

# Setting up Super Natural

This chapter describes how to set up Super Natural to suit your environment.

This section covers the following topics:

- Setting Up Super Natural Without Natural Security
  - Setting Up Super Natural With Natural Security
  - Set-Up for the Super Natural Personal Database
  - Buffer Sizes
  - Natural User System File (FUSER)
  - Natural Library SYSSN
  - Customizing Super Natural (System Exits)
  - Super Natural in Inverse Mode
  - Super Natural for Year 2000
  - Setting up the Environment for the Super Natural Tutorial
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## Setting Up Super Natural Without Natural Security

### To initialize Super Natural

- Execute the Super Natural initialization function with:

```
LOGON SYSSNSNINIT
```

The user DBA and the default user \*\*\*\*\* are defined and the Super Natural Administration Application is invoked.

The administrator is defined as an authorized user who may use the Super NaturalAdministration Application.

**▶ To add / link users and files**

- Add/link additional users and files to Super Natural using the Super NaturalAdministration Application as described in the following instruction.

**▶ To define files and users**

When Natural Security is not installed, the following sequence is recommended when defining files and users to Super Natural:

1. Define files to Super Natural using theAdd Files function.

**Note:**

For DL/I files, the options Physical Read Allowed, Display Values for Key Fields andAdabas Sorting Allowed must be set toN.

2. Set default user options by modifying the default user\*\*\*\*\*.

**Note:**

The user options of the default user \*\*\*\*\*are used as a basis when adding Super Naturalusers.

3. Define users to Super Natural using theAdd User function, and create a file list for them using either the Modify User >Files function or the Modify File >Users function.

Now files are defined to Super Natural, users are defined to Super Natural with default user option settings, and each user definition includes an associated file list. You can now modify users and files further using the Modify User and Modify File functions.

The hierarchy of the specific file and user option settings is discussed in the *Super Natural Administration documentation*.



**Warning:**

**Do not use theNatural utility SYSMAIN,SYSMAIN2 or ULDMAINto copy or moveSuper Natural transactions between system files. These utilities only copy up to 80 characters per source line andSuper Natural specifications contain up to 250 characters per line.**

## Setting Up Super Natural With Natural Security

When Natural Security is installed, the application SYSSN must be defined (without protection) to the Natural Security system before it can be used.

**Note:**

If Super Natural replaces an existing older version running with Natural Security, remove the startup program MENU from the library profileSYSSN (this prevents installation errors when loading help texts with SNLOAD). After the installation is completed, set the startup program again to MENU.

SYSSN must be installed with Programming Mode Reporting.

**▶ To define mandatory command processors to Natural Security**

1. Link the following command processor to the applicationSYSSN using Additional Options in Functional Security:

MNSPCMD1	Super Natural Maintenance
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2. Set the Keyword defaults to ALLOWED.
3. Link the following command processors to the librarySYSLIB using Additional Options in Functional Security:

NRMNSNS1	Natural Report Manager - Maintenance
NRM-CMD1	Natural Report Manager - Testing

4. Set the Keyword defaults to ALLOWED.

**▶ To define language-dependent command processors to Natural Security**

1. Link the following command processor to the applicationSYSSN using Additional Options in Functional Security:

NSP-CMDn	Super Natural Processor Where n is replaced by the language code number of the language you want to install.
----------	---

2. Set the Keyword defaults to ALLOWED.
3. Link the following command processors to the librarySYSLIB using Additional Options in Functional Security:

NRMNSN0n	Natural Report Manager - Processor
NRM-CMDn	Natural Report Manager - Testing (not necessary if installing English version) Where n is replaced by the language code number of the language you want to install.

4. Set the Keyword defaults to ALLOWED.

**▶ To initialize Super Natural**

1. Execute the Super Natural initialization function with:

```
LOGON SYSSNSNINIT
```

The administrator is defined as an authorized user who may use the Super Natural Maintenance System. The user DBA and the default user\*\*\*\*\* are defined and the Super Natural Maintenance System is invoked.

2. The Super Natural administrator should now define additional authorized Super Natural users and files as described below.

**▶ To modify the application SYSSN**

Once SNINIT has been executed successfully, do the following:

1. Modify the application SYSSN to people protected.
2. Allow command mode.
3. Set the startup and restart programs to MENU.
4. Set the error program to SNRTE.

**▶ To link users and files**

1. Link at least one user to the application.
2. Link private files to be used to library SYSSN.
3. Add/link users and files to Super Natural using the Super Natural Administration Application as described in the following instruction.

### **To define files and users**

When Natural Security is installed, it is recommend that the following sequence be followed when defining files and users to Super Natural:

1. Set default user options by modifying the default user\*\*\*\*\*.

**Note:**

The user options of the default user\*\*\*\*\*are used as a basis when addingSuper Naturalusers.

2. Import users and their associated private files to Super Natural by using the Import Userfunction.

Only private files that are linked to application SYSSNare available for this function.

**Note:**

For DL/I files, the options Physical Read Allowed, Display Values for Key Fields andAdabas Sorting Allowed must be set toN.

3. Import public files to Super Natural by using theImport File function.

**Note:**

For DL/I files, the options Physical Read Allowed, Display Values for Key Fields andAdabas Sorting Allowed must be set toN.

4. Modify users' file lists by using the Modify User >Files function to add public files to their file lists, or modify the public files' users list by using the Modify File >Users function.

Now files are defined to Super Natural, users are defined to Super Natural with default user option settings, and each user definition includes an associated file list with private and public files that can be used through Super Natural. At this point, individual option settings may be changed for files and users using the Modify User andModify File functions.

The hierarchy of the specific file and user option settings is discussed in the *Super Natural Administration documentation*.

**Note:**

for BS2000 users:

If you wish to run batch while online,ETID parameters must not be generated (see the*Natural Security*documentation).

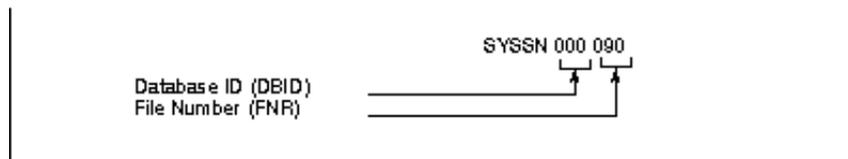


**Warning:**

**Do not use the Natural utility SYSMAIN, SYSMAIN2 orULDMAINto copy or move Super Natural transactions between system files. These utilities only copy up to 80 characters per source line and Super Natural specifications contain up to 250 characters per line.**

## Set-Up for the Super Natural Personal Database

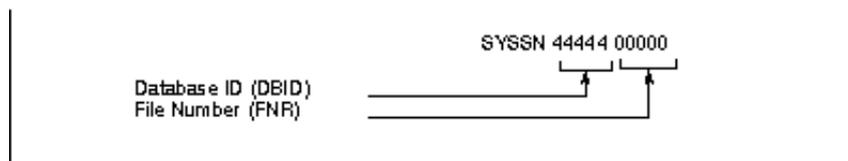
The master DDM for the Super Natural personal database is catalogued on Database 0, File Number 90 in accordance with the following naming conventions:



It shows the compatibility format to former Super Natural versions and can be used if the DBID and FNR are in the following range.

DBID	0 - 254
FNR	1 - 255

The general format for the master DDM enabling even for a DBID greater than 255 and/or a FNR greater than 255 is as follows:



The DBID and FNR are in the following range:

DBID	0 - 65535
FNR	1 - 5000

The DBID and FNR must be renamed and recatalogued to correspond to the actual DBID and FNR of the Adabas file installed in Step 2 of the installation procedure. This DBID and FNR must also be entered in the optionsUser File Adabas Database ID and User File Adabas File Number (seeUser Options).

**Note:**

SYSSN must not be renamed.

If there are inconsistencies in the user and default options, users receive one of the following error messages when invoking the File List screen:

Adabas Response Code	Natural Error
148	NAT3148
017	NAT3017
061	NAT3061

It is also possible to have multiple Personal Databases (one physicalAdabasfile required per Personal Database). Use of these files is defined by these DBID and FNR option settings.

The field list may be restricted within the DDM, thus enabling the Super Natural administrator to control the use of the file.

**Note:**

The field with the Adabas short name AA must never be changed.

If Natural Security is installed, note that all user files created on the Personal Database will automatically be defined as Natural Security private files and automatically be linked to the application SYSSN.

## Buffer Sizes

The following buffer sizes are recommended:

Buffer	Size
DATSIZE	50
ESIZE *	45
RUNSIZE	20

\* ESIZE is dependent on the size of the DDMs you are dealing with and the number of fields used. Some transactions may need larger values than those listed above.

For an example of the buffer sizes needed by the transactions SAMPLE2 and SAMPLE3 (described in the Super Natural Tutorial), see Technical Information.

## Natural User System File - FUSER

Super Natural uses the Natural user system file (FUSER) to store and maintain the following:

### Authorized Users

A record is maintained for each Super Natural user. The record contains the user's default options, a list of the files which the user is authorized to access and an entry for the user's authorization to the Super Natural Maintenance System.

**Note:**

The profiles of the Natural Report Manager are stored on the Natural system system file FNAT.

### Files

A record is maintained for each file on which Super Natural transactions are to be performed. These files must have a corresponding Natural DDM in the dictionary file (FDIC).

### Transaction Programs

When a user saves or runs a new transaction, a Natural program is generated from the transaction specification and this program is saved and cataloged like any other Natural program. The transaction specification information is stored as comment lines at the beginning of the generated Natural program to facilitate transaction modification.

The Natural library name used for transaction programs is generated as follows:

The first character is the private library prefix (default Y)

The second through eighth characters are the User ID of the user.

Super Natural also supports read-only public libraries which have corresponding Natural libraries where the first character is the public library prefix (default Z). A transaction may be copied into a public library using the Super Natural Maintenance Application. The transaction program names in both private and public libraries are constructed as follows:

The first character is the transaction prefix (default I)  
The second through eighth characters are the Transaction ID as specified by the user.

### **Common Libraries**

List of common libraries.

### **Help Text**

Super Natural help texts.

### **Note:**

If you are using a new Natural system user file (FUSER), use the utilities SNULD and SNLOAD to move Super Natural data created in a former Natural environment.

## **NaturalLibrary SYSSN**

SYSSN is the Super Natural system library. SYSSN is in the Natural system system file (FNAT) and is used to store and maintain the following:

### **Super Natural System Programs**

The Natural programs comprising the Super Natural system are provided in INPL object form for loading (using the Natural INPL facility) into the Natural library SYSSN.

### **System Exits**

The system exit programs SPRJEU, SPPARM, EXIT, SNERRU, ENTRY, are provided in source form which you can modify. For further information, see Customizing Super Natural.

### **Batch Utilities**

The batch utilities SNULD, SNLOAD and SNDELUF are provided in object form. For further information, see Batch Utilities.

### **Error Logging**

#### **SNELOG**

Service program for reviewing the error protocol. You can use the error protocol to see whether errors are environment-specific, for example, size problems, or printer or work file assignment problems. For further information on error logging see section Error Logging.

### **Status Reporting**

#### **SNTALOG**

Service routine for reviewing Status Reports written if the option DDM Check on Modify is set and deviations are detected in a transaction.

#### **SNTAON**

Service routine which activates status reporting. The Status Reports are written to the Personal Database. If you invoke SNTAON using the NOUSER parameter, user IDs are not recorded in the status report.

**SNTAOFF**

Service routine which deactivates status reporting. It deletes all Status Reports

## Customizing Super Natural - System Exits

In the library SYSSN, Super Natural provides the following system exit programs in source form, which may be modified to customize Super Natural to the needs of your user site. At the beginning of each program, there is a detailed program description.

**EXIT**

Program invoked as exit routine when the Super Natural session is terminated.

**SNERRU**

Program invoked by error routine SNRTE.SNERRU can be modified to handle specific error conditions. For example, you can use SNERRU to give the user additional information or instructions when an error occurs.

**SPRJEU**

Natural subprogram which is executed once for every job card prior to the submission of a batch job.

**SPPARM**

Subprogram to define environment specific parameter settings. Parameters include:

- The submission indicator for batch job submission (RJE or NPR)
- COM-LETE hardcopy support - default printer number generation or prompting for destination (default)
- Common library prefix character
- Layout prefix character

**ENTRY**

Program invoked as entry routine for the Super Natural session.

The Report function displays a list of errors showing date, time, error number, type of error, program, line and user (if not deactivated using the NOUSER parameter). If you move the cursor to an error line and press Enter, you receive further information concerning the error.

TheDelete function deletes the current list of errors.

**SHEXIT**

Program which takes over if the user presses CLEAR.

## Super Natural in Inverse Mode

Using Super Natural inverse mode, you can display Semitic languages (display from right to left) provided that the appropriate hardware facilities are available. All input and output fields are displayed in inverse mode.

The Super Natural administrator defines which language code each user will use for inverse mode by setting the user optionLanguage Code for Inverse Mode in that user's user profile. For further information, see Users. If the user selects this language code in his/her user profile, the terminal display is switched.

If the files Super Natural users are accessing in inverse mode contain only data in inverse format, no further set-up requirements need be considered.

## Files with Mixed Data Format

If a file contains both fields with data in regular format (to be displayed from left to right) and fields with data in inverse format (to be displayed from right to left), the Super Natural administrator must prepare the Super Natural environment accordingly.

Super Natural must be able to distinguish between fields of regular and inverse format for all data maintenance and reporting functions. If this distinction is not made, both field types are treated alike and the resulting data is unusable. If the distinction between regular and inverse format data is made, Super Natural can display regular format fields from left to right when accessing the mixed file in inverse mode.

So that Super Natural can distinguish between the two field types of a mixed file, fields with regular format must be indicated by a prefix in the field name when the file is designed. For example, you could define regular format fields with the prefix reg-, as in REG-NAME, REG-CITY, etc. This prefix must also be specified in the mixed file's file option Prefix for Inverse Field Output. Users do not need to distinguish between the two field types when operating in inverse mode as Super Natural adjusts the corresponding field formats automatically. Users can maintain and display data of any field type regardless of field format.

You must consider the following when operating Super Natural in inverse mode with mixed files:

- Define all names of fields that are to contain data in regular format (from left to right) with a prefix when creating the file.
- Use the same prefix for the file's option Prefix for Inverse Field Output.
- Set the option Language Code for Inverse Mode to the appropriate code for each user who is to operate in inverse mode.
- Advise users to only access mixed files in inverse mode.

## Super Natural for Year 2000

Here we provide some hints to enable the correct interpretation of your production data concerning the Year 2000 problem. If your data values are not Year 2000 enabled, Natural provides the possibility to adapt them.

### Use the profile parameter DFOUT

To enable the input and output of data values of your production data with 4-digit year numbers without enlarging the input and output fields in a transaction, the DFOUT parameter should be set. If the former format was YY-MM-DD, it will be the DFOUT setting YYYYMMDD.

#### To use the profile parameter DFOUT

- Set the profile parameter "DFOUT = I"

For more information, see the *Natural Programmers Documentation*.

## Use the profile parameter YSLW

To define a time window for interpreting the date values of your production data correctly, you have to set the profile parameter rYSLW appropriate. This is necessary if only 2-digit numbers are used and you want to adapt them to 4-digit numbers as e.g. 1900 or 2000.

### To use the profile parameter YSLW

- Set the profile parameter "YSLW = nn", where nn = 00 ... 99

For more information, see the *Natural Programmers* Documentation.

## Setting up the Environment for the Super Natural Tutorial

If you proceed with the examples 9 to 11 of the *Super Natural Tutorial* you have to provide the data you have selected with the transaction to your Natural for Windows environment for further processing.

The following steps describe how to load the example application from the Documentation CD and to set up your environment.

### To load the example application

If you want to set up your Natural for Windows in order to use the Super Natural RPC Service, set up the Natparms according to the recommendation. For further information see *Natural documentation* section **Remote Procedure Call > Setting up a Natural Client**. Furthermore ensure that your connections and servers are active.

1. Open Natural for Windows.
2. Execute the Natural for Windows Unload Utility by selecting System Libraries > SYSUNLD > Programs > Menu.

The Unload Utility window appears:

3. Enter L in the Code field.
4. Press Enter.
5. Select the Work button and enter the path of the workfile you want to load to your Natural for Windows environment: Documentation CD\supernat\tuhtml\sample\NSNsampl.SAG.
6. Press Enter.
7. Enter A in the Code field to determine that you want to load all data.
8. Press Enter until you reach the screen of step 7.

All data for the sample application is loaded.

9. Exit the Unload Utility by entering . in the Code field.

### To set up your Natural environment for the tutorial example data

1. Go to the user library you expect the sample application (here NSNSAMPL) and refresh it.

NSNSAMPL is placed in the user library now.

2. Execute System Libraries > SYSRPC > Programs > Menu.
3. Select Tools > Local Service Directory Maintenance.
4. Add the library NSNSAMPL and the corresponding subprograms RPCSMPL1, RPCSMPL2 andRPCSMPL3.
5. Select OK.
6. Go to the library SYSRPC > Subprograms and copy the subprogram NATCLTGS to the library NSNSAMPL > Subprograms.

Your Natural environment is now ready to use for the tutorial RPC examples.

