Reality V15.2 Update

Introduction

NPS Reality is pleased to announce V15.2, a **significant feature update** to Version 15. This update demonstrates the ability to **enable continual incremental change driven by user needs**. Since the first **MultiValue commercial release going back to 1973 Reality** has continued to grow in functionality, while retaining the key product aims of providing a **highly scalable, resilient, cost effective database, programming and operating environment.**

V15.2 Key Features

- **Hyper Files – Distributing Data Across Files & Systems**
  One logical view of Reality data, with unique Items-IDs, that is built from a view into multiple physical data sections including remote access, refer to the **Feature Example ►**

- **Improved Security – T/Logging and User Passwords**
  Clean Logs Accessible for Auditing and Security
  This feature enables secure access to Transaction Clean Logs to provide detailed auditing of all database updates. It also allows full and accurate audit information for database items changed, or to assist tracing potential security breaches where unauthorized updates have been made.
  Multiple Clean Log Deletion from TLMENU
  Provides easier deletion of sets of logs in one operation when no longer required.
  Password Configurable Definition
  Definable formats, in line with growing industry demands in terms of defining length, allowed patterns of alphanumeric and special characters are now available. Users can be forced to reset passwords at the next login.

- **DataBasic Debugging Enhancements – improving R&D**
  New debugger Module Commands
  Allows for improved debugging by breaking on Main and Subroutine Entry/Exit points, plus a Context Stack list.
  System Functions for Running Program Information
  There are a number of System() functions that can help debugging and reviewing for optimal program code.
  Automatic Runtime Dump of process issues
  A runtime program error can be logged automatically which allows application support personnel to access detailed support information at any time for analysis.
  Debugger ? command and other enhancements
  The ? command now displays help pages as you use the debugger. There are also a number of other new features to aid debugging including inhibiting cursor positioning, an extended description of the reason the debugger was entered as well as improvements to the DB command.

- **DataBasic Feature Enhancements**
  Email Application Programming Interface - API
  A high level API for sending complex emails including mixed content from within the database and host platform environment.

V15.2 Key Features – continued over page ►

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Hyper File – Feature Example

With a created Hyper File applications can access and update all of the hyper sections data making up the Hyper File as one logical view, as well as each separate underlying physical data section file. Each data section can use all dictionary and indexes associated with them, with the created Hyper File able to access all of these for its logical view across all data sections. Index and dictionary definitions need to be consistent across all data sections for datum's that are part of the Hyper File logical view. A part of the Item-ID defines which physical data section an Item resides in. This is setup when the Hyper File is created using a flexible approach of a data range or direct match. In the below a year indicator is assumed to be part of the Item-ID, e.g. _15_ matches to SALES_2015.

For example, sales figures could be updated processed and analyzed as one large Hyper File opened as SALES, which is a view of the separate data section files called SALES_CURRENT, SALES_2015, SALES_2014, etc. Existing applications could see all these separate data sections as one logical file called SALES. The SALES file being able to use English, DataBasic and the rest of the Reality features just like any standard file including updates using dictionaries and indexes. The same file access is also available to the separate files SALES_CURRENT, SALES_2015, SALES_2014 etc. The history years of hyper section data files could be fully accessible to updates, or restricted within the application to controlled maintenance so that sizing is stable. Data sections forming the Hyper File SALES can be stored locally in the same or different databases or on remote systems. They can be updated under application control or reside in non-updatable databases. Whereas, for the current year figures data section called SALES_CURRENT, this could be the only part of the Hype File that is within the main live database, growing throughout the year using optimal performance as previous years are within another database. When needed, however, all sales figures would be accessible using the SALES Hyper File, which views all the separate years' hyper sections of data as one logical file.

Reality Hyper File Benefits…

Distributing data files in this way leads to operational efficiency, secure known data grouping like audited and closed financial years and providing for more efficient organizing; like being able to use higher performance storage types for only some data sections of a logical Hyper File for current or rapid access operational data. Saving only the data sections that have been updated, and deploying other methods of distributed data stores, allows for the ever growing datasets applications now face.

- **DataBasic Feature Enhancements – Continued**

Relational Expression Operators
MATCHE{ES} the existing relational expression operator has new parameters to indicate range(from minimum to maximum characters required), inverse(e.g. non-alpha) and for any number of characters. It can also return the pattern that matched and the matching pattern count when used with multiple patterns.
MATCHFIELD is a new operator, which is similar to MATCHE{ES} but also returns the characters that matched a requested sub-field of a pattern. While this new operator is MultiValue compatible, it also has an optional added parameter to provide the maximum number of consecutive fields to return.
User Defined Runtime Compiler
Definable for each Environment to provide the ability to control which compiler to use for safely deploying feature changes.
DataBasic Object Server – for integrated Java
This is now included as a standard available feature, with further object languages to be included in future updates.

Keeping up with Previous Releases:

Refer to the ***Feature Catch-Up*** briefing on the Reality Website covering features introduced in previous releases e.g. **DataBasic Object Server** – DBO for running Java App code, **Exception Handler** for intercepting errors, **Fast on-line database image backup** and recovery, data **encryption at rest**, **HTML from English** reports, automatic **System and Application error alerts**, **DataBasic runtime profiler** and command stack trace…

Evaluation License:

A free 3-user download for evaluation and non-commercial use is available from the Reality Website. **Reality on Windows loads with a simple install** that then creates a demo database **including SQL and DataBasic/ RealWeb** (HTML/GUI Interface) examples. This also includes all UNIX Host Platforms installs on the single download delivery. A **Web Services** evaluation is also available as a separate evaluation download.

Supported Host Platforms:

UNIX – 64bit Architecture
SUN/SPARC on Solaris 11 & 10 or IBM pSeries on AIX 7 & 6

Linux – 64bit Architecture – Intel x64
Red Hat ES 7 & 6 commercial release, CentOS 7 & 6 open S/W

Windows – 64/32bit Architecture – Intel x64/x86
Running 10(64bit only), 7, Server 2012/2008

Reality MultiValue Compatibility:

Reality provides a **Pick/MultiValue, NoSQL or SQL-enabled Database, operating and multi-language programming environment**. There is a simple migration process using the standard saves, use of selectable MV emulation when installing and creating new databases. Case insensitivity and many MV features have been assimilated into Reality. The **Documentation set has a dedicated MultiValue section** covering functionality and the migration process. Refer to the **Reality Website** for the latest information.

Other Key Features of Reality:

Maintaining the original highly efficient virtual machine concept, Reality has undergone development based on the future needs of both existing and growing user base.

Interoperability using integrated **ODBC/JDBC SQL** (*including accessing external SQL sources and exposing Reality as a SQL database*), **Web Services** (*incoming and outgoing*), **XML Parsing, HTML Interfaces via DataBasic & English, TCP/IP Sockets.** Remote calls can also be made in order to provide integration with open Java applications and Microsoft Visual Basic C/C++ and C# .Net.

Reality, Safe & Secure
Areas include **Data Encryption** and remote **Disaster Recovery**, along with built-in highly efficient local **Transaction Logging** to full **FailSafe** redundant systems.

Advanced User Documentation
Feature Exampled Web browser-based content with latest updates available to view and download from the Website. The Documentation set is installable on any local System, File and Web Server, including via built-in Reality mini Web Server.
One-click feedback can be sent via email, using ***Comment on this topic*** links on each page, in order to help us maintain the highest quality content.

Reality Website: http://www.nps-reality.com

This provides the **latest product and documentation updates**. It also includes **News**, **FAQs**, a **Feature Catch-Up Briefing** by each release and instant access to the **Evaluation License Download**.

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