

## **Natural**

## Natural Release Notes for z/OS

Version 9.2.4

October 2025

This document applies to Natural Version 9.2.4 and all subsequent releases.

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

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## **Table of Contents**

Preface	V
1 About this Documentation	1
Document Conventions	2
Online Information and Support	2
Data Protection	3
2 Supported Environments	5
Supported Platforms, Requirements, Product Availability, and End of	
Maintenance	6
TP Monitors/Online Interfaces	6
Database Management Systems	6
Assemblers	7
Authorized Services Manager and Roll Server	7
Java	7
3 Available and Supported Product Versions	9
Product Availability and End of Maintenance	10
Overview of New Natural Add-On Product Versions	
Product Versions Supported by Natural	12
4 Installation and Compatibility	
Changes to Installation	16
Compatibility	16
5 New and Changed Features of Base Natural	19
Change in Company Name	20
Operations and Performance	20
Unicode and Code Page Support	
Syntax, Compiler, and Runtime Enhancements	20
Editors	22
Utilities	23
Profile Parameters	23
Application Programming Interfaces	24
6 New and Changed Features of Natural Add-On Products	27
Change in Company Name	28
Natural Development Server	28
NaturalONE	28
Natural Security	28
Natural Messaging	29
7 Dropped Features	31
Features Dropped with this Natural Version	32

## **Preface**

This document provides a brief summary of the changes and enhancements that have been introduced in Natural Version 9.2.4 for z/OS and the Natural add-on products released with this version. Revised and updated documentation sets are available with this version.

Supported Environments	Supported Platforms, Requirements, Product Availability, and End of Maintenance TP Monitors/Online Interfaces Database Management Systems Assemblers Authorized Services Manager and Roll Server	
Available and Supported Product Versions	Product Availability and End of Maintenance Overview of New Natural Add-On Product Versions Product Versions Supported by Natural	
Installation and Compatibility	Changes to Installation Compatibility	
New and Changed Features of Base Natural	Change in Company Name Operations and Performance Unicode and Code Page Support Syntax, Compiler, and Runtime Enhancements Editors Utilities Profile Parameters Application Programming Interfaces	
New and Changed Features of Natural Add-On Products	Change in Company Name Natural Development Server NaturalONE Natural Security Natural Messaging	
<b>Dropped Features</b>	Features Dropped with this Natural Version	

# 1 About this Documentation

Document Conventions	. 2
Online Information and Support	
Data Protection	

### **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 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**

#### **Product Documentation**

You can find the product documentation on our documentation website at <a href="https://documentation.softwareag.com">https://documentation.softwareag.com</a>.

#### **Product Training**

You can find helpful product training material on our Learning Portal at <a href="https://learn.software-ag.com">https://learn.software-ag.com</a>.

#### **Tech Community**

You can collaborate with Software GmbH experts on our Tech Community website at <a href="https://tech-community.softwareag.com">https://tech-community.softwareag.com</a>. From here you can, for example:

- Browse through our vast knowledge base.
- Ask questions and find answers in our discussion forums.
- Get the latest Software GmbH news and announcements.
- Explore our communities.
- Go to our public GitHub and Docker repositories at <a href="https://github.com/softwareag">https://github.com/softwareag</a> and <a href="https://github.com/softwareag">https://github.com/softwareag</a> and discover additional Software GmbH resources.

#### **Product Support**

Support for Software GmbH products is provided to licensed customers via our Empower Portal at <a href="https://empower.softwareag.com">https://empower.softwareag.com</a>. Many services on this portal require that you have an account. If you do not yet have one, you can request it at <a href="https://empower.softwareag.com/register">https://empower.softwareag.com/register</a>. Once you have an account, you can, for example:

- Download products, updates and fixes.
- Search the Knowledge Center for technical information and tips.
- Subscribe to early warnings and critical alerts.
- Open and update support incidents.
- Add product feature requests.

#### **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

Supported Platforms, Requirements, Product Availability, and End of Maintenance	(
■ TP Monitors/Online Interfaces	
Database Management Systems	6
Assemblers	7
Authorized Services Manager and Roll Server	7
■ Java	

Natural support is provided 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, we will stop supporting that version of the operating system, TP monitor, database management system or assembler.



**Note:** For information regarding product compatibility with IBM platforms and any IBM requirements, see <a href="https://www.softwareag.com/ibm">https://www.softwareag.com/ibm</a>.

# Supported Platforms, Requirements, Product Availability, and End of Maintenance

You can view all available product versions and check the dates when their maintenance ends by using the System Requirements App at:

https://documentation.softwareag.com/systemrequirements/#/

Here, you can enter the product name or code in the search field and see the latest information on system requirements and product availability.

### **TP Monitors/Online Interfaces**

Natural Version 9.2.4 supports the versions of the TP monitors/online interfaces listed below:

Product	Version
Com-plete	See Product Versions Supported by Natural.
CICS TS for z/OS	5.5, 5.6, 6.1, 6.2
IMS TM	15

## **Database Management Systems**

Natural Version 9.2.4 supports the versions of the database management systems listed below:

Product	Version		
Adabas	ee Product Versions Supported by Natural.		
Db2 for z/OS	12.1, 13.1		
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 9.2 requires "HL" Assembler as delivered with the operating system for the assembly of its source modules.



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

## **Authorized Services Manager and Roll Server**

The Authorized Services Manager (module NATASM92) and the Natural Roll Server (module NATRSM92) supplied with Natural Version 9.2.4 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.

#### Java

Natural add-on products which require Java (e.g.: Natural for Db2 for zIIP) are supported with the following Java versions:

Product	Version
Java	17.0

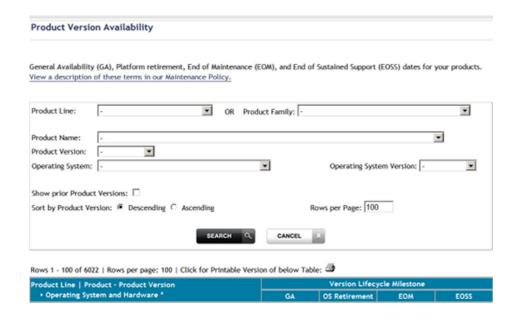
# 3 Available and Supported Product Versions

Product Availability and End of Maintenance	10
Overview of New Natural Add-On Product Versions	
Product Versions Supported by Natural	12

## **Product Availability and End of Maintenance**

You can view all available product versions and check the dates when their maintenance ends by visiting <a href="https://empower.softwareag.com/">https://empower.softwareag.com/</a>:

- 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 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 at *https://empower.softwareag.com/*.

Product Name	Product Code	Version
Natural Advanced Facilities	NAF	9.2.4
Natural CICS Interface	NCI	9.2.4
Natural Com-plete/SMARTS Interface	NCF	9.2.4
Natural Connection	NTC	9.2.4
Natural Development Server	NDV	9.2.4
Natural for Db2	NDB	9.2.4
Natural for Db2 for zIIP	NDZ	9.2.4
Natural for VSAM	NVS	9.2.4
Natural IMS TM Interface	NII	9.2.4
Natural ISPF	ISP	9.2.4
Natural Optimizer Compiler	NOC	9.2.4
Natural Review	RNM	9.2.4
Natural SAF Security	NSF	9.2.4
Natural Security	NSC	9.2.4
Natural TSO Interface	NTI	9.2.4
Natural Web I/O Interface	NWO	9.2.4 (server)
Super Natural	NSN	9.2.4
Natural Batch for zIIP	NAZBT	9.2.4
Natural for CICS for zIIP	NAZCI	9.2.4
Natural for Com-plete for zIIP	NAZCO	9.2.4
Natural for IMS for zIIP	NAZNI	9.2.4
Natural Messaging	NMQ	1.1.1

## **Product Versions Supported by Natural**

Natural Version 9.2.4 and the add-on products released with this version support the minimum versions and fixes (or higher) of the optional products listed in the following table. In general, it is recommended that you use 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	8.5
Adabas CICS Interface	ACI	8.5
Adabas IMS/TM Interface	AII	8.5
Adabas Online System	AOS	8.5
Adabas Review	REV	5.2
Adabas Text Retrieval	TRS	2.1.4
Com-plete	COM	6.8.1 Cumulative Fix 19 with SMARTS Version 3.3.1 Cumulative Fix 35 6.8.2 with SMARTS Version 3.3.2
Con-form	CMF	3.4.3
Con-nect	CNT	3.4.3
Entire Connection	PCC	9.3.
Entire Event Management	NCL	2.2.1
Entire Net-Work	WCP	6.5 (This product is required if you are using Natural Security in a heterogeneous environment.)
Entire Operations	NOP	5.5.2
Entire Output Management	NOM	3.5.2
Entire System Server	NPR	3.7.2
ICU for Adabas & Natural	ICS	3.2.1
Mainframe License Check	MLC	1.4.1
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	9.3
Natural Web I/O Interface	NWO	9.2 (client)
Predict	PRD	8.5.1
Predict Application Control	PAC	2.6.1
SMARTS	APS	3.3.1 Cumulative Fix 35 3.3.2

System Automation Tools	SAT	3.5.2
webMethods EntireX	EXX	10.7
(before: EntireX Communicator)		

Although it may be technically possible to run versions of other products which are older than the ones listed above with a new version of Natural, this is not recommended because, for legal reasons, we 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 products which are older than the ones listed above.

# 4 Installation and Compatibility

Changes to Installation	16
Compatibility	16

## **Changes to Installation**

This section describes the changes in the installation process of base Natural and the Natural addon 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
- License Checks for Selected Add-on Products

#### 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).

#### **License Checks for Selected Add-on Products**

In addition to the existing license checks, license checks are also performed for Natural Security.

The license files must be installed in your environment when using Natural Security.

For information about the steps for installing Natural Security on z/OS, see *Installing Natural Security on z/OS*.

## Compatibility

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



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 for Mainframes Version 2.3, 3.1, 4.1, 4.2, 8.2 or 9.1 can be executed with Natural Version 9.2 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 9.2. This also applies to data areas that are used by these objects.

It is strongly recommended that any existing objects be recataloged with Natural Version 9.2 to take advantage of improved runtime handling.

#### **Special-Purpose Zaps**

The following table lists Natural Version 9.2 Zaps and the special purposes they support:

Zap	Special Purpose		
NA21002	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.	
NA21003	Resolve problems (RSP=46) during Natural for z/OS calls to Adabas for Windows, Linux and Cloud	Resolve problems that can arise when Natural calls Adabas on Linux, UNIX or Windows from a z/OS 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 z/OS does not send a final RC command to release the Adabas Format Buffer if the READ receives RSP=3.	



**Note:** Former special purpose zaps are either replaced by parameters (e.g. Support for the Arabic shaped format) or will no longer be required for Natural version 9.2.4.

# New and Changed Features of Base Natural

Change in Company Name	20
Operations and Performance	
Unicode and Code Page Support	20
Syntax, Compiler, and Runtime Enhancements	
■ Editors	22
■ Utilities	23
Profile Parameters	23
Application Programming Interfaces	

## **Change in Company Name**

The string "Software AG" has been replaced by "Software GmbH" or other text where it was used as a company name (for example, copyright information, error messages, hello screens, maps, etc. Where possible, the string was removed.

## **Operations and Performance**

#### **Roll Server**

The new RESET command allows you to reset the counters for interval-based statistics. This can also be done using the user exit USR9209N. See also *z/OS Environment > Natural Roll Server Operation > Operating the Roll Server* in the *Operations* documentation.

## **Unicode and Code Page Support**

International Components for Unicode

#### **International Components for Unicode**

The SAGICU and SAGICUA9 modules are now identical. Both modules are built with Architecture Level 9 instructions. There is no longer a module built with Architecture Level 0, as there was with the former SAGICU. Future versions of Natural will release only one module, SAGICU, which is built with Architecture Level 9 instructions. For more information, see *Alternative ICS Modules for Support of Architecture Levels* in *Unicode and Code Page Support*.

## Syntax, Compiler, and Runtime Enhancements

- Label and Line Number for END-XXX Statement
- Enhanced PARSE XML Statement
- New END-SUBROUTINE Label for DEFINE SUBROUTINE
- New System Variable \*UUID
- DOWNLOAD PC FILE Statement Enhanced to Allow Edit Mask

#### WRITE WORK FILE Statement Enhanced to Allow Edit Mask

#### Label and Line Number for END-XXX Statement

You can now specify labels or line numbers in structured mode when ending the following statements:

CALL FILE
CALL LOOP
FIND
FOR
HISTOGRAM
PARSE JSON
PARSE XML
READ/BROWSE
READLOB
READ RESULT SET (SQL)
READ WORK FILE
REPEAT
SELECT (SQL)
SORT
UPLOAD PC FILE

For more information about ending these statements, see *Statements*.

#### **Enhanced PARSE XML Statement**

The PARSE XML statement has been enhanced by a GIVING error code clause.

You can now receive the 4-digit Natural error number when a runtime error occurs. If that error contains different reason codes, a subcode is provided alongside the error number.

For more information, see PARSE XML Syntax Description in PARSE XML.

#### **New END-SUBROUTINE Label for DEFINE SUBROUTINE**

The END-SUBROUTINE clause of the DEFINE SUBROUTINE statement has been enhanced by an optional END-SUBROUTINE label.

You can use this label to improve the readability of a program by placing it after the END-SUBROUTINE clause of a subroutine. For more information, see *DEFINE SUBROUTINE Syntax Description* in *DEFINE SUBROUTINE*.

#### **New System Variable \*UUID**

A new system variable \*UUID has been introduced that generates a Universally Unique Identifier (UUID). For more information about the structure and usage of the new variable, see \*UUID in Application-Related System Variables.

#### DOWNLOAD PC FILE Statement Enhanced to Allow Edit Mask

You can now define an edit mask for *operand1* of a DOWNLOAD PC FILE statement. For more information, see DOWNLOAD PC FILE in *Statements*.

#### WRITE WORK FILE Statement Enhanced to Allow Edit Mask

You can now define an edit mask for *operand1* of a WRITE WORK FILE statement. For more information, see WRITE WORK FILE in *Statements*.

#### **Editors**



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

#### SYSDDM (DDM Editor) - File Number in Field FNR > 5000

The range of valid values for the file number (**FNR** field) of the database file for which the DDM is defined has changed from 0 - 5000 to 0 - 65535. For more information, see *SYSDDM Utility* > *Using SYSDDM Maintenance and Service Functions* > *DDM Specification*.

#### New Database Type MQ in SYSDDM

The SYSDDM utility supports the new DB type M, which is used to access IBM MQ from Natural Messaging.

If databases are defined with that type, they are listed as DB type **MQ** in the SYSDDM utility, functions **Show Defined DBIDs and Used FNRs** and **Database IDs Defined in Natural**. See SYSDDM Utility > Using SYSDDM Maintenance and Service Functions.

The corresponding DDMs use the new DDM type M, which is indicated in the editor as **IBM MQ**. See *SYSDDM Utility > Using the DDM Editor > DDM Header Information*.

### **Utilities**

SYSRPC Utility



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

#### **SYSRPC Utility**

The SYSRPC utility now also supports server commands for the server tasks of a selected RPC server. The prerequisite is EntireX Broker 11.0 with CIS version 13 or higher. For more information, see *Executing Commands for RPC Server Tasks* in the section *SYSRPC Utility*.

### **Profile Parameters**

You can find detailed descriptions of all Natural profile and session parameters in the *Parameter Reference* documentation, unless otherwise noted.

- New Profile Parameters
- Changed/Enhanced Profile Parameters

#### **New Profile Parameters**

Parameter	Corresponding	Task	Description
	Macro		
IMSGLOG		Write session	This profile parameter can be used to write specified
			initialization error messages to the message log instead of
		messages to the	displaying it on the primary output device, i.e. the user
		message log	terminal or the CMPRINT file under batch. IMSGLOG can
			be useful to avoid undesired error messages on the terminal
			resp. CMPRINT and to avoid the Natural termination
			message NAT9964 with condition code 4, which can
			influence the execution sequence of the batch job.

### **Changed/Enhanced Profile Parameters**

Parameter	Corresponding Macro	Task	Change/Enhancement
CMP0 <b>Keyword subparameter</b> GDASC=0N	NTCMPO	GDA signature check	When the GDASC compilation option is set to 0N and a Natural object that references a GDA without a GDA signature is cataloged, the Natural error NAT0926 is no longer issued.  As before, GDA timestamps are checked at execution time if the GDA does not contain a GDA signature.  This improved handling means that you no longer have to catalog the GDA and all referencing Natural objects just because a Natural object needs to be cataloged and GDASC is set to 0N.  See also GDASC – GDA Signature Check.
IMSG	none	Suppression of session initialization error messages	This profile parameter can be used to suppress initialization error messages. It can be useful to avoid undesired error messages on the terminal or to the CMPRINT file under batch processing and to avoid the Natural batch termination message NAT9964 with condition code 4, which can influence the execution sequence of the batch job.
PRINT  Keyword subparameter DEST=DUMMY  WORK  Keyword subparameter DEST=DUMMY	n/a n/a	Define no device when downloading data to Entire Connection	When downloading data on Entire Connection (AM=PC) with the statement PRINT WORK FILE or WRITE WORK FILE, you can now define a dummy device with the keyword subparameter DEST=DUMMY of the profile parameter PRINT or WORK.

## **Application Programming Interfaces**

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

API	Task	Enhancement
USR1033N	Find DBID/FNR of a	The API now returns the type A for all Adabas DDMs.
	cataloged DDM	The API now supports the new DDM type IBM MQ.
		The handling of VSAM flags has been corrected.
		The example program USR1033P now shows a message if appropriate.
USR2023N	Get type of database	The API now provides the following additional optional parameters:
		■ DB-FCTLEVEL - The database functional level (output).
		■ DB-PARMTYPE-The database type as given with the DB parameter or the NTDB macro (output).
		■ DB-TYPELONG - The long name of the database type (output).
		■ DB-ENTRIES - The number of DBID entries to be processed (input). Default/maximum: 257.
		The example program USR2023P now lists the new output values.
USR4206N	List objects in a library	As expected, the API now returns all objects in the given range when OPT-TYPE-OP='I' and OPT-TYPE='*' are set.
USR9208N	Get Roll Server statistics	This new API returns Roll Server statistics, which can be found in the SYSTP option R, followed by a subsystem name.
USR9209N	Reset Roll Server interval	This new API resets interval counters and updates the timestamp
	counters	of the start of the current interval.
USR9210N	List Roll Server directory entries	This API, which is an extension of USR3001N, returns a list of Roll File directory entries.
USR9211N	Get current subsystem ID	This new API returns the currently used subsystem ID.

## 

## **New and Changed Features of Natural Add-On Products**

Change in Company Name	28
■ Natural Development Server	
■ NaturalONE	
■ Natural Security	
■ Natural Messaging	

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

## **Change in Company Name**

The string "Software AG" has been replaced by "Software GmbH" or other text where it was used as a company name (for example, copyright information, error messages, hello screens, maps, etc. Where possible, the string was removed.

## **Natural Development Server**

This section describes the new features provided with Natural Development Server Version 9.2.4.

#### **XRef Data Generation Adapted for NaturalONE Private-mode Libraries**

Natural for z/OS and Natural Development Server version 9.2.4 no longer produce redundant XRef data generated for NaturalONE private-mode libraries. XRef data is now generated only for shared mode libraries.

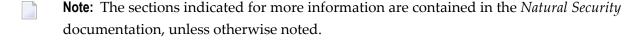
### **NaturalONE**

For information on changes, enhancements and new features available with NaturalONE, see the *Release Notes* in the *NaturalONE* documentation at *https://documentation.softwareag.com/*.

### **Natural Security**

The following enhancements are provided with Natural Security Version 9.2.4:

- License Check
- New Authentication Options (LDAP)
- Password and Cipher Code



#### **License Check**

A license check is performed for Natural Security at the start of a Natural Security session.

The license file must be installed in your environment when using Natural Security.

#### New Authentication Options (LDAP)

With the new LDAP authentication options, a user defined in Natural Security can be allowed to use the session if LDAP authentication fails.

■ New authentication types in the list of **Authentication Options**:

M3 = master profile - active - Natural Security authentication if LDAP fails.

A3 = alternative profile - active - Natural Security authentication if LDAP fails.

For details, see *Invoking LDAP Security Profile Maintenance*.

■ New value for the **Protection level** option:

3 = Same as protection level 1, except if LDAP authentication fails, then the user will be authenticated further with Natural Security.

For details, see Components of an LDAP Security Profile.

#### Password and Cipher Code

For the FUSER and FDIC library files, each entered value in the **Password** and **Cipher code** fields is now masked with an asterisk (\*). This prevents unauthorized access or exposure of sensitive information. For details, see *Natural Security* > *Library File*.

### **Natural Messaging**

Natural Messaging (NMQ 1.1.1) is a new Natural add-on that supports communication with IBM MQ. Natural for z/OS 9.2.4 is a prerequisite for using this feature.

Natural Messaging allows you to easily access message queues using Natural PROCESS and FIND statements. Example programs to perform operations such as BROWSE, GET and PUT are available in a new library SYSEXNMQ. For further information, see *Natural Messaging* in the *Database Management System Interfaces* documentation.

# 7 Dropped Features

Features Dropped with this Natural Version	3
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## **Features Dropped with this Natural Version**

The following features or Natural add-on products are discontinued and no longer supported in Natural Version 9.2.4:

- Database Types ADAV7, ADAV8, and ADAV82
- Module NATXMLA9

#### Database Types ADAV7, ADAV8, and ADAV82

The database types ADAV7, ADAV8, and ADAV82 for the DB parameter and the NTDB macro have been removed. Adabas databases older than version 8.5 are no longer supported. Please ensure that you only use database types ADABAS and ADAV86 for Adabas databases.

#### Module NATXMLA9

Module NATXMLA9 has been removed in Natural for z/OS 9.2.4. The module has been replaced by NATXML. You must change all instances of NATXMLA9 in your link jobs to NATXML.