Micro Focus Visual COBOL Development Hub 2.3 Update 1

Release Notes

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Contents

Micro Focus Visual COBOL Development Hub 2.3 Update 1 Release Notes

These release notes contain information that might not appear in the Help. Read them in their entirety before you install the product.

Note:

- This document contains a number of links to external Web sites. Micro Focus cannot be responsible for the contents of the Web site or for the contents of any site to which it might link. Web sites by their nature can change very rapidly and although we try to keep our links up-to-date, we cannot guarantee that they will always work as expected.
- Check the *Product Documentation* section of the *Micro Focus SupportLine Web site* and the *Micro Focus Infocenter* for any updates to the documentation which might have been uploaded.

What's New

This release provides enhancements in the following areas:

- *Application Server JCA support for Enterprise Server*
- *File Handling*
- *UNIX and Linux platform support*

Application Server JCA support for Enterprise Server

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This release provides support for automatic connection recovery to an active Java application server when an enterprise server region is restarted. This applies to COBOL resource adapters.

File Handling

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The following enhancements have been made to file handling processes:

- A new indexed file format, IDXFORMAT12, has been introduced to improve file maintenance and recovery procedures when using the rebuild utility. This file format is similar in structure and use to IDXFORMAT8. Where the two formats differ is that an IDXFORMAT12 file has an accompanying side file (`.idx` file) containing the indexed key information.

  You can use this type of file with the new `rebuild /q` option. This rebuild process is considerably quicker than other rebuild processes such as a data scrape or `rebuild /p`.
- Faster SORT operations for fixed block records - when using the DFSORT emulation, the performance when sorting fixed block records has greatly improved.

UNIX and Linux platform support

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This release is now supported on SUSE and Red Hat platforms that are running the little-endian PowerLinux architecture.

Note: These are 64-bit platforms only.

There are a few restrictions when running in this environment:

- The `cob` flag -p, which enables profiling, is not supported on Red Hat platforms.
- The `cobmode` utility is not supported.
- SQL functionality is restricted to OpenESQL support (ODBC and JDBC) only.
- The RM File Manager (RMFM) is not supported.

Significant Changes in Behavior or Usage

This section describes significant changes in behavior or usage. These changes could potentially affect the behavior of existing applications or impact the way the tools are used.

Where present, the numbers that follow each issue are the Support Incident Numbers followed by the Reported Problem Incident (RPI) number (in parentheses).

Run-Time System

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- The Audit Manager contains a new TIMEOUT option. When a client sends an audit event using the ‘CBL_AUDIT_EVENT’ API, the event gets placed in the next available slot in a shared memory block. If shared memory is full (i.e. no slots are available), the event is re-tried until a slot becomes available.

  If no Audit Manager is running, no events are removed from shared memory, and no slots will ever become available. Therefore, use the new TIMEOUT option so that a client will only retry sending until the TIMEOUT duration is reached; after which, it will stop sending audit events. If Audit Manager is recycled, events will start to be sent again.

  To set the TIMEOUT for all Audit Manager clients, specify the following line in the Audit Manager configuration file:

  ```
  mfaudit.timeout = n
  ```

  Where n is the timeout value in milliseconds.

  To set the TIMEOUT for an individual Audit Manager client, use the ‘CBL_AUDIT_CONFIG_PROPERTY_SET’ API. It takes an integer property-value, which should be the timeout value in milliseconds.

  If TIMEOUT is set using both methods, the client property TIMEOUT takes precedence, unless this property is set to zero; in such cases, the TIMEOUT in the configuration file is used. If you use the ‘CBL_AUDIT_CONFIG_PROPERTY_GET’ API on the ‘TIMEOUT’ property, it only returns the TIMEOUT value for the client property; it does not return the value set in the configuration file.

  2838689 (1101685)
- Several changes have been made to the implementation of IS DBCS, IS KANJI and IS JAPANESE class condition tests:

  - IS [NOT] DBCS

    When CHARSET"EBCDIC" is in effect, the IS DBCS test returns true when each character in the string is deemed to be a valid DBCS character. A valid character has its first byte in the range 0x41 through 0xFE, and the second byte in the range 0x41 through 0xFE, or the character is an EBCDIC space (0x4040). When CHARSET"ASCII" is in effect, the DBCS test uses an OS call to determine if the string contains only valid double-byte character, and returns true if valid.
  - IS [NOT] KANJI

    When CHARSET"EBCDIC" is in effect, the IS KANJI test returns true when each character in the string is deemed to be a valid Kanji character. A valid character has its first byte in the range 0x41 through 0x7F, and the second byte in the range 0x41 through 0xFE, or the character is an EBCDIC space (0x4040). When CHARSET"ASCII" is in effect, the IS KANJI test uses an OS call to determine if the string contains only valid Kanji character, and returns true if valid.

- IS [NOT] JAPANESE

  When CHARSET"EBCDIC" is in effect, the IS JAPANESE test is not supported, and will generate a COBCH1806 Feature not supported in selected charset message on compilation.

  When CHARSET"ASCII" is in effect, the IS JAPANESE test returns true when the string contains only double-byte Japanese characters or single-byte Japanese Katakana characters, and returns true if valid. When NSYMBOL"NATIONAL" is in effect, these class tests are not supported, and will generate a COBCH0303 Operand has wrong data-type message on compilation.

2812895 (1098401)

SQL: OpenESQL

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- The DB2 CONCAT function and operator now convert to SQL Server using the HCOSS-supplied dbo.CONCAT for character, numeric and datetime data. If you are using BINARY or VARBINARY data, you must apply the HCOSS-supplied dbo.CONCAT_BINARY function. HCOSS applications deployed with earlier versions of Enterprise Developer are affected, if they use string or binary concatenation. The mainframe dialect DB2 || operator and CONCAT function now call a new SQL Server scalar function dbo.CONCAT(). All existing programs with dialect=mainframe that use DB2 concatenation syntax should be recompiled. All existing SQL Server databases that are accessed by these programs must have dbo.CONCAT installed. To create the new function in your application's SQL Server database, you can either:

  - Run a DSN bind against the customer database. Or:
  - Execute the `%ALLUSERSPROFILE%\Micro Focus\Enterprise Developer\hcoss \InstallDigitsFunction.sql` script.

  This is a one-time only change to the database.

  2843818 (1102248)

SQL Option for DB2

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- Spurious errors were sometimes returned while querying using an ALIAS.

  2830383 (1100609)

Resolved Issues

The numbers that follow each issue are the Support Incident Numbers followed by the Reported Problem Incident (RPI) number (in parentheses).

Adis

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- Deleting a DBCS character no longer causes corruption when the ADISCF options 15 Pre Clear and 29 Read Screen are specified.

  2848637 (1102857)

Common Communications Interface

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- The performance of Fileshare servers on Linux and UNIX platforms has been substantially improved since the 2.2 Update 2 and 2.3 releases of Visual COBOL and Enterprise Developer.

  2829622 (1101067)
- On UNIX, the product previously was looking for the cciusers.dat file (used for the initial population of the MFDS Internal Security users and groups) in the /etc/ folder. Starting with this release, the cciusers.dat file in $COBDIR/etc/ is used in preference. This removes the requirement to store cciusers.dat in the /etc directory.
- Components that use the SSL/TLS support in CCI, such as Fileshare and MFDASMX, can now use private key files in binary (DER) format.

Communications Server

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- The Enterprise Server EZ Sockets feature no longer fails to initialize at system startup if the MFCS connection to MFDS is unusually delayed.

  2847439 (1102743)

Documentation

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- When handling XML files, after a successful WRITE action, the size of the XML file written is returned as the status code.

  2587541 (1085484)
- When using Fileshare with the CCISM protocol, ensure the server is started using the /SC switch. This switch starts Fileshare in synchronous communications mode, which gives better performance than when using Fileshare with the CCITCP protocol. Without this switch, Fileshare operations may be slower.
- An Enterprise Server error message has been added to the help pages for CASKC0048, process soft-killed failed and was hard-killed.

  2846350 (1102574)
- The ldpli topics have been updated to include information about native ld options.

  2840325 (1101829)
- The product help now provides the correct definition of the ES_ESM_RESSEC environment variable.

  2836105 (1101281)
- The "mfsupport" utility is now correctly named and spelled as MFSupportInfo, for Windows platforms.

  2848869 (1102896)
- In the topic "Sample Parameters File", the value of Keys towards the end of the code sample has been changed from 48 to 60.

  2844479 (1102300)
- The parameter TSOE_JOBPREFIX has been replaced with TSOE_JOBCHAR.

  2844210 (1102719)
- Additional information added to the help pages for the audit event codes emitted by the External Security Facility (ESF) and Micro Focus Directory Server (MFDS).

  2842807 (1102120)
- If you receive a 9/064 file status, this is informing you that a process has attempted to open a file using a different locking mode than the one that is already in place. The locking mode is determined by the tunable strict_file_locking. All processes accessing the same file need to be using the same locking mode; that is, all have the tunable set to the same value, which can be either 'true' or 'false'.

  2837405 (1101440)
- Option D(o) in the Character Animator is only applicable when you are debugging intermediate (.int) code.

  2839572 (1101835)

Enterprise Server

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- The caslock utility now validates the APPLID. In order for caslock to remove all locks for a given cluster client, the passed APPLID must already be known to the GLM - for example, it must already have an entry in the CASGLM.LCK file.

  2847684 (1103145)
- When processing a WSBIND that contain nested occurs levels, the group level is now correctly maintained.

  2844738 (1102697)
- XA transactions will now end when an ECI request fails with PGMIDERR.

2843668 (1102276)

- The order in which user privileges are checked when accessing cataloged files has changed. First, a check for the alter privilege is performed. If access is denied, Enterprise Server performs a check for update privileges. If this check fails as well, a final check for read access is performed. This is reflected in both the console log output and in any Audit Manager events that are generated.

2842162 (1102048)

- Previously, when generating a MQRFH2 header, the CCSID that was used was 0. This resulted in an abend APIJ on the CPIL transaction and in an error 2111 on the MQGET API. The MQRFH2 header is now generated with the correct CCSID values.

2841974 (1102004)

- When the targetService option was enabled for the JMS Invoke Webservice, no response was returned to the application if the URIMAP was not found. This caused the transaction to hang. A message is now sent to the Dead Letter Queue, and the application fails with an error message DFHPI0112.

2841602 (1101959)

- casspool type 16 records (spool-printed-88) are now being processed and the printed spool records get deleted when using Delete from the ESMAC page.

2839657 (1101706)

- A Run-Time System error 114 no longer occurs when a GET request is received.

2825851 (1100157)

- You can now start Enterprise Server instances that have the casuesm exit enabled. If you are already using this exit, you must recompile your applications using the updated cascbesm.cpy that is in the cpylib subfolder in the product installation directory. You also need to include the version check at initialization time that is implemented in the skeleton casuesm.cbl file that is in the src in the product installation directory.

2821228 (1099658)

- You no longer receive a memory leak in cassi processes when using the Micro Focus External Call Interface.

- If no license has been found when starting Enterprise Server, Enterprise Server Administration now periodically checks whether a license server is present.

2836688 (1101388)

- The Enterprise Server External Security Facility, using LDAP-based security, no longer incorrectly matches a wildcard character ("*") in a resource access rule to a period (".") in the requested resource name. The double wildcard sequence ("**") does match a period (".").

2854402 (1103604)

- When using LDAP-based security immediately after installing Enterprise Server, with the sample access rules provided with the product, the TRANCLASS definitions in ESMAC are now granted administrative access to as it is for other resource types.

2838380 (1101547)

- The LISTREFERENCES command now works correctly when the resource class names use special characters.

File Handling

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- OPEN EXTEND EXCLUSIVE for sequential files accessed via ACUFH/RMFM now correctly locks the file.

2849233 (1102953)

- If a program opens an RM/COBOL or ACUCOBOL-GT data file, and the file format has been specified at compile time (and not in a run-time config file), then file assignments containing a sub-path will correctly search locations specified by COBDATA.

  2842825 (1102218)
- Rebuild now correctly processes the key structure defined through an options file.

  2837028 (1101412)
- Relative filenames specified with dot-slash (e.g. ./file.dat) will now match filename tags in the extfh.cfg configuration file (e.g. [file.dat]).

  2832386 (1100932)
- Rebuild option /t now supports extended ESDS (XESDS) files. Rebuild also allows you to create an ESDS file without supplying the index key information (option /k).

  2837756 (615857)
- Rebuild now allows the case where "9" is specified after ":"

  2836782 (1101437)

Interface Mapping Toolkit

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- Ebiz execution no longer fails when tracing is enabled and several programs contain a mismatched linkage offset.
- JSON request messages containing multi-byte UTF8 characters caused errors for REST web services.

Micro Focus Common Client

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- COBOL Web, EJB, and REST services with Japanese characters in their names can now be deployed to Enterprise Server.

Micro Focus Directory Server

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- Fixed an issue in the Enterprise Developer Administration HTML GUI if a long user id value was input.

  2846804 (1102971)
- Enterprise Server instance startup performance has been improved, particularly when the Enterprise Server Administration GUI has been configured to use SSL.

  2837359 (1101501)
- Issue fixed where the Enterprise Server Administration HTML GUI occasionally became unresponsive if configured to use an SSL browser connection.

  2834446 (1101342)
- The Enterprise Server user id no longer needs to have security administration access permissions to start an Enterprise Server instance if external security is specified.

Monitoring and Management

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- The Operations Manager agent no longer logs a warning event 21405 for machines being monitored that do not have Enterprise Server installed .

  2830110 (1100895)

Run-Time System

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- In the JVM COBOL run time, an alphanumeric comparison with a collating sequence now gives correct results for character values greater than 127.

  2839717 (1101845)

- If a file is opened for Read with 'deny neither read nor write' and then the same file is opened for Read (or Read/Write) with 'deny write', then when the second FD is closed, the 'deny write' file lock was NOT removed. This has now been resolved.

  2837230 (1101419)

- When using "mfauditadm -r" on an audit file containing processes that have very long command lines, the process could terminate early with a memory fault. This has now been resolved.

  2832770 (1101000)

- The Sharedmem demo has been updated to make it compatible across all supported UNIX platforms. Previously, on some platforms the semaphore synchronization did not work.
- Repeatedly calling and cancelling different programs in different threads could cause the application to hang. This has now been resolved.

SQL: COBSQL

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- The COBSQL preprocessor has been updated to correctly handle P(CP) with the NOSQL directive.

  2850394 (1103086)

- Background parse should now create temporary files with names that differ from the actual build process.

  2843719 (1102613)

DB2

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- A compiler error that resulted from the DB2 ECM preprocessor incorrectly handling embedded comments within an SQL statement has been fixed.

  2846756 (1102646)

- An HCO pre-compiler routine incorrectly replaced an underscore in host variable name which resulted in invalid host variable. This has now been fixed.

  2837674 (1101487)

SQL: OpenESQL

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- An overflow problem with host variables of type System.Decimal has been fixed.

  2849939 (1103195)

- OpenESQL has been updated to correctly handle cursors in static methods when using DBMAN=ODBC in a managed application.

  2847268 (1102968)

- A problem with EXEC ADO REBIND CONNECTION has been fixed.

  2846426 (1102645)

- In some scenarios, OpenESQL for ADO.NET incorrectly handled level 49 VARCHAR host variables defined with zero (0) length.

2845409 (1102510)

- HCOSS with SQL(CHECKCALLPARAMS) now correctly determines parameter types and directions for SQL, SQL synonym, and SQL CLR stored procedure calls that use four-part names, and that are located on other servers or in other databases.

2844292 (1102483)

- HCOSS did not fully support DB2 ROW_NUMBER().

2843937 (1102362)

- Using SQL(CHECK) with .NET applications caused an error on Oracle.

2842102 (1102037)

- The OpenESQL JVM Runtime was updated to correctly process a FETCH from a VARCHAR column where the field is zero length.

2841149 (1102637)

- The Project Properties user interface has been updated to include SYBASE and INFORMIX-NEW on the COBSQLTYPE options list.

2840953 (1101877)

- An EXEC ADO GET DATATABLE statement for DataTables contained within a dataset resulted in SQL errors.

2837717 (1101484)

- HCO for SQL Server incorrectly returned result set locators for result sets containing VARCHAR(MAX) columns.

2832384 (1101169)

- The ADO and JDBC runtimes have been updated to fix a share lock problem that occurred when SQL(ISOLATION) was set.

2797208 (1096456)

- To correct a problem when using SQL(DETECTDATE) with SQL Server datetime columns, applications updating to Visual COBOL 2.3 might require use of the SQL(DETECTDATE) directive if they use SQL Server datetime columns with PIC X host variables. Alternative solutions are to switch to datetime2, or to use SQL TYPE TIMESTAMP host variables.

2850022 (1103058)

- To correct a problem with closing CURSORs, SQL(SPCALLLOCAL) can now be used to instruct OpenESQL to detect and close cursors associated with simulated stored procedures not closed by an application.

2848402 (1102838)

- When using SQL Server version 2012 SP2 or later, OpenESQL now supports a [NOCHECK] statement prefix to enable SQL(CHECK) to be disabled on a per-statement basis. If used with other statement prefixes, it must come first. When compiling programs that use global temporary tables, HCOSS executes converted DECLARE GLOBAL TEMPORARY statements at compile time. These enable subsequent statements that reference the temporary table to be checked using SQL(CHECK).

2847791 (1102782)

- OpenESQL now supports SQL(DETECTDATE=SERVER) when using the ADO.NET runtime and SQL Server version 2012 or later. SQL(DETECTDATE=SERVER) is ignored when using ADO.NET with earlier versions of SQL Server, and when using any other database.

2846825 (1102701)

- When migrating a DB2 application using HCOSS, a compiler error caused by string concatenations that included literals containing angle bracket characters has been corrected.

2846226 (1102582)

- A new directive, CHECKSP, has been added to the OpenESQL preprocessor to verify whether or not parameters match the COBOL definitions defined in a stored procedure. If not, the OpenESQL

preprocessor generates error ES0127. The syntax is: SQL(CHECKSP=<spd-filename> CHECKSP applies only when SQL(SPCALLLOCAL) is also used.

2844399 (1102329)

- The POSTGRESQL parameter for the TARGETDB SQL compiler directive option was erroneously omitted from the drop-down list in the user interface.

2842879 (1102128)

- When using the OpenESQL JDBC Managed Runtime with positioned updates on a cursor, an error occurred when the same cursor was opened and closed multiple times.

2841857 (1102003)

- The OpenESQL runtime for ADO.NET was erroneously trimming trailing spaces from variable-length input host variables that used an explicit-length field.

2841721 (1102106)

- A problem with disconnecting named connections when using the JDBC runtime for OpenESQL has been fixed.

2841508 (616495)

- When compiling applications with SQL(DIALECT=MAINFRAME), literals could be corrupted with embedded spaces.

2839826 (1101752)

- In European locales, Oracle queries failed to return the decimal symbol for floating point results returned to decimal numeric host variables.

2839066 (1102162)

- OpenESQL SAVEPOINT handling was not working as expected with Static SQL.

2838227 (1101571)

- An HCOSS stored procedure called from multiple locations in either the calling application or in a nested stored procedure, and that returns result set locators, resulted in an SQLCODE error.

2834386 (1101104)

- HCO for SQL Server returned incorrect output parameter values when a CALL statement specified a stored procedure name in a host variable.

2833755 (1101022)

- OpenESQL with DATE+EUR erroneously returned values representing a 12-hour clock. Returned values now correctly represent a 24-hour clock.

2833683 (1101017)

- The SPD Generator did not set the NOTRUNC directive when generating a SQL CLR wrapper.

2829499 (1102075)

- When running in ODBC mode, the OpenESQL Assistant DCLGEN sometimes generated incorrect TIMESTAMP and DATE column sizes. It now generates the TIMESTAMP(6) columns as PIC X(26) and the DATE columns either as PIC X(19) or X(10) based on the NLS_DATE_FORMAT setting.

2823577 (1099922)

- The documentation has been updated to clarify the issue of trailing spaces in comparisons for PIC X host variables with CHAR and VARCHAR columns.

2806980 (1097582)

- An attempt to compile in Visual COBOL with OpenESQL using unsupported HCOSS directives now returns errors rather than warnings. HCOSS is not supported in Visual COBOL.
- OpenESQL for ADO.NET did not recognize and handle Oracle's full managed .NET provider in addition to the original partially managed provider. Note: The two providers are not 100% compatible. The partially managed provider uses NLS settings for date/time formatting and the fully managed provider uses the local machine locale.

SQL Option for DB2

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- The XDB pre-processor incorrectly processed SQL statement that had embedded singles within a literal. This resulted in receiving an incorrect message "cobsql0111e - no from clause specified error".

  2850293 (1103073)

- When using an open cursor with constants comparison in an IN () clause, an Sqlcode -1352 error occurred.

  2844111 (1102266)

- An SQL statement with SELECT caused an XDB with Server Violation error when converting from the CHARACTER to INTEGER type in the INSERT SQL statement.

  2839382 (1101677)

- Incorrect results sometimes occurred when using a host variable for the second parameter of the SQL scalar function ROUND() function.

  2831359 (1101083)

- Exiting SQLWizard processing no longer causes an exception.

  2849696 (1103097)

- A problem with the display of code page conversions in the SQLWizard Import/Export dialog boxes has been resolved.

  2846196 (1102659)

- An issue that resulted in a syntax error when editing tables with decimal data has been resolved.

  2840937 (1101960)

- Exporting a table with a reserved word as a column name no longer produces an error X020 if the quoting types are Apost or Quote.

  2806803 (1097559)

- An RTS 114 error would sometimes occur on an UPDATE WHERE CURRENT OF CURSOR.

  2840936 (1101868)

- When executing a batch job containing XDB Null loads, an error occurred during DSNUTILB processing when loading the XICU40N DLL.

  2840147 (1101785)

- An execution error resulted when using dynamic SQL with an SQLDA SQLN integer much larger than required for input parameter markers.

  2818992 (1099256)

XML Support

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- PREXML now terminates and returns an error message if there is a problem expanding a copybook.

  2472213 (1076394)

- XMLPARSE did not honor the encoding in the XML declaration for output text.

  2851343 (1103239)

- XML WRITE with CHECK VALIDITY OUTPUT no longer causes RTS 114 error if the written document contains an XML declaration.

  2837110 (1101424)

- XMLPARSE did not handle CONTENT-CHARACTERS correctly in XMLSS mode.

2822339 (1099692)

Known Issues

Refer to the *Known Errors and Restrictions* topic in the *Product Information* section of your product Help.

In addition, note the following:

Debugging

- When debugging a remote program, the performance of the network, specifically the latency between the local and remote machines, will have an effect on the responsiveness of Eclipse. Whenever Eclipse has to show the new execution position, a number of messages are sent from the remote machine, over the network, to get the required information. The effect of this is that it can take a few seconds after a Step command is issued before Eclipse has updated the screen and is ready for the next command.

  You can mitigate this delay by closing any unnecessary debug views. For instance, by closing the Expressions view and the Variables view, the number of messages that are sent is reduced, which allows Eclipse to update quicker.
- Large programs can suffer from a large delay the first time that the program is displayed in the debugger and an expression is evaluated. You can reduce this delay by following these steps:

  1. Create a text file called `debugconfig.xml`.
  2. Add the following lines, and then save the file:

     ```
     <?xml version="1.0" encoding="utf-8" ?>
     <NativeDebuggerOptions>
       <DebugOption Option="REMOTECHECKER" Value="yes"/>
     </NativeDebuggerOptions>
     ```
  3. At a command or shell prompt, set the environment variable DEBUG_CONFIG to the full path name for `debugconfig.xml`.
  4. Start Eclipse from the same command or shell prompt.
- Remote debugging does not work for programs running on AIX or HP machines, if you are trying to debug using Visual COBOL installed on a Linux machine.

Enterprise Server

- The Historical Statistics Facility may generate incorrect records for SSTM-enabled enterprise servers.

Resource Adapters

- Trying to deploy the local resource adaptor `mfcobol-localtx.rar` to WebLogic may fail with a ClassCastException. To work around this issue, you need to deploy `mfcobol-xa.rar` first, then need to undeploy this file and deploy the local one, `mfcobol-localtx.rar`. If there are issues deploying using the WebLogic GUI, you can use the command line. If there are issues with this as well, try reducing the length of the command (for example, by moving the file to a location with a shorter path).

REST/JSON IMTK implementation and the same-origin policy (SOP)

- HTTP requests sent from scripts within a web browser to REST services deployed on an enterprise server might fail due to the same-origin policy (SOP). Some browsers might implement (or support plugins that implement) techniques for relaxing SOP such as cross-origin resource sharing (CORS) that enable sending cross-origin requests successfully. For REST services, Enterprise Server does not implement a method for relaxing SOP. This means that browsers that implement CORS (or any other SOP relaxation technique) might still forbid requests made from scripts due to Enterprise Server not implementing the equivalent technique on the server side.

Other Issues Resolved in This Release

The numbers listed are the Support Incident Numbers followed by the Reported Problem Incident (RPI) number (in parentheses).

- 2266906 (1066314)
- 2541594 (1081441)
- 2610077 (1087571)
- 2613606 (1088533)
- 2691674 (1093498)
- 2784725 (1095083)
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- 2843140 (1102509)
- 2843301 (1102185)
- 2843324 (1102296)
- 2843438 (1102240)
- 2843446 (1102173)
- 2843446 (1102174)
- 2843884 (1102492)
- 2845184 (1102627)
- 2845218 (1102490)
- 2845635 (1102601)
- 2845781 (1102730)
- 2846150 (1102557)
- 2846669 (1102644)
- 2846797 (1102780)
- 2846971 (1103070)
- 2847253 (1102806)
- 2847876 (1102765)
- 2848324 (1103143)
- 2849271 (1103044)
- 2849307 (1102974)
- 2849430 (1103011)
- 2849508 (1102970)
- 2849972 (1103094)
- 2851114 (1103175)
- 2851169 (1103174)
- 2852143 (1103362)

Installing Visual COBOL Development Hub

Before Installing

Downloading the Product

1. Use the download links in your Electronic Product Delivery email.

   For more information follow the links for the installation instructions and the End User License Agreement.

UNIX and Linux Installer Issues

License Server

You need to configure the computer hostname to ensure the license server will start properly.

To avoid performance issues, "localhost" and the computer hostname must not both be mapped to IP address 127.0.0.1. You should only map "localhost" to IP address 127.0.0.1.

The following is an example of how to specify these entries correctly in the `etc/hosts` file:

```
127.0.0.1 localhost.localdomain localhost
IP machinelonghostname machineshorthostname
```

where *IP* is the unique IP address of the computer in xx.xx.xx.xx format.

System Requirements for Micro Focus Visual COBOL Development Hub

Hardware Requirements

The disk space requirements are approximately:

Platform	Installer type	Setup file size (MB)	Disk space required for the installation	Disk space required for running the product (MB)	Sentinel RMS license server (MB)
POWER running AIX	Micro Focus installer	419	1.68 GB	838	36.5
HP IA	Micro Focus installer	763	3.05 GB	1526	69
System Z running Red Hat Linux	Micro Focus installer	346	1.38 GB	692	36

Platform	Installer type	Setup file size (MB)	Disk space required for the installation	Disk space required for running the product (MB)	Sentinel RMS license server (MB)
x86-64 running Red Hat Linux	Micro Focus installer	359	1.44 GB	718	46
SPARC running Solaris	Micro Focus installer	405	1.62 GB	810	40
x86-64 running Solaris	Micro Focus installer	375	1.60 GB	750	31
System Z running SUSE SLES	Micro Focus installer	349	1.40 GB	698	36
x86-64 running SUSE SLES	Micro Focus installer	364	1.46 GB	728	46

Operating Systems Supported

For a list of the supported operating systems, check the *Product Availability* section on the Micro Focus SupportLine Web site: *http://supportline.microfocus.com/prodavail.aspx*.

Software Requirements

Note: This product includes OpenSSL version 1.0.1p.

Before installing this product, you must have the following software installed on your computer:

- Xterm, the terminal emulator for the X Window System, is part of your UNIX/Linux distribution but is not installed by default. Use your UNIX/Linux installation media to install it.
- The pax archiving utility is required by the setup file. Pax is distributed with most UNIX/Linux systems but, if it is missing, you must install it separately. To verify pax is installed, run `pax --help` or `pax --version` at the command line.
- The following operating system libraries must be installed:

Library	Platform		
	SUSE 11	Red Hat 6.*x*	Red Hat 7
glibc-locale-32bit	X		
gcc (gcc-32-bit)	X		
gcc*.i686		X	X
glibc-*.x86_64		X	X
glibc-*.i686		X	X
libgcc-*.x86_64		X	X
libgcc-*.i686		X	X
libstdc++-*.x86_64		X	X

Library	Platform		
	SUSE 11	Red Hat 6.*x*	Red Hat 7
gcc*.s390		X	X
glibc-*.s390		X	X
glibc-*.s390x		X	X
glibc-devel-*.x86_64		X	X
glibc-devel-*.i686		X	X
glibc-devel-*.s390		X	X
glibc-devel-*.s390x		X	X
libstdc++-*.i686		X	X
gdb*	X	X	X

- Visit the *Red Hat Web site* for more information.
- Oracle's Java Platform, Enterprise Edition (Java EE) Java 7 or Java 8 is required to execute COBOL JVM code and for native COBOL and Java interoperability. You can download Oracle's Java EE from *Oracle's web site* and install it anywhere on your machine.

  Note:

  - On AIX and zLinux, you need to have IBM's JDK. The earliest supported release of IBM's JDK is 7.0 Service Refresh 8. You can get IBM's AIX JDK from *IBM's Web site*.
  - On HP-UX, you need to have HP-UX JDK. The earliest supported release of HP-UX is JDK 7.0.11. You can get the HP-UX Java JDK from *HP's Web site*.

To execute COBOL JVM code, you need to set the environment as follows:

- You need to set the JAVA_HOME environment variable. When installing the product, set this variable to a 32-bit Java installation or the installation terminates. For example, execute the following:

  ```
  JAVA_HOME=java_install_dir
  ```

  where *java_install_dir* is the path to the JAVA installation directory such as `/usr/java/javan.n`
- You need to add `$JAVA_HOME/bin` to your system PATH variable. To do this, execute:

  ```
  export PATH=$JAVA_HOME/bin:$PATH
  ```
- You need to set the LANG environment variable to pick up localized messages. The LANG settings are English and Japanese only.

Important: This release requires version 10000.2.990 or later of the Micro Focus License Administration tool. For local servers, you do not need to install it separately, as the setup file installs a new Visual COBOL client and a new licensing server on the same machine.

If you have a network server, you must update the license server before installing the product as the client is not able to communicate with license servers of versions older than 10000.2.660. To check the version of the license server on UNIX, run `/var/microfocuslicensing/bin/mfcesver` or `/var/microfocuslicensing/bin/cesadmintool.sh`.

You can download the new version of the license server software from the Micro Focus SupportLine Web site: *http://supportline.microfocus.com*.

Additional Software Requirements for Micro Focus Visual COBOL Development Hub

To ensure full functionality for some features, you might be required to obtain and install additional third-party software in addition to the prerequisite software installed automatically by the setup file.

Basic Installation

The instructions in this section apply when you are performing a basic installation of this product for the first time. If you are an administrator, you can perform a basic installation on a local machine before performing a more advanced installation when rolling out the product to developers within your organization.

For considerations when installing this product as an upgrade, for additional installation options or non-default installations, see *Advanced Installation Tasks*.

Installing Micro Focus Visual COBOL Development Hub

Note: Micro Focus offers two types of installers on UNIX and Linux - a proprietary Micro Focus installer for installing on UNIX and Linux and a standard RPM (RPM Package Manager) installer for installing on Linux. See your product Help for instructions on how to use the RPM installer.

These are the steps to install this product using the Micro Focus installer:

1. Give execute permissions to the setup file:
   ```
   chmod +x setup_visualcobol_devhub_2.3_update1_platform
   ```
2. Run the installer with superuser permissions:
   ```
   ./setup_visualcobol_devhub_2.3_update1_platform
   ```
   If you don't run this as superuser you will be prompted to enter the superuser password during the installation.

   The COBOL environment is installed by default into `/opt/microfocus/VisualCOBOL`, (COBDIR).

SafeNet Sentinel considerations

- The installation of this product could affect the SafeNet Sentinel licensed components running on your machine. During installation licensing is shutdown to allow files to be updated. To ensure the processes running on your machine are not affected, you need to use the `-skipsafenet` option, which skips the installation of SafeNet:
  ```
  ./setup_visualcobol_devhub_2.3_update1_platform -skipsafenet
  ```
- To protect the SafeNet Sentinel installation from accidental updating you can create an empty file named `SKIP_SAFENET_INSTALL` in `/var/microfocuslicensing/` as follows:
  ```
  touch /var/microfocuslicensing/SKIP_SAFENET_INSTALL
  ```
  While the file is present, the SafeNet installer does not make changes to the installation or shutdown the running license daemons. If licensing needs to be updated later, remove the file and install Sentinel RMS server manually.

Note:

During the installation process, the installer configures the product's Enterprise Server System Administrator Process User ID. The Process User ID will be the owner of all Enterprise Server processes except the one for the Micro Focus Directory Server (MFDS). The Directory Server process (Enterprise Server Administration) runs as root as this allows it to access the system files and ports.

All Enterprise Server processes you start from Enterprise Server Administration run under the Process User ID which can affects the file access and creation.

By default, the installer uses the login id of the user that runs the installer for the Process User ID. To change the user id after you complete the installation, execute `$COBDIR/bin/casperm.sh`.

Advanced Installation Tasks

This section includes instructions about how to perform a non-default installation, install this product as an upgrade, or about how to install the additional components.

The advanced installation tasks include:

- *Installing as an Upgrade* - included in these Release Notes
- *Command line installation options* - included in these Release Notes
- *Installing using an RPM installer on Linux* - available in the product Help and in the Micro Focus Infocenter

Click here to see this information on the Micro Focus Infocenter.

Installing as an Upgrade

This release works concurrently with the previous version of Micro Focus Visual COBOL Development Hub, so you do not need to uninstall it. There are two options for installing the latest version in this case:

- Move the existing installation to a different location and install the latest version to the default install location specified by the COBDIR environment variable (`/opt/microfocus/VisualCOBOL`, by default).

  This ensures you do not need to change your environment. To move the existing older installation to a different location:

  1. Execute the following command as root:
     ```
     mv /opt/microfocus/VisualCOBOL /opt/microfocus/VisualCOBOLversion
     ```
  2. Install the latest version as described in the section *Installing*.
- Install the latest version in a different location and set the environment to point to it. To do this, run the Micro Focus Visual COBOL Development Hub installer with the –installlocation option:

  1. Execute the following command:
     ```
     . /InstallFile -installlocation="/opt/microfocus/VisualCOBOL"
     ```

     Note: You can use variables or the tilde syntax for the path for `–installlocation`. For example, the following examples are equivalent:
     ```
     -installlocation="/home/myid/installdir"
     -installlocation="~myid/installdir"
     -installlocation="~/installdir"
     -installlocation="$HOME/installdir"
     ```
  2. Execute cobsetenv to set the environment and point to the new install location:
     ```
     . /opt/microfocus/VisualCOBOL/cobsetenv
     ```

     Note that `cobsetenv` is only compatible with POSIX-like shells, such as bash, ksh, or XPG4 sh. It is not compatible with C-shell or pre-XPG4 Bourne shell.

Micro Focus Visual COBOL Development Hub Installation Options

Installing into a different location

To install in a different location use the `-installlocation="Location"` parameter to specify an alternative directory location. For example:

```
./setup_visualcobol_devhub_2.3_update1_platform -installlocation="full path of new location"
```

Note: You can use variables or the tilde syntax for the path for `–installlocation`. For example, the following examples are equivalent:

```
-installlocation="/home/myid/installdir"
```

```
-installlocation="~myid/installdir"
```

```
-installlocation="~/installdir"
```

```
-installlocation="$HOME/installdir"
```

You can see details about which additional parameters can be passed to the install script if you enter the `-help` option.

Configuring the Enterprise Server installation

You can use the following options to configure the Enterprise Server installation: `[ -ESsysLog="location" ] [ -ESadminID="User ID" ] [ -CASrtDir="location" ]`, where:

-ESsysLog	Specifies a location in which the build will create the Enterprise Server System log file - for example, `-ESsysLog="/home/esuser/logs"`. The default location is `/var/mfcobol/logs`.
-ESadminID	Sets the Enterprise Server System Administrator Process User ID from the command line - for example, `-ESadminID="esadm"`. The default user ID is the one that runs the installer.
-CASrtDir	Specifies the location were the Enterprise Server run-time system files are placed - for example, `-CASrtDir="/home/esuser/casrt/es"`. The default location is `/var/mfcobol/es`.

Installing Silently

You can install Micro Focus products silently by using command line parameters to specify the installation directory, user information, and which features to install. You must execute the command with superuser permissions.

You can use the following command line arguments to install silently on UNIX/Linux:

```
–silent -IacceptEULA
```

For example, execute:

```
[as root] setup_filename –silent -IacceptEULA
```

After Installing

- The information about Micro Focus Visual COBOL Development Hub is part of the Visual COBOL for Eclipse product help.

- Check the *Product Documentation* section of the *Micro Focus SupportLine Web site* and the *Micro Focus Infocenter* for any updates to the documentation which might have been uploaded.

Setting up the product

1. To set up your product, execute:
   ```
   . /opt/microfocus/VisualCOBOL/bin/cobsetenv
   ```
2. To verify that your product is installed, execute:
   ```
   cob -V
   ```

Important: These commands set the environment only for the current shell. You need to execute them for each new shell that you start.

To avoid having to run `cobsetenv` for every shell, add these commands to the shell initialization files (such as `etc/profile`, `etc/bashrc`).

Note that `cobsetenv` is only compatible with POSIX-like shells, such as bash, ksh, or XPG4 sh. It is not compatible with C-shell or pre-XPG4 Bourne shell.

Configuring the Remote System Explorer Support

The remote development support from the Eclipse IDE relies upon Visual COBOL Development Hub running on the UNIX machine and handling all requests from the IDE for building and debugging programs. Visual COBOL Development Hub provides a UNIX daemon, the Remote Development Option (RDO) daemon, which initiates the RDO as Eclipse clients connect to it. Whichever environment is used to start the RDO daemon will be inherited for all servers and hence all build and debug sessions.

Configuring the Environment

You may need to configure some aspects of the environment before you start the daemon. This is because when a build or debug session is initiated on the Development Hub from one of the Eclipse clients, the environment used will be inherited from whatever was used to start the daemon. A typical example of the kind of environment that might need to be set up would include database locations and settings for SQL access at build/run time.

Starting the Daemon

Important: Before starting the daemon you must have the following on your UNIX machine:

- a version of Perl
- a version of Java
- the `as` (assembler) and `ld` (linking) programs on the path, as specified by the PATH environment variable

To start the daemon on the default port (4075) as a background process, perform this command with superuser authority:

```
$COBDIR/remotedev/startrdodaemon
```

The daemon will now listen for any Eclipse client processes connecting to that machine on port 4075. If you want to use another port, specify another port number on the `startrdodaemon` command.

The daemon can also be configured to instantiate the servers on a specified port or range of ports. This is particularly relevant when you want to only open certain ports through a firewall. To do this, perform this command with superuser authority:

```
$COBDIR/remotedev/startrdodaemon [<port> | <low port>-<high port>]
```

where:

- <*port*> is the port number the daemon should use to listen for connections from Eclipse on the client machine. If no value is given, it will be assigned a default value of 4075. This value matches the value assigned within the Eclipse installation.

  For example,

  ```
  $COBDIR/remotedev/startrdodaemon 4999
  ```

  This command will start a daemon listening on port 4999 and will use random server ports.
- <*low port*>-<*high port*> is the range of ports on which the servers (launched by the daemon) should use to communicate with Eclipse on the client machine.

  For example,

  ```
  $COBDIR/remotedev/startrdodaemon 4080 4090-4999
  ```

  This command will start a daemon listening on port 4080 and server ports will be in the range 4090 to 4999.

Stopping the Daemon

To stop the daemon, type the following command with superuser authority:

```
$COBDIR/remotedev/stoprdodaemon <port>
```

Repairing on UNIX

If a file in the installation of the product becomes corrupt, or is missing, we recommend that you reinstall the product.

Uninstalling

Note: Before you uninstall the product, ensure that the Enterprise Server instances and the Micro Focus Directory Service (MFDS) are stopped.

To uninstall this product:

1. Execute as root the `Uninstall_VisualCOBOLDevelopmentHub2.3.sh` script in the `$COBDIR/bin` directory.

Note: The installer creates separate installations for the product and for Micro Focus License Administration. Uninstalling the product does not automatically uninstall the Micro Focus License Administration or the prerequisite software. To completely remove the product you must uninstall the Micro Focus License Administration as well.

To uninstall Micro Focus License Administration:

1. Execute as root the `UnInstallMFLicenseServer.sh` script in the `/var/microfocuslicensing/bin` directory.

   The script does not remove some of the files as they contain certain system settings or licenses.

You can optionally remove the prerequisite software. For instructions, check the documentation of the respective software vendor.

Licensing Information

Note:

- When you activate Visual COBOL Personal Edition, you can use it for a limited period of 365 days. After this period, you can either register a new Personal Edition license for 365 days or acquire a valid license either for a 30-day trial or full license of Visual COBOL in order to continue using the product.
- If you have purchased licenses for a previous release of this product, those licenses will also enable you to use this release.
- The latest version of the SafeNet licensing software is required. See the *Software Requirements* section in this document for more details.
- Your entitlement for using this product is governed by the Micro Focus End User License Agreement and by your product order. If you are unsure of what your license entitlement is or if you wish to purchase additional licenses, contact your sales representative or *Micro Focus SupportLine*.

To buy and activate a full unlimited license

To buy a license for Visual COBOL, contact your sales representative or Micro Focus SupportLine.

For instructions on using the Micro Focus Licensing Administration Tool, see *Licensing* in the Visual COBOL help.

To start Micro Focus License Administration

Log on as root, and from a command prompt type:

```
/var/microfocuslicensing/bin/cesadmintool.sh
```

Installing licenses

If you have a license file

1. Start the Micro Focus License Administration tool and select the **Manual License Installation** option by entering 4.
2. Enter the name and location of the license file.

If you have an authorization code

Authorizing your product when you have an Internet connection

The following procedure describes how to authorize your product using a local or network license server. The license server is set up automatically when you first install the product.

1. Start Micro Focus License Administration.
2. Select the **Online Authorization** option by entering 1 and pressing **Enter**.
3. Enter your authorization code at the **Authorization Code** prompt and then press **Enter**.

Authorizing your product when you don't have an Internet connection

This method of authorization is required if your machine does not have an Internet connection or if normal (automatic) authorization fails.

In order to authorize your product you must have the following:

- Your authorization code (a 16-character alphanumeric string).
- The machine ID. To get this, start the Micro Focus License Administration tool and select the **Get Machine Id** option by inputting 6. Make a note of the "Old machine ID".

If you have previously received the licenses and put them in a text file, skip to step 6.

1. Open the Micro Focus license activation web page *http://supportline.microfocus.com/activation* in a browser.
2. Enter your authorization code and old machine ID and, optionally, your email address in the **Email Address** field.
3. Click **Generate**.
4. Copy the licenses strings from the web page or the email you receive into a file.
5. Put the license file onto your target machine.
6. Start the Micro Focus License Administration tool and select the **Manual License Installation** option by inputting 4.
7. Enter the name and location of the license file.

To obtain more licenses

If you are unsure of what your license entitlement is or if you wish to purchase additional licenses for Visual COBOL, contact your sales representative or Micro Focus SupportLine.

Updates and SupportLine

Our Web site gives up-to-date details of contact numbers and addresses.

Further Information and Product Support

Additional technical information or advice is available from several sources.

The product support pages contain a considerable amount of additional information, such as:

- The *Product Updates* section of the Micro Focus SupportLine Web site, where you can download fixes and documentation updates.
- The *Examples and Utilities* section of the Micro Focus SupportLine Web site, including demos and additional product documentation.
- The *Support Resources* section of the Micro Focus SupportLine Web site, that includes troubleshooting guides and information about how to raise an incident.

To connect, enter *http://www.microfocus.com* in your browser to go to the Micro Focus home page, then click *Support*.

Note: Some information may be available only to customers who have maintenance agreements.

If you obtained this product directly from Micro Focus, contact us as described on the Micro Focus Web site, *www.microfocus.com*. If you obtained the product from another source, such as an authorized distributor, contact them for help first. If they are unable to help, contact us.

Also, visit:

- The Micro Focus Community Web site, where you can browse the Knowledge Base, read articles and blogs, find demonstration programs and examples, and discuss this product with other users and Micro Focus specialists. See *http://community.microfocus.com*.
- The Micro Focus YouTube channel for videos related to your product - see *https://www.youtube.com/user/MicroFocusIntl*.

Information We Need

However you contact us, please try to include the information below, if you have it. The more information you can give, the better Micro Focus SupportLine can help you. But if you don't know all the answers, or you think some are irrelevant to your problem, please give whatever information you have.

- The name and version number of all products that you think might be causing a problem.
- Your computer make and model.
- Your operating system version number and details of any networking software you are using.
- The amount of memory in your computer.
- The relevant page reference or section in the documentation.
- Your serial number. To find out these numbers, look in the subject line and body of your Electronic Product Delivery Notice email that you received from Micro Focus.

Alternatively, you might be asked to provide a log file created by the Consolidated Tracing Facility (CTF) - a tracing infrastructure that enables you to quickly and easily produce diagnostic information detailing the operation of a number of Micro Focus software components.

On UNIX, you can use the Micro Focus UNIX Support Scan Utility, `mfsupport`, to create a log file that contains the details about your environment, product, and settings. The `mfsupport` script is stored in `$COBDIR/bin`.

To run `mfsupport`:

1. Start a UNIX shell.
2. Set COBDIR to the product with issues.
3. Execute `mfsupport` from a directory where you have write permissions.

   This creates a log file, `mfpoll.txt`, in that directory.
4. When the script finishes, send the `mfpoll.txt` file to your Micro Focus SupportLine representative.

Note:

If COBDIR is set to a location that does not contain `etc/cobver`, the script outputs the contents of `/opt/microfocus/logs/MicroFocusProductRegistry.dat` which keeps a list of the installed Micro Focus products.

Creating Debug Files

If you encounter an error when compiling a program that requires you to contact Micro Focus SupportLine, your support representative might request that you provide additional debug files (as well as source and data files) to help us determine the cause of the problem. If so, they will advise you how to create them.

Disclaimer

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