NEC

Reality v15.3

Release Information

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Document control

Software Version	Document Status	Document Revision	Issue Date	Reason for Change
v15.3	Published	v0.1	09/09/2022	Final draft

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Section 1: 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 V15.3 for UNIX and Windows. Reality V15.3 adds new features and enhanced compatibility with similar database systems. Faults reported since the production release of Reality V15.2 have been resolved. See New features in Reality V15.3 and Fault Resolutions for more details.

Reality V15.3 is delivered as a Service Pack.

1.1 Retirement notice

This version of the software supersedes all previously released versions. NEC Software Solutions 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 Software Solutions representative or the Reality website.

1.2 Backwards compatibility

NEC Software Solutions attempts 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.

1.3 Deliverables

Reality V15.3 is delivered as a Service Pack.

1.4 Reality website

Visit the Reality website for:

- Product information.
- Latest updates.
- Latest documentation.

  Reality is supplied with comprehensive Online Documentation for viewing in a web browser. Refer to the Document Directory in the online documentation for details.

  Note

  The documentation is subject to change and it is essential that you have the latest version. You should regularly access this from the Reality website.

  For any suggestions or improvements to this documentation, please contact your NEC Helpdesk.

- Enquiries.

Section 2: Prerequisites

2.1 Reality on UNIX

- UNIX 64-bit architecture:
    - SUN SPARC running Solaris 11 or Solaris 10
    - IBM pSeries running AIX 7 or AIX 6
- Linux 64-bit architecture on Intel x64:
    - Red Hat ES 7 or 6 commercial release
    - CentOS 7 or 6 open software
- 128 MB RAM minimum (512 Mb recommended), plus 2-6 MB per Reality User. See also Memory (page 8).
- 1 GB of available space to accommodate set up (actual hard disk used once installed will be between 220 MB and about 350 MB, 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 in the Reality ISO/DVD image file).
- NEC Software Solutions Customisation (a download is available for SUN; for other operating systems, contact NEC Software Solutions).
- C compiler (on Solaris, if a C compiler is not available you can install the GNU C Compiler from the NEC Software Solutions Customisation download).

2.2 UNIX-Connect

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

2.3 Reality on Windows

- PC with Intel x86/x64 processor or equivalent, 1 GHz or faster:
    - Windows 10 (64-bit only)
    - Windows 7
    - Windows Server 2012
    - Windows Server 2008
- The minimum memory as required for the base Windows release, plus 2-6 Mb per Reality user. (See also Memory (page 8).)
- Up to 1.5 GB of available disk space to accommodate setup (actual hard disk used once installed will be between 150 MB and about 350 MB for 32-bit and up to 500 MB for 64-bit deliveries, 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.
- Reality backup and restore is supported on 4 mm, 8 mm and DLT/LTO tape units.

- Using at least a dual processor system is highly recommended for more than a small user count in order to run on recent Windows releases.

- NEC Software Solutions 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.

- NEC Software Solutions recommend Microsoft's A Guide to Assessing Windows Server Licensing and their prevailing licensing policy is used to determine what is required for end user deployment.

2.4 Memory

Reality memory usage is difficult to predict, but as a rough sizing guide use 128 Mb for the system and then 2 to 6 Mb 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.

2.5 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

- PC with Intel x86/x64 processor or equivalent, 1 GHz or faster, with 1 GB (for 32-bit) or 2 GB (for 64-bit) of memory, running Windows 10, Windows 7, Windows Server 2012, Windows Server 2008 (32-bit or 64-bit).

- 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).

2.6 RealEdit

- PC with Intel x86/x64 processor or equivalent, 1 GHz or faster, with 1 GB (for 32-bit) or 2 GB (for 64-bit) of memory, running Windows 10, Windows 7, Windows Server 2012,

- Windows Server 2008 (32-bit or 64-bit).

- NEC Software Solutions PCSNI software V2.3.1 Rev C or later.

2.7 JReal

Java Run Time Environment (JRE) version 1.4.1_02 or above. If this is not available, it can be downloaded from:
http://www.oracle.com/technetwork/java/javase/downloads/index.html

2.8 RealSQL-ODBC Driver

- PC with Intel x86/x64 processor or equivalent, 1 GHz or faster, with 1 GB (for 32-bit) or 2 GB (for 64-bit) of memory, running Windows 10, Windows 7, Windows Server 2012, Windows Server 2008 (32-bit or 64-bit).

- NEC Software Solutions 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 need UNIXConnect.

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.

2.9 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 http://www.oracle.com/technetwork/java/javase/downloads/index.html.

- If you are connecting to a Reality database on a UNIX host, the host will need UNIXConnect.

2.9 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 http://www.oracle.com/technetwork/java/javase/downloads/index.html.

- If you are connecting to a Reality database on a UNIX host, the host will need UNIXConnect.

2.10 Remote Tape Server

- Any UNIX or Windows system that supports Reality.

Note

The Reality Database product does not have to be loaded onto the Server with the tape devices, only the Remote Tape Server component.

2.11 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.

- 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.

2.12 Remote Basic ActiveX Control

- PC with Intel x86/x64 processor or equivalent, 1 GHz or faster, with 1 GB (for 32-bit) or 2 GB (for 64-bit) of memory, running Windows 10, Windows 7, Windows Server 2012, Windows Server 2008 (32-bit or 64-bit).

- PCSNI (client) software V2.3.1 Rev C or later.

2.13 Online Documentation

The online documentation is intended to be installed on a web server. If necessary, it can also be installed on file server, or on individual PCs running Windows or Linux. It can also be viewed from the Reality ISO/DVD image file.

The online documentation is compatible with most contemporary web browsers (those listed below are suitable). However, be aware that browsers can change over time as to what they allow access to, in terms of local/remote drives and/or websites, so browser settings may need to be checked. If a particular browser prevents access, please try another browser:

- Mozilla Firefox

- Safari

- Google Chrome

Section 3: New features in Reality V15.3

Reality V15.3 contains a number of new features since the release of V15.2.

Some of the new features have come from the user feedback that we receive during the life of a release, so please continue to use the 'Comment on this topic' links at the top and bottom of each topic in the Online Documentation, or visit the Reality website, in order to help us to improve your Reality.

Note

The online documentation includes all the updates till fix version V15.1.0.0420.

3.1 Database Configuration Parameters

A new PlidByPeer feature has been added to Reality and is only available on UNIX and Linux. It enables the use of session licences on SSH connections (that is, more than one connection per licence).

Y Reality generates a PLId based on the TCP/IP address of the peer, with the format: INET-IPaddress-TTY

For example: INET-172.16.100.72-TTY

N Reality generates a PLId based on the Reality serial number.

Default: N

3.2 tlmenu Menus and Procedures

Once the database has been identified, tlmenu displays a main menu entitled Administration Options, similar to that shown below.

```
 Transaction Logging Menu System         Fri Jan 12 10:25:12 2016
 Database name : drtestslv               Host name : gate10
 State       : Transaction Handling/Logging enabled
      Administration Options
      =====================

      1. Routine Maintenance
      2. Configuration and Setup
      3. Database Recovery
      4. Miscellaneous
      5. Disaster Recovery Configuration and Maintenance
      6. Clean Log Export Configuration and Maintenance
      S. Show Logging Status (from any menu)

      Enter option (1-6,S) :
```

Selection of each main menu option displays a sub-menu with another set of options. The sub-menu displayed varies according to the option selected and whether Shadow Database or FailSafe is being supported.

Note

Option 5 (Disaster Recovery Configuration and Maintenance) is available only if you have purchased the optional Disaster Recovery feature.

tlmenu is sensitive to enhancement keys. In the above mentioned Administration Options, the Clean Log Export Configuration and Maintenance option is at position 6 as a Disaster Recovery Configuration and Maintenance option is also present.

3.3 Clean Log Export Option

A new clean log export option has been added. Clean log export option is used to hold status information which can be displayed from the **tlmenu**. This is done by going to TCL in the SYSMAN account in the relevant database(s).

> CREATE-FILE CLOG.EXPORT (I

> Account name:SYSFILES

The filters must be placed here to include or exclude the Account or Files. The filter can be given any name.

Use **tlmenu** for the relevant database. The Clean Log Export Configuration and Maintenance option in the **tlmenu** displays the following sub-menu:

```
Transaction Logging Menu System        Fri Jan 12 10:25:12 2016

Transaction Logging Menu System           Mon Jun 20 2022

Database name : ace.tester              Host name : hempol01

State       : Transaction Handling/Logging enabled

   Clean Log Export Configuration and Maintenance

   =================================================


   1. Configure/Reconfigure Clean Log Export

   2. Start Clean Log Export

   3. Stop Clean Log Export

   4. Stop Clean Log Export on next switch

   S. Show Clean Log Export Status



   Enter option (1-5,S) :
```

Option 1 on the new clog export option is for configuration tlmenu.

```
      Clean Log Export Configuration

   =================================================


   1. Export folder: /real0/clogs/ace.tester/export

   2. Filter name: NONE

   3. Include system accounts: N
```

Export folder holds the name of the directory which will hold the exported data - this may be a mounted disk (in the case of a failsafe pair, a disk should be mounted that both machines can access).

Filter name holds the Filter name if filter is required.

Include system accounts may hold Y or N (Y will include data held in SYSMAN, SYSFILES and SYSPROG) - Generally such data may be excluded.

3.4 SP-SUMMARY and Related Procedures

A new SP-SUMMARY verb has been added to summarise formqueue contents and statuses.

This topic describes how to use SP-SUMMARY and its associated commands to summarise the formqueues contents and statuses. The following action codes and associated TCL commands are described.

Action Code	Action	Equivalent TCL command
Action Code 1	Switch View	No equivalent TCL Command
Action Code 2	SP-STATUS	SP-STATUS
Action Code 3	SP-JOBS	SP-JOBS
Action Code 4	Reset Selection	No equivalent TCL Command

Note

Action Code 4 (Reset Selection) is available only from the alternate Form Queue Status Summary screen).

3.4.1 Action Code 1 Switch View

Switches the display to the alternative view showing a summary of the statuses for each formqueue similar to the following:

```
13:52:42 30 Apr 2020          2 Print Jobs          Page 1/ 1


 Queue Name        Status        Number .... Size .... .... Copies ....


                            Jobs Total Printed  Total  Printed




 STANDARD          Hold            2    3     0      2      0




 1. Switch view   2. SP-STATUS   3. SP-JOBS    4. Reset     99. Exit


 Enter action code / Option (P# / Q queuename)
```

This alternate screen displays a list of current formqueue names with a breakdown of their jobs summarised by status, together with their total number of print jobs and totals for their sizes and copies. At the bottom of the screen, five action codes are displayed. Action codes 2 and 3 correspond to the equivalent TCL commands that perform the same function.

Note

This screen only shows the status of queues in the Reality environment.

3.4.2 Action Code 2 SP-STATUS and SP-STATUS

Monitors and maintains the Spooler's formqueues.

3.4.3 Action Code 3 SP-JOBS and SP-JOBS

Displays and maintains print jobs in the Spooler's formqueues.

3.4.4 Action Code 4 Reset Selection

Resets the screen so that it displays summarised details for all formqueues. This may be used after a Q option has been entered at the prompt:

Enter Action Code / Option (P# / Q queuename)

That restricts the display to a single formqueue.

3.5 realevent

A new configuration parameter added.

Syntax elements

Param	Specifies the configuration parameter to be set or cleared. Must be one of the following.
Htmltemplate	The path to an HTML message template.

In addition two new Notifiers have been added

notificationMethod	The notification method to be configured. One of:
	htmle
	Similar to html but adds a '**Number:** ' field containing a unique ascending identifier based on the date/time. The type is 'html'.
	Item
	Notifies by creating a file for each notification in the directory with a prefix specified by the recipient. If no prefix is specified it defaults to 'files/event.'
	The filename is suffixed with a unique ascending identifier based on the date/time. This same identifier is included in the item as an additional a '**Number:** ' field.

3.6 NEW.LISTVERBS

A new verb has been added which provides an improved and more descriptive layout of details than the original LISTVERBS verb.

Command class

Proc.

Syntax

NEW.LISTVERBS {(options}

Options

Option	Description
N	Suppresses automatic paging (No Page).
P	Sends output to printer assigned to your port (Printer).
G	Only shows entries in the GLOBAL MD.
A	Only shows entries in the users alternative MD.
M	Only shows entries in the user's (local) MD.
X	Shows all items in the MD rather than just verbs. (This a debugging option.)

3.7 LISTVERBS

A new option R has been added to the LISTVERBS verb.

Option

Option	Description
R	Calls a revised version of LISTVERBS, NEW.LISTVERBS.

3.8 PH-MONITOR

A new verb has been added that monitors the Terminal Independent Process Handler (TIPH) process and displays the latest output lines of a specified TIPH port.

Important

The M option of PH-START must be used for this verb to work on Microsoft Windows systems.

Syntax

PH-MONITOR portNo {lines}

Syntax elements

Option	Description
portNo	The port number of the TIPH to display the output from.
lines	The number of lines to display from the end of the TIPH output. If not specified, the default is the last 10 lines.

3.9 PH-START

A new option M has been added to the PH-START verb.

Option

Option	Description
M	Enables a monitoring tag in TIPH output — required to work on Microsoft Windows.

3.10 LISTFILES

A new option has been added to LISTFILES verb.

Option

Option	Description
V{limit	Sort the output by the descending total size of each file. An optional limit may be specified to restrict the output to files with a total size of over that value.

3.11 Using the GSSM Command

A new verb GSSM has been added. GSSM extends the capabilities of SSM to allow you to create and update multiple network, user, and security profiles at the same time, based on a new or existing item. The list of profiles to create or update can be provided by (all or part of) an active SELECT list, or the list can be created on the fly. GSSM uses the existing SSM screens for NETWORK, USERS, and SECURITY to modify an existing source item or create a new one.

Syntax

GSSM {?} item ([N ‖ U ‖ S] {A}{C}{M}

Syntax elements

Syntax element	Description
?	Shows the usage details.
item	The item-id of a source item to be used as the basis for creating or updating profiles. This can be an existing item in the NETWORK, USERS, or SECURITY file (as appropriate), or it can be created on the fly by the C option. There are restrictions on the existing items than can be used as source items.
M	Applies to network profiles in the NETWORK file. When using an existing profile, the Location Description and CCI fields cannot be modified. The following NETWORK items are reserved cannot be used as the source item: DEFAULT.
U	Applies to user profiles in the USERS file. When using an existing profile, the Description and Password fields cannot be modified. The following USER items are reserved cannot be used as the source item: DEFAULT, DSPMON, FILEDSP, NETDSP, REMFS, RLTYXDSP, SQLDEMO, SYSMAN and TAPEDSP.
S	Applies to security profiles in the SECURITY file. The following SECURITY items are reserved cannot be used as the source item: DEFAULT, DEFAULT.EXPLORER, DEFAULT.HARNESS, DEFAULT.REALWEB, DEFAULT.WEBSERVICE, REMFS, SYSMAN, SYSMAN.EXPLORER and TL.SECURITY
A	Adds any items from the select list that do not already exist in the relevant file. If this option is absent, only items in the select list that already exist in the file are updated.
C	Allows the creation of a new source item if it does not already exist in the relevant file.
M	Allows modification of the active select list of items, or creation of a new select list if one is not active (see list maintenance details below). The command validates that each item already exists in the relevant file before adding it to the list, unless the A option is also being used.

Restrictions

Can only be run from the SYSMAN account.

Comments

One of the options N, U, or S must be specified.

Newly-created items based on the source item will use their id as the description rather than the source item's description.

If no changes are made to an existing source item using either EX or FI, the items in the active select list will not be changed and will report "No changes made."

If the existing source item is deleted using FD or a new item is abandoned using EX, the items in the active select list will not be changed and will report "'<itemid>' has been deleted."

3.12 List maintenance

The M option allows the entries in an active selection list to be modified or, if no list is active, create a new list of items.

3.13 File Triggers

Additional trigger types have been added: PRE-WRITE, POST-WRITE, PRE-DELETE or POST-DELETE, PRE-READ or POST-READ, PRE-CLEAR-FILE or POST-CLEAR-FILE, PRE- DELETE-FILE or POST-DELETE-FILE.

3.14 CREATE-TRIGGER

Syntax

CREATE-TRIGGER file-specifier trigger-name trigger-type

Syntax elements

Syntac element	Description
trigger-type	The type of trigger - one of the following:
	WRITE or PRE-WRITE
	Runs the trigger routine before writing a file item.
	POST-WRITE
	Runs the trigger routine after writing a file item.
	READ or PRE-READ
	Runs the trigger routine before reading an item from the file.
	POST-READ
	Runs the trigger routine after reading an item from the file.
	CLEAR or PRE-CLEAR-FILE
	Runs the trigger routine before a CLEAR-FILE operation on a file data section.
	POST-CLEAR-FILE
	Runs the trigger routine after a CLEAR-FILE operation on a file data section.
	DELETE-FILE or PRE-DELETE-FILE

Syntac element	Description
	Runs the trigger routine before a DELETE-FILE operation on a file dictionary or data section.
	POST-DELETE-FILE
	Runs the trigger routine after a DELETE-FILE operation on a file dictionary or data section.
	DELETE or PRE-DELETE
	Run the trigger routine before deleting an item from the file.
	POST-DELETE
	Run the trigger routine after deleting an item from the file.

3.15 DELETE-TRIGGER

Syntax

DELETE-TRIGGER file-specifier[trigger-typell*]

Syntax elements

Syntax element	Description
file-specifier	is the name of the file with which the trigger is associated.
Trigger-type	The type of trigger: WRITE or PRE-WRITE, POST-WRITE, DELETE or PRE-DELETE, POST-DELETE, READ or PRE-READ, POST-READ, CLEAR- FILE or PRE-CLEAR-FILE, POST-CLEAR-FILE, DELETE-FILE or PRE- DELETE-FILE, POST-DELETE-FILE.

Asterisk * specifies all triggers.

Note

Many of the keywords have synonyms.

3.16 ACCESS Function

ACCESS(30)

For each of the different calling environments, ACCESS(30) returns a number associated with the command or reason for entry:

Environment	ACCESS(23)	ACCESS(30)	Calling Sub-environment
Trigger	1	0	PRE WRITE trigger.
		1	POST WRITE trigger.
		2	PRE DELETE trigger.
		3	POST DELETE trigger.
		4	PRE READ trigger
		5	POST READ trigger
		6	PRE CLEAR FILE trigger.

		7	POST CLEAR FILE trigger.
		8	PRE DELETE FILE trigger.
		9	POST DELETE FILE trigger.
Conversion	3	0	CALL conversion code.
		1	B conversion code.
		2	User-defined User Exit.

3.17 TIDYPF

Displays saved lists and cataloged items associated with accounts, and optionally removes them for accounts that no longer exist.

Syntax

TIDYPF {account-name} {(options}

Syntax elements

account-name   The name of a single account. Alternatively, a list of accounts can be

supplied from an active select list.

If no account name is supplied, and there is no active select list, the default is to show all saved lists and cataloged items for all non-existent accounts.

Options

Option	Description
L	Considers only saved lists.
C	Considers only cataloged items.
N	Suppresses automatic pagination.
R	Removes items when prompted to confirm. This works only if a single non- existent account is specified; otherwise, this option is ignored.
D	Does not show any details and does not prompt for confirmation. Each item that is deleted is represented by a dot character. This can only be used in conjunction with the R option.
E	Include existing accounts, to produce an output similar to LISTPF. Nothing is removed (the R option is ignored if present).
A	Produces an alternative view of the items.

Restrictions

Only available in the SYSMAN account.

3.18 DELETE-ACCOUNT

A new option has been added to DELETE-ACCOUNT verb.

Options

Option	Description
C	Cleans up (removes) the deleted account's saved lists and catalogued items when prompted to confirm. This option has the same effect as the TIDYPF (R command.

3.19 XDT

A new verb XDT has been added which displays dates and times converted between internal and external formats.

Syntax

XDT {value} {(options)}

Options

Option	Description
A	Uses an alternative display format. Times are displayed in 12-hour format and dates with 2-digit years. (The defaults are 24-hour times and 4-digit years.).
I	Inhibits the prompt for a date/time value if none is specified.

Operation

The command attempts to determine the type of value supplied from its format. If no value is supplied, the default is to use the current date and time and prompt for a value. If the value supplied is ambiguous then both time and date results are displayed.

Comments

The date format is recognised and displayed using the current DATE-FORMAT setting. The use of full stops in times is determined by the current setting of the ALT.MT environment option.

3.20 LIST-TABLE

LIST-TABLE is a new English reference command added which generates a formatted listing of the contents of a file based on the selection criteria entered in the same way as LIST, but tabulated in a similar way to an SQL SELECT statement, and without pagination.

Syntax

LIST-TABLE file-specifier {item-list} {selection-criteria} {USING file-specifier} {sort- criteria} {output-specification} {format-specification} {macro-call} {(options)}

Refer to Sentence Structure for descriptions of these parameters and the standard options.

Special Options

Option	Description
S	Displays a summary at the end of the listing.

Comments

As the width of the columns cannot be determined until all the data has been processed, large data sets will take longer to display.

3.21 SORT-TABLE

SORT-TABLE is a new English reference command which generates a formatted listing of the contents of a file based on the selection criteria entered in the same way as SORT, but tabulated in a similar way to an SQL SELECT statement, and without pagination.

Syntax

SORT-TABLE file-specifier {item-list} {selection-criteria} {USING file-specifier} {sort-criteria} {output-specification} {format-specification} {macro-call} {(options}

Refer to Sentence Structure for descriptions of these parameters and the standard options.

Special Options

Option	Description
S	Displays a summary at the end of the listing.

Comments

As the width of the columns cannot be determined until all the data has been processed, large data sets will take longer to display.

3.22 EESEARCH

EESEARCH is a new English reference command which searches a single file, a list of files, or all files in current account for specified character strings.

Syntax

EESEARCH {filename}{(options}

Syntax elements

Option	Description
filename	This is the file name to be searched. An asterisk can be used to signify all accounts. If a select list is active, the filename is not necessary and is ignored. If the file name is omitted and no select list is active then a No items present error is generated.

Prompts

After the sentence is entered, the processor prompts:

STRING:

Enter a character string and press RETURN. The prompt is repeated until only RETURN is pressed. The total of all character strings entered can be up to 500 characters.

Double quotes should not be entered.

Options

Option	Description
A	ANDs string together. Items must contain all specified strings.
F	Includes the item-id in the search.
N	Selects only those items that do not contain the specified string(s).

Option	Description
O	Sorts the resulting matched items in a file alphabetically. Searching large files will slow the process if this option is used.
R	Suppresses the No items present message that is generated if no items are selected.
U	Specifies that case is significant when comparing strings.
W	Specifies that case should be ignored when comparing strings.

Comments

As the search can involve a large amount of data and/or items, the user has a number of opportunities to abort sections of the search using certain keystrokes:

Control-X	Aborts the search and immediately returns to TCL.
Control-Y	Aborts the search of the current file data section and begins searching the next data section.

The process checks for the use of selected keystrokes before processing a file, and after each batch of 500 items in the file.

The name of the file and data section currently being processed is displayed to provide an indication of the progress.

DataBasic object code is not searched.

Case sensitivity

If neither U nor W is specified, the current data case setting (set with the DATA.CC environment option or the CASE TCL command) is used. See Case Sensitivity for more details.

If both U and W are specified an error message is displayed and no list is generated. The differences between similar verbs are shown below:

FIND	Locates files with an item ID of the required field.
ESEARCH	Locates an item within the named file that contains the given string.
EESEARCH	Will locate items with the required ID or any items which contain the given string.

3.23 GENML, SGENML

Syntax

GENML file-specifier {item-list} {selection-criteria} {USING file-specifier} {sort-criteria}

{output-specification} {format-specification} {macro-call} {(options}

SGENML file-specifier {item-list} {selection-criteria} {USING file-specifier} {sort-criteria}

{output-specification} {format-specification} {macro-call} {(options}

Options

Option	Description
F	Defines items as described below.

Option	Description
P	Sends the listing to the printer. You will not be prompted for an output file or item.
T	Sends the output to the terminal. You will not be prompted for an output file or item.
W	Requests the output type for the results. This can be HTML (the default if none is given), JSON or XML.
	If the X option is specified, the following prompt is displayed: Conversion Type:
	The valid responses are HTML, JSON, or XML. If you simply press RETURN, the default of HTML is used. If an invalid type is given, the message, Item not on file error is displayed and the type is requested again

Operation

The F option uses a template item containing placeholders that will be replaced by the relevant values in the columns from the data. Each row of data will create an item in the specified file or if the output is to the screen or printer, a continuous listing. This overrides the X option and the supply of a template file and item is mandatory. This allows the user more detailed formatting of the generated data.

The template item uses placeholders to indicate where values from a row of data will appear. The placeholders are formatted as <%n%> where n is the number of the column to show the value from. For example, if a row of data consists of 123 VM ABC VM 456 and the template contains <%3%>~<%2%>~<%1%>, the resulting data will be 456~ABC~123. Any placeholders that are greater than the maximum number of columns in the data will not be changed.

If the output is to a file, the requested output item id will be used to create unique item ids in the file. The entered value will generate an id consisting of the value from the first column of a row of data suffixed with a dot then the entered id. For example, if the value in the first column contains 123 and the entered id is ABC then the resulting id of 123.ABC will be generated. A supplied id containing an asterisk signifies the position of the first columns value in the generated id. For example, an entered id of ABC-*-DEF would result in an id of ABC-123-DEF being used. The asterisk can be used any number of times and each occurrence will be replaced with the first columns value.

3.24 SLS

Removes redundant data from various system logs, with optional reporting.

Syntax

SLS log[lower-date{,upper-date} ‖ -n] {(options}

Syntax elements

Syntax element	Description
Log	Identifies the log to be processed:
	ACC Accounting log.
	DBD DataBasic Debugger Dumps.
	PHH TIPH log.
	SER Services log.

Syntax element	Description
	TCL TCL Audit log.
	ALL All of the above.
lower-date	Items earlier than this date are not selected.
upper-date	Items later than this date are not selected.
N	Items younger than n days are not selected.

Options

Option	Description
S	Produces a summary listing of the selected items but does not actually remove them. This is the default option if none is specified.
R	Actually removes the selected items.
D	Produces a detailed listing of removed items (can only be used with the R option).

3.25 realclone

Options

Option	Description
-{p}u	Updates the specified instance to match the base version of the Reality software where all the files are copied regardless of the timestamp, rather than just the new files. The p option ensures that any files that are no longer present in the base version are deleted from the instance.

3.26 ENCRYPT

Two new encryption methods are now supported.

method	An integer expression specifying one of the following encryption methods:
7	Provides access to the openSSL message digest algorithms for MD4, MD5, MDC2, RIPEMD160, whirlpool, SHA0, SHA1, SHA224, SHA256, SHA384 & SHA512. The algorithm to use is passed as the key parameter of the function. The returned data is binary so care must be taken to process values such as character 255 that may occur in the result.
8	Provides access to the openSSL ciphers for AES-128-CBC, AES-192-CBC, AES-256-CBC, DES-CBC and DES-EDE3-CBC. The cipher, key (in hex) and initialisation vector (in hex) are passed as an attribute separated list in the key parameter. The returned data is binary so care must be taken to process values such as character 255 that may occur in the result.

3.27 DECRYPT

Two new decryption methods are now supported.

method	An expression that evaluates to an integer specifying one of the following decryption methods:
7	It will return a null value as decrypting a digest is not possible.
8	Provides access to the openSSL ciphers such as AES-128-CBC, AES-192-CBC, AES-256-CBC, DES-CBC and DES-EDE3-CBC. The cipher, key (in hex) and initialisation vector (in hex) are passed as an attribute separated list in the key parameter. The passed string is binary (as returned from a corresponding ENCRYPT). The returned data is binary so care must be taken to process values such as character 255 that may occur in the result.

3.28 SET-FILE

A new option D has been added to SET-FILE command.

Options

Option	Description
D	Allows Q-pointered file to be set on another account.

Note

The D option needs GRU flag to be set manually by changing attribute 48 of SECURITY SYSMAN to 7 before editing the source code for SET-FILE on fork.

3.29 U2-SET

Defines the connection details when creating a new U2-VIEW / U2-RBASIC file.

Syntax

U2-SET system, [port], [default account], user, password

3.30 U2-VIEW

Creates a local Reality file that is used to access a remote U2 file and requires a U2- SET to be active in this session.

Syntax

U2-VIEW [DICT]Reality_file[U2_ACCOUNT][DICT]U2_FILE[(options]

3.31 U2-RBASIC

Configures a Reality file to be used to access a remote Basic subroutine on the U2 / Universe server.

Syntax

U2-RBASIC reality_file

3.32 U2-CHANGE

U2-CHANGE verb has been added to allow U2-VIEWS to enable password amendment with U2-VIEW'S.

Syntax

U2-CHANGES local file-namepassword new_value{(Option

Syntax elements

Option	Description
local file-name	The name of the file you want to change the parameters. It can be omitted if a SELECT list is active.
password	password is required as a security measure and if any parameters are missing, a usage message is displayed.

Options

Option	Description
S	Change remote system name.
U	Change remote user name.
E	Change the password used for the user in the connection.

Section 4: Restrictions

This section lists the restrictions that were current when Reality V15.3 was released. For the latest information, refer to the Reality website.

For this release

- 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).

Online documentation

If the documentation is installed on the local file system and you are using Internet Explorer, you may 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).

Section 5: Fault Resolutions

Reality V15.3 includes resolutions of the following faults.

Declared for the initial Reality V15.3 release.

Fault number	Description
91601	Enable build of reality on Centos 8/Move to Reality V15.3.
91606	Correct error handling in tlmenu.
91608	Amendment to realclone -pu to ensure all files are copied rather than just changes.
91610	Correct handling of Instances under Centos.
91611	New version of DELETE-ACCOUNT verb to behave as original if run from PROC by PH. Fixes issue in SYS-UPDATE.
91612	Ensure PCL2PDF uses the Java Language Server as the default connection.
91572	Enhancement to DECRYPT/ENCRYPT to add algorithms for SHA, AES and other openSSL.
91614	Intercall functions added (U2-VIEW and U2-SET) to allow pointers to a U2 database.
91617	Fix for issue with incorrect scale being applied for SQL-VIEW numeric and decimal columns.
91618	U2-CHANGE verb added, to allow U2-VIEWS to enable password amendment with U2-VIEW'S.
91619	SET-FILE reinstated - only relevant to new databases. The verb had been removed from mkdbase but would still be there in mkdbase -r.
91620	DELETE-FILE syntax corrected and improved error checking.
91615	Rebranded to NEC Software Solutions UK Limited.
85973	Fix for tlmenu perl warnings when selecting to save a database with transaction handling.

Declared in previous Reality V15.2 product updates.

Fault number	Description
91565	Enable use of session licences on SSH connections.
91567	Enable tlmulti selection of primary secondary database. Prevents the deletion of Clean Logs (tlmulti) if the database is defined as a secondary.
91569 91566	Correct DataBasic debugger L and V commands when listing more than one include line.
85965	Enable RealEdit V1 to connect to database after enabled debugger on RealEdit V2.
91573	Add BITAND, BITOR, BITXOR, BITNAND, BITNOR, BITXNOR and BITNOT DataBasic functions . Documentation for these items is available on the Reality website on the usual documentation page.
85966	Resolve memory allocation issues on Solaris 11.4.
91574 90792 85550 90787 90786 91579	Enhance English sentence to allow dynamic modification and compatibility with other flavours such as D3.
91575	Allow SAVE options X or Y to be used without options Z or S.
91576	Fix restore of data section create image.
85968	Stop SIGHUP in early stages of login cause reality to exit.
85967	Fix tlmenu syntax error on line 180.
91558	Fix LIST LFB special file.
85969	Reduce eliminate hit processes on abortive terminal closure.
85970	Fix getcwd following symbolic links.

91580	Correct REST-ENABLE handling of @PARAM and provide updated RW_RESTFUL.
91582	Correct the index handling of null nodes and end of list even.
85971 91583	READNEXT of the output of an ISELECT with KEYS-ONLY truncates the item count.
91585	Correct release of item locks for VERIFY-INDEX (T with MvStyleItemLocks set.
91586	Correct Variable Unassigned error in Network File Maintenance.
91587	Correct DBO %Admin handling of both formats of the function.
91562	Add a number of monitoring utilities to listdb.
91588	New SP-SUMMARY verb to summarise formqueue contents and statuses.
91589	realevent enhancements for items and extended html templates.
91434	New NEW.LISTVERBS verb to provide improved layout of details over original LISTVERBS verb.
85972	New PH-MONITOR verb to monitor output of TIPH process, enhancement to PH-START.
91591	Enhance LISTFILES to allow sorting of files by descending total file size.
91593	New GSSM verb to allow a global update of items in the NETWORK, USERS and SECURITY files (as controlled with menu within SSM).
91598	Additional Trigger types now available.
-----	New Verb LIST-ALL-TRIGGERS to list all the triggers associated with a Reality account.
-----	Enhancement to ACCESS Function.
91590	Add new TIDYPF verb. Enhance DELETE-ACCOUNT.
91595	New Verb XDT.
91596	New Verbs – LIST-TABLE and SORT-TABLE.
91599	PCL2PDF – Correct handling of delta row compression raster images.
91594	New verb EESEARCH to allow searching of all, selected or single files for character strings.

	The returned results show the file name, data section and item id of those matching items.	
91597	Enhancements to GENML/SGENML to output formats json, html, csv or XML.	
91600	New verb SLS to perform log file reporting and maintenance.	

Section 6: 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.).

- Apache Tomcat™ web server (Apache Software Foundation).

- Jetty web server (Mort Bay Consulting).