Installing the Natural Optimizer Compiler

This chapter describes how to install the Natural Optimizer Compiler (also referred to as NOC) in the various environments supported.

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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 Software AG's System Maintenance Aid (SMA).

For each step of the installation procedure described below, the job number of a job performing the corresponding task is indicated. This job number refers to an installation job generated by SMA.

Using System Maintenance Aid

For information on using SMA for the installation process, refer to the System Maintenance Aid documentation.

Prerequisites

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

Installation Tape - z/OS

The installation tape contains the dataset listed in the table below.

Dataset Name	Contents
NOC*vrs*.LOAD	This dataset contains the Natural Optimizer Compiler load modules.

The notation *vrs* in dataset names represents the version, release and system maintenance level number of the product.

For a detailed description of the installation tape refer to the *Report of Tape Creation* which accompanies the tape.

Space Requirements

The space the dataset requires on disk is shown in the *Report of Tape Creation*.

Installation Tape - z/VSE

The installation tape contains the following dataset:

Dataset Name	Contents
NOC*vrs*.LIBR	LIBR backup file.

The notation *vrs* in dataset names represents the version, release and system maintenance level number of the product.

Installation Tape - BS2000/OSD

The installation tape contains the following dataset:

Dataset Name	Contents
NOC*vrs*.MOD	Optimizer Compiler module library.

The notation *vrs* in dataset names represents the version, release and system maintenance level number of the product.

For a detailed description of the installation tape refer to the *Report of Tape Creation* which accompanies the tape.

Space Requirements

The space the dataset requires on disk is shown in the *Report of Tape Creation*.

Installation Tape - VM/CMS

The installation tape contains the dataset listed in the table below.

Dataset Name	Contents
NOC*vrs*.TAPE	This dataset contains the Natural Optimizer Compiler load module.

The notation *vrs* in dataset names represents the version, release and system maintenance level number of the product.

For a detailed description of the installation tape refer to the *Report of Tape Creation* which accompanies the tape.

Space Requirements

The space the dataset requires on disk is shown in the *Report of Tape Creation*.

Copying the Tape Contents to Disk

To copy the tape contents to disk

1. Position the tape for the TAPE LOAD command by calculating the number of tape marks as follows:

   If the sequence number of NOC*nnn*.TAPE, as shown by the *Report of Tape Creation*, is *n*, you must position over 3*n*- 2 tape marks (that is, FSF 1 for the first dataset, FSF 4 for the second, etc.)

2. Access the disk that is to contain the Natural installation files as Disk A.

3. Ask the system operator to attach a tape drive to your virtual machine at the address X'181' and mount the Natural Optimizer Compiler installation tape.

4. When the tape has been attached, enter the following CMS command:

   ```
   TAPE REW
   ```

   Position the tape by entering the CMS command:

   ```
   TAPE FSF n
   ```

   where *n* is the number of tape marks and is calculated as described above (3*n*- 2).

5. Load the Natural Optimizer Compiler/CMS installation material by entering the CMS command:

   ```
   TAPE LOAD * * A
   ```

   Keep the tape drive attached to your virtual machine, because the tape is needed later in the installation procedure.

Installation Procedure

Step 1 - Modify the Natural Parameter Module - Jobs I060, I080

Activate the Natural Optimizer Compiler by adding the following macro to your Natural parameter module (NATPARM):

```
NTOPT ON
```

Assemble and link the parameter module.

Step 2 - Relink all Natural Nuclei - Jobs I060, I080

Adapt the link steps for Natural.

- **z/OS**
  Add the following INCLUDE instruction to all links of the Natural nuclei (if you are using a shared nucleus, then include this statement in the link of the shared part):

  ```
  INCLUDE NOCLIB(NOCNUC)
  ```

  Add the corresponding DD statement:

  ```
  //NOCLIB DD DSN=NOCvrs.LOAD,DISP=SHR
  ```

- **z/VSE**
  Add the following INCLUDE instruction and the corresponding sublibrary for the Natural Optimizer Compiler in the search chain for the linkage editor:

  ```
  INCLUDE NOCNUC
  ```

- **BS2000/OSD**
  Add the following INCLUDE instruction to the element LNATSHAR in NATvrs.JOBS:

  ```
  INCLUDE NOCNUC,NOCvrs.MOD
  ```

  Relink your Natural nucleus as described in *Link the Natural Nucleus* in Installing Natural under BS2000/OSD in the Natural *Installation* documentation.

- **VM/CMS**
  The list of text files to be included in the Natural module or DCSS is contained in REXX program NAT$LOAD EXEC (variable LOADLIST). To customize your Natural system, modify this EXEC with XEDIT by changing the LOADLIST as required.

  Add the following INCLUDE instruction to the program NAT$LOAD EXEC:

  ```
  LOADLIST = LOADLIST 'NOCNUC'
  ```

  Relink your Natural nucleus with the procedure NATBLDM.

Installation Verification

1. Recatalog an existing program or write a new program and then catalog it.
2. Check the directory information for the program you have just cataloged, by using the `LIST` system command:

   `LIST DIR` *`object-name`*

The directory information for the specified object will be displayed, showing the size of the machine code at the bottom of the screen.