northgate
INFORMATION SOLUTIONS

Reality

V14.2

Release Information

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Contents

Introduction

Reality is a software environment that supports multiple MultiValue SQL-enabled databases on a single host and includes a range of powerful utilities for building, managing and accessing the databases.

The release information in this document applies to Reality V14.2 for UNIX and Windows. Reality V14.2 adds new features and enhanced compatibility with similar database systems. Faults reported since Production Release of Reality V14.0 have been resolved. See *New Features in Reality V14.2* (page 12) and *Fault Resolutions* (page 18) for more details.

Reality V14.2 is supplied on CD or as a downloadable CD/ISO image file. These both contain:

- The Reality database software.
- User Documentation
- UNIX-Connect – networking software that provides communications between Reality databases and between Reality and host system environments.
- Reality Remote Tape – server software that allows a Reality host to use tape units on remote systems.
- PCSNI – client software that allows communication between a PC and a Reality database.
- JReal – client software that provides the Java programmer with the ability to run Remote Basic subroutines and to write custom servlets to access a Reality database via RealWeb.
- RealWeb – software that provides a Web developer with DataBasic experience with access to data held in a Reality database.
- RealSQL-JDBC Driver – client software that provides a standard API for Java applications, applets and servlets using SQL to access data.
- RealSQL-ODBC Driver – client software that allows PC applications to access data using SQL.
- RealEdit – a Reality editor that runs on Windows PCs.
- Remote Basic ActiveX Control – a DLL that can be used in PC programs written in Visual Basic to run Remote Basic subroutines on a Reality database.
- Reality and RealWeb demonstration software.

A second CD/ISO image file contains the Web Services feature (including the Jetty web server). This can be downloaded from the Reality web site; select **Support** > **Downloads** > **System Components**.

Note: A third CD/ISO image file is available on request – this contains the Reality GUI Administration tool, which consists of:

- GUI Administration server.
- Client configuration utility.
- Client deployment service.

If you require this feature, contact your Northgate representative or submit an enquiry via the Reality website (select **Contact us** > **Enquiries**).

This version of the software supersedes all previously released versions. Northgate policy is to withdraw support for previous versions six months after a new release. The relevant date for this software can be obtained from your Northgate representative or the Reality web site.

Backwards Compatibility

Northgate strives to make each new version of Reality fully backwards compatible with previous versions. However, fault resolutions and new features can, in some cases, result in changes to menus and prompts displayed by host and TCL utilities; scripts which automate such utilities may therefore need to be reworked after upgrading or installing updates.

Packaging

All of the software comprising this release is supplied on the installation CD and CD/ISO image files, with electronic versions of all documents (including this one).

The installation CD and first CD/ISO image file both contain the following components.

Software	Version
PDS History Tool	V12.0
Reality	V14.2
User Documentation	V14.2
UNIX-Connect	V1.5
Reality Remote Tape	V12.0
PCSNI (client)	V2.3.1
JReal (client)	V3.2
RealSQL-JDBC Driver (client)	V1.0.1
RealSQL-ODBC Driver (Windows client)	V2.5.1
RealSQL-ODBC Driver (UNIX client)	V2.5.1
RealWeb HTML	V3.0
RealWeb Servlets	V3.2
Reality Demonstration	V12.0
RealWeb Demonstration	V1.1
WinSNI Configuration Editor (client)	V1.0

Software	Version
RealEdit (client)	V1.1.1
Remote Basic ActiveX Control	V1.0
TCP Bridge	V1.0.1

The second CD/ISO image file contains the following components.

Software	Version
Web Services	V1.0

The third CD/ISO image file (available on request) contains the following components.

Software	Version
GUI Administration Tools	V2.0
Installation Guide for GUI Administration Tools	V2.0

Reality Website

Visit the Reality website at *www.northgate-is.com/reality* for:

- Product information (select **Products**).
- Downloads (select **Support** > **Downloads**).
- The latest documentation (select **Products** > **On-line Reality Documentation**).

  Reality is supplied with comprehensive on-line documentation for viewing in a web browser. Refer to the *Document Directory* in the on-line documentation for details. Note that the documentation is subject to change and it is essential that you have the latest version. You should regularly download this from the *Reality website*.

  We are constantly trying to improve the Reality documentation, so please send us your comments. Every topic in the documentation includes a link to a comment form.

- Enquiries (select **Contact us** > **Enquiries**).

Prerequisites

Reality on UNIX

- One of the following:

  SUN SPARC running Solaris 8, 9 or 10.

  IBM pSeries (RS 6000), running AIX 6.1.

  PC with Intel Pentium processor or equivalent running one of the following versions of Linux: Red Hat version 7.2, 9, ES/AS versions 2.1 or 3 (32-bit), ES3 (64-bit) or ES4; CentOS 5.0.

- 128Mb RAM minimum (512Mb recommended), plus 2-6Mb per Reality User. See also *Memory* on page 8.

- 500 Mb of available space to accommodate setup (actual hard disk used once installed will be between 220Mb and about 350Mb, depending on the system components installed, plus space for databases).

- Korn shell.

- Perl – this is normally supplied with the operating system.

- UNIX-Connect for networking (supplied on the Reality CD).

- Northgate Customisation (a CD is available for SUN – for other operating systems, contact Northgate).

- C compiler (on Solaris, if a C compiler is not available you can install the GNU C Compiler from the Northgate Customisation CD).

UNIX-Connect

'rosi' UNIX user id with a home directory on a file system with at least 25 Mbytes free.

Reality on Windows

- PC with Intel Pentium processor or equivalent, 200MHz or faster, running Windows 7, Vista, XP (Home or Professional), Server 2008, Server 2003 or 2000 SP1+ (Professional or Server).

  Note: Reality is not available for Windows NT, 95, 98, 98 SE or ME.

- 64Mb RAM minimum (128Mb recommended), plus 2-6Mb per Reality User. See also *Memory* on page 8.

- 500Mb of available disk space to accommodate setup (actual hard disk used once installed will be between 150Mb and about 350Mb, depending on the system components installed, plus space for databases).

  It is recommended that Reality is installed on an NTFS partition.

- The Reality database can be loaded on to a Primary Domain Controller, Backup Domain Controller, stand-alone member server or WorkStation.
- Northgate can take no responsibility for the processor and memory requirements of other applications running on a Windows server. Ideally, Reality should be loaded on a dedicated server.
- Reality backup and restore is supported on 4mm, 8mm and DLT tape units.
- Using at least a dual processor system is highly recommended.

Memory

Reality memory usage is difficult to predict, but as a rough sizing guide use 128Mb for the system and then 2Mb to 6Mb per user, depending on type of user and application. Performance problems are generally caused by lack of memory. If the server is not dedicated to Reality then other application memory requirements must be added to this.

Foreign Database Support and SQL View

These features require a working ODBC installation, with appropriate ODBC driver(s), on the Reality system.

External Components

PCSNI

- Microsoft Windows 7, Vista, XP (Home or Professional), Server 2003, Server 2008 or 2000.
- A LAN card.
- TCP/IP networking.
- A way of resolving host name and IP addresses (for example, a hosts file or a domain name service).

RealEdit

- Microsoft Windows 7, Vista, XP (Home or Professional), Server 2003, Server 2008 or 2000.
- Northgate PCSNI software V2.3.1 Rev C or later.

JReal

Java Run Time Environment (JRE) version 1.4.1_02 or above. If this is not available, it can be downloaded from Sun's Java web site (*http://java.sun.com/j2se/*).

RealSQL-ODBC Driver

- Microsoft Windows 7, Vista, XP (Home or Professional) , Server 2003, Server 2008 or 2000.
- Northgate PCSNI software V2.3.1 Rev C or later.

- Any ODBC Level 1 or 2 compliant application.
- A Winsock compliant TCP/IP transport stack for TCP/IP connections.
- If you are connecting to a Reality database on a UNIX host, the host will require UNIX-Connect.

The PC applications and transport stacks use large amounts of memory. It is therefore essential that PCs running this package are configured for the optimum use of memory; otherwise it is possible that GPFs and other memory type errors will occur.

RealSQL-JDBC Driver

- Java Run Time Environment (JRE) version 1.4.1_02 or above. If this is not available, it can be downloaded from *java.sun.com/j2se*.
- If you are connecting to a Reality database on a UNIX host, the host will require UNIX-Connect.

RealWeb

- A web server with support for Java servlets. (This can be on the same system as the Reality database or on another system.) On web servers that do not support servlets, plug-ins can be used to add servlet support.
- Java Run Time Environment (JRE) version 1.4.1_02 or above. If this is not available, it can be downloaded from *java.sun.com/j2se*.
- If you are connecting to a Reality database on a UNIX host, the host will require UNIX-Connect.

Remote Tape Server

Any UNIX or Windows system that supports Reality.

Reality Web Services

- A web server with support for Java servlets (Jetty is supplied). This can be on the same system as the Reality database or on another system. On web servers that do not support servlets, plug-ins can be used to add servlet support.

  Note: Reality Web Services have been tested on Jetty 5.1.4 and Tomcat 5.0.

- Java Runtime Environment (JRE) or Java Development Kit (JDK), version 1.4.1_02 or later. For Jetty, you can use either; for Tomcat you must use a JDK.

Remote Basic ActiveX Control

- Microsoft Windows 7, Vista, , Server 2003, XP (Home or Professional) or 2000.
- *PCSNI* software V2.3.1 Rev C or later.

On-line Documentation

The on-line documentation can be installed on a web or file server, or on individual PCs running Windows or Linux. It can also be viewed from the Reality CD.

To view the on-line documentation you will require one of the following web browsers:

- Internet Explorer 6.0 or later (PC only).
  –or–
- Mozilla Firefox 2.0 or later (PC or UNIX).

Note: You can also view the on-line documentation on some earlier versions of the above browsers and on some other types of browser. A message will warn you that your browser is not fully supported.

GUI Administration Tools

GUI Administration Server

The GUI Administration server will run on the majority of platforms that support Reality V11.0 and later, subject to the following additional requirements:

UNIX and Windows

- Reality V11.0 or later.
- Java V1.4.1_02 or later. (Versions of the JRE suitable for Windows, Linux and Solaris are supplied on the CD.)
- 256Mb RAM minimum (512Mb recommended), plus 2-6Mb per Reality User.
- 5MB free disk space, plus space for JRE (around 40-50Mb for Java V1.4.1_02).
- TCP/IP network.

Windows

- 500MHz or faster processor.
- Windows XP + SP1, Windows 2000 + SP3.

  Note: The Reality GUI Administration Server is not currently certified on Windows 7, Vista, XP SP2, Server 2008 or Server 2003 SP1, though this is subject to review. For the latest information, refer to the *Reality website.*

Client Deployment Service

The Client Deployment Service will run on the majority of platforms that support Reality V11.0 and later, subject to the following additional requirements:

UNIX and Windows

- Web server (it is strongly recommended that you use the web server supplied with Reality).
- 128 MB Memory (256Mb recommended).
- Java V1.4.1_02 or later (versions of the JRE suitable for Windows, Linux and Solaris are supplied on the CD).
- 80MB free disk space (includes around 40-50 MB for JRE).
- TCP/IP network.

Windows

- 500MHz or faster processor.

- Windows XP + SP1, Windows 2000 + SP3.

  Note: The Reality Client Deployment Service is not currently certified on Windows XP SP2, Server 2003 SP1 or Vista, though this is subject to review. For the latest information, refer to the *Reality website.*

Client Configuration Utility

Java V1.4.1_02 or later (versions of the JRE suitable for Windows, Linux and Solaris are supplied on the CD).

GUI Administration Client

Any Windows or Linux platform with Java V1.4.1_02 or later and for which a web-start component is available. The following is recommended:

Linux

- 128Mb RAM minimum (512Mb recommended).
- 5MB free disk space, plus space for JRE (around 40-50Mb for Java V1.4.1_02)
- Netscape 6 or 7, or Mozilla 1.4 or 1.5 (to display on-line documentation).

Windows

- 500MHz or faster processor.
- Windows 2000 SP3+, XP Home Edition SP1+ or XP Professional Edition SP1+.

  Note: The Reality GUI Administration Client is not currently certified on Windows XP SP2, Server 2003 SP1 or Vista, though this is subject to review. For the latest information, refer to the *Reality website*.

- 128Mb RAM minimum (256Mb recommended).
- 5MB Free disk space, plus space for JRE (around 40-50Mb for Java V1.4.1_02)
- Internet Explorer 6.0 or later, or Mozilla Firefox 2.0 or later (to display on-line documentation).

Suitable versions of Java are supplied on the CD.

New Features in Reality V14.2

The features below that are marked as optional are chargeable and must be separately enabled with a software key. Contact your Northgate representative to obtain the keys you need.

MultiValue Compatibility

Reality V14.2 has been further enhanced to improve compatibility with other MultiValue systems. In addition, the following features simplify migration to Reality from other MultiValue systems.

- The case-insensitivity options that were introduced on Reality V14.1 have been extended to further simplify migration from D3. Refer to the sections Data Case-insensitivity, Keyword Case-insensitivity and Item-id Case-insensitivity.

  You should not normally need to use these, as the correct options are set when you specify the MultiValue emulation for a database.

- Other MultiValue Features.

Case-insensitivity

Data Case-insensitivity

- TCL commands. The SEARCH, ESEARCH and SSEARCH commands now accept additional options to control data case-insensitivity.

- Line editor. The editor commands that search for strings (DE, L, R, SP and TR) can now operate in both case-sensitive and -insensitive modes. The required mode can be specified when starting the editor (the default is the current data case setting) and changed while editing with new CI, CS and = commands. See Search Strings for more details.

- Screen Editor. The screen editor commands that search for strings (L and S) can now operate in both case-sensitive and -insensitive modes. The required mode can be specified when starting the editor (the default is the current data case setting) and changed while editing with the new = command.

- ME development editor. The ME editor commands that search for strings (/, L and R) can now operate in both case-sensitive and -insensitive modes. The required mode can be specified when starting ME (the default is the current data case setting) and changed while editing with new CI, CS and = commands.

Keyword Case-insensitivity

This has been extended to:

- English conversion codes (wherever used) and their operators and operand keywords.

- Proc commands and their operators and operand keywords.

- Command definition items (attribute 1).

- Data definition items (attributes 1 and 9).

Item-id Case-insensitivity

- Elements 104 to 107 of the DataBasic SYSTEM function return the state of item-id case-sensitivity for the SYSTEM, NETWORK, USERS and SECURITY system files.

- The SYSTEM(108) function returns whether the host operating system is case-sensitive or -insensitive.

SQL for Reality

Although Reality files can now be case-insensitive as regards item-ids, SQL for Reality currently remains case-sensitive. The SQLM command has been enhanced to ignore case-insensitive files (and display an error message to that effect) when creating or regenerating SQL tables. A new option (W) allows you to force SQLM to convert case-insensitive files, but its use is not recommended because SQL access to Reality files is always case-sensitive.

Other MultiValue Features

MultiValue Environments

- Predefined V14.2 environments have been provided for Reality, D3, mvEnterprise and mvBase. UniVerse, UniVision and UniData environments are now available. For details of which options are set in these, use SSM option 4 (Define Environment Settings) or the DEFINE-ENVIRONMENT TCL command.

- The TCL stacker command now has UniVerse, UniVision and UniData modes, set in the operating environment.

- The DataBasic $OPTIONS statement now accepts keywords representing UniVerse, UniVision and UniData systems. For each of these, an appropriate symbol is defined to control condition compilation with the $IFDEF and $IFNDEF statements.

- The mkdbase host command now allows you to choose UniVerse, UniVision and UniData emulations.

- A new DEFAULT.TO.ALL environment option allows the COPY, CP, CT, ECOPY and QSELECT TCL commands to behave in the same way as on D3 (if the item-list parameter is omitted, the default is *: all items). This option is set in the V14.2 D3 predefined environment.

TCL

The information displayed by the WHO command and user exit U50BB depends on the selected MutliValue environment; for details, see MultiValue Compatibility.

English

- English now provides default attribute definitions that allow you to specify any attribute in an English command; for details, see the topics Data Definition Item and MultiValue Compatibility in the *English Reference* section of the documentation.

- Certain characters have special meanings when used in an English HEADING or FOOTING modifier. A new NOOLDHEADER environment option is set in the V14.2 MultiValue predefined environments to inhibit this behaviour.

Proc

- The Proc A command now allows you to specify the number of characters to be extracted from a parameter in the input buffer.

- A new PQN.ABS.S environment option changes the behaviour of the PQN Proc S command so that it will insert empty parameters, if necessary, to allow the pointer to be set to the specified position. This option is set in the V14.2 D3 predefined environment.

DataBasic

- When using the INPUT@ statement, a format string can now start with the letter "M" (for compatibility with other MultiValue systems).

- SYSTEM function: In Reality and D3 modes, if an item read fails because the item is locked, SYSTEM(0) now returns the number of the port holding the lock.

- DQUOTE and SQUOTE functions: In D3, AP, PICK and R83 modes, these functions search a string for a substring enclosed in quotation marks.

- EXECUTE statement:

    - In D3 mode, the SETTING clause returns error numbers only, rather than error numbers and messages.

    - The executed command can now be a dynamic array that includes responses to input prompts generated by the command.

- When called from DataBasic with ICONV or OCONV, the information returned by user exit U50BB depends on the MultiValue mode set with the $OPTIONS statement. For details, see User Exit Conversions.

- In D3 mode, strings containing only arithmetic unary operators and decimal points are treated as numeric.

- In D3, PICK/R83 and AP modes, THEN/ELSE clauses are not required in the OPEN, READ, READU, READV, READVU, MATREAD and MATREADU statements. If the statement fails, and there is no THEN or ELSE clause, the result (returned in the appropriate parameter) is set to null.

- DIV, SADD and SSUB functions: Provide alternative ways of performing arithmetic operations.

- MSLEEP statement: This causes a program to sleep for a specified number of milliseconds.

- OUT statement: Outputs raw data to the display.

- CHANGE statement: This changes the contents of a variable by replacing all occurrences of a substring with a new substring (cf. CHANGE function).

- TRANS function: Extracts data from a file.

- LEFT and RIGHT functions: These extract substrings from the beginning and end respectively of a string.

- FOLD function: This has been enhanced to provide greater compatibility with other MultiValue systems.

    - If omitted, the fold width now defaults to 25.

    - Fold widths can be specified in a dynamic array.

    - The delimiter can now be specified.

- External functions: In additional to internal and external subroutines, Reality V14.2 allows you to write your own functions. These are similar to external subroutines, but return a value to the calling program and are called in the same way as intrinsic functions. The must be defined in a separately compiled and cataloged program module and declared before use in the calling program. New FUNCTION and DEFFUN statements are now available and the RETURN statement has been enhanced to return a value.

Other Enhancements

TCL

- The stacker mode where reused commands are moved to the top of the stack has been extended to include commands that are re-entered at TCL. See . (Dot - TCL Stacker Recall Command) and SET-STACK.

- TCL macros now combine options on the command line with those specified in the first line of the macro.

- The ACCOUNT-RESTORE, M-A-R and SEL-RESTORE TCL commands now accept a **W** option that specifies that the save is from a case-insensitive database.

DataBasic

- COMPARE statement: This new statement allows you to compare two dynamic arrays.

- PERFORM statement: The performed command can now be a dynamic array that includes responses to input prompts generated by the command.

- DIMENSION and COMMON statements: when declaring a dimensioned array, you can now specify the size using defined symbols instead of literal values.

- Dynamic array functions: New DataBasic intrinsic functions allow you to perform arithmetic, string, character, logical, comparison and string formatting operations on the elements in dynamic arrays.

- New functions: The NO.NEW.FUNCS compatibility switch matrix option allows you to exclude new DataBasic intrinsic functions when compiling, to avoid problems caused by existing arrays having the same names as these functions.

SQL for Reality

Reality SQL/ODBC now complies with ODBC version 2.5 and the ODBC Applications Programming Interface (API) Level 2.

Administration

Reality's command logging features (Audit and Support logs) have been enhanced to give the administrator greater control over what is logged and how the information is presented. For details, refer to the descriptions of the AutditTclLog, SupportTclLog, SizeTclLog and TimeTclLog database configuration parameters.

Installing Updates

- The way in which Reality updates are installed on Windows hosts now works in a similar way to on UNIX. This permits the installation of a single update if necessary without having to install a complete service pack. For details, refer to the Installing Updates section in the *Reality on Windows Installation Guide* and the install_fix host command.

- On UNIX, it is no longer necessary to provide **install_fix** with the full path to the required update or the directory containing the updates.

Documentation

Search Tool

- If the search text contains any punctuation characters, this now automatically searches for the exact phrase.

- If the search text contains dot, hyphen and/or underscore separators, this now searches for all three of these characters. This means that if you have used the wrong separator when searching for a file or command name, etc. you should still find what you are looking for.

Restrictions

This section lists the restrictions that were current when Reality V14.2 was released. For the latest information, refer to the Reality pages on the *Reality website*.

All Versions

- File triggers can currently only be associated with file data sections.
- Shadow database cannot currently use partition databases constructed from standard host files on different file systems (see Types of Database).

AIX

The foreign database files feature is not currently available on AIX.

Linux

The UNIX-Connect Simple File Transfer (SFT) utility is not available on Linux.

On-line Documentation

On Windows 7, Vista, Windows Server 2003 SP1 or XP SP2, if the documentation is installed on the local file system and you are using Internet Explorer, you will receive a number of security warnings regarding active content. These can be avoided by installing the documentation on a web server (recommended), or by selecting the **Allow active content to run in files on My Computer** option (you can find this in **Tools** | **Internet Options...**, on the **Advanced** tab under **Security**).

GUI Administration Tool

- The GUI Administration Tool client is only available for Linux and Windows.
- The GUI Administration Tool will not use any licences in this release. However, Northgate reserves the right to change this in future versions of the Reality product.
- The GUI Administration feature is not currently certified on Windows XP SP2, Server 2003 SP1 or Vista, though this is subject to review. For the latest information, refer to the *Reality website*.

Fault Resolutions

Reality V14.2 includes resolutions of the following faults:

Fault Number	Description
85255	INPUT @(1,1):X,11:'*11' Gives error message 44.
85373	SEARCH, ESEARCH and SSEARCH verbs are not case-insensitive.
84502	Add A*m*,*n* feature to Proc.

Third Party Products

The following third party products are used within Reality:

- GNUmalloc (GNU Software Foundation);
- zlib compression library (GNU Software Foundation).
- DES Encryption library (Eric Young – eay@cryptsoft.com).

The following third party products may be included with Reality (depending on the operating system and the features selected):

- Perl scripting environment (GNU Software Foundation);
- Gzip compression software (GNU Software Foundation);
- GNU C-complier (GNU Software Foundation);
- Gdb Debugger (GNU Software Foundation);
- Adobe Acrobat document reader (Adobe Systems Inc.);
- TomCat web server (Apache Software Foundation).
- Jetty web server (Mort Bay Consulting).