Release Information for Natural Version 6.3.7

This chapter covers the following topics:

- New Features
- Changes and Enhancements
- Natural Remote Procedure Call (RPC)
- Natural Security

New Features

Application Programming Interfaces

The utility SYSEXT provides the following new application programming interfaces (APIs):

API	Description
USR4215N	Return a list of resources (short object and long resource name) of a Natural library according to the forwarded range parameters.

Natural for Ajax

Natural for Ajax is now delivered in the Version 1.2.4. It is based on Application Designer Version 8.0.

Support is provided for the following:

- Certain controls can be bound to Natural control variables so that the modification status of a Natural operand that represents the value of the control can be checked with `IF control-variable MODIFIED`. See *XCIDATADEF - Data Definition* in the *Natural for Ajax* documentation.
- The Natural system variable `*CURS-FIELD` can be used in Natural for Ajax applications to identify the operand that represents the value of the control that has the input focus. When the Natural system function `POS` is applied to a Natural operand that represents the value of a control, it yields the identifier of that operand. See also *Natural Parameters and System Variables* in the *Natural for Ajax* documentation.
- The `statusprop` property for input controls such as FIELD has been split into two separate properties: `statusprop` and `displayprop`. See *Dynamically Controlling the Visibility and the Display Status of Controls* in the *Natural for Ajax* documentation.
- It is now possible to define a Natural for Ajax application as a servlet in the file *web.xml*. This makes the definition of security constraints for individual applications easier. See *Wrapping a Natural for Ajax Application as a Servlet* in *Configuring the Client* which is part of the *Natural Web I/O Interface* documentation.

The following new features apply only to Natural maps, not to rich GUI pages:

- With the configuration tool, it is now possible to configure the behavior of a double-click. The double-click can be assigned to a function key or can be disabled. See *Overview of Session Options* in *Configuring the Client* which is part of the *Natural Web I/O Interface* documentation.
- With the configuration tool, it is now possible to define that all function keys are to be shown, including those which do not have names. This makes sure that the function keys are always displayed at the same position. See *Overview of Session Options* in *Configuring the Client* which is part of the *Natural Web I/O Interface* documentation.

Natural Web I/O Interface Client

The Natural Web I/O Interface is now delivered in the Version 1.3.5.

Support is provided for the following:

- It is now possible to define different styles for output fields which are based on variables and output fields which are based on literals (J2EE only). See *Defining Different Styles for Output Fields* in *Configuring the Client* which is part of the *Natural Web I/O Interface* documentation.

Changes and Enhancements

Support of Processing Rules in Objects of Type Adapter

Processing rules (inline rules and Predict free rules) are now supported in Natural adapters in the same way as in Natural maps.

PROCESS PAGE Statement Enhanced

A field in a `PROCESS PAGE` statement can now be associated with a control variable. When the value returned for that field is not equal to the value sent, the field is regarded as modified and the control variable is set to modified.

Compiler Option PCHECK Enhanced

The compiler option `PCHECK` has been enhanced for use in conjunction with objects of type adapter. With `PCHECK` set to `ON`, the `PROCESS PAGE USING` statement now checks the parameter number, format, length and array index boundaries not only at execution time, but already at compile time.

In addition, the parameter check at compile time has been expanded to other invoking statements, such as `PERFORM` (external subroutine), `INPUT USING MAP`, and to the calling of helproutines.

Result Format and Length of an Exponentiation with an Exponent of Format Numeric (N) or Packed (P)

The precision of the result field in an exponentiation with an exponent of format numeric (N) or packed (P) has changed in Natural Version 6.3.7 in order to achieve a result which is more precise.

In case of an exponentiation where the exponent is a numeric or packed operand with one or more digits after the decimal point (for example, `N1.1` or `P1.1`), a result field of format float (F8) instead of format packed (P) is now generated.

The change is effective after a `RUN`, `CATALOG` or `STOW` in Natural Version 6.3.7. An `EXECUTE` of programs which are compiled under a previous version (Natural Version 6.3.6 or below) has no effect.

Example:

```
DEFINE DATA LOCAL
1 #F8 (F8)
END-DEFINE
COMPUTE ROUNDED #F8 = 1 + 5 ** 0.5
/* The result field of the exponentiation 5 ** 0.5 is now F8 instead of P15.0
PRINT #F8
/* After CATALOG, the result in Natural Version 6.3.7 is +3.236067977499789E+00
/* Result in Natural Version 6.3.6 is +3.000000000000000E+00
END
```

The documentation has been adapted accordingly. See *Performance Considerations for Mixed Format Expressions* in the *Programming Guide*.

New DDM for EMPLOYEES File

With Natural Version 6.3.7, the new DDM `EMPLOYEES-V2009` is delivered. This DDM is used by the new sample programs supplied with the `SYSEXV` utility. This DDM makes use of new Adabas data types introduced with Adabas Version 6. The respective `EMPLOYEES` data requires Adabas Version 6.1.6 or higher.

Enhanced Dialog Box for SYSPROD

The columns that are shown in the **SYSPROD - Product Information** dialog box have been changed.

For displaying the products in the local environment, the unused columns **Inpl Creation**, **Nucleus Date**, **Nucleus Time** and **Status** have been removed. The information that was previously shown in the **PL** column has been attached to the information shown in the **Version** column.

For displaying the products in a mainframe environment, the column **Nucleus Version** has been added. This column will be filled with the next version of the Natural Development Server (NDV) for mainframes. Furthermore, the columns have been changed to better distinguish between INPL and nucleus components of the installed products.

See also *Product Information* in *Using Natural Studio*.

Enhanced Application Programming Interfaces

The following application programming interfaces (API) in the library `SYSEXT` have been enhanced:

`USR0330N`

The complete timestamp value for Natural objects is now returned.

USR0360N, USR0421N and USR1020N

A new optional parameter named LAYOUT-CHECK is available. The layout definition is checked when a value other than blank is specified for this parameter. Error messages that do not fit into the ranges are not processed.

Natural Remote Procedure Call (RPC)

Natural Remote Procedure Call (RPC) is available as a separate subcomponent of Natural. It has its own version number. This measure takes into account that Natural RPC is a cross-platform component and makes it possible to provide new Natural RPC versions independent of new Natural versions for the various platforms supported.

With Natural Version 6.3.7, an enhanced Natural Remote Procedure Call Version 6.3.3.1 is delivered that replaces the existing Natural RPC Version 6.3.3.

As of Version 6.3 of Natural Remote Procedure Call (RPC), the following changes and enhancements are available:

- System Command RPCERR Enhanced
- RPCINFO/RPCINFOL Enhanced
- Documentation

System Command RPCERR Enhanced

The system command RPCERR has been enhanced to show the full error message text returned by an EntireX RPC server.

RPCINFO/RPCINFOL Enhanced

The following enhancements have been applied to the user application programming interface RPCINFO and the parameter data area RPCINFOL:

- RPCINFO has been enhanced to retrieve the error message text returned by an EntireX RPC server.
- The fields S-NODE, S-NAME, C-NODE, C-NAME have been enlarged from A8 to A32 to be more compliant with EntireX.
- RPCINFO is loaded to the library SYSTEM on system file FNAT and is immediately available to all user applications.

All enhancements are compatible with existing applications.

Notes:

1. If you recatalog an existing application that references RPCINFOL, you may be concerned if the enlarged fields are displayed. Either adapt your output layout accordingly or add the session parameter AL=8 where appropriate.
2. You are strongly recommended to remove any copies of RPCINFO from the FUSER system file.

Documentation

Please note that the term "stub subprogram", which in earlier versions of EntireX was also used to refer to application-dependent, Workbench-generated pieces of code for issuing and receiving remote procedure calls, will no longer be used. In the EntireX documentation, these objects are now referred to as "interface objects". In the Natural Remote Procedure Call documentation, however, the term "stub subprogram" is still prevailing. It will be replaced in one of the next versions of Natural RPC.

Natural Security

The following enhancements are provided with Natural Security Version 6.3.7:

- Users
- Libraries
- Utilities
- Application Programming Interfaces
- Other Enhancements

Users

The following enhancements are provided for users:

- Copying a User
- New User Exit NSCUSEX2

Copying a User

The function **Copy User** has been enhanced: You can enter the name of the new user not only in the new profile but already in the window which is displayed when you invoke the **Copy** function. This name is then written into the new profile (where you can still change it, of course).

New User Exit NSCUSEX2

A new user exit, `NSCUSEX2`, is provided in the library `SYSSEC`. It allows you to review the changes you have made to a list of group members. It is invoked when you use the user-maintenance function **Edit Group Members** and `CATALOG` the changes to the group. It displays a list of the group's members, indicating which members have been added to the group and which have been removed from it.

Libraries

The following enhancements are provided for libraries:

- Copying a Library
- Use of UNIX Shell Commands

Copying a Library

The function **Copy Library** has been enhanced: You can enter the name of the new library not only in the new profile but already in the window which is displayed when you invoke the **Copy** function. This name is then written into the new profile (where you can still change it, of course).

Use of UNIX Shell Commands

UNIX shell commands can be executed from within a Natural program by invoking the Natural user exit SHCMD via the statement CALL SHCMD. With Natural Security you can now control for each library the execution of UNIX shell commands from within Natural programs by allowing/disallowing the execution of the CALL SHCMD statement in the **Command Restrictions** section of library profiles.

Utilities

The following enhancements are provided for utilities:

- SYSERR - Direct Commands
- SYSMAIN and SYSOBJH - Exclude Library Profiles With Co-Owners

SYSERR - Direct Commands

In the security profiles for the SYSERR utility, you can now control the use of SYSERR direct commands. You can allow or disallow each command for all users, or allow it for Natural Security administrators only.

SYSMAIN and SYSOBJH - Exclude Library Profiles With Co-Owners

The session option **Utilities option** in the default profiles of utilities SYSMAIN and SYSOBJH has been enhanced: In addition to the existing values Y and N, you can specify the new value O: This is identical to Y, but has the following additional effect:

If you use SYSMAIN or SYSOBJH to process the contents of a library in whose library profile the general option **Utilities** is set to O (= processing permitted for owners), and you as an owner require a countersignature, the countersignature prompt will be suppressed; instead, the library will be excluded from SYSMAIN/SYSOBJH processing.

This enhancement is only relevant online, because in batch mode countersignatures cannot be processed anyhow.

Application Programming Interfaces

The following application programming interfaces (APIs) have been enhanced:

- NSCADM
- NSCXR

NSCADM

The API NSCADM has been enhanced. It allows you to compare a preset value (as set in the **Library and User Preset Values**) with the the corresponding actual value in user profiles, and provides a list of all user profiles in which the value differs from the preset value. For details, see example program PGMADM04 and text member TXTADM04 in the library SYSSEC.

NSCXR

The API NSCXR has been enhanced. It allows you to retrieve information about the access rights to an individual module in a library, for all users who have access to the library. For details, see example program PGMXR018 and text member TXTXR018 in the library SYSSEC.

Other Enhancements

The following other enhancements are provided:

- Suppress Startup Transaction in NDV Mapped Environment
- Copying a Mailbox

Suppress Startup Transaction in NDV Mapped Environment

If a startup transaction is specified in a Natural Security library profile, it will be executed after a successful logon to the library. In a Natural Development Server environment, however, when a library is selected from the tree view in the mapped environment, the execution of a startup transaction may not be desired. A new Administrator Services option **NDV Startup Inactive**, which can be set in the **Library And User Preset Values**, allows you to suppress the execution of startup transactions in a mapped environment.

Copying a Mailbox

The function **Copy Mailbox** has been enhanced: You can enter the name of the new mailbox not only in the new profile but already in the window which is displayed when you invoke the **Copy** function. This name is then written into the new profile (where you can still change it, of course).