Micro Focus Enterprise Server 2.3 Update 2

Release Notes

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Micro Focus Enterprise Server 2.3 Update 2 Release Notes

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

Note:

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

Product Overview

Enterprise Server provides the execution environment for applications created with any IDE variant of Enterprise Developer.

What's New

This release provides enhancements in the following areas:

- *COBOL language enhancements*
- *Database access - DSNREXX*
- *File handling*
- *IMS support*
- *Library routines*
- *PL/I support*

COBOL language enhancements

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

Database access - DSNREXX

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Note: This is a technology preview feature only. It is being made available to allow you to test and provide feedback on this new capability; however, this feature is not intended for production use and it is not supported as such.

DSNREXX support is available for use with Enterprise Server using DB2 LUW and SQL Server. See *DSNREXX Support* for more information.

File handling

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

IMS support

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This release supports the PROMPT keyword in MFS source files.

Library routines

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The following library routine contains new functionality:

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

PL/I support

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This release provides the following enhancements:

- New built-in functions - support has been added for the ONCONDID() and SAMEKEY() built-in functions.

- Support for strings declared with the VARYINGZ attribute - the Open PL/I compiler and run-time system now support the use of VARYINGZ strings as variables, parameters, and targets for built-in functions. This provides an improved compatibility with IBM's mainframe compiler, and the ability to more easily interact with other languages such as ANSI C.
- Improved PL/I macro preprocessor compatibility - the Open PL/I compiler now supports all macro preprocessor built-in functions used by IBM's PL/I Macro Preprocessor.
- Improved compatibility with IBM's Structure Alignment rules - the -zalign option of the Open PL/I compiler now maps structure elements of the BIT data type that do not consume a full byte to the same boundaries as IBM's PL/I compiler. This helps make the migration of mainframe data files to a distributed platform easier and improves the program execution compatibility.
- Improved floating point support - the Open PL/I Code Generator now utilizes the newer Intel floating point operands for improved speed. In addition, the Code Generator now provides improved compatibility with passing parameters between C and COBOL.

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).

- *Enterprise Server*
- *MF Directory Server*
- *Monitoring and Management*
- *JCL Support*
- *PL/I Support*
- *Run-Time System*

Enterprise Server

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

  2869848 (619107)

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

  (618668)

MF Directory Server

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

  2816871 (1099564)

Monitoring and Management

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

  2854207 (1103659)

JCL Support

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- A printer exit can now evaluate the spool copybook field lk-dest-source-is to find the source of the value in the spool DEST-NODE and DEST-USERID fields, to determine if it is from a SYSOUT 'DEST=' value or from a /*ROUTE PRINT value.

  2852302 (1103304)

PL/I Support

- A problem with PUT STRING when compiled with the -bigendian option in effect has been fixed. Note that when upgrading to ED 2.3 U2 you must recompile any program using PUT SPRING.

  2857374 (1104039)

- Previously, if using the -incafter option of the macro preprocessor to infuse a %INCLUDE with macro logic, you were required to schedule a second macro pass to preprocess the contents of the %INCLUDE. This is no longer necessary and the macro logic will be preprocessed on the first macro pass as if it was part of the original source.

- Previously, if writing output to a CTLASA (PRINT) file with the optional LINE(x) parameter having a value of x that was less than the current line, PL/I did not generate ASA Control characters to end of page and emit the output on the first line of the new page. This no longer occurs.

  2871278 (1106114)

- Previously, if SIGPIPE was triggered when a PL/I program was in the callstack, then PL/I error handling got control and processed the ERROR. This no longer occurs. Users who rely upon catching SIGPIPE can re-enable it by adding a call to cobpostsighandler() to their code to turn it back on.

  2859980 (1104399)

Run-Time System

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

  2838118 (1101539)

Known Issues

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

In addition, note the following:

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.
- In Enterprise Developer 2.3, some job scheduling tools from third-party vendors might stop communicating with Enterprise Server. This might have an impact on our external partners who integrate with Enterprise Server such as job schedulers which do not use MFBSI. The issue might occur with job schedulers such as Zena, CA, ASG or UC4, if these are run outside of a COBOL environment with the path set. *Click here* for more information about the issue and how to work around it.

IDE

- When you add a COPY statement in a COBOL program and then show it in Expanded Copybook View, the line for the copybook statement is read-only. If you then perform an Undo in the COBOL program, the COPY statement is removed while the contents of the copybook is still shown in the program.
- **Replace All** does not work inside the Expanded Copybook View
- For copybooks with file extensions that are not traditionally associated with COBOL you must first add the file extension to the list of known copybooks extensions in **Tools > Options > Text Editor > File Extensions** before you can show them in Expanded Copybook View.

Linking

- Changes in the C compiler in Visual Studio 2015 affect the way you link COBOL object code and C object code built with that version of Visual Studio in the same executable. In this scenario, you must use the Microsoft link utility and the C runtime libraries directly from Visual Studio, rather than the Micro Focus cbllink utility, the Microsoft link utility and the libraries supplied with Visual COBOL. You might also need to specify some additional C runtime libraries - see the Microsoft documentation for more details.

  Note that when using COBOL and C object code together, Micro Focus recommends you build and keep the COBOL and C executables separate, and use import libraries and the Micro Focus C functions for calling COBOL (see "C functions for calling COBOL" in the product help) to resolve calls between them.

PL/I Support

- The Micro Focus PL/I Macro Preprocessor supports the majority of the IBM PP(MACRO) functions. The only support for PP(PLX) is for the deprecated KEYS option. There are no plans to further extend the existing support for PLX.
- On SUSE, the PL/I CodeWatch debugger does not display output with MicroFocus ViewNowX. To resolve this issue, you need to install a HotFix of ViewNowX - contact Micro Focus SupportLine for more details.

- Trying to debug remote PL/I projects that compile to 32-bit using the CodeWatch debugger fails. To work around this issue, you must set the environment variable $COBMODE to COBMODE=32 on the remote machine before you start the RDO daemon.

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).

Resolved Issues

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

- *Assembler Support*
- *CICS Support*
- *Codeset Support*
- *Common Communications Interface*
- *Compiler*
- *Communications Server*
- *Data Tools*
- *Dialog System*
- *Documentation*
- *Enterprise Server*
- *File Handling*
- *H2cpy*
- *HCO for Microsoft SQL Server*
- *IMS Support*
- *JCL Support*
- *Licensing*
- *Mainframe Access*
- *Mainframe Batch Scheduler Integration*
- *Micro Focus Directory Server*
- *MVS REXX Emulation*
- *OpenESQL*
- *PL/I Support*
- *Run-Time System*
- *Setup*
- *SQL: COBSQL*
- *SQL: HCO for DB2 LUW*
- *SQL: HCO for SQL Server*
- *SQL: OpenESQL*
- *SQL Option for DB2*
- *XML Syntax Support*

Assembler Support

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- An issue where GENCB macro was causing SOC1 ABENDS at execution time has been fixed.

  2864941 (1105224)

- STOW macros now accept invocations which omit the third argument. For example: STOW (1),PDSNAME CLOSE MEMBER W/O REPLACE

  2868167 (1105603)
- BPAM (Basic Partitioned Access Method) emulation has been fixed to allow an open output of PDSs with no members.

  2868167 (1105604)

- Assembler LAY instructions were incorrectly Soc5 abending when a negative displacement was specified. This has been fixed so instructions of the form LAY 14,-262144(,14) work correctly.

  2862443 (1104723)

- Assembler Add Packed (AP) instruction was not detecting numeric overflow as per IBM's z/OS specifications for 32-bit mathematical operations. The overflow detection logic in the Assembler Run-Time system has now been changed to properly detect all condition codes associated with 32-bit add operations.

  2861800 (1104652)

CICS Support

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- Previously, HSF records for CICS transactions were incorrectly given a type of JCL under SSTM.

  2854986 (1103786)

- A trap could sometimes occur if an EZASOKET call was made before MFCS was ready to process the call.

  2861431 (1104615)

- CICS SEND FROM statements now support a new option, _NOCONVERT. When this is set, the associated data stream will not be converted between ASCII and EBCDIC.

  2858809 (1104228)

- During the auto-install of a terminal that would result in a duplicate terminal, the duplicate terminal would hang and each attempt to reconnect would create a new invalid terminal entry. Also, attempts of an IMS terminal that uses a predefined NETNAME to reconnect would fail.

  2857211 (1104013)

- When trying to write to the local trace table, a flag was not initialized properly which resulted in a crash in casgreqt.

  2854635 (1103673)

- An issue causing some memory leak has been fixed.

  2848625 (1102926)

- When an ambiguous handle does not need to be qualified within an exec cics statement (i.e. a paragraph exists in the same section as the exec cics statement, and a duplicate paragraph name exists in another section), "COBEC1402S HANDLE label not unique" will no longer be returned.

  2871628 (1106156)

- The NOCONVERT and CCSID options are now supported in the GET/PUT CONTAINER APIs.

  2830735 (1100803)

- Non-unique locations within EXEC CICS statements are now flagged as Not Unique when compiled if they need to be qualified.

- An issue where CICS INQUIRE REQID returned EIBRESP=NORMAL even when no REQID was present in the system has been fixed.

  2870593 (1106043)

- A CWI group in the startup list would cause intermittent 252 Run-Time System errors in casgate, especially under load.

  2865028 (1105237)

- Timeouts specified by ECI clients are now honored.

  2864330 (1104999)

- Previously, data returned on an EXEC CICS READQ TD command could be truncated. This could only occur for regions running without TRANCLASS specified.

2863822 (1104922)

- The value of IOAREALEN in T-TYPE definitions is now honored during the auto-installation of the Universal Client terminal.

2863437 (1105060)

- An issue causing a memory leak when using CICS POST has been fixed.

2862452 (1104719)

- An issue causing file locks when using CICS SPOOLOPEN has been fixed.

2858609 (1104717)

- An issue with CWS using MQ transport where the reply was sent to the dead letter queue instead of to the reply queue has been fixed.

2858022 (1104129)

- SET TERMINAL NEXTTRANSID is now being honored.

2851169 (1103193)

- An INQUIRE DSNAME now returns the dsname when ES_INQFILE_RETURN=DSN even if the datafile has not yet been opened since the region started.

2850740 (1103167)

- If a region was active when a daylight savings or other timezone change was made, the new time would not be reflected in the CICS ASKTIME API. The PERFORM RESETTIME command now behaves in the same way as under CICS on the mainframe allowing a user-written program to update the system to use the new time.

2842910 (1102203)

- The BMS field attributes are now correctly applied for fields that are defined within a group.

2839597 (1101990)

- Enterprise Server now supports the CICS API SET TASK Purge, Forcepurge and Kill commands.

2810092 (1098212)

- The following new trace flags are now available in the System Initialization Table (SIT): srv - traces SEP hosted task control functions; pcp (program control program) - traces program management functions.
- When MFDS uses SSL ports and the user navigates to ESMAC from MFDS, the HOME link now points to the correct SSL port.

2863039 (1104794)

- A problem with the CICS API FORMATTIME incorrectly truncating seconds has been corrected. The milliseconds value is now truncated if the milliseconds value is not requested.

2868459 (1105680)

- A problem with user names and passwords importing into the resource definition file as upper case has been fixed.

2868202 (1105606)

- It is now possible to run the casrdtex command on resource definition files defined with read-only access.

2852401 (1103335)

Codeset Support

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

2858171 (1104157)

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

Common Communications Interface

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

Communications Server

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- MFCS now accepts security configurations which do not include optional data such as the "Authorized ID" for security managers.

  2865680 (1105868)
- Enterprise Server now provides some new options for EZ Sockets support for Mainframe Subsystem Enterprise Server applications. You can use these options to enable your applications to share sockets without using GIVESOCKET/TAKESOCKET. See the product Help (available from documentation.microfocus.com) for a description of the "share descriptors" option.

  2863608 (1104885)
- TN3270 conversations no longer hang, looping in the MFCS process, if the client sends a malformed TN3270E header. A message will now be written to the MFCS log and the input record will be discarded.

Compiler

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

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

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

  2853877 (1103611)
- An error in the "ACCEPT binary-floating-point-item" syntax, which occurred on Intel x86 platforms in 32-bit generated code, has been fixed.
- On UNIX or Linux, Intel x86, 32-bit platforms, callable shared objects no longer state a spurious line number when reporting RTS 163 run time errors.

- If more than one report shared the same FD, for example: REPORTS ARE REPORT-1 REPORT-2. then under HOSTRW, the record length was wrong. This has been corrected.

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

  2864991 (1105087)

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

  2864361 (1105017)

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

  2864131 (1105018)

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

  2863045 (1105008)

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

  2863002 (1104821)

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

  2860899 (1104519)

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

  2860416 (1104588)

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

  2859026 (1104318)

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

  2858944 (1104278)

- When REPLACE is active, a literal containing '""' now compiles as expected.

  2858804 (1104264)

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

  2858013 (1105427)

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

  2857266 (1104189)

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

  2856776 (1104074)

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

  2854533 (1103648)

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

  2854371 (1103662)

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

  2854113 (1103542)

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

2853789 (1105472)

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

2851928 (1103254)

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

2646229 (1089272)

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

2433731 (1073167)

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

2867788 (1105608)

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

2856883 (1103973)

- If a program contained 'PERFORM of section-name THRU paragraph-name', where the section-name is known to terminate, the compiler erroneously assumed that the PERFORM THRU terminates (which is not necessarily the case when paragraph-name is within section-name). This meant that no code was generated for any statements following that PERFORM statement. This is now fixed.

2871380 (1106107)

- When ILSMARTLINKAGE was specified for a program compiled with the directive ODOSLIDE (which is set automatically when a mainframe dialect is used), and when the program contained a linkage section record with multiple OCCURS DEPENDING ON items, then illegal code was being produced with multiple error messages. This is now fixed.

2870166 (1105899)

- Index names (that is, names defined using INDEXED BY) in the Linkage Section were being allocated in local storage. This is correct for linkage records in methods, but for procedural programs, they need to be allocated in working-storage for compatibility with previous behavior. This is now the case.

2870162 (1105922)

- If the OUTDD or INDD directives were in effect, but the CHARSET directive was set to ASCII, then use of a DISPLAY statement could result in a warning about a 'Reference to undeclared extern assembly'. This has been fixed. (Note - this situation could arise by setting DIALECT to a mainframe variant such as ENTCOBOL (which in turn sets OUTDD/INDD), and then setting CHARSET"ASCII".)

2869937 (1105859)

- Level 66 items declared as instance or static data in a class are now accessible from methods. Previously, attempting such an access produced a compile time error.

2869374 (1105791)

- The ILMAIN directive being set no longer results in incorrect code being generated for the EXIT PROGRAM statement.

2868383 (1105651)

- If two overloads exist for a method with identical parameters except that one has an additional optional parameter, then an invocation of the method specifying only the fixed parameters will now choose the overload without optional parameters. Previously the method with optional parameters was chosen.

2867722 (1105552)

- When compiling for .NET, a sequence of two or more IF NUMERIC tests joined together by the OR operator no longer causes the Compiler to crash with an error 114.

  2866846 (1105400)
- In previous versions of the product, a comparison between an arithmetic expression and a single-digit literal or data item could produce invalid code in the case where CHARSET"EBCDIC", HOSTNUMCOMPARE and ILVERIFY were all set. This is now fixed.

  2866229 (1105284)
- Whilst debugging, it is now possible to examine the value of an INDEXED BY item declared inside the LINKAGE SECTION of a program.

  2864353 (1105075)
- The CURSOR IS syntax in the SPECIAL-NAMES paragraph is now working correctly for managed COBOL code.

  2863432 (1104897)
- The use of an EVALUATE statement in one of the WHEN branches of an outer EVALUATE statement no longer has the effect of switching off the HOSTNUMCOMPARE directive.

  2863206 (1104921)
- A TABLE OF expression that includes a subscripted item in its list of operands no longer generates bad code; previously, this was leading to an invalid program.

  2860957 (1104571)
- A COMP-X operand used as a second (or subsequent) operand to a full-screen DISPLAY statement no longer causes generation of bad code. A move of low-value (or other non-numeric alphanumeric literal) to a PIC 9(4) display data item now follows RM rules when the ACU dialect is in effect.

  2860907 (1104515)
- With ILSMARTLINKAGE, the data access get method for data with multiple subscripts was being generated incorrectly. This could mean that the value passed for subscripts other than the first was being ignored. This is no longer the case.

  2859095 (1104263)
- When a referenced assembly was loaded, but one or more of its dependent assemblies could not be found by the Compiler, unreported errors could occur. In particular, this could have the effect that operator overloads (such as the equality operator for items of type string) were not found. In the case of string comparisons, this could then result in two strings with the same contents (but different object references) comparing unequal. Such behavior is now fixed.

  2857192 (1104066)
- An issue where Content Assist/IntelliSense did not offer all available extension methods has been resolved.
- The LENGTH OF expression is no longer allowed on an object expression; an error (COBCH1869) is produced if attempted. For objects of type string, collection types, or single dimensional managed arrays, the SIZE OF expression can be used to determine the current size (i.e. the length of string or of the managed array, or the number of elements in the collection).

Data Tools

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

  2868190 (1105640)
- The classic Data File Tools utility now shows the correct field sizes for PL/I array elements.

  2858068 (1104147)
- The DFCONV utility now converts correctly between IEEE and 370 floating points.

  2857502 (1104054)

Dialog System

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

Documentation

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

  2867660 (1105532)
- The product help now clarifies that navigation bar in Visual Studio displays the lists of the objects and procedures used in the current program as well as the Procedure Division, any sections, paragraphs, and group level data definitions and enables you to position the cursor on any of them.

  2858290 (1104219)
- The topic "Making the Most Out of The COBOL Editor" in the product help for Visual Studio now provides a link to the information about limitations with single file support.

  2858263 (1104217)
- Information on setting the mfdepinst security credentials in the .mfdeploy file in the deployment parent directory has been added to the documentation.

  2854625 (1103607)
- The product help now includes information about the ExcilRespException and InvalidDataException classes and corresponding serialized form information.

  2851195 (1103171)
- The 'This Page' help link in Enterprise Server on UNIX now opens the Help.

  2818256 (1099110)
- Changing the project's connection type can result in the project losing the connection to its version control system. You can re-establish the connection with your version control system in the Share Project dialog.

  2792882 (1101965)

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

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

  2855600 (1103829)

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

  2863618 (1104878)
- User exits MFDASIMP and MFDASEXP are now documented.

  2858575 (1104507)
- Updated the information on the action of the MFJESPWR user exit program contained in the documentation.

  2856725 (1103944)
- The DATAFIELD built-in function has been removed from the documentation.

  2852986 (1103391)
- Details have been added to the topics "To enable Windows Event Logging" and "To enable Performance Counters" to state that the user must be able to write to the appropriate registry, and have appropriate privileges, to complete these tasks.

2840002 (617369)

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

2830787 (1100664)

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

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

2645110 (1089268)

Enterprise Server

- The CASGLM.LCK and ESCLRMLs.cfg files were not generated if the system catalog was in a spacey path.

- The security when displaying any of the Enterprise Server configuration pages in the Enterprise Server Administration HTML GUI has been increased.

2846702 (1102642)

- The "Renew" command available from the left hand side navigation pane in the Enterprise Server Administration HTML GUI did not work when SSL was enabled.

- A potential memory corruption when a SEP executing an EXEC CICS DELAY is killed has been fixed. This situation only occurred when TRANCLASS was enabled.

2865931 (1105228)

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

2865927 (1105226)

- IN-only messages are now supported for CICS Web Services.

2864329 (1104991)

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

2858651 (1104770)

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

2856234 (1103860)

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

2852058 (1103778)

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

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

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

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

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

  2848888 (1102908)
- A default password for an external Security Manager connection is no longer used when you specify a user id but not a password. This is to help avoid locking out the user id. Also, if no password has been specified, the Enterprise Server Administration HTML GUI no longer displays a dummy value in the password field on the Security Manager configuration page.

  2864790 (1105187)
- Under heavy loads, the ESFCA0401I log messages were not appearing at the correct intervals.

  2863222 (1104948)
- Restricting access to the Enterprise Server External Security Facility's Admin API for the MLDAP ESM Module now works correctly when you use resource definitions in the optional AdminAPI class.

  2830660 (1100636)
- With some types of tracing enabled, the MLDAP ESM Module for Enterprise Server security would sometimes report that a group ACE matched the user's logon group when in fact it did not match. The trace message now correctly indicates whether the ACE matched or not.
- When using Enterprise Server security with LDAP, on some platforms, a resource access rule with an empty access control list (ACL) could cause an RTS 114 or other program crash. This has now been fixed.

File Handling

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

  2868664 (1105707)
- When certain in-flight rewritten records were rolled back at the end of a transaction, the File Handler was setting incorrect values for the length field in some records and various warning messages were displayed during index file validation.

  2864802 (1106106)
- VB files are now created with the correct lrecl, taking into account the extra space for a print character when creating the file header.

  2856899 (1104023)
- FS_CHECK_FILE_EXIST is now being processed correctly when called with an environment variable that contains a Fileshare server-name. Previously, the request was not being sent to the server.

  2851717 (1103253)
- Memory is now correctly being deallocated at end of IMS rollback recovery processing; previously, it was not.

2840046 (1101795)

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

2832733 (1101061)

- The rollback recovery process is now working as expected.

2802180 (1097066)

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

2860981 (1104576)

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

2861239 (1104614)

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

2858360 (1104276)

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

2857600 (1104073)

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

2855141 (1103700)

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

2854443 (1103597)

H2cpy

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- H2cpy now successfully parses cURL header files.

2858155 (1104162)

HCO for Microsoft SQL Server

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

2871163 (1106063)

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

2866507 (1105337)

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

2861657 (1104733)

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

2853667 (1103453)

IMS Support

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- When a GE status (record not found) was returned when accessing a secondary index directly as a stand-alone DB, the database position was lost. This has been corrected.

  2859678 (1104360)
- When using a PROCOPT=GO PCB to access a secondary index DB, a record locked status (9/068) error message could occur when other active applications were updating adjacent records in the index.

  2856236 (1103858)
- Secondary Index sparse exit routines were allowed to run in parallel in the multi-threaded IMS DB Control process. Exit routines are now serialized by default to prevent any possible unintentional storage corruption by exit routines which are not thread-safe. If all sparse exit routines are thread-safe, you need to use the configuration variable ES_IMS_SERIAL_SPARSE_EXIT=0 to allow exit routines to be multi-threaded.

  2856235 (1103857)
- A qualified GU call to a PROCSEQ PCB with a key value greater than the last record of the SX DB resulted in an unnecessary forward search across the entire SX DB. This has been fixed.

  2855116 (1103841)
- On a heavily loaded system running a combination of read-only batch and online shared database applications (MPP, BMP, or CICS), an invalid file status of 42, 48, or 49 sometimes resulted on a secondary database index. This has been fixed.

  2850171 (1103561)
- When editing an IMS database in the DB editor, a severe DLI call failure resulted in an editor crash rather than setting the appropriate DLI status code. This has been corrected.

  2849835 (1104252)
- A DLI status code (NE) was returned incorrectly to DLET call depending on secondary index definitions and data population. This has been corrected.

  2847064 (1103584)
- When a CHARSET(EBCDIC) program issued an EXEC DLI REPL call that omitted segments that were included in the previous GET call, and then followed this with a path GET call, an invalid "AC" status code resulted. This has been corrected. The correction does not require a recompile of the CHARSET(EBCDIC) program. This issue does not apply to CHARSET(ASCII) programs.

  2843343 (1102714)

- The cursor position set by the application program on output is now working as expected. Previously, the output cursor position was the positioned defined in the MFS source.

  2868851 (1105753)
- An issue in the DBCS support incorrectly sets the model 7 terminals to a screen width of 80 characters, this resulted in invalid overlapping field errors. Model 7 screen width is now set to the correct value of 132 characters.

  2863035 (1104790)
- The output of IMS printed lines were one fewer than the number defined. This has now been fixed.

  2859815 (1104349)
- For LU3 printing, the print buffer will no longer contain any trailing spaces. LU3 printing has output buffer size limitations. Trailing spaces could result in the buffer exceeding the limitation.

  2857377 (1104041)
- NULL characters defined in the MID are now correctly converted to the EBCDIC equivalent. This addresses the problem where some code pages (for example, code page 932) like an ASCII null (x'1A') does not convert to the expected EBCDIC null (x'3F').

  2857213 (1104014)
- User should no longer abend when generating a large MFS source. The literal pool sizes have been increased to take into account an earlier increase to the number of MFLDs.

2856514 (1103910)

- The dynamic modification of the color attributes from an EBCDIC COBOL program will now be honored. Dynamically modifying extended attributes such as color and field highlighting works regardless of the code base, ASCII or EBCDIC of the COBOL program.

2853509 (1103505)

- LU3-type printing from IMS transactions is no longer unexpectedly truncated.

2853494 (1103437)

- If the MFS specifies that the print line should have spaces stripped, then all spaces following the last significant data byte will be removed.

2853493 (1103436)

- IMS system commands and paging requests will be honored when they occur in segments other than the first and the preceding segments contain all NULLS.

2852124 (1103551)

- The MFS PROMPT keyword in MFS source is now supported.

2818114 (1099103)

- On a successful IMS CHNG call, a corrupted EBCDIC PCB name in ALT-IO PCB was sometimes generated. This has been fixed to generate a valid EBCIDIC name.

2857243 (1104018)

- RTS 114 errors no longer occur when printing from an IMS transaction while the printer is disconnected.

2857604 (1104070)

- Printing from an IMS transaction no longer fails to print when the printer is not connected until after the print request has already been sent by the transaction.

2857603 (1104068)

- Printing a large number of pages from an IMS transaction no longer causes the transaction to abend.

2848152 (1102799)

- Submitting a /FORMAT command with data no longer abends with a Run-Time System error 114.

2847486 (1102797)

- A new Enterprise Server environment variable, ES_IMS_GOTO_CICS_ON_SIGNOFF, has been added in this release. Set ES_IMS_GOTO_CICS_ON_SIGNOFF=Y to return users to CICS upon logging off or timing out, rather than returning them to the IMS sign-on screen, which is the default behavior.

2836417 (1102541)

- A problem with incorrectly formatted output data appearing on IMS screens when default literals or system literals were assigned to output message fields has been fixed.

2825068 (1100049)

JCL Support

Back to the list

- You no longer receive a U4038 abend when calling MFJZLPSA with a JCL that uses DFSRRC00 and BMP.

2869477 (1105804)

- The IEBPTPCH utility now checks against code page 0290 for printable characters when running with MF_CHARSET=EBCDIC and MFCODESET=9122.

2867654 (1105531)

- An incorrect reason code was returned by mvscatpb when deleting a record in a user catalog.

2866782 (1105384)

- Previously, when the output or output-hold job record was selected in ESMAC and deleted, the physical spool files would be left.

  2865754 (1105269)
- Under VSE, when the environment variable ES_SAM_ESDS is set to Y, an open OUTPUT of a reusable ESDS file resets the file in situations when the DISP is not specified in the DLBL statement.

  2865599 (1105186)
- The catalog list function now returns correct results when user catalogs exist.

  2865225 (1105120)
- Allocation overrides can be applied to a GDG model, and each GDG bias will use the folder location for the physical file.

  2865068 (1105102)
- You can now use the environment variables MF_SPOOL_HK_OUTPRT and MF_SPOOL_HK_LEX_SCAN with the MVSSPLHK spool housekeeping utility. The values can also be used in the utility configuration file.

  2864993 (1105088)
- A problem with the initialization of the JCL job number caused a hang on a region startup.

  2863640 (1104883)
- The mvscatpb public interface was missing the secondary space value and the directory blocks value.

  2860753 (1104483)
- The JCL user exit is now being called for the event step-bypassed.

  2857924 (1104130)
- A time-expired spool file will not be removed from the MVS Spool or the catalog if a record still exists in casspool.

  2857452 (1104079)
- The JES000915E error message now shows the correct userid.

  2856571 (1103927)
- Some issues that resulted in receiving sporadic locked record errors in the spool housekeeping utility have been fixed.

  2855421 (1103730)
- DD DUMMY overrides are now correctly processed in concatenated SORT statements.

  2853452 (1103435)
- The record locking and reporting has been improved.

  2853344 (1103438)
- The archived files report of the MVSSPLHK utility, INDEXO, will now be populated when DATA-only archiving is requested. The class-specific overrides are now applied.

  2853244 (1103544)
- The SYSOUT messages produced when the MVSSPLHK program was writing to an EBCDIC file were corrupt.

  2852020 (1103718)
- The JCL job restart error messages for some of the known error codes now provide more specific details.

  2851945 (1103293)
- IF the SYSUT2 DCB information is missing, IEBGENER now copies the DCB from SYSUT1 to SYSUT2 even when SYSUT2 is specified as a SYSOUT dataset.

  2851861 (1103357)

- When using a DUMMY input file for IDCAMS operations, the dataset properties from a previous operation could still be set.

  2851041 (1103192)
- When calling MVSSPLHK from user programs, the passed parameters are now respected.

  2850869 (1103135)
- A warning will be displayed in situations where a wildcard is used in the IDCAMS DELETE function and a non-empty GDG base is encountered. This will not stop the deletion of other datasets.

  2849270 (620072)
- IEBCOPY now correctly copies the DCB attributes from INDD to OUTDD in situations where the OUTDD DCB information is missing from the job.

  2844219 (1102265)
- ICEGENER and IEBGENER now support PDS members with names that start with numbers.

  2843583 (1102530)
- There is a new environment variable, ES_SSTM_JOB_FLUSH_ACTIVE. When this is set to Y, CICS SSTM job will be removed from the ACTIVE queue when the region shuts down.

  2843520 (1102320)
- If a non-optional file is opened and it is present but virgin, the product returns a 3/5 status.

  2832909 (616390)
- Cataloged spool records are no longer removed if a corresponding casspool record still exists.

  2832909 (1103892)
- IDCAMS REPRO now only requires "UPDATE" permissions in order to write to existing DSNs.

  2824128 (1100133)
- If a PDS has no members, IEBCOPY now reports that no members were found and does not change the COND CODE. Previously the COND CODE was set to 4.

  2810006 (1098237)
- Square brackets are now supported in MFUSERCAT_NODE.

  2514366 (1105505)
- The incorrect character encoding was used when a PL/I program allocated a dataset using SVC99.
- When using multiple catalogs, entries from the last catalog were not always found or displayed when performing a listing.
- Any JESDS OUTPUT statements are now passed to the printer exit if the JCL job log, JESYSMSG, is printed.

- The Job Detail and Catalog Entry pages now support the Shift JIS character encoding. The information about the character encoding of the Operating System is retrieved from the region and if it is Shift JIS these pages will now correctly display it.

  2853227 (1103407)
- The Management Class (MGMTCLAS) is now displayed on the Catalog Entry page.

  2581463 (1085180)

- To prevent interference with MFFTP execution when running under VSE, edit the VSE configuration file USE-SYSIN section for MFFTP and assign the permenant instream DD name to SYSIPT (IPTSYS).

  2864865 (1105434)
- Jobname information is no longer carried forward from one VSE job to the successive jobs.

  2864594 (1105072)
- A problem processing PAUSE statements in DOS/VSE has been corrected.

  2862396 (1104715)

- A problem with SETPARM incorrectly assigning a symbolic parameter value has been fixed.

  2858580 (1104411)
- A SYSIPT read error that occurred when no input data was included in JCL has been changed to return an EOF instead as is done on the mainframe.

  2858377 (1104199)
- DLBL allocations before PAUSE statements are no longer lost.

  2856861 (1104732)
- The maximum number of characters in comments in VSE PAUSE statements has been increased from 44 to 71.

  2856412 (1103937)
- MFFTP now handles both SYSIPT(VSE) and INPUT(JES2) DD statements for FTP commands.

  2855714 (1104139)

Licensing

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

  2860254 (1104400)

Mainframe Access

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- Output from the MFDAS GETENQI command now contains line feeds.

  2860316 (1104413)

- When MFA dependent ASIDs terminated, the message IEF352I was issued "ADDRESS SPACE UNAVAILABLE". This could lead to the system running out of ASIDs. This has now been fixed.

  2856313 (1103876)
- Web sites that validate the APPL when passwords are verified no longer reject logons from MFA.

  2850696 (1103118)
- Mainframe Access now successfully imports and exports binary files that have LRECLs greater than 80 bytes.

  2846536 (1102617)

- The directory listing for Panvalet libraries now contains the member status flags.

  2850501 (1103099)

- It is now possible to export files greater than 2 GB in length from a MFA client to a mainframe.

  2860982 (1105964)
- Unloaded IMS databases larger than 64Kb were corrupted when imported.

  2856795 (1104303)

Mainframe Batch Scheduler Integration

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- The MFBSI Control-M AutoEdit emulation is now ignoring the IF/ELSE statements block when the condition is false.

  2863481 (1104860)

- The default delays used by MFBSIJCL to check for a job state in Enterprise Server are as follows - two seconds before each check for "Job Started" and ten seconds before each check for "Job Concluded". It is now possible to configure these delays in the MFBSI configuration file, mfbsi.cfg, with the following two new parameters - JOBSTART-LOOKUP-FREQ and JOBEND-LOOKUP-FREQ. Both parameters accept values between 1 and 60 (in seconds), and AUTO. When AUTO is used, MFBSIJCL uses an initial frequency of one second for three minutes after which the default values are restored. Using these parameters will significantly reduce the overhead elapsed time in MFBSIJCL when compared to the Enterprise Server JCL reported execution time of a job. This has an effect mainly in scenarios when you have short-running jobs that are frequently executed.

  2857416 (1105116)

Micro Focus Directory Server

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

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

  2842321 (1102116)

MVS REXX Emulation

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

  2842140 (1102170)

OpenESQL

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

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

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

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

  2866086 (1105262)
- The OpenESQL Managed Runtime for ADO.NET now allows non-printing characters in PIC X host variables.

  2865166 (1105140)
- The OpenESQL pre-compiler incorrectly generated code for programs compiled with CHARSET(EBCDIC) and SQL(DBMAN=ADO) when SQL statements were greater than 4000 characters.

  2864850 (1105064)

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

  2864348 (1104993)

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

  2864021 (1104951)

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

  2863699 (1104906)

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

  2860329 (1104628)

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

  2857619 (1104103)

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

  2856215 (1104118)

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

  2853668 (1103454)

- A problem with the ADO.NET run-time system for OpenESQL not implementing the default threading behavior for THREAD=SHARE has been fixed, enabling single-user applications, such as Windows Forms or WPF applications, to use background worker threads provided that the application takes steps to ensure that only one thread executes embedded SQL statements at a time. When using the THREAD directive, be aware that ADO does not support THREAD=ISOLATE. For multi-user applications, we recommend using COBOL run units instead.

  2850789 (1103122)

PL/I Support

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- A problem when using SUBSTR as an argument to UPPERCASE has been fixed.

  2863064 (1104802)

- A problem with initialization of structures containing a CHAR(0) member has been fixed.

  2868923 (1105719)

- A problem with passing an unconnected array reference to an argument with CONNECTED in its descriptor has been fixed.

  2868606 (1105886)

- The compiler now diagnoses PICTURE specifications which cause internal compiler implementation limits to be exceeded.

  2868176 (1105602)

- A problem with GRAPHIC concatenation causing a SIGSEGV has been fixed.

  2867892 (1105565)

- ? ?roblem with an ENTRY invocation without () has been fixed.

  2867705 (1105540)

- A problem with a comparison of a BIT(1) to a numeric literal or FIXED BINARY variable has been fixed.

  2866657 (1105363)
- A possible problem with the scoping of implicit and contextual declarations has been corrected.

  2865207 (1105109)
- The diagnostic message MFPLI00176S when issued erroneously has been fixed. The text of the diagnostic has also been corrected and changed to W-level.

  2864859 (1105066)
- When SQL compilation phase terminates with "Severe errors have been detected during initialization (FERC=12)", a .list file (or .lst file on Windows) is now created which contains the Severe diagnostic messages. Note: The -l option must be supplied to mfplx, or if using an IDE, you must select Generate listing file (-l) via the PL/I Compile settings.

  2863419 (1104854)
- A problem with -agginit used in conjunction LIKE erroneously causing Error MFPLI00126E has been fixed.

  2862202 (1104697)
- A problem with CTL structures which contain Fixed Bin(7) arrays causing a compiler Abort MFPLI2000A with an internal consistency error has been fixed.

  2861581 (1104616)
- A problem using a function reference in an INIT clause has been fixed.

  2860769 (1104496)
- A problem diagnosing structures declared with LIKE, and inheriting the CONNECTED (or NONCONNECTED) attribute, has been fixed.

  2860742 (1104489)
- A problem with EBCDIC conversion of string literals under the Japanese locale has been corrected.

  2859505 (1104311)
- A problem with CTL storage and structure expressions has been fixed. This problem caused unexpected side-effects, for example, structure assignments with BY NAME causing internal compiler errors.

  2859473 (1104309)
- A problem causing an error diagnostic to not be shown in the Eclipse IDE has been fixed.

  2858299 (1104180)
- A DEFINED overlay with bit-strings erroneously diagnosed as invalid has been corrected.

  2857736 (1104086)
- The compiler now diagnoses PUT DATA without an argument list as unsupported.

  2857371 (1104051)
- The compiler now does a compile-time check for invalid constant conversions, and provides a Warning diagnostic to help preempt invalid conversions at run-time.

  2854530 (1103602)
- A problem assigning unconnected arrays has been fixed.

  2850898 (1103139)
- Bit-field alignment within structures when applying Z/OS mapping rules (-zalign) have been corrected.

  2843898 (1102241)
- The Open/PLI compiler now supports STATIC initialization of FILE variables and ENTRY variables. LABEL variables cannot be initialized at compile-time and an appropriate diagnostic is issued.

  2841654 (1102011)

- The compiler now supports initializing static pointer variables to the address of another static variable at compile time. For example: dcl x fixed bin (31) static; dcl p pointer static initial(addr(x));

  2841649 (1101974)

- Previously, if macro code was poorly written and did not contain matching %DO-%END groups, a loop and/or trap could occur after a message was generated indicating this "Severe" error. The logic in the macro preprocessor has been modified to issue the message and stop trying to process the macro code.

  2862937 (1104776)

- Previously, if you were using a PL/I macro to generate code that contained exponentiation and in the generated code the exponentiation symbol ended up on column 71/72, the symbol was split to the next line. This no longer occurs.

  2860875 (1104505)

- Previously, if a macro contained a %DO;-%END; group and -margins 2,72 option was in effect, and the source contained an asterisk in column 72 immediately followed by the %END; beginning in column 2 of the following line, then the diagnostic was incorrectly generated. This no longer happens.

  2857346 (1104034)

- Previously, if using the macro ANSWER statement within a DO loop, the macro preprocessor would not emit a complete preprocessed source deck. This no longer happens.

  (619151)

- Previously, if reading SYSIN via a PL/I Program compiled with -ebcdic, from a physical dataset in an enterprise server region running in EBCDIC mode, the input was garbled. This no longer occurs.

  2865346 (1105128)

- Previously, if using PUT SKIP(x) where x is greater than 1, on the first line of the first page of a PRINT CTLASA file, the use of ASA control characters did not mimic the undocumented behavior present in IBM's PL/I on z/OS. This has now been fixed.

  2864096 (1104958)

- Previously, when a CTLASA file was OPEN(ed) and CLOSE(ed) without any data being written, a zero length file was created. Open PL/I now matches IBM's behavior and emits a single blank page feed line.

  2863818 (1104911)

- Previously, if using an EXTFH.CFG where the [XFH-DEFAULT] contained INSERTNULL=OFF, the compiler would trap when compiling larger complex programs while attempting to read back in a temporary file created during the parsing phase. This no longer occurs.

  2863220 (1105599)

- The PL/I compiler and run time have been enhanced to support the SAMEKEY() built-in function.

  2860459 (1104456)

- Previously, if an ERROR condition was triggered in a PL/I CICS user program and the user program did not contain its own ON ERROR unit, the PL/I RTS error messages were not driven to the CPLI temporary data queue. This has now been fixed.

  2851930 (1103255)

- A problem printing bit fields within structures has been corrected.

- Previously, the EXEC preprocessor was unable to handle a hex literal constant that exceeded 255 bytes in length. This has now been fixed.

  2861454 (1104591)

Run-Time System

Back to the list

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

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

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

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

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

  (618769)
- Detaching from animation that was started using the debug_on_error tunable could cause animation to re-start again for the initial error - this has now been resolved.
- In managed COBOL code, setting an environment variable to spaces or low-values now unsets that environment variable.

  2864896 (1105147)
- You now receive a correct error message when the CBL_CHECK_FILE_EXIST library call is used with DD_ environment variable expansion on a directory that already exists.

  2864515 (1105023)
- In the .NET COBOL Run-Time system, default NLS messages are now returned for locales that do not have the messages defined.

  2863236 (1104831)

Setup

Back to the list

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

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

  2854557 (1103628)

SQL: Cobsql

Back to the list

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

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

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

  2818934 (1099169)

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

  2794407 (1096173)

SQL: DB2 ECM

Back to the list

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

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

  2857403 (1104045)

SQL: HCO for SQL Server

Back to the list

- An HCOSS problem with statements of the form 'SELECT ... FROM ((SELECT ...) ...), that is, a table reference using a nested query that is itself in parentheses, has been fixed with the new STRICTPARSE SQL compiler directive option. Use STRICTPARSE with DIALECT=MAINFRAME to enhance diagnostics for DB2 statements that HCOSS does not recognize.

  2868603 (1105683)
- An issue with HOCSS handling comparison operators that include angle bracket characters has been fixed.

  2867541 (1105520)
- An issue that occurred when HCOSS was processing an IN expression using a row constructor in a nested subquery has been fixed.

  2867264 (1105519)
- A few issues with the HCOSS emulation of DB2's CHAR scalar function in the formatting date and time values as character strings have been resolved.

  2861301 (1104596)
- A problem with SQL(CHECK) for DBMAN=ODBC with queries where the reserved word INNER immediately follows a host variable has been fixed.

  2855930 (1103815)
- A problem qualifying sequence names when using SQL(DIALECT=MAINFRAME) and SQL(QUALIFIER) has been fixed to qualify sequence names in the same manner as as table names are qualified.

  2854747 (1103654)
- The Generate SPD File tool generated incorrect code if the name of a called routine was enclosed in single quotes; this resulted in COBRT173 error when the code was executed.

  2853692 (1103481)
- The HCOSS Transfer Data tool has been updated to support SQL Server 2016.
- A problem with HCOSS incorrectly handling DROP statements when SQL(QUALIFIER) is used has been fixed.

SQL: OpenESQL

Back to the list

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

2871907 (1106251)

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

2870141 (1105889)

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

2869320 (1105787)

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

2868965 (1105736)

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

2868282 (1105622)

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

2867772 (1105549)

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

2867423 (1105490)

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

2865750 (1105229)

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

2865750 (1105230)

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

2865378 (1105139)

- HCOSS now correctly handles hexadecimal constant strings.

2865026 (1105146)

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

2864585 (1105039)

- OpenESQL now supports DESCRIBE CURSOR statements.

2863839 (1104939)

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

2862754 (1105122)

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

2862064 (1104674)

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

2861897 (1104668)

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

2861580 (1104613)

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

2861570 (1104629)

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

2861567 (1104751)

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

2861516 (1104689)

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

2859565 (1104692)

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

2859200 (1104598)

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

2858980 (1105338)

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

2856643 (1103936)

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

2856198 (1104002)

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

2856008 (1103831)

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

2854780 (1103670)

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

2854592 (1103598)

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

2854393 (1103713)

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

2854004 (1103529)

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

2853859 (1103520)

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

2853832 (1103555)

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

2853578 (1104167)

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

2853439 (1103430)

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

2853412 (1103426)

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

2853341 (1103461)

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

2852996 (1103431)

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

2850369 (1103793)

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

2849318 (1102957)

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

2849301 (1102956)

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

SQL Option for DB2

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

2854157 (1103541)

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

2867096 (1105432)

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

2855151 (1103687)

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

2839228 (1101904)

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

2869971 (1105862)

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

2867209 (1105454)

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

2865204 (1105108)

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

2860427 (1104449)

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

2856158 (1103932)

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

2853378 (1103442)

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

2853078 (1103385)

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

2850725 (1103117)

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

2849898 (1103024)

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

2849892 (1103103)

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

2847745 (1102766)

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

2845161 (1102494)

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

2640689 (1088784)

XML Syntax Support

Back to the list

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

2851143 (1103185)

- When reading an empty XML document, the returned file status is now -7.
  2851074 (1103216)

Other Issues Resolved in This Release

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

- 2865238 (1105114)
- 2871930 (1106185)
- 2866567 (1105346)
- 2865516 (1105153)
- 2865065 (1105097)
- 2857117 (1104003)
- 2872217 (1106234)
- 2864576 (1105124)
- 2855891 (1103807)
- 2864100 (1104959)
- 2867120 (1105479)
- 2865687 (1105211)
- 2864343 (1105019)
- 2858008 (1104163)
- 2858007 (1104161)
- 2835721 (1101500)
- 2835605 (1101499)
- 2858091 (1104136)
- 2865419 (1105238)
- 2864875 (1105074)
- 2861263 (1104753)
- 2859986 (1104407)
- 2855942 (1103906)
- 2679133 (1093595)
- 2852255 (1104353)
- 2856233 (1103855)
- 2867934 (1105578)
- 2867215 (1105455)
- 2866174 (1105419)
- 2858808 (1104227)
- 2855088 (1103672)
- 2853477 (1103462)
- 2852874 (1103543)
- 2839669 (1101704)
- 2836259 (1101305)
- 2808029 (1098883)
- 2790796 (1095836)
- 2854829 (1103653)
- 2854739 (1103627)
- 2866458 (1105348)
- 2865807 (1105205)
- 2864327 (1104989)
- 2862599 (1104785)
- 2848016 (1102774)
- 2843761 (1102734)
- 2841092 (1101887)

- 2865193 (1105135)
- 2864092 (1106070)
- 2859740 (1104343)
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- 2853585 (1103448)
- 2852872 (1103696)
- 2852872 (1103930)
- 2852872 (1103931)
- 2851306 (1103352)
- 2840161 (1101839)
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- 2816310 (1104173)
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- 2854470 (1103640)
- 2857870 (1104107)
- 2809343 (1099937)
- 2858035 (1104156)
- 2856499 (1104222)
- 2857318 (1104188)
- 2858539 (1104204)
- 2856795 (1103963)
- 2840704 (1103249)
- 2863482 (1104862)
- 2861561 (1104610)
- 2860719 (1104512)
- 2858941 (1104253)
- 2858723 (1104229)
- 2856941 (1103977)
- 2856206 (1103880)
- 2861649 (1104679)
- 2853710 (1103578)
- 2867842 (1105600)
- 2865028 (1105119)
- 2860212 (1104480)
- 2854400 (1103587)
- 2852486 (1103340)
- 2842820 (1103533)
- 2855179 (1103705)
- 2855179 (1103707)

- 2819868 (1099861)
- 2865350 (1105129)
- 2864599 (1105025)
- 2853376 (1103486)
- 2855231 (1103701)
- 2870740 (1106000)
- 2858161 (1104152)
- 2864758 (1105772)
- 2856295 (1103875)
- 2839181 (1101830)
- 2864619 (1105054)
- 2861296 (1104593)
- 2860006 (1104387)
- 2854108 (1104290)
- 2848917 (1103264)
- 2838891 (1101791)
- 2648290 (1089566)
- 2864197 (1105004)
- 2852655 (1103333)
- 2869703 (1105832)
- 2869126 (1105760)
- 2852996 (1103913)
- 2859001 (1104312)
- 2869594 (1105948)
- 2867462 (1105499)
- 2866779 (1105567)
- 2865650 (1105214)
- 2865630 (1105243)
- 2865078 (1105100)
- 2865051 (1105317)
- 2865003 (1105132)
- 2863175 (1104845)
- 2860863 (1104746)
- 2860785 (1104563)
- 2859507 (1104314)
- 2859155 (1104316)
- 2859044 (1104282)
- 2857023 (1104176)
- 2857021 (1103995)
- 2856592 (1104053)
- 2852281 (1103298)
- 2818259 (1099422)
- 2865602 (1105177)
- 2863239 (1105044)
- 2861423 (1104585)
- 2858787 (1104233)

- 2869763 (1105896)
- 2851107 (1103173)

Installation

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

Hardware Requirements

The disk space requirements are approximately:

Enterprise Server	Sentinel RMS License Manager
1.2Gb	75MB

Note: 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: This product can be installed on earlier versions of Windows but it has not been tested on them.

Software Requirements

Note:

- The setup file will check your machine for whether the prerequisite software is installed and will install any missing prerequisites and the product components.
- This product includes OpenSSL version 1.0.1p.

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

- The Microsoft .NET Framework - the setup file installs the .NET Framework 4.5.2 . You might need to install the following version of the .NET framework manually, if it is targeted by your applications:

  - Microsoft .NET Framework 2 - if your applications use the ILCLR(2) Compiler Directive or if they target the .NET Framework versions 2, 3 or 3.5. You might need to download these installers depending on the .NET Framework you are targeting.

    To download the Microsoft .NET Framework 2 *click here*.

Microsoft .NET Framework 2 or later is also required for the Micro Focus License Manager if you install this on a separate machine as a license server.

Note:

- .NET Framework 3 is provided with Windows Vista and Windows Server 2008.
- .NET Framework 3.5 is provided with Windows 7 and Windows Server 2008 R2.
- .NET Framework 4.0 is provided with Windows 7 and Windows Server 2008 R2.
- .NET Framework 4.5 is provided with Windows 8 and Windows Server 2012.
- .NET Framework 4.5.1 is provided with Windows 8.1 and Windows Server 2012 R2.

- Microsoft's Web Platform Installer 2.0 if your application targets ASP.NET 4. This installs and sets up ASP.NET. To download the installer *click here*.

- A Web browser is required for Enterprise Server Administration in Enterprise Server.

  To use your Web browser offline, you need the dial-up networking feature of Windows installed. Otherwise you might have TCP/IP errors such as being unable find "localhost" or the numeric equivalent (127.0.0.1).

- To use Enterprise Server Administration, scripting or JavaScript support must be enabled in your browser. This is on by default in Internet Explorer in most Windows operating systems. Also, active content must be allowed and not blocked. To enable both these in Internet Explorer:

  1. Click **Tools** > **Internet Options**.
  2. On the **Security** tab, click **Custom Level**. In the **Scripting** section, under **Active Scripting**, click **Enable**.
  3. On the **Advanced** tab, scroll down the list to the **Security** section, and ensure the item **Allow active content to run in files on My Computer** is checked.

- Enterprise Server Help requires the Java Runtime Environment on some Windows systems to enable the Search facility to work.

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 Enterprise Developer 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

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

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

Installation Restrictions and Requirements

Before starting the installation, you should consider the following:

- You need to be logged in with a user-ID that has write access to the registry structure under HKEY_LOCAL_MACHINE, HKEY_CLASSES_ROOT, and HKEY_CURRENT_USER so the installation software can set the environment appropriately. You also need to be logged on with Administrator privileges.

- Before installing this product, make sure that any existing Micro Focus Directory Server (MFDS) or CCITCP2 Windows service (on Windows) or a process (on UNIX) from an existing product is stopped and uninstalled. On Windows, do this as follows:

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

     ```
     net stop mf_ccitcp2
     ```

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

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

     For CCITCP2: `ccitcp2 -u`

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

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

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

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

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

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

Product Co-Existence

Note: The following applies to Windows only.

- Enterprise Developer and Enterprise Server (or Enterprise Test Server) cannot coexist on the same machine.
- Enterprise Server and Enterprise Test Server cannot coexist on the same machine.

On UNIX

System Requirements

Hardware 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 (MB)	Sentinel RMS license server (MB)
POWER running AIX	Micro Focus installer	479	1.91 GB	958	36.5
HP IA	Micro Focus installer	782	3.13 GB	1564	69
System Z running Red Hat Linux	Micro Focus installer	324	1.29 GB	648	36
x86-64 running Red Hat Linux	Micro Focus installer	338	1.35 GB	676	46
SPARC running Solaris	Micro Focus installer	386	1.54 GB	772	40
x86-64 running Solaris	Micro Focus installer	351	1.40 GB	702	31
System Z running SUSE SLES	Micro Focus installer	328	1.31 GB	656	36
x86-64 running SUSE SLES	Micro Focus installer	344	1.38 GB	688	46

Operating Systems Supported

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

Software Requirements

🖉 **Note:** This product includes OpenSSL version 1.0.1p.

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

- 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.
- On Red Hat 6.*x* and Red Hat 7, you must have the following operating system libraries installed:

    glibc-*.x86_64
    glibc-*.i686
    libgcc-*.x86_64
    libgcc-*.i686
    libstdc++-*.x86_64
    libstdc++-*.i686
- On IBM System z (390), you must have the following operating system libraries installed:

    glibc-*.s390

glibc-*.s390x
libgcc-*.s390
libgcc-*.s390x

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

- On SUSE and Red Hat, PL/I support requires that you have the following operating system libraries installed:

  libelf-devel-0.137-8.19
  libelf1-0.137-8.19
  libelf1-32bit-0.137-8.19

- Oracle's Java Platform, Enterprise Edition (Java EE) 7 or Java 8 is required 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 AIX and zLinux, you need to have IBM's JDK. The earliest supported release of IBM's JDK is 7.0 Service Refresh 8. You can get IBM's AIX JDK from *IBM's Web site*.
  - On HP-UX, you need to have HP-UX JDK. The earliest supported release of HP-UX is JDK 7.0.11. You can get the HP-UX Java JDK from *HP's Web site*.

Before you start the installation, you need to set the environment as follows:

- You need to set the LANG environment variable to pick up localized messages. The LANG settings are English and Japanese only.
- The Java Development Kit (JDK) is required for compiling Java. The JDK is downloadable from *www.oracle.com*. After installing the JDK, you must put the tools.jar file for the JDK on your classpath, using a command similar to:

  ```
  set classpath=jdk-install-directory\lib\tools.jar
  ```

- JavaScript or scripting support must be enabled in your browser, so that Enterprise Server Administration is usable. Also, active content must be allowed and not blocked.

  ⚠️ **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 Enterprise Developer 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 Enterprise Server features, you might be required to obtain and install additional third-party software in addition to the prerequisite software installed automatically by the Enterprise Server setup file.

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

UNIX and Linux Installer Issues

License Server

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

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

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

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

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

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 and for installing the mainframe components, see *Advanced Installation Tasks* in your product Help.

Installing on Windows

🖉 **Note:** If there is an earlier version of Enterprise Server installed on your machine, check *Installing as an Upgrade* first.

These are the steps to install this product:

1. Run the `es_232.exe` file and follow the wizard instructions to install the prerequisite software and the product.

   The setup file will also install any missing prerequisite software as listed in *Software Requirements*.

   🖉 **Note:**
   - If you are installing onto a machine that has an existing Micro Focus product that uses an older Sentinel RMS License Manager, you might be prompted to remove it and install the Micro Focus License Administration. By doing this you maintain the existing Sentinel RMS license files while adding the Micro Focus License Administration. If you are unsure about existing licenses on your computer or removing the Sentinel RMS License Manager, consult your System Administrator. If you want to proceed, remove Sentinel RMS License Manager by using **Program and Features** (Windows Vista or later), and rerun the installation file.
   - Trial licenses cannot be used with remote desktop services. If you want to use your product in this way, please contact Micro Focus SupportLine to obtain a relevant license.
   - We recommend that you install any updates for the .NET Framework that are available at the *Microsoft Download* site.
   - If you install JDK you might be prompted to install the latest update. The latest update is not required for use with Enterprise Server but you can install it if you wish.

Installing on UNIX

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

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

1. Give execute permissions to the setup file:

   ```
   chmod +x setup_ent_server_2.3_update2_platform
   ```

2. Run the installer with superuser permissions:

   ```
   ./setup_ent_server_2.3_update2_platform
   ```

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

   If you set COBDIR to an already installed product, the installer will back up the existing installation and will install this release in the location COBDIR points to. If COBDIR is not set, the installer does a fresh install.

   The COBOL run-time is installed by default into `/opt/microfocus/EnterpriseDeveloper`, (COBDIR).

   ✎ **Note:**

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

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

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

SafeNet Sentinel considerations

* The installation of this product could affect the SafeNet Sentinel licensed components running on your machine. During installation licensing is shutdown to allow files to be updated. To ensure the processes running on your machine are not affected, you need to use the `-skipsafenet` option, which skips the installation of SafeNet:

  ```
  ./setup_ent_server_2.3_update2_platform -skipsafenet
  ```

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

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

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

Advanced Installation Tasks (Windows)

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

The advanced installation tasks include:

* *Installing as an Upgrade*

- *Command line installation options*

To see this information on the Micro Focus Infocenter, *click here*.

Installing as an Upgrade

Before installing, check *Installation Restrictions and Requirements.*

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

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

Enterprise Server Installation Options

To install Enterprise Server you run `es_232.exe` which contains a number of product `.msi` files (Windows Installer packages). When run, `es_232.exe` performs some initial system checks then sequentially installs the `.msi` files.

`es_232.exe` can take a number of parameters, enabling you to specify a number of different types of installation:

- Standard Installation

    Format:
    `es_232.exe`
    Summary:
    Full installation including License Manager and Enterprise Server. During installation you can specify options including the location to which the components are installed.
- Non-interactive Installation

    Format:
    `es_232.exe /passive`
    Summary:
    Full installation, but the components are installed non-interactively using default options and directories.
- Silent Installation

    Format:
    `es_232.exe /q`
    Summary:
    Full installation, but the components are installed non-interactively with no user interface, using default options and directories.
- Modified Silent Installation

    Format:
    `es_232.exe /q InstallFolder=d:\cobolrts`
    Summary:
    Full installation, but the components are installed non-interactively with no user interface, and Enterprise Server is installed to `d:\cobolrts`.

To see what parameters you can use, execute the following from the command line: `es_232.exe /?`.

Note:

- Log files that are created during installation are saved in the folder specified by the TEMP environment variable. To change the location or name of the files, use the `/log` parameter on your setup command line and specify the path and file name, for example: `filename /log d:\temp \log.txt`. This creates a log file, named `log.txt`, in the `d:\temp` directory.

Advanced Installation Tasks (UNIX)

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

The advanced installation tasks include:

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

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

Installing as an Upgrade

This release works concurrently with the previous version of Enterprise Server, 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/ EnterpriseDeveloper`, 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/EnterpriseDeveloper /opt/microfocus/
     EnterpriseDeveloperversion
     ```
  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 Enterprise Server installer with the –installlocation option:

  1. Execute the following command:

     ```
     . /InstallFile -installlocation="/opt/microfocus/EnterpriseDeveloper"
     ```

     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/EnterpriseDeveloper/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:

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

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

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

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

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

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

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

Configuring Enterprise Server

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

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

Installing Silently

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

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

```
-silent -IacceptEULA
```

For example, execute:

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

After Installing

- See *Changes in Behavior or Usage* in your product documentation and in the Release Notes for important information about changes in this release that might affect existing applications.
- Check the *Product Documentation* section of the *Micro Focus SupportLine Web site* and the *Micro Focus Infocenter* for any updates to the documentation which might have been uploaded.

On Windows

To access the Enterprise Server help:

- On versions of Windows 7 and earlier, select **Start > All Programs > Micro Focus Enterprise Server > Documentation** from the Windows Taskbar.

- On Windows 8, right-click at the bottom of the Start screen, and click **All apps** to display all available links for this product. In the Enterprise Server section, click **Documentation**.

This opens the online Micro Focus Infocenter in a browser. From the left-hand pane, select **Enterprise > Micro Focus Enterprise Server**.

Repairing

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

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 Enterprise Server and Micro Focus License Administration. Uninstalling only Enterprise Server 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

Setting 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/EnterpriseDeveloper/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.

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_EnterpriseServer2.3.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:**
>
> •
> • If you have purchased licenses for a previous release of this product, those licenses will also enable you to use this release.
> • 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 start Micro Focus License Administration

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.

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

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

Installing licenses

If you have a license file

1. Start 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**.

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

If you have an authorization code

Authorizing your product when you have an Internet connection

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

1. Start Micro Focus License Administration.
2. 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.

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.

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**.

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 Enterprise Developer, 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.

If COBDIR is set to a location that does not contain `etc/cobver` or COBDIR is not set, `mfsupport` gives you the option to search your machine for possible product locations. Note that the search can take some time if you have a large amount of disc storage and files.

Creating Debug Files

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

Disclaimer

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