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 - z/OS Systems

- Installation Tape - z/VSE Systems

- Installation Procedure - z/OS and z/VSE

- Installation Verification - z/OS and z/VSE

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

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 z/OS and z/VSE, 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*.

Installation Tape - z/OS 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*vrs*.SRCE	NVS source modules.
NVS*vrs*.LOAD	NVS load modules.
NVS*vrs*.EXPL	NVS sample programs.
NVS*vrs*.EMPL	VSAM EMPLOYEES demo file.
NVS*vrs*.JOBS	NVS installation jobs.

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

Installation Tape - z/VSE 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*vrs*.LIBR	NVS source modules, macros and relocatable modules.
NVS*vrs*.EXPL	NVS example programs.
NVS*vrs*.EMPL	VSAM EMPLOYEES demo file.

The notation *vrs* 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 JCL:

```
* $$ JOB JNM=NATJOBS,CLASS=0,DISP=D,LDEST=*,SYSID=1
* $$ 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 NVSvrs.LIBR - SUBLIBRARY NVSnnnJ ***
// EXEC LIBR,PARM='MSHP'
RESTORE SUBLIB=SAGLIB.NVSvrsJ:SAGLIB.NVSnnnJ -
TAPE=SYS006 -
LIST=YES -
REPLACE=NO
/*
```

```
// MTC REW,SYS006
/*
/&
* $$ EOJ
```

Notation:

cuu	represents the physical unit address of the tape drive.
nn	represents the file sequence number as shown in the *Report of Tape Creation*.
vrs	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 `NVSvrsJ` 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 - z/OS and z/VSE

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

Step 1: Define CICS RDO Definitions - Job I005

- Define CICS RDO Definitions for sample VSAM files.

Step 2: Prepare NVS Demo File - Job I008, Steps 1403 to 1407

- Load the VSAM demo file `EMPL` (dataset `NVSvrs.EMPL`). Define the alternate index path `EMPLX` for the file `EMPL`.

Step 3: 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 4: 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 you install NVS under CICS, use the I/O module `NVSCICS`; for this module, use Job NVSI070 (Step 1400).

    ○ If you install NVS under Com-plete, the I/O module `NVSMISC` must be assembled by using the parameter `SMARTS=YES` (Steps 1415 and 1416). See also SMARTS in the section *Parameters*.

    ○ If you install NVS in any other environment, use `NVSMISC`. 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 5: 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 *Relink all Natural Nuclei* below.

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

  ```
  VSIZE=72 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 6: 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
z/OS	`INCLUDE NVSLIB(NVSNUC)`
z/VSE	`INCLUDE NVSNUC`

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

Platform	Instruction
z/OS	`INCLUDE  SMALIB(NVSPARM)`
z/VSE	`INCLUDE NVSPARM`

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

Platform	Instruction
z/OS	`INCLUDE  SMALIB(NVSCICS)`
z/VSE	`INCLUDE NVSCICS`

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

Platform	Instruction
z/OS	`INCLUDE  SMALIB(NVSMISC)`
z/VSE	`INCLUDE NVSMISCD`

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

Platform	Instruction
z/OS	`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.

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

Step 7: Load Examples - Job I061, Step 1400

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

Step 8: Customize your TP Monitor

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TP Monitor	Instruction
CICS	Add the entries for the NVS test files `EMPLVS` and `EMPLVX` to your RDO definition as described in *Define CICS RDO Definitions* above; 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`: 1. Catalog your front program to Com-plete using the `CA` function of the Com-plete utility `ULIB` with a region size of 40 KB if you have not changed the first default value of the `WPSIZE` parameter in the Natural parameter module. Under z/VSE, you must also catalog the front program as privileged. 2. Load the IBM routine `IGG0CLA0` either in the LPA or as resident program using the Com-plete utility `UCTRL` under z/OS.

TSO	Add the following `ALLOC` statements to your Natural CLIST:
	
	`ALLOC F(EMPLVS) DA('SAGLIB.VSAM.EMPL') SHR`
	`ALLOC F(EMPLVX) DA('SAGLIB.VSAM.EMPLX.PATH')SHR`

Installation Verification - z/OS and z/VSE

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