Reality v12.0

Release Information

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Document control

Software Version	Document Status	Document Revision	Issue Date	Reason for Change
v12.0	Published	v0.1	January, 2006	Final draft

Table of Contents

Section 1: Introduction

Reality is a software environment that supports multiple 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 V12.0 for UNIX and Windows. Reality V12.0 adds new features and enhanced compatibility with similar database systems. Faults reported since Production Release of Reality V11.0 have been resolved. See New Features in Reality V12.0 (page 11) and Fault Resolutions (page 18) for more details.

Reality V12.0 is supplied on two CDs. Included on the first CD are:

- 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: Client 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.
- WinSQLM: Client software that assists in creating SQL tables based on existing Reality dictionary definitions.
- RealEdit: A Reality editor that runs on Windows PCs.
- Reality and RealWeb demonstration software.

The second CD contains the Web Services feature (including the Jetty web server).

Note

A third CD 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 NEC representative.

This version of the software supersedes all previously released versions. NEC 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 NEC representative or the NEC web site, www.nec-is.com/reality.

Section 2: Related documents

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.

Section 3: Packaging

All of the software comprising this release is supplied on the installation CDs, with electronic versions of all documents (including this one).

The first installation CD contains the following components.

Software	Version
PDS History Tool	V12.0
Reality	V12.0
User Documentation	V12.0
UNIX-Connect)	V1.4.3
Reality Remote Tape	V12.0
Reality Explorer (client)	V1.0.1
Reality Explorer Help (client)	V1.0
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 (client)	V3.0
RealWeb Servlets (client)	V3.2

WinSQLM (client)	V2.0
Reality Demonstration	V12.0
RealWeb Demonstration	V1.1
WinSNI Configuration Editor (client)	V1.0
RealEdit (client)	V1.1.1
TCP Bridge	V1.0.1

The second installation CD contains the following components.

Software	Version
Web Services	V1.0

The third installation CD (available on request) contains the following components.

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

Section 4: Prerequisites

4.1 Reality on UNIX

One of the following:

- SUN Sparc running Solaris 2.6, 7, 8, 9 or 10.
  IBM P Series (RS 6000), running AIX 5.2.
  PC with Intel Pentium processor or equivalent running Red Hat Linux version 7.2 or 9, or ES/AS versions 2.1, 3 (32- or 64-bit) or 4.
- 128Mb RAM minimum (512Mb recommended), plus 2-6Mb per Reality User. See also Memory on page 7.
- 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).
- NEC Customisation (a CD is available for SUN, for other operating systems, contact NEC).
- C compiler (on Solaris, if a C compiler is not available you can install the GNU C Compiler from the NEC Customisation CD).

4.1.1 UNIX-Connect

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

4.2 Reality on windows

- PC with Intel Pentium processor or equivalent, 200MHz or faster, running Windows NT 4.0 SP3+, 2000 SP1+, Server 2003, XP Home Edition or XP Professional Edition.

Note

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

- 64Mb RAM minimum (128Mb recommended), plus 2-6Mb per Reality User. See also Memory below.
- 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.
- NEC 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.

4.3 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.

4.4 Foreign database support and SQL view

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

4.5 Client components

4.5.1 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 1.2 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.

4.5.2 RealSQL-JDBC driver

- Java Run Time Environment (JRE) version 1.2 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.

4.5.3 RealEdit

- Microsoft Windows NT4.0, 2000, XP (Home or Professional) or Server 2003.
- NEC PCSNI software V2.2 Rev C or later.

4.5.4 RealSQL-ODBC driver

- Microsoft Windows NT4.0 with NT4 Option Pack, 2000, XP (Home or Professional) or Server 2003.
- NEC PCSNI software V2.2 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.

4.5.5 WinSQLM

- Microsoft Windows NT4.0, 2000, XP (Home or Professional) or Server 2003.
- NEC PCSNI software V2.2 Rev C or later.
- 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.

4.5.6 Remote tape server

Any UNIX or Windows system that supports Reality.

4.5.7 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.

4.6 Online documentation

The on-line documentation can be installed on a web or file server, or on individual PCs running Windows NT 4.0, 2000, XP or Server 2003. On Windows systems, 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 (PC only). –or–
- Netscape 7.x or 8.x (PC or UNIX). –or–
- Mozilla 1.5, 1.6 or 1.7 (PC or UNIX). –or–
- Mozilla Firefox 1.0 (PC or UNIX).

Internet Explorer is recommended.

Note

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

4.7 GUI administration tools

4.7.1 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:

4.7.1.1 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.)

Note

Java V1.4.1_02 is not available for Solaris 2.6 and 7.

- 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.

4.7.1.2 Windows

- 500MHz or faster processor.
- Windows XP + SP1, Windows 2000 + SP3 or Windows NT 4.0 + SP6.

Note

The Reality GUI Administration Server is not currently certified on Windows XP SP2, though this is subject to review. For the latest information, refer to the Reality pages on the NEC portal (http://www.nec-is.com/reality).

4.7.2 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:

4.7.2.1 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.

4.7.2.2 Windows

- 500MHz or faster processor.
- Windows XP + SP1, Windows 2000 + SP3 or Windows NT 4.0 + SP6.

Note

The Reality Client Deployment Service is not currently certified on Windows XP SP2, though this is subject to review. For the latest information, refer to the Reality pages on the NEC portal (http://www.nec-is.com/reality).

4.7.3 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).

4.7.4 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:

4.7.4.1 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).

4.7.4.2 Windows

- 500MHz or faster processor.
- Windows NT 4.0 SP6+, 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 or Server 2003 SP1, though this is subject to review. For the latest information, refer to the Reality pages on the NEC portal (www.nec-is.com/reality).

- 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, Netscape 7, Mozilla 1.5 or later, or Mozilla Firefox 1.0 (to display on-line documentation).

Suitable versions of Java are supplied on the CD.

Section 5: New features in Reality v12.0

5.1 Supported environments

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

5.2 Supporting environments

Reality V12.0 adds support for the following platforms:

- Solaris 10.
- AIX 5.2.
- Red Hat Linux ES/AS version 4.
- Red Hat Linux ES/AS version 3 (64-bit).
- Windows XP SP2.
- Windows Server 2003.

Support for AIX 4.3.3 and 5.1 has been discontinued, and only limited support is available for Solaris 2.6, Solaris 7, Windows NT Server, and HP-UX.

Reality client components are no longer supported on Windows 95, Windows 98 and Windows ME. Only limited support is available for Windows NT 4.0.

5.3 Indexing enhancements

5.3.1Index validation

A new TCL command, LIST-INDEXES, allows you to validate Reality index definition items against existing indexes. It also reports any index definitions that do not have corresponding indexes.

5.3.2 Index repair

The DEFINE-INDEX TCL command has a new option (R) that allows you to recreate an index definition from its associated index. This allows you to recover a corrupt index definition, or one that has been deleted in error.

5.3.3 Reality SQL Commands

The Reality SQL command LISTINDEXES has been renamed LIST-SQL-INDEXES to avoid confusion with the new LIST-INDEXES command. Similarly, the SQL command LISTCOLUMNS has been renamed LIST-SQL-COLUMNS.

5.4 CSV file support

This feature allows Reality to read and write host files in comma-separated format. This format is supported by many host applications (for example, Microsoft Excel, Outlook and Access).

A new keyword, CSV, is now recognised by the MAKE-SPECIAL TCL command. This allows you to create a Reality special view of a host file that contains comma-separated values. Once created, a CSV file can be used in the same way as any other Reality file. A new TCL command, CSV-COPY, allows you copy data from a Reality file into a CSV file created in this way.

5.5 WinPrinter support

This feature allows you to set up Reality despoolers on Windows hosts to print using the Windows GDI (Graphical Device Interface). This is a high-level printer-independent interface that translates the print data into a graphical format that can be printed without further processing by the printer.

To use the Windows GDI, you create a SYS despooler in the normal way, but specify winprinter as part of the printer name. See DESPOOLER.CONTROL File Maintenance, Option 2 - Device Name for details.

5.6 DataBasic profiler

The DataBasic Profiler is an optional host utility that allows you to:

- Capture and display the DataBasic call stack for any process.
- View the DataBasic call stack as it changes, with details of the time taken to make each subroutine call.
- Capture a profile of a DataBasic application running on any Reality process, with timings of how long each catalogued subroutine is taking and caller information. If required, profiles can be captured in a graphical format that can be viewed with a third-party graphics tool.

This makes it possible to diagnose problems with ports, and to find out where most time and system resources are spent within a DataBasic application.

Refer to Using the DataBasic Profiler for details.

5.7 XML support

This feature allows DataBasic programmers to extract data from and export data to XML documents.

5.7.1 XML data extraction

Five DataBasic subroutines are provided to extract data from XML documents – you must provide strings containing the XML document and an XML query which specifies the data to be extracted.

5.7.2 XML document generation

A single DataBasic subroutine is provided to generate XML documents. Data is copied from a dynamic array into a skeleton XML document (supplied as a string) containing markers that specify the fields required.

5.8 Web services (optional)

This feature allows DataBasic subroutines to be exposed as Web Services, thus providing a simple mechanism by which non-Reality applications can call DataBasic subroutines. The web services use the industry-standard Simple Object Access Protocol (SOAP) and are defined using the Web Service Definition Language (WSDL). This makes them compatible with the Microsoft .NET development environment, Microsoft Visual Basic for Applications (the macro language used in Microsoft Office applications) and most Java development environments (for example, JBuilder and Eclipse).

Subroutines must be made available through the Reality SSM (System Security Maintenance) utility. A web-based configuration tool allows you to set up the available subroutines as one or more independent web services.

Reality web services run on web servers that support Java servlets and XML.

5.9 Physical back-up and restore

This feature provides a way of making a physical backup of a Reality database without requiring users to log off. A physical backup can be up to three times quicker than a logical save, but normally needs the database to be idle. Reality physical backup and restore uses checkpointing so that the database can be backed up while it is in use.

Two new host commands and six new TCL commands are available to perform fast backup and restore (see Save and Restore for details). In addition, the tlmenu host command has been enhanced to offer physical backup in addition to FILE-SAVE and dbsave.

In Reality V12.0, it is not possible to restore individual files and accounts.

Two locations are supported for storing checkpoint data:

- Space taken from the database's free space table.
- A separate disk partition or host file.

Because of this, Reality's disk requirements may be higher if you intend using physical back-up and restore.

5.10 System alerts

This feature provides various ways of informing operators of events that might need attention. Three ways of doing this are provided: by text messaging, by email and by appending the alert message to a web page; different operators can be notified by the same or different methods. Operators can be notified of daemon log messages at or above a specified level of seriousness, and of user-generated events. System alerts are configured using a host command line utility called real event. This allows the system administrator to specify the destinations of messages sent by the different notification methods and to set up any other parameters (such as the email server address). It is also possible to create user-defined alerts, to enable and disable the available alerts, and to specify days and times of the day when alert messages should be sent, and the recipients to whom they should be sent.

Reality service and system alerts are generated automatically by the system. However, you can also define your own alerts for use within your applications. Once defined, a

user-defined alert can be generated with realevent, or with the ALERT TCL command; this can be used in DataBasic programs and procs. It can also be run from TCL for testing purposes. By embedding user-defined alerts in your applications, you can provide an operator with, for example, timely feedback on the progress of processes that take a long time to complete, and with details of any errors that occur.

Note

Alerts sent by text message must be emailed to an SMTP to SMS gateway, which extracts the text message and forwards it to the recipient. To use text messaging, therefore, you will require a subscription to a suitable gateway.

5.11 Database isolation

This feature makes it possible to run multiple instances of the same version of Reality. Each instance runs completely independently of other instances in much the same way as different versions of Reality.

This has two main advantages:

- Application service providers who host Reality databases for a number of separate customers can run these databases in complete isolation.
- Users on one database are unable to disrupt users on other databases by, for example, leaving a transaction open and performing continuous updates, thus filling the raw log.

Each instance of Reality requires the same amount of memory and disk space as a normal (non-isolated) Reality installation.

Note

Additional instances are licensed separately from the base instance of Reality. If you want to create a new instance, you must purchase the required number of user licences specifically for that instance number. On Reality releases other than the live release, additional instances are restricted to a maximum of eight users in the same way as for the base instance.

Three new host command line utilities are provided to create and configure multiple instances of Reality.

5.12 Reality disaster recovery (optional)

The Reality Disaster Recovery (Reality DR) feature provides a simple resilience facility for Reality databases. It can be used in various ways. For example:

- To provide offsite replication of a standalone system. Reality DR can form part of a configuration that meets the requirements of ISO 17799:2005 Information Security Standard. Refer to the ISO 17799 Directory (www.iso-17799.com/index.htm) for details.

Note

For true disaster recovery, it is recommended that the two systems should at least 10km (6 miles) apart.

To increase the resilience of Reality Failsafe systems by providing a second backup system, which would normally be off site. This has two advantages:

- If the secondary system is taken down for maintenance purposes, you will remain protected against failure of the primary system.
- In a disaster situation where the computer room is destroyed, both the primary and secondary databases may be lost. An off-site backup system ensures that your data remains secure.

In DR operation, the Reality systems take the role of master (this might be a failsafe primary or secondary) and slave (backup). The slave system is kept up to date by means of clean logs copied from the master. If the slave system becomes unavailable (because of a system crash or a broken link), operation of the master continues as before, transfer of the clean logs can resume when the slave again becomes available.

5.13 Frame size on AIX

On AIX, Reality now uses 4Kilobyte frames to improve performance.

5.14 Partition database

Partition databases that are constructed using disk partitions directly are optimised for use on Sun Solaris systems. Reality V12.0 introduces an alternative form of partition database that gives improved performance on other types of hosts (both UNIX/Linux and Windows). It uses a small number of standard host files on different spindles and can be striped by Reality in a similar way to one that uses disk partitions directly.

5.15 MultiValue migration

Reality V12.0 has been further enhanced to improve compatibility with other MultiValue systems.In addition, the following features simplify migration to Reality from other MultiValue systems.

- A MIGRATE.ACCOUNT Utility is available to convert accounts saved from other MultiValue systems to run on Reality.
- Two new TCL commands, ISELECT and ICOUNT, allow you to select and count file items whose index keys meet specified conditions.
- The ACCOUNT-RESTORE TCL command can now restore from mvEnterprise and jBASE tapes.
- The FLOPPYTOTAPE TCL command can now load mvEnterprise and jBASE tape images.
- CONTINUE, EXIT and BREAK keywords are now available in the DataBasic FOR and LOOP statements.
- The DataBasic SENTENCE function now accepts a parameter that allows you to select a particular element from the command line.
- DataBasic READNEXT KEY and READPREV KEY statements for compatibility with mvEnterprise.
- DataBasic EXECUTE statement to execute TCL commands from DataBasic.
- The number of Proc file and select buffers has been increased to 47.

5.16 On-line documentation

5.16.1 Mozilla Firefox support

The on-line documentation can now be viewed in the Mozilla Firefox browser (version 1.0 and later) and in the latest version of Netscape (version 8.0).

5.16.2 Glossary

The glossary can now also be displayed in the navigation pane on the left of the browser window. This allows you to look up terms and abbreviations without navigating away from the current topic.

Section 6: Functionality/Features restrictions

This section lists the restrictions that were current when Reality V12.0 was released. For the latest information, refer to the Reality pages on the NEC portal (www.nec-is.com/reality).

6.1 All versions

File triggers can currently only be associated with file data sections.

6.2 AIX

The foreign database files and SQL-VIEW features are not currently available on AIX.

6.3 Linux

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

6.4 Web services

It is currently recommended that each web service should contain only one DataBasic subroutine. If you have included more than one, in some development environments (for example, Microsoft Office and VB6), you may find that only one can be used.

6.5 On-line documentation

On Windows XP SP2 and Windows Server 2003 SP1, 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).

If the documentation is installed on the local file system and you are using a browser that uses the Gecko rendering engine (Netscape, Mozilla, or Mozilla Firefox), on returning to your search results after viewing another topic, they will be unformatted and none of the links will work. This is a feature of the browser's security model. You can work around this by repeating your search. Alternatively, install the documentation on a web server.

6.6 GUI administration tool

- The GUI Administration Server is not available for Solaris 2.6 and 7.
- 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, NEC reserves the right to change this in future versions of the Reality product.
- When the on-line documentation is viewed in a browser running in the Linux environment, the contents and search tools may not function correctly.

- The GUI Administration feature is not currently certified on Windows XP SP2 or Server 2003 SP1, though this is subject to review. For the latest information, refer to the Reality pages on the NEC portal (www.nec-is.com/reality).

Section 7: Fault resolutions

Reality V12.0 includes resolutions of the following faults:

Fix number	Fault number	Description
0001	49950	Linux: Failsafe link fails when heavily used
0002	49951	Linux: When the failsafe link fails all primary processes lock up
0004	84737	Allow different Item lock models.
0005	49955	After TL-REDUAL completes TL-STATUS continues to show status of redual.
0006	84741	Enhance cursor handling of Lear Siegler terminals to allow addressing beyond column 70 with a QUME terminal.
0007	49956	Enhance error reporting for faulty F conversions when called from DataBasic.
0008	84742	Ensure that files are closed correctly when returning from a PERFORM statement.
0009	49845	Allow SP-QUEUEHOLD (SP-JOBS option 19) to re-queue a KILLED Hold file.
0010	49957	Stop such verbose logging of connection failures and rladm into daemon.log.

0011	84748	Cannot change priority on host systems other than SVr4 based Unix or Windows.
0012	49958	ISTAT mis-reported number of secondary frames.
0013	84743	Enhance error reporting when index updates fail.
0014	49960	Correct possible corruption of workspace 1 to 15 by compilation of DataBasic on byte reversed systems.
0016	49951	When the failsafe link fails all primary processes lock up.
0017	NA	Implement Terminal Independence in RPL – RPQ feature R205.
0018	84751, 84762	Ensure that multiple fixes can be installed using install_fix.
0019	84763	Correct RPL BUFFER OVERFLOW when processing Tfile translates.
0020	84766	Increase the number of PROC select buffers from 10 to 47 and file from 20 to 47.
0021	84767	Stop infinite loop when LISTing file with mix of A and F conversions and S, summation conversion.
0022	NA	Indexing Enhancements: new support tools LIST-INDEXES and DEFINE-INDEX (R).

0023	84770	Reality generates confusing error message when trying to restore a JBase tape with duplicate MD entries.
0024	84757	Caching open DIR-VIEW items causes synchronisation problems on Windows.
0025	49964	Allow DIR-VIEW to work if given a quoted path with spaces.
0026	49849	Enhance the logging of DataBasic Programs and Subroutines, to allow profiling.
0027	84771	Add J option to ACCOUNT-RESTORE to allow jBASE tapes to be restored on Reality. Allows overwrite of non-dptr MD items by CREATE-FILE.
0028	84769	Add J option to FLOPPYTOTAPE to allow jBase tape images to be converted to Reality tape images.
0029	84768	Enhance TAPETOFLOPPY to convert Reality tape blocks to pseudo floppy blocks of 500 bytes.
0030	84490	Add CONTINUE, BREAK & EXIT syntax to LOOP processing in DataBasic.
0031	84490	Add CONTINUE, BREAK & EXIT, RTNLIST to EXECUTE, ON or TO to WRITES & EQU nn to @(-n) to DataBasic compiler.
0032	84779	Add the @ conversion to F and A codes.
0033	84780	Correct mkdbase -r operations.

0034	84783	Stop core dumps during terminal IO.
0035	84785	Trap rather than abort on additional invalid internal date conversions.
0036	84753, 84787	Failsafe link fails unexpectedly on Windows systems.
0037	84789, 84790	Enhance MIGRATE.ACCOUNT to check for account reload and process jBASE data.
0038	84794	Stop RPL Buffer overflow messages.
0039	NA	Patch to supply CSV file access feature.
0040	84788	AFS expands files to above 16 million groups, which can then not be saved/restored.
0041	NA	WinPrinter support.
0042	84796	Can now TANDEM and take control of target without target keyboard input.
0043	49971	Cannot logon to admin server on AIX. Admin server fails when changing logging level.
0044	49972	ISTAT (U – N command generates wrong results when used with AFS files.
0045	84803	Add E and F options to FLOPPYTOTAPE to allow mvEnterprise tape images to be converted to Reality tape images.

0046	84804	Enhance RESTORE to allow mvEnterprise G, P, B, F and L segments to be restored onto Reality.
0047	49952	Remote file write errors are not reported back to user.
0048	84781	tlrestore does not notice when clean log is corrupt.
0049	NA	XML Parser and Generator feature.
0050	NA	DataBasic API for XML Parser and Generator feature.
0051	84806	SQL server aborts at 3354,694 with “Address compatibilty error” when inserting into an exploded multi-value column. Application sees -virtual circuit reset by remote side error.
0052	49978	Reality TIME on AIX ignores actual timezone during summer daylight saving time.
0053	NA	Enable XML Parser and Generator feature.
0054	84809	Allow PQN L command to support both 'text' and "text".
0056	49945, 49979	Ensure that mkdbase can have an alternate drive letter specified and that if icon is changed on folder that permission denied is not reported.
0057	49980	Installing Reality on RedHat ES4 – central daemon fails to start.

0058	49974	Stop touch warnings during on site build on Linux Redhat 7.2/ES2.1.
0059	49974	Stop touch warnings during on site build on Linux Redhat 9/ES and AS 3.
0060	49982	TANDEM to background Reality process can cause it to log off.
0061	84813	Modify modes to allow the addition of an optional field number to the DataBasic SENTENCE function.
0062	84814	Correct the operation of the DELETESEQ statement in mvEnterprise mode.
0063	84815	Implement new set position/set limit features for MV Enterprise and add ISELECT and ICOUNT verbs.
0064	84817	Allow MATREAD and MATWRITE to work with arrays and vectors.
0065	49981	Basic profiler problems – name clash with perform and program name, truss output when STOP in subroutine, handling of quotes in PERFORM string.
0067	84818	Correct transaction handling when logging off.
0068	84820	Allow a simple form of MultiValue mapping for the @(-n) DataBasic function.
0069	84813, 84821	Enhance SENTENCE function and EXECUTE statement. Add new internal

		literals @WHO and @USERNO. Add STACKING as a keyword.
0070	84822	Add virtual handling to allow Reality to process the mvEnterprise READ{NEXT/PREV} KEY code.
0071	84824	Ensure tlmenu can communicate with Reality V10.0.
0072	49638, 84760	SQL-VIEW: allow no data columns, support "*" in column list.
0073	84827	Allow SSELECT to work with active exploded lists.
0074	84810	ISTAT gives incorrect item count. ISTAT (U now shows progress, has correct total size for large files, has h command for changing hash type.
0077	84823	RntsNetSend() failures, error 48004.
0078	84783	Core dumps during write buffering.
0080	84827, 84815	Enhance ISELECT and SSELECT to handle exploded and non-exploded terms.
0081	84829, 84830	Correct handling of security profiles and auto creation of tables via SQLM.
0082	49986	SELECT-INDEX is very slow for complex index keys.
	49943	Documentation does not display correctly in Linux browser.

0083	84828	Correct handling of missing translate file during complex index updates.
0084	84800	Stop core dumps occuring under certain conditions when reading items.
0085	84834	Add the 'M' and 'U' options to FLOPPYTOTAPE to allow mvEnterprise and jBase multiple images to be converted to Reality images.
0086	84835	Allow restore of jBase account-saves.
0087	84833	Ensure BST is handled correctly on LINUX.
0088	49990	Remaking a pseudo partition database enables striping which adversely affects performance.
0089	49993, 49994	Fix pdump group command for AFS files. Fix realdbck: excessive line feeds, ticking off overflow and OG items in AFS files.
0090	NA	PF6.4 Reality Disaster Recovery Phase 1
0091	4497, 84808	Allow PROC "T" command with no elements, also allow "T," in addition to "T ".
0092	84841	Enhance performance of DataBasic MATREAD code.
0093	49991	TL-LISTFILES does not display log files in error (no OS level file).

0094	49990	Fix creating of pseudo partition database (mkdbase -P).
0095	84839, 84840	Typeahead is not discarded when switching from view to feed mode in TANDEM. Entering F for feed in TANDEM menu requires terminal io on target for synchronisation.
0096	84846	Correct handling of FCBs by index verbs.
0097	84848	Stop core dumps when attempting DDA connections (remlog).
0098	84816	Enhance MIGRATE.ACCOUNT to handle mvEnterprise accounts.
0099	84849	Ensure that SQL optimisation does not incorrectly filter rows of data when optimising OR and AND clauses.
0100	84851	Some multi-table SQL queries fail to return any data. Problem is related to the order in which the tables are specified in the query.
0101	84851	Some multi-table SQL queries fail to return any data. Problem related to order in which tables are specified. Enhanced version of fix 100.
0102	84850	SQL optimiser problems with tables with multi-part item-ids. Caused queries to wrongly return no data.
0103	84845	Stop core dumps or unexpected errors when logging off.

0104	84852	SQL performed poorly compared to V5 on queries involving many exploded multi-values or sub-values.
0105	84819, 84855	Allow DataBasic Profiler to track calls to subroutines cataloged by a different name.
0106	84836	Clean log visible and binary files can fail to be linked when created on failsafe secondary, causing restore process to fail.
0107	49997	Heavy tracing on Windows telnet session hangs Reality when window hidden.
0108	49999	CSV-COPY did not copy items to CSV filenames of form DICT,DATA.
0109	84857, 84858	Cannot access files that have be resized with RESIZE-FILE.
0110	90005, 84859	Stop ALLOW-TANDEM from terminating a tandem session, also stop port dropping into debugger.
0111	84860	Correct NEC supplied basic emulation of uxer exit U02A2, suppress CR.
0112	84862	Reality DR daemon on Solaris leaves ports in a CLOSE_WAIT state.
0113	90020	realcip can fail to open clean log on failsafe secondary causing it to exit.
0114	84856	Fixes a SIGSEGV abort in the SQL Server – occurs in Frame 7 called from 3329,105. Same problem can

		also manifest as erroneous Table Not Found errors.
0115	84870, 84874	Tandem target buffers input when in feed mode.
0116	84871	Despooling to net printers is slow.
0117	84869	SYSTEM (6) returns a line count one higher than it should be after HEADING has been invoked in the generation of a hold job in DataBasic.
0118	84864	SQL-VIEW - Convert empty attributes to SQL NULLs in numeric columns.
0119	90028	Enable more than 22 database fixes to be loaded.
0120	84877	Ensure another tlmenu process cannot interfere with shadow database restore.
0121	84865	Allow contexts to be released after a NULL perform.
0122	84880	Failsafe primary hangs when secondary connection is lost.
0123	84883	Realcip can fail RCEAE_LOCK_FAIL on Failsafe secondary.
0124	NA	Diagnostic fix for Failsafe link failure problems.
0125	84884	Enhance logging to catch autoswitch failures.

0126	84890	SQL SELECTs sometimes fail reporting - next object link is void.
0127	84885, 90052	Fixes aborts related to numeric sorts and correlated subqueries in SQL.

Section 8: Third-party products

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

- 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)

The following third-party products are used within Reality:

- GNUmalloc (GNU Software Foundation)
- Zlib compression library (GNU Software Foundation).


About NEC Software Solutions
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