using System Maintenance Aid, adapt and run job NVSTAPE to copy the dataset from tape to disk. NVSTAPE is contained in sublibrary NVS*nnn*J on the Natural installation tape.

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

Installation Procedure - OS/390 and VSE/ESA

To install NVS under the operating systems OS/390 and VSE/ESA, perform the following steps:

Step 1: Prepare NVS Demo File - Job I008, Steps 1403 to 1407

Load the VSAM demo file EMPL (dataset NVS*nnn*.EMPL). Define the alternate index path EMPLX for the file EMPL.

Step 2: Create NVS Parameter Module - Job I055, Steps 1400 and 1401

Edit, assemble, and link the NVS parameter module NVSPARM. See Assembling the NVSPARM Parameter Module in the section Parameters, for a description of the parameters which can be specified.

Step 3: Create NVS I/O Module - Job I055, Steps 1410 and 1411, or Job I070, Step 1400

Assemble and link the NVS I/O module.

- If NVS is installed under CICS, use the I/O module NVSCICS; for this module, use Job NVSI070 (Step 1400).
- If NVS is installed in any other environment, use the I/O module NVSMISC, for this module use Job I055. See the description of the parameters which can be specified in NVSMISC.

Note:

Under CICS versions below 5.3, the precompile step receives Condition Code 12, since new COMMAND level options are used depending on the CICS version applied. The corresponding assembly step must be finished with Return Code 0. This is normal and can be ignored.

Step 4: Adapt all Natural Parameter Modules - Jobs I060, I080

Modify the appropriate I060 and I080 jobs according to the TP monitor or batch modules you are relinking; for example, NATI060 for batch, NCOI080 for Com-plete and NCII080 for CICS. This applies also to Step 5 below.

Add the following parameter and macro call to your Natural parameter modules:

```
VSIZE=70
NTDB VSAM, vsam-dbid
```

The value for VSIZE depends on the values specified in NVSPARM (see also the SIZE Parameter in the section Parameters).

Step 5: Relink all Natural Nuclei - Jobs I060, I080

For information on the components and structure of the Natural interface to VSAM, see also Components of Natural for VSAM and Structure of the Natural Interface to VSAM in the section General Information.

Add the following INCLUDE instruction in all links of the shared nucleus:

Platform	Instruction
OS/390	INCLUDE NVSLIB(NVSNUC)
VSE/ESA	INCLUDE NVSNUC

Add the following INCLUDE instruction in all links of the front-end:

Platform	Instruction
OS/390	INCLUDE SMALIB(NVSPARM)
VSE/ESA	INCLUDE NVSPARM

Add the following INCLUDE instruction in the link of the front-end in a CICS environment:

Platform	Instruction
OS/390	INCLUDE SMALIB(NVSCICS)
VSE/ESA	INCLUDE NVSCICS

Add the following INCLUDE instruction in the link of the front-end in any other supported environment (except CICS):

Platform	Instruction
OS/390	INCLUDE SMALIB(NVSMISC)
VSE/ESA	INCLUDE NVSMISCD

Add the following INCLUDE instruction in the link of the front-end under OS/390 in any other supported environment (except CICS) if RLS=CHECK is specified in NVSPARM:

Platform	Instruction
OS/390	INCLUDE CSSLIB (IGWARLS)

The routine IGWARLS is a callable service to support RLS processing. It resides in the system library SYS1.CSSLIB. Add the corresponding DD statement to the link step.

Add the following INCLUDE instruction in the link of the front-end in a Com-plete environment if PATH=CHECK is specified in NVSPARM.

Platform	Instruction
OS/390	INCLUDE COMLIB (U2GETDSN)
VSE/ESA	INCLUDE U2GETDSN

The routine U2GETDSN is a callable Com-plete service. It resides in the corresponding Com-plete library COM nnn .LOAD. Add the corresponding DD statement to the link step.

Platform	Instruction
OS/390	Add the corresponding DD statements to the link step for Natural and link-edit the executable module.
VSE/ESA	Add the corresponding sublibrary for NVS to the search chain for the linkage editor and link-edit the executable module.

Step 6: Load Examples - Job I061, Step 1400

Use the system command INPL to load the NVS example programs (dataset NVS nnn .EXPL) into the Natural system file.

Step 7: Customize your TP Monitor

TP Monitor	Instruction
CICS	Add the entries for the NVS test files EMPLVS and EMPLVX to your FCT; you can find the CICS tables on the JOBS dataset as NVSI005.
Com-plete	Catalog all VSAM files to Com-plete using the CA function of the Com-plete utility UFILE. If you have specified PATH=CHECK in NVSPARM: <ol style="list-style-type: none"> 1. Catalog your front program to Com-plete using the CA function of the Com-plete utility ULIB with a region size of 36 KB if you have not changed the first default value of the WPSIZE parameter in the Natural parameter module. 2. Load the IBM routine IGG0CLA0 either in the LPA or as resident program using the Com-plete utility UCTRL under OS/390.
TSO	Add the following ALLOC statements to your Natural CLIST: <pre>ALLOC F(EMPLVS) DA('SAGLIB.VSAM.EMPL') SHR ALLOC F(EMPLVX) DA('SAGLIB.VSAM.EMPLX.PATH') SHR</pre>

Installation Verification - OS/390 and VSE/ESA

To verify whether the installation has been successfully performed, log on to the library SYSEXNVS and run the following programs:

- NVSINST1
- NVSINST2
- NVSINST3
- NVSINST4
- NVSINST5
- NVSINST6

If all these programs can be executed successfully, the installation of Natural for VSAM is completed and verified.

Note for OS/390 batch mode:

For verification in batch mode under OS/390, you can run the job NVSI200 which executes the above programs.