

Super Natural

Installation and Set-Up

Version 9.2.3

September 2025

This document applies to Super Natural Version 9.2.3 and all subsequent releases.

Specifications contained herein are subject to change and these changes will be reported in subsequent release notes or new editions.

Copyright © 1985-2025 Software GmbH, Darmstadt, Germany and/or its subsidiaries and/or its affiliates and/or their licensors.

The name Software AG and all Software GmbH product names are either trademarks or registered trademarks of Software GmbH and/or its subsidiaries and/or its affiliates and/or their licensors. Other company and product names mentioned herein may be trademarks of their respective owners.

Detailed information on trademarks and patents owned by Software GmbH and/or its subsidiaries is located at <https://softwareag.com/licenses>.

Use of this software is subject to adherence to Software GmbH's licensing conditions and terms. These terms are part of the product documentation, located at <https://softwareag.com/licenses> and/or in the root installation directory of the licensed product(s).

This software may include portions of third-party products. For third-party copyright notices, license terms, additional rights or restrictions, please refer to "License Texts, Copyright Notices and Disclaimers of Third-Party Products". For certain specific third-party license restrictions, please refer to section E of the Legal Notices available under "License Terms and Conditions for Use of Software GmbH Products / Copyright and Trademark Notices of Software GmbH Products". These documents are part of the product documentation, located at <https://softwareag.com/licenses> and/or in the root installation directory of the licensed product(s).

Use, reproduction, transfer, publication or disclosure is prohibited except as specifically provided for in your License Agreement with Software GmbH.

Document ID: NSN-INSTALL-923-20250930

Table of Contents

Preface	v
1 About this Documentation	1
Document Conventions	2
Online Information and Support	2
Data Protection	3
2 Installing Super Natural on Mainframes	5
Prerequisites	6
Installation Jobs	7
Using System Maintenance Aid	7
Personal Database	7
Contents of the Distribution Medium	8
Installation Procedure	9
3 Setting up Super Natural	15
Setting Up Super Natural Without Natural Security	16
Setting Up Super Natural With Natural Security	17
Set-Up for the Super Natural Personal Database	20
Buffer Sizes	21
Natural User System File - FUSER	22
Natural Library SYSSN	23
Customizing Super Natural - System Exits	24
Super Natural in Inverse Mode	25
Setting up the Environment for the Super Natural Tutorial	26

Preface

This documentation provides information on installing and setting up Super Natural. The documentation is organized in the following parts:

Installing Super Natural on Mainframes	How to install Super Natural under the z/OS operating system.
Setting up Super Natural	How to set up and customize Super Natural.

1 About this Documentation

▪ Document Conventions	2
▪ Online Information and Support	2
▪ Data Protection	3

Document Conventions

Convention	Description
Bold	Identifies elements on a screen.
Monospace font	Identifies service names and locations in the format <code>folder.subfolder.service</code> , APIs, Java classes, methods, properties.
<i>Italic</i>	Identifies: Variables for which you must supply values specific to your own situation or environment. New terms the first time they occur in the text. References to other documentation sources.
Monospace font	Identifies: Text you must type in. Messages displayed by the system. Program code.
{ }	Indicates a set of choices from which you must choose one. Type only the information inside the curly braces. Do not type the { } symbols.
	Separates two mutually exclusive choices in a syntax line. Type one of these choices. Do not type the symbol.
[]	Indicates one or more options. Type only the information inside the square brackets. Do not type the [] symbols.
...	Indicates that you can type multiple options of the same type. Type only the information. Do not type the ellipsis (...).

Online Information and Support

Product Documentation

You can find the product documentation on our documentation website at <https://documentation.softwareag.com>.

Product Training

You can find helpful product training material on our Learning Portal at <https://learn.software-ag.com>.

Tech Community

You can collaborate with Software GmbH experts on our Tech Community website at <https://tech-community.softwareag.com>. From here you can, for example:

- Browse through our vast knowledge base.
- Ask questions and find answers in our discussion forums.
- Get the latest Software GmbH news and announcements.
- Explore our communities.
- Go to our public GitHub and Docker repositories at <https://github.com/softwareag> and <https://hub.docker.com/publishers/softwareag> and discover additional Software GmbH resources.

Product Support

Support for Software GmbH products is provided to licensed customers via our Empower Portal at <https://empower.softwareag.com>. Many services on this portal require that you have an account. If you do not yet have one, you can request it at <https://empower.softwareag.com/register>. Once you have an account, you can, for example:

- Download products, updates and fixes.
- Search the Knowledge Center for technical information and tips.
- Subscribe to early warnings and critical alerts.
- Open and update support incidents.
- Add product feature requests.

Data Protection

Software AG products provide functionality with respect to processing of personal data according to the EU General Data Protection Regulation (GDPR). Where applicable, appropriate steps are documented in the respective administration documentation.

2 Installing Super Natural on Mainframes

■ Prerequisites	6
■ Installation Jobs	7
■ Using System Maintenance Aid	7
■ Personal Database	7
■ Contents of the Distribution Medium	8
■ Installation Procedure	9

This section describes how to install Super Natural (language-dependent and language-independent Natural objects) under z/OS.

- [Prerequisites](#)
- [Installation Jobs](#)
- [Using System Maintenance Aid](#)
- [Personal Database](#)
- [Contents of the Distribution Medium](#)
- [Installation Procedure](#)

Prerequisites

Installation

The following software must be installed and running at your site before you install Super Natural:

- Adabas for Mainframes
- Natural for Mainframes

For product/version dependencies, refer to *Natural and Other Software AG Products* in the current *Natural Release Notes for Mainframes*.

Transaction Modes

The following table lists the requirements which must be fulfilled in order to use certain Super Natural transaction modes.

Transaction Mode	Requirement
Destination PRINTER	Natural Advanced Facilities or Complete must be installed.
Destination WORK FILE	The operating system and TP monitor system used must support Natural work file access.
Destination PC	Entire Connection must be installed.

For information on the supported versions of the Natural add-on products mentioned in the table above, refer to *Natural and Other Software AG Products* in the current *Natural Release Notes for Mainframes*.

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).

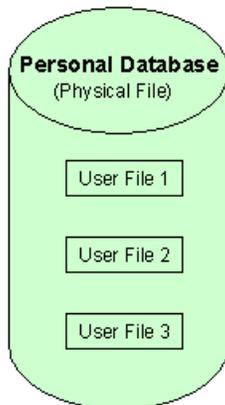
For each step of the installation procedure described below, the job number of a job performing the corresponding task is indicated. This job number refers to an installation job generated by SMA. If you are not using SMA, an example installation job of the same number is provided in the job library on the Natural installation medium; you must adapt this example job to your requirements.

Using System Maintenance Aid

For information on using the Software AG product System Maintenance Aid, see the *System Maintenance Aid* documentation.

Personal Database

The Super Natural personal database is the physical Adabas file that accommodates Super Natural user files as shown in the following diagram:



Contents of the Distribution Medium

Super Natural is distributed as either a Special Purpose Medium or a System Maintenance Medium. The same data set (file) names are used for both media types, whereas volume serial numbers and the position of the data set (file) on the medium may vary.

All references in this document are made to data set (file) names, and are thus applicable to both types of media.

For a detailed description of the distribution medium, see *The Software AG Product Delivery Report* which accompanies the medium.

Data Set (File) Names

Data set (file) names on Super Natural distribution medium are made up of three parts. The following is an example of a data set (file) name:

```
NSN $vr$ s.INPL
```

A Software AG product abbreviation forms the first part of the data set (file) name. Each data set (file) name contains one of the following:

- NSN for Super Natural
- NZ y for Super Natural Language Module, where y is replaced by the language code letter of the language you want to install.

The second part of the name, represented by vr s, is substituted by the version, release and system maintenance level number of the software on your medium.

The third part of the name (the four letters after the period) denotes the type of data set (file). For example, INPL denotes a library of Natural modules.

List of Data Sets (Files)

The distribution medium contains the following data sets (files) as standard labeled files.

NSN vr s.SYSF - Physical User File

This data set (file) contains the physical file description of the Super Natural physical user file in ADAULD format for use by the Personal Database.

NSN_{vrs}.INPL - Language-Independent Objects and Master DDM for Personal Database

This data set (file) contains Super Natural language-independent modules in INPL format for loading into the Natural system system file (FNAT). It also contains the master DDM (Data Definition Module) for the Personal Database for loading into the Predict system file (FDIC).

NZ_{vrs}.INPL - Language-Dependent Objects for Super Natural

This data set (file) contains Super Natural language-dependent maps (source and object modules) and programs.

NZ_{vrs}.ERRN - Error Messages (Language-Dependent)

This data set (file) contains the Super Natural error message texts for loading into the Natural system file (FNAT).

NZ_{vrs}.HLPS - Help Texts (Language-Dependent)

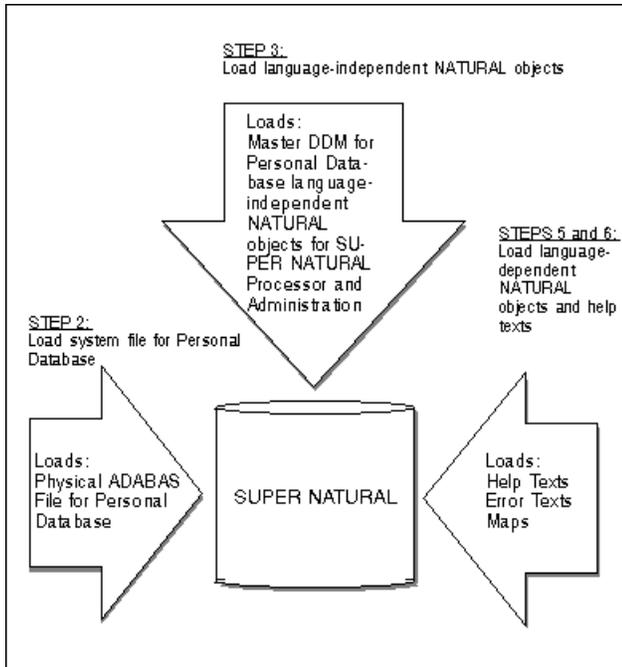
This data set (file) contains Super Natural help texts in a form suitable for loading into the Natural user file (FUSER) by the batch Natural program SNLOAD (this program is included in data set (file) NSN_{vrs}.INPL).

Documentation on CD > supernat > tutorial > sample - Sample Application for the Tutorial

Sample application for the Super Natural RPC service on Natural for Windows. Contains the sample client to load to Natural for Windows.

Installation Procedure

1. [Delete former Super Natural versions from the Natural system system file \(FNAT\)](#)
2. [Load system file for personal database: Job I050](#)
3. [Load language-independent Natural objects: Job I061](#)
4. [Define SYSSN to Natural Security](#)
5. [Load language-dependent objects: Job I061](#)
6. [Load language-dependent help texts: Job I200](#)
7. [Load the sample application](#)



Step 1: Delete former Super Natural Versions from the Natural System File

Exception: Do not delete the following modules stored in the library SYSSN:

Natural Security Modules	NSSNSPFI NSSNSPFL NSSNSPUL
Predict Modules	PRDNSPED PRDNSPFA PRDNSPFI PRDNSPRL PRDNSPSF PRDNSPWF

Step 2: Load System File for Personal Database

- (Job I050, Step 0400 NSN*vrs*.SYSF)



Note: For SMA Users:

If you want to continue using your old system file, check that the NSN-FIRST-INSTALL parameter is set to NO.

For Non-SMA Users:

If you want to continue using your old system file, ignore this step.

Load the NSN*vrs* system file as delivered on the installation medium using the ADALOD utility.

The size of this file should be based on the size of your production environment. The following is a list of sample values:

```
DBID=7
NAME=FNSN
FILE=20
ISNREUSE=YES
NISIZE=200B
UISIZE=100B
DSSIZE=100B
MAXISN=1000
VERSION=7
USERISN=YES
```

Step 3: Load language-independent Natural Objects

- (Job I061, Step 0400 NSN *vrs*.INPL)

Job I061 performs the following SMA steps:

The INPL utility loads the programs (maps, subprograms etc.) for Super Natural processor, administration and personal database and the master DDM for personal database.

For the personal database master DDM, use the following input for CMSYNIN:

```
INPL B
```

Otherwise use the following input for CMSYNIN:

```
INPL L
```

The Super Natural modules are loaded into the library SYSSN on the Natural system system file (FNAT).

The following modules are loaded into the library SYSTEM on the Natural system system file (FNAT):

LAYCHINA	LAYGEDUM
LOADGDA	NRM-INPI
NRM-INPL	NRMPRFD
SNLIB	SNLOAD
SNRTE	SNSWISA
SNTEND	SNTENDE
SPPRWF	SRNWSI

When the INPL is completed, you receive two messages confirming that Super Natural and the Natural Report Manager profiles for Super Natural have been successfully installed. If these messages do not appear, Super Natural is not correctly installed.

Step 4: Define SYSSN to Natural Security

For information on defining SYSSN to Natural Security, see the *Natural Security* documentation.

Step 5: Load language-dependent Objects

- (Job I061, Steps 04n1 NZyvrs.INPL, 04n2 NZyvrs.ERRN)

Job I061 performs the following SMA steps where *n* is replaced by the language code number of the language you want to install:

- **Step 04n1 NZyvrs.INPL**

Loads the language-dependent Natural objects (programs and maps).

Users not using SMA can issue the following command for CMSYNIN:

```
INPL L
```

- **Step 04n2 NZyvrs.ERRN**

The ERRLODUS utility loads the Super Natural error messages into the Natural system file (FNAT).

Users not using SMA can issue the following commands, as in the following example:

```
LOGON SYSTEM  
ERRLODUS  
FIN
```

Step 6: Load language-dependent Help Texts

- (Job I200, Step 04n3 NZyvrs.HLPS)

The program SNLOAD loads the Super Natural help texts into the Natural user system file (FUSER).

Users not using SMA can issue the following commands, as in the following example:

```
LOGON SYSSN  
SNLOAD  
FIN
```

Step 7: Load the Sample Application

Load the sample application for Natural for Windows from the Documentation CD (**Documentation CD > supernat > tutorial > sample**) to your Natural for Windows environment.

The Super Natural RPC service objects, resulting from the tutorial samples 9, 10 and 11 are available on the library SYSSN on the Natural system system file (FNAT):

RPCSMPL1	RPCSMPL2	RPCSMPL3
----------	----------	----------

They are intended to be compared with your own results if you proceed with the samples. You can copy the objects into the library NSNSAMPL on the Natural user system file (FUSER) to execute them with the sample application for Natural for Windows via RPC.

3

Setting up Super Natural

- Setting Up Super Natural Without Natural Security 16
- Setting Up Super Natural With Natural Security 17
- Set-Up for the Super Natural Personal Database 20
- Buffer Sizes 21
- Natural User System File - FUSER 22
- Natural Library SYSSN 23
- Customizing Super Natural - System Exits 24
- Super Natural in Inverse Mode 25
- Setting up the Environment for the Super Natural Tutorial 26

This chapter describes how to set up Super Natural to suit your environment and 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](#)
- [Setting up the Environment for the Super Natural Tutorial](#)

Setting Up Super Natural Without Natural Security

➤ To initialize Super Natural

- Execute the Super Natural initialization function with:

```
LOGON SYSSN  
SNINIT
```

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 Natural Administration Application.

➤ To add / link users and files

- Add/link additional 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 not installed, the following sequence is recommended when defining files and users to Super Natural:

- 1 Define files to Super Natural using the Add Files function.

-  **Note:** For DL/I files, the options `Physical Read Allowed`, `Display Values for Key Fields` and `Adabas Sorting Allowed` must be set to N.
- 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 Natural users.
 - 3 Define users to Super Natural using the `Add 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 *Administration* documentation.

-  **Caution:** Do not use the `Natural` utility `SYSMAIN` or `SYSMAIN2` to 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.

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 profile `SYSSN` (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 application `SYSSN` using `Additional Options` in `Functional Security`:

MNSPCMD1	Super Natural Maintenance
----------	---------------------------

- 2 Set the Keyword defaults to ALLOWED.
- 3 Link the following command processors to the library SYSLIB 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 application SYSSN using Additional Options in Functional Security:

NSP-CMD n	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 library SYSLIB using Additional Options in Functional Security:

NRMNSNO n	Natural Report Manager - Processor
NRM-CMD n	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 SYSSN
SNINIT
```

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 adding Super Natural users.

- 2 Import users and their associated private files to Super Natural by using the Import User function.

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



Note: For DL/I files, the options Physical Read Allowed, Display Values for Key Fields and Adabas Sorting Allowed must be set to N.

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



Note: For DL/1 files, the options Physical Read Allowed, Display Values for Key Fields and Adabas Sorting Allowed must be set to N.

- 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` and `Modify File` functions.

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

Caution: Do not use the Natural utility `SYSSMAIN` or `SYSSMAIN2` to 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

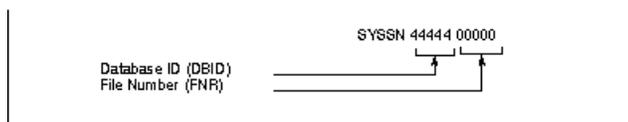
The master DDM for the Super Natural personal database is cataloged on Database 0, File Number 90 in accordance with the following naming conventions:



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 recataloged 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 options `User File Adabas Database ID` and `User File Adabas File Number` (see *User 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 physical Adabas file 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 size of the Natural runtime buffer is determined by the Natural profile parameter `RUNSIZE`, and the size of the user-buffer extension area is determined by the profile parameter `ESIZE` (see the *Natural Parameter Reference* documentation). We recommend the following parameter settings:

Buffer	Size
RUNSIZE	20
ESIZE	45

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 *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 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.

Natural Library 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 and 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 [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)
- Complete 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.

The Delete 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 right-to-left languages (such as Arabic and Hebrew) 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 option `Language 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.

Setting up the Environment for the Super Natural Tutorial

If you proceed with the examples 9 to 11 of the *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 NATPARM parameter module according to the recommendation. For further information, see the *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\tutorial\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 and RPCSMPL3.

- 5 Select OK.
- 6 Go to the library **YSRPC > Subprograms** and copy the subprogram NATCLTGS to the library NSNSAMPL > Subprograms.

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

