software AG

Natural

Natural Release Notes for Mainframes

Version 8.2.8

October 2021

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 8.2.8 for Mainframes 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 **https://documenta-tion.softwareag.com**.

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.aspx** and give us a call.

Software AG Tech Community

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

- Access product documentation, if you have Tech Community 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 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 8.2.8 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	5.3, 5.4, 5.5, 5.6
CICS TS for VSE/ESA	2.1
IMS TM	15.1
*open*UTM	6.3, 6.4, 6.5, 7.0
TIAM	13.1, 13.2

Database Management Systems

Natural Version 8.2.8 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	12.1
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 8.2.8 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 operating systems).

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

IBM z/OS Authorized Code Scanner (zACS)

All Natural Program Calls (PC) have been validated with the IBM z/OS Authorized Code Scanner (zACS) toolkit. All found vulnerabilities have been fixed, therefore all Natural PCs are vulnerability-free now. For more information about zACS, please refer to the corresponding IBM documentation at **https://www.ibm.com/support/knowledgecenter/SSLTBW_2.4.0/com.ibm.zos.v2r4.bpn/bpn.htm**.

Authorized Services Manager and Roll Server

The Authorized Services Manager (module NATASM91) and the Natural Roll Server (module NATRSM91 or fix NAT827L009) supplied with Natural Version 8.2.8 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.

In addition, use of the Roll Server module (or fix, respectively) requires that Natural Batch for zIIP is installed.

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 Software AG's Empower web site at *https://empower.softwareag.com/*:

1. Log in to 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.

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	8.2.8
Natural CICS Interface	NCI	8.2.8
		8.3.5 (z/OS only)
Natural Com-plete/SMARTS Interface	NCF	8.2.8
		8.3.6 (z/OS only) if Com-plete Version 6.8.1 Cumulative Fix 16 and SMARTS Version 3.3.1 Cumulative Fix 31 are installed
Natural Connection	NTC	8.2.8
Natural Development Server	NDV	9.1.2
Natural for DB2	NDB	8.4.3
Natural for DL/I	NDL	8.2.8 (z/OS only)
Natural for VSAM	NVS	8.2.8
Natural IMS TM Interface	NII	8.2.8
		8.3.5
Natural ISPF	ISP	8.2.8
Natural *open*UTM Interface	NUT	8.2.8
Natural Optimizer Compiler (*)	NOC	8.3.6
Natural Review	RNM	8.2.8
Natural RPC (*)	RPC	8.2.8 (RPC is a separate subcomponent of Natural)
Natural SAF Security	NSF	8.2.8
Natural Security	NSC	8.2.8
Natural TIAM Interface	NRT	8.2.8
Natural TSO Interface	NTI	8.2.8
Natural Web I/O Interface	NWO	9.1.2 (server)
Super Natural	NSN	8.2.8
Natural Batch for zIIP (*)	NAZBT	8.2.8
Natural for CICS for zIIP (*)	NAZCI	8.3.5
Natural for Com-plete for zIIP (*)	NAZCO	8.3.6
Natural for IMS for zIIP (*)	NAZNI	8.3.5

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

Software AG Product Versions Supported by Natural

Natural Version 8.2.8 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.

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 8.4.1 LX if Natural for CICS for zIIP is installed
Adabas IMS/TM Interface	AII	8.3
Adabas Online System	AOS	8.3
Adabas Review	REV	4.7.2
Adabas Text Retrieval	TRS	2.1.4
Com-plete	COM	6.8.1 Cumulative Fix 16 with SMARTS Version 3.3.1 Cumulative Fix 31
Con-form	CMF	3.4.3
Con-nect	CNT	3.4.3
Entire Connection	PCC	4.5.3
Entire Event Management	NCL	2.2.1 (2.1.2 for z/VSE)
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	3.6.1
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	2.2.2, 3.1.1
Mainframe License Check	MLC	1.3.6

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	9.1.2
Natural Web I/O Interface	NWO	1.3.18 (client)
Predict	PRD	8.2.3
Predict Application Control	PAC	2.6.1
SMARTS	APS	2.7.2 Cumulative Fix 22 for BS2000 3.3.1 Cumulative Fix 31 for z/OS 3.3.1 Cumulative Fix 31 for z/VSE
System Automation Tools	SAT	3.4.3
webMethods EntireX (before: EntireX Communicator)	EXX	9.5.1 for z/OS 9.6.0 for z/VSE 8.1.1 for BS2000

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.

4   Installation and Compatibility

License File

A product license file for Natural is required.

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 Software AG's mainframe product licensing, see 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.

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

- System Maintenance Aid: Readme File
- Changes to ICU Data Libraries

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).

Changes to ICU Data Libraries

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*):

ICS 2.2.1 / ICS 2.2.2 Library Name	ICS 3.1.1 does not support Data Libraries
ICSDT58E	- - -
ICSDT58J	- - -
ICSDT58X (not for z/VSE and BS2000)	- - -

> **Note:** ICSDT58X is not supplied for z/VSE, nor BS2000. However, you can create a user-defined ICU data library (see *Customizing the ICU Data Library*) or use single ICU data items as described in the *Unicode and Code Page Support* documentation.

For details on ICU data libraries, see the relevant section in the *Unicode and Code Page Support* documentation.

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

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
- Using ICS Version 3.1.1 with the Natural Development Server on z/OS (Batch)

Special-Purpose Zaps

The following table lists Natural Version 8.2 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.
NA95017, NA95018, NA95019, NA95020, NA95021 and NA95022	Support for the Arabic shaped format	Keeps the shaped format of Arabic characters produced in a previous Natural version.
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 not send a final RC command to release the Adabas Format Buffer if the READ receives RSP=3.
NA96036	Define Arabic comma as special character	The Arabic comma is not defined as a special character in Natural. If this Zap is applied, the Arabic comma is treated as a special character.
NA97176	Support for the Arabic shaped format	Correct mirroring error of characters like bracket signs.

Using ICS Version 3.1.1 with the Natural Development Server on z/OS (Batch)

If ICS Version 3.1.1 is used with a Natural Development Server on z/OS in batch mode the ICS load library must be added to the STEPLIB concatenation in the NDV startup job.

Additionally, if the Natural Development Server is configured to impersonate the NDV clients (SECURITY_MODE=IMPERSONATE or SECURITY_MODE=LOCAL) the ICS load library must be added to the Sdefined to the program class "**" of RACF

```
ralt program ** addmem('ICS311 load library'//NOPADCHK) uacc(read)
```

5 New and Changed Features of Base Natural

> **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.

Operations and Performance

- Roll Server Support for VSAM
- Roll Server Start with Parameter File
- New Authorized Services Manager Features for NATASM91

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 for NATASM91

Support for SECURITY_CACHING of NDV Server
To support the new SECURITY_CACHING feature of the Natural Development Server, the Authorized Services Manager NATASM91 has been enhanced to verify an NDV client with user ID and password against the z/OS Security Server (RACF or any other compliant external security product) and to link the created ACEE to the NDV client request.

New Parameters in the ASMPARM Parameter File
The following parameters have been added to the ASMPARM parameter file:

- TIMEOUTREPEAT: Specifies the interval between two timeout checks.

- FSSM*xxxx*: Defines parameters for the Shared Memory Objects File Server (FSSM) of Natural for DB2.

For more information, see *Parameters in the Parameter File* in the *Operations* documentation.

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.

Unicode and Code Page Support

- ICU Version Upgrade
- Localization Data in Newer ICU Releases
- New ICS Load Modules with Minimum Collation Data

ICU Version Upgrade

The ICS (International Components for Unicode) version 3.1.1 has been upgraded to ICU Version 65.1 which supports Unicode Version 12.0.

ICU Version 65.1 enhancements include improvements in performance and robustness.

For a summary of all changes in ICU Version 65.1 and Unicode Version 12, see the Download ICU 65 website at **http://site.icu-project.org/download/65** and the Unicode 12.0.0 website at **http://www.unicode.org/versions/Unicode12.0.0/**, respectively.

The ICS version 3.1.1 is delivered in addition to the ICS version 2.2.2

See also **Changes to ICU Data Libraries**.

Localization Data in Newer ICU Releases

Due to significant changes in the method of compiling and loading localization data in newer ICU releases, an ICS Transition Version 222 is provided in addition to ICS 311. Data libraries provided by Software AG are not supported with ICS 311. However, they will still be supported as part of the ICS Transition Version 222.

For more information on using localization data based on ICS Transition Version 222 see *Unicode and Code Page Support*.

For more information on using localization data based on ICS 311 see *Unicode and Code Page Support*.

New ICS Load Modules with Minimum Collation Data

Starting with ICS Version 2.2, the additional load modules `SAGICUM` and `SAGICUM9` are delivered to provide the option to include only the bare minimum of collation data in the module build. This enables a light-weight configuration and better performance for particular use cases.

System Commands

- ZIIP System Command
- LIST System Command
- TECH System Command

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

ZIIP System Command

RESET Functions
   The new RESET function can be used to reset the various counters and CPU times to zero.

zIIP Report Adapted to PROJECTCPU Setting
   The ZIIP system command now considers the z/OS system parameter PROJECTCPU and provides an adapted **zIIP Processing Information** report if PROJECTCPU is set to YES and no zIIPs are configured to the current logical partition. This is indicated on the first line of the zIIP Processing Information display.

   For more information, see the *zIIP Processing Information* reports and the syntax of `PRINT INFO`.

New zIIP Statistics about Roll Server
   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`.

LIST System Command

The `LIST` profile of the `LIST` system command now provides the option to specify a step increment for scrolling right or left in a list: see the new `LIST-SHIFT-INCREMENT` parameter described in *LIST Profile Parameters*.

TECH System Command

The `TECH` system command now provides information on the architecture level supported by the IBM processor on which your z/OS or z/VSE system runs.

Terminal Commands

- %P=SQ - Standard Linkage for Call of Quasi-Reentrant Subprograms

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

%P=SQ - Standard Linkage for Call of Quasi-Reentrant Subprograms

If Natural CICS Interface Version 8.3.5 is installed, on z/OS, the new `%P=SQ` terminal command can be used in a Natural CICS running in the CICS OTE environment (threadsafe) to call quasi-reentrant user programs.

See also *New Terminal Command for Calling Quasi-Reentrant Subprograms* in the section *Natural CICS Interfaces Version 8.3.5*.

Editors

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

DDM Editor: SQL and DL/I Services Discontinued on z/VSE

The DDM editor (SYSDDM utility) no longer supports SQL services for Natural for SQL (NSQ) and the DL/I services for DL/I on z/VSE platforms.

See also *Features Dropped with this Natural Version*.

Utilities

- DBLOG Utility
- Natural Profiler Utility
- Object Handler
- SYSCP Utility
- SYSPARM Utility

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

DBLOG Utility

The DBLOG utility now also supports VSAM calls.

For more information, see the section *DBLOG Utility - Logging Database Calls*.

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*.

Transaction Response Time Evaluation
   The Natural Profiler utility now provides the option to evaluate transactions and generate a transaction summary. The summary shows how many events occurred during execution of the transaction and the response time used by the transaction.

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

Object Handler

The `FIND` direct command of the Object Handler now also considers the save and catalog date of a Natural object in an object search operation with specified date/time range.

For more information, see the new `DATECHECK` option of the *select-clause* described in *Syntax of Natural Library Object and DDM Selection*.

SYSCP Utility

The new function **Loaded Code Pages** lists the already loaded code pages in the current Natural environment. For more information, see *Loaded Code Pages* in section *SYSCP utility* of the Utilities documentation and the *Unicode and Code Page Support* documentation.

SYSPARM Utility

Enhanced SYSPARM TERM1ST Option

The TERM1ST option of the SYSPARM direct command now also allows resetting a warning counter for SYSPARM commands that output return codes.

For more information, see TERM1ST in the *basic command syntax* of the SYSPARM command in the section *SYSPARM Utility*.

New SYSPARM LOWER Option for Lowercase Conversion

The SYSPARM direct command now provides the LOWER option to specify whether lowercase letters are converted to uppercase.

For more information, see LOWER in the *basic command syntax* and the *with-clause* of the SYSPARM command in the section *SYSPARM Utility*.

Profile 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
THPINIT	NTPRM	Name of Pre-initialized Storage Thread Model	This new profile parameter is used to save the contents of the Natural storage thread after static session initialization and to reuse it for other sessions in order to improve performance.
STEPLIB	NTCFICU	ICS 3.1.1 Initialization options.	New ICS 3.1.1 initialization option. Name of the dataset containing the ICU 3.1.1 data items to be dynamically allocated.

Changed/Enhanced Profile Parameters

Parameter	Corresponding Macro	Task	Change/Enhancement
DB2	NTDB2	DB2 - Parameters for SQL Database Management Interfaces	**Shared Memory Objects for File Servers** The new SMFSRV subparameter specifies whether a shared memory object is used as a file server. **Multi-Fetch Row Count** The new MF keyword subparameter specifies the number of rows to be fetched by DB2 in one FETCH operation.
PGP	NTPGP	Properties for External Programs	**New Property for Standard Linkage under CICS** The new STDLQ property shows whether standard linkage on QR TCB under CICS is used. Prerequisite: Natural CICS Interface Version 8.3.5 must be installed.
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.
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.
ZIIP	NTZIIP	zIIP Processing (z/OS Only)	**Disable Caching for Print and Work Files** The new PWCXAM keyword subparameter disables caching for print and work files for single or multiple file access methods.

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 as supplied by the TECH **system command**
USR3004N	Improved usage of bufferpool fast locate	Reduces the time spent in the bufferpool and increases the overall performance.
USR8204N	Create a new zIIP Report for PROJECTCPU PoVs	

6 New and Changed Features of Natural Add-On Products

> **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*.

Natural for DB2

The enhancement provided with Natural for DB2 Version 8.4.3 is described in the following section.

Support for Shared Memory Objects for File Servers

Natural for DB2 now supports shared memory objects above the bar to be used as storage media for file servers.

This avoids I/O against VSAM files and switches between SRB and TCB modes when using the Natural for DB2 file server and running zIIP-enabled.

For more information, see *File Server – Shared Memory Object* (*Database Management Systems Interfaces* documentation) and the new `SMFSRV` subparameter of the `DB2` profile parameter (`NTDB2` macro).

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 ISPF

- File Version Backup Option for BS2000 File Maintenance

File Version Backup Option for BS2000 File Maintenance

The BS2000 file maintenance facility now also provides the option to display and set the file attribute `#BACK-VERS` for the number of file versions to be saved in a backup archive. For details, refer to the section *BS2000 File*s in the *User's Guide* of the *Natural ISPF* documentation on Software AG's documentation web site at *https://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 *https://empower.softwareag.com/*.

Natural Optimizer Compiler

With Natural Version 8.2.8, the Natural Optimizer Compiler Version 8.2 is no longer delivered. With Natural Version 8.2.8, the Natural Optimizer Compiler Version 8.3.5 is delivered which is fully compatible with the previous version.

Natural RPC (Remote Procedure Call)

With Natural Version 8.2.8, an enhanced Natural RPC Version 8.2.8 is delivered which introduces the following changes and enhancements:

- Application Programming Interfaces (APIs)
- SYSRPC Utility

Application Programming Interfaces (APIs)

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

API	Task
`USR8225N`	Provide access to messageID/correlationID in NATURAL RPC clients

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.

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 for zIIP

- Natural zIIP Enabler Renamed
- 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

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 8.3.5 is installed. For more information, see the *Natural for zIIP* 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 New and Changed Features of Most Recent Natural Add-On Products

Natural CICS Interface Version 8.3.5

Natural CICS Interface Version 8.3.5 is available on z/OS platforms, from Natural Version 8.2.8 onwards.

This section describes the new features and changes of Natural CICS Interface Version 8.3.5.

- Discontinued Support for Swap Pool
- New Terminal Command for Calling Quasi-Reentrant Subprograms
- Enhanced NTCICSP Macro Functionality

Discontinued Support for Swap Pool

Natural CICS Interface Version 8.3.5 is available on z/OS platforms, from Natural Version 8.2.8 onwards.

This section describes the changes of Natural CICS Interface Version 8.3.5.

From Natural CICS Interface Version 8.3.5 onwards, the Natural swap pool is no longer supported on z/OS when running in the CICS OTE environment (threadsave). The roll server must be used instead. The new error message NS56 indicates the error situation (see the *Messages and Codes* documentation).

New Terminal Command for Calling Quasi-Reentrant Subprograms

On z/OS, the new `%P=SQ` terminal command can be used in a Natural CICS running in the CICS OTE environment (threadsafe) to call quasi-reentrant user programs.

For this purpose, the supplied assembler program `NCILINKQ` must be installed in CICS as quasi-reentrant. See the relevant installation instructions described in *Installing Natural CICS Interface on z/OS* in the *Installation* documentation.

Enhanced NTCICSP Macro Functionality

The maximum value for the tolerance value of the `STORVIO` parameter has been increased from 255 to 16777215. See also `STORVIO` in the *Parameter Reference* documentation for further details.

Natural Com-plete/SMARTS Interface Version 8.3.6

Natural Com-plete/SMARTS Interface 8.3.6 is available on z/OS platforms, from Natural Version 8.2.8 onwards.

This section describes the changes of Natural Com-plete/SMARTS Interface Version 8.3.6.

Support of the zIIP-enabled Natural Roll Server

Natural Com-plete/SMARTS Interface Version 8.3 supports the Natural Roll Server. With Natural for zIIP under Com-plete the compression and decompression of the Natural thread is executed on a zIIP.

The use of the zIIP-enabled Natural Roll Server is controlled by the `TPF` parameter and requires the selectable unit U1.

Natural IMS TM Interface Version 8.3.5

Natural IMS TM Interface Version 8.3.5 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.

8 Dropped Features

Features Dropped with this Natural Version

The following features or Natural add-on products are discontinued and no longer supported in Natural Version 8.2.8:

- Discontinued Support for Natural Web I/O Interface Server Version 8.2
- Discontinued Support for Natural Development Server Version 8.2
- Discontinued Support for Natural SQL Gateway
- Discontinued Support for Natural for SQL/DS
- Discontinued Support for Natural for DL/I on z/VSE

Discontinued Support for Natural Web I/O Interface Server Version 8.2

Natural Web I/O Interface (server) Version 8.2 is no longer supported. It has been replaced by Version 9.1.2 which is fully compatible with the previous version.

Discontinued Support for Natural Development Server Version 8.2

Natural Development Server Version 8.2 is no longer supported. It has been replaced by Version 9.1.2 which is fully compatible with the previous version.

Discontinued Support for Natural SQL Gateway

Natural SQL Gateway is no longer delivered and supported.

Discontinued Support for Natural for SQL/DS

Natural for SQL/DS is no longer delivered and supported.

Discontinued Support for Natural for DL/I on z/VSE

Natural for DL/I is no longer delivered and supported for z/VSE operating systems.

Features Dropped with a Future Natural Version

The following features will be discontinued or will no longer be supported in a future version of Natural:

- Discontinued Support for Natural Telex Driver NATTLX
- Discontinued Support for Natural Swap Pool on z/OS
- Discontinued Support for Natural Net Data Driver NATNETTO
- Discontinued Support for z/VSE and BS2000

- Discontinued Support for Optimize for Infrastructure (O4I)

Discontinued Support for Natural Telex Driver NATTLX

The Natural Telex Diver NATTLX will no longer be available in a future version of Natural.

Discontinued Support for Natural Swap Pool on z/OS

The Natural swap pool will no longer be available on z/OS in a future version of Natural. The Natural Roll Server can be used instead.

Discontinued Support for Natural Net Data Driver NATNETTO

The Natural Net Data Driver NATNETTO will no longer be available in a future version of Natural.

Discontinued Support for z/VSE and BS2000

Natural and Natural add-on products will no longer be supported on z/VSE and BS2000 operating systems in a future version of Natural.

Discontinued Support for Optimize for Infrastructure (O4I)

Starting with Natural and Natural add-on products Version 9.2.x, Optimize for Infrastructure (O4I) will no longer be supported.

A roadmap how Software AG will pursue infrastructure monitoring on mainframe (and Linux/UNIX/Windows) in the future will be provided in 2021.