NATURAL

Natural

Release Notes

Version 4.1.2 for Windows

software AG
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This document applies to Natural Version 4.1.2 for Windows and to all subsequent releases. Specifications contained herein are subject to change and these changes will be reported in subsequent release notes or new editions.

Table of Contents

Release Notes - Natural for Windows - Overview

The following release notes are included in this version:

- Release Notes for Natural Version 4.1.2 for Windows
- Release Notes for Natural Version 4.1.1 for Windows*

* These Release Notes are archive versions and are provided for background information only! References contained in the archive Release Notes generally refer to documents of the corresponding earlier version which are not included in the Version 4.1.2 documentation set.

Natural Version 4.1.1 Release Notes for Windows NT

The Release Notes of the Natural version 4.1.1 are provided for background information only! References contained in the Version 4.1.1 Release Notes generally refer to the corresponding Version 4.1.1 manuals which are not included in the Version 4.1.2 documentation set.

The following topics are covered below:

Introduction

These Release Notes describe in summary form the enhancements and new features that are provided with Natural Version 4.1 for Windows NT.

In addition to providing the enhancements and new features described in these Release Notes, Natural Version 4.1 also consolidates all error corrections, modifications and enhancements provided with previous releases of Natural.

Prerequisites

Natural Version 4.1 requires Windows NT Version 4.0 SP5 for purposes of Year 2000 compatibility.

Documentation

A revised set of Natural documentation is provided with this release of Natural Version 4.1 for Windows NT. All enhancements and new features described in these Release Notes are fully documented in the Natural Version 4.1 documentation set.

The documentation is provided in HTML format for online access using a Web browser and also in PDF format for viewing/printing using Adobe Acrobat.

In addition to the extensive hyperlinks available for online access and navigation, a powerful online search facility is also provided.

With Natural 4.1, a comprehensive HTML-based online help facility is also provided. For example, you can invoke the Natural help facility using the F1 key.
Note: If an error message is received when using the F1 key for the first time, the help system of Windows NT must be updated. In this case, you will find on the Natural CD-ROM under the directory Help an update file (there are actually two update files available one for English and one for German). Start the appropriate update file for the language in use by double clicking on the file. This will update the online help as required. If you are using a language other than English or German, you will need to download the appropriate update file for the language in use from the Microsoft web page. The URL for this download is contained in the Readme file.

Please note that this documentation set and the associated online help are preliminary editions. A further enhanced documentation set and online help will be provided with the first SM release for Natural Version 4.1.

For a complete overview of the Natural 4.1 documentation set, see the Documentation Main Menu.

General Enhancements

The following general enhancements are provided with Natural 4.1:

- The Natural Studio
- Natural Configuration Utility
- Natural Dialog Services
- Natural Wheel Mouse Support
- NaturalX
- Natural Component Browser
- Natural Class Builder
- Natural Web Interface
- Natural Source Size
- Natural in Batch Mode
- Natural Debugger
- Natural Remote Procedure Call
- Natural Performance Enhancements

The Natural Studio

The Natural Studio provides modern user interface techniques for fast construction of Natural applications. These include:

- Full drag & drop / cut & paste support for all file operations such as import, export, copy or move
- In-place editing for creating new Natural libraries or classes with the class builder (dialogs, programs, etc.) and for renaming objects
- Dockable windows and tool bars with tool tips

For more information, see the Natural Studio.

Natural Configuration Utility

The Natural configuration and profile files are displayed in a tree structure. The profile parameters have been regrouped. The search functionality is now available using a tool bar combo box.

Natural Dialog Services

Natural Version 4.1 provides extensive enhancements within the graphical facilities for creating dialogs for event-driven Natural applications. These include:

- Table control
  The color attributes and the DIL (dynamic information link) text can be defined at the cell level.
- Support for almost all ActiveX controls
  All data types used in the programming interface of ActiveX controls are mapped to corresponding Natural data types.
- Context menus
  Context menus are now supported in Natural dialogs.
- New control: control box
  A new general purpose control container is now supported.
- Nested controls
  Certain controls in Natural dialogs are able to build a window hierarchy. This applies to ActiveX controls that have the "simple frame" style (like most tabbed dialog or property sheet controls), control boxes and optionally group frames.
- Event editing with the Program Editor
  The Program Editor can now be used to edit individual dialog or dialog element events. Multiple event editor instances can be active simultaneously.
- Property pages
  ActiveX controls can be configured in the Dialog Editor using their property pages.
- Resources (private and shared)
  Non-Natural files that are part of Natural applications ("shared resources") can be kept in Natural libraries together with the Natural modules that use them. Binary data related to a Natural dialog is stored in a "private resource" assigned to the dialog.

For more information, see the Dialog Editor and the Dialog Components.

Natural Wheel Mouse Support

Natural now supports vertical scrolling via rotation of the mouse wheel in all view windows for dialogs and maps at runtime, and for the source windows in the Natural debugger.

Note:
More advanced features, such as panning and autoscrolling, are not available if a suitable mouse driver is not installed. However, the Microsoft IntelliPoint driver, for example, provides an option called ’Universal scrolling’, which makes panning of many of these windows possible. Please consult your wheel mouse documentation for further information.

NaturalX

The full functionality of NaturalX has been incorporated into Natural Version 4.1.

NaturalX enables you to create and distribute component based applications. Using Component technology (currently DCOM), NaturalX enables you to:

- allow your application components to be accessed by other components,
- execute these components on local and/or remote servers,
- access components written in a variety of programming languages across process and machine boundaries from within Natural programs,
- provide your existing Natural applications with (quasi) standardized interfaces.

For more information, see the NaturalX documentation.

Natural Component Browser

With Natural Version 4.1, the Natural Component Browser replaces the OLE Control Browser.

The Natural Component Browser displays ActiveX components and interfaces that can be used in NaturalX applications. The information is presented in a way that allows fast and efficient application development.

For more information, see the Natural Component Browser.

Natural Class Builder

The Natural Class Builder simplifies the creation and management of Natural classes. It is completely integrated into the new Natural Studio.

For more information, see the Natural Class Builder.

Natural Web Interface

The full functionality of Natural Web Interface has been incorporated into Natural Version 4.1.

Natural Web Interface is a link between a web server (more precisely: HTTP server) and your Natural environment. This can be on a separate server machine or on the same machine as the HTTP server (e.g. Netscape's Communication Server or Microsoft's IIS).

Contents of web pages can easily be created dynamically by a Natural program. This is a basis for implementing an interactive application on the web.

An interactive web-based application can receive input information and react by issuing output depending on that input. Examples of web-based applications are order entry systems, travel booking services and parcel tracking systems. This considerably increases the scope of Natural applications. Not only in-house users but also potential users/customers all over the world can now use the same application.

And best of all: Natural users do not have to learn a new programming language to implement such an application. Navigation and user input/output are implemented fully in Natural (with some additional embedded HTML statements).

For more information, see the Natural Web Interface documentation.

Natural Source Size

With Natural 4.1, the maximum size of a single source in Natural has been extended from approximately 128 KB to 1 MB.

This applies to all source types (programs, maps, dialogs, data areas, DDM sources, etc.).

Natural in Batch Mode

Natural Version 4.1 provides full batch mode support.

This means that Natural can be run as a background job. This is particularly useful for performing mass data processing operations and also for re-usable execution.

For more information, see Natural Operations, Batch Mode.

Natural Debugger

The Natural Debugger now supports multiple sources. Multiple source windows can be opened thereby providing a better overview and simplifying error searching.

For more information, see Natural Debugger.

Natural Remote Procedure Call

The following information applies to various aspects of the Natural Remote Procedure Call (RPC) facilities.

Support of EntireX Broker ACI Version 4

The support of EntireX Broker ACI Version 4 (Entire Broker Version 5.2) is required to activate the security exits and the code-page support of EntireX Broker.

Due to non-numeric conversion IDs on the client side (which were introduced with EntireX Broker ACI Version 3), EntireX Broker ACI Version 3 and above on the client side are not compatible with RPC servers of previous Natural versions (Version 2.3 on mainframe, Version 3.1 on other platforms).

As the RPC on the client side does not know the ACI version used by the RPC server, the new parameter ACIVERS has been added to the Natural parameter module. With ACIVERS, you can specify the version to be used.

Support of Code-Page Functionality

RPC servers and clients may specify the code page used in their local environment. For example, the client located on a UNIX computer may use an ASCII code page and the client on a mainframe computer may use an EBCDIC code page. The translation from one code page to the other is done by EntireX Broker.

The code page to be used by the RPC server or client is specified with the new Natural profile parameter CP.

The code-page functionality requires EntireX Broker ACI Version 4. For information on the code-page functionality, please refer to the EntireX Broker ACI documentation.

Support of EntireX Broker Functions LOGON and LOGOFF in RPC Servers

The support of the EntireX Broker functions LOGON and LOGOFF is required for compliance with the EntireX Broker.

With the support of LOGOFF, EntireX Broker will release internal data structures on request and not based on a time-out mechanism. In addition, this support will enable the EntireX Broker to run with the AUTOLOGON attribute set to OFF.

Support of Non-Numeric Conversation IDs

If the client which opens a conversation sets the EntireX Broker ACI version to 3 or above (with the ACIVERS parameter as described above), the EntireX Broker may generate a non-numeric conversation ID (format/length A16).

Therefore, any attribute settings which had to be made to avoid the generation of non-numeric conversation IDs in the EntireX Broker attribute file are now obsolete.

Authentification of the RPC Server

In Natural Security environments, the user ID and password are passed to the EntireX Broker if the subparameter SRVUSER of the NTRPC macro is set to "NSC".

Buffer Sizes

The maximum size of the send/receive buffer (parameter MAXBUFF) has been increased from 32 KB to 16 MB.

RPC Trace File

As default, old RPC trace files are deleted when a new file with the same name is created. If you wish to append the new log to the old one, specify >>*filename*.

Natural Performance Enhancements

Performance enhancements have been made in the following areas:

- output from Natural reports (I/O statement)
- access to Natural objects in the Natural buffer pool

Natural Programming Enhancements

The following programming enhancements are provided with Natural 4.1:

- Large and Dynamic Variables
- Optional Parameters
- Toggle of insert/overwrite in an input field

Large and Dynamic Variables

Natural Version 4.1 provides enhanced capabilities for the usage of large variables by removing the existing size limitations and by providing for dynamic allocation of these variables at execution time.

Large variables for alpha and binary data are based on the well known Natural formats A and B. The current limitations of 253 for format A and 126 for format B are no longer in effect. The new size limit is 1 GB.

In that the maximum size of large data structures (for example, pictures, sounds, videos) may not exactly be known at application development time, Natural additionally provides for the definition of alpha and binary variables with the attribute DYNAMIC. The value space of variables which are defined with this attribute will be extended dynamically at execution time when it becomes necessary (for example, during an assignment operation: #picture1 := #picture2). This means that large binary and alpha data structures may be processed in Natural without having to define a limit at development time.

The new Natural system variable *LENGTH can be used to obtain the number of bytes of the value space which are currently used for a given dynamic variable.

For performance optimization and also to prevent insufflicent memory problems, the new statements REDUCE and EXPAND have been iintroduced. If the dynamic variable space is no longer needed, the REDUCE DYNAMIC VARIABLE statement can be used to reduce the allocated space for the dynamic variable to zero (or any other desired size). If the upper limit of memory usage is known for a specific dynamic variable, the EXPAND statement can be used to set the used space for the dynamic variable to this specific size.

For more information, see Large and Dynamic Variables.

Optional Parameters

Natural Version 4.1 supports the use of optional parameters.

Parameters of subprograms and dialogs can be defined as optional (DEFINE DATA parameter).

The statements which involve parameter transfer (CALLNAT, PERFORM, OPEN DIALOG, SEND EVENT, PROCESS GUI and SEND METHOD) now support optional parameters (nX notation).

The transfer of optional parameters can be checked by using the SPECIFIED clause in the logical condition criterion.

For more information, see DEFINE DATA parameter and Optional Parameters.

Toggle of insert/overwrite in an input field

In input fields of the INPUT statement, it is possible to switch between overwrite and insert mode. This is comparable to the behaviour on UNIX. For more information, see INPUT statement.

New and Enhanced Natural Statements

The following table provides a summary of the new/enhanced Natural statements provided with Natural 4.1:

New Natural Statements	**Description**
CALLDBPROC and READ RESULT SET	CALLDBPROC invokes a stored procedure of the SQL database system. READ RESULT SET reads a result set which was created by a stored procedure.
EXPAND and REDUCE	Expands/reduces the size of the allocated memory for a dynamic variable.
Enhanced Natural Statements	
DEFINE WORK FILE	TYPE clause defines a work file type.
SET KEY	Support of keys PGUP and PGDN
CALL (INTERFACE4)	INTERFACE4 option provides a new interface to 3GL programs.
DEFINE CLASS	The ACTIVATION clause defines the activation policy of the class.
CALLNAT, PERFORM, PROCESS GUI, OPEN DIALOG, SEND EVENT, SEND METHOD	Specify optional parameters (nX notation).
Logical Condition Criteria	SPECIFIED clause to check if optional parameters are transferred.

New and Enhanced Natural System Variables and System Commands

The following table provides a summary of the new/enhanced Natural system variables and Natural system commands provided with Natural 4.1:

New Natural System Variables	**Description**
*CPU-TIME	CPU time used by Natural process.
*DATV	Current date in format dd-mmm-yyyy
***DATVS	Current date in format ddmmmyyyy
*HOSTNAME	Name of the machine on which Natural is running.
*LENGTH(field)	The current length of valid data for a large dynamic data variable.
*NATVERS	Natural version string.
*NET-USER	User ID including domain name
*PARM-USER	Name of the parameter file currently in use
*PATCH-LEVEL	Natural patch level number as string value
*PID	Current process ID as string value
*SCREEN-IO	Screen input/output possible
*SERVER-TYPE	Server start-up type of Natural
*THIS-OBJECT	Enables an object to call its own methods.
New Natural System Commands	
LIST DIR	Displays detailed directory information about Natural objects.
LIST COUNT	Displays information about the number of objects in the current library.

New and Enhanced Natural Profile Parameters

The following new/enhanced Natural profile parameters are provided with Natural 4.1:

New Profile Parameters	Description
ACIVERS	Specifies the EntireX ACI version to be used.
AUTORPC	This parameter was formally called AUTOREMOTE.
BATCHMODE	Enable real batch mode
BMBLANK	Display trailing blanks (for batch mode only)
BMCONTROL	Display control characters (for batch mode only)
BMFRAME	Window frame characters (for batch mode only)
BMSIM	Simulate batch mode output (for batch mode only)
BMTIME	Display process time (for batch mode only)
BMTITLE	Display window title (for batch mode only)
BMVERSION	Display Natural version (for batch mode only)
CC	Error processing in batch mode (for batch mode only)
CMOBJIN	Batch output file for Natural INPUT data (for batch mode only)
CMPRINT	Batch output file (for batch mode only)
CMPRTnn	Additional report file name This parameter can only be used in batch mode and can be dynamically specified at Natural start-up.
CMSYSIN	Batch input file for Natural commands and INPUT data (for batch mode only)
CMWRKnn	Natural work file name. This parameter can only be used in batch mode and can be dynamically specified at Natural start-up.
CP	Specifies the code page to be used by the EntireX Broker
CVMIN	Control variable modified on input
ECHO	Control printing of batch input data (for batch mode only)
ENDMSG	Display session end message (for batch mode only)
NATLOG	Natural log file
RPCSIZE	This parameter was formally called SIZE.
TMPSORTUNIQ	Choose an alternate algorithm for generating sort work file names
TRANSP	TRANSP has new values in this version. This parameter has been changed in order to enable compatibility with the mainframe platform.

New and Enhanced Natural Utilities

The following new/enhanced Natural utilities are provided with Natural 4.1:

- SYSERR Utility
- SYSEXT Utility
- SYSOBJH Utility
- SYSTRANS Utility
- Additional Configuration Enhancements

SYSERR Utility

The SYSERR utility is now provided with a new GUI interface which permits easy and efficient entering and maintenance of error messages.

The SYSERR utility now also provides an import and export function (as currently provided by MSGGEN).

SYSEXT Utility

The SYSEXT utility has two new user exits:

- User exit USR2027N performs a wait interval.
- User exit USR2030N reads error tokens up to 253 bytes long.

SYSOBJH Utility

The new utility SYSOBJH (Object Handler) processes objects for the purpose of application distribution. This utility combines the functionality currently provided by the SYSPAUL and SYSTRANS utilities. The utilities SYSPAUL and SYSTRANS will be discontinued with the next Natural release

SYSOBJH can be used to unload objects in the source environment to work files and then load these objects from work files into the target environment. SYSOBJH can process Natural programming objects, resources, DDMs, error messages, Natural related objects, Natural command processors, external objects and Adabas FDTs.

Unloading and loading can be performed in internal format (as with the utility SYSPAUL), or in transfer format (as with the utility SYSTRANS).

Work files created with the utilities SYSPAUL and SYSTRANS can also be processed.

Work files created with SYSOBJH in transfer format can be processed by the utility SYSTRANS on all platforms.

SYSTRANS Utility

The following enchancements are provided with the SYSTRANS utility:

- With Natural Version 3.1, records written to work file 1 were written with a fixed length of 96 bytes. With Natural Version 4.1, they are written with a variable length of 12 to 96 bytes. This will reduce the size of the work file by approximately fifty percent.
- As a result of an inprovement in SYSTRANS internal processing, work file 3 is now used only if 'Selection List = Y' is specified online.
- The user exit TRA-E1-S (TRA-EX-1) has been expanded. For details see the source of TRA-E1-S.

Additional Configuration Enhancements

SQL Date/Time Conversion

A conversion table can now be specified via: Natural Configuration Utility > Global Config File > DBMS Assignment > SQL Date/Time Conversion. Date and time conversions will be performed based on the definitions provided in this conversion table.

Adabas Multi-Fetch Disabling

Multi-fetch processing can now be disabled explicitly for the Adabas commands L1, L2, L3 and/or L9 for each dbid/filenumber combination. This can be done via: Natural Configuration Utility > Global Config File > DBMS Assignment > Multi-Fetch Disabling.

New configuration parameter BPNLE

For more information on BPNLE, see Operations Environment section on the Natural Bufferpool in the Natural Operations documentation

Example Library for New Features

A new example library SYSEXV is available with Natural Version 4.1. This library replaces the previous example library SYSEXV31 and contains examples for both Version 3.1 and Version 4.1. Some examples in this library require Microsoft Developer Studio Version 6 for support of ActiveX controls.

You can view these examples by logging on to library SYSEXV and executing the program VERSION. You can then use the resulting menu to select the various example programs.

Please note that some examples make use of Office 97 (Word97, Excel97 and Visual Basic 6.0). Previous versions of these office products are no longer supported. Future Natural versions will only support the then current MS office products.

Compatibility / Removed Functionality

Applications created with Natural Version 3.1 can be executed with Natural Version 4.1 1 without any conversion or adjustments to Natural programs, except in the few cases of intentional minor incompatibilities as documented below.

When a Version 3.1 application is executed with Version 4.1, these incompatibilities will cause the application to produce better, but slightly different, results. If in these cases you wish to get the same results as with Version 3.1, you must adjust your Natural applications accordingly.

The following list provides an overview of the intentional incompatibilities as well as functionality no longer supported.

Topic	**Intended Incompatibilty / Removed Functionality**
Natural Execution using nde.exe	With Natural 4.1, the command ’natural.exe’ is used to execute Natural. For batch mode execution, the command ’nde.exe’ will also be permitted with Natural 4.1. With future releases of Natural, only ’natural.exe’ will be permitted. This also is applicable for the Natural Runtime Version (natrun.exe). .
Natural Help Execution	In that with Natural 4.1, a completely new HTML-based online help is provided, the previous online help file Natural.hlp is no longer provided.
Natural Parameter LANG	The Natural dynamic parameter LANG has been removed. The parameter ULANG should be used instead.
Natural Parameters SIZE and AUTOREMOTE	The Natural parameter SIZE has been renamed to RPCSIZE. The Natural parameter AUTOREMOTE has been renamed to AUTORPC. This was done to ensure consistency across all Natural platforms, and also for clearer direct association of these parameters with RPC.
Natural Parameter USEREP	The default for this parameter has been changed from ON to OFF. With Natural 4.1, you must set this parameter value to ON in order to cause Natural to use the NEW (Natural Engineering Workbench) repository.
Natural Work Files	Natural work files are closed automatically in the following cases: ● a READ statement execution reaches end-of-file ● a DEFINE WORK statement is executed

Topic	Intended Incompatibilty / Removed Functionality
New Error Message NAT0777	Error message NAT0777 will be returned if no contiguous memory is available in the buffer pool for loading a Natural object.
New Error Message NAT0967	Error message NAT0967 will be returned if any of the Natural statements FETCH, RUN, STOP or TERMINATE attempts to execute a method.
New Error Message NAT0968	Error message NAT0968 will be returned if a parameter which is defined as mandatory is not transferred.
Error Message NAT0300	Error message NAT0300 will be returned in case of data transfer incompatibility in method calls and property assignments instead of error message NAT6003.
Error Message NAT6149	Error message NAT6149 will be returned in case of locking conflicts instead of error message NAT6153.
NATLINK Support	NATLINK is no longer supported. The appropriate user exit (USExxx) should be used instead.
NaturalX Registration	The type libraries and registry files created during class registration are now stored in a separate directory for each class.
Dialog Source Format	The enhanced dialog source format is now the only format generated by Natural. However, the "CMNGE (’22C’) format can still be read by the Dialog Editor.
WRITE PC with COMMAND Clause	This statement will return error message 1183, if the work file is already open or if the work file type is not TRANSFER.

Migrating Applications to Version 4.1

The following should be considered when migrating Natural applications from Natural 3.1 to Natural 4.1:

- Bitmaps will still be found by Natural in the directory NATGUI_BMP. These bit maps should however be copied to the appropriate application library. Natural always searches the application library first and then NATGUI_BMP.
- Parameter settings need to be checked (SSIZE parameter) in order to use large Natural source.

Application Shell and Frame Gallery Usage

For the display of Application Shell Maintenance and Frame Gallery, the small font setting is recommended in the display driver. You can then modify the font attribute in generated dialogs to suit your application. If you modify the font attribute of the dialog, all controls within this dialog will inherit this setting.

Before using Application Shell and Frame Gallery, you must prepare the Adabas SAG-DEMO-DB. See the readme file in folder ’demodb’ in the Natural version path for more information.

Start Application Shell from library SYSCOMP. Copy the application Z_TOP using Save As to define an application for the library in which you intend to use Frame Gallery.

Information Pertaining to Upcoming Natural Release

The following information pertains to functionality that will most likely not be supported in future Natural releases:

- Natural Execution Using nde.exe
- Omission of DBID/FNR within Context of FUSER
- CSCI Support
- EXECUTE and RUN Commands
- Statement Restrictions for RPC
- Parameter Name Changes
- Importing Objects

Natural Execution Using nde.exe

With Natural 4.1, the command ’natural.exe’ is used to execute Natural.

For batch mode execution, the command ’nde.exe’ will also be permitted with Natural 4.1.

With future releases of Natural, only ’natural.exe’ will be permitted.

Omission of DBID/FNR within Context of FUSER

Natural currently allows a steplib without DBID/FNR defined in the context of FUSER. This will not be permitted in future Natural releases.

CSCI Support

CSCI will no longer be supported in future Natural releases.

EXECUTE and RUN Commands

For compatibility reasons, the next version of Natural will fully enforce the restriction that a library-id cannot begin with ’SYS’. The only exception to this restriction which will be allowed is the library-id ’SYSTEM’.

MSGGEN, SYSPAUL and SYSTRANS Utilities

The MSGGEN; SYSPAUL and SYSTRANS utilities will no longer be supported in future Natural releases.
The MSGGEN functionality is now provided in the SYSERR utility and the SYSPAUL and SYSTRANS functionality is now provided in the new utility SYSOBJH.

Statement Restrictions for RPC

The use of the following Natural statements is currently permitted but not recommended for remote procedure calls:

Statement	Explanation / Undesired Effects
TERMINATE	The server is terminated regardless of any conversations that may still be open.
FETCH, RUN, STOP	The server detects that it has lost its CALLNAT context and returns an error message to the client. However, the statement has already been executed by the server.
INPUT	Input data values are unpredictable when read from a file (and not from the Natural stack).

In order to prevent these undesired effects, the use of the above statements will be restricted so that it will no longer be possible to use them with RPC in future Natural releases.

Parameter Name Changes

- AUTOREMOTE has been renamed to AUTORPC.
- SIZE has been renamed to RPCSIZE.

The parameters SIZE and AUTOREMOTE are still valid in this version, however, they will no longer be available in future Natural releases.

Importing Objects

When importing an object into Natural, a backup copy is created if the file already exists in the SRC directory of the Natural library but is not registered in the FILEDIR.SAG. This functionality will no longer be provided in future Natural releases.

Known Problems

For information on problems that are known to Software AG, but have not yet been solved with this version of Natural, please refer to the section "Known Problems" in the README file supplied on the Natural installation CD-ROM.

Natural Version 4.1.2 Release Notes for Windows

Refers to the following operating systems:

In a Natural development environment:

- Microsoft Windows NT
- Microsoft Windows 2000

In a Natural run-time environment:

- Microsoft Windows 98
- Microsoft Windows NT
- Microsoft Windows 2000

Topics

The following topics are covered below:

See also Natural for Windows NT Version 4.1.1 Release Notes.

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Introduction

These Release Notes describe in summary form the enhancements and new features that are provided with Natural Version 4.1.2 for Windows.

In addition to providing the enhancements and new features described in these Release Notes, Natural Version 4.1.2 also consolidates all error corrections, modifications and enhancements provided with previous releases of Natural.

Prerequisites

Natural Version 4.1.2 requires Windows NT Version 4.0 SP5 for purposes of Year 2000 compatibility or Windows 2000.

Documentation

A revised set of Natural documentation is provided with this release of Natural Version 4.1.2 for Windows. All enhancements and new features described in these Release Notes are fully documented in the Natural Version 4.1.2 documentation set.

The documentation is provided in HTML format for online access using a Web browser and also in PDF format for viewing/printing using Adobe Acrobat.

In addition to the extensive hyperlinks available for online access and navigation, a powerful online search facility is also provided.

With Natural 4.1, a comprehensive HTML-based online help facility is also provided. For example, you can invoke the Natural help facility using the F1 key.

Note:
If an error message is received when using the F1 key for the first time, the help system of Windows NT must be updated. In this case, you will find on the Natural CD-ROM under the directory Help an update file (there are actually two update files available: one for English and one for German). Start the appropriate update file for the language in use by double clicking on the file. This will update the online help as required. If you are using a language other than English or German, you will need to download from the Microsoft web page the appropriate update file for the language in use. The URL for this download is contained in the Readme file.

For a complete overview of the Natural 4.1.2 documentation set, see the Documentation Main Menu.

 Natural Version 4.1.2 Release Notes for Windows

General Enhancements

The following general enhancements are provided with Natural 4.1:

- Natural Studio
- Natural Dialog Services
- Natural Class Builder
- Natural Web Interface
- Program Editor

Natural Studio

The following features have been added in the current version of Natural for Windows:

- Support of Resource objects within the Library Workspace and List views.
  For more information, see Shared Resources in the Natural Studio documentation
- Dialog Editor
  The Dialog Editor provides the ability to design dialogs using dialog units instead of pixels.
- User-defined commands can be defined which contain a series of Natural commands. These user-defined commands can be added to any tool bar.
  For more information, see Adding User-Defined Commands to a Tool Bar in the Natural Studio documentation.

Natural Dialog Services

Natural Version 4.1 provides extensive enhancements within the graphical facilities for creating dialogs for event-driven Natural applications. These include:

- Licensed ActiveX Controls
  These are supported in the following way: If a development license for a control is available, the control can be used in the Dialog Editor to build dialogs. The resulting dialogs can then also be executed in an environment where no development licence for the control is available. But in such an environment, it is not possible to use the control in the Dialog Editor.
- Find Objects
  The Find Objects dialog also supports retrieval for Resource objects.
- Scalable dialogs
  The Dialog Editor provides the ability to design dialogs that are scaled according to the Control Panel settings. New styles have been added to the list box and table controls to not display partial controls.
- Improved Help
  The Help can now be displayed in a popup (tool tip style) window. In addition, a help button can be displayed in a dialog's title bar. The help can be in WinHelp or compiled HTML format.
- Event queueing
  Event queueing (a feature that was needed for compatibility to previous Natural for Windows 3.x versions) can now be switched off at the dialog level. This ensures that Windows messages are then processed immediately, which is the preferred setting for new applications.

For more information, see the Dialog Editor and the Dialog Components.

Natural Class Builder

The following new feature has been added to the Natural Class Builder:

If an Interface Module has been changed, it is no longer saved implicitly when the class which uses it is saved. The Class Builder will display a dialog in this case, which asks whether the user wants to save the Interface Module or not.

For more information, see the Natural Class Builder.

Natural Web Interface

During the default installation of Natural, only the Natural Web Server Extensions for CGI interfaces will be installed.

If you need isapi or nsapi Natural Web Server Extensions, you can select Custom Installation and specify the Natural Web Server Extensions you prefer.

For more information, see the Natural Web Interface documentation.

Program Editor

You can restructure the current Natural Program Editor source. This is accomplished by issuing the Format Source command, i.e., by clicking the appropriate menu item in the Edit menu while the Program Editor is active.

Natural Programming Enhancements

The following programming enhancements are provided with Natural 4.1:

Optional Parameters

Natural Version 4.1 supports the use of optional parameters.

Parameters of subprograms and dialogs can be defined as optional (DEFINE DATA PARAMETER).

The statements which involve parameter transfer (CALLNAT, PERFORM, OPEN DIALOG, SEND EVENT, PROCESS GUI and SEND METHOD) now support optional parameters (nX notation).

The transfer of optional parameters can be checked by using the SPECIFIED clause in the logical condition criterion.

For more information, see DEFINE DATA PARAMETER and Optional Parameters.

Enhanced Natural Statements

The following table provides a summary of the new/enhanced Natural statements provided with Natural 4.1.2:

Enhanced Natural Statements	Description
CALLNAT PERFORM	These statements allow you to mark a parameter with the option AD to control the parameter passing. This is also useful for the SEND statement.
SEND METHOD SEND EVENT OPEN DIALOG	These statements allow you to mark a parameter with the option AD to control the parameter passing. The option can be used syntactically, as in the statements CALLNAT and PERFORM.

Enhanced Natural System Command

The following enhanced Natural system command is provided with Natural 4.1.2:

New Natural System Command	Description
STRUCT	The Natural STRUCT command can now be used to restructure a source.

Natural Silk Interface

With Natural Version 4.1.2 for Windows NT/2000, Software AG is publishing for the first time an interface and examples for the testing tool SilkTest (Segue Software, Inc). SilkTest is a regression testing tool which offers test planning and management, direct database access and validation. For more information about the tool and the whole range of products provided by Segue Software, please contact Segue Software on http://www.segue.com/.

The corresponding files can be found on the Natural 4.1.2 installation CD in the directory Windows\Silk. The Natural-Silk interface was developed and tested with SilkTest Version 5.02.

A test installation CD of SilkTest 5.02 can either be found in your Natural 4.1.2 package or it can be ordered from Segue Software, Inc. Please note that as a prerequisite, the Natural-Silk interface needs a file called assist.dll which might not be part of your SilkTest installation. You are kindly requested to order this file from Segue Software.

For more information about the installation of the Natural-Silk interface and the example, please read the document Install.htm which is part of the directory Windows\Silk on the Natural 4.1.2 installation CD.

A description of the Natural-Silk interface itself can be found in the document NaturalSilk_Interface.htm.

Natural Tamino DOM Example Application

For demonstration purposes, a new example application SYSEXINO is available with Natural Version 4.1.2.

It enables you to access a Tamino Database by using Tamino DOM ActiveX Control and Microsoft XML DOM, and is documented in an HTML based help file.

The example also demonstrates the use of the following new features of Natural:

- Resource directory
- Group frames
- Dynamic variables
- Advanced parameter passing (SEND METHOD with AD parameter)
- HTML-based help with source

The example application of a HTML based help file is contained in a Zip file on this CD.

Compatibility / Removed Functionality

Applications created with Natural Version 3.1 can be executed with Natural Version 4.1.2 without any conversion or adjustments to Natural programs, except in the few cases of intentional minor incompatibilities as documented in the section Compatibility / Removed Functionality in the Natural Version 4.1.1 Release Notes.

When a Version 3.1 application is executed with Version 4.1, these incompatibilities will cause the application to produce better, but slightly different, results. If in these cases you wish to receive the same results as with Version 3.1, you must adjust your Natural applications accordingly.

The following list provides an overview of the intentional incompatibilities as well as functionality no longer supported with Version 4.1.2.

Topic	Intended Incompatibilty / Removed Functionality
Error Message NAT1317	The error message NAT1317 will be returned in case of array mismatch in property assignments instead of the error message NAT0748.

Migrating Applications to Version 4.1

When migrating Natural applications from Natural 3.1 to Natural 4.1 the information given in the section Migrating Applications to Version 4.1 in the Natural Version 4.1.1 Release Notes should be considered.

Natural Version 4.1.2 Release Notes for Windows

Natural in Batch Mode

Full Batch-Mode Support

Natural Version 4.1 provides full batch-mode support. This means that Natural can be run as a background job. This is particularly useful for performing mass data processing operations and also for re-usable execution.

CMPRTnn Specifications in Batch Mode

In order to allow the user to specify variable print-file names, alpha-format system variables and numeric counter markers may be embedded in the filename specification for CMPRTnn.

For more information, see Natural Operations, Batch Mode.

Natural Remote Procedure Call

Functional security now also exists for the SYSRPC utilty. Major benefits are that the RPC Service Directory Maintenance and the TERMINATE function for servers can be protected from the client side.

If the client runs under Natural Security and the SYSRPC utility is to be used, then a functional security profile must be defined.

The stub generation function of SYSRPC now offers the possibility to generate stubs directly into the user library.

Information Pertaining to Upcoming Natural Release

The following information pertains to functionality that will most likely not be supported in future Natural releases:

Future Restrictions of Statement Usage with RPC

Current State

With Natural Version 3.1 (mainframe environments) or Version 4.1 (Windows NT/2000, OpenVMS and UNIX environments), the use of the following statements in conjunction with RPC is theoretically possible, but not recommended, as it causes undesired effects:

Statement	Description
TERMINATE	Using this statement causes the server to be terminated, regardless of conversations that may still be open.
FETCH, RUN, STOP	Using these statements causes the CALLNAT context to get lost. Upon a FETCH, RUN or STOP statement, the server detects that it has lost its CALLNAT context and returns a corresponding Natural error message to the client; at that time, however, the statement has already been executed by the server. **Exception:** This does not apply to FETCH RETURN.
INPUT	Input values are unpredictable when the input data are read from a file (and not from the stack).

Future State

The use of the statements FETCH, INPUT and RUN in conjunction with the Natural Remote Procedure Call will be inhibited.

Statement	Description
FETCH, RUN, INPUT	Not permitted.
STOP, TERMINATE	Same as ESCAPE ROUTINE.

Natural Security

This part of the Release Notes covers the following topics:

- Introduction
- Known Problems
- Using Multiple Versions of Natural Security
- Documentation
- Central Administration in a Heterogeneous Environment
- General Options in Administrator Services
- User Profiles
- Library Profiles
- Utility Protection
- Mailbox Profiles
- User Interface
- User Exits
- Interface Subprograms
- Support of Batch Mode

Introduction

This part of the Release Notes informs you of the enhancements and new features that are provided with Version 4.1.2 of Natural Security for Windows. For details on the individual items, please see the corresponding section of the new Natural Security documentation provided with this release.

In addition to providing the enhancements and new features described in these Release Notes, Natural Security Version 4.1.2 also consolidates all error corrections, modifications and enhancements provided with the previous patch-level releases of Version 3.1. Version 4.1.2 contains all changes applied to Version 3.1 as error corrections.

These Release Notes summarize the changes and corrections which might result in a difference in handling between Natural Security Version 4.1.2 and Version 3.1.

Known Problems

For information on problems that are known to Software AG, but have not yet been solved with this version of Natural Security, please refer to the section "Known Problems" in the Readme file supplied on the Natural Security installation CD.

Using Multiple Versions of Natural Security

The Natural Security system file FSEC can be shared by Natural Security Versions 3.1.1 and 4.1.2.

To ensure the consistency and completeness of the security data on a shared FSEC file, it is strongly recommended that you use only the highest Natural Security version for Natural Security maintenance.

If you use a shared FSEC file, it is **not** necessary to transfer any security data with SECULD/ SECLOAD.

Documentation

Revised Natural Security documentation is available with the release of Natural Security Version 4.1.2 for Windows.

The Natural Security documentation has been consolidated, so that this new documentation not only applies to Version 4.1.2 on Windows, but will also apply to OpenVMS and UNIX.

Central Administration in a Heterogeneous Environment

With Natural Security, you can also control access to Natural in a heterogeneous environment, that is, an environment comprising Natural on a mainframe computer and Natural on various non-mainframe platforms (OpenVMS, UNIX, Windows, and Natural Lightstorm).

To make security administration in such a heterogeneous environment easier, Natural Security Version 3.1 for mainframes allows you to store all security data in a single mainframe FSEC system file, and maintain them centrally for all other platforms in the heterogeneous environment using Natural Security on the mainframe computer.

Thus, security administration can be simplified and standardized on a company-wide basis.

The security data on the mainframe FSEC file are accessible from the non-mainframe platforms by way of Entire Net-Work. On a non-mainframe platform, you can retrieve these central security data, but not maintain them (neither directly nor using interface subprograms).

To make this central administration possible, the following enhancement was also necessary to library maintenance:

- Disallow/Allow "Non-Existent" Modules - The Disallow/Modules screen of a library profile displays a list of all modules contained in the corresponding library. In a heterogeneous production environment, however, the library may exist not on the mainframe FUSER system file but in the file system on another platform. If you defined a library profile for such a library, Natural Security on the mainframe computer would not know of that library, and the list of modules would therefore be empty.
  For you to be able to disallow/allow modules for a library on a non-mainframe platform within a heterogeneous environment, the Allow/Disallow Modules function provides a new subfunction (PF9 on the Allow/Disallow Modules screen). This subfunction enables you to manually enter the names of modules and allow/disallow them.

For further information on Natural Security in heterogeneous environments, please refer to your Natural Security documentation (Version 4.1 for OpenVMS, UNIX and Windows or Version 3.1 for Mainframes).

General Options in Administrator Services

Control of System File Access

The new Administrator Services function "Definition of system file access" enables you to control the access to the Natural system files which are defined in the Natural configuration file NATCONF.CFG.

When you invoke the function, a list of all system files defined in NATCONF.CFG will be displayed. For each system file, you can set an "Access" status, which can be one of the following:

Ma	**Maintain** - The system file is not protected; it can be accessed by any user (this is the default).
No	**No access** - The system file is protected; it can only be accessed by users who are linked to it.

To allow a user access to a protected system file, a *link* has to be established between the user and the system file. Corresponding functions for creating and deleting such links are provided.

Password History

With Version 3.1, the maximum number of stored passwords, which cannot be used again by the user, could only be set in steps of 10.

With Version 4.1, this number can be set to any value from 1 to 99.

Free Access to Functions via Interface Subprograms

You can specify the new value "R", which allows only the retrieval and display functions (but not the maintenance functions) to be accessed using interface subprograms by anybody who may use the subprograms.

Lock User Option

Besides "Y" and "N", you can specify the new value "F". This causes the user’s Natural session to be terminated automatically when the user ID is locked after the user has entered too many invalid passwords.

User Profiles

Activation Dates for Group Security Profiles

The setting of an activation date in a user profile, which has already been possible for users of types ADMINISTRATOR, PERSON and MEMBER, is now also possible for users of type GROUP.

Library Profiles

Editing Restrictions

In the Editing Restrictions window, you can now also allow or disallow the editing of objects of type "class".

Please note, however, that this editing restriction has not yet been activated. It will be activated with one of the next patch-level releases of Natural Security.

Disallow/Allow "Non-Existent" Modules

See the above description Disallow/Allow Non-Existent Modules.

Utility Protection

Access to Disallowed Utilities Intercepted at Invoking

With Version 3.1, when a user invoked a utility which he/she is not allowed to use, he/she could still invoke the utility - and only received an error message when he/she tried to perform a function within that utility.

With Version 4.1, the user will already receive an error message (NAT0877) when he/she tries to invoke a utility he/she is not allowed to use.

SYSMAIN, SYSOBJH and SYSRPC Utilities

The use of the Natural utilities SYSMAIN, SYSOBJH and SYSRPC can now also be controlled with Natural Security.

NATLOAD and NATUNLD Utilities

In the utility profiles for NATLOAD and NATUNLD, you can now also allow/disallow functions dealing with error messages.

PROFILE Command

The information displayed by the system command PROFILE now also contains information on the user’s access rights to Natural utilities (PF5 on the first screen displayed by the PROFILE command).

Mailbox Profiles

"Valid from" Date for Mailbox Display

In addition to the expiration date, after which the mailbox is no longer displayed to users, you can now specify a "Valid from" date to determine when the display of the mailbox is to begin.

The field "Expiration Date" is now called "Valid to".

Both dates are displayed with a 4-digit year component.

The format in which both dates are displayed is now dependent on the Natural profile parameter DTFORM.

Conversion of Existing Mailboxes

Due to the change of the format of the expiration date, you have to convert existing Version 3.1 mailboxes; otherwise they will not be displayed after 31st December 1999.

For the conversion, you use the program CHCKNSC provided in the library SYSSEC. When you execute this program, a menu is displayed, from which you select function "C" for the mailbox conversion.

Mailbox for Initial Logon

You can define a mailbox with the mailbox ID "1INITIAL": if a mailbox with this ID is defined, it will be displayed to every user after a successful initial logon to Natural.

The mailbox 1INITIAL need not be assigned to any user or library.

User Interface

Date Display

Natural Security screens now display date information with a 4-digit year component.

Enhanced Error Message NAT0963

The text of error message NAT0963 (security violation during program execution) now also shows the name of the program in question

New Error Messages

- **NAT0802** is issued if a user tries to log on to a system file either which is not defined in the NATCONF.CFG configuration file or which the user is not allowed to access. See also "Control of System File Access"
- **NAT0877** is issued when a user tries to invoke a utility he/she is not allowed to use.
- **NAT0878** is issued if a user tries to log on via a group whose security profile is not active (due to Activation Date settings in the group profile).
- **NAT0879** is issued if a user tries to log on, but none of the groups to which the user belongs is active (due to Activation Date settings in the group profiles).

User Exits

LOGONEX1

The logon user exit LOGONEX1 now provides a parameter (format L) which you can interrogate to determine whether a logon is an initial logon or a subsequent logon. For details, see the source code of the user exit.

Interface Subprograms

Creation/Modification Dates

With Version 3.1, the Natural Security interface subprograms supplied the dates of creation and last modification of a security profile in the format "YY-MM-DD".

With Version 4.1, these dates are supplied in the format "YYYYMMDD".

Support of Batch Mode

Under Windows NT/2000, Natural Security can now also be used in batch mode.

For details, see Natural Security in Batch Mode.