

Installing and Setting Up Natural on OpenVMS

This document describes how to set up and install Natural 6.3 on an OpenVMS platform. The following topics are covered:

- Product Requirements
 - The Natural Distribution Kit
 - Before You Start
 - Installing Natural in a Cluster Environment
 - Multiple Versions of Natural
 - Natural Directory Structure
 - Overview of the Installation Procedure
 - PCSI Installation Procedure
 - After the Installation
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Product Requirements

The following topics are covered below:

- Required Memory Space
- Disk Space
- Related Software AG Products

See also *Supported Operating Systems* in the *Release Notes*.

Required Memory Space

The memory space required by Natural largely depends on the number of users.

The memory space per user is determined by the settings in the parameter file NATPARM, especially by the values of profile parameters such as USIZE and SSIZE.

In addition to the user-specific memory, memory is required for the buffer pool, which is shared among all users.

Disk Space

The space required on disk will be checked by the PCSI utility during the installation.

Approximately 350 MB of hard-disk space is required for Natural, another 18 MB for Natural Security, and another 7 MB for Natural Development Server.

Related Software AG Products

The following product is required for installing Natural for OpenVMS:

- Sagbase (GBA) Version 1.3 .

Natural 6.3 requires:

- EntireX Broker Stub Version 8 to access a remote EntireX Broker (necessary if RPC is used).

Natural 6.3 includes interfaces to:

- Adabas Version 6 (necessary if Natural Security, Natural Command Processor or Natural Development Server is used).

The Natural Distribution Kit

The Natural distribution kit on the installation medium contains the installation files for OpenVMS. An example of the directory hierarchy on the installation medium is shown in the section *Directory Structure of the Installation Medium*.

Please note that the license key file is not contained on this installation medium. It is delivered separately in your product package. If this is not the case, it can be obtained from Software AG.

Before You Start

This section contains important information on the necessary activities before installing Natural on an OpenVMS platform.

The following topics are covered below:

- General Information
- Required UAF and SYSGEN Parameters
- Required Process Privileges

General Information

Please note the following before you start the Natural installation:

- Software AG recommends some common steps for the installation of Software AG products on OpenVMS. See *Installing and Setting Up Software AG Products on OpenVMS* for a detailed description.

- Before you start the installation, back up your current product version.
- During the installation, you need a valid license key file.
- Ensure that prerequisite software is installed.

Required UAF and SYSGEN Parameters

The following UAF (User Authorization File) and SYSGEN parameters should have at least the following values for each Natural user:

Parameter	Function	Minimum Value	Utility
FILLM	File limit	100	UAF
TQCNT	Timer queue elements	10	UAF
ENQLM	Lock queue entry limit	1000	UAF
BYTLM	Byte limit	30000	UAF
MAXBUF	Maximum size of buffered I/O transfer	4096	SYSGEN
JTQUOTA	Job table quota	2048	UAF
PGFLQUO	Page file quota	50000	UAF
PROCSECTCNT	Process section count	70	SYSGEN

To install the recommended Natural images, the following system resources are required:

Images for	GBLPAGES	GBLSECTIONS
Natural Nucleus	10000	50
Natural Buffer Pool	8000	1

Required Process Privileges

To install the Natural images and to create the Natural buffer pool, the following system privileges are required: CMKRNL, SYSNAM, SYSPRV, PRMGBL, SYSGBL, BYPASS.

The process privilege TMPMBX is required before Natural can be used.

Installing Natural in a Cluster Environment

In a cluster environment, you must install Natural on each node on which it is to be used.

Initial Installation

Depending on the Sagbase installation, the initial Natural installation within a cluster will choose either the common or the specific root directory. Each node must first be prepared by installing Sagbase. The installation procedure checks for an existing Natural installation in the cluster.

Subsequent Installations

Subsequent installations consist of the following steps:

- Checking whether or not system parameters have correct values.
- Modifying *NATBPENV_<nodename>.COM* according to the parameters specified.
- Modifying the startup component database if *STARTUP_NAT<v>.COM* was found in *SYSS\$STARTUP*.
- Executing the command procedure *STARTUP_NAT<v>.COM*.

Note:

<v> in the above file name stands for the first digit of the Natural version number.

Multiple Versions of Natural

You can use more than one Natural version on your system. Image names contain the current version number, and the command procedure *LOGIN.COM* is downward compatible.

When *LOGIN.COM* is called, the parameter P1 should be set to the value of the full version number of the used Natural version. For example, *@SAG\$ROOT:[NATURAL]LOGIN 6340*.

Activating Another Natural Version

If another version is to be used in the job environment of a specific user, the UAF parameter *JTQUOTA* must be set to 2048.

If you have already installed Natural system-wide by executing *STARTUP_NAT<v>.COM*, the value of the parameter P1 was set to the value of the installed Natural version.

You can now activate another version of Natural in a job environment by executing *STARTUP_NAT<v>.COM* with the parameter P1 set to a different value of an existing Natural version.

Natural Directory Structure

Natural will be installed in the *SAG\$ROOT:[NATURAL.V<version>]* directory.

The Natural logicals are to be found in a version-specific name table called *Natural_C\$V<version>_LOGICAL_NAMES*.

Overview of the Installation Procedure

The installation procedure PSCI automatically performs the following steps when used to install Natural:

- Checks whether the prerequisite version of the operating system is running.
- Temporarily sets the privileges (BYPASS, CMKRNL, SYSNAM).

- Checks whether Sagbase (GBA) is installed.
- Sets the owner of the *SAG\$ROOT* directory to all installed product directories and files.
- Checks whether system parameters have correct values.
- Registers the product Sagbase to PCSI, if required.
- Calculates and verifies the disk space needed for installation on both the work-directory device and the installation device.
- Invokes the Natural suite installation.
- Creates Natural directories, if necessary.
- Moves all files and images to the appropriate directories.
- Sets protections for files and directories.
- The Natural product installation in the Natural product suite asks whether you want to copy *STARTUP_NAT<v>.COM* into the *SAG\$ROOT:[NATURAL]* directory or the *SYS\$STARTUP* directory.

Note:

If you want Natural to be loaded and activated automatically at every booting, specify the option that the *STARTUP_NAT<v>.COM* shall be moved to *SYS\$STARTUP* during the PCSI installation. An entry in the system startup database will then automatically be generated. When rebooting, *STARTUP_NAT<v>.COM* will then be invoked with the most current Natural version number as parameters P1 and P2 will be set to "BP". For more information, see *Changing a Process Environment with STARTUP_NAT<v>.COM*.

- The Natural product installation in the Natural product suite asks whether you want to modify the system startup database (only if the directory *SYS\$STARTUP* was selected to contain *STARTUP_NAT<v>.COM*).
- Creates the patch level file in the version subdirectory of the Natural directory (*V<version>*).

Note:

Patch level files are for internal use and should not be modified or deleted. They are used for other installations.

- Inserts the node-specific buffer pool section into the local configuration file.
- Asks for the location of the buffer pool section file.
- Creates the buffer pool start procedure *NATBPENV_<nodename>.COM*.

Note:

For more information, see *Activating the Natural Buffer Pool*.

- Executes *STARTUP_NAT<v>.COM* for the new Natural version.

- Verifies the Natural installation.
- The Natural suite installation invokes the installation of other products in the suite such as Natural Security or Natural Development Server.

PCSI Installation Procedure

Before you start installing Natural using the PCSI procedure, perform the necessary steps as described in *Installing and Setting Up Software AG Products on OpenVMS*.

You started the installation using the command procedure *SETUP.COM* located on the installation medium to install Natural in the OpenVMS environment.

SETUP.COM copies the Natural PSC file from the installation medium to the *SAG\$ROOT:[SAGKITS]* directory and starts the Natural suite installation of the Polycenter Software Installation utility (PCSI). The suite installation automatically invokes the single product PCSI installations for Natural, Natural Security and Natural Development Server. During the installation procedure, a number of general information messages are displayed. Read all messages carefully and follow any advice they may provide.

Continue the Suite Installation

If you have interrupted the *SETUP.COM* procedure after it has copied the product kits from the installation medium to the *SAG\$ROOT:[SAGKITS]* directory, you can also start the Natural suite installation by entering the following:

```
product install NAT_6340_SUITE /destin=sag$root:[000000] /OPTIONS=NOVALIDATE
```

After the Natural suite is started, you will be informed:

The following product has been selected:

```
SAG I64VMS NAT_6340_SUITE V6.34-PL0 Platform (product suite)
```

Do you want to continue? [YES]

Enter "YES" to continue the installation.

Configuration phase starting ...

You will be asked to choose options, if any, for each selected product and for any products that may be installed to satisfy software dependency requirements.

```
SAG I64VMS NAT_6340_SUITE V6.34-PL0: NAT-suite for OpenVMS/Itanium
```

Do you want the defaults for all options? [YES]

Enter "NO" if you want to set the options for single product installations.

Do you want to install NAT<version>? [YES]

Enter "YES" to continue with the Natural PCSI installation.

Modify the PCSI Options

When you are asked whether you want to use the defaults for all options, enter "NO". You can then modify the following options (the recommended actions are given below):

Do you want to copy the examples?

Enter "YES".

Move `STARTUP_NAT<v>.COM` to `SYS$STARTUP`?

Press RETURN to accept the default: the startup file is moved to the `SYS$STARTUP` directory and an entry is made in the startup database. Software AG recommends running the `STARTUP_NAT<v>.COM` procedure during system startup.

If you enter "NO", the startup file will be moved to the directory `SAG$ROOT:[NATURAL]`.

Enable `STARTUP_NAT<v>.COM` using `SYSMAN`?

Only shown when you used the default value for the previous question.

Press RETURN to generate entries in the system startup database in order to execute the procedure automatically during system startup.

An entry of the following form will be generated:

Phase	Mode	File
LPBETA	DIRECT	STARTUP_NAT<v>.COM

Run `STARTUP_NAT<v>.COM` after successful installation?

If you want to run the startup file during the installation, enter "YES".

If you enter "NO", you have to start the startup file manually after the product suite installation.

Run Natural buffer pool after successful installation?

If you want to run the Natural buffer pool after the installation, enter "YES". The prerequisite for this is that you have also entered "YES" for the option **Run `STARTUP_NAT<v>.COM` after successful installation?**.

Are you satisfied with these options?

Not shown when Natural is installed with the suite installation.

If you enter "YES", the procedure now installs Natural to the destination directory.

If you enter "NO", you can review and change your options.

If you are installing Natural with the Natural suite installation, you are asked whether you want to install other products included in the suite. After the PCSI installation of the products in the suite is finished, the post-installation steps described in the above options are performed. Answer the questions (such as the location of the buffer pool) asked by the post-installation procedures. You will be informed whether the

post-installation steps were successful.

After the successful installation of the suite, you are informed about the installed products, for example:

```
The following products have been installed:
    SAG I64VMS NAT_6340 V6.34-PL0          Layered Product
```

Continue the PCSI Installation

A message appears during the installation process, informing you that the product "SAG I64VMS NAT_<version> V<v.rs>-PL<p> Layered Product" has been selected, and asks whether you want to continue.

When you answer "YES", the installation procedure checks whether the product Sagbase (product code GBA) has already been installed and registered with the PCSI utility. If Sagbase has been installed but not yet registered, you will be asked to do so. Register by following the instructions on the screen. If the Sagbase software has not been found on your system the installation aborts. In this case, follow the steps in *Installing Sagbase on OpenVMS*.

Information on the product license key is shown. Check whether the license key file is available on *SYS\$LOGIN* of the installing user. Without a proper license key file, the installation will abort.

Set Up the Natural Buffer Pool Section File

The procedure inserts the node-specific buffer pool section into the local configuration file.

The information about the global section file for the Natural buffer pool file is displayed. You have the choice to place the section file into the *NATETC* directory or to another location.

If you answered **Run STARTUP_NAT<v>.COM after successful installation** with "YES", the procedure continues by executing *STARTUP_NAT<v>.COM* with parameters P1 (version number) and P2 ("BP") to define the logical names required by Natural. The Natural images will not be installed. See the section *Changing a Process Environment with STARTUP_NAT<v>.COM* below.

After the Installation

The following topics are covered below:

- Verifying the Installation Procedure
- Completing the Installation
- Changing a Process Environment with *STARTUP_NAT<v>.COM*
- Activating the Natural Buffer Pool

Verifying the Installation Procedure

To verify the product entry in the PCSI database enter:

```
PRODUCT SHOW PRODUCT NAT_<version>
```


Completing the Installation

After the Natural suite installation (PCSI), the following post-installation steps for Natural have to be performed.

Go to the following directory:

```
SET DEF SAG$ROOT:[NATURAL.V<version>.INSTALL]
```

In this directory, execute the following procedure:

```
@SAGINST_NAT.COM
```

The **Installation Procedure** screen appears. It offers the following functions:

- 1 - Load Natural modules
- 2 - Check logfile of inpl procedure
- 3 - Specify Adabas DBID for SYSNCP
- 4 - Create SYSNCP file

To complete the installation, first execute function 1, then execute function 2. If you want to use the Natural command processor, execute functions 3 and 4.

Your installation is now complete.

To set the Natural symbols, run the *LOGIN.COM* command procedure:

```
SET DEF SAG$ROOT:[NATURAL]
@LOGIN.COM <version>
```

for example, @LOGIN.COM 6340.

To invoke Natural, enter "NAT63".

Changing a Process Environment with *STARTUP_NAT<v>.COM*

During the Natural installation with PCSI as described above, the command procedure *STARTUP_NAT<v>.COM* was executed for the environment, if you answered **Run STARTUP_NAT<v>.COM after successful installation?** with "YES". However, if you want to change a user-specific environment, you can use *STARTUP_NAT<v>.COM* again, but you specify different parameters. These parameters are:

Parameter	Description
<p1>	Natural version.
<p2>	"BP" if you want to activate the Natural buffer pool, or "NOBP" if you do not want to activate it.
<p3>	"INST" if you want to install the Natural images, or nothing if you do not want to install them.

Note:

If you want to install the Natural images, you must have the privileges SETPRV, CMKRNL, SYSNAM or SYSPRV.

Enter the following command to start *STARTUP_NAT<v>.COM*:

```
@STARTUP_NAT<v> <p1> <p2> <p3>
```

For example:

```
@STARTUP_NAT6 6340 BP INST
```

Activating the Natural Buffer Pool

To activate the Natural buffer pool, you execute the command procedure *STARTUP_NAT<v>.COM* with parameter P2 set to "BP" as in the following example:

```
@STARTUP_NAT<v>.COM <version> BP
```