



What's in OpenQM but not in U2?

Connection

- Port mapping - links telnet port number to QM user number
- Use of QM as an element of a Linux pipe
- Serial port connection

File System, Dictionaries and Conversions

- Optional case insensitive record ids on a per-file basis
- Optional case insensitive alternate key indices
- Integrated QMNet as a standard component
- Virtual File System for access to alien file systems
- Extended Q-pointers for QMNet access to remote servers
- Deferred dynamic file split/merge
- Dictionaries - L-type records to minimise the need for TRANS() I-types and T conversions
- Compiled A/S-types for improved performance
- C-type records for complex dictionary calculations
- Nested compound I-types
- TRANS() can retrieve a calculated value
- Additional conversion codes - Base64, Boolean, ISO dates, ANSI X12 dates, Integer, Field extraction
- Extended triggers - post read, pre/post write, pre/post delete, pre/post clear
- Ad hoc encryption
- Epoch based date/time for multi-time zone applications

Command Environment

- Cursor key driven command editor
- Command logging for diagnostics or auditing
- Personal vocabulary (per user or shared by groups)
- Simpler use of security subroutines on V-type VOC entries
- Largely case insensitive
- ON.LOGTO VOC item, executed by LOGTO before moving to new account
- Extended file syntaxes for remote files and access by pathname
- Dynamic menus allow run-time control of which options are displayed
- Extended inline prompts - substitution of select list items, @-variables, environment variables, function values, SYSTEM() values, ranges of command line tokens
- Pick style form queue emulation
- Print prefix and overlays for forms printing
- Hold file records locked while being written
- Optional call to user written subroutine to log hold file record creation.
- PCL printer graphics
- ALIAS to remap command names
- CREATE.FILE option to create in non-default location
- Simple display of internal format date and time
- DISPLAY supports cursor management, reducing need to write programs for simple screens
- User defined @-variables allow programming style operations in paragraphs
- LOGMSG to add messages to the system error log file
- Immediate messaging via pop-up windows
- Run a VOC style item from alternative files
- Enhanced UPDATE.RECORD with interactive mode
- Suspend/resume COMO file creation
- Option to run phantom processes without logging

Query Processing

- Enhanced heading/footer capabilities
- Report styles for colour or font highlighting
- \$QUERY.DEFAULTS to set standard query default actions
- Use of dictionary links to access remote files without needing TRANS() I-types or T conversions
- Full or partial pan of reports wider than the screen
- Scroll back through report pages

SHOW command for interactive select list generation
ABSENT.NULL option to handle mis-matched records in report built from data in multiple files
BETWEEN operator for inclusive ranges
BOXED option for enhanced report appearance
Breakpoints - Multiple B elements to capture heading data
Extended column heading format controls
CSV and delimited reports
CUMULATIVE option for running totals
MEDIAN and MODE averaging
Case insensitive selection clause options - not just mapped to uppercase
IN and NOT.IN selection operators to compare field value with a stored list
Extended page heading/footer control options
Optional file locking during report for data consistency
Overlay pages for forms printing
Page sequence control for merged reports
REPEATING to repeat single valued item within multivalued data
SAVING clause can handle multivalued data

QMBasic

Enhanced heading/footer capabilities
Simple mark translation suppression on directory files
Set exit status for operating system error handling
Extended sequential file processing statements (CSV handling, append, overwrite)
Object Oriented Programming
Automatic cataloguing option after successful compilation
Variable length argument lists to subroutines and functions
Terminfo based function key recognition (BINDKEY, KEYCODE, INPUTFIELD)
Save/restore part or all of screen image
Ability to open a file for non-transactional update
User defined break handlers for application level quit key handling
Exception handling
Arbitrarily multi-dimensional data collections
Sort mode options to SSELECT
CHILD() - Check if child phantom process is still running
CLEAR.COMMON - Extended to allow clearing of specific named common
CROP() - Remove redundant mark characters
IDIV() - Integer division - also as // operator
INPUTCSV - CSV format input parsing
INPUTFIELD - Extended INPUT with function key handling
LISTINDEX() - Find item in arbitrarily delimited list
LOCATE() - Function call style LOCATE, very useful in I-types
LOGMSG - Add message to system error log
MAX(), MIN() - Find maximum or minimum of two values
MD5() - Create MD5 message digest value for a given string
OSREAD, OSWRITE, OSDELETE - Simple operating system file read, write, delete
OUTERJOIN() - Simple interface to indices for use in I-types
PAUSE / WAKE - Synchronise with some other process
REMOVEF() - High performance extraction of delimited items
SHIFT() - Logical shift
SUBSTITUTE() - Multivalued text substitution
TESTLOCK() - Test state of task lock
VSLICE() - Extract a row of a multivalued data set

Development Aids

Paragraph tracing
S (stack), W (where) and P (process dump) options on quit key actions
DELETE.COMMON, LIST.COMMON
Real time file statistics monitoring
Equate token generation to ensure consistency between dictionaries and programs
Hot Spot Monitor to identify performance bottlenecks
LIST.FILES to determine names of all open files and who has them open
Full screen debugger over telnet connection
Debug phantom and QMClient processes
Process dump files - Complete state of an application at a run time error or on demand
Simple screen builder for rapid application development
Full screen editor