software AG

Natural

Natural Release Notes for z/OS

Version 9.1.1

October 2018

ADABAS & NATURAL

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Preface

This document provides a brief summary of the changes and enhancements that have been introduced in Natural Version 9.1.1 for z/OS mainframe operating systems and the Natural add-on products released with this version.

Revised and updated documentation sets are available with this version.

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1 About this Documentation

Document Conventions

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

Online Information and Support

Software AG Documentation Website

You can find documentation on the Software AG Documentation website at **http://documenta-tion.softwareag.com**. The site requires credentials for Software AG's Product Support site Empower. If you do not have Empower credentials, you must use the TECHcommunity website.

Software AG Empower Product Support Website

If you do not yet have an account for Empower, send an email to empower@softwareag.com with your name, company, and company email address and request an account.

Once you have an account, you can open Support Incidents online via the eService section of Empower at **https://empower.softwareag.com/**.

You can find product information on the Software AG Empower Product Support website at **https://empower.softwareag.com**.

To submit feature/enhancement requests, get information about product availability, and download products, go to **Products**.

To get information about fixes and to read early warnings, technical papers, and knowledge base articles, go to the **Knowledge Center**.

If you have any questions, you can find a local or toll-free number for your country in our Global Support Contact Directory at **https://empower.softwareag.com/public_directory.asp** and give us a call.

Software AG TECHcommunity

You can find documentation and other technical information on the Software AG TECHcommunity website at **http://techcommunity.softwareag.com**. You can:

- Access product documentation, if you have TECHcommunity credentials. If you do not, you will need to register and specify "Documentation" as an area of interest.

- Access articles, code samples, demos, and tutorials.

- Use the online discussion forums, moderated by Software AG professionals, to ask questions, discuss best practices, and learn how other customers are using Software AG technology.

- Link to external websites that discuss open standards and web technology.

Data Protection

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

2   **Supported Environments**

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 system or assembler 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 the Software AG Empower website at *https://empower.software-ag.com/* (see also *Product Availability and End of Maintenance*).

TP Monitors/Online Interfaces

Natural Version 9.1.1 supports the versions of the TP monitors/online interfaces listed below:

Product	Version
Com-plete	See *Software AG Product Versions Supported by Natural*.
CICS TS for z/OS	5.1, 5.2, 5.3, 5.4, 5.5
IMS TM	13.1, 14.1, 15.1

Database Management Systems

Natural Version 9.1.1 supports the versions of the database management systems listed below:

Product	Version
Adabas	See *Software AG Product Versions Supported by Natural*.
DB2 for z/OS	11.1, 12.1
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

Authorized Services Manager and Roll Server

The Authorized Services Manager (`NATASM91`) and the Natural Roll Server (`NATRSM91`) supplied with Natural Version 9.1.1 employ machine instructions from the IBM General Instructions Extension Facility. They will not execute successfully on machines for which IBM does not supply this extension facility.

Assemblers

Natural Version 9.1.1 requires the following assembler for the assembly of its source modules on z/OS:

■ "HL" Assembler Version 1.6

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

3 Available and Supported Software AG Product Versions

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 the Software AG Empower website at *https://empower.softwareag.com/*:

1. Log in to Empower.

2. Expand **Products & Documentation** in the left menu of the page and select **Product Version Availability**:

Product Version Availability

General Availability (GA), Platform retirement, End of Maintenance (EOM), and End of Sustained Support (EOSS) dates for your products.
View a description of these terms in our Maintenance Policy.
There are some exceptions to the product availability dates shown below. For details of those exceptions, visit this page.

Product Family: | - |
Product Name: | - |
Product Version: | - |
Operating System: | - | Operating System Version: | - |

Show prior Product Versions: ☐
Sort by Product Version: ⊙ Descending ○ Ascending   Rows per Page: 100

SEARCH 🔍   CANCEL ✕

Expand all - Collapse all
Rows 1 - 100 of 12116 | Rows per page: 100 | Too many data selected; Printable Version of below Table is not available

| Product Family \| Product - Product Version | Version Lifecycle Milestone | | | |
| • Operating System and Hardware * | GA | OS Retirement | EOM | EOSS |

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 Natural Add-On Product Versions

This release of Natural provides changes to the Natural add-on product versions (or subcomponents) marked with an asterisk (*) in the following table. All other Natural add-on product versions listed in the table have already been released with a previous Natural version and provide no changes.

The Zap solutions and fixes mentioned in the following table can be downloaded from the **Product Fixes** section of the Software AG Empower website at *https://empower.softwareag.com/*.

Product Name	Product Code	Version
Natural Advanced Facilities	NAF	8.2.7
Natural CICS Interface (*)	NCI	8.3.4
Natural Com-plete/SMARTS Interface	NCF	8.3.5
Natural Connection	NTC	8.2.7
Natural Development Server (*)	NDV	9.1.1 (z/OS batch mode including adapters)
Natural for DB2 (*)	NDB	8.4.2 with Zaps NQ12009, NQ12010, NQ12011 and NQ12012 applied and Hotfix NQ84207 if the multi-fetch feature is to be used
Natural for DL/I	NDL	8.2.7
Natural for VSAM	NVS	8.2.7
Natural IMS TM Interface (*)	NII	8.2.7
		8.3.4 if Natural for IMS for zIIP is to be used
Natural ISPF	ISP	8.2.7
Natural Japanese Language Pack	NCJ	9.1.1
Natural Optimizer Compiler	NOC	8.3.5
Natural Review	RNM	8.2.7
Natural RPC (*)	RPC	8.2.7 (RPC is a separate subcomponent of Natural)
Natural SAF Security (*)	NSF	8.2.7 with Zap SF97005 if password phrases are to be used
Natural Security (*)	NSC	9.1.1
Natural SQL Gateway	NSB	8.2.7
Natural TIAM Interface	NRT	8.2.7
Natural TSO Interface	NTI	8.2.7 with Zap NY97003

Natural Web I/O Interface (Server)	NWO	9.1.1
Super Natural	NSN	8.2.7
Natural Batch for zIIP (*)	NAZBT	8.2.7
Natural for CICS for zIIP (*)	NAZCI	8.3.4
Natural for Com-plete for zIIP (*)	NAZCO	8.3.5
Natural for IMS for zIIP (*)	NAZNI	8.3.4

* Product-specific changes and/or enhancements are described in *New and Changed Features of Natural Version 9.1.1 Add-On Products*.

Software AG Product Versions Supported by Natural

Natural Version 9.1.1 and the add-on products released with this version support the minimum versions and fixes (or higher) of the optional Software AG products listed in the following table. In general, Software AG recommends using the latest product versions supported by Natural to take advantage of new features and enhancements provided by these products.

The Zap solutions, fixes and service packs mentioned in the following table can be downloaded from the **Product Fixes** section of the Software AG Empower website at *https://empower.software-ag.com/*.

Product Name	Product Code	Minimum Version
Adabas	ADA	8.3 8.3.4 with Zap AO834004 (`ADALCO`) if Natural for Com-plete for zIIP is installed
Adabas CICS Interface	ACI	8.3 8.4.2 if Natural for CICS for zIIP is installed
Adabas IMS/TM Interface	AII	8.3 8.4.3 if Natural for IMS for IIP is installed
Adabas Limited Load Library	WAL	8.3 if Natural SAF Security is to be used WAL843L001 if Natural SAF Security with password phrases is to be used
Adabas Online System	AOS	8.3
Adabas Review	REV	4.8.2
Adabas System Coordinator	COR	8.2.2 COR822P003 if Natural for CICS for zIIP is installed

Adabas Text Retrieval	TRS	2.1.4
Com-plete	COM	6.8.1 Cumulative Fix 12 with SMARTS Version 3.3.1 Cumulative Fix 25
Con-form	CMF	3.4.3
Con-nect	CNT	3.4.3
ConnecX SQL Engine	CXX	12.0.1
Entire Connection	PCC	9.1.1
Entire Event Management	NCL	2.2.1
Entire Net-Work	WCP	6.3.2 (This product is required if you are using Natural Security in a heterogeneous environment.)
Entire Operations	NOP	5.4.3
Entire Output Management	NOM	3.4.3
Entire System Server	NPR	3.6.2
Entire Transaction Propagator	ETP	1.5.2 with Zaps ET52001 and ET52003 (for ETP) to use ETP with Adabas Version 8, and, additionally, Zap EZ52005 (for ETC) to use Entire Transaction Propagator CICS Interface (ETC)
International Components for Unicode for Software AG	ICS	2.2.1
Mainframe License Check	MLC	1.3.3
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	9.1.1
NaturalONE (*)	ONE	9.1.1
Natural Web I/O Interface (Client)	NWO	1.3.18
Predict	PRD	8.4.1
Predict Application Control	PAC	2.6.1
SMARTS	APS	3.3.1 Cumulative Fix 27 for z/OS
System Automation Tools	SAT	3.4.3
System Maintenance Aid	SMA	2.1.2 Cumulative Fix 4
webMethods EntireX	EXX	9.10 for z/OS

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.

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 the Software AG Empower website at *https://empower.softwareag.com/*.

4 Installation and Compatibility

License File

A product license file for Natural is required. In addition, product license files are required for Natural Batch for zIIP, Natural for CICS for zIIP, Natural for Com-plete for zIIP and Natural for IMS for zIIP, if installed.

For information on product licensing, see the *Software AG Mainframe Product Licensing* document-ation.

More Precise License Message Texts

The texts the LICUTIL license utility provides with the messages MLC1004 and MLC2004 have changed as described in *LICUTIL Licensing Messages* in the *Software AG Mainframe Product Licensing* documentation.

Changes to Installation

This section describes the changes in the installation process of base Natural and the Natural add-on products released with this Natural version.

- System Maintenance Aid: Readme File

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

System Maintenance Aid: Readme File

For installation guidance and information on new or changed System Maintenance Aid (SMA) parameters and Natural features, you can view the product-specific Readme files by using the appropriate SMA function.

≫ **To view a product-specific Readme**

■ From the product list on an SMA **Maintenance** screen, execute the RM (**Show Readme File**) command for the required product(s).

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/*.

- Using Natural Objects Created in Previous Natural Versions
- Special-Purpose Zaps

Using Natural Objects Created in Previous Natural Versions

Natural objects that were created with Natural Version 2.3, 3.1, 4.1, 4.2 or 8.2 for Mainframes can be executed with Natural Version 9.1 without any adjustments to the objects or any conversion or migration procedure being required. This also applies to objects that have been cataloged with the Natural Optimizer Compiler.

> **Important:** Objects cataloged with a Natural Version prior to 2.3 must be recataloged before execution with Version 9.1. This also applies to data areas that are used by these objects.

Software AG strongly recommends that any existing objects be recataloged with Natural Version 9.1 to take advantage of improved runtime handling.

Special-Purpose Zaps

The following table lists Natural Version 9.1.1 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.
NA95038	Resolve problems (RSP=46) during Natural mainframe calls to Adabas LUW	Resolve problems that can arise when Natural calls Adabas on Linux, UNIX or Windows from a mainframe platform: an unexpected RSP=46 can occur if a READ loop at the level 1 (*LEVEL=1) ends with an End-of-File (RSP=3) and is executed multiple times. This occurs because Natural on the mainframe does

Zap	Special Purpose
	not send a final RC command to release the Adabas format buffer if the READ receives RSP=3.

5 New and Changed Features of Base Natural

This section describes all changes and enhancements provided with Natural Version 9.1.1.

📄 **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 the Software AG Empower website at *https://empower.softwareag.com/* and the enhancement proposals that have been implemented in base Natural:

Request Number	Feature Request
01400	Return the name of the steplib library in `*LIBRARY-ID` system variable: see the new API `USR8217N` in *Application Programming Interfaces*.
03713	Provide Natural session information: see *New Authorized Services Manager Features.*

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

Operations and Performance

- Changed Default for Buffer Pool Search Method
- Roll Server Support for VSAM
- Roll Server Start with Parameter File
- New Authorized Services Manager Features
- New Selectable Units Not Yet Available

Changed Default for Buffer Pool Search Method

The default algorithm used to allocate storage in the Natural buffer pool to load new objects has changed from a selection process (`METHOD=S`) to a wrap-around (`METHOD=N`) method. Wrap-around usually improves the load performance, in particular, if a buffer pool is larger than 10 MB and when cache storage is assigned.

For more information, see *METHOD - Search Algorithm for Allocating Space in Buffer Pool* in the *Operations* documentation.

Roll Server Support for VSAM

The Natural Roll Server now also supports roll files for VSAM.

For more information, see *Natural Roll Server Operation* and *Formatting the Roll File* in the *Operations* documentation.

Roll Server Start with Parameter File

The Roll Server can now also be started with a parameter file as an alternative to a JCL EXEC statement.

For more information, see *Starting the Roll Server* and in the *Operations* documentation.

New Authorized Services Manager Features

New Option to Control Timeout Processing

The Authorized Services Manager (NATASM91) now offers a timeout service for the Session Information Pool (SIP) to control timeout settings through startup parameters and operator commands similar to the Natural Roll Server.

For more information, see the new TIMEOUT command described in *ASM Operator Commands* and the TIMEOUTCHECK parameter described in *Parameters in the Parameter File* in the *Operations* documentation.

New Parameter File

Parameters for the Authorized Services Manager can now be supplied through a keyword parameter file instead of the positional parameters specified with the JCL EXEC statement.

For more information, see *Starting the ASM* in the *Operations* documentation.

New Selectable Units Not Yet Available

All features previously supplied as selectable units are integrated in Natural Version 9.1.1. Selectable units are not yet available.

As a result, the setting of the SELUNIT profile parameter is ignored and appropriate messages occur for the SHOWSU system command and the SU line command of the SYSPROD system command.

Unicode and Code Page Support

New Names for Data Item Modules

The naming conventions for data item modules have been changed to reflect the ICU version in the names of the data items.

For more information, see *Naming Conventions for Data Item Modules* in the section *ICU Data Items* in the *Unicode and Code Page Support* documentation.

Natural Main Menu/Development Functions: Changes to Create and Edit

The **Create Object** and **Edit Object** functions of the **Development Functions Menu** are not available if Natural editors are disabled in the current Natural environment.

See also the section *Natural Program, Data Area and Map Editors Deactivated*.

Programming Language

System Variables

*EDITOR
  The new `*EDITOR` system variable returns information on whether the Natural program, data area and map editors are enabled (activated).

  For more information, see the *System Variables* documentation.

System Commands

- EDIT System Command
- LIST System Command
- MAINMENU System Command
- SCAN System Command
- SYSRPC System Command
- TECH System Command

- ZIIP System Command

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

EDIT System Command

The `EDIT` system command no longer supports the Natural program, data area and map editors by default.

For more information, see the section *Natural Program, Data Area and Map Editors Deactivated*.

LIST System Command

Disabled Edit Functions

The `E` and `ED` edit functions are not available for a source object listed on a selection screen if Natural editors are disabled in the current Natural environment.

See also the section *Natural Program, Data Area and Map Editors Deactivated*.

Object Directory Now Indicates DBID and FNR

The `LIST DIRECTORY` function now displays the database ID (DBID) and file number (FNR) in the object directory of an object that was cataloged in Natural Version 9.1 (and above) or in Natural Version 8.2 with the Zap NA97082 applied.

For more information, see *Displaying Directory Information*.

New LIST Profile Option for DBID and FNR of Cataloged Objects

The `LIST` profile provides the new `SHOW-CAT-DBID-FNR-IN-LIST-DIR` parameter to specify whether the directory of a cataloged object displays the database ID (DBID) and file number (FNR) of the library where the object was cataloged (`LIST DIRECTORY`). For more information, see *List Profile Parameters*.

Execute the `UPDATE` command in the `LIST` profile maintenance (invoked with the `LISTPROF` function of `LIST`) to activate the new parameter.

MAINMENU System Command

The **Create Object** and **Edit Object** functions of the **Development Functions Menu** are not available if Natural editors are disabled in the current Natural environment.

Exception: **Edit Object** for object type `D` (Description) is still available.

See also the section *Natural Program, Data Area and Map Editors Deactivated*.

SCAN System Command

The EDIT command provided by the SCAN system command is not available if Natural editors are disabled in the current Natural environment.

See also the section *Natural Program, Data Area and Map Editors Deactivated*.

SYSRPC System Command

The SYRPC PING command now provides the option ALL to ping all RPC servers.

For more information, see *Using the SYSRPC PING Direct Command* in the *SYSRPC Utility* documentation.

TECH System Command

Support for Architecture Level
The TECH command now provides information on the architecture level supported by the IBM processor on which your z/OS system runs.

Availability of Natural Editors
The TECH command now provides information on whether the Natural program, data area and map editors are enabled in the current Natural environment.

See also the section *Natural Program, Data Area and Map Editors Deactivated*.

ZIIP System Command

Roll Server Information
The ZIIP system command now provides the new ROLL option to view zIIP statistics information about the Roll Server.

For more information, see the **Roll Server zIIP Information** report and the syntax of PRINT ROLL.

New Screen Layout for zIIP Reports
The layout of the **zIIP Processing Information** report screen has been enhanced for more distinct field names and to comply with corresponding zIIP information provided by Adabas.

For more information, see *zIIP Processing Information*.

Editors

Natural Program, Data Area and Map Editors Deactivated

The following Natural editors have been disabled (deactivated) by default in a local mainframe environment on z/OS:

- Program editor,
- Data area editor,
- Map editor.

This change does not affect the following:

- DDM editor (SYSDDM utility),
- Software AG Editor/Natural ISPF,
- `EDT` system command for the line editor,
- Batch mode processing (batch programs will run as usual),
- Predict `EDIT DESCRIPTION` system command,
- Super Natural `EDIT REPORT` system command,
- APIs and user exits that access editor interfaces.

You can use the `TECH` system command (or corresponding API `USR2026N`) and the `*EDITOR` system variable to find out whether Natural editors are disabled in the current Natural environment.

Disabled Natural editors are substituted by the editors provided with NaturalONE. For this purpose, NaturalONE and Natural Development Server are supplied free of charge for mainframe customers who move their development environment to NaturalONE.

If Natural editors are disabled in the current Natural environment, the editor-related functions of the following commands and features are no longer supported and a corresponding error message is returned when you request an edit function:

- `EDIT` **system command,**
- `LIST` **system command,**
- `SCAN` **system command,**
- `MAINMENU` **system command**,
- **SYSEXT utility**.

(See also the referenced sections.)

If you want to continue editing with the Natural program, data area or map editor, contact your local Software AG sales organization.

Utilities

- SYSEXT Utility
- SYSRPC Utility
- Natural Profiler Utility

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

SYSEXT Utility

The E edit line command is not available on an API selection list screen if Natural editors are disabled in the current Natural environment.

See also the section *Natural Program, Data Area and Map Editors Deactivated*.

SYSRPC Utility

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

Natural Profiler Utility

Summary of Executed Source Lines
The Natural Profiler utility now provides the option to generate a summary of source lines executed in a Natural object. The summary shows how many events occurred during execution of a source line and the CPU and elapsed time spent executing the line.

For more information, see *Line Summary* in the section *Using the Profiler Utility in Batch Mode*.

Profile and Session Parameters

- New Profile and Session Parameters
- Changed/Enhanced Profile Parameters

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

New Profile and Session Parameters

Parameter	Corresponding Macro	Task	Description
SHAPED	NTPRM	Control of Character Shaping	This new session and profile parameter controls conversion of unshaped characters to correctly display text in a bidirectional language format.

Changed/Enhanced Profile Parameters

Parameter	Corresponding Macro	Task	Change/Enhancement
DB	NTDB2	Parameters for SQL Database Management Interfaces	**Multi-Fetch Row Count** The new `MF` keyword subparameter specifies the number of rows to be fetched by DB2 in one `FETCH` operation.
DBGAT	NTDBGAT	Debug Attach Server for NaturalONE	**Specification of Trace Level for Natural Development Server** You can now specify the trace level of Natural Development Server.
RDC	NTRDC	Configure the Natural Data Collector	**Natural Data Collector Events to Call User Exits** The new `XEVENT` keyword subparameter determines the Natural Data Collector events for which user exits are called.
SCTAB	NTSCTAB	Set character attributes	**SPECIAL Accepted as Character Attribute** The attribute `SPECIAL` can now be used to set character attributes independent of the code page. If set, any character attributes defined by the current code page are ignored. For more information, see *SCTAB Parameter Syntax*.
ZIIP	NTZIIP	zIIP Processing (z/OS Only)	**Cache Size for Primary Batch I/O Files** The new `IOCSIZE` keyword subparameter determines the cache sizes for processing the primary batch I/O files CMSYNIN, CMOBJIN and CMPRINT.

> **Note:** The `ZIIP` keyword subparameter `IMSG` replaces functionality introduced with the special purpose Zap NA95083. This Zap is no longer required when using `IMSG`.

Application Programming Interfaces

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

API	Task	Enhancement
`USR2026N`	Get TECH information	This API now also returns ■ IBM architecture level information and ■ the Natural editor status (enabled/disabled editors) as supplied by the `TECH` system command (see the relevant section).

See also the changes to **Natural RPC-specific APIs** and **Natural Security APIs**.

6 New and Changed Features of Natural Version 9.1.1 Add-On

Products

This section describes all changes and enhancements provided with the add-on products available with Natural Version 9.1.1.

> **Note:** For an overview of all Natural add-on products and the new product versions available, see *Overview of 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 the Software AG Empower website at *https://empower.softwareag.com/* that have been implemented in the following Natural add-on products released with Natural Version 9.1.1:

Product	Request Number	Feature Request
Natural Security	05312	Separate password check for number of characters and special characters: see the sections *Password Phrases* and *Password Rules*.
Natural Security	05314	Unlock user after *nn* minutes: see the section *Unlocking Locked Users*.

See also *Customer Feature Requests for Base Natural*.

Natural Development Server

The changes and enhancements provided with Natural Development Server Version 9.1.1 (z/OS batch mode including adapters) are described in the following section.

Natural Development Server Version 9.1.1 includes all changes of Natural Development Server Version 8.3. provided in previous Natural releases.

- Changes to Installation: INPL Data now Supplied with Natural
- Support for Password Phrases
- PC File Transfer from Natural to NaturalONE

> **Note:** The sections indicated for more information are contained in the *Natural Development Server* documentation in the **Documentation** section of the Software AG Empower website at *https://empower.softwareag.com/*, unless otherwise noted.

Changes to Installation: INPL Data now Supplied with Natural

The NDV*vrs*.INPL data set is no longer supplied with Natural Development Server Version 9.1.1. The data contained on the data set (transaction processor, error messages of the transaction processor and sample programs for the tutorial) are now provided on the NAT*vrs*.INPL data set supplied with base Natural.

As a result, the `SYSPROD` system command no longer shows INPL information but the version of the server and the date and time when the server was built.

Support for Password Phrases

Natural Development Server supports password phrases in a Natural Security environment.

Prerequisite requirements are the following products and minimum versions: Natural Security Version 9.1.1 and NaturalONE Version 9.1.1, or Natural Security Version 9.1.1 and Natural for Windows Version 9.1.1.

See also *Password Phrases* in the section *Natural Security*.

Impersonation with password phrases is not yet supported for the CICS adapter.

PC File Transfer from Natural to NaturalONE

Natural Development Server now enables file transfers from Natural to NaturalONE.

Natural IMS TM Interface

Natural IMS TM Interface Version 8.3.4 supports use of IBM's System z Integrated Information Processors (zIIPs) in an IMS TM environment on z/OS.

For information on Natural for zIIP support, see the *Natural for zIIP* documentation.

For the changes in installation, see *Installing Natural for zIIP on z/OS* and *Installing Natural IMS TM Interface on z/OS* in the *Installation for z/OS* documentation.

Natural RPC (Remote Procedure Call)

With Natural Version 9.1.1, an enhanced Natural RPC Version 8.2.7 is delivered which introduces the following changes and enhancements:

- Support for EntireX Trusted User IDs for TCP
- Application Programming Interfaces (APIs)
- SYSRPC Utility

Support for EntireX Trusted User IDs for TCP

Natural RPC now supports the trusted user ID feature of EntireX Security for TCP transport methods using RACF PassTickets.

For more information, see *EntireX Security on the Server Side using Trusted User IDs (z/OS only)*.

Application Programming Interfaces (APIs)

The following Natural RPC-specific APIs are new in the SYSEXT system library or have changed:

API	Task
USR8213N	**Shut down a server on an EntireX Broker node** This API now provides the option to terminate a server according to a sequence number. See also *SYSRPC Utility* below.
USR9171N	**Set user ID and password phrase for RPC server** This new API provides the option to pass user IDs with password phrases in the range from 9 to 128 characters to the Natural RPC server. It can be used as an alternative to API USR1071N which is used to pass passwords of up to 8 characters. See also the sections *Password Phrases* (Natural Security) and *Password Phrases* (Natural SAF Security) and *Using Natural RPC with Natural Security* in the *Natural RPC* documentation.

SYSRPC Utility

The new features provided with the SYSRPC utility are announced in this section.

For detailed information on these features, refer to the indicated chapters in the *Utilities* documentation.

Server Termination with Sequence Number

The SYSRPC utility now provides the option to terminate an RPC server from a selection list of servers registered on an Entire X Broker. The list contains details on each server and the sequence number assigned during registration.

This utility function is also provided by the API USR8213N (see also *Application Programming Interfaces (APIs)* above).

For more information, see *Terminating an RPC Server* in the *Utilities* documentation and *Terminating a Natural RPC Server* in the *Natural RPC (Remote Procedure Call)* documentation.

Pinging all Servers

The SYRPC PING command now provides the option ALL to ping all RPC servers.

For more information, see *Using the SYSRPC PING Direct Command*.

Service Directory Maintenance: Cursor Now Placed at Inserted Lines

The I insert line command of the **Service Directory Maintenance** now places the cursor at the position where new items can be entered for a selected node.

For more information, see *Line Commands* in the section *Commands for Service Directory Maintenance*.

Natural Security

The following enhancements are provided with Natural Security Version 9.1.1:

- Administrator Services
- Unlocking Locked Users
- Password Phrases
- Password Rules
- Utility Profiles
- Application Programming Interfaces (APIs)

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

Administrator Services

The menu structure of Administrator Services has been revised slightly. In particular, **User Preset Values** and **Library Preset Values** are now two separate menu items.

Unlocking Locked Users

User Preset Values provide a new option **Automatically unlock users after** *nn* **hours,** *nn* **minutes**. If you use the **Lock User Option**, you had to unlock every locked user manually. With this option, you can specify a time interval after which locked users are unlocked automatically: A locked user ID will then be unlocked *nn* hours and *nn* minutes after which the locking occurred.

Password Phrases

In addition to passwords of up to 8 characters, Natural Security now also supports the use of password phrases that can be in the range from 9 to 128 characters. The use of password phrases is activated by the new option **Password phrases active** in the **User Preset Values** section of *Administrator Services*.

Several **Password Phrase Options** are available to control the use of password phrases.

In conjunction with password phrases, the new logon-related user exit `LOGONEX0` is used instead of `LOGONEX1`; see *Logon-Related User Exits*.

See also *Application Programming Interfaces (APIs)* below.

Password Rules

In the **Password Options** section of **User Preset Values**, the option **Minimum no. of non-alphabetical characters** has been replaced by the two new options **Minimum no. of numeric characters** and **Minimum no. of special characters**.

Utility Profiles

The use of the system command `ZIIP` can now be controlled by Natural Security. Due to the complexity of the command, Natural Security handles it like a utility. See *ZIIP Utility Profiles*.

Application Programming Interfaces (APIs)

For the handling of password phrases, two new APIs are available:

- NSC--PH can be used to check password phrases.
- NSC--PHS can be used to check and change password phrases.

The existing API NSC-US has been enhanced: The parameter `PPARM4` can be used to set a password phrase in a user security profile (see the example program `PGMUS001`).

To set the user ID and password phrase for an Natural RPC service request, you can use the new API `USR9171` provided in the library `SYSEXT`.

Natural Web I/O Interface (Server)

The changes and enhancements provided with Natural Web I/O Interface Server Version 9.1.1 are described in the following section.

Natural Web I/O Interface Server Version 9.1.1 includes all changes of Natural Web I/O Interface Server Version 8.3. provided in previous Natural releases.

- Support for Password Phrases

> **Note:** The sections indicated for more information are contained in the *Natural Web Interface* documentation, unless otherwise noted.

Support for Password Phrases

Natural Web I/O Interface Server supports password phrases in a Natural Security environment.

Prerequisite requirements are the following products and minimum versions: Natural Security Version 9.1.1 and Natural for Ajax Version 9.1.1.

See also *Password Phrases* in the section *Natural Security*.

Impersonation with password phrases is supported in z/OS batch mode; the CICS adapter is not yet supported.

Natural for zIIP

- Natural zIIP Enabler Renamed
- Natural for zIIP Installation Changes
- zIIP Support for Natural for IMS TM
- CPU Time Limit in SRB Mode

Natural zIIP Enabler Renamed

Natural zIIP Enabler products have been renamed as follows:

Old Name	New Name
Natural zIIP Enabler for Batch	Natural Batch for zIIP
Natural zIIP Enabler for CICS	Natural for CICS for zIIP
Natural zIIP Enabler for Com-plete	Natural for Com-plete for zIIP

Natural for zIIP Installation Changes

The installation documentation for Natural for zIIP (before: *Installing Natural zIIP Enabler*) has been updated: see *Installing Natural for zIIP* in the *Installation for z/OS* documentation.

zIIP Support for Natural for IMS TM

Natural for IMS for zIIP (product code NAZNI) is now available to support IBM's System z Integrated Information Processors (zIIPs) in an IMS TM environment on z/OS if Natural IMS TM Interface Version 8.3.4 is installed. For more information, see the *Natural for zIIP* documentation.

For the changes in installation, see *Installing Natural for zIIP on z/OS* and *Installing Natural IMS TM Interface on z/OS* in the *Installation for z/OS* documentation.

Note that Natural for IMS for zIIP requires a **license file**.

CPU Time Limit in SRB Mode

When running zIIP-enabled under z/OS, the `MT` profile parameter applies separately to both TCB and SRB (zIIP) processing modes. If `MT=0` is set in SRB mode, Natural uses the existing z/OS TCB time limit to avoid endless loops because there is no z/OS CPU time limit (for example, the JCL TIME parameter) for SRBs.

7 Enhancements of Natural Add-on Products for Special

Natural Version 9.1.1 Features

This section describes changes and enhancements provided by Natural add-on products to support special features of Natural Version 9.1.1.

Natural CICS Interface

The following change is provided with Natural CICS Interface Version 8.3.4:

Installation: Selectable Units Module Renamed

The `NATSUPGM` load module has been renamed to `NATSUP91`. This module supports Natural features supplied as selectable units (see the *Operations* documentation).

See also *Selectable Units Module NATSUP91* in the *Installing Natural CICS Interface* documentation.

Natural for DB2

The enhancement provided with Natural for DB2 Version 8.4.2 is described in the following section.

Please refer to *Overview of Natural Add-On Product Versions* for the Zap solutions required for this version.

Multi-Row Fetch Operations for Enhancing Performance and zIIP Usage

You can now specify the number of rows to be fetched by DB2 in one `FETCH` operation by using the new `MF` subparameter of the `DB2` parameter or `NTDB2` macro (see also *Changed/Enhanced Profile Parameters*). This helps to improve performance and enhance zIIP usage in a zIIP-enabled Natural session.

Natural SAF Security

The enhancement provided with Natural SAF Security Version 8.2.7 is described in the following section.

Please refer to *Overview of Natural Add-On Product Versions* for the Zap solution required for this version.

Password Phrases

In addition to passwords of up to 8 characters, Natural SAF Security now also supports the use of password phrases that can be up to 100 characters. The use of password phrases is activated by the new option **Password phrases active** in the **NSF Options** section of *Administrator Services*.

See also *Password Phrases* under *Natural Security* below.