



Micro Focus Visual COBOL 2.3 Update 1 for Eclipse

A large, decorative graphic consisting of multiple overlapping, wavy blue lines that create a sense of motion and depth, positioned in the lower half of the page.

Release Notes

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Micro Focus Visual COBOL 2.3 Update 1 for Eclipse 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.

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 Eclipse](#)
- [Application Server JCA support for Enterprise Server](#)
- [Code analysis](#)
- [Code coverage](#)
- [Compiler directives](#)
- [Data File Tools](#)
- [Editor writing assistance](#)
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- [Native COBOL syntax](#)
- [Rosetta Stone for COBOL, .NET and Java Developers](#)
- [UNIX and Linux platform support](#)

Integration with Eclipse

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This release provides enhancements in the following areas:

Editor:

- COBOL editor:
 - You can now specify the increment for the COBOL and the standard line numbering from **Window > Preferences > Micro Focus > COBOL > Editor > Line numbering**.
 - You can now toggle single or multiple lines between commented and uncommented states.

Building applications:

- Environment variables - a new page, **Build Environment**, in the project's properties enables you to specify environment variables for your applications. You can also specify environment variables that only apply at run time on the run or debug configuration for the application.

Application Server JCA support for Enterprise Server

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Restriction: This feature applies only when the Enterprise Server feature is enabled.

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

Code analysis

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This release provides support for performing code analysis at the command line using Ant which enables the integration of code analysis in CI frameworks. Features include:

- Support for performing code analysis at the command line using the project's `.cobolBuild` Ant script and specifying a target.
- New Ant targets for code analysis - `analyze` and `build.and.analyze`. These enable you to only run analysis and produce analysis data or to build and produce build artifacts as well as analysis data.
- New Micro Focus Ant task, `analysis`, for the `.cobolBuild` file. A parameter for this task enables you to specify whether the build fails or continues when code analysis results are received.
- New parameters for code analysis for the cobol Ant task - `analysisData`, `analysisDataDir`.
- New Ant type, `ruleList`, for the `.cobolBuild` file - enables you to specify the rules to execute.
- Support for running analysis using a custom `.cobolBuild` file from outside of the project directory or the workspace.

See the [Micro Focus Ant User Manual](#) in the Micro Focus Infocenter for more details on the new task, types and parameters.

Code coverage

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The code coverage reports are now integrated with the IDE and with the editor. Features include:

- A new Code Coverage view (Eclipse) showing the statistics of what percentage of the code has executed.
- Navigation from the Code Coverage view (Eclipse) to the missed and covered blocks in the editor.
- Colorization in the editor of blocks that were executed (covered blocks) or not (missed blocks).

Compiler directives

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The following Compiler directives contain new parameters in this release:

- `ILMAIN` - you now specify the main entry point for the executable program, which can be specified either as `class-name::method-name`, or just as `method-name`. For example, `ILMAIN"classA::methodB"` or `ILMAIN"methodB"`. The first format can be used to distinguish between multiple methods with the same name in different classes.

This directive is now available for JVM COBOL.

- `OOCTRL` - a new parameter, `+/-A`, as been added. Set this parameter to `-A` to allow ActiveX controls in your COBOL application to use classes and methods in the OLE class library. The default is `+A`, which does not allow it.

Data File Tools

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This release provides improved security and increased support for more file types. Features include:

- Certain aspects of Enterprise Server security are honored when you attempt to access data sets. If the Enterprise Server region has security enabled, logon details must be authenticated before you can access the data set. If the details are unable to be authenticated, access is denied.
- When using a record layout, certain data is now validated at field level (to ensure the contents is compatible with its picture string) and record level (to ensure the record length matches the layout size).
- Full editing support has been added for variable block sequential files and relative files. Full editing is also available for line sequential files, as long as they do not contain any binary data.

Eclipse editor coding assistance

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This release includes various improvements in the Content Assist support for COBOL in the following areas:

- Native COBOL - support is now available for OCCURS statements
- Managed COBOL - suggestions are now available in the working storage section and in the following scenarios:
 - Arithmetic expressions in method arguments
 - Casting variables and some expressions
 - Creating arrays using the TABLE OF expression and indexers
 - Generics
 - Implements and inherits
 - Javadoc comments are now displayed (Eclipse)
 - Type name filtering in constructs and attributes
 - Managed type headers, method headers and index headers.
 - Nested types
 - SIZE OF expressions
 - String concatenations
 - TYPE OF constructs
 - Unqualified members access - using the `SELF::` or `SUPER::` syntax
- Support for float literals has been enhanced.
- Suggestions are now available for more COBOL verbs such as TRY and RAISE (in managed COBOL) and EXAMINE, INSPECT, SEARCH, GO TO, INITIALIZE, INVOKE, and UNLOCK (in native COBOL).
- There are new IDE configuration settings for inserting suggestions and for case handling.

Enterprise COBOL 5.2

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With the introduction of Enterprise COBOL 5.2, the following features are supported:

- The VOLATILE keyword is supported within the data entry description; although, this is treated as documentary. It has also become a reserved word when under the ENTCOBOL dialect.
- Format 2 of the SORT statement no longer treats the COLLATING SEQUENCE clause as documentary-only.
- The SUPPRESS clause of the XML GENERATE statement has been enhanced.
- The IBM z/OS JSON parser API, as documented for the IBM z/OS client web enablement toolkit.

File Handling

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The following enhancements have been made to file handling processes:

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

You can use this type of file with the new `rebuild /q` option. This rebuild process is considerably quicker than other rebuild processes such as a data scrape or `rebuild /p`.

- Faster SORT operations for fixed block records - when using the DFSORT emulation, the performance when sorting fixed block records has greatly improved.

Library routines

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The following library routines are new in this release:

- CBL_CODESET_SET_MAPPING - enables you to change the codeset in effect.
- CBL_RUNTIME_ERROR - forces an application to terminate with a run-time error condition.

Micro Focus Unit Testing Framework

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This release provides the following enhancements:

- Updates to the test runner command line options:
 - Using the `-testcases:` option, you can now specify a list of test cases to execute.
 - The new `-report:markdown` option enables you to produce test reports in github style markdown format (`.md`).

You can use various Third-Party utilities such as pandoc to convert `.md` files into HTML or PDF format.

- Support for running test suites using dynamic metadata - you use an entry point in the test case and, when it is called during the preparation stage of the test case, you can change various fields exposed through `mfunit.cpy` to update the metadata of the test case.

This is an alternative to specifying metadata for a test case in the text fixture file (`.mfu`).

- Support is now available for creating and debugging test cases written in procedural managed COBOL (procedural code compiled as managed). The following new test runners are supplied:
 - `mfurunil`, for .NET COBOL code
 - `mfurunj` (Windows) and `cobmfurunj` (UNIX) for JVM COBOL code.

Managed COBOL syntax

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The following enhancements have been made to the managed COBOL syntax:

- A new command line utility, `mfjarprogmapp`, is available to allow you to create the necessary Java property file when calling COBOL programs that have been compiled as part of a package.
- You can now create generic iterators.
- You can now use the Profiler utility to obtain detailed statistics on the run-time performance of managed COBOL applications.

Native COBOL Syntax

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The following items are new features of the native COBOL syntax:

Class condition tests New and updated class condition tests are available for DBCS, KANJI, and JAPANESE.

RM/COBOL compatibility

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The RM/Panels syntax is now supported in Micro Focus COBOL applications.

Rosetta Stone for COBOL, .NET and Java Developers

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The product Help now includes a quick and easy to use syntax guide for developers who need to learn OO COBOL syntax when modernizing COBOL applications for the Java or .NET platforms. The guide includes side-by-side equivalent syntax for COBOL, C#, VB and Java.

UNIX and Linux platform support

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



Note: These are 64-bit platforms only.

There are a few restrictions when running in this environment:

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

Significant Changes in Behavior or Usage

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

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

- [Data Tools](#)
- [Editor Writing Assistance](#)
- [IDE](#)
- [Run-Time System](#)
- [SQL: OpenESQL](#)
- [SQL Option for DB2](#)

Data Tools

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- When filtering a data file, if there is no valid temporary directory set, you are prompted to set one using the option in the Preferences dialog box.
- The editor no longer allows you to open a file if the file size (without header size) is not a multiple of the record size on disk; an error is produced instead.
- The editor no longer allows you to open a file if the file size without header size is not a multiple of the record size on disk; an error is produced instead.
- The level numbers displayed in a record layout correspond to the levels used in the .idy file that was used when the structure file was created.

Editor Writing Assistance

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- IntelliSense (Visual Studio) or Content Assist (Eclipse) suggestions are no longer offered if you start typing numbers and automatic triggering of suggestions is enabled.

IDE

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- When compiling to multiple executables from the command line, you must specify the -logger parameter to enable the correct log to be output to the console.

2848855 (1102932)

- For a file added to a JVM COBOL project by adding the folder that stores the file (using the **Source** tab on the **Micro Focus > JVM Build Path > Source page** in the projects' properties), there is now a new context-menu command, **Copy to Output Directory**, in COBOL Explorer. Choosing this command on a file triggers a build of the project and copies the file into the output directory.

2699374 (1094326)

Run-Time System

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

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

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

```
mfaudit.timeout = n
```

Where n is the timeout value in milliseconds.

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

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

2838689 (1101685)

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

- IS [NOT] DBCS

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

- IS [NOT] KANJI

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

- IS [NOT] JAPANESE

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

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

2812895 (1098401)

SQL: OpenESQL

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

dbo.CONCAT installed. To create the new function in your application's SQL Server database, you can either:

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

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

2843818 (1102248)

SQL Option for DB2

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

2830383 (1100609)

Known Issues

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

In addition, note the following:

Debugging

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

You can mitigate this delay by closing any unnecessary debug views. For instance, by closing the Expressions view and the Variables view, the number of messages that are sent is reduced, which allows Eclipse to update quicker.

- Large programs can suffer from a large delay the first time that the program is displayed in the debugger and an expression is evaluated. You can reduce this delay by following these steps:

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

```
<?xml version="1.0" encoding="utf-8" ?>
<NativeDebuggerOptions>
  <DebugOption Option="REMOTECHECKER" Value="yes" />
</NativeDebuggerOptions>
```

3. At a command or shell prompt, set the environment variable `DEBUG_CONFIG` to the full path name for `debugconfig.xml`.
 4. Start Eclipse from the same command or shell prompt.
- Remote debugging does not work for programs running on AIX or HP machines, if you are trying to debug using Visual COBOL installed on a Linux machine.

Documentation

- 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.

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.

Resolved Issues

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

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- [Common Communications Interface](#)
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Adis

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- Deleting a DBCS character no longer causes corruption when the ADISCF options 15 Pre Clear and 29 Read Screen are specified.
2848637 (1102857)

Character Animator

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- Breakpoints set on paragraphs or sections can now be unset.
2845763 (1102710)
- Breakpoints are saved correctly when Animator is detached.
2842488 (1102878)
- Failure to detach the Animator from a process no longer results in the breakpoints being lost.
2842488 (1102117)

Code Analysis

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- The GO TO statement in the analysis result now has a valid sequence line.
- Handling for TRY-CATCH-FINALLY code block has been implemented. An issue with Level 78 constant declared in linkage section has been fixed.

Common Communications Interface

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- The performance of Fileshare servers on Linux and UNIX platforms has been substantially improved since the 2.2 Update 2 and 2.3 releases of Visual COBOL and Enterprise Developer.
2829622 (1101067)
- On UNIX, the product previously was looking for the cciusers.dat file (used for the initial population of the MFDS Internal Security users and groups) in the /etc/ folder. Starting with this release, the cciusers.dat file in \$COBDIR/etc/ is used in preference. This removes the requirement to store cciusers.dat in the /etc directory.
- Components that use the SSL/TLS support in CCI, such as Fileshare and MFDASM, can now use private key files in binary (DER) format.

Communications Server

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- The Enterprise Server EZ Sockets feature no longer fails to initialize at system startup if the MFCS connection to MFDS is unusually delayed.
2847439 (1102743)

Compiler

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- The expression 'instance of type com.microfocus.cobol.program.Reference' (or the .NET equivalent) no longer produces unverifiable code in either JVM COBOL or .NET COBOL.
2844614 (1102378)
- OSVS report writer programs now compile as expected.
2848192 (1102831)
- SQL programs containing procedural \$SET CONSTANT directives now compile as expected.
2847029 (1102768)
- Passing variable length groups to a user defined function now produces correct object code, which executes as expected.
2845100 (1102408)
- An implicit definition of a VALUE OF FILE-ID, that is, when the program does not declare the data-name specified in the VALUE OF FILE-ID clause, has been fixed. Previously, the implicit definition was being made external when it should not have been.
2844151 (1102278)
- COPY statements that span multiple lines no longer stop REPLACE operations from working as expected.
2843367 (1102672)
- A REPLACE statement that acts upon a literal containing a continuation character, where the literal also contains quotation marks that start and end on different lines, now compiles as expected.
2841444 (1102573)

- COPY REPLACING now correctly affects a REPLACE statement, even if a REPLACE statement is already active.
2841281 (1101930)
- COBOL applications using ActiveX controls need to add the -A option to the OOCTRL Compiler directive in order to invoke methods in the ActiveX control.
2840671 (1101874)
- In the execution of an XML GENERATE statement, the '&' character is now replaced as expected, even when the associated field is numeric.
2839493 (1101911)
- Warning message "COBCH0990W No period following EXEC SQL INCLUDE END-EXEC. DB2 coprocessor will fail" is now restricted to mainframe dialects only.
2833943 (1101053)
- Alphanumeric ACCEPT statements that specify the CONVERT phrase, under RM(ANSI), now work as expected.
2833548 (1100998)
- A DBCS name specified as an EXTERNAL ASSIGN name in a SELECT statement is now processed as expected.
2833547 (1100996)
- A DISPLAY of a national literal now executes as expected.
2833546 (1100995)
- A DISPLAY of the result of the DISPLAY-OF intrinsic function with a national literal argument now executes as expected.
2833544 (1100994)
- The HOSTRW directive no longer truncates Report Writer files when there is no RECORD CONTAINS clause in the FD for the report file.
2826147 (1100638)
- A program compiled with a mainframe dialect that contains a source line with non-ASCII characters in Area C no longer incorrectly receives the flag message "COBCH1082S Source line is too long".
2809384 (1097885)
- An ALTER statement on a paragraph defined in a previous section, which also had an ALTER statement on that paragraph name, now executes as expected.
2514516 (1079210)
- The informational message "COBCH1210 COMP processed as DISPLAY (future occurrences not indicated)" has been fixed so that it is produced based on the COMP directive setting and not the DIALECT setting.
- A COBRT114 error in generated code on Itanium platforms, for extremely large programs (> 2²⁴ bytes) has been fixed.
2844642 (1102395)
- A link error "fatal error LNK1190" when compiling to an executable on 64 bit Windows no longer occurs.
2843600 (1102215)
- A bug in generated code on Intel-x86 32-bit platforms, when generated with opt (4), which caused an infinite loop, has been fixed. The bug affected SORT on a table that has an "occurs ... depending on ..." clause.
- A bug during compilation with the OPT(3) directive set, where a loop variable could contain an incorrect value after a PERFORM UNTIL loop, has been fixed.
- An error no longer occurs as the result of using the 'AS template-1' phrase within an INVOKE statement. Previously, this could generate a COBRT240 runtime error.

- On little-endian 64-bit platforms, such as Windows 64-bit or Linux x86 64-bit, a bug could occur with the following code: add 1 to var-a add 1 to var-a giving var-b where var-a is a comp or comp-x item less than 8 bytes in size. The result of the bug was that the wrong value was stored in var-b. This bug has been fixed.
- While debugging using previous versions, an exception occurring in a program using copy files could lead to the debugger showing an arbitrary position in one of the copy files.
2825779 (1100297)
- A compile time error when compiling to JVM bytecode, and where \$CLASSPATH is longer than 4096 characters, has been fixed.

Data Tools

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- When filtering records, it is based on the selected encoding when the Filter dialog box was opened. Previously, the filter was only using ANSI encoding.
- The editing caret no longer disappears when in Edit mode.
- The Hex View is now displayed when you click Toggle Hex after opening a data file that does not contain a layout.
- Deleting the last record in a sequential fixed-block file or a line sequential file no longer produces an error message or crashes the editor.
- When copying and pasting records, the record length for fixed block files is no longer resized.
2833640 (1101732)

Debugging

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- The handling of NLS, Japanese and multi-byte character sequences has been improved, when animating programs on UNIX.
2836278 (1101545)
- On Windows, the CBL_DEBUG_START routine will now use the COBANIMSRV environment variable as the identifier, if the identifier passed in is NULL. This also means that cross-session animation now works as per the UNIX environment.

Documentation

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- Dead Code Analysis is not supported for remote COBOL projects. Clarification of this restriction has been added to the documentation.
2814273 (1098595)
- When handling XML files, after a successful WRITE action, the size of the XML file written is returned as the status code.
2587541 (1085484)
- When using Fileshare with the CCISM protocol, ensure the server is started using the /SC switch. This switch starts Fileshare in synchronous communications mode, which gives better performance than when using Fileshare with the CCITCP protocol. Without this switch, Fileshare operations may be slower.
- An Enterprise Server error message has been added to the help pages for CASKC0048, process soft-killed failed and was hard-killed.
2846350 (1102574)

- The Idpli topics have been updated to include information about native Id options.
2840325 (1101829)
- The product help now provides the correct definition of the ES_ESM_RESSEC environment variable.
2836105 (1101281)
- The "mfsupport" utility is now correctly named and spelled as MFSupportInfo, for Windows platforms.
2848869 (1102896)
- In the topic "Sample Parameters File", the value of Keys towards the end of the code sample has been changed from 48 to 60.
2844479 (1102300)
- The parameter TSOE_JOBPREFIX has been replaced with TSOE_JOBCHAR.
2844210 (1102719)
- Additional information added to the help pages for the audit event codes emitted by the External Security Facility (ESF) and Micro Focus Directory Server (MFDS).
2842807 (1102120)
- If you receive a 9/064 file status, this is informing you that a process has attempted to open a file using a different locking mode than the one that is already in place. The locking mode is determined by the tunable strict_file_locking. All processes accessing the same file need to be using the same locking mode; that is, all have the tunable set to the same value, which can be either 'true' or 'false'.
2837405 (1101440)
- Option D(o) in the Character Animator is only applicable when you are debugging intermediate (.int) code.
2839572 (1101835)

Editor Writing Assistance

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- IntelliSense (in Visual Studio) and Content Assist (Eclipse) no longer offer verbs within EXEC blocks. The END-EXEC statement is offered instead.
- The IntelliSense suggestions now include the attributes for any reference, output or returning parameters that are explicitly declared in the linkage section.
- An issue where IntelliSense (Visual Studio) and Content Assist (Eclipse) offered Sort/Merge items where only file items were valid has been resolved.
(616206)
- Intellisense (Visual Studio) and Content Assist (Eclipse) now only offer suggestions for types which are suitable to the context. For example, the suggestions for a CATCH phrase only include exception types and the suggestions after NEW only include constructable types.
- Intellisense (Visual Studio) and Content Assist (Eclipse) now offer members of the current type when there is no qualification using "SELF::" or "SUPER::".
- Intellisense (Visual Studio) and Content Assist (Eclipse) now offer suggestions for READY TRACE and RESET TRACE.
- The Intellisense (Visual Studio) and Content Assist (Eclipse) suggestions no longer include multiple imported types with the same short names.
- IntelliSense (Visual Studio) and Content Assist (Eclipse) now offer suggestions for specifying array types (OCCURS) in managed COBOL.
- IntelliSense (Visual Studio) and Content Assist (Eclipse) now offer all relevant data for EXHIBIT statements.
- IntelliSense (in Visual Studio) and Content Assist (in Eclipse) now correctly handle the automatic import of the namespace (and any nested types) from the current type.

- Condition-value items are now correctly accepted as complete conditional expressions.
- IntelliSense (Visual Studio) and Content Assist (Eclipse) no longer offer completion suggestions outside of their proper scope.
- IntelliSense proposals now correctly replace unquoted copybook names in the editor.

Enterprise Server

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- The caslock utility now validates the APPLID. In order for caslock to remove all locks for a given cluster client, the passed APPLID must already be known to the GLM - for example, it must already have an entry in the CASGLM.LCK file.
2847684 (1103145)
- When processing a WSBIND that contain nested occurs levels, the group level is now correctly maintained.
2844738 (1102697)
- XA transactions will now end when an ECI request fails with PGMIDERR.
2843668 (1102276)
- The order in which user privileges are checked when accessing cataloged files has changed. First, a check for the alter privilege is performed. If access is denied, Enterprise Server performs a check for update privileges. If this check fails as well, a final check for read access is performed. This is reflected in both the console log output and in any Audit Manager events that are generated.
2842162 (1102048)
- Previously, when generating a MQRFH2 header, the CCSID that was used was 0. This resulted in an abend APIJ on the CPIL transaction and in an error 2111 on the MQGET API. The MQRFH2 header is now generated with the correct CCSID values.
2841974 (1102004)
- When the targetService option was enabled for the JMS Invoke Webservice, no response was returned to the application if the URIMAP was not found. This caused the transaction to hang. A message is now sent to the Dead Letter Queue, and the application fails with an error message DFHPI0112.
2841602 (1101959)
- casspool type 16 records (spool-printed-88) are now being processed and the printed spool records get deleted when using Delete from the ESMAC page.
2839657 (1101706)
- A Run-Time System error 114 no longer occurs when a GET request is received.
2825851 (1100157)
- You can now start Enterprise Server instances that have the casuesm exit enabled. If you are already using this exit, you must recompile your applications using the updated cascbesm.cpy that is in the cpylib subfolder in the product installation directory. You also need to include the version check at initialization time that is implemented in the skeleton casuesm.cbl file that is in the src in the product installation directory.
2821228 (1099658)
- You no longer receive a memory leak in cassi processes when using the Micro Focus External Call Interface.
- If no license has been found when starting Enterprise Server, Enterprise Server Administration now periodically checks whether a license server is present.
2836688 (1101388)
- The Enterprise Server External Security Facility, using LDAP-based security, no longer incorrectly matches a wildcard character ("*") in a resource access rule to a period (".") in the requested resource name. The double wildcard sequence ("**") does match a period (".").

2854402 (1103604)

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

2838380 (1101547)

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

File Handling

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

2849233 (1102953)

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

2842825 (1102218)

- Rebuild now correctly processes the key structure defined through an options file.

2837028 (1101412)

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

2832386 (1100932)

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

2837756 (615857)

- Rebuild now allows the case where "9" is specified after ":"

2836782 (1101437)

IDE

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- Debugging of remote application attachments now respects the order of source containers during source lookup instead of relying on the information in the IDY files.

2845910 (1102501)

- Error annotations that follow INCLUDE statements are now displayed on correct lines.

2845634 (1102720)

- The 'delimited' and 'delimited by size' COBOL program clauses no longer prevents the Outline view and Content Assist from functioning correctly.

2843597 (1102236)

- Each project now has its own build console that accumulates build output until explicitly cleared or closed by the user.

2841821 (1102009)

- Added new system property build.errors.limit which limits the maximum number of problem error markers created as part of a build. You can modify this property by editing the eclipse.ini file.

2840702 (1101870)

- A momentary loss of network connectivity can result in COBOL Project settings being lost if the project was stored on a network location.

2833101 (1101082)

- When debugging native COBOL applications the .idy file loaded by the debugger is now used to create the editor's Outline view and other information such as content assist and colourization.

2827035 (1101229)

- A full rebuild of all projects in a workspace could sometimes be triggered after restarting Eclipse.

2816310 (1101363)

- Debugging network file system remote projects can be made faster by using the 'Remote File System Directory' container to specify the source lookup path on the Source tab of the Debug launch configuration.

2792882 (1096491)

- By selecting the "Create top-level folder" option when importing the copybooks and then adding the folder to the Dependency Paths/Copybooks, the project will compile successfully.

2682665 (1092789)

- It is now possible to change the compiler directives in the project settings without cleaning the build artifacts through the use of a new preference.

2647695 (1089794)

Integrated Preprocessor

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- Programs with EXEC SQL INCLUDE statements that have a trailing period that is not immediately following the END-EXEC now compile as expected with the COBSQL preprocessor.

2844222 (1102486)

- A user preprocessor which calls directly the 'CP' system preprocessor now behaves as expected during the syntax checking of source files you are editing.

Interface Mapping Toolkit

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

Micro Focus Common Client

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

Micro Focus Directory Server

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

2846804 (1102971)

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

2837359 (1101501)

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

2834446 (1101342)

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

Monitoring and Management

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- The Operations Manager agent no longer logs a warning event 21405 for machines being monitored that do not have Enterprise Server installed .
2830110 (1100895)

Run-Time System

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- In the JVM COBOL run time, an alphanumeric comparison with a collating sequence now gives correct results for character values greater than 127.
2839717 (1101845)
- If a file is opened for Read with 'deny neither read nor write' and then the same file is opened for Read (or Read/Write) with 'deny write', then when the second FD is closed, the 'deny write' file lock was NOT removed. This has now been resolved.
2837230 (1101419)
- 64-bit Windows only, and native generated code only. Programs containing code of the form 01 f comp-2. compute f = f ** 0.5 no longer give a load error at run time (for .gnt code) or fail to link (.obj code) with the message "unresolved external symbol _tMc4506".
2836893 (1101465)
- When using "mfauditadm -r" on an audit file containing processes that have very long command lines, the process could terminate early with a memory fault. This has now been resolved.
2832770 (1101000)
- The Sharedmem demo has been updated to make it compatible across all supported UNIX platforms. Previously, on some platforms the semaphore synchronization did not work.
- Repeatedly calling and cancelling different programs in different threads could cause the application to hang. This has now been resolved.

SQL: COBSQL

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- The COBSQL preprocessor has been updated to correctly handle P(CP) with the NOSQL directive.
2850394 (1103086)
- Background parse should now create temporary files with names that differ from the actual build process.
2843719 (1102613)

DB2

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- A compiler error that resulted from the DB2 ECM preprocessor incorrectly handling embedded comments within an SQL statement has been fixed.
2846756 (1102646)
- An HCO pre-compiler routine incorrectly replaced an underscore in host variable name which resulted in invalid host variable. This has now been fixed.
2837674 (1101487)

SQL: OpenESQL

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- An overflow problem with host variables of type System.Decimal has been fixed.
2849939 (1103195)
- OpenESQL has been updated to correctly handle cursors in static methods when using DBMAN=ODBC in a managed application.
2847268 (1102968)
- A problem with EXEC ADO REBIND CONNECTION has been fixed.
2846426 (1102645)
- In some scenarios, OpenESQL for ADO.NET incorrectly handled level 49 VARCHAR host variables defined with zero (0) length.
2845409 (1102510)
- HCOSS with SQL(CHECKCALLPARAMS) now correctly determines parameter types and directions for SQL, SQL synonym, and SQL CLR stored procedure calls that use four-part names, and that are located on other servers or in other databases.
2844292 (1102483)
- HCOSS did not fully support DB2 ROW_NUMBER().
2843937 (1102362)
- Using SQL(CHECK) with .NET applications caused an error on Oracle.
2842102 (1102037)
- The OpenESQL JVM Runtime was updated to correctly process a FETCH from a VARCHAR column where the field is zero length.
2841149 (1102637)
- The Project Properties user interface has been updated to include SYBASE and INFORMIX-NEW on the COBSQLTYPE options list.
2840953 (1101877)
- An EXEC ADO GET DATATABLE statement for Data Tables contained within a dataset resulted in SQL errors.
2837717 (1101484)
- HCO for SQL Server incorrectly returned result set locators for result sets containing VARCHAR(MAX) columns.
2832384 (1101169)
- The ADO and JDBC runtimes have been updated to fix a share lock problem that occurred when SQL(ISOLATION) was set.
2797208 (1096456)
- To correct a problem when using SQL(DETECTDATE) with SQL Server datetime columns, applications updating to Visual COBOL 2.3 might require use of the SQL(DETECTDATE) directive if they use SQL Server datetime columns with PIC X host variables. Alternative solutions are to switch to datetime2, or to use SQL TYPE TIMESTAMP host variables.
2850022 (1103058)
- To correct a problem with closing CURSORS, SQL(SPCALLLOCAL) can now be used to instruct OpenESQL to detect and close cursors associated with simulated stored procedures not closed by an application.
2848402 (1102838)
- When using SQL Server version 2012 SP2 or later, OpenESQL now supports a [NOCHECK] statement prefix to enable SQL(CHECK) to be disabled on a per-statement basis. If used with other statement prefixes, it must come first. When compiling programs that use global temporary tables, HCOSS

executes converted DECLARE GLOBAL TEMPORARY statements at compile time. These enable subsequent statements that reference the temporary table to be checked using SQL(CHECK).

2847791 (1102782)

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

2846825 (1102701)

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

2846226 (1102582)

- A new directive, CHECKSP, has been added to the OpenESQL preprocessor to verify whether or not parameters match the COBOL definitions defined in a stored procedure. If not, the OpenESQL preprocessor generates error ES0127. The syntax is: SQL(CHECKSP=<spd-filename> CHECKSP applies only when SQL(SPCALLLOCAL) is also used.

2844399 (1102329)

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

2842879 (1102128)

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

2841857 (1102003)

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

2841721 (1102106)

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

2841508 (616495)

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

2839826 (1101752)

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

2839066 (1102162)

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

2838227 (1101571)

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

2834386 (1101104)

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

2833755 (1101022)

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

2833683 (1101017)

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

2829499 (1102075)

- When running in ODBC mode, the OpenESQL Assistant DCLGEN sometimes generated incorrect TIMESTAMP and DATE column sizes. It now generates the TIMESTAMP(6) columns as PIC X(26) and the DATE columns either as PIC X(19) or X(10) based on the NLS_DATE_FORMAT setting.
2823577 (1099922)
- The documentation has been updated to clarify the issue of trailing spaces in comparisons for PIC X host variables with CHAR and VARCHAR columns.
2806980 (1097582)
- An attempt to compile in Visual COBOL with OpenESQL using unsupported HCOSS directives now returns errors rather than warnings. HCOSS is not supported in Visual COBOL.
- OpenESQL for ADO.NET did not recognize and handle Oracle's full managed .NET provider in addition to the original partially managed provider. Note: The two providers are not 100% compatible. The partially managed provider uses NLS settings for date/time formatting and the fully managed provider uses the local machine locale.

SQL Option for DB2

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- The XDB pre-processor incorrectly processed SQL statement that had embedded singles within a literal. This resulted in receiving an incorrect message "cobsq10111e - no from clause specified error".
2850293 (1103073)
- When using an open cursor with constants comparison in an IN () clause, an Sqlcode -1352 error occurred.
2844111 (1102266)
- An SQL statement with SELECT caused an XDB with Server Violation error when converting from the CHARACTER to INTEGER type in the INSERT SQL statement.
2839382 (1101677)
- Incorrect results sometimes occurred when using a host variable for the second parameter of the SQL scalar function ROUND() function.
2831359 (1101083)
- Exiting SQLWizard processing no longer causes an exception.
2849696 (1103097)
- A problem with the display of code page conversions in the SQLWizard Import/Export dialog boxes has been resolved.
2846196 (1102659)
- An issue that resulted in a syntax error when editing tables with decimal data has been resolved.
2840937 (1101960)
- Exporting a table with a reserved word as a column name no longer produces an error X020 if the quoting types are Apost or Quote.
2806803 (1097559)
- An RTS 114 error would sometimes occur on an UPDATE WHERE CURRENT OF CURSOR.
2840936 (1101868)
- When executing a batch job containing XDB Null loads, an error occurred during DSNUTILB processing when loading the XICU40N DLL.
2840147 (1101785)
- An execution error resulted when using dynamic SQL with an SQLDA SQLN integer much larger than required for input parameter markers.
2818992 (1099256)

XML Support

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- PREXML now terminates and returns an error message if there is a problem expanding a copybook.
2472213 (1076394)
- XMLPARSE did not honor the encoding in the XML declaration for output text.
2851343 (1103239)
- XML WRITE with CHECK VALIDITY OUTPUT no longer causes RTS 114 error if the written document contains an XML declaration.
2837110 (1101424)
- XMLPARSE did not handle CONTENT-CHARACTERS correctly in XMLSS mode.
2822339 (1099692)

Other Issues Resolved in This Release

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

- 2266906 (1066314)
- 2541594 (1081441)
- 2610077 (1087571)
- 2613606 (1088533)
- 2691674 (1093498)
- 2784725 (1095083)
- 2792882 (1102055)
- 2801626 (1097006)
- 2801847 (1097374)
- 2805056 (1097357)
- 2806566 (1097816)
- 2807649 (1097763)
- 2809132 (1097892)
- 2812331 (1098359)
- 2815582 (1099634)
- 2817630 (1101066)
- 2824712 (1100086)
- 2824925 (1099961)
- 2825098 (1100032)
- 2825249 (1101374)
- 2827707 (1100302)
- 2828305 (1100419)
- 2828897 (1100491)
- 2829677 (1100588)
- 2830741 (1100655)
- 2830871 (1100785)
- 2831477 (1100831)
- 2831788 (1100810)
- 2831959 (1100864)
- 2832490 (1100907)
- 2832904 (1100916)
- 2833083 (1101060)
- 2833100 (1101123)
- 2833473 (1101007)
- 2833925 (1101045)
- 2834217 (1101124)
- 2834245 (1101085)
- 2834253 (1101099)
- 2834843 (1101156)
- 2834959 (1101167)
- 2835289 (1101498)
- 2835416 (1101496)
- 2835506 (1101288)
- 2835508 (1101292)
- 2835599 (1101293)
- 2835608 (1101494)
- 2835687 (1101497)
- 2835835 (1101262)
- 2836694 (1101356)
- 2837531 (1101490)
- 2837784 (1101511)
- 2838086 (1101525)
- 2838343 (1101586)
- 2838426 (1101552)
- 2838593 (1101986)
- 2838671 (1101587)
- 2838689 (1102052)
- 2839730 (1101776)
- 2840155 (1101821)
- 2840349 (1101906)
- 2840530 (1101860)
- 2840658 (1101893)
- 2840766 (1101857)
- 2840977 (1102019)
- 2841607 (1101961)
- 2841785 (1101988)
- 2841933 (1102021)
- 2842318 (1102129)
- 2842702 (1102121)
- 2842940 (1102122)
- 2843048 (1102186)
- 2843076 (1102135)
- 2843140 (1102509)
- 2843301 (1102185)
- 2843324 (1102296)
- 2843438 (1102240)
- 2843446 (1102173)
- 2843446 (1102174)
- 2843884 (1102492)
- 2845184 (1102627)
- 2845218 (1102490)
- 2845635 (1102601)
- 2845781 (1102730)
- 2846150 (1102557)
- 2846669 (1102644)
- 2846797 (1102780)
- 2846971 (1103070)
- 2847253 (1102806)
- 2847876 (1102765)
- 2848324 (1103143)
- 2849271 (1103044)
- 2849307 (1102974)
- 2849430 (1103011)
- 2849508 (1102970)
- 2849972 (1103094)
- 2851114 (1103175)
- 2851169 (1103174)
- 2852143 (1103362)

Installation

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.

- 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: `mfdss -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: `mfdss -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 ("mfdss") 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 and 4.3 for the 32-bit Eclipse only. See *Installing Visual COBOL into other instances of Eclipse* for instructions.

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.
- The following libraries must be installed:

| Library | Platform | | | |
|-----------------------------------|----------|---------|-------------|-----------|
| | SUSE 11 | SUSE 12 | Red Hat 6.x | Red Hat 7 |
| glibc-locale-32bit | X | X | | |
| gcc | X | X | | |
| gtk2 (libgtk2, gtk2-tools-32-bit) | | X | | |
| libXcomposite1-32bit | | 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 | | |
| gcc*.i686 | | | X | X |
| glibc*.x86_64 | | | X | X |
| glibc*.i686 | | | X | X |

| Library | Platform | | | |
|--------------------------------|----------|---------|-------------|-----------|
| | SUSE 11 | SUSE 12 | Red Hat 6.x | Red Hat 7 |
| 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 |
| 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*.

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_231.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_update1_platform
```

2. Run the setup file with superuser permissions:


```
./setup_visualcobol_deveclipse_2.3_update1_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_update1_platform -installlocation="full path of new location"
```

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

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

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

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

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

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

 **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_update1_platform -skipsafenet
```

- To protect the SafeNet Sentinel installation from accidental updating you can create an empty file named `SKIP_SAFENET_INSTALL` in `/var/microfocuslicensing/` as follows:

```
touch /var/microfocuslicensing/SKIP_SAFENET_INSTALL
```

While the file is present, the SafeNet installer does not make changes to the installation or shutdown the running license daemons. If licensing needs to be updated later, remove the file and install Sentinel RMS server manually.

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 Windows [click here](#) and for UNIX [click here](#).

On Windows

Installing as an Upgrade

- 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_231.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_231.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_231.exe /q InstallFolder2=c:\EclipseInstallDirectory
```
- To skip installing JRE when installing Visual COBOL:

```
start /wait vce_231.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_update1_platform -installlocation="full  
path of new location"
```



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

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

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

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

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

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

Configuring 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 where 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

- 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, run the file `ViewNow_X_Server.exe` in your Visual COBOL installation. By default this will be in the `%ProgramFiles(x86)%\Micro Focus\Visual COBOL\ViewNowX` 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.

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.

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