Micro Focus Visual COBOL 2.3 Update 2 for Eclipse Distributed Edition

Release Notes

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Contents

Micro Focus Visual COBOL 2.3 Update 2 for Eclipse Distributed Edition 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.

Product overview

The Micro Focus Visual COBOL for Eclipse Distributed Edition package comprises the following products which you can download from your Electronic Product Delivery Note:

- Visual COBOL for Eclipse - the product provides an Eclipse-based integrated COBOL development environment for Windows or Linux. Visual COBOL for Eclipse provides COBOL JVM support and enhanced compatibility with ACUCOBOL and can be used standalone for developing local applications or in conjunction with the Visual COBOL Development Hub to develop remote projects in Linux and UNIX.
- Visual COBOL Development Hub - the product provides a rich desktop development environment based on the Eclipse IDE with high-performance server-based tools for managing builds, source code access and the debugger engine. Visual COBOL Development Hub also provides a central administration site, simplifying the development tool distribution and maintenance process.

Upgrading from earlier Micro Focus products

Application executables that were compiled using earlier Micro Focus products must be recompiled from the sources using Visual COBOL.

What's New

This release provides enhancements in the following areas:

Integration with the Eclipse IDE

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Enhancements are available in the following areas:

- Using the search facility, **Search > Micro Focus**, you can now limit the search to the copybooks used by the current program rather than all copybooks in the project or the entire workspace.
- The editor provides a new context menu command, **Extract COBOL code to copybook**, that enables you to move a selected segment of the code to a new copybook file in your project. The segment of code moved to a copybook is replaced with a COPY statement in the original program.
- Support for Eclipse 4.5 - after installing Visual COBOL, you can add it as a plugin into a separate instance of Eclipse 4.5. See your product's *Installation* notes.

COBOL language enhancements

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Numeric, edited and external floating point items can now specify USAGE NATIONAL when the NATIONAL"2" Compiler directive is in effect. Signed numeric items must be specified with the SIGN IS SEPARATE clause.

Compiler directives

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The following Compiler directives are new in this release:

- COMMAND-LINE-LINKAGE - enables you to call a program and pass the command line to the main program as a parameter to be accessed via the Linkage Section. This offers equivalent functionality to the command_line_linkage tunable, which has now been deprecated.
- EBC-COL-SEQ - controls the behavior of an EBCDIC collating sequence, specified in a NATIVE"EBCDIC" program. EBC-COL-SEQ"1" (the default) maintains use of the long-standing fixed (platform-independent) EBCDIC collating sequence. EBC-COL-SEQ"2" prompts use of the latest CODESET table, which varies according to platform and user-controlled MFCODESET environment variable setting.
- NATIONAL - enables you to specify numeric, edited and external floating point items as USAGE NATIONAL.

Editor writing assistance

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This release provides the following enhancements:

- Colorization of conditional compilation regions - by default, inactive code is now colored the same as Compiler directive elements. Inactive code is defined as code within conditional blocks that do not evaluate with the applied Compiler settings.
- $REGION statement - support is provided for the $REGION Compiler-control statement. You can use $REGION - $END-REGION to surround blocks of code that you want to fold or expand in the editor.
- AutoCorrect - you can configure the editor to automatically fix the most frequently misspelled words. You use the IDE preferences to specify a list of words that you sometimes mistype, and the correct spellings for them. Whenever you misspell that word, the editor automatically replaces it with correct version. This feature is enabled by default and can be configured from a new preference page in **Window** > **Preferences** > **Micro Focus** > **COBOL** > **Editor** > **AutoCorrect**.

File handling

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MFJSORT ICETOOL now supports the USING parameter in the SELECT operator.

Interface Mapping Toolkit

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This release supports JSON schemas for the generation of REST Web service clients in the Eclipse IDE.

Library routines

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The following library routine contains new functionality:

- CBL_GET_PROGRAM_INFO - a new function (function 10) has been added for native COBOL which returns the path and program name, or the program name only of a particular program.

Tutorials

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The product help includes the following new tutorial:

- *Tutorial: SQL - Deploying an Enterprise JavaBean Containing JVM COBOL to a JBoss Application Server* - that walks you through the process of deploying an EJB that contains JVM COBOL code.

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).

Compiler

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- Replacing a partial token no longer causes the second part of the token to appear on a new line. This could happen if the new text was larger than the text being replaced.

  2869185 (1105763)
- There is no longer a problem opening an RM/COBOL indexed file when the program has a RECORD CONTAINS n CHARACTERS clause and there are record descriptions with lengths less than n. This situation previously caused a 39 error on the OPEN (other than OPEN OUTPUT) because there was a mismatch in the minimum record length.

Eclipse IDE

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- This update modifies any existing connections defined in an Eclipse workspace. If the connections had any non-default values, those values could revert to their original default setting. After installing this release, before you use any remote connections for the first time, you need to check the settings and amend them as necessary.

  2852872 (1103699)

Enterprise Server

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- Previously, it was possible to install groups that should not have been installed. If a group name, as defined in the Startup List, did not exist in the list of Groups then the next Group in the alphabetical order would be loaded instead. Now, if a Group is not defined in the list of Groups, a warning that the Group could not be loaded is issued.

  2869848 (619107)
- On UNIX, if the "File Path" setting was not specified in the configuration of an Enterprise Server, the environment variable TXFILEP was defaulting to $COBDIR/etc/cas. This has been changed and TXFILEP is not populated when the "File Path" is not specified.

  (618668)

MF Directory Server

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- The "-n" option for the mfds command now supports hostnames as the network addresses in addition to IPv4 addresses.

  2816871 (1099564)

Monitoring and Management

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- Messages that are written to the console log by applications that perform "display upon console" now contain a standard message ID (CASMG0001I).

  2854207 (1103659)

Run-Time System

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- The command_line_linkage tunable has been deprecated; equivalent functionality can be achieved by using the COMMAND-LINE-LINKAGE Compiler directive instead.

  2838118 (1101539)

Known Issues

Refer to the *Known Issues 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.

Database Access

- If you have a remote COBOL project under Eclipse that uses DB2 ECM in Visual COBOL or HCO for DB2 LUW in Enterprise Developer and the DB2 software is not installed on the client machine where you are using the Eclipse IDE, you receive background parsing errors in your application. To resolve the issue, you can do either one of the following:

  - Disable background parsing **Window > Preferences > Micro Focus > COBOL > Editor** and disabling the checkbox for **Background parsing**.
  - Install the IBM DB2 client-side software on the machine on which you are running Eclipse. Go to the IBM Support Home and locate the page entitled "IBM Download Fix Packs for IBM Data Server Client Packages" .

Enterprise Server

- The Historical Statistics Facility may generate incorrect records for SSTM-enabled enterprise servers.
- On Windows 10, if you are using Microsoft's EDGE browser to access the Enterprise Server Administration GUI, issues with EDGE can cause the automatic refresh feature to display a dialog asking whether you want to resubmit a form. To work around this issue, cancel the resubmit request and then refresh the server list page or the Home page of Enterprise Server Administration. You can also turn off the automatic refresh by setting the **Auto-refresh interval** setting on the Home page of Enterprise Server Administration to 0.

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.

Viewing the Product Help

- A known issue in JRE 1.7.0_45 (issue JDK-8028111) causes problems with searching and indexing the help in the Eclipse help viewer if you are running Eclipse on a machine that has this version of JRE installed.

Resolved Issues

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

Character Animator

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- The source file is now found when it is located in the same directory as the .idy file.

  2852782 (1103425)

Code Analysis

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- The GO TO statements targeting non-exit paragraphs query no longer returns points inside EXEC statements.
- The performance has been improved.
- The criterion for dead statements within a program has been modified to exclude child elements of statements.
- Level 78 constant names used in picture definitions are now replaced with the actual values.
- An issue with de-referencing NULL pointers during program generation has been fixed.
- An issue with de-referencing a NULL pointer has been fixed.

Codeset Support

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- A number of DBCS translation tables for CODESET have been added to the deployment product to fix the 'COBRT255 CODESET cannot open double byte conversion table' error.

  2858171 (1104157)
- The following changes have been made to CODESET tables: • The Japanese Katakana Extended codeset (country code 81) now corresponds to EBCDIC code page 290 when converting between ASCII and EBCDIC, which means lower case letters (which start at x61, and not x81) can now be converted. • Unused entries for the following codesets have been filled in order to allow round tripping (ASCII>EBCDIC>ASCII conversions) of SBCS values: • Japanese Latin Extended, country code 939, which corresponds to EBCDIC code page 1027. • Korean, country code 82, which corresponds to EBCDIC code page 833. • Simplified Chinese, country code 86, which corresponds to EBCDIC code page 836. • Traditional Chinese, country code 886, which corresponds to EBCDIC code page 37.

Common Communications Interface

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- The formatting of the context help pages for the Enterprise Server Administration HTML GUI has been improved.

Compiler

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- When a program uses SQL, the debugger could highlight the wrong line when entering that program. This has been fixed.

  2869190 (1105765)
- On 32-bit Intel platforms you could receive an error "001-F Internal error 38" when generating for debug.

  2856865 (1104040)
- A COBRT114 error produced at generate time has been fixed.

  2853877 (1103611)
- An error in the "ACCEPT binary-floating-point-item" syntax, which occurred on Intel x86 platforms in 32-bit generated code, has been fixed.
- On UNIX or Linux, Intel x86, 32-bit platforms, callable shared objects no longer state a spurious line number when reporting RTS 163 run time errors.
- If more than one report shared the same FD, for example: REPORTS ARE REPORT-1 REPORT-2. then under HOSTRW, the record length was wrong. This has been corrected.

  2865849 (1105553)
- Programs using B-AND, B-OR, or B-XOR now compile with the ARITHMETIC"ENTCOBOL" Compiler directive in effect.

  2864991 (1105087)
- A DISPLAY statement containing a very large number of operands now compiles as expected.

  2864361 (1105017)
- An inline method invoke with a variable-length group item now produces correct object code.

  2864131 (1105018)
- Report Writer now generates the correct record length. Previously, if the BLOCK CONTAINS clause came after the RECORD CONTAINS clause in the File Descriptor, the BLOCK would corrupt the value from the RECORD clause, causing the record to have the wrong length when written to the file.

  2863045 (1105008)

- The use of 'AS' as a data-name for programs using an SQL ECM now works as expected.

  2863002 (1104821)
- If an INVOKE statement specifies more parameters than the method actually has, an appropriate error message is produced. Previously, an 'internal error' error message was produced.

  2860899 (1104519)
- An INITIALIZE statement performed on a subscripted table containing fields that are object references or procedure pointers now executes as expected.

  2860416 (1104588)
- Messages produced by the FLAGSTD directive now have the correct line and column info reported in the IDE.

  2859026 (1104318)
- A COBOL program compiled with the PROFILE Compiler directive now shows information on the number of times the program has been called, as well as loaded.

  2858944 (1104278)
- When REPLACE is active, a literal containing "" now compiles as expected.

  2858804 (1104264)
- A compilation where a user pre-processor is specified below CP in the pre-processor stack, and this pre-processor passes COPY statements through unopened, now works as expected.

  2858013 (1105427)
- Compilation of a STRING statement, with an operand that reference modifies the result returned by a user function, now works as expected.

  2857266 (1104189)
- A new directive, EBC-COL-SEQ, now controls the behavior of an EBCDIC collating sequence, specified in a NATIVE"EBCDIC" program. EBC-COL-SEQ"1" (the default) maintains use of the long standing fixed (platform independent) EBCDIC collating sequence. EBC-COL-SEQ"2" prompts use of the latest CODESET table, which varies according to platform and user-controlled MFCODESET environment variable setting.

  2856776 (1104074)
- SCREEN SECTIONs with very large amounts of fields, which worked in Net Express, now work in Visual COBOL.

  2854533 (1103648)
- Copybook dependency information is now shown correctly in Eclipse for programs compiled with a preprocessor such as CP.

  2854371 (1103662)
- Compiler warning message "COBCH972 Linkage item (or subordinate item) is referenced but has no addressability" is no longer produced inappropriately.

  2854113 (1103542)
- The use of the HOSTRW and CURRENT-DATE directives no longer causes an excessive number of lines in a report produced from the Report Writer.

  2853789 (1105472)
- Subscripts specified via intrinsic function LENGTH-AN no longer receive spurious boundary violation error messages.

  2851928 (1103254)
- Preprocessor created error messages containing SJIS characters are now displayed correctly, as expected.

  2646229 (1089272)

- A USE FOR DEBUGGING statement that references a table item and is triggered by a condition where the table item is referenced but not evaluated (due to short-circuit evaluation) now executes as expected.

  2433731 (1073167)

- There is a new option, CP, in EXECPERIOD. It controls the processing of periods that follow EXEC statements. In most scenarios, the default option, EXECPERIOD(SMART), enables you to compile by applying a flexible behavior based on the program's context.

  2867788 (1105608)

- A CALL statement inside a method could sometimes lead to bad code generation, leading to verification errors on program load. This is now fixed.

  2856883 (1103973)

Data Tools

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- DFCONV now correctly supports a command line length of 1024 characters, as documented.

  2868190 (1105640)

- The classic Data File Tools utility now shows the correct field sizes for PL/I array elements.

  2858068 (1104147)

- The DFCONV utility now converts correctly between IEEE and 370 floating points.

  2857502 (1104054)

Debugging

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- In Eclipse, program breakpoints in a program with DECLARATIVES now stop correctly when the program is entered.

  2868653 (1105740)

- When repeating the debugging of remote 64-bit applications, Eclipse would occasionally hang.

  2846587 (1102616)

- When the COBANIMSRV environment variable was used under Windows for cross-session debugging under Eclipse, the working-storage data items might have displayed 'RT114 error' instead. These items should now display correctly.

- When debugging a program or core file, stack unwind through a signal trampoline could fail on AIX 7.1.

Dialog System

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- The Dialog System configuration information can now be updated using the painter.

Documentation

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- The documentation of the format of CCI.INI has been corrected.

  2867660 (1105532)

- The product help now clarifies that navigation bar in Visual Studio displays the lists of the objects and procedures used in the current program as well as the Procedure Division, any sections, paragraphs, and group level data definitions and enables you to position the cursor on any of them.

2858290 (1104219)

- The topic "Making the Most Out of The COBOL Editor" in the product help for Visual Studio now provides a link to the information about limitations with single file support.

2858263 (1104217)

- Information on setting the mfdepinst security credentials in the .mfdeploy file in the deployment parent directory has been added to the documentation.

2854625 (1103607)

- The product help now includes information about the ExcilRespException and InvalidDataException classes and corresponding serialized form information.

2851195 (1103171)

- The 'This Page' help link in Enterprise Server on UNIX now opens the Help.

2818256 (1099110)

- Changing the project's connection type can result in the project losing the connection to its version control system. You can re-establish the connection with your version control system in the Share Project dialog.

2792882 (1101965)

- Step five in the installing on UNIX was missing the period that goes before "/opt". It now reads:

```
. /opt/microfocus/EnterpriseDeveloper/bin/cobsetenv
```

2855600 (1103829)

- The product help has been updated to remove the requirement to install the gcc libraries. These libraries are not required to install and configure the product and then for the basic functionality. gcc is only required if you need to use C and COBOL together and gcc will be installed together with the required development tools.

2863618 (1104878)

- User exits MFDASIMP and MFDASEXP are now documented.

2858575 (1104507)

- Updated the information on the action of the MFJESPWR user exit program contained in the documentation.

2856725 (1103944)

- The DATAFIELD built-in function has been removed from the documentation.

2852986 (1103391)

- Details have been added to the topics "To enable Windows Event Logging" and "To enable Performance Counters" to state that the user must be able to write to the appropriate registry, and have appropriate privileges, to complete these tasks.

2840002 (617369)

- ECI programs that use mfccl.jar raise an error exception, EXCIException, if exciResp1 and exciResp2 are not both equal to zero. To ensure your ECI program captures all errors, you must catch this exception in your code. Please add the following code snippet, which enables your program to compile and execute properly: try { … } catch(ExciException e) { String rcMsg = e.getRcMsg(); } If an error occurs, rcMsg captures the appropriate error message.

2830787 (1100664)

- The documentation for the “MF Directory Server Security” page has been clarified, to show that the Security Facility Configuration parameters are available on this screen only when MFDS is configured to use an ESF (i.e. setup to use a Security Manager other than "MFDS Internal Security"), otherwise no ESF security configuration options (including the caching options) will be seen on this MFDS Security tab screen. These parameters are: Allow unknown resources Allow unknown users Cache limit Cache TTL Create audit events Verify against all Security Managers

- The product Help now includes some additional details on creating advanced filters for using regular expressions with the Compare and Synchronization Monitor.

  2645110 (1089268)

Editor Writing Assistance

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- IntelliSense (Visual Studio) and Content Assist (Eclipse) would sometimes not offer reserved word types where they were valid.
- IntelliSense (Visual Studio) and Content Assist (Eclipse) offered unqualified managed members where they could not be used without qualification.
- IntelliSense (Visual Studio) and Content Assist (Eclipse) sometimes offered invalid pointer items.
- IntelliSense (Visual Studio) and Content Assist (Eclipse) incorrectly offerred level 88 itens or require them to be qualified.
- IntelliSense (Visual Studio) and Content Assist (Eclipse) did not offer items in the PERFORM USING statement.
- An issue where members with reserved word names were not colorized correctly has been fixed. IntelliSense (Visual Studio) and Content Assist (Eclipse) suggestions are now offered in member headers for members with names that are reserved words.
- IntelliSense (Visual Studio) and Content Assist (Eclipse) did not show options after items which were subscripted or reference modified.
- IntelliSense (Visual Studio) and Content Assist (Eclipse) did not correctly offer typedefs in LENGTH OF phrases.
- Items from external programs were incorrectly offered in IntelliSense (Visual Studio) and Content Assist (Eclipse).
- IntelliSense (Visual Studio) and Content Assist (Eclipse) did not offer variables with the same name as classes, methods or properties in the same file.
- IntelliSense (Visual Studio) and Content Assist (Eclipse) did not offer suggestions after variables with the same name as classes, methods or properties in the same file.
- IntelliSense (Visual Studio) and Content Assist (Eclipse) omitted options after the SET SIZE [OF] statement.
- IntelliSense (Visual Studio) and Content Assist (Eclipse) did not offer items within indexers on natively typed arrays.
- IntelliSense (Visual Studio) and Content Assist (Eclipse) did not offer or recognise PIC 1 items within conditional expressions.
- IntelliSense (Visual Studio) showed the wrong members after a cast to SUPER.
- IntelliSense (Visual Studio) and Content Assist (Eclipse) sometimes did not list any members after names of unqualified types.
- The Content Assist (Eclipse) and IntelliSense (Visual Studio) lists would not include any options if there where unknown parameter types in the code.
- Some IntelliSense (Visual Studio) and Content Assist (Eclipse) proposals for items from external programs did not have any descriptions.
- If there were multiple items with the same name declared in external programsm they were not offered correctly by IntelliSense.
- IntelliSense now supports constructing instances of the current or parent type using either NEW SELF or NEW SUPER.
- IntelliSense in Visual Studio would sometimes show the wrong members for unqualified type names within partial classes.
- Content Assist (Eclipse) and IntelliSense (Visual Studio) now offer to qualify file record items by their FD items.
- IntelliSense (Visual Studio) and Content Assist (Eclipse) would sometimes list the wrong members after an unqualified type name.

Enterprise Server

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- The CASGLM.LCK and ESCLRMLs.cfg files were not generated if the system catalog was in a spacey path.
- The security when displaying any of the Enterprise Server configuration pages in the Enterprise Server Administration HTML GUI has been increased.

  2846702 (1102642)
- The "Renew" command available from the left hand side navigation pane in the Enterprise Server Administration HTML GUI did not work when SSL was enabled.
- A potential memory corruption when a SEP executing an EXEC CICS DELAY is killed has been fixed. This situation only occurred when TRANCLASS was enabled.

  2865931 (1105228)
- An initial 3270 terminal connection could hang if there was an attempt to send an error message to the terminal not yet connected and an XA error occurred at the same time.

  2865927 (1105226)
- IN-only messages are now supported for CICS Web Services.

  2864329 (1104991)
- An issue causing an RTS 114 error in mfjclsub when a CICS program executed a 'display' call in an SSTM-enabled region has been fixed.

  2858651 (1104770)
- It is now possible to programmatically change the name of a Web service displayed in the HSF records by calling the following entry point: call 'ES_trace_application_data' using by reference ws-trace-block . Where ws-trace-block is defined as follows: 01 ws-trace-block. 03 ws-trace-version pic x comp-x. 03 ws-trace-data. 05 ws-trace-type pic x comp-x. 05 ws-trace-text pic x(255). - ws-trace-version and ws-trace-type must have a value of 1. - ws-trace-text is restricted to 255 bytes in length, must be terminated by low-values (x'00) and must not have any spaces embedded in it.

  2856234 (1103860)
- When using cassout from the API and not cancelling it between calls, it was possible to overwrite the file output from a previous invocation if the '-d' option (output to file) was not specified. The product now initializes the required environment variables on each invocation to ensure this problem does not occur.

  2852058 (1103778)
- Trying to access ESMAC in a secure region no longer results in the application crashing.

  2851933 (1103724)
- On a CICS stateful request, after a run-time system failure, a transient SEP could loop, produce an RTS 114 error or an abend CDCD on shutdown during SDP2. This was caused by the ATP not being at the expected level when running SDP2.

  2851618 (1103389)
- The casutl command line utility supports a new option, /n. When used with /n, the utility starts a new console.log and saves the contents of the current console.log to a new file, console.nnn_switch_date_time (where nnn is a number).

  2851178 (1103265)
- Visual COBOL and COBOL Server with SOA now include castran with the CANCEL support.

  2849934 (1103037)
- Credentials are now masked out in the formatted dump.

  2848888 (1102908)
- A default password for an external Security Manager connection is no longer used when you specify a user id but not a password. This is to help avoid locking out the user id. Also, if no password has been

specified, the Enterprise Server Administration HTML GUI no longer displays a dummy value in the password field on the Security Manager configuration page.

2864790 (1105187)

- Under heavy loads, the ESFCA0401I log messages were not appearing at the correct intervals.

2863222 (1104948)

- Restricting access to the Enterprise Server External Security Facility's Admin API for the MLDAP ESM Module now works correctly when you use resource definitions in the optional AdminAPI class.

2830660 (1100636)

- With some types of tracing enabled, the MLDAP ESM Module for Enterprise Server security would sometimes report that a group ACE matched the user's logon group when in fact it did not match. The trace message now correctly indicates whether the ACE matched or not.
- When using Enterprise Server security with LDAP, on some platforms, a resource access rule with an empty access control list (ACL) could cause an RTS 114 or other program crash. This has now been fixed.

File Handling

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- An internal field used to store the current file status was being overwritten by the allocation of a buffer. Now we store it off beforehand so its value can be restored, and an accurate file status returned.

2868664 (1105707)

- When certain in-flight rewritten records were rolled back at the end of a transaction, the File Handler was setting incorrect values for the length field in some records and various warning messages were displayed during index file validation.

2864802 (1106106)

- VB files are now created with the correct lrecl, taking into account the extra space for a print character when creating the file header.

2856899 (1104023)

- FS_CHECK_FILE_EXIST is now being processed correctly when called with an environment variable that contains a Fileshare server-name. Previously, the request was not being sent to the server.

2851717 (1103253)

- Memory is now correctly being deallocated at end of IMS rollback recovery processing; previously, it was not.

2840046 (1101795)

- When running non-transactional file handling, a record-locked status will also return the process-id of the locking process when run on UNIX and using FCD3. This means C$LOCKINFO can also return this information for Micro Focus files. This behavior does not apply to Fileshare.

2832733 (1101061)

- The rollback recovery process is now working as expected.

2802180 (1097066)

- For corrupted files, where a corrupted offset occurs beyond the end of the file, you now receive a validation message instead of a Run-Time System error 114.

2860981 (1104576)

- When MFJSORT fails to open SYSOUT, it now gives an error message to the console, and then abends.

2861239 (1104614)

- The MFJSORT E15 user exit is now giving the correct record length.

2858360 (1104276)

- A COBOL SORT called from JCL no longer causes a COBRT200 error message in managed code.

  2857600 (1104073)
- SORT now treats leading spaces in ZD fields as zero, which emulates mainframe behavior.

  2855141 (1103700)
- The conversion of PD to ZD is now giving correct SORT results for negative numbers.

  2854443 (1103597)

H2cpy

Back to the list

- H2cpy now successfully parses cURL header files.

  2858155 (1104162)

HCO for Microsoft SQL Server

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- The OpenESQL pre-compiler generated code has been modified to perform swap logic for COMP fields if an SQLCODE of -305 or -811 is also returned, as data can be returned with either of those SQLCODEs.

  2871163 (1106063)
- An issue with OpenESQL handling cursor names that start with "CURSOR" has been fixed.

  2866507 (1105337)
- An issue where HCOSS was not locating the correct stored procedure for a bound statement in multi-step JCL jobs has been fixed.

  2861657 (1104733)
- When using DIALECT=MAINFRAME, if a program references a DECLARE GLOBAL TEMPORARY TABLE before the declaration, the precompiler now produces a warning and not an error message.

  2853667 (1103453)

IDE

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- Copybook dependencies are now shown correctly within Eclipse for 64-bit compilations.

  2866406 (1105576)
- You can now customize task tags for the COBOL, JCL, and PL/I editors.

  2865386 (1105306)
- A password in no longer required to establish an SSH connection in the Remote System view.

  2863953 (1105480)
- Additional options are now correctly saved in the .cobolBuild and .cobolProj files.

  2863027 (1104789)
- A PL/I macro invocation used as a statement parameter is no longer reported as an error.

  2862571 (1104763)
- PL/I background parse no longer reports an error when a macro replacement string is a DCL statement that ends with a semicolon.

  2862568 (1104767)
- Code coverage report generation now works where a project depends upon a copylib project.

  2858045 (1104184)

- The MFA connection sign-on dialog could be displayed at startup, it is now displayed when the connection is being established.

  2857986 (1104150)
- Hyperlink detectors defined in the Eclipse preferences for "Textual Editors" were not enabled for the PL/I and COBOL editors.

  2856932 (1103984)
- The performance of the "Updating Micro Focus model" job, user interface responsiveness and memory consumption have been improved when folders containing large numbers of files are added to an Eclipse project.

  2856154 (1105184)
- It is now possible to load templates in columns 1-7 in COBOL programs using content assist.

  2855703 (1103770)
- Updating the Micro Focus Model could result in high CPU and Disk IO. This has now been fixed.

  2854512 (1103605)
- The auth.pl process no longer hangs when the user ID is blank or null.

  2851049 (1103233)
- The generated .cobolBuild ant scripts now contains target names using simple filenames instead of full file system paths for the FileCompile.filename targets.

  2847988 (1102977)
- A problem with the core Eclipse code could cause a full project rebuild to occur when not required. This has now been fixed.

  2816310 (1104735)

Interface Mapping Toolkit

Back to the list

- Client generation now works as expected when invoked from the Team Developer Tree View.

  2869050 (1105758)
- A Web Services folder is now created when creating a web service in a COBOL remote project, specifying CREATEXFD as an additional project directive.

  2849983 (1103157)

Licensing

Back to the list

- The SafeNet installer now uses tar instead of PaX. This is to ensure compatibility across platforms.

  2860254 (1104400)

Micro Focus Directory Server

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- Fixed an issue where XA open string which included the "=" character would not display correctly in the Enterprise Server Administration HTML GUI.

  2856722 (1103958)
- If a user attempts to login to the MFDS process using a valid ID but an invalid password the message "ML3073W Unknown user" is no longer logged in the MFDS journal output.

  2842321 (1102116)

MVS REXX Emulation

Back to the list

- This release provides a technology preview support for the DSNREXX commands for DB2 LUW.

  2842140 (1102170)

OpenESQL

Back to the list

- A problem with SQL(SQLCLRTRANS) that caused a COBOL 173 runtime error on stored procedures that make COBOL calls to other modules has been fixed.

  2871330 (1106084)
- A problem using SQL(CHECK) with statements that contain a FOR :hostVariable prefix has been fixed.

  2868823 (1105704)
- In managed code only, a problem with the OpenESQL preprocessor sometimes generating incorrect code after a stored procedure call resulted in some data being returned incorrectly. This has been fixed.

  2868405 (1105663)
- Compiler errors sometimes resulted when the SQLCLR wrapper generator generated duplicate parameter names. This has been fixed by updating the generator to check for the potential of duplicate names and choose an alternate extension to insure unique names.

  2866086 (1105262)
- The OpenESQL pre-compiler incorrectly generated code for programs compiled with CHARSET(EBCDIC) and SQL(DBMAN=ADO) when SQL statements were greater than 4000 characters.

  2864850 (1105064)
- Previously, the SPD Generator did not handle correctly some of the parameters which resulted in generating an incorrect COBOL code.

  2864348 (1104993)
- The OpenESQL component was updated to resolve an issue executing the HCOSS Assess Application Migration tool when either no Visual Studio product was installed, or just the Visual Studio Integrated Shell was installed.

  2864021 (1104951)
- The SPD generator incorrectly handled quotes around the procedure name, resulting in a compile error of generated COBOL code. This has been corrected.

  2863699 (1104906)
- HCOSS was improperly handling UPDATE statements that uses row constructors based on a subquery. This has been fixed.

  2860329 (1104628)
- Using SQL(DETECTDATE=SERVER) with queries containing single quote characters sometimes resulted in an error. This has been fixed.

  2857619 (1104103)
- The DCLGEN function of OpenESQL Assistant now supports including comments in copybooks for the Label extended properties on SQL Server columns.

  2856215 (1104118)
- The SQL(CHECKSP) Compiler directive has been added to list of directives which you can set from the project's or a file's properties. Also, receiving an error message that the SPD file was not found no longer causes compiling to hang.

  2853668 (1103454)

Run-Time System

Back to the list

- A statement "MOVE <justified-alphanumeric-item> TO <numeric-item>" no longer produces a COBRT200 error.

  2869985 (1105986)
- If the Audit Manager was under heavy load by many client processes and was then re-cycled, it was possible that the client processes would not send the correct details when attaching to the new Audit Manager process, which would cause Audit Manager to crash. This is now fixed.

  2863509 (1104863)
- Pasting of DBCS characters that have a 2nd byte of x"E0" is now working correctly.

  2861398 (1104580)
- A dynamically bound application DLL that uses Object COBOL no longer hangs intermittently when loaded concurrently in multiple threads.

  2858271 (1104328)
- An additional sub-function has been added to the CBL_GET_PROGRAM_INFO library routine. The sub-function, number 10, returns a program's full path, or name only, depending on flag settings.

  (618769)
- Detaching from animation that was started using the debug_on_error tunable could cause animation to re-start again for the initial error - this has now been resolved.

Setup

Back to the list

- The UNIX setup file now supports the SuSE 12 SP1 version of spax.

  2866227 (1105283)
- The Install.sh script now performs the correct disk space checks to determine if there is enough space on SOLARIS SPARC machines prior to installing.

  2854557 (1103628)

SQL: Cobsql

Back to the list

- A problem with processing an SQL statement when it was on the same line as a COBOL condition resulted in a CSQL-F-026 error. This has been fixed.

  2864989 (1105085)
- A problem with COBSQL incorrectly handling EXEC SQL INCLUDE statements has been fixed.

  2821960 (1099586)
- A problem with COBSQL not recognizing or properly processing a section that comes directly after comment lines and returning an error has been fixed.

  2818934 (1099169)
- A problem with COBSQL not properly invoking cobpre64 when COBSQLTYPE is set to SYBASE has been fixed.

  2794407 (1096173)

SQL: DB2 ECM

Back to the list

- A problem with the HCO import tool incorrectly handling packed decimals greater than 18 digits has been fixed.It has been updated to now handle packed decimals up to 26 digits.

  2866180 (1105278)
- The DB2 pre-compiler sometimes incorrectly restored the RETURN-CODE after a SQL statement was executed.

  2857403 (1104045)

SQL: OpenESQL

Back to the list

- The INSENSITIVE option is no longer available for the STATICREADONLY directive.

  2871907 (1106251)
- A problem with error message handling in the ODBC run time for SAVEPOINT statements has been fixed.

  2870141 (1105889)
- A problem with HCOSS incorrectly renaming parenthesized expressions in select lists has been fixed.

  2869320 (1105787)
- SQL(SPTHROWEXCPETION) now throws an exception only for errors that result when SQL Server terminates the current transaction.

  2868965 (1105736)
- SQL(DETECTDATE) would sometimes incorrectly match dates and times in European and USA formats.

  2868282 (1105622)
- A problem with the OpenESQL preprocessor failing to properly check the length of an SQL statement properly, resulting in a 153 RTS error, has been fixed.

  2867772 (1105549)
- A problem with OpenESQL SQL Entry and Exit not showing in trace output has been fixed. The trace output is now sent to Auxiliary trace during CICS transaction execution.

  2867423 (1105490)
- A problem running SQL CLR stored procedures on heavily loaded servers has been fixed.

  2865750 (1105229)
- A problem with OpenESQL allocating duplicate server cursor names for positioned updates in stored procedures has been fixed.

  2865750 (1105230)
- A problem with the OpenESQL Assistant generating copybooks with TINYINT columns as PIC S9(2) COMP-5 rather than PIC S9(4) COMP-5 has been fixed.

  2865378 (1105139)
- HCOSS now correctly handles hexadecimal constant strings.

  2865026 (1105146)
- A problem with the OpenESQL preprocessor when compiling with the CHARSET(EBCDIC) directive sometimes generating COBCH0002/COBCH0302 compilation errors for programs that used arrays as host variables in SQL statements has been fixed.

  2864585 (1105039)
- OpenESQL now supports DESCRIBE CURSOR statements.

  2863839 (1104939)
- A problem with HCOSS handling the SUBSTRING function when only three parameters are supplied has been fixed.

2862754 (1105122)

- HCOSS now correctly handles the DB2 TRUNCATE scalar function when the function is called with only one parameter.

2862064 (1104674)

- HCOSS could sometimes report a SQL(CHECK) error as a warning instead of an error.

2861897 (1104668)

- The ODBC pre-compiler now swaps array variables using DO UNTIL loops similarly to how it does this for COBOL. This considerably reduces the number of statements generated for array variables.

2861580 (1104613)

- HCOSS now correctly sets SQLCODE = 100 for a rowset fetch that retrieves fewer rows than the host array size.

2861570 (1104629)

- HCOSS now handles correctly FETCH FIRST and ORDER BY clauses in queries that use set operators.

2861567 (1104751)

- A problem with OpenESQL incorrectly handling DB CAST expressions that use FOR BIT DATA has been fixed.

2861516 (1104689)

- HCOSS no longer trims trailing spaces automatically from input host variables when SQL(DIALECT=MAINFRAME) is set.

2859565 (1104692)

- Previously, you could incorrectly receive truncation warnings for output parameters of Oracle stored procedure calls that are character fields narrower than 19 characters.

2859200 (1104598)

- Using MySQL ODBC 5.6 or later with OpenESQL in VC/ED 2.3 or later caused an RTS 114 error. This has been fixed.

2858980 (1105338)

- Problems with the OpenESQL Assistant that caused the "no columns in table" error have been fixed.

2856643 (1103936)

- A problem with applications compiled with the SQL(INIT=PROT) directive caused Enterprise Server .NET jobs to hang. This has been fixed.

2856198 (1104002)

- HCOSS now supports DB2 RELEASE SAVEPOINT statements and problems with global temporary table housekeeping and ROLLBACK TO SAVEPOINT statements have been fixed.

2856008 (1103831)

- The SPTHROWEXCEPTION SQL compiler directive option has been added to improve diagnostics returned to calling applications from COBOL SQL CLR stored procedures in the case of an implicit SQL Server rollback on a transaction.

2854780 (1103670)

- A problem with OpenESQL not allowing 'NO' to be used as an SQL identifier has been fixed.

2854592 (1103598)

- A problem with the JDBC runtime incorrectly setting SQLCODE on repeat execution of EXECUTE IMMEDIATE statements has been fixed.

2854393 (1103713)

- A problem processing the EXEC ADO DATATABLE <name> BIND statement resulted in a COBES0100 error. This has been fixed.

2854004 (1103529)

- Some problems with DB2-style result sets where allocated cursors are reused without being closed and where cursors must remain open across multiple calls to the same stored procedure have been fixed.

  2853859 (1103520)
- EXCEL table names enclosed in single quotes were incorrectly handled by the DCLGEN function of the OpenESQL Assistant, resulting in an unhandled exception. This has been fixed.

  2853832 (1103555)
- The COBOL Run-Time system now successfully loads the ODBCRW64.DLL file when a native COBOL application is being called from a C# application.

  2853578 (1104167)
- The OpenESQL directives SQLCLRTRANS and SPDISPLAY now work correctly for Enterprise Server.NET batch jobs.

  2853439 (1103430)
- An HCOSS problem transforming SQL statements that contain both XML and CONCAT operators has been fixed.

  2853412 (1103426)
- The OpenESQL ODBC runtime has been updated to ensure that connections are closed after a DISCONNECT.

  2853341 (1103461)
- HCOSS now correctly handles WITH DEFAULT clauses in table definitions that do not specify a default value.

  2852996 (1103431)
- HCOSS now supports DB2 DECLARE GLOBAL TEMPORARY TABLE statements that use AS <query> and LIKE <tableName>.

  2850369 (1103793)
- The SQL(PROCOB) directive option for the OpenESQL preprocessor now supports Pro*COBOL's syntax for calling database functions when SQL(DBMAN=ADO) is also set. In addition, a problem that prevented DML from being executed in user-defined functions has been fixed.

  2849318 (1102957)
- The SQL(PROCOB) directive option for the OpenESQL preprocessor has been updated to process Oracle grouped host array syntax.

  2849301 (1102956)
- To fix a problem with the DETECTDATE directive not allowing runtime control of datetime data formatting, the OpenESQL SET <hostvariable> and SET OPTION statements have been enhanced to allow datetime data formatting behavior equivalent to the OpenESQL DATE, TIME, DATEDELIM, TIMEDELIM, TSTAMPSEP, and DETECTDATE directives.
- A problem with positioned update when using the latest release of the PostgreSQL ADO.NET provider has been fixed.
- The namespace used by the JDBC runtime for OpenESQL has changed from MicroFocus.COBOL.SqlJVM to com.microfocus.openesql.
- The 32-bit Windows DLL names used in OpenESQL JES program-alias mapping have been changed as follows: SQLTP232 to SQLTP2 SQLUTB32 to SQLUTB.
- Using the CHARSET(EBCDIC) directive with OpenESQL sometimes caused the preprocessor to generate incorrect code for converting SQLCA fields, resulting in CONNECT failures. This has been fixed.
- The SET host-variable embedded SQL statement has been added to OpenESQL to enable you to query the current connection name and database type.
- Cursor prefetch behavior in OpenESQL has been made more consistent with updates to the PF_RO_CURSOR and PF_UPD_CURSOR primitive compiler directive options for BEHAVIOR, and the MARS compiler directive option. See your product documentation for complete details.

SQL Option for DB2

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- The SQLN value in SQLDA is no longer modified when a FETCH is performed using invalid SQLVAR SQLDATA pointers.

  2854157 (1103541)

- A Run-Time System error "-84 UNACCEPTABLE SQL statement" could occur when there was a VARCHAR host variable definition with an extra 49 level FILLER statement.

  2867096 (1105432)

- Modified the XDB precompiler to no longer generate COBSQ0413S errors if the program is compiled with directive XDB(BEHAVIOR=STACKED).

  2855151 (1103687)

- The XDBSetup utility supports creating a user XDB.INI in the user's local application space.

  2839228 (1101904)

- An issue with scalar functions invoking aggregate functions invoking more scalar functions with embedded host variables has been fixed.

  2869971 (1105862)

- A problem that resulted in XDB Server providing incorrect SORT results when using ROWSET POSITIONING has been fixed.

  2867209 (1105454)

- Implicit casting is now carried out for SUBSTR() arguments in the V10 XDB engine.

  2865204 (1105108)

- A problem with uninitialized query common space generating an illegal decimal data error has been resolved.

  2860427 (1104449)

- XDB Server has been updated to correctly return results from XDB SQL when certain statement combinations are executed.

  2856158 (1103932)

- Some SQL queries that return data on the mainframe did not return data in XDB. These queries now return data in XDB as well.

  2853378 (1103442)

- The XDB SQL optimizer has been updated to use a new compound index routine. This corrects a problem that caused a thread access violation when processing a very large join restriction queue that had overflowed to disk.

  2853078 (1103385)

- A problem with the XDB server corrupting a row after executing a program that uses a FOR UPDATE cursor has been fixed.

  2850725 (1103117)

- Multiple issues that occurred when the reserved word SELECT was used as an identifier have been resolved.

  2849898 (1103024)

- A problem causing the SQL result to be inconsistent when using the SELECT... IN clause has been fixed.

  2849892 (1103103)

- A problem when creating a unique index, that resulted in an "x020: Syntax error. Last symbol read was 'INCLUDE'" error message, has been fixed.

2847745 (1102766)

- SQL Option now supports PARTITION BY SIZE syntax for DB2 version 9.

  2845161 (1102494)
- XDB no longer throws an X405 error message when it encounters a NOT operator that is part of a compound predicate.

  2640689 (1088784)

XML Syntax Support

Back to the list

- In some scenarios, XMLPARSE returned an RTS 114 error while parsing certain XML documents.

  2851143 (1103185)
- When reading an empty XML document, the returned file status is now -7.

  2851074 (1103216)

Other Issues Resolved in This Release

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

- 2865238 (1105114)
- 2871930 (1106185)
- 2866567 (1105346)
- 2865516 (1105153)
- 2865065 (1105097)
- 2857117 (1104003)
- 2872217 (1106234)
- 2864576 (1105124)
- 2855891 (1103807)
- 2864100 (1104959)
- 2867120 (1105479)
- 2865687 (1105211)
- 2864343 (1105019)
- 2858008 (1104163)
- 2858007 (1104161)
- 2835721 (1101500)
- 2835605 (1101499)
- 2858091 (1104136)
- 2865419 (1105238)
- 2864875 (1105074)
- 2861263 (1104753)
- 2859986 (1104407)
- 2855942 (1103906)
- 2679133 (1093595)
- 2852255 (1104353)
- 2856233 (1103855)
- 2867934 (1105578)
- 2867215 (1105455)
- 2866174 (1105419)
- 2858808 (1104227)
- 2855088 (1103672)
- 2853477 (1103462)
- 2852874 (1103543)
- 2839669 (1101704)
- 2836259 (1101305)
- 2808029 (1098883)
- 2790796 (1095836)
- 2854829 (1103653)
- 2854739 (1103627)
- 2866458 (1105348)
- 2865807 (1105205)
- 2864327 (1104989)
- 2862599 (1104785)
- 2848016 (1102774)
- 2843761 (1102734)
- 2841092 (1101887)
- 2865193 (1105135)
- 2864092 (1106070)
- 2859740 (1104343)
- 2859539 (1104350)
- 2856245 (1103972)
- 2855704 (1104105)
- 2855440 (1103871)
- 2853585 (1103448)
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- 2852872 (1103931)
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- 2840161 (1101839)
- 2799183 (1096680)
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- 2848947 (1103100)
- 2816310 (1104173)
- 2859923 (1104371)
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- 2857870 (1104107)
- 2809343 (1099937)
- 2858035 (1104156)
- 2856499 (1104222)
- 2857318 (1104188)
- 2858539 (1104204)
- 2856795 (1103963)
- 2840704 (1103249)
- 2863482 (1104862)
- 2861561 (1104610)
- 2860719 (1104512)
- 2858941 (1104253)
- 2858723 (1104229)
- 2856941 (1103977)
- 2856206 (1103880)
- 2861649 (1104679)
- 2853710 (1103578)
- 2867842 (1105600)
- 2865028 (1105119)
- 2860212 (1104480)
- 2854400 (1103587)
- 2852486 (1103340)
- 2842820 (1103533)
- 2855179 (1103705)
- 2855179 (1103707)
- 2819868 (1099861)
- 2865350 (1105129)
- 2864599 (1105025)
- 2853376 (1103486)
- 2855231 (1103701)
- 2870740 (1106000)
- 2858161 (1104152)
- 2864758 (1105772)
- 2856295 (1103875)
- 2839181 (1101830)
- 2864619 (1105054)
- 2861296 (1104593)
- 2860006 (1104387)
- 2854108 (1104290)
- 2848917 (1103264)
- 2838891 (1101791)
- 2648290 (1089566)
- 2864197 (1105004)
- 2852655 (1103333)
- 2869703 (1105832)
- 2869126 (1105760)
- 2852996 (1103913)
- 2859001 (1104312)
- 2869594 (1105948)
- 2867462 (1105499)
- 2866779 (1105567)
- 2865650 (1105214)
- 2865630 (1105243)
- 2865078 (1105100)
- 2865051 (1105317)
- 2865003 (1105132)
- 2863175 (1104845)
- 2860863 (1104746)
- 2860785 (1104563)
- 2859507 (1104314)
- 2859155 (1104316)
- 2859044 (1104282)
- 2857023 (1104176)
- 2857021 (1103995)
- 2856592 (1104053)
- 2852281 (1103298)
- 2818259 (1099422)
- 2865602 (1105177)
- 2863239 (1105044)
- 2861423 (1104585)
- 2858787 (1104233)

- 2869763 (1105896)
- 2851107 (1103173)

Installation

Installing Visual COBOL for Eclipse

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.

On Windows

System Requirements for Visual COBOL for Eclipse (Windows)

Hardware Requirements

Visual COBOL has the following requirements in addition to the requirements of Eclipse. See the Eclipse documentation for details of its requirements.

The disk space requirements are, approximately:

Visual COBOL	Sentinel RMS License Manager
3.7GB	75MB

Note: The disk space requirements include the size of the Eclipse IDE and the version of Java and the .NET Framework provided with the Visual COBOL setup file. This includes the space needed to cache information locally so that you can modify the installation without the original source media.

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*.

Note:

- Visual COBOL enables you to produce both 64-bit and 32-bit applications on 64-bit operating systems.
- The Enterprise Server feature is not supported on Windows XP.

Software requirements

Note: This product includes OpenSSL version 1.0.1p.

The setup file will check your machine for whether the prerequisite software is installed and will install any missing prerequisites and the product components.

Eclipse requirements

- The setup file installs Visual COBOL and Eclipse 4.4.2.

  See *Installing Visual COBOL into other instances of Eclipse* for instructions on how to install Visual COBOL into other instances of Eclipse installed on your machine.

  Note: If you are installing Visual COBOL into Eclipse 4.5, you must install the Eclipse Target Management plugins into the Eclipse IDE for Java EE Developers package (32-bit):

  1. Click **Help** > **Install New Software** in your Eclipse 4.5 and add a new repository for the location `http://download.eclipse.org/tm/updates/4.0`.
  2. Expand **RSE 3.8 Main Features**, check **RSE Terminals UI (Deprecated)** and complete the installation of the plugin.
- Visual COBOL does not support the 64-bit Eclipse. You can, however, use the 32-bit Eclipse to create both 32-bit and 64-bit applications.
- Visual COBOL requires a 32-bit Java installation.

Software requirements

- 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: If Java 7 is installed on your machine, to skip installing Java 8, run the Setup file with the `skipjre=1` command line option.
- The setup file also installs .NET Framework v4.5.2 and the Microsoft Visual C++ 2010 and 2012 Redistributables.

See the *Java Support Considerations for the Eclipse IDE* in the *Known Issues and Restrictions* section in your product help for considerations that apply to using the Eclipse IDE and Java.

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. On Windows, you can check the version of your license server by clicking **Help > About** in the Micro Focus License Administration tool. 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 on Windows

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

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

Product Co-Existence

Note: The following applies to Windows only.

- Visual COBOL and COBOL Server cannot coexist on the same machine.

- Visual COBOL and Enterprise Developer cannot coexist on the same machine regardless of which IDE (Visual Studio or Eclipse) you install.

Installation Restrictions and Requirements

Before starting the installation you should consider the following:

- Visual COBOL and Enterprise Developer cannot coexist on the same machine.
- You need to be logged in with a user-ID that has write access to the registry structure under HKEY_LOCAL_MACHINE, HKEY_CLASSES_ROOT, and HKEY_CURRENT_USER so the installation software can set the environment appropriately. You also need to be logged on with Administrator privileges.
- Before installing this product, make sure that any existing Micro Focus Directory Server (MFDS) or CCITCP2 Windows service (on Windows) or a process (on UNIX) from an existing product is stopped and uninstalled. On Windows, do this as follows:

  1. Stop the MFDS and CCITCP2, using either the Windows Service Management Console GUI (`services.msc`) or from a command line prompt by typing:

     ```
     net stop mf_ccitcp2
     ```

     Only one instance of the MFDS or CCITCP2 service can run on a Windows machine.
  2. Uninstall the MFDS or CCITCP2 service.

     For MFDS, from a command line prompt enter: `mfds -u`

     For CCITCP2: `ccitcp2 -u`

  To run an earlier version of MFDS as a service after you have installed a later version:

  1. Stop and uninstall the MFDS service, as described above.
  2. Reinstall the earlier version, as follows:

     a. Open a Visual COBOL command prompt.
     b. Install the service. Enter the following command: `mfds -i`
     c. Start the service. Enter the following command: `net start mf_ccitcp2`

     Note: The two versions use different paths for environment and registry values, so the list of configured enterprise servers might be different depending on which version has been started, since, by default, different MFDS data repositories are used.

  MFDS 5.1 and later are able to import or use Enterprise Server configuration data generated by earlier versions of MFDS, but 5.0 or earlier versions of MFDS might not be able to read data generated by later versions.

  It is possible to run MFDS from a command prompt ("mfds") rather than as a service, but by default the "mfcobol" port is used (86) and this can only be used by one process at a time

On UNIX

System Requirements for Visual COBOL for Eclipse (UNIX)

Hardware Requirements for Visual COBOL for Eclipse

Visual COBOL has the following requirements in addition to the requirements of Eclipse. See the Eclipse documentation for details of its requirements.

The disk space requirements are approximately:

Platform	Installer type	Setup file size (MB)	Disk space required for the installation (GB)	Disk space required for running the product (GB)	Sentinel RMS license server (MB)
x86-64 running Red Hat Linux	Micro Focus installer	923	3.69	1.84	46
x86-64 running SUSE SLES	Micro Focus installer	927	3.71	1.85	46

Operating Systems Supported

Note: You can produce both 64-bit and 32-bit applications on 64-bit operating systems.

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

Eclipse requirements

- Visual COBOL only supports the 32-bit Eclipse IDE and requires a 32-bit Java installation.
- Visual COBOL does not support the 64-bit Eclipse. You can, however, use the 32-bit Eclipse to create both 32-bit and 64-bit applications.
- The setup file installs Visual COBOL and Eclipse 4.4.2. After the installation, you can install the Visual COBOL plug-in into other instances of Eclipse available on the same machine. The supported versions are 4.2, 4.3, 4.4, and 4.5 for the 32-bit Eclipse only. See *Installing Visual COBOL into other instances of Eclipse* for instructions.

Note: If you are installing Visual COBOL into Eclipse 4.5, you must install the Eclipse Target Management plugins into the Eclipse IDE for Java EE Developers package (32-bit):

1. Click **Help** > **Install New Software** in your Eclipse 4.5 and add a new repository for the location `http://download.eclipse.org/tm/updates/4.0`.
2. Expand **RSE 3.8 Main Features**, check **RSE Terminals UI (Deprecated)** and complete the installation of the plugin.

Other software requirements

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

- The unzip utility is required by the setup file.
- 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.
- Required libraries - the 32-bit libraries listed below are required on both 32-bit and on 64-bit Operating Systems for this product to install and work correctly.

  If installing on a 64-bit OS, the 32-bit libraries are not installed by default and must be installed before you start the installation.

Library	Platform			
	SUSE 11	SUSE 12	Red Hat 6.*x*	Red Hat 7
glibc-locale-32bit	X	X		
gtk2 (libgtk2, gtk2-tools-32-bit)		X		
libXcomposite1-32 bit		X		
libgdk_pixbuf-2_0-0-32bit		X		
gdk-pixbuf-query-loaders-32bit		X		
libjasper1-32bit		X		
gtk2-x11 (libgthread-2_0-0-32bit)		X		
libXtst6-32bit		X		
glibc-*.x86_64			X	X
glibc-*.i686			X	X
libgcc-*.x86_64			X	X
libgcc-*.i686			X	X
libstdc++-*.x86_64			X	X
libstdc++-*.i686			X	X
gtk2-*.x86_64			X	X
gtk2-*.i686			X	X
gtk2-engines.*.i686			X	
gtk2-engines.*.s390			X	
gtk2-engines.*.x86_64			X	X
libXtst-*.x86_64			X	X
libXtst-*.i686			X	X
libcanberra-gtk2-*.x86_64			X	X
libcanberra-gtk2-*.i686			X	X
libgnome.x86_64			X	X
libgnome.i686			X	X
PackageKit-gtk-module-*.x86_64			X	X

Library	Platform			
	SUSE 11	SUSE 12	Red Hat 6.*x*	Red Hat 7
PackageKit-gtk-module-*.i686			X	
PackageKit-gtk-module-*.s390			X	
PackageKit-gtk3-module-*.i686				X
PackageKit-gtk3-module-*.s390				X
webkitgtk.x86_64			X	
webkitgtk.i686			X	
webkitgtk3.x86_64				X
webkitgtk3.i686				X
xterm (any version)			X	X
gdb*	X	X	X	X

* Additional libraries required to use the core_on_error runtime variable. The gdb packages (for the GNU Project Debugger) can be installed from the install media for your OS.

** Operating system libraries required for PL/I support on both SUSE and Red Hat.

Visit the *Red Hat Web site* for more information.

- 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.
- Oracle's Java Platform, Enterprise Edition (Java EE) 7 or Java 8 is required to run the Eclipse IDE, to execute COBOL JVM code and for native COBOL and Java interoperability. The setup file installs Java 8 u51 32-bit. You can download Oracle's Java EE from *Oracle's Web site* and install it anywhere on your machine.

  Note: On Linux, the 32-bit version of Java is required to install and use Visual COBOL for Eclipse. When you start the installation, if the 64-bit version of Java is already installed on your Linux machine, you might not be able to install Visual COBOL. This is a *known issue* with the Oracle Java installers for Linux which prevent you from installing both the 32-bit and the 64-bit versions of Java on the same machine. To work around this problem:

  - Download the 32-bit Java distribution in a compressed .tar format from the Oracle Web site.
  - Untar the distribution into a location different from the one used for the 64-bit Java version. For example, untar in `/usr/local/java32` and not in `/usr/local/java`.
  - Set JAVA_HOME and LD_LIBRARY_PATH to the 32-bit version of Java so that it is used to install and run Visual COBOL.

Before you start the installation, 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. On Windows, you can check the version of your license server by clicking **Help > About** in the Micro Focus License Administration tool. 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 on Linux and UNIX

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

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

UNIX and Linux Installer Issues

Installing on Linux

On Linux, the 32-bit version of Java is required to install and use Visual COBOL for Eclipse. When you start the installation, if the 64-bit version of Java is already installed on your Linux machine, you might not be able to install Visual COBOL. This is a *known issue* with the Oracle Java installers for Linux which prevent you from installing both the 32-bit and the 64-bit versions of Java on the same machine. To work around this problem:

- Download the 32-bit Java distribution in a compressed .tar format from the Oracle Web site.
- Untar the distribution into a location different from the one used for the 64-bit Java version. For example, untar in `/usr/local/java32` and not in `/usr/local/java`.
- Set JAVA_HOME and LD_LIBRARY_PATH to the 32-bit version of Java so that it is used to install and run Visual COBOL.

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.

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* in your product Help.

On Windows

Installing on Windows

Note:

- This version of the product is a full install.
- If you have an earlier version of Visual COBOL installed on your machine, check *Installing as an Upgrade* before you start the installation - see *Advanced Installation Tasks*.

These are the steps to install Visual COBOL:

1. Run the `vce_232.exe` file and follow the wizard instructions to complete the installation.

   By default, this installs Visual COBOL in the `%ProgramFiles(x86)%\Micro Focus\Visual COBOL` folder and installs a full version of Eclipse 4.4.2, with the Micro Focus plugins already installed, in the `C:\Users\Public\Micro Focus\`*`Product Name`*`\eclipse` directory.

   The setup file installs any missing prerequisite software as listed in the topic *Software Requirements*.

Note: See *Advanced Installation Tasks* for information about non-default installation tasks. For example, if you have Java 7 installed on your machine and you want to skip installing Java 8, run the setup file from the command line with the `skipjre=1` command line option.

On UNIX

Installing the software

Note: Micro Focus offers two types of installers on UNIX and Linux - a proprietary Micro Focus installer for installing Visual COBOL on UNIX and Linux and a standard RPM (RPM Package Manager) installer for installing Visual COBOL 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_deveclipse_2.3_update2_platform
   ```
2. Run the setup file with superuser permissions:
   ```
   ./setup_visualcobol_deveclipse_2.3_update2_platform
   ```

   If you don't run this as superuser, you are prompted to enter the superuser password during the install.

   The COBOL environment is installed by default into `/opt/microfocus/VisualCOBOL`, (COBDIR). A full version of Eclipse, with the Micro Focus plugins already installed, is present in the `$COBDIR/eclipse` directory.

   To install in a different location use the `-installlocation="Location"` parameter to specify an alternative directory location. For example:
   ```
   ./setup_visualcobol_deveclipse_2.3_update2_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.

Note:

- 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_deveclipse_2.3_update2_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.

Setting up the environment

When you have installed the product, you need to set the environment as described below.

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.

Starting the product

To start Eclipse:

- If you are using a GUI interface, double-click the product icon (automatically installed on your desktop).

  Note: The installer automatically creates a shortcut icon for the product on the desktop for the user for which you ran the install script. If you need to create desktop icons for other users' desktops on the same machine, or if the icon was not created on the desktop for the root user, run the following shell script as the user you need to login as: `$COBDIR/bin/createdesktopicon.sh`

- If you are using a non-GUI interface, such as a terminal emulator, type the following from a command prompt:

  ```
  eclipse
  ```

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
- *Installing into other instances of Eclipse* - available in the product Help and in the Micro Focus Infocenter
- *Installing on Microsoft Terminal Server and Citrix* - available in the product Help and in the Micro Focus Infocenter

See this information in the Micro Focus Infocenter - for Visual COBOL for Eclipse for Windows *click here* and for Visual COBOL for Eclipse for UNIX *click here*.

Click here to see this information on the Micro Focus Infocenter for Micro Focus Visual COBOL Development Hub.

On Windows

Installing as an Upgrade

Installing this release as an upgrade will automatically uninstall any HotFixes of the older version of the product you have installed on your machine.

- Before installing this release as an upgrade, ensure you create a back-up of your Enterprise Server configuration. To do this, on the Enterprise Server Administration home page, click **Export** and then select **Export Enterprise Server configuration and Security Manager definitions**. This creates a backup folder in the `c:\programdata\micro focus\Enterprise Developer\MFDS`. You can restore the Enterprise Server configuration after installing this release - click Import on the Enterprise Server Administration home page.

Visual COBOL Installation Options

You can install Micro Focus products silently by specifying /q at the command line and using command line parameters to specify the installation directory (`installfolder=`*`path`*), user information, and which features to install. You must execute the command with superuser permissions.

To see what parameters you can use, execute the following from the command line:

```
install-file /help
```

where *install-file* for the following products is as follows:

Visual COBOL	`vce_232.exe`

See the *Examples* section further in this topic for examples of some of the parameters you can use.

Directory considerations

- You must have read and write access for every directory accessed during the installation.
- You can override the default installation folder using the `InstallFolder` parameter.

- Installing creates a group of log files prefixed `Micro_Focus_` in the `%temp%` folder, by default. To change the location or name, use the `/log` parameter on your Setup command line and specify the path and file name, for example:
  ```
  /log drive:\path\LogFilename
  ```

Installing silently

Use the `/q` parameter to install silently:

```
start /wait install-file.exe /q [parameters]
```

Examples

- To silently install Visual COBOL into a directory other than the default:
  ```
  start /wait vce_232.exe /q InstallFolder=c:\DirectoryName
  ```
- If you want to silently install the Eclipse IDE in a location other than the default, execute:
  ```
  start /wait vce_232.exe /q InstallFolder2=c:\EclipseInstallDirectory
  ```
- To skip installing JRE when installing Visual COBOL:
  ```
  start /wait vce_232.exe /q skipjre=1
  ```

On UNIX

Installing as an upgrade

This release works concurrently with the previous version of Visual COBOL, 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/eclipse`, 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/eclipse /opt/microfocus/VisualCOBOL/eclipseversion
     ```
  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 Visual COBOL installer with the –installlocation option:

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

     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/bin/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.

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_deveclipse_2.3_update2_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 Enterprise Server

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.f

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

- See *Changes in Behavior or Usage* in your product documentation and in the Release Notes for important information about changes in this release that might affect existing applications.
- 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.

On Windows

Configuring Visual COBOL

If you have used Eclipse from the same workspace before, the Eclipse perspective settings are not reset after installing any Micro Focus product. To pick up any new features, you must reset the perspective you are working with after installation:

1. Open the existing workspace with this product.

   You may receive some warnings or errors which you can ignore.
2. Make sure you are in the perspective you need to reset by clicking **Window** > **Open Perspective** > **Other**.
3. From the **Open Perspective** dialog box, click the perspective you want to reset.
4. Click **OK**.
5. Click **Window** > **Reset Perspective**.
6. When prompted, click **Yes**.
7. Reapply any customizations.

Installing X Windows on Windows

Some features of Visual COBOL for Eclipse on Windows require an X Windows installation, hence Micro Focus ViewNowX is provided with the product.

To install ViewNowX:

1. Using Windows Explorer, navigate to the folder that contains the ViewNowX executable. By default, this is `%ProgramFiles(x86)%\Micro Focus\Visual COBOL\ViewNowX`.
2. Execute `ViewNow_X_Server.exe` and then `vnx_HF_11327.msp` in that folder.

ViewNowX requires that your client machine has Microsoft Visual C++ 2008 SP1 Redistributable Package (x86) installed. If it is missing from your machine, the ViewNowX installation will offer a link to download the package.

Repairing on Windows

If any product files, registry settings or shortcuts are accidentally removed at any point, you can perform a repair on the installation to replace them.

To repair your installation on versions of Windows Vista or later:

1. From the **Control Panel**, click **Uninstall a program** under **Programs**.
2. Right-click your Micro Focus product and select **Repair**.

Uninstalling

Windows

To uninstall the product, you cannot simply delete its files from your hard disk. To uninstall the product:

1. Log in with the same user-ID as you used when you installed the product.
2. Click **Uninstall a program** under **Programs** in **Control Panel**.
3. Select the product and click **Remove** or **Uninstall** as appropriate.

When you uninstall, the only files deleted are those that the installation software installed. If the product directory has not been removed, delete any unwanted files and subdirectories within it using Windows Explorer.

Important: The installer creates separate installations for Micro Focus Visual COBOL and Micro Focus License Administration. Uninstalling only Visual COBOL does not automatically uninstall the Micro Focus License Administration or any of the prerequisite software.

To completely remove the product you must uninstall the Micro Focus License Administration as well.

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

To silently uninstall the product, you need the setup file and you need to execute the following at the command line:

```
start /wait install-file.exe /quiet /uninstall
```

On UNIX

Configuring Visual COBOL

If you have used Eclipse from the same workspace before, the Eclipse perspective settings are not reset after installing any Micro Focus product. To pick up any new features, you must reset the perspective you are working with after installation:

1. Open the existing workspace with this product.

   You may receive some warnings or errors which you can ignore.
2. Make sure you are in the perspective you need to reset by clicking **Window** > **Open Perspective** > **Other**.
3. From the **Open Perspective** dialog box, click the perspective you want to reset.
4. Click **OK**.
5. Click **Window** > **Reset Perspective**.
6. When prompted, click **Yes**.
7. Reapply any customizations.

Configuring the Environment for Developing RDBMS Applications on UNIX

Note:

- If you are working with remote projects, you need to configure the environment before you start the remote server process.
- On UNIX, if you are working with local projects, you need to configure the environment before you start Eclipse.

1. Ensure the COBOL and the third-party software environments are set.
2. Set up the RDBMS environment.

   Refer to your RDBMS vendor documentation for details.
3. Set COBCPY as required in order for the IDE to locate any copybooks that are external to your project.
4. If working with Pro*COBOL/Cobsql applications you need to set COBOPT. This sets the appropriate linker options for the platform and the COBOL working mode:

   To do this, execute the following at the command line:

   ```
   $COBDIR/src/oracle/set_cobopt_oracle
   COBOPT=$PWD/cobopt.ora
   export COBOPT
   ```

Repairing

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_VisualCOBOLEclipse2.3.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.

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

Installing on Linux

On Linux, the 32-bit version of Java is required to install and use Visual COBOL for Eclipse. When you start the installation, if the 64-bit version of Java is already installed on your Linux machine, you might not be able to install Visual COBOL. This is a *known issue* with the Oracle Java installers for Linux which prevent you from installing both the 32-bit and the 64-bit versions of Java on the same machine. To work around this problem:

- Download the 32-bit Java distribution in a compressed .tar format from the Oracle Web site.
- Untar the distribution into a location different from the one used for the 64-bit Java version. For example, untar in `/usr/local/java32` and not in `/usr/local/java`.
- Set JAVA_HOME and LD_LIBRARY_PATH to the 32-bit version of Java so that it is used to install and run Visual COBOL.

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
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.

- Required libraries - the 32-bit libraries listed below are required on both 32-bit and on 64-bit Operating Systems for this product to install and work correctly.

  If installing on a 64-bit OS, the 32-bit libraries are not installed by default and must be installed before you start the installation.

Library	Platform		
	SUSE 11	Red Hat 6.*x*	Red Hat 7
glibc-locale-32bit	X		
glibc-*.x86_64		X	X
glibc-*.i686		X	X
libgcc-*.x86_64		X	X
libgcc-*.i686		X	X
libstdc++-*.x86_64		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. On Windows, you can check the version of your license server by clicking **Help > About** in the Micro Focus License Administration tool. 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 Visual COBOL features, you might be required to obtain and install additional third-party software in addition to the prerequisite software installed automatically by the Visual COBOL setup file.

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

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

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* in your product Help.

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_update2_platform
   ```
2. Run the installer with superuser permissions:
   ```
   ./setup_visualcobol_devhub_2.3_update2_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_update2_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
- *Installing into other instances of Eclipse* - available in the product Help and in the Micro Focus Infocenter
- *Installing on Microsoft Terminal Server and Citrix* - available in the product Help and in the Micro Focus Infocenter

See this information in the Micro Focus Infocenter - for Visual COBOL for Eclipse for Windows *click here* and for Visual COBOL for Eclipse for UNIX *click here*.

Click here to see this information on the Micro Focus Infocenter for Micro Focus Visual COBOL Development Hub.

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_update2_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.
- Personal Edition licensing is only available with Visual COBOL for Eclipse
- 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

Windows

From the Windows Taskbar click **Start** > **All Programs** >**Micro Focus License Manager** > **License Administration**.

Note: On Windows 8, Windows 10, and Windows Server 2012, you use the Start screen to invoke programs.

UNIX

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

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

Installing licenses

If you have a license file

Windows

1. Start Micro Focus License Administration.
2. Click the **Install** tab.

3. Do one of the following:
    - Click **Browse** next to the **License file** field and select the license file (which has an extension of `.mflic`).
    - Drag and drop the license file from Windows Explorer to the **License file** field.
    - Open the license file in a text editor, such as Notepad, then copy and paste the contents of the file into the box below the **License file** field.
4. Click **Install Licenses**.

Alternatively, you can install the license file from within the IDE as follows:

1. Start Visual COBOL.
2. Click **Help > Micro Focus > Product Licensing** to open the **Product Licensing** dialog box.
3. Ensure **I have a full Visual COBOL license** is checked.
4. Click **Browse** next to the **License file** field.
5. Select the license file (which has an extension of `.mflic`), and then click **Open**.
6. Click **Finish** to install the license.

UNIX

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.

Windows

1. Start Micro Focus License Administration.
2. Click the **Install** tab.
3. Type the authorization code in the **Enter authorization code** field.
4. Click **Authorize**.

If you change the name of the machine running your license server after it has granted licenses, the licenses stop working.

UNIX

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.

Windows

1. Start Micro Focus License Administration.
2. Click **Manual Authorization** on the Install page.

3. Make a note of the contents of the **Machine ID** field. You will need this later.
4. Do one of the following:

   - If your machine has an Internet connection, click the SupportLine Web link in the Manual Authorization Information window.
   - If your machine does not have an Internet connection, make a note of the Web address and type it into a Web browser on a machine that has an Internet connection.

   The Micro Focus SupportLine Manual product authorization Web page is displayed.
5. Type the authorization code in the **Authorization Code** field. The authorization code is a 16-character alphanumeric string supplied when you purchased your product.
6. Type the Machine ID in the **Machine ID** field.
7. Type your email address in the **Email Address** field.
8. Click **Generate**.
9. Copy the generated license string (or copy it from the email) and paste it into the box under the **License file** field on the Install page.
10. Click **Install Licenses**.

UNIX

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.

On Windows, if you are reporting a protection violation you might be asked to provide a dump (`.dmp`) file. To produce a dump file you use the **Unexpected Error** dialog box that is displayed when a protection violation occurs. Unless requested by Micro Focus SupportLine, leave the dump setting as `Normal` (recommended), click **Dump**, then specify a location and name for the dump file. Once the dump file has been written you can email it to Micro Focus SupportLine.

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 Windows, you can use the Micro Focus SupportLine Support Scan Utility, MFSupportInfo, to create either:

- a `.log` file that contains the details about your environment, Micro Focus SupportLine products, and settings.
- a `.zip` archive that includes the same information as the `.log` file plus some product configuration files from **c:\ProgramData** and the product installation log files.

`MFSupportInfo.exe` is stored in `<install-dir>\bin`.

To run MFSupportInfo:

1. Start a 32-bit Enterprise Developer command prompt.
2. Enter `MFSupportinfo` at the command prompt to start the utility.
3. Create a `.log` file or a `.zip` archive as follows:

   a. To create a `.log` file, click **File > Save**.

      This prompts to save the `.log` file, `MFSupportInfo_Log_MachineName_YYYY-MM-DD_HH-MM-SS.log`, in the `%temp%` directory.

   b. To create a `.zip` archive, click **Tools > Create Zip Package**.

      This creates a `.zip` archive, `MFSupportInfo_Log_MachineName_YYYY-MM-DD_HH-MM-SS.zip`, in the `%temp%` directory.
4. Send the diagnostic information to your Micro Focus SupportLine representative:

   The following requires an Internet connection and an Email client:

   a. Click **Tools > Email Log to SupportLine** to open the **Email Log** dialog box.
   b. Fill in the required fields and click **Send**.

   If the machine is not connected to the Internet or if there are no Email clients installed, copy either the `.log` file or the `.zip` archive to a machine that is connected to the Internet. Use your Email client to email the files to Micro Focus SupportLine at *supportline@microfocus.com* together with the Support Incident (SI) number, if available, and any additional details that might be useful to diagnose the issues that you are experiencing.

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