

Natural

Release Notes

Version 8.2.5

October 2015

This document applies to Natural Version 8.2.5.

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

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Preface

This document provides a brief summary of the changes and enhancements that have been introduced in Natural Version 8.2.5 for Mainframes and the Natural add-on products released with this version. Revised and updated documentation sets are available with this version.

Update Information

The following modifications and/or amendments to this document have been done after the release of Natural Version 8.2.5 for Mainframes:

The section Natural RPC (Remote Procedure Call) has been modified.

The section *Support for the Arabic Shaped Format* has been modified.

The section *Software AG Product Versions Required with Natural* has been modified.

The section *Support for Internet Protocol Version 6* has been modified.

Supported Environments	Operating Systems TP Monitors/Online Interfaces Database Management Systems Assemblers
Available and Required Software AG Product Versions	Product Availability and End of Maintenance Overview of New Natural Add-On Product Versions Software AG Product Versions Required with Natural
Installation and Compatibility	Changes to Installation Compatibility
New and Changed Features of Base Natural	Customer Feature Requests for Base Natural Operations and Performance Operating System Interfaces Unicode and Code Page Support Programming Language System Commands Editors Utilities Profile Parameters Application Programming Interfaces
New and Changed Features of Natural Add-On Products	Customer Feature Requests for Natural Add-On Products Natural CICS Interface Natural Com-plete/SMARTS Interface Natural IMS TM Interface Natural ISPF NaturalONE Natural RPC (Remote Procedure Call)

	Natural Security
Most Recent Natural Add-On Product Versions	Natural Development Server Version 8.3.2 Natural Optimizer Compiler Version 8.3.2 Natural Web I/O Interface Server Version 8.3.2
Dropped Features	Features Dropped with this Natural Version

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1 Supported Environments

Operating Systems	2
TP Monitors/Online Interfaces	
Database Management Systems	
Assemblers	

Software AG provides Natural support for the versions of the operating systems, TP monitors, database management systems and assemblers supported by their respective manufacturers. In general, when the provider of an operating system, TP monitor, database management or assembler system stops supporting a version of an operating system, TP monitor, database management system or assembler, Software AG will stop supporting that version of the operating system, TP monitor, database management system or assembler.



Note: For information regarding Software AG product compatibility with IBM platforms and any IBM requirements for Software AG products, please review the *Product Compatibility for IBM Platforms* web page at *http://www.softwareag.com/*.

Operating Systems

Software AG provides Natural support for the operating systems and versions listed in the **Product Version Availability** section of Software AG's Empower web site at https://empower.software-ag.com/ (see also *Product Availability and End of Maintenance*).

TP Monitors/Online Interfaces

Natural Version 8.2.5 supports the versions of the TP monitors/online interfaces listed below:

Product	Version		
Com-plete	See Software AG Product Versions Required with Natural		
CICS TS for z/OS	3.1, 3.2, 4.1, 4.2, 5.1, 5.2		
CICS TS for VSE/ESA	1.1.1		
IMS TM	12.1, 13.1		
openUTM	6.1, 6.2, 6.3		
TIAM	13.1, 13.2		

Database Management Systems

Natural Version 8.2.5 supports the versions of the database management systems listed below:

Product	Version
Adabas	See Software AG Product Versions Required with Natural
DB2 for z/OS	10.1, 11.1
DB2 Server for VSE & VM	7.3, 7.4, 7.5
DL/I	As delivered with the TP monitor IMS TM
VSAM	As delivered with the operating system
DFSMStvs	As delivered for the respective VSAM version if transactional VSAM is to be used with Natural for VSAM

Assemblers

Natural Version 8.2.5 requires one of the following assemblers for the assembly of its source modules:

- "HL" Assembler Version 1.6 (z/OS and z/VSE operating systems),
- "Assembh" Assembler (BS2000/OSD operating systems).



Note: It may be possible to assemble source modules with older assemblers; however, Software AG cannot guarantee this.

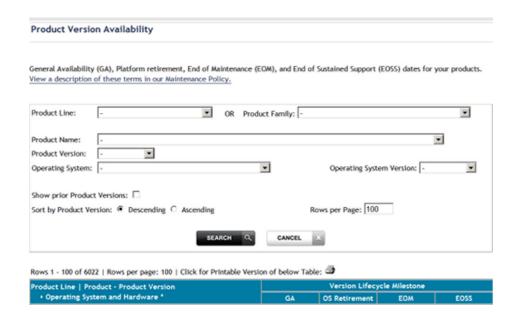
2 Available and Required Software AG Product Versions

Product Availability and End of Maintenance
Overview of New Natural Add-On Product Versions
Software AG Product Versions Required with Natural

Product Availability and End of Maintenance

You can view all available Software AG product versions and check the dates when their maintenance ends by visiting Software AG's Empower web site at https://empower.softwareag.com/:

- 1. Log into Empower.
- 2. Expand **Products** in the left menu of the page and select **Product Version Availability**:



3. Select the required filter criteria from the drop-down list boxes and click on the **SEARCH** button.

A list of supported Software AG products that meet the filter criteria is shown. In addition, the end-of-standard-maintenance dates are indicated in the **EOM** column.

If you mark **Show prior Product Versions**, only product versions that are out of maintenance are listed.

Overview of New Natural Add-On Product Versions

This release of Natural provides new versions of the Natural add-on products (or subcomponents) listed in the following table. These versions contain

- all Zaps,
- INPL updates,
- early warnings and

source changes

applied to their respective predecessor versions as error corrections.

Product Name	Product Code	Version
Natural Advanced Facilities	NAF	8.2.5
Natural CICS Interface (*)	NCI	8.2.5
Natural Com-plete/SMARTS Interface (*)	NCF	8.2.5
Natural Connection	NTC	8.2.5
Natural Development Server (*)	NDV	8.2.5
		8.3.2
Natural for DB2	NDB	8.2.5
		8.3.2
Natural for DL/I	NDL	8.2.5
Natural for SQL/DS	NSQ	8.2.5
Natural for VSAM	NVS	8.2.5
Natural IMS TM Interface (*)	NII	8.2.5
Natural ISPF (*)	ISP	8.2.5
Natural Japanese Language Pack	NCJ	8.2.5
Natural openUTM Interface	NUT	8.2.5
Natural Optimizer Compiler (*)	NOC	8.2.5
		8.3.2
Natural Review	RNM	8.2.5
Natural RPC (*)	RPC	8.2.5 (RPC is a separate subcomponent of Natural)
Natural SAF Security	NSF	8.2.5
Natural Security (*)	NSC	8.2.5
Natural SQL Gateway	NSB	8.2.5
Natural TIAM Interface	NRT	8.2.5
Natural TSO Interface	NTI	8.2.5
Natural Web I/O Interface (*)	NWO	8.2.5 (server)
		8.3.2 (server)
Super Natural	NSN	8.2.5
zIIP Enabler for Natural	NAZ	8.2.5

^{*} Product-specific changes and/or enhancements are described in *New and Changed Features of Natural Add-On Products*.

Software AG Product Versions Required with Natural

The following minimum product versions/fixes (or higher) are required to use Natural Version 8.2.5 and the add-on products released with this version with the Software AG products listed below:

Product Name	Product Code	Minimum Version
Adabas	ADA	8.2.4
		8.2.5 for the zIIP Enabler for Natural with Zaps AO825001 through AO825006 (ADASVC) and AI825002 (ADALNK) installed
Adabas CICS Interface	ACI	8.2.4
Adabas IMS/TM Interface	AII	8.2.4
Adabas Online System	AOS	8.2.4
Adabas Review	REV	4.6.1
Adabas Text Retrieval	TRS	2.1.4
Adabas UTM Interface	AUT	7.4.4
Com-plete (СОМ	6.8.1 with SMARTS Version 3.3.1 Cumulative Fix 20
Con-form (CMF	3.4.3
Con-nect (CNT	3.4.3
ConnecX SQL Engine	CXX	12.0
Entire Connection	PCC	4.5.2
Entire DB Engine	AER	1.5.7
Entire Event Management	NCL	2.2.1 (2.1.2 for z/VSE)
Entire Net-Work	WCP	6.2.1 (This product is required if you are using Natural Security in a heterogeneous environment.)
Entire Operations	NOP	5.4.2
Entire Output Management	NOM	3.4.3
Entire System Server	NPR	3.5.3
Entire Transaction Propagator	ETP	1.5.2
		Apply Zaps ET52001 and ET52003 (for ETP) to use ETP with Adabas Version 8. If you are also using the additional Entire Transaction Propagator CICS Interface (ETC), in addition, apply Zap EZ52005 (for ETC).

International Components for Unicode for Software AG	ICS	1.4.1
Mainframe License Check	MLC	1.2.8
Natural Business Services	NBS	8.2.2
Natural Construct	CST	8.2.2
Natural Document Management	NDM	1.6.3 with Service Pack I001 applied
Natural Engineer	NEE	8.3.2
Natural Web I/O Interface	NWO	8.3.16 (client)
Predict	PRD	8.2.3
Predict Application Control	PAC	2.6.1
Predict Case	PCA	2.5.2 with Service Pack I001 applied
SMARTS	APS	2.7.2 Cumulative Fix 20 for BS2000/OSD
		3.3.1 Cumulative Fix 20 for z/OS and z/VSE
System Automation Tools	SAT	3.4.3
System Maintenance Aid	SMA	2.1.2 Cumulative Fix 4
webMethods EntireX	EXX	9.0.1 for z/OS 9.6.0 for z/VSE
(before: EntireX Communicator)		8.1.1 for BS2000/OSD

Although it may be technically possible to run versions of other Software AG products which are older than the ones listed above with a new version of Natural, this is not recommended because, for legal reasons, Software AG cannot continue to support such combinations and cannot make any statements about whether it is technically possible to run a new version of Natural with versions of other Software AG products which are older than the ones listed above.

3 Installation and Compatibility

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Changes to Installation

Particular installation changes to Natural add-on products are described in the relevant sections in *New and Changed Features of Natural Add-On Products*.

The sections indicated for more information are contained in the Natural *Installation* documentation, unless otherwise noted.

- New Module for PARSE XML Support for IBM Architecture Level 9
- New ICU Data Modules
- ICS: Dynamically Loaded ICU Data Items
- Discontinued Support for EntireX Broker Stub NATETB23 on z/VSE
- BS2000/OSD: Discontinued Support for TSOSLNK Editor
- Discontinued Delivery of ICS Module SAGICUA5

New Module for PARSE XML Support for IBM Architecture Level 9

A new load module is supplied enabling the PARSE XML statement to support the IBM hardware architecture level 9 on z/OS and z/VSE platforms.

For more information, see the corresponding installation step for z/OS and z/VSE in *Installation* for REQUEST DOCUMENT and PARSE XML Statements.

New ICU Data Modules

The ICU data libraries provided as Natural load modules with ICS (International Components for Unicode for Software AG) have changed due to the new ICU version (see also *ICU Version Upgrade*):

Old Name	New Name
ICSDT51E	ICSDT53E
ICSDT51J	ICSDT53J
ICSDT51X (not for z/VSE)	ICSDT53X (not for z/VSE)

The ICSDT53J data module contains the same code pages and locales as ICSDT53E plus all Japanese code pages. For more information, see *ICU Data Libraries* in the *Unicode and Code Page Support* documentation.

For the resulting changes in installation steps, see the *Installation Procedure* for z/OS, z/VSE and BS2000/OSD in *Installing International Components for Unicode for Software AG*.

ICS: Dynamically Loaded ICU Data Items

ICS (International Components for Unicode for Software AG) Version 1.4.1 now supports dynamic loading of single ICU data items during runtime. An ICU data item, for example, is a converter or a collator used for collation services.

As a result, you no longer have to use the extended ICSDT53X data module or create your own data module, but rather load only the data items required in your Natural session.

For more information, see ICU Data Items in the Unicode and Code Page Support documentation.

For the resulting changes in installation, see the appropriate installation steps for z/OS, z/VSE and BS2000/OSD in *Installing International Components for Unicode for Software AG*.

Discontinued Support for EntireX Broker Stub NATETB23 on z/VSE

The EntireX Broker stub NATETB23 is no longer supported on z/VSE. You must use BKIMB or BKIMC instead as described in the appropriate sections of the *EntireX* documentation.

BS2000/OSD: Discontinued Support for TSOSLNK Editor

Effective with this Natural version, the BS2000/OSD TSOSLNK linkage editor is no longer supported.

System Maintenance Aid (SMA) still delivers the current TSOSLNK framework but no longer maintains it.

As a consequence, during installation of Natural, you must link the environment-dependent nucleus as an LLM (contained in an LMS library) with the BINDER if the nucleus uses the NAT2TCP socket routine. In addition, you must not specify the BS2000/OSD system socket library for autolink resolution of unresolved external references.

Discontinued Delivery of ICS Module SAGICUA5

The ICS (International Components for Unicode for Software AG) load module SAGICUA5 is no longer supplied. This module was used to support the IBM architecture level 5.

For the resulting changes in installation, see the corresponding installation procedure for z/OS and z/VSE in *Installing International Components for Unicode for Software AG*.

Compatibility

This section provides the latest information for this Natural release regarding compatibility with earlier versions of Natural for Mainframes as well as with Natural on other platforms.



Note: For information regarding Software AG product compatibility with IBM platforms and any IBM requirements for Software AG products, please review the *Product Compatibility for IBM Platforms* web page at *http://www.softwareag.com/*.

- Special-Purpose Zaps
- Discontinued Support for EntireX Broker Stub NATETB23 on z/VSE
- RPC Subparameter ACIVERS Ignored on z/VSE

Special-Purpose Zaps

The following table lists Natural Version 8.2.5 Zaps and the special purposes they support:

Zap	Special Purpose	
NA93189	Suppress NAT3145 error information	Suppress extra L2 calls to Adabas after a NAT3145 error has occurred.
		If this Zap is applied, the application programming interface USR8202N no longer provides extended information on the NAT3145 error message.
NA93228	Migrate old maps	Provide option to migrate Natural Version 4 maps that contain erroneous numeric field definitions to Natural Version 8.2.
NA94121	Process RDC exit in zIIP mode	Process the RDC exit in zIIP mode. This Zap only applies if the zIIP Enabler for Natural is installed and if an RDC exit is used. If so, the Zap must only be implemented if the RDC exit does not use any SVCs.
NA95017, NA95018, NA95019, NA95020, NA95021 and NA95022	Support for the Arabic Shaped Format	See: Support for the Arabic Shaped Format.

Discontinued Support for EntireX Broker Stub NATETB23 on z/VSE

The EntireX Broker stub NATETB23 is no longer supported on z/VSE. You must use BKIMB or BKIMC instead as described in the appropriate sections of the *EntireX* documentation.

RPC Subparameter ACIVERS Ignored on z/VSE

The ACIVERS keyword subparameter of the RPC profile parameter is no longer required on z/VSE platforms and is therefore ignored: see *Highest EntireX API Version Now Used on z/VSE*.

New and Changed Features of Base Natural

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■ Unicode and Code Page Support	
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Application Programming Interfaces	



Note: The SYSEXV utility gives you access to examples of new features available in the current and in some earlier versions of Natural. SYSEXV is described in the *Utilities* documentation.

Customer Feature Requests for Base Natural

This is an overview of the customer feature requests submitted in the **Brainstorm** portal of Software AG's Empower web site at *https://empower.softwareag.com/* and the enhancement proposals (EP) that have been implemented in base Natural:

Request Number	er Feature Request	
00408	Limit the size of the environment-independent (shared) Natural nucleus: see <i>Constant Natural Nucleus Size</i> .	
00955	Improve error messages issued by the PCHECK profile parameter to immediately locate the statements affected by parameter errors.	
	Solution:	
	Natural Version 8.2.3 introduced the PECK profile parameter which provides several options to adapt syntax error reporting to your needs.	
	For more information, see <i>PECK - PCHECK/ECHECK Error Processing</i> in the <i>Parameter Reference</i> documentation.	
EP2380	Provide option for the LIST system command to check the settings of the MAINPR profile parameter: see <i>LIST System Command</i> .	
EP4534	Retrieve the current settings of the DB parameter/NTDB macro to avoid database errors: see USR8211N in <i>Application Programming Interfaces</i> and <i>New SHOWDBS Command to View Database Definitions</i> .	

See also Customer Feature Requests for Natural Add-On Products.

Operations and Performance

- Constant Natural Nucleus Size
- PARSE XML Support for Architecture Level 9 on z/OS and z/VSE

■ Print Data in a Remote JES Environment

Constant Natural Nucleus Size

From this Natural version onwards, the environment-independent (shared) nucleus will no longer increase but kept at a constant maintenance size.

The new Natural features previously delivered with the nucleus by default are now supplied as separate selectable units that can be implemented on demand only by using the new SELUNIT profile parameter.

PARSE XML Support for Architecture Level 9 on z/OS and z/VSE

The PARSE XML statement now supports the IBM hardware architecture level 9 on z/OS and z/VSE platforms.

Architecture levels employ instructions available with IBM hardware facilities that significantly improve performance. Under heavy workload, you can expect an increase in performance of between 10 and 20 percent when using level 9.

For more information on architecture levels, see the related literature from IBM.

For the required changes to installation, see the appropriate installation steps for z/OS and z/VSE in *Installation for REQUEST DOCUMENT and PARSE XML Statements* in the *Installation* documentation.

Print Data in a Remote JES Environment

You can now use the write-to-spool file feature to route data through a remote JES node and send it to a user or print it on a device defined in the remote JES environment. For more information, see *Using the Write-to-Spool Feature* in the *Operations* documentation.

Operating System Interfaces

Support for Files on Remote BS2000/OSD Net Storage

Natural can now allocate files contained on remote Network Attached Storage servers and process them as Natural print files and work files. Prerequisite: BS2000/OSD V9.0 (or above) must be installed at your site.

For more information, including JCL samples, see *Using Net Storage Files as Natural Print and Work Files* in the *Operations* documentation.

Unicode and Code Page Support

- ICU Version Upgrade
- Support for Dynamic Loading of ICU Data Items
- Support for the Arabic Shaped Format

ICU Version Upgrade

The ICU (International Components for Unicode) version has been upgraded to ICU Version 53.1 which supports Unicode Version 6.3.

The improvements in ICU Version 53.1 include performance enhancements for string comparison, for example, the comparison of Unicode and alpha fields in an IF statement.

For a summary of all changes in ICU Version 53.1 and Unicode Version 6.3, see the Download ICU 53 website at http://site.icu-project.org/download/53 and the Unicode 6.3.0 website at http://www.unicode.org/versions/Unicode6.3.0/, respectively.

See also New ICU Data Modules.

Support for Dynamic Loading of ICU Data Items

ICS (International Components for Unicode for Software AG) Version 1.4.1 now supports dynamic loading of single ICU data items during runtime. An ICU data item, for example, is a converter or a collator used for collation services.

As a result, you no longer have to use the extended ICSDT53X data module or create your own data module, but rather load only the data items required in your Natural session.

For more information, see ICU Data Items in the Unicode and Code Page Support documentation.

For the resulting changes in installation, see the appropriate installation steps for z/OS, z/VSE and BS2000/OSD in *Installing International Components for Unicode for Software AG* in the *Installation* documentation.

Support for the Arabic Shaped Format

Since Natural Version 8.2.3, Natural Arabic characters are internally represented in the unshaped format instead of the shaped format. If you want to keep the shaped format of Arabic characters produced in a previous Natural version, apply the contiguous **special-purpose Zaps** listed in under *Compatibility*.

For more information on Arabic shaping, see the relevant section in the *Unicode and Code Page Support* documentation.

Programming Language

Statements

PROCESS PAGE and ESCAPE Statements

The statements ESCAPE TOP and ESCAPE BOTTOM are no longer applied to the PROCESS PAGE MODAL processing block.

The statements ESCAPE TOP and ESCAPE BOTTOM are designed to interrupt the flow of a processing loop. Since the statements PROCESS PAGE MODAL and END-PROCESS form a processing block (and not a processing loop), the ESCAPE statement is no longer applied to the PROCESS PAGE MODAL processing block.

If an ESCAPE statement is encountered during processing of a PROCESS PAGE MODAL block, the execution of the processing block is terminated and the ESCAPE processing continues as defined.

System Commands

- New SHOWDBS Command to View Database Definitions
- New SHOWSU Command to View Selectable Units
- COMPOPT System Command
- LIST System Command
- SYSPROD System Command
- SYSRPC System Command

Note: The sections indicated for more information are contained in the *System Commands* documentation, unless otherwise noted.

New SHOWDBS Command to View Database Definitions

The new system command SHOWDBS system provides the option to view database-specific information defined with the DB profile parameter or corresponding NTDB macro.

New SHOWSU Command to View Selectable Units

The new SHOWSU system command provides the option to view all selectable units available in your Natural environment, and the selectable units that have been activated with the SELUNIT profile parameter.



Note: Selectable units are not yet available; they are planned for future delivery.

COMPOPT System Command

Syntax Check between the Mainframe and UNIX or Windows

The COMPOPT system command now provides the LUWCOMP option to check whether the syntax of features introduced in Natural for Mainframes Version 8.2 is also valid for Natural for UNIX Version 8.3 and Natural for Windows Version 8.3. If any inconsistencies are detected during compilation, Natural returns an appropriate syntax error.

For more information, see LUWCOMP - Disallow Syntax Not Available on UNIX or Windows.

V41COMP and V42COMP Options no longer available

Effective with this Natural version, the V41COMP and V42COMP compiler options of the COMPOPT system command are no longer supported. These compiler options were used to disallow Natural Version 8.2 programming language enhancements for compatibility with Natural Version 4.1 (V41COMP) or Version 4.2 (V42COMP).

LIST System Command

New Option to Override the Default Output Report

The LIST system command now provides the option to use the MAINPR profile parameter to override the default output report number. For this reason, you can specify the new LIST parameter USEMAINPR in the settings for the LIST command and set the new LIST profile parameter USE-MAINPR to determine the default MAINPR setting to be used.

For more information, see USEMAINPR in the section *Settings* and USE-MAINPR in the section *List Profile Parameters*.

Object Directory now with GDA Timestamps

The LIST DIRECTORY system command now also shows the GDA (global data area) timestamps of a cataloged object and the timestamp of the GDA used by the object.

For more information, see *Displaying Directory Information*.

SYSPROD System Command

The SYSPROD system command now provides the SU line command/keyword to view all Natural features that have been activated as selectable units with the new SELUNIT profile parameter.

SYSRPC System Command

The SYSRPC system command now provides the SM REPLACE option to replace single or multiple items maintained in the service directory of the SYSRPC utility.

Editors



Note: The sections indicated for more information are contained in the *Editors* documentation, unless otherwise noted.

Map Editor

The map editor no longer supports the following functions:

■ Migration of Maps Created with KAPRI

(used to migrate maps created with Natural Version 3.1 and KAPRI (a product by Beacon IT)) and

Outline Editor

(used to create boxes for map fields).

Utilities

- Profiler Utility
- SYSRPC Utility
- SYSTP Utility



Note: The sections indicated for more information are contained in the *Utilities* documentation, unless otherwise noted.

Profiler Utility

The Profiler utility can now be used to trace and analyze Natural batch applications. Statistics and event traces are provided in the batch output. The event data is saved in a resource file and can be analyzed by the NaturalONE Profiler.

For detailed information, see Profiler Utility.

SYSRPC Utility

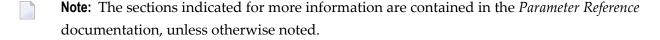
The SYSRPC utility is a subcomponent of Natural RPC: see *SYSRPC Utility* in *Natural RPC*.

SYSTP Utility

The Natural SYSTP utility no longer provides the **Multi Session** function used by Natural IMS TM Interface.

Profile Parameters

- New Profile Parameters
- Changed/Enhanced Profile Parameters



New Profile Parameters

	Corresponding Macro	Task	Description
PDPSIZE	NTPRM	Size of the Profiler Data Pool	Determines the size of the Profiler data pool required for the NaturalONE Profiler and the Profiler utility (see the <i>Utilities</i> documentation) in batch mode. For information on the NaturalONE Profiler, see the relevant section in the <i>NaturalONE</i> documentation at http://documentation.softwareag.com/ .
RNCONST	NTPRM	Renumber Line Numbers in Constants	Renumbers the line-number references in alphanumeric and Unicode constants within a Natural source.
SELUNIT	NTPRM	Activate Selected Natural Features	Replaces the PLUGIN profile parameter: see <i>SELUNIT Parameter</i> below.
SKEY	NTPRM	Storage Key for Program Execution	This profile parameter can now also be used in a CICS environment: see <i>Support for CICS Storage Keys</i> .

SELUNIT Parameter

The SELUNIT profile parameter provides the option to use only particular Natural features supplied with a new Natural version instead of completely upgrading Natural.

SELUNIT activates single or multiple selectable units provided to support the new features.

You can use the new SHOWSU system command to view all selectable units available and active in your environment. You can also use the new SU line command/keyword of the SYSPROD system command to view all active selectable units.

Selectable units are not yet available. They are planned for a future release of Natural.

Changed/Enhanced Profile Parameters

Parameter	Corresponding Macro	Task	Change/Enhancement
CFICU	NTCFICU	Unicode and Code Page Support	Load Method for ICU Data Items The new DATITEM keyword subparameter determines the method to load ICU data items under CICS and Com-plete. See also Support for Dynamic Loading of ICU Data Items.
СМРО	NTCMPO	Compilation Options	Platform-specific Syntax Check The new LUWCOMP keyword subparameter detects syntax inconsistencies between Natural for Mainframes and Natural for UNIX or Natural for Windows: see also COMPOPT System Command. V41COMP and V42COMP Options Removed The V41COMP and V42COMP options are no longer supported.
DB2	NTDB2	Parameters for SQL Database Management Interfaces	Alternative SQL Date Format for Natural SQL Gateway The new NSBDATE keyword subparameter is used to represent SQL date strings in DD.MM.YYYY format.
IMSPE	NTIMSPE	Environment Parameters for Natural IMS TM Interface	Multi-Session Subparameters Removed The following keyword subparameters have been removed from the NTIMSPE macro: MSACTV, MSCMPTB, MSCRKEY, MSRSKEY, MSDBD and MSMAX.
IMSPT	NTIMSPT	Transaction Definitions for Natural IMS TM Interface	Multi-Session Subparameter Removed The MSPCB keyword subparameter has been removed from the NTIMSPT macro.

Parameter	Corresponding Macro	Task	Change/Enhancement
PLUGIN	NTPRM	Enable the Natural Plug-In Components	This profile parameter has been replaced by the SELUNIT profile parameter.
RPC	NTRPC	Remote-Procedure-Call Settings	Highest EntireX API Version for z/VSE The ACIVERS keyword subparameter is no longer required on z/VSE: see <i>Highest EntireX API Version Now Used on z/VSE</i> .
SKEY	NTPRM	Storage Key for Program Execution	Changed Default Setting The default setting has changed from 0N to 0FF to protect storage by default. Important: If you run Natural under Com-plete and have storage keys other than the keys 8 and 9 assigned to your Com-plete threads, we strongly recommend that you set SKEY=0N to avoid performance degradation. This is likely to be the problem when you use the Software AG Editor, for example, in connection with Natural ISPF.

Application Programming Interfaces

The following Natural application programming interfaces (APIs) in the SYSEXT system library are new:

API	Task	Enhancement
USR8211N		This new API returns database-specific information as defined with the Natural profile parameter DB or corresponding NTDB macro.
USR8214N	Adabas calls	This new API gets or sets a token in the ACBUSER field (user area) of the Adabas control block during Adabas calls. The ACBUSER field can then be used as a selection criteria for Adabas Review reports.

See also the new or changed APIs specific to **Natural CICS Interface**, **Natural RPC** and **Natural Security**.

New and Changed Features of Natural Add-On Products

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Note: For an overview of all Natural add-on products and the new product versions available, see *Overview of New Natural Add-On Product Versions*.

Customer Feature Requests for Natural Add-On Products

This is an overview of the customer feature requests submitted in the **Brainstorm** portal of Software AG's Empower web site at https://empower.softwareag.com/ that have been implemented in the following Natural add-on products released with Natural Version 8.2.5:

Product	Request Number	Feature Request
Natural CICS Interface	00146	Provide option to switch between conversational and pseudo-conversational in CICS: see USR8212N in <i>Application Programming Interfaces</i> in <i>Natural CICS Interface</i> .
Natural RPC	00459	Enhance the Service Directory Maintenance function of the SYSRPC utility to facilitate library maintenance: see <i>Replace Option for Service Directory Items</i> in <i>SYSRPC Utility</i> and <i>SYSRPC System Command</i> .
Natural RPC	01865	Improve explanation of Reason 11 in the NAT6975 (security error) system message.
Natural RPC	02124	Provide user exit to set transaction ID for impersonation under CICS: see <i>RPCSFEX1</i> - <i>User Exit for Impersonation under CICS</i> in the <i>Natural RPC</i> documentation.
Natural Security	01329	Enhance Natural Security log reporting: see <i>Logging of Maintenance Functions</i> in <i>Administrator Services</i> .

See also Customer Feature Requests for Base Natural.

Natural CICS Interface

- Support for CICS TS for z/OS Version 5.2.
- Support for CICS Storage Keys
- Execution Control of NCIDTPEX Terminal Exit Interface

Application Programming Interfaces

Support for CICS TS for z/OS Version 5.2.

The Natural CICS Interface now also supports the CICS Transaction Server for z/OS Version 5.2.

Support for CICS Storage Keys

The Natural profile parameter SKEY now provides the option to dynamically switch to run Natural in CICS key if required.

For more information, see SKEY in the *Parameter Reference* documentation.

Execution Control of NCIDTPEX Terminal Exit Interface

This new FDTPX generation parameter of the NCMPRM macro provides the option to determine whether the NCIDTPEX terminal exit interface is called for all types of terminals used in your environment.

For more information, see FDTPX and *NCIDTPEX - DTP Terminal Exit* Interface in the *TP Monitor Interfaces* documentation.

See also the new XNCITIOX sample terminal exit interface and the new XNCIFRNN sample front-end program supplied in the Natural CICS source library.

Application Programming Interfaces

The following new Natural application programming interface (API) in the SYSEXT system library is supplied for Natural CICS Interface:

API	Task	Enhancement
USR8212N	Switch to conversational mode under	This new API switches a pseudo-conversational session
	CICS	in CICS into conversational mode and vice versa.

Natural Com-plete/SMARTS Interface

Migration: SKEY Parameter Setting Can Affect Performance

The default setting of the SKEY profile parameter (see the *Parameter Reference* documentation) has changed from 0N to 0FF.



Important: If you run Natural under Com-plete and have storage keys other than the keys 8 and 9 assigned to your Com-plete threads, we strongly recommend that you set SKEY=0N to avoid performance degradation. This is likely to be the problem when you use the Software AG Editor, for example, in connection with Natural ISPF.

Natural IMS TM Interface

- Discontinued Support for Multi-Session Function
- Installation and Configuration: Support for NIITRTAB
- Installation and Configuration: Discontinued Support for NIIPARM

Discontinued Support for Multi-Session Function

Support for the multi-session function has been discontinued and is no longer available for Natural IMS TM Interface. As a result:

- The NTIMSPE and NTIMSPT macros in the Natural parameter module no longer support the keyword subparameters listed in *Changed/Enhanced Profile Parameters*. They are still accepted for compatibility reasons but otherwise ignored.
- The Natural SYSTP utility no longer provides the **Multi Session** function.

Installation and Configuration: Support for NIITRTAB

An NIITRTAB transaction code table previously generated by the NIMTRNTG macro is still supported for compatibility reasons. However, any changes to transaction codes must be defined in the NTIMSPT macro of the Natural parameter module. The NTIMSPT definitions are checked first, followed by the NIITRTAB entries.

Installation and Configuration: Discontinued Support for NIIPARM

The NIIPARM parameter module previously generated by the NIMPARM macro is no longer supported. You have to use the NTIMSPT macro in the Natural parameter module instead.

Natural ISPF

Enhanced Display Option for BS2000/OSD File Maintenance

The BS2000/OSD file maintenance facility now also provides the option to display the date and time when a file was last modified. For details, refer to the section BS2000/OSD Files in the User's Guide of the Natural ISPF documentation in the **Documentation** section of Software AG's Empower web site at http://documentation.softwareag.com/.

NaturalONE

For information on changes, enhancements and new features available with NaturalONE, see the *Release Notes* in the *NaturalONE* documentation in the **Documentation** section of Software AG's Empower web site at *http://documentation.softwareag.com/*.

Natural RPC (Remote Procedure Call)

- Encryption
- Application Programming Interfaces
- Highest EntireX API Version Now Used on z/VSE
- User Exit for Impersonation under CICS
- SYSRPC Utility

Encryption

EntireX Encryption will be deprecated with the next version of EntireX.

For encrypted transport, Software AG strongly recommends that you use the Secure Sockets Layer/Transport Layer Security protocol. The relevant sections in the Natural RPC documentation have been updated accordingly.

Applications that execute with EntireX Encryption are still supported for compatibility reasons.

For more information, see SSL/TLS and Certificates with EntireX in the EntireX documentation.

Application Programming Interfaces

New APIs

The following Natural RPC-specific application programming interfaces (APIs) have been added in the SYSEXT system library:

API	Task
USR4371N	Set User ID and ETID for RPC
	On the RPC client side, this API sets the user ID and ETID for Natural RPC servers which were configured with Impersonation = A (automatic logon).
USR8213N	Shutdown a server on EntireX Broker
	Terminate a single Natural RPC server by using the sequence number returned for the required server.

Changed APIs

The following Natural RPC-specific APIs have changed: they no longer support EntireX Location Transparency.

API	Task
RPC-CNTX	Maintain RPC context for Natural clients.
USR2071N	Support EntireX Security on client side.
USR2073N	Ping or terminate an RPC server.
USR2074N	Set new password for Natural Security user in RPC context.
USR2075N	Terminate EntireX Broker service.

All USR* APIs are contained in the SYSEXT system library, RPC-CNTX is contained in the SYSRPC system library.

Highest EntireX API Version Now Used on z/VSE

The highest API version of the EntireX ACI that Natural RPC, the EntireX Broker stub and the EntireX Broker support is now determined automatically on z/VSE platforms.

As a result, the ACIVERS keyword subparameter of the RPC profile parameter has become obsolete and is ignored on z/VSE. ACIVERS is described in the *Parameter Reference* documentation.

User Exit for Impersonation under CICS

The new RPCSFEX1 user exit can be used to set specific CICS transaction IDs for impersonated RPC requests.

For detailed information, see *RPCSFEX1* - *User Exit for Impersonation under CICS* in the *Natural RPC* documentation.

SYSRPC Utility

Replace Option for Service Directory Items

The **Service Directory Maintenance** function now provides the option to search for and replace single or multiple nodes, servers, libraries and/or programs. For more information, see the new REPLACE direct command and corresponding PF key described in *Direct Commands and PF Keys* in the section *Service Directory Maintenance* in the *SYSRPC Utility* documentation.

The replace function can also be executed with the SYSRPC system command.

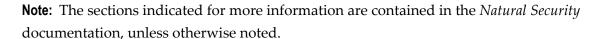
Discontinued Support for Logical Names

The **Service Directory Maintenance** and the **Server Command Execution** functions of the SYSRPC utility no longer support logical node and server names previously supplied by EntireX.

See also Discontinued Support for EntireX Location Transparency.

Natural Security

- Changes to Installation
- Administrator Services
- Library Maintenance
- RPC Server Profiles
- Application Programming Interfaces
- Read-Only FSEC System File



Changes to Installation

New Step for Loading Logon and Data Files

A new step for Natural Security installations on Adabas supports the new *Store Logon and Error Data on Separate System Files* function: see the relevant announcement in *Administrator Services* below.

Administrator Services

The **Administrator Services** options described in this section only apply if Adabas is installed in your environment.

Logging of Maintenance Functions

Whenever you modify a security profile, Natural Security automatically adjusts related security profiles to ensure the consistency of all Natural Security definitions. For example, if you modify a group profile to remove a user from the group, Natural Security will automatically modify the user profile to remove that group from the list of the user's Privileged Groups if required.

As of this version, the general option **Logging of Maintenance Functions** will not only log the profile modifications themselves but also the automatic adjustments of related profiles.

Store Logon and Error Data on Separate System Files

With previous versions, all Natural Security data were stored on a single FSEC system file.

As of this version, you can store the following data on separate system files:

- logon records,
- logon/countersign error records,
- maintenance log records.

These system files can be specified with the new general option **Store Logon and Error Data on Separate System Files**.

All other definitions of Natural Security settings, object definitions and object relations will still be stored on the main FSEC system file.

For the resulting changes in installation, see the new installation step *Load the Logon and Error Log File* for z/OS, z/VSE and BS2000/OSD in *Installing Natural Security*.

Library Maintenance

The **Link Users to Library** selection list now also displays the user types of the users listed.

RPC Server Profiles

The use of certain subprograms can be restricted generally by disallowing modules in library (and special link) security profiles. In a Natural RPC server context, you can now further restrict the use of subprograms so that only specific users can access a server, and only via specific subprograms. For this purpose, RPC server profiles provide a new option **Service Protection**; in addition, functions for **Allowing/Disallowing Services** are available.

Application Programming Interfaces

The application programming interfaces NSCADM, example program PGMADM02, and NSCXR, example program PGMXR006, provide a new subcode D: This can be used for the maintenance/retrieval of logon records sorted by date.

Read-Only FSEC System File

If the FSEC system file is read-only (profile parameter FSEC=(dbid, fnr,,,R0) or ROSY=ON), any attempt to invoke a Natural Security maintenance function which would cause an update to the system file will be rejected with error NAT1012.

6

Most Recent Natural Add-On Product Versions

Natural Development Server Version 8.3.2

Natural Optimizer Compiler Version 8.3.2

Natural Web I/O Interface Server Version 8.3.2

Natural Development Server Version 8.3.2

Support for Internet Protocol Version 6	4(
New Levels for Start and Termination Traces Only	40

Natural Development Server Version 8.3.2 is available from Natural Version 8.2.5 onwards.

This section describes the new features of Natural Development Server Version 8.3.2.

Support for Internet Protocol Version 6

Natural Development Server Version 8.3.2 supports Internet Protocol Version 6 (IPv6) on z/OS and z/VSE if an active IPv6 connection is available (otherwise, IPv4 is used).

For the changes in installation, see the appropriate *Natural Development Server* documentation in the **Documentation** section of Software AG's Empower web site at *https://empower.softwareag.com/*.

New Levels for Start and Termination Traces Only

Natural Development Server Version 8.3.2 introduces the new trace levels 12 and 13 to just trace the start and the termination of the server or client session, respectively. This avoids excessive trace data that can cause performance degradation.

For more information, see the appropriate *Natural Development Server* documentation in the **Documentation** section of Software AG's Empower web site at *https://empower.softwareag.com/*.

8 Natural Optimizer Compiler Version 8.3.2

Support for IBM Architecture Level 10	42
Optimized Code for Statements with Unicode Strings	42

Natural Optimizer Compiler Version 8.3.2 is available from Natural Version 8.2.5 onwards.

For the changes in installation, see *Installing the Natural Optimizer Compiler Version 8.3.2* on z/OS and z/VSE in the Natural *Installation* documentation.

This section describes the new features of Natural Optimizer Compiler Version 8.3.2.

Support for IBM Architecture Level 10

Architecture levels are used to exploit new instructions available with IBM hardware facilities in order to enhance the performance of generated code (see the related literature from IBM).

The ARCH option of Natural Optimizer Compiler Version 8.3.2 now also supports IBM architecture level 10 on z/OS and z/VSE platforms.

When using architecture level 10, you can improve the performance of specific Natural statements with arithmetic variable operations by up to 40 percent. For the requirements and restrictions that apply, see the sections *ARCH Option* and *Support for Architecture Level 10* in *Natural Optimizer Compiler Version 8.3 - Documentation Updates* in the *Natural Optimizer Compiler documentation*.

Optimized Code for Statements with Unicode Strings

Natural Optimizer Compiler Version 8.3.2 now also generates optimized code for Natural statements that contain Unicode operands.

In addition, the new UNICC option is provided to meet specific generation requirements for IF and DECIDE statements with Unicode operands.

For more information, see the following sections in *Optimizer Options under Natural Optimizer Compiler Version 8.3* in the *Natural Optimizer Compiler documentation*:

- Prerequisites for Code Generation with Unicode Operands
- UNICC Option

9 Natural Web I/O Interface Server Version 8.3.2

Support for Internet Protocol Version 6	44
New Levels for Start and Termination Traces Only	4/

Natural Web I/O Interface Server Version 8.3.2 is available from Natural for Mainframes Version 8.2.5 onwards.

This section describes the new features of Natural Web I/O Interface Server Version 8.3.2.

Support for Internet Protocol Version 6

Natural Web I/O Interface Server Version 8.3.2 supports Internet Protocol Version 6 (IPv6) if an active IPv6 connection is available (otherwise, IPv4 is used).

For the changes in installation, see *Installing and Configuring the Natural Web I/O Interface Server* in the *Natural Web I/O Interface* documentation.

New Levels for Start and Termination Traces Only

Natural Web I/O Interface Server Version 8.3.2 introduces the new trace levels 12 and 13 to just trace the start and the termination of the server or client session, respectively. This avoids excessive trace data that can cause performance degradation.

For more information, see *Runtime Trace Facility* in the section *Operating the Natural Web I/O Interface Server* in the *Natural Web I/O Interface* documentation.

10 Dropped Features

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Features Dropped with this Natural Version

The following features are discontinued and no longer supported in Natural Version 8.2.5:

- BS2000/OSD: Discontinued Support for TSOSLNK Editor
- Discontinued Support for V41COMP and V42COMP Compiler Options
- Discontinued Support for KAPRI Maps and Outline Editor
- Discontinued Support for EntireX Location Transparency
- Discontinued Support for CINIT Function of Roll Server

BS2000/OSD: Discontinued Support for TSOSLNK Editor

Effective with this Natural version, the BS2000/OSD TSOSLNK linkage editor is no longer supported.

System Maintenance Aid (SMA) still delivers the current TSOSLNK framework but no longer maintains it.

As a consequence, during installation of Natural, you must link the environment-dependent nucleus as an LLM (contained in an LMS library) with the BINDER if the nucleus uses the NAT2TCP socket routine. In addition, you must not specify the BS2000/OSD system socket library for autolink resolution of unresolved external references.

Discontinued Support for V41COMP and V42COMP Compiler Options

Effective with this Natural version, the V41COMP and V42COMP compiler options of the COMPOPT system command and the CMPO profile parameter are no longer supported. These compiler options were used to disallow Natural Version 8.2 programming language enhancements for compatibility with Natural Version 4.1 (V41COMP) or Version 4.2 (V42COMP).

Discontinued Support for KAPRI Maps and Outline Editor

Effective with this Natural version, the map editor no longer supports the **Migration of Maps Created with KAPRI** and **Outline Editor** functions.

Discontinued Support for EntireX Location Transparency

EntireX no longer supports Location Transparency. Effective with this Natural version, Natural no longer supports Location Transparency as well.

For this reason, **SYSRPC utility functions** and Natural RPC-specific **application programming interfaces** have changed as described in the relevant sections.

Discontinued Support for CINIT Function of Roll Server

Effective with this Natural version, the NATRSRFI roll file formatting routine no longer supports the CINIT function. As a result, you need to change all jobs that use CINIT and use the FORMAT function instead. For more information, see *Formatting the Roll File* in the *Operations* documentation.