

Natural Runtime Version

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General Information on Natural Runtime

Natural Runtime is used to execute applications that have been written using the development version of Natural for Windows.

This section tells you how to port an application from a Natural Development version to a Natural Runtime version workstation.

This porting process can be used for a first installation, and for Runtime workstation updates.

Before porting an application to a Runtime workstation, ensure that all objects have been compiled using identical Natural Development and Runtime versions.

Runtime Version Differences

System Commands

The following System Commands are **not** supported by the Runtime version:

CATALL	EDIT	RENUMBER	SCRATCH
CATALOG	GLOBALS	RUN	STOW
CHECK	PURGE	SAVE	STRUCT
CLEAR	READ	SCAN	UNCAT

Editors

Natural editors are **not** supported.

Natural Utilities

Natural utilities providing developer functionality are **not** supported.

Porting Procedure Overview

To port an application from a Natural Development workstation to a Natural Runtime workstation

1. Package the application on the Natural Development workstation:
 - Create a collecting directory in your file system on PC;
 - Customize the configuration files for the application, and copy the customized configuration files to the collecting directory;
 - Unload or copy the Natural objects to the same directory;
 - Copy all files from the collecting directory to the transfer medium (e.g., diskette, tape, network) used for installation of your Natural application on the Natural Runtime workstation.
2. Install the Natural Runtime software on the workstation.
3. Install the application objects on the Natural Runtime workstation:
Copy the Natural configuration files from the transfer medium to the Natural Runtime workstation;
Load or copy the Natural objects from the transfer medium.
4. Start the Natural application.

These steps are described in detail below. See also Transfer Natural Generated Programs in the Natural Programming Guide for further information.

Step 1: Packaging the Application

After customizing the configuration settings, create the application installation package on the Natural Development workstation.

To package the Natural application on the Natural Development workstation

1. Create a collecting directory.
2. Customize the global configuration file, and copy the customized configuration file to the collecting directory;
3. Customize the Natural parameter file, and copy the customized Natural parameter file to the collecting directory;
4. Copy the Natural code to the collection directory.
5. Copy the contents of the collection directory to the transfer medium (e.g., diskette, tape, network).

Creating a Collecting Directory

Create a new directory on the local file of the Natural Development workstation. Use this temporary directory to collect all files belong to the application.

Customizing the Global Configuration File

To customize the global configuration file

1. Backup the existing global configuration file.

Note:

You can use the Natural Configuration Utility to locate the global configuration file. Run the Natural Configuration Utility. Display the Installation Assignments of the Local Config File. The full path name of the global configuration file is listed as "Global Configuration File".

2. Run the Natural Configuration Utility.
3. Adjust the Global Config File settings as required for your application.
4. Save the Global Config File settings. Note that you cannot start the Natural Development environment until the global configuration file is adapted to the Runtime environment.

5. Copy the customized global configuration file to the collecting directory.
6. Restore the backed up global configuration file.

Notes:

1. The default paths to the FNAT and to the FUSER system files differ in Natural Development version and Natural Runtime version.

To simplify the installation of the Natural application in the Runtime environment, adjust the paths just in this step.

Select Global Config File, System Files, System Files. Modify the FNAT and the FUSER paths to the settings of the Natural Runtime version.

Example:

For a default Natural Development version installation and Natural Runtime installation, change:

99	100	C:\Program Files\Software AG\Natural\Version\Fnat
99	101	C:\Program Files\Software AG\Natural\Natapps\Fuser

to the following paths:

99	100	C:\Program Files\Software AG\Natural Runtime\Version\Fnat
99	101	C:\Program Files\Software AG\Natural Runtime\Natapps\Fuser

Version is the corresponding Natural version.

2. Make sure that with every new application you are porting, the new settings are compatible with the old ones.

Example:

Your first application accesses an SQL database and the DBID entry applies to this SQL database. Your second application, which you are porting at a later date, accesses an Adabas C database. In this case, you must add a second DBID entry for Adabas C, because if you do not, the new global configuration file will overwrite the SQL database’s DBID and your first application will no longer be able to access its database.

Customizing the Natural Parameter File

 **To customize the Natural Parameter File**

1. Run the Natural Configuration Utility on the Natural Development version workstation.
2. Select the corresponding Natural parameter file.
3. Adjust the Natural parameters as required for your application to run in the Runtime environment.
4. Ensure that your Natural parameter file contains at least the settings listed in the table below.

AUTO	Set to Y.
INIT-LIB	Indicate the library into which the application will be moved.
STARTUP	Indicate the application program name that is started.
USER	Indicate the default User ID to be set when Natural is started.

5. Save the modified parameter file with a the name that you want to use in the Natural Runtime environment, e.g. RUNPARAM.

6. Locate the parameter file.

Note:

You can use the Natural Configuration Utility to locate the parameter file. Display the Installation Assignment of the Local Config File. The location of the Natural parameter files is listed as "Path to Profile Parameters".

7. Copy the customized parameter file, e.g. RUNPARAM.SAG, from the location of the parameter files to the collecting directory.

Copying Natural Code to the Collecting Directory

To make compiled code available to the Natural Runtime version, cataloged objects from a Development version of Natural must be copied to the Runtime version. If the Natural application consist of complete Natural libraries, it is possible to copy the corresponding Natural libraries with Windows File Manager copy routines. Another way for porting Natural code is to unload the objects on the Natural Development workstation, and to load them on the Runtime environment.

To copy Natural code

1. Create a new library in which the cataloged objects are to be contained.
2. Copy all cataloged objects, the resources, and the error messages from the development library to the new library (Runtime). Do not copy the sources.
3. Locate the directory containing this Runtime library.

Note:

You can use the Natural SYSPROF command to locate the directory containing this Runtime library. Start the Natural SYSPROF command. Display the current definitions of the Natural system files. Select FUSER to see the path of the FUSER system file.

The Runtime library is the subdirectory on the FUSER directory with the same name as the source Runtime library . This directory contains a file named FILEDIR.SAG, a subdirectory GP containing all cataloged objects, a subdirectory RES containing the resources, and a subdirectory ERR containing the error messages.

4. Copy the entire directory, including the GP, RES and ERR subdirectories, from the FUSER path to the collecting directory.
5. Rename the directory on the collecting directory if necessary. Enter the name of the library that is used in the Runtime environment.

Notes:

1. If the application consists of more than one library, treat all libraries the same way.
2. Another way to locate the FUSER directory is to use the Natural Configuration utility. Run the Natural Configuration Utility. Select the Natural parameter file copied in the step above, and used to start the application in the Runtime environment. Display the System Files of the Natural Execution Configuration. The path of the FUSER system file is listed as "User System File" of the System Files.

To unload Natural code

1. Start the Natural Object Handler.
2. Start the Unload Wizard.
3. Unload the objects into a Natural work file.
4. In the options settings, use a Natural work file located on the collecting directory.
5. If the application uses other library names in the Runtime environment, than in the Development environment, set the names with the parameter setting.
If the application uses the same library names in both environments, do not use parameters with the parameter setting.
6. Unload all catalogued objects, shared resources and error messages contained in the application. Do not unload the sources.

7. After the successful unload, you can check the work file created on the collecting directory. Use the Load Wizard to scan the work file for all objects.

Completing the Package

When all files on the collecting directory are ready for porting, copy the contents of the collecting directory, including all subdirectories to the transfer medium.

Step 2: Installing the Runtime Version

See the Natural Installation documentation for information on how to install Natural Runtime for Windows.

Step 3: Installing the Application to the Runtime Version

To install the application to the Runtime version

1. Install the configuration files.
2. Install the Natural code.

Installing the Configuration Files

To install the configuration files

1. Locate the Natural parameter file and the global configuration file in the Runtime version.

Note:

You can use the Natural Configuration Utility. Run the Natural Configuration Utility. Display the Installation Assignments of the Local Config File. The full path name of the global configuration file is listed as "Global Configuration File". The location of the Natural parameter file is listed as "Path to Profile Parameters".

2. Copy the global configuration file and the Natural parameter from the transfer medium to the corresponding paths.

Installing the Natural code

Depending on the package process, complete libraries are transferred, or the Natural code is unloaded into a Natural work file, see Copying Natural Code.

If complete libraries are transferred, the transfer medium contains directories with Natural library names, and the Natural library structure (FILEDIR.SAG file, subdirectories named GP, RES, and ERR). Install the libraries with file copy.

If the Natural code is transferred via unload/load, the transfer medium contains a Natural work file. Install the Natural code with load.

To install the Natural code with file copy

1. Locate the directory containing the Runtime libraries (FUSER).

Note:

You can use the Natural Configuration Utility to locate the FUSER path. Run the Natural Configuration Utility. Select the Natural parameter file copied in the step above. Display the System Files of the Natural Execution Configuration. The path of the FUSER system file is listed as "User System File" of the System Files.

2. Copy the libraries including their subdirectories to the FUSER path. Use the Windows File Manager.

To install the Natural code with load

1. Compare the FUSER settings of the NATPARAM parameter module, and the Natural parameter file copied in the step above.

Note:

You can use the Natural Configuration Utility. Run the Natural Configuration Utility. Select the corresponding parameter file. Display the System Files of the Natural Execution Configuration. The DBID and FNR of the FUSER are listed as "User System File" of the System Files.

2. Start the Natural Runtime Version using the standard NATPARAM parameter module.
3. Execute the MENU program on the SYSOBJH library.
4. Start the Load Wizard.
5. Load the objects from Natural work file.

6. In the options settings, use the Natural work file located on the transfer medium as load file.
7. If the DBID and FNR of the new parameter module differs from the standard NATPARM setting, enter these values in the parameter settings. Choose "Use Global Parameters", and enter the corresponding values for "Load FUSER DBID" and "Load FUSER FNR".
8. Load all objects from the work file.
9. Exit the Object Handler, and exit Natural.

Step 4: Starting the Application

To start the application in the Runtime version

- Choose the "Natural Runtime" file in the Explorer.

If your customized Natural parameter file has a name other than 'NATPARM', create a shortcut to the naturalr.exe in the binary path of the Natural Runtime environment, and change the Target in the Explorer using the following:

"..\Bin\naturalr.exe" PARM=*filename*

where *filename* is the name you have assigned to your customized Natural parameter file (without any file extension).

Runtime Startup Services

With Natural (Runtime) for Windows, you can use a service to start Natural Runtime processes.

With the help of the startup service, you can also define "parameter templates" which are used to hold Natural command line parameters. The templates are named and thus allow you to start a Natural Runtime process with all the parameters contained within the template.

Enter the corresponding commands in the Command Prompt of your Windows system. Ensure, that the NATRTSVC is available.

Note:

To ensure, that the NATRTSVC is available, change your current directory to the binary path of the Natural Runtime environment. In a default installation it is

```
C:\Program Files\Software AG\Natural Runtime\version\Bin,
```

where `version` is the current version of the Natural Runtime environment.

Example:

To install the service with the automatic startup function

- Create a template and have the corresponding Natural Runtime process started up at boot time--you will see output from each invocation which is left out here:

```
NATRTSVC INSTALL automatic
NATRTSVC CREATE exa_temp
NATRTSVC SET exa_temp start=yes
NATRTSVC SET exa_temp parm=myparm
```

Runtime Startup Service Commands

The following Runtime Startup Service commands are available in the Command Line Interface:

Install Service

```
NATRTSVC
  INSTALL {manual | automatic}
```

Two parameters are available: manual (default) and automatic.

- **Manual:**
This service is installed and must be started manually from the "Services" dialog in the "Control Panel".
- **Automatic:**
This service is installed and started automatically when the PC is booted.

Remove Service

```
NATRTSVC
  REMOVE
```

This command removes the service from the system.

Start Service

```
NATRVSVC
START
```

This command starts the service if it had not been started yet. The service searches for previously created parameter templates where the start parameter is set to 'yes'. In addition, it starts a Natural Runtime process with the Natural parameters which are also stored in the template.

Start Specified Parameter Template

```
NATRVSVC
START template-name
```

This command starts a Natural Runtime process with the Natural parameters stored in the specified template. If the service has not been started (automatically at boot time or manually by the user) an error message is displayed.

Stop Service

```
NATRVSVC
STOP
```

This command stops the service and stops all Natural Runtime processes that have been started by the Natural Runtime service.

Stop the Specified Template

```
NATRVSVC
STOP template-name
```

This command stops the Natural runtime processes that has been started by the startup service with the Natural parameters stored in the specified template.

Create New Parameter Template to be Started by the Service

```
NATRVSVC
CREATE template-name
```

Delete Specified Template from the Service

```
NATRVSVC
DELETE template-name
```

Define Startup

```
NATRVSVC
SET template-name start=(yes | no)
```

If the value of

```
start
```

is set to 'yes', a Natural Runtime process with the Natural parameters also stored in the specified template will be started if the service is started. The default value of

```
start
```

is 'no'.

Define Natural Parameters

```
NATRISVC
  SET template-name Natural-parameter
```

This command stores the Natural parameter in the specified template. For valid Natural parameters, refer to the Natural Operations documentation, section Profile Parameters.

Display all Templates

```
NATRISVC
  SHOW
```

This command displays the startup setting and the stored Natural parameters for all Templates.

Display specific Template

```
NATRISVC
  SHOW template-name
```

This command displays the startup setting and the stored Natural parameters for the specified Template.

Display Status of all Templates (active or inactive)

```
NATRISVC
  STATUS
```

This command is used to determine if the Natural Runtime processes corresponding to all templates are active.

Display Status of Specified Template

```
NATRISVC
  STATUS template-name
```

This command is used to determine if the Natural Runtime process corresponding to the specified template is active.