



Rocket UniData

Release Notes

Version 8.2.4

August 2022
UDT-824-ALL-RN-1

Resolved issues

UniData 8.2.4

The following enhancements were made and customer issues were fixed in UniData 8.2.4.

Build 3000

August 2022

What's new in 8.2.4

Python

- The version of Python shipped with UniData has been upgraded to 3.9.12.
- Enhancements have been made to the UniData installation process to preserve and restore the existing Python environment (modules, `u2.pth` and other `.pth` files) on an upgrade. See the *Python User Guide* and the *Installation Guide* for more information.

Security

- The OpenSSL library shipped with 8.2.4 has been upgraded to version 1.1.1n.
- A new UniBasic function `PBKDF2HMAC` has been added to allow the use of the PBKDF2-based message digest algorithm in OpenSSL.
- Pluggable Authentication Module (PAM) changes – UNIX only.

The PAM module is used in UniData to authenticate users. If a system administrator applies stronger restrictions on this service for security compliance, connections may fail due to authentication failure. Previously, UniData was restricted to the standard `/etc/pam.d/login` service. Starting in 8.2.4, UniData supports the optional `mvdb` PAM service to enable U2 connections without affecting strict login rules.

- `u2tty` configuration for root authentication – UNIX only.

When a new rule using `pam_securetty.so` (`login` or `mvdb`) is configured in the PAM service, it requires a secure tty configured in `/etc/securetty` for the root user. If no tty is configured, the root user will not be able to login to a U2 connection. Starting in 8.2.4, a new tty named `u2tty` can be used with `/etc/security` file to allow this.

- Enabling legacy authentication – Unix Only.

Starting in 8.2.4, you can use an option called `!legacy_auth` in the `unirpcservices` file. This option allows UNIX/Linux users to authenticate using legacy methods that fallback to local user authentication in the event of a PAM authentication failure.

Audit

- Audit data change capture is now configurable at an attribute level. Previously, the whole record was captured and recorded for any change in Audit. Audit can now be configured to specify which attributes are to be captured and recorded as opposed to the whole record.
- Starting at 8.2.4 a new consolidation mode has been added. This mode allows audit records to be consolidated based on the record ID and for other commands such utilities or `sys` commands.

Windows 11 and Server 2022 Certification

UniData 8.2.4 is our first release to be certified for Windows 11 and Server 2022.

Installation and Upgrade

The `udtinstall` and `updatesys` tools have been removed on Unix and replaced by `udtsetup`.

Windows Memory

Windows Only. Starting with UniData 8, the memory allocation for BASIC variables was moved from shared memory to heaped memory. With the previous shared memory model, it was unlikely that a `udt` or `udapi_slave` process could consume all the memory on a server because the process would likely encounter the old shared memory controls first and be aborted by UniData.

With heaped memory allocation on Windows, there was no simple way to restrict the memory one of these processes could consume. On UNIX, there are `ulimits` that can be put in place to avoid this happening.

A new config file `nt_limitconfig` (located under `$UDTHOME/include`) has been added to control the amount of memory a `udt` or `udapi_slave` process can consume.

UniObjects

A new environment variable called `PHANTOM_WAIT_UO` has been added. UniData has a hard coded 1 second delay after the use of a `PHANTOM` command within a UO connection. The delay was originally put in place to ensure continuity of the `udapi_slave` process. The `PHANTOM_WAIT_UO` environment variable accepts a positive integer value and controls how long the wait is. Setting the value to 0 removes the wait period.

ECL

The `UDT.OPTIONS` command has been enhanced to have the option to display options that are currently turned ON or OFF only.

Enhancements and Fixes

Key	Release Notes	Component
UDT-424	Prior to this release, running <code>guide_ndx</code> on a file with no data present would produce an error similar to <code>sort: can not open file /tmp/K00_794776</code> . This issue has now been resolved.	Files - Corruption
UDT-14567	Prior to this release, <code>CREATE.FILE</code> and <code>RESIZE</code> allowed an incorrect type to be specified resulting in the file being unusable. This issue has now been resolved.	ECL Tools
UDT-16417	Starting in this release, the <code>shmconf</code> tool has been withdrawn and the <code>udtconf</code> tool should be used instead.	Error Reporting - Crash, Shared Memory
UDT-16666	Prior to this release, <code>uoj</code> connections would still have been allowed to an expired account on Linux. This issue has been resolved.	Other
UDT-16681	Audit. Starting with this release, customers can configure which attributes are captured during a change event.	Audit Logging

Key	Release Notes	Component
UDT-16692	Windows Only. Prior to this release, using <code>DELETE . INDEX ALL</code> could result the <code>udt.exe</code> process producing a mini-dump on logout. This issue has been resolved.	Indexes
UDT-16826	Prior to this release, UniRPC did not correctly set user names related to @-variables for users that logged in via PAM and SSSD. This issue has been resolved.	U2 Basic, UNIRPCD
UDT-16834	Prior to this release, while processing file header information on UniData, the following error message could have been repeated multiple times in the <code>udt.errlog: 'unfree buffer message in merginmem.c at 688'</code> . This issue has been resolved.	Shared Memory
UDT-16947	Prior to this release, if NFILES was changed to be higher than the internal hard coded limit of 1019, UniData would report that the limit was being detected from an operating system setting. This issue has been resolved.	Other, Performance
UDT-16968	UNIX only. Starting with this release, changes have to made to allow an optional PAM service in addition to the <code>/etc/pam.d/login</code> service.	Security, TC
UDT-17025	Starting in UniData 8.2.0, setting the <code>udtconfig</code> parameter <code>EXPBLKSIZE</code> to 0 would result in <code>udt</code> processes crashing. This issue has been resolved.	Server Processes
UDT-17026	Prior to this release, when an HTTP 4xx status code was encountered, <code>callHTTP</code> would only return code 400 with no additional information. Beginning with this release, full responses from HTTP 4xx status codes are returned from the web server. This modification enhances the ability to troubleshoot requests returning 4xx status codes.	U2 Basic, CallHTTP
UDT-17032	Prior to this release, the <code>CREATE . FILE</code> command incorrectly allowed a type of 2 to be defined. This issue has been resolved.	ECL Tools, Files - Dynamic
UDT-17732	Beginning with this release, changes were made to ensure that python UTF-8 encoding passed with the <code>u2string</code> from BASIC to Python as a python string passes correctly through the UniBasic Python API function.	Python
UDT-17737	Beginning with this release, changes were made to ensure that python UTF-8 encoding passed with the <code>u2string</code> from BASIC to Python as a python string passes correctly through the UniBasic Python API function.	Python
UDT-17742	Beginning with this release, changes have been made to ensure the coding of strings passed between UniBasic and Python is done with UTF8 encoding to avoid potential corruption of mark characters.	Python
UDT-17744	Prior to this release, a Python <code>str</code> converted from <code>u2py.DynArray</code> in Python could be passed back to BASIC as a BASIC array. This issue has been resolved.	Python

Key	Release Notes	Component
UDT-18070	UniBasic. Prior to this release, if an executed query exceeded the U_SENTLEN LIMIT (Currently 9247), @SYSTEM.RETURN.CODE would return 0, not the expected -1. This issue has been resolved.	U2 Basic
UDT-18201	Beginning with this release, changes were made to ensure the exchange of dynamic arrays work well between UniData and Python with the new BASIC functions PyByteCallFunction, PyByteCallMethod, and PyByteCall.	Python
UDT-18403	Audit. Starting with this release, enhancements have been made to allow a consolidation type based upon Record Id. For more details, please see the UniData Security Manual.	Audit Logging
UDT-18415	Prior to this release, problems could be encountered when using UO to call BASIC subroutines which invoked Python. Once control was returned to the BASIC subroutine from Python, executing other UniData commands could fail with various errors. The behavior was due to an incompatibility between the Python and UO libraries, which has been resolved in the current release.	Python, U2 Basic
UDT-18419	Beginning with this release, enhancements have been made to the UniData installation process to preserve the existing Python environment on an upgrade. See the Python manual for details on the specifics.	Python
UDT-18437	Prior to this release, if a file had been corrupted via the problem detailed in UDT-17159, then deleting multiple records from the file could have resulted in the process aborting. This issue has been resolved.	Files - Corruption
UDT-18466	Starting with this release, adding the option ON or OFF only to the UDT . OPTIONS command will report only the options in the specified state.	ECL Tools
UDT-18527	Audit. Prior to this release, the default size of the memory buffer used to hold the AUDIT logging configuration file information was 8K. When changes were made to the AUDIT configuration file while UniData was running, UniData AUDIT would reload the changes into memory. If the changes caused the memory required to be greater than current allocated memory, an error would be displayed and the changes would not be loaded. Stopping and restarting UniData was required to increase the memory buffer. In this release, the default size of the AUDIT configuration file memory buffer has been increased to 1MB.	Audit Logging
UDT-18593	Starting with this release, the version of OpenSSL that is shipped with UniData has been updated to 1.1.1n.	SSL
UDT-18613	UNIX only. Starting in this release, udtinstall and updatesys have been removed and replaced by udtsetup.	Installation

Key	Release Notes	Component
UDT-18614	Linux. In releases 8.2.2 and 8.2.3, stopud displayed the message "su: cannot open session: Module is unknown". This issue has been resolved.	Other
UDT-18615	<p>Prior to this release, under unusual and rare internal conditions within the UniData engine, after executing a <code>SELECT</code> statement, internal stack structures were not cleared down correctly including some file pointers. When a subsequent call was made to read the results of the <code>SELECT</code> statement, it may have resulted in the inadvertent closing of a file handle and reuse of the handle by another file. This would then result in UniData attempting to read an incorrect file handle which could result in the process aborting or a pread error message being generated. We have also seen that when the pread error message is generated, then files could become corrupted with incorrect information appended to the end of the file or overwriting the header information of the file.</p> <p>This issue has been resolved and if the situation is detected, the following message displays in the <code>udt.errlog</code>: 'longjmp condition detected and clean up checks performed for unclosed file units'.</p>	Files - Dynamic
UDT-18631	Prior to this release, changing the Python console size could cause the execution of the <code>PYTHON</code> command in a <code>udt</code> process to terminate the session. If the console size was changed after using <code>PYTHON</code> , a subsequent invocation of <code>PYTHON</code> would terminate the session. This issue has been resolved in the current release.	Python
UDT-18647	Prior to this release, the example files used with <code>CALLC</code> in the <code>\$UDTHOME/work</code> directory contained invalid include paths. This issue has been resolved.	UDT Linking
UDT-18652	Prior to this release, when connecting via UniRPC with PAM authentication, the <code>udapi_server</code> process could terminate unexpectedly if password validation failed. Password validation failures can include incorrect passwords or PAM modules that did not load properly. This issue has been resolved.	Error Reporting - Crash, TC, UNIRPCD
UDT-18653	Prior to this release, the UniData-supplied OpenSSL1.1.1b libraries did not contain the symbol <code>EVP_KDF_ctrl</code> , which caused PAM authentication to fail. The system OpenSSL 1.1 libraries will now be loaded by default when doing PAM authentication, resolving this issue. Additionally, the environment variable <code>U2PAM_OPENSSL_LIB_VER</code> is now available if there is a need to define a different OpenSSL version from the default OpenSSL 1.1 version. When using the <code>U2PAM_OPENSSL_LIB_VER</code> variable, the UniRPC daemon must be restarted to have the variable take effect.	Security, SSL, TC

Key	Release Notes	Component
UDT-18657	Prior to this release, if the EXPBLKSIZE value in udtconfig is set to 256 or higher, and an upgrade is performed, the value is reset to 0. This in turn caused udt shells to fail with the stack noted in UDT-17025. This issue has been resolved.	Installation, Shared Memory
UDT-18668	Prior to this release, if an index on a file was originally created with a small alternate key length (for example the default of 20), when you attempted to encrypt the index for the first time the following error message could occur: Index: read OV block error(0). Index: Save overflow block failed. This issue has now been resolved.	Automatic Data Encryption, Indexes
UDT-18676	Prior to this release, a <code>SELECT BY</code> statement would fail if the one of the record's fields contained only a control character. This issue has been resolved.	Query
UDT-18678	Prior to this release, under unusual conditions including the use of UOLOGIN, the SUBR call in an I-Type dictionary would fail in UOJ,UO.NET and UOPY. This issue has been resolved.	U2 Basic
UDT-18703	Starting in 8.2.2, changes were made to allow reporting of the options used when a program was compiled and stored them with an ID of <code><_programname>'.INFO'</code> . Starting with this release, the extension has now been changed to <code>'.\$\$BCTI\$ \$'</code> (BCTI = Basic Compile Time Information) to avoid potential naming clashes and inadvertently deleting application pcode.	U2 Basic
UDT-18705	UNIX only. Prior to this release, <code>SSELECT</code> commands could return incorrect results when the <code>"sort: warning: the record contain '\0' character, discard it!"</code> message is displayed. This issue has been resolved.	Query
UDT-18706	Python. Starting in 8.2.3, setting a UDTHOME to a setting other than the installation UDTHOME stops python from working. This issue has been resolved.	Python
UDT-18708	Starting in 8.2.1 build 9114 and 8.2.2, support was added for 64bit Pointer types in <code>CALLC</code> on Windows. If an empty value was passed to the C function, the pointer address returned was not set properly. This issue has been resolved.	Basic Call Interface

Key	Release Notes	Component
UDT-18709	<p>Windows Only. Starting at UniData 8, the memory allocation for BASIC variables was moved from shared memory to heaped memory. With the previous shared memory model, it was unlikely that a udt or udapi_slave process could consume all the memory on a server because the process would likely encounter the old shared memory controls first and be aborted by UniData.</p> <p>With heaped memory allocation on Windows, there was no simple way to restrict the memory one of these processes could consume. On UNIX there are ulimits that can be put in place to avoid this happening.</p> <p>Starting at this release, a new config file <code>nt_limitconfig</code> (located under <code>\$UDTHOME/include</code>) has been added to control the amount of memory a udt or udapi_slave process can consume. The following is the default file:</p> <pre data-bbox="587 800 1142 968"># configure udapi_slave maximum memory limitation (MB), 0 stand for unlimited udapi_slave.max_memory=0 # configure udt maximum memory limitation (MB), 0 stand for unlimited udt.max_memory=0</pre> <p>If UniData detects the limit will be breached, you will see a message similar to the following:</p> <pre data-bbox="574 1087 1166 1142">In BP_MEM.TEST at line 4 insufficient memory, requested size = 4194305.</pre> <p>The file will be read each time a udt or udapi_slave process starts. No restart of UniData is required to change this file.</p> <p>If you want to take advantage of this setting, Rocket recommends not setting either value to below 15. Otherwise, a udt or udapi_slave process might not be able to start.</p>	Shared Memory
UDT-18710	<p>Windows Only and Automatic Data Encryption (ADE). Previously, if ADE encryption was used and the Grantee checking was done at the domain group level, then the second time that the ADE keys were used, the user's process would generate a minidump. Using local groups or named user grantees did not have this issue. This issue has been resolved.</p>	Automatic Data Encryption

Key	Release Notes	Component
UDT-18711	<p>Network File Access (NFA). Starting at UniData 8, changes were made to support IPv6. Because of these changes, erroneous UDTsvr_nnnnnnn.log files could be produced in the /tmp directory, even if the log level of the server process was set to 0. The log would appear similar to:</p> <pre data-bbox="587 422 1085 590"> UDTsvr_10158216.log In at line 1, peerhost=dentap. rocketsoftware.com. /src/ud/ofs/UDT_starter.c: 494 Thu May 20 09:33:18 2021 peerhost=dentap.rocketsoftware.com </pre> <p>Starting in this release, the information in this log will be only be produced if the log level is set to 1 or above.</p>	Network File Access
UDT-18714	Python. Starting in 8.2.3, calling a python program from unibasic code result in a crash of the entire udt process.	Python, U2 Basic
UDT-18724	Starting with UniData 8.2.2, concatenating numbers inside a for loop can caused incorrect results when using basictype M or R. This issue has been resolved.	U2 Basic
UDT-18885	Prior to this release, the UCI configuration parameter COLUMN_DISPLAY_LENGTH was not functioning correctly. When defined with a column length greater than the default of 254, columns containing more than 254 characters were still generating error messages. The error messages indicated the maximum expected data length was still 254. This issue has been resolved.	Other
UDT-18890	Python. Starting with this release, the version of Python shipped with UniData has been upgraded to 3.9.12.	Python

Key	Release Notes	Component
UDT-18899	<p>Prior to this release, when using replication, group ownership on new records in directory types files or newly created files may have been set incorrectly on the subscriber.</p> <p>For directory type files, if the group owner of the directory was not the same group as the primary group of the directory owner, the new record would incorrectly be created on the subscriber, as it used the primary group id. At the current release, the new record on the subscriber will be created with a group id matching the group owner of the directory.</p> <p>When creating new files, the group owner may not have been set correctly if the account directory had the SETGID bit enabled. On the publisher, the group owner of the newly created file would match the group owner of the account directory. On the subscriber, the group owner would be set based on the primary group id of the user creating the file. At the current release, if the SETGID bit is enabled on the account directory on the subscriber, the file will be created with a group owner matching the group owner of the account directory.</p> <p>These issues have been resolved.</p>	Replication
UDT-18907	<p>Starting in 8.2.1, in some situations when UniBasic programs are re-used during uniobjects connections, an 'Illegal level' error may have occurred. This issue is now resolved.</p>	U2 Basic, UNIRPCD
UDT-18918	<p>Starting in UniData 8.2.0, UniData on UNIX or Linux switched from being statically linked to dynamically linked. If external C programs were added via CALLC functionality and a parameter input type or return type was a bstring, symbol errors similar to the following could occur:</p> <pre> Could not load program udsrvd: rtld: 0712-001 Symbol U_bstrass was referenced from module /disk1/ud82/work/libu2callc. so(), but a runtime definition of the symbol was not found. rtld: 0712-001 Symbol U_ret_bstr was referenced from module /disk1/ud82/work/libu2callc. so(), but a runtime definition of the symbol was not found. rtld: 0712-002 fatal error: exiting. </pre> <p>This issue has been resolved by properly defining the noted symbols.</p>	TC, UDT Linking

Key	Release Notes	Component
UDT-18930	<p>Replication. Starting with this release, as part of internal logging improvements, two new executables have been added for UNIX as part of additional logging changes for U2 Replication. These executables are <code>testnetwork_server</code> and <code>testnetwork_client</code>. They use basic network system calls to detect if two machines can be connected.</p> <p>Testing that the pub can connect to the sub:</p> <pre>run 'testnetwork_server 31438' on the sub run 'testnetwork_client [ip of the sub] 31438' on the pub</pre> <p>Testing the sub can connect to the pub:</p> <pre>run 'testnetwork_server 31438' on pub run 'testnetwork_client [ip of the pub] 31438' on sub</pre>	Support Tools
UDT-1934	Prior to this release, if UniData was reallocating a large amount of memory in excess 0x80000000, then shared memory corruption could have occurred. This issue has been resolved.	U2 Basic
UDT-18945	Starting in UniData 8.2, the <code>ulc_tool</code> crashed when attempting to display locks both interactively and when reading a dump file. This issue has been resolved.	Support Tools
UDT-18947	UniData has a hard coded 1 second delay after the use of a <code>PHANTOM</code> command within a UO connection. The delay was originally put in place to ensure continuity of the <code>udapi_slave</code> process. Starting in this release, the <code>PHANTOM_WAIT_UO</code> environment variable has been added. This environment variable accepts a positive integer value and controls how long the wait is. Setting the value to 0 removes the wait period.	Server Processes
UDT-18958	Beginning with this release, <code>uopy</code> can now retrieve <code>FILEINFO()</code> information from a file on a 8.2.4 server.	UOPY
UDT-19000	Starting in UniData 8.2.4, the Windows <code>udtdiag</code> script has been updated to v4.4.2.	Support Tools
UDT-19042	UniBasic. Starting in UniData 8.2, after changes were made for Audit, the <code>SYSTEM(49)</code> call stack function in UniBasic had a memory leak. The call had to be made repeatedly (in the customer's case several thousand) to <code>SYSTEM(49)</code> by the same process before it became problematic. This issue has been resolved.	U2 Basic
UDT-19073	Starting in this release, the <code>EDA_TRANS</code> function now allows the specification of the remote key id instead as well as the default ID.	External Database Access

Key	Release Notes	Component
UDT-19075	Starting in this release, a new UniBasic function PBKDF2HMAC has been added to work with the PBKDF2 message digest algorithm. For more details, please refer to UniBasic Command Manual.	Basic Call Interface, Security
UDT-19087	Starting in this release, a new service of uddaps has been added to allow the MV Visual Studio Code Extension to work with the UniData debugger.	Debug Tools
UDT-19093	Prior to this release, a memory allocation may have occurred when saving the current command value for @COMMAND for a uniobjects session. This issue has been resolved.	Error Reporting - Crash
UDT-19116	Replication. Prior to this release, if multiple write error occurred when updating an EDA file, the reporting of those errors to rw.errlog could result in the crash of the udrw process. This issue has been resolved.	External Database Access
UDT-19140	<p>In 8.2.1.9110 to 8.2.1.9124, 8.2.2, 8.2.2.1001 - 8.2.2.1003, 8.2.3, 8.2.3.2001 - 8.2.3.2003 , a change was made under UDT-16840 and checked into these releases to correct the problem. The change that was made was not restricted to AIX and the change impacts all platforms on these releases. As described in the updated description for UDT-16840, no fix was necessary in UniData, and customers should have been advised to check their AIX patch level. The change that was made will be reversed in this release, as they can now result in other exponent based arithmetic failing. Our internal testing shows examples with negative exponents will fail. 10^{-3} will be returned as 0 not 0.001. This can be corrected by changing the float precision for the exponent calculation only. Float precision cannot be changed globally as it has impacts across the board.</p> <pre> EXPECTED = 0.001 ; COMPUTED = (10 ^ -3) CRT "Expected: ":EXPECTED:" Computed: ":COMPUTED IF (EXPECTED = COMPUTED) THEN CRT "PASS" ELSE CRT "FAIL" </pre> <p>This issue has now been resolved.</p>	U2 Basic
UDT-19160	Windows Only. Prior to this release, certain smm errors could be repeatedly written to the <code>smm.errlog</code> file. The result would be a very large <code>smm.errlog</code> file which could either cause disk space problems and/or problems attempting to restart UniData. In the current release, repeating errors will be written a maximum of 10 times, thus resolving this issue.	Error Reporting

Notices

Edition

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Website: www.rocketsoftware.com

Rocket Global Headquarters
77 4th Avenue, Suite 100
Waltham, MA 02451-1468
USA

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