



# **Micro Focus Enterprise Test Server 2.2 Update 1**

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**Release Notes**

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# Micro Focus Enterprise Test Server 2.2 Update 1 Release Notes

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



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

## Micro Focus Heartbleed Update

The OpenSSL library used in this product has been updated to version 1.0.1g to fix the "Heartbleed" vulnerability with TLS heartbeat requests.

Enterprise Test Server is a test execution environment that allows you to test mainframe applications on a low cost Windows platform. You can use variables or the tilde syntax can be used to relieve the mainframe test bottleneck by allowing you perform a substantial part of your application testing on Windows prior to moving the application back to the mainframe for final pre-production testing and deployment.

Enterprise Test Server supports IBM COBOL, High Level Assembler, CICS, IMS TM and DB, JCL, DB2, and z/OS file formats. It also supports common batch utilities such as SORT. This means that applications running under Enterprise Test Server behave just as they would on the mainframe, so you can perform a wide variety of pre-production testing activities on low-cost hardware rather than on the mainframe.

To configure Enterprise Test Server your development administrator will work with the development teams to set up the Enterprise Test Server environment on your central Windows test server, as follows:

1. Enterprise Developer is used to recompile application source code for execution on Windows.
2. Test data sets or databases are made available either locally or on the mainframe through remote access.
3. Development and test teams are trained to ensure that they understand how to test applications within the Enterprise Test Server environment and to switch between the different test regions it supports.

Enterprise Test Server comes in the following product variants:

- Enterprise Test Server which is the standard Test Server product and is a mainframe Test Execution environment.
- Enterprise Test Server Premium which provides two additional capabilities to extend the test execution platform:
  - Data Manager, which allows you to subset and mask mainframe data which is then available for testing under Enterprise Test Server.
  - Test Automator which is a test automation capability that allows you to create automated test suites that can be played back against Enterprise Test Server or against the host.

In addition, Enterprise Test Server comes in the following versions:

- Enterprise Test Server, which is the test execution environment for applications built using Enterprise Developer for Visual Studio 2010 and Enterprise Developer for Eclipse.
- Enterprise Test Server 2012, which is the test execution environment for applications built using Enterprise Developer for Visual Studio 2012.

# Installation

## Installing

### System Requirements for Enterprise Test Server for Windows

#### Hardware Requirements

The disk space requirements are approximately:

Platform	Enterprise Test Server	Sentinel RMS License Manager
x86 Windows platforms	250MB	25MB
x64 Windows platforms	350MB	25MB

 **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

The following platforms are 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.

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

- The Microsoft .NET Framework - the setup file installs Microsoft .NET Framework 4 with Enterprise Server, .NET Framework 4.5 with Enterprise Server 2012. 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.
- Microsoft .NET Framework 4.5 might be required for COBOL applications created with Visual Studio 2012.
- Microsoft .NET Framework 4.5.1 might be required for COBOL applications created with Visual Studio 2013.

**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.
- 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 Test 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 licensing software. 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 Licensing System Administration tool.

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

## Additional Software Requirements on Windows

To ensure full functionality for some Enterprise Test 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 Test Server setup file. The following information specifies the third-party software required for each feature.

- [Application server support for interaction with Enterprise Server](#) on page 6
- [Database Access](#) on page 7
- [Data Manager](#) on page 7
- [Micro Focus Rumba](#) on page 7
- [WebSphere MQ](#) on page 7

### Application server support for interaction with Enterprise Server

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Java EE 5 and Java EE 6 are supported for the deployment of EJBs generated using the Interface Mapping Toolkit, as follows:

- Java EE 5 includes support for EJB 3.0 and Java Connector Architecture 1.5

- Java EE 6 includes support for EJB 3.1 and Java Connector Architecture 1.6

The following J2EE application servers are supported using the following JDKs:

J2EE Application Servers	JDK (vendor)	Java EE
JBoss 5	1.5/1.6 (Oracle)	5
JBoss 6	1.6 (Oracle)	6
Oracle WebLogic 10	1.5 (Oracle)	5
Oracle WebLogic 12	1.6/1.7 (Oracle)	6
IBM WebSphere 7.0	1.5 (IBM)	5
IBM WebSphere 8.0	1.6 (IBM)	6
IBM WebSphere 8.5	1.6/1.7 (IBM)	6

### Database Access

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Before you can use Enterprise Test Server to deploy SQL applications developed with OpenESQL, DB2 ECM, or COBSQL, ensure any third-party software prerequisites are installed and the environment is set properly. Refer to the your product help, **Welcome > Product Information > Installing... > System Requirements... > Additional Software Requirements > Database Access**, for details.

### Data Manager

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 **Restriction:** Data Manager is available in Enterprise Test Server Premium only. To obtain a license for Enterprise Test Server Premium, contact Micro Focus SupportLine.

IBM DB2 Client Application Enabler for Windows version 6.1 or later; or IBM DB2 Connect Personal Edition version 6.1 or later (needed to access Gateway DB2 Connect Enterprise Edition).

Although not required, we recommend that your Windows machine has a direct connection to the DB2 database through DB2 Connect.

Borland Database Engine. This software needs to be installed after the Enterprise Test Server installation.

### Micro Focus Rumba

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- On Windows 8, in order to install Micro Focus Rumba you must have the Microsoft .NET Framework 3.5 Service Pack 1 installed.

### WebSphere MQ

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IBM WebSphere MQ version 7 and later.

## Installing Enterprise Test Server for Windows

### 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.

## Product Co-Existence

- Enterprise Developer is available in different IDE variants, each one of which is targeted by one specific variant of the development product:
  - Enterprise Server - the deployment environment for COBOL applications created with Enterprise Developer for Visual Studio 2010 or Enterprise Developer for Eclipse
  - Enterprise Server 2012 - the deployment environment for COBOL applications created with Enterprise Developer for Visual Studio 2012
- Enterprise Test Server and Enterprise Test Server 2012 cannot coexist on the same machine.
- Enterprise Server and Enterprise Test Server cannot coexist on the same machine.

## Installation Restrictions and Requirements

Before starting the installation, you should consider the following:

- If you are installing this as an upgrade, make sure that none of the product files are in use when you start the installation.
- 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) 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 Test 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

- To use Data Manager, you must obtain an Enterprise Test Server Premium license. Once you have procured a Premium license, Micro Focus provides an electronic product download (EPD) that enables

you to install the Data Manager for z/OS component, which is a separate installation from Enterprise Test Server. See *Installing Data Manager* in your product help for details.

## Installing



**Important:** Before you install this release as an upgrade to an existing installation of the previous version 2.2 of the product, you must uninstall any HotFixes of 2.2. This is to avoid some problems that might result in files not being installed.

These are the steps to install this product:

1. Run the `ets2010_221.exe` file and follow the wizard instructions to install the prerequisite software and the product.



**Note:** The respective installation file for Enterprise Test Server 2012 is `ets2012_release.exe`.



**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 Test Server but you can install it if you wish.

## Installing as an Upgrade

This release will update an existing installation of Enterprise Test Server 2.2.



**Important:** Before you install this release as an upgrade to an existing installation of the previous version 2.2 of the product, you must uninstall any HotFixes of 2.2. This is to avoid some problems that might result in files not being installed.

Before installing, check *Installation Restrictions and Requirements*.

## Enterprise Test Server Installation Options

To install Enterprise Test Server you run `ets2010_221.exe` which contains a number of product `.msi` files (Windows Installer packages). When run, `ets2010_221.exe` performs some initial system checks then sequentially installs the `.msi` files.



**Note:** This document only uses the filename of the executable for the product variant you have installed - `ets2010_release.exe`. For Enterprise Server 2012, the filename is `ets2012_release.exe`.

`ets2010_221.exe` can take a number of parameters, enabling you to specify a number of different types of installation:

- Standard Installation

**Format:**

`ets2010_221.exe`

**Summary:**

Full installation including License Manager and Enterprise Test Server. During installation you can specify options including the location to which the components are installed.

- Non-interactive Installation

**Format:**

```
ets2010_221.exe /passive
```

**Summary:**

Full installation, but the components are installed non-interactively using default options and directories.

- Silent Installation

**Format:**

```
ets2010_221.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:**

```
ets2010_221.exe /q InstallFolder=d:\cobolrts
```

**Summary:**

Full installation, but the components are installed non-interactively with no user interface, and Enterprise Test Server is installed to d:\cobolrts.

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

```
ets2010_221.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.

## After Installing

To open the help on versions of Windows 7 and earlier, select **Start > All Programs > Micro Focus Enterprise Test 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 Test Server section, click **Documentation**.

This starts the documentation for Enterprise Test Server in the online Micro Focus Infocenter. From the left hand pane, select **Enterprise > Micro Focus Enterprise Test Server**.



**Note:** For applications created with earlier Micro Focus products or earlier versions of Enterprise Developer, note the following:

<b>Database Access</b>	Managed applications using SQL(DBMAN=ODBC) that were compiled in Enterprise Developer 2.1 Update 1 must be recompiled in Enterprise Developer 2.2 Update1.
<b>Existing Applications</b>	Application executables that were compiled using earlier Micro Focus products must be recompiled from the sources using Enterprise Developer. For more information, read the section <i>Upgrading to Enterprise Developer for Visual Studio 2010</i> in the product Help.

## 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**.

## Installing Mainframe Access Server

### Introduction

The installation process for Mainframe Access Server (MFA) uses a single FTP operation to transfer all of the mainframe software into a partitioned data set that you pre-allocate. When this transfer is complete, the remaining installation activities are all done on the mainframe. You customize and submit the pre-built FRESTORE job to restore the product data sets from the uploaded files and then continue with customization steps to create an operational Mainframe Access Server.

### Requirements

- IBM TCP/IP 4.0, or Interlink TCP/IP 3.1 or higher
- Two APPLIDs, two TCP/IP ports
- Availability of APF security authorization support personnel
- Access to a network share with acceptable space for source and data, as well as the ability to access the IP address and ports used to access MFA
- The following installation-specific variable information:

Variable	Description
<i>drive</i>	
<i>userid</i>	TSO user-ID for FTP to your mainframe
<i>pswd</i>	TSO password for the FTP user-ID
<i>your.mainframe.name</i>	TCP/IP host name or IP address of your mainframe
<i>prodhq</i>	A NEW high level qualifier that will be assigned for all Host Connectivity data sets when the new Mainframe Access product is installed. These are NOT existing product data sets, but rather brand new files that you will be creating for this base version.



**Important:** The installation of a new version of MFA creates new product run-time data sets before the upgrade is applied. Any existing Host Connectivity 3.01 libraries remain intact, and can be used for fallback. If you prefer to retain your former production library names and re-use your existing *prodhq*, rename your old libraries beforehand.

Make a note of the maintenance level of your current Mainframe Access Server. Messages MFM0001I and MFM0014I on the syslog and XDBOUT sysout data set show the maintenance level at startup. You may need to know what level you are upgrading from when you complete post-installation customizations for this upgrade.

### Install Mainframe Access Server

In the instructions that follow, the information that you must provide is shown as one of the variable names from the table of information in the previous section. For example, if your high-level qualifier (*prodhq*) value is MY.MFA, then substitute MY.MFA for *prodhq*.

Follow these steps to load Mainframe Access Server:

1. Download the installation file from the link in your Electronic Product Delivery email and extract its contents to a directory on the PC.
2. On the mainframe, allocate a new partitioned data set named *prodhlq.UPLOAD* to receive the uploaded files. Use the following data set characteristics for this upload library:

```
DSORG=PO <=== PDS (partitioned data set)
RECFM=FB <=== record format fixed and blocked
LRECL=80 <=== 80 character record size
BLKSIZE=3120 <=== 3120 character block size
SPACE=(3120,(3500,500,50)) <=== allocate blocks (BLKS) size 3120
                                     3500 primary blocks
                                     500 secondary blocks
                                     50 directory blocks
```

3. On the PC, issue the following FTP commands. The actual text of the FTP prompts and responses that you see may differ slightly from those shown in this example.

**a. Start FTP:**

```
C:\>ftp your.mainframe.name
Connected to your.mainframe.name.
220-FTPD1 IBM FTP CS/390 VxRy at YOUR.MAINFRAME.NAME, hh:mm:ss
220 Connection will close if idle for more than 5 minutes.
User (your.mainframe.name:(none)): userid
331 Send password please.
Password: pswd
230 userid is logged on. Working directory is "userid."
```

**b. Change the working directory on the mainframe to be the upload library that you allocated:**

```
ftp> cd 'prodhlq.UPLOAD'
250 The working directory "hlq.UPLOAD" is a partitioned data set.
```

**c. Set file transfer type to binary:**

```
ftp> binary
200 Representation type is Image
```

**d. Set FTP prompting off to transfer all files without interruption:**

```
ftp> prompt
Interactive mode Off.
```

**e. Transfer all files from the extracted \Upload directory to members in the *prodhlq.UPLOAD* library:**

```
ftp> mput drive:\upload\f*
200 Port request OK.
125 Storing data set prodhlq.UPLOAD(Fxxxxxxx)
250 Transfer completed successfully.
ftp: xxxx bytes sent in x.xx seconds (xxx.xx Kbytes/sec)
.
.
.
```

**f. When mput has transferred all files the ftp> prompt appears. End the FTP connection:**

```
ftp> quit
221 Quit command received. Goodbye.
```

**g. On the mainframe, verify that all files transferred successfully and that for each Fxxxxxx file in the \Upload directory there is a corresponding member in the *prodhlq.UPLOAD* data set. There should be 10 members, F1 through to F9 and FRESTORE.**

4. On the mainframe, edit member FRESTORE in the upload library, *prodhlq.UPLOAD*. Follow the instructions in that member to customize the JCL and then submit that job to restore the product libraries from the uploaded files and populate your new product runtime libraries.
5. Start Mainframe Access Server.

### After installation

Since the program libraries can change between versions, it is necessary to either create new procedures, or back up the old procedures, and at least modify the DSNQUAL=*prodhlq* within your MFA sample started

task procedures as provided by Micro Focus. The *prodhq.LOADLIB* and *prodhq.SASC.LINKLIB* must both be authorized.

Verify successful maintenance application by checking the Mainframe Access Server startup message:

```
MFM0001I: Mainframe Access V4.00 (BASE ) is active
```

The "(BASE )" indicates the product maintenance level. Also check for "V4.00" in the Mainframe Access Data Connect server startup message:

```
MFA303I MFA/DATACONNECT V4.00 - BASE COPYRIGHT (C) 1987-2012 MICRO FOCUS...
```

When you are satisfied with the new version installation you may delete the UPLOAD data set from your system.

### New parameters and members in the CNTL samples data set

The following updated members are found in the CNTL data set.

MFA	sample MFA started task
MFAS	*new* sample MFAS started task for Data Connect
MFAAS	sample MFAAS application server started task
MFAVTAM	sample MFA VTAM definitions
PARMS	sample PARMS for MFA started task
PARMSAS	sample PARMSAS for MFAAS started task
SERVERS	sample SERVERS configuration for MFA
UPQUICK	configuration notes

If you are migrating from Host Connectivity 3.01 WebSync 10 or earlier, you may want to retain your existing CNTL members from your current version as an installation test. You can simply copy the existing MFA started task JCL and change the STEPLIB to reference the new product libraries. You will however need to modify the MFAS started task JCL since the module names for Data Connect have been changed to allow co-residence within the same authorized library as MFA.

Review the Change Log in each of the new members. Read the documentation for any new parameters in the Readme and in the updated Mainframe Access Administrator's Guide. Add these new parameters and other changes to your working copies. If necessary, customize the new parameters for your installation.

Once you are satisfied with the operation of Mainframe Access, you can consolidate the configuration settings into the new high-level qualified CNTL members.

## 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 Test Server and Micro Focus License Administration. Uninstalling only Enterprise Test 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
```

# 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.
- Be aware that the person who purchased this product has had to sign a license which states that you may use this product for testing only, and not for development work. If you are uncertain as to whether you will need to do development work, we recommend you speak to the person who purchased the product to see if you need a different license.
- Your entitlement for using this product is governed by the Micro Focus End User License Agreement and by your product order. If you are unsure of what your license entitlement is or if you wish to purchase additional licenses, contact your sales representative or [Micro Focus SupportLine](#).

## To buy and activate a full unlimited license

To buy a license for Enterprise Developer, contact your sales representative or Micro Focus SupportLine.

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

## To start Micro Focus License Administration

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



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

## 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**.

# If you have an authorization code

## Authorizing your product when you have an Internet connection



**Note:** This topic only applies if you have an authorization code.

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.

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



**Note:** This topic only applies if you have an authorization code.

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**.

## 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.

# New Features in Enterprise Test Server 2.2 Update 1

This release provides enhancements in the following areas:

## Micro Focus Heartbleed Update

The OpenSSL library used in this product has been updated to version 1.0.1g to fix the "Heartbleed" vulnerability with TLS heartbeat requests.

## Btrieve Support

Support for the Btrieve file handling system from Pervasive Software Inc. has been added into Enterprise Developer.

Support is restricted to native COBOL, in a Windows environment.

## Compare and Synchronization Monitor

With the release of Enterprise Developer 2.2 Update 1, the Compare and Synchronization Monitor has been updated to version 2.

Version 2 is greatly improved in terms of performance, especially during initial checkout of partitioned data sets or when synchronizing a large number of members. Also, the user interface has been improved, and some of the functions available in the old version have now changed or become obsolete.

## Compiler Directives

The following Compiler directives have been added in this release:

**ILPARAMS** Determines the way in which you call a method that contains an array as its last receiving parameter.

**INIT-BY-TYPE** Initializes Working-Storage Section data items to a default value, according to their type.

- Alphabetic, alphanumeric, alphanumeric edited, and numeric edited items are initialized to spaces.
- Numeric items are initialized to zero.
- Pointer items are initialized to null.
- Index items are initialized to the value 1.

## Enterprise Server Integration in the IDE

You can now use the context menu for the servers in Server Explorer to enable the display of the Enterprise Server log information in .

## Enterprise Server MQ-IMS Bridge



**Attention:** This feature is in Early Adopter Product (EAP) release status. We intend to provide the finalized feature in a future release. Please contact Micro Focus SupportLine if you require further clarification.

This release provides support that enables WebSphere MQ applications to communicate with IMS applications in an Enterprise Server region.

## Environment Variables

The following environment variable has been added in this release:

**strictvsam** strictvsam enables strict mainframe emulation when processing VSAM files.

When set to ON and running under mainframe emulation, file status 37 is returned for an existing VSAM file when opened for OUTPUT if the file has data or previously had data written to it, or if the file is of a different format to the file on disk. When set to OFF, file status 0 is returned and a new file is created when an existing VSAM file is opened for OUTPUT. This variable is set to OFF by default.

## Fileshare Recovery

Recovery of Fileshare data files has been enhanced.

Rollback recovery is a faster process that aims to fix the files from their failed state.

This process cannot be used in all scenarios, but a new user exit has also been introduced that allows you to programmatically control which files you wish to recover with this process.

Hot backups are also a new introduction, which allow you to perform a backup without having to shut down Fileshare.

## HCO for DB2 LUW

- Support added for DB2 LUW version 10.5
- Enhanced RETURN-CODE processing
- The HCO DDL processor now accepts column names with a length greater than 18 characters.
- The HCO Import Data tool now processes CLOB data less than 32K in size.
- The HCO Import Data tool can now convert DSNTIAUL import files to delimited format, enabling the actual import to be done by DB2 LUW IMPORT and LOAD utilities. This is done using the new SAVEDEL and CHARDEL parameters.

## Mainframe Emulation

Previously, MGMTCLAS was supported by simply saving it on the catalog record when a dataset was allocated in JCL using the MGMTCLAS parameter on the DD statement. Starting with this release, you can use batch jobs to define MGMT classes and to specify the EXPIRE AFTER time (in days).

## Mainframe Subsystem

**Casspool performance enhancement** As part of an enhancement to improve performance when browsing the spool queue of an Enterprise Server, you must update the casspool file for any Enterprise Server created before Enterprise Developer 2.2 Update 1 before you can submit jobs to it.

To update the casspool for each Enterprise Server, from a command prompt, run `fixcasspool.bat`, located in `%COBDIR%\bin` and `%COBDIR%\bin64`, using the following syntax:

```
fixcasspool.bat casspool.dat backup.dat
```

Where:

**casspool.dat**

The spool file, located in the same directory as the Enterprise Server's system catalog, that will be updated.

**backup.dat**

A file that will be created with a backup of the old `casspool.dat` file. If `backup.dat` already exists, the update is not run.

If you do not update casspool and attempt to start Enterprise Server, the following messages are displayed in the console:

```
JES000011E Batch Spool File Error; Status [39]
```

```
JES000130E Note JES000011 Error - New casspool indexes may need  
generating. See error description in product docs
```

### Managed COBOL Syntax

This release includes the following enhancements to the managed COBOL syntax:

- |  |   |
|--|---|
| <b>Specifying parameters in the method signature</b> | You can now specify passing parameters and returning items in the method signature, instead of using a Procedure Division header. This applies to methods, indexers, iterators, constructors and delegates. |
| <b>CONSTANT keyword</b>                              | Use the CONSTANT keyword on a field to protect it from being altered.   |
| <b>Operations on string fields</b>                   | You can now use the STRING, UNSTRING and INSPECT statements on fields of type string.   |

### Run-time Launch Configuration Files

Use a run-time launch configuration file to ensure an application can be launched when it is deployed in a separate location to the run-time system (in the case of dynamically bound applications), or when the licensing daemon is not already running.

### XA Switch Modules

This release provides the following new functionality:

- New two-phase commit module for SQL Server based on Microsoft's XA switch. This provides support for xa\_recover.
- Support for DB2 LUW version 10.5.
- Support for Oracle version 12.1.

# Known Issues

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

In addition, note the following:

## CICS

- An EXEC CICS DELAY statement may sometimes produce a difference of one second.

## Enterprise Server

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

## ICETOOL Emulation

ICETOOL emulation for managed code is not available in this release.

## Installation

- Before you install this release as an upgrade to an existing installation of the previous version 2.2 of the product, you must uninstall any HotFixes of 2.2. This is to avoid some problems that might result in files not being installed. This is required only on Windows.

## Micro Focus Rumba

On versions of Windows Vista and later, Enterprise Server listens only on the IPv4 loopback address (127.0.0.1). As a result, an attempt to connect to localhost with a TN3270 emulator such as Micro Focus Rumba may fail. To work around this issue, in your emulator's configuration use 127.0.0.1 in preference to localhost or your host machine's name.

## 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).

# 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.

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

- [.NET Compiler](#)
- [MTO - JCL ESMAC](#)
- [MTO - JCL MVS](#)
- [MTO - JCL System Catalog](#)
- [MTO - JCL Utils - IDCAMS](#)
- [SQL: COBSQL](#)

## .NET Compiler

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- In member reference in managed COBOL syntax, you may now only use parentheses when referencing methods. You can no longer specify parentheses when referencing fields or properties, as this will produce a syntax error. For example:

```
set intLength to testString::Length()
```

must change to:

```
set intLength to testString::Length
```

## MTO - JCL ESMAC

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- As part of an enhancement to improve performance of the spool display function, several new indices have been added to the `casspool.dat` file. If you are upgrading from a previous release, you must convert the `casspool.dat` file of any enterprise server created before Enterprise Developer 2.2 Update 1 to the new format before starting any JES-enabled enterprise server and submitting jobs to it.

This release provides the following scripts that convert the `casspool.dat` file to the new format:

- On Windows: `fixcasspool.bat` in `%COBDIR%\bin` or `%COBDIR%\bin64`
- On UNIX/Linux: `fixcasspool.sh` in `$COBDIR/bin`

,

To convert the `casspool.dat` file, run the appropriate script from an Enterprise command prompt using the following syntax:

- On Windows:

```
fixcasspool.bat <old-location>casspool.dat <new-location><backup_filename>
```

- On UNIX/Linux:

```
fixcasspool.sh <old-location>casspool.dat <new-location><backup_filename>
```

Where:

- `<old-location>` - the fully or partially qualified location of the existing `casspool.dat` file, if not in the current directory. Optional.
- `casspool.dat` - the spool file that will be updated. The file is located in the same directory as the enterprise server's system catalog.

- *new-location* - the fully or partially qualified location where the backup file will be created, if not in the current directory. Optional.
- *backup\_filename* - the name of the file that will be a back-up of the old `caspool.dat` file. If the file name already exists, the script terminates without converting the `caspool.dat` file.

If you do not convert `caspool.dat`, attempts to start the enterprise server fail with the following messages:

```
JES000011E Batch Spool File Error; Status [39]
      JES000130E Note JES000011 Error - New caspool indexes may need
generating. See error
      description in product docs
```

2654417 (1090421)

## MTO - JCL MVS

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- The final disposition processing of temporary datasets has been corrected to be in line with the mainframe processing, with a default value of PASS unless DELETE has been specified in the DD card. Previously, the default value was DELETE.

2671175 (1091627)

- When running batch programs, receiving an "Out of Space" error requires operator intervention to continue processing.

2642115 (1089055)

## MTO - JCL System Catalog

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- You can now use MGMTCLAS to provide an EXPIRE AFTER number of days. This is used to calculate an expiry date for datasets allocated using the MGMTCLAS parameter.

2664639 (1090992)

- MFLEX\*.DAT files were not being moved with spool files. Spool housekeeping now deletes LEX files when it deletes JESYSMSG. Also, to identify any remaining orphan LEX files, the MF\_SPOOL\_HK\_LEX\_SCAN environment variable sets spool housekeeping to scan the data directory for LEX files older than the max retain period.

2659555 (1090759)

- Spool housekeeping has been rewritten to provide a number of new features. These will be described in the product documentation.

(592452)

## MTO - JCL Utils - IDCAMS

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- The state of VSAM virgin files is now being correctly processed.

2686149 (1093587)

- A REPRO COUNT of zero is now processed as zero records to be included in the REPRO operation.

2665006 (1091034)

## SQL: COBSQL

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- COBSQL now displays appropriate COBOL syntax errors after encountering EXEC SQL statement errors.

2673619 (1093197)

# Resolved Issues

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

- *.NET Compiler*
- *.NET ESQL Support*
- *.NET RTS*
- *Adis*
- *Assembler Compiler: HLL Macro Assembler*
- *Assembler Program Execution*
- *CAS (COBOL App Server) General*
- *CAS Admin Console*
- *CAS Resource Manager Interface*
- *CAS Security*
- *CAS XA Switch modules*
- *CASRDO*
- *Compiler*
- *Compiler ECM Support*
- *Documentation*
- *ES Monitor/Control (ESMAC)*
- *File Handling - External File Handler*
- *File Handling - Fileshare*
- *File Handling - Sort / JCL Sort*
- *Interface Mapping Toolkit General*
- *LE370 Support*
- *MDSA API for CAS*
- *MF Communications Server*
- *MF Directory Server*
- *MF Server Administrator (GUI)*
- *MFA: GUI components*
- *MFA: Mainframe*
- *MFIO*
- *Micro Focus Heartbleed Update*
- *MTO - CICS BMS Screen painter*
- *MTO - CICS Communications*
- *MTO - CICS ECM/Preprocessor/Translator*
- *MTO - CICS Emulation*
- *MTO - CICS ESMAC*
- *MTO - IMS DB*
- *MTO - IMS MFS*
- *MTO - IMS Other*
- *MTO - IMS TM*
- *MTO - JCL ESMAC*
- *MTO - JCL MVS*
- *MTO - JCL System Catalog*
- *MTO - JCL TSO*

- [MTO - JCL Utils](#)
- [MTO - JCL Utils - IDCAMS](#)
- [NCG](#)
- [RJSE - JCL](#)
- [Run-Time System](#)
- [SQL: COBSQL](#)
- [SQL: DB2 ECM](#)
- [SQL: HCO for SQL Server](#)
- [SQL: OpenESQL](#)
- [Web Service Client](#)
- [XDB Server](#)
- [XDB: Problems not classed above](#)
- [XML Syntax Support Preprocessor](#)
- [XML Syntax Support Runtime](#)

## **.NET Compiler**

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- When compiling for managed code with the RM(ANSI) directive, the EXIT PROGRAM statement now works as expected. Previously, it was causing all files open in the program to be closed, which should only occur if the RM directive (without the ANSI parameter) is specified.  
2690872 (1093437)
- (As 1091900) Previously, when the NOBOUND directive was set, generation of a level 88 condition name on a subscripted item could result in a system error.  
2685375 (1093076)
- An INITIALIZE statement without the REPLACING phrase now initializes PIC N data items to DBCS spaces (x"8140"). In a previous version, this was incorrectly initializing to ASCII spaces (x"20").  
2682846 (1092779)
- An INITIALIZE statement applied to a particular element of a subscripted group, where a space fill should precede a sub-occurs item, now applies the space filling to the correct element of the subscripted group.  
2682845 (1092778)
- A problem has been fixed where an INITIALIZE statement referencing a group that redefines something did not function correctly if the group itself was not otherwise referenced.  
2681790 (1092700)
- Arithmetic statements involving subscripted operands no longer cause bad code generation. Previously, this was likely to happen when the subscripted data item was declared at 01 level, or was declared within a group, which itself was never referenced.  
2677890 (1092368)
- In previous product versions, the event which was the target of an attach or detach statement could not be specified as the end of a member reference chain. This meant that it was not possible to have statements like:  

```
attach method self::MyMethod to self::TextBox::TextChanged
```

  
This is now fixed.  
2676123 (1092130)
- Property initializers as part of the 'new' (constructor) expression are now functioning correctly.  
2674668 (1091974)
- Previously, when the NOBOUND directive was set, generation of a level 88 condition name on a subscripted item could result in a system error.

2673571 (1091900)

- Previously, a mixture of static and instance files within a class could result in bad code generation. This has now been resolved.

2672322 (1091732)

- Previously, in situations where a reference-modified move from a `pic x` to a `pic n` field has the same length expression on each side, compiling produced incorrect code which resulted in the target being truncated.

2670726 (1091595)

- Type inference for generic methods is now working as expected. Previously, in certain cases, it was causing 'COBCH0829 Could not find method...' errors.

2670658 (1091643)

- Programs compiled to managed code, and which use the `SSRANGE` directive, no longer produce system errors at compile time.

2668437 (1091389)

- After stepping into an `INVOKE` or a `PERFORM` statement, the call stack will now point to the `INVOKE` or `PERFORM` itself, and not to the statement following it.

(583690)

- When compiling for .NET, XML comments that are attached to types and members (for example, methods and fields) now generate warnings if the XML text is not correctly formatted.

(595368)

- Previous versions of the product allowed the caller of a method, in which the last parameter was an array, to specify a list of zero or more arguments of the array element type, in place of a single array argument. By default, this behavior is now only supported when the array parameter in the target method has the `PARAMS` attribute. To restore the old behavior, the new `ILPARAMS` directive has been introduced.

(599666)

- Previously, the resolution of shortened type names (those without explicit namespace) could fail when different programs had different `ILUSING` lists. This could occur when there were multiple programs in a project and one or more of them had `$set` statements with the `ILUSING` directive.

(599903)

- A problem where generic classes would wrongly appear to have errors on background parse has been resolved.

(601182)

## **.NET ESQL Support**

### *[Back to the list](#)*

- OpenESQL did not correctly handle `EXEC ADO BIND CONNECTION` statements that passed the connection name in a host variable.

2681358 (1092636)

- Previously, the OpenESQL precompiler split DBCS SQL statements which resulted in receiving a managed OpenESQL run-time error when processing the statements.

2672260 (1091722)

- The `LIKE` operator was not invoked properly for .NET `DATAROWS` cursor search conditions.

2671820 (1091683)

- Some consistency issues with sensitive cursors have been resolved in the ODBC, JDBC and ADO run-time systems for OpenESQL.

2667592 (1091300)

## .NET RTS

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- An error when converting values from type decimal to other COBOL data types has been fixed.  
2695116 (1093886)

## Adis

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- REVERSE-VIDEO now works as expected when using the X"AF" function.  
2683509 (1092851)
- MS ACCEPT statements now sound a beep when invalid characters are entered into integer or decimal fields. Integer fields no longer accept invalid characters and normalise.  
2680081 (1092542)
- MS ACCEPT statements now display numerics with space fill and sign leading so that integers and decimals are appropriately aligned.  
2680081 (1092543)
- The attributes specified in the screen section are now displayed correctly after a call to the X"AF" function 81 has been made.  
2650012 (1089634)

## Assembler Compiler: HLL Macro Assembler

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- The /PREPASM operand used with the BMS generator utility to invoke the MFASM Assembler to expand copyfiles (MFBMSCL <bms\_filename> /PREPASM) was affected by a long and spacey filename fix to the MFASM command line handler that resulted in the Assembler macro processor not running. The issue with the command line has now been fixed and COPY statements in BMS modules are now expanded correctly.  
2685507 (1093084)

## Assembler Program Execution

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- Previously, if you assembled and linked an Assembler module with the ANIM option turned on and then you ran it under Enterprise Developer 2.1, and the ES\_CONSOLE\_SERVER environment variable was not set to YES, an error 197 would occur as the Assembler run-time system attempted to bring up the Assembler debugger and make screen displays from it. Now, if ES\_CONSOLE\_SERVER is not set, the Assembler run-time turns the debugging flag off and just zooms through the module without invoking the Assembler debugger. Additionally, ES\_CONSOLE\_SERVER now accepts both YES or Y as values and they can be either upper or lower case.  
(596477)

## CAS (COBOL App Server) General

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- Multiple casout calls (using the -r option) in a single process now work correctly.  
2694290 (1093800)
- When accessing TS/TD on error, the file status is now displayed correctly.  
2684719 (1093023)

- HSF records no longer contain incorrect dates when a task runs past midnight at the end of a month.  
2644616 (1089363)
- Messages issued from casstop are now sent to stdout.  
2643162 (1089019)
- All system abend messages are now reported to the console.  
(602933)

### **CAS Admin Console**

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- The JES Program Path and CICS Transaction Path now accept paths of up to 4096 characters.  
2665324 (1091104)

### **CAS Resource Manager Interface**

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- A thread synchronisation issue was causing responses to be lost intermittently. For stateful requests, this could result in lost SEPs (whereby a SEP would appear as busy even though it was not processing any work).  
2686429 (1093442)

### **CAS Security**

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- A new user objectclass instance added to an LDAP-based external security manager now has its initial login attempts count value set correctly.  
2637659 (1088656)

### **CAS XA Switch modules**

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- The Declared Global Temp table is being dropped at CICS end of task with XDB as resource manager.  
2682648 (1093069)
- A new SQL Server XA switch module provides support for xa\_recover and also handles implicit rollback by SQL Server more cleanly than previous switch modules.  
2679162 (1092481)

### **CASRDO**

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- Clicking **Resources > JES > Catalog** in ESMAC now opens the initial screen without showing the results of any previous searches.  
2656391 (1090454)

### **Compiler**

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- LOCAL-STORAGE data in nested programs now behaves as expected and as it does on the mainframe - as LOCAL-STORAGE of the main program.  
2693843 (1093746)

- A MOVE from a group item to a DBCS target that requires padding now behaves as expected.  
2692634 (1093553)
- DELETE statements that contain the END-DELETE scope terminator now compile as expected.  
2690465 (1093235)
- UNSTRING on LINKAGE SECTION data items with reference modification could sometimes give the wrong result.  
2684812 (1092998)
- Using large EXEC SQL statements no longer causes the Compiler to hang.  
2684713 (1092993)
- The ? NUMERO SIGN (U+2116) Shift-Jis FA59/8782 is now converted correctly to EBCDIC value 446e under CHARSET(EBCDIC).  
2683297 (1092823)
- MOVE figurative constant to PIC G item under CHARSET(EBCDIC) now returns the expected results.  
2683091 (1092801)
- A MOVE CORRESPONDING statement with a GLOBAL subscripted target now compiles as expected.  
2682557 (1092981)
- A program compiled with the FDCLEAR Compiler directive and containing a numeric file record now compiles as expected.  
2678050 (1092326)
- The asterisk character is now treated correctly in COPY REPLACING text under mainframe emulation.  
2676006 (1092571)
- A literal greater than 80 bytes but less than 160 bytes in length and containing non-ASCII characters will now compile as expected with a mainframe dialect.  
2670083 (1091560)
- Programs that contain EXEC INCLUDE statements inserted by a preprocessor now debug as expected.  
2661838 (1091416)
- ISO2002 and SNI table VALUE syntax is now working as expected for multi-dimensional tables that are not directly nested within each other.  
2651916 (1089808)
- The Compiler error message 62 (COBCH0062) has been clarified by changing "Nested COPY replacement not supported" to "Nested COPY replacement causes termination of parent COPY replacement".  
(599823)
- The SQL TYPE DBCLOB(n) now creates the correct COBOL record structure.  
(599679)

### **Compiler ECM Support**

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- The SQL(CHECK) option no longer incorrectly affects the setting of the unrelated NCG option 'CHECK'.  
2685791 (1093351)

### **CICS BMS Screen Painter**

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- The BMS compiler no longer generates a MOD or copy file if errors or severe errors are encountered during compilation. To revert to the previous behavior, where the BMS compiler generates a MOD or copy file even if it encounters errors or severe errors, specify the /IE directive.

(595227)

## Documentation

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- You may now specify an SSL-enabled listener when submitting jobs via CASSUB. You achieve this by using the tcpssl protocol on the /s or -s switch.

2671020 (1091619)

- When creating a VSAM data set using the DEFINE CLUSTER command, records are assumed to be variable-length, unless the NUMBERED parameter is used and the RECORDSIZE parameter specifies the same length for the average and maximum record size, in which case, fixed-length is assumed.

2615989 (1088176)

- A compiler directive INIT-BY-TYPE has been provided to allow initialization of each data type to a sensible value for that type.

2650462 (1091658)

- The INITIALIZE verb now supports multiple categories in a single REPLACING clause.
- Variable length record files that are 4 bytes or smaller are padded to 8 bytes.

2537147 (1081777)

- The installation instructions now list the required libraries for IBM System z (390) in the *Software Requirements* section of the installation instructions of the product help.

2683015 (1092919)

## ES Monitor/Control (ESMAC)

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- In the ESMAC (casrdo45) page, there is now provision to filter and list the members of a particular PDS. The filter text is PDSNAME(\*). The PDSNAME should be the complete name of the PDS, and cannot contain any wildcards.

2500753 (1078391)

## File Handling - External File Handler

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- Under Mainframe emulation, when an empty virgin VSAM file is opened for input or for input/output, a file status of 35 is returned, regardless of the access mode specified.

2692826 (1093604)

- When using the RMFM File Handler, a file status '05' is returned when executing a DELETE FILE statement, if appropriate. This emulates the behavior of the RM/COBOL run-time.

2685220 (1093089)

- A rollback recovery of a REWRITE where the record size was being reduced was producing incorrect results.

2685069 (1093085)

- When a DD name is associated with several concatenated data sets of different charsets, the returned data has the charset encoding of the first data set. However, if the first data set is LSEQ, the returned data has the charset encoding of the application program.

2677941 (1092434)

- cobfhrepro2 now produces the correct output for FCD2.  
2664465 (1090972)
- A new environment variable, STRICTVSAM, has been introduced. When it is set to ON and under a mainframe emulation, a file status of 37 is returned when you open an existing VSAM file for OUTPUT and the file has or previously had some data written to it, or if the file format is different from the file on disk. The default for this variable is OFF.  
2660766 (1090639)
- When reading concatenated datasets, each dataset in concatenation must use the same RECFM, either all FB or all VB.  
2654517 (1091793)
- The FOLDER section in a file handler configuration file now supports relative paths.  
2653787 (1090290)
- Btrieve files are now supported, using the xfh2btr call conversion module, for native COBOL, running in a Windows environment.  
2598434 (1086466)
- 64-bit fileshare clients would fail to connect if any cci configurations settings were used.

### **File Handling - Fileshare**

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- The Escape character was not being honoured for filenames passed to FSVIEW which caused filenames containing \$ to be interpreted as environment variables.  
2660207 (1093021)
- MFJSORT now correctly displays the file status of a queried VSAM file, rather than a generic error message, when the file being queried returns a non-zero file status.  
2589273 (1092107)

### **File Handling - Sort / JCL Sort**

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- When VLFILL is specified in OUTFIL, the variable length records smaller than the LRECL/OUTREC are now correctly padded with the value specified in VLFILL rather than with spaces.  
2680553 (1092622)
- Under ICETOOL emulation, the maximum size of an ON Field for PD data type has been increased from 8 to 31 bytes in order to emulate mainframe behavior.  
2680285 (1092551)
- The PARM options CORE, SIZE and MSG are now parsed and ignored.  
2675829 (1092090)
- After a SORT operation, the memory allocated by SORTTEMPSPACE is correctly freed.  
2666797 (1091311)
- MFSORT now correctly sorts NU fields when SORT-EBCDIC is specified.  
2663772 (1090910)

### **Interface Mapping Toolkit General**

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- RESP condition code information is now available to COMMAREA Web Service clients when EXEC CICS LINK errors occur.

2671956 (1093056)

- The Driver Program name of a COMMAREA Service Interface cannot be the same as an operation's program name. Service Interface Validation now performs a check for this.

2669112 (1091799)

## **LE370 Support**

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- LE370 parameters that continue on the next line are no longer flagged.

2681691 (1092669)

- TSO ALLOCATE command emulation now supports the use of "F B".

2668742 (1091453)

- An unsupported LE option in the code no longer invalidates the options that follow.

2668740 (1091425)

- A fault that caused the data received by an EBCDIC program when a 'READ from SYSIN' was performed to be in ASCII format has been corrected.

2657391 (1090401)

- CEE3PRM now successfully retrieves the parm value to the calling program.

2654879 (1090140)

## **MDSA API for CAS**

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- If an enterprise server instance is started by an Enterprise Server user account that has execute privilege but not update privilege for that server, you now receive an INSUFFICIENT\_ACCESS error when the server starts.

2664445 (1091238)

## **MF Communications Server**

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- When using casout to get job information, sometimes you could receive an error and the output was truncated.

2693283 (1093638)

- An issue where terminating 3270 sessions would result in high CPU usage in the MFCS process has been fixed.

2682179 (1092886)

- In version 2.2 of this product, the received data was missing from the trace messages for CTG and ISC conversations. This has now been fixed.

2674286 (1091971)

- Some of the Enterprise Server functions for informing running enterprise server of security updates and for retrieving the list of printers available on the server system were broken in Enterprise Developer 2.2. This has now been fixed.

(601260)

- You no longer receive exceptions in MFCS when the data-trace option is enabled for a CTG listener.

(601465)

## MF Directory Server

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- When using the export and import functionality of the MFDS XML Enterprise Server configuration, XRM name and label definitions are now exported and imported correctly.  
2683510 (1092852)
- When using the export and import functionality of the MFDS XML Enterprise Server configuration, the open and close string properties of XRM resources now support the inclusion of double quotes.  
2682635 (1092777)
- When adding or editing an IMS MPR definition in the Enterprise Server Administration GUI, you can now use comma as a separator in the class field to enter multiple class definitions.  
2676449 (1092164)
- The mfds export and import command line options -x and -g XML now also support exporting and importing enterprise server script configuration information.  
2668554 (1091412)
- XML import in the MFDS no longer fails if the XML source code contains long paths.  
2668553 (1091409)
- When using the Enterprise Server Administration to edit the properties of JES Initiators, JES Printers, IMS MPRs and XRM, the GUI now rejects duplicate names.  
2668020 (1091336)
- Session cookies in the browsers for the Enterprise Server Administration GUI now use the HttpOnly flag for additional security.  
2666975 (1091258)
- The browser auto-complete feature is now disabled for the password fields in the Enterprise Server Administration GUI.  
2666975 (1091260)
- If the Enterprise Server Administration HTML GUI is in "restricted access" state, a logged on user now needs to have "administer user" levels permission to see the "Display" options in the LHS of the GUI. This includes the "Directories", "Statistics", "Sessions" and "Journal" menu options. The "administer user" option is available by default to any member of the #DSAdmin MFDS user group. In MLDAP ESM security, this permission is defined by Update, Add or Delete ACE permissions against the "User Administration" resource in the "Enterprise Server Administration" resource class under "Enterprise Server Resources".  
2663991 (1090934)
- When exporting the Enterprise Server configuration in XML format with the "mfds -x" command line option, the MSS ISC and CTG listener information was not formatted correctly, which resulted in an incorrect behavior when you reimported the XML configuration.  
2651735 (1090147)
- When you use the Enterprise Server Administration HTML GUI to create a user group, the following characters are no longer allowed in name: '<', '>', '&', '"' and '&#39;'.

## MF Server Administrator (GUI)

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- When trying to change a password from the Enterprise Server Administration HTML logon page, additional checks are made before reporting the success or failure of the request.  
2659582 (1090525)
- The execution scripts configured for an enterprise server instance can now use the credentials specified on the Start/Stop page of the server in Enterprise Server Administration. For example, to use the

specified credentials to start an enterprise server instance, you need a script with the following command:

- On Windows:

```
casstart /r%ES_SERVER% /u%TXUOPERATOR% /p%TXPOPERATOR%
```

- On UNIX:

```
$ES_SERVER, $TXUOPERATOR
```

Where:

- TXUOPERATOR resolves to the user id.
- TXPOPERATOR resolves to the password.

After the enterprise server instance uses these environment variables, they are reset to blank and are no longer available to query.

2599100 (1086661)

## **MFA: GUI components**

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- Missing SI characters no longer cause an abend. Incorrect DBCS character streams are now ignored.  
2667289 (1091404)
- After the MFA server sends a 9/218 error ("Unsupported DCB/DSORG"), the data set is released and can then be reallocated.
- If an x37 out of space abend occurs when running an MFDAS EXPORT command, the affected data set is deallocated and available for use.

## **MFA: Mainframe**

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- The MFA server now works with CA Endeavor R16.0. You will need to update your MFA and MFAE JCL in order to use the new libraries.  
2692338 (1093691)

## **MFIO**

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- MFGENER now works with the server using FCD3 protocol.  
2676130 (1092134)
- The comments in the MFAVTAM sample member have been updated.  
2674286 (1091976)
- SM2 no longer segfaults when a member has been deleted on the mainframe.

## **Micro Focus Heartbleed Update**

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The OpenSSL library used in this product has been updated to version 1.0.1g to fix the "Heartbleed" vulnerability with TLS heartbeat requests.

## **MTO - CICS BMS Screen painter**

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- BMS COPY files will be found in the /SYSLIB folder when the /PREPASM directive is used to include the COPY files.  
2685507 (1093277)
- The message "BMSCH1101S COPY file expansion requires directive /PREPASM" is no longer displayed if copy file expansion fails due to errors in the copy file.  
2669082 (1091499)
- The BMS Compiler no longer fails with an access violation error when invoking a user pre-processor (/PCOMP=...).  
2669050 (1091679)
- The BMS Compiler no longer fails if the /MAP name exceeds seven characters. A message is displayed and the name is truncated to seven characters.

### **MTO - CICS Communications**

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- When converting a transaction typed on a DBCS terminal from EBCDIC to ASCII, the conversion did not use the length of the transaction but the length of the variable that was holding it. This has been fixed and the conversion now uses the length of the transaction.  
2676259 (1092144)

### **MTO - CICS ECM/Preprocessor/Translator**

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- DFHRESP(TIMEDOUT) was missing from the CICS precompiler tables. The value has now been added.  
2675857 (1092238)

### **MTO - CICS Emulation**

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- In CICS transaction routing, BMS Maps in DBCS environment are now displayed correctly.  
2680118 (1092510)
- When importing a startup list that had more than one group in it, only the first group was imported. This has been fixed.  
2659018 (1090500)
- When the casprt process dies, it will now be restarted automatically.  
2593342 (1086058)

### **MTO - CICS ESMAC**

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- The ESMAC page now displays CICS TERM definitions correctly.  
2676448 (1092163)

### **MTO - IMS DB**

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- An IMS application written in PL/I could produce an unexpected error RTS114 in MFIMSEP.  
2680509 (1092550)

- A non-zero return code from an IMS application program written in PL/I now sets JES COND CODE.  
2680115 (1092509)
- IMS Data Capture exit routines were not called for the destination parent segment during update of a concatenated segment in a logical DB when the logical child segment did not have an exit defined.  
2676941 (1092370)
- You could receive an error RTS 114 in MFIMSDBS if a BMP was killed after issuing a large number of uncommitted database updates.  
2671177 (1092024)
- Previously, Roll Forward recovery was incorrectly asking whether to recover the same file multiple times.

### **MTO - IMS MFS**

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- Screen data in a conversational transaction is no longer misaligned when the first field after the transaction code contains spaces.  
2680867 (1092593)

### **MTO - IMS Other**

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- The message "OPEN ERROR ON MESSAGES FILE, STATUS=35 DSN=IMSWND.MSG" was sometimes issued in place of an IMS error message, depending on the preceding program execution in a JES initiator.  
2665550 (1091186)

### **MTO - IMS TM**

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- IMS-TM no longer becomes unresponsive upon multiple application ABENDs.  
2664063 (1091514)

### **MTO - JCL ESMAC**

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- When browsing the catalog via ESMAC, the maximum number of lines displayed is controlled by the environment variable ES\_MAX\_CATALOG\_LINES, which has a default value of 5000. This is introduced for stability and performance reasons. If you wish to display more than 5000 lines, you need to set the environment variable to a higher value in Configuration Information on the General tab in MFDS. See "Setting Environment Variables for Micro Focus Directory Server" in the online documentation for more information.  
2671855 (1091696)

### **MTO - JCL MVS**

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- A new environment variable, JES\_PRINT\_SPOOL\_MSG= [ CONSOLE | LOG | SILENT ], can be used to control the disposition of the spool dataset printing message (JES000029I). Environment values are:
  - CONSOLE - send the message to the console (default).

- LOG - write the message to a special log file named PRNT\_SPL\_MSG\_YYYY\_MM\_DD.DAT where YYYY\_MM\_DD is the current date. This file resides in the same directory as casspool.dat, and a new file is created every day.
- SILENT - no message. Use this option with caution, as you will have no audit log of your spool datasets.



**Note:** This environment variable is introduced for high print load users, where print messages to the console impact system performance.

2660637 (1091746)

## MTO - JCL System Catalog

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- In the MVSCATPB API, the second and any subsequent reads of catalog records for dynamic PDS were not returning the extension lisy.  
2685834 (1093098)
- New empty dynamic pds members are now retained if they have been opened for output, to extend, or for an update.  
2681745 (1092834)
- Deleting the JESYSMSG from ESMAC (casrdo43) now deletes all the associated files.  
2659558 (1090837)
- The last change date on the catalog entry for a dynamic PDS model is set to the current date when a new member is added to the PDS.  
2581611 (1091084)

## MTO - JCL TSO

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- An issue related to temporary datasets later referred to as permanent ones has been corrected.  
2676531 (1092360)
- A problem when running batch programs with large parameters has been fixed. A parameter with length of up to 100 characters can now be passed to the user program.  
2671469 (1091663)
- Previously, after a batch job using IKJEFT01, a SEP was incorrectly terminating with CASKC0026E Error unloading service " after IKJEFT step with DSN.

## MTO - JCL Utils

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- Setting MFALLOC\_PCFILE=Y would not create the file if RECM=LSEQ.  
2682866 (1092920)
- Using MFGENER to copy RECFM=VB to RECFM=FB no longer results in bad data in the output file.  
2679429 (1092796)
- When copying an LSEQ dataset to a dataset with no dsorg specified, IEBGENER did not correctly assign the default dataset characteristics.  
2663396 (1090889)
- There is now an extra validation for IEBGENER to check that the attributes of concatenated SYSUT1 files are compatible.  
2654517 (1090132)

- When a job deletes a G0000V00 dataset belonging to a GDG, the DG manager updates its internal BIAS/G00000V00 table to reflect it, so that subsequent references to the GDG via relative BIASes within the same job are resolved the same way as on the mainframe.

2650338 (1089941)

## **MTO - JCL Utils - IDCAMS**

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- An existing SYSIN of type Dynamisc PDSM no longer causes a failure.

2686421 (1093226)

- It is now possible to use wildcards to specify the names of PDS members to delete.

2684823 (1093005)

## **NCG**

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- An error could occur at generate time for programs with calls to INTRINSIC functions that had multiple ALL subscript parameters.

2695026 (1093885)

- An issue in cob which caused a core dump when all entry points in the main program were invalid has been fixed.

2663974 (1090927)

- An issue has been resolved where the debugger would not step into the code when a PERFORM statement is the last statement in a WHEN branch of an EVALUATE statement.

## **RJSE - JCL**

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- MFA server can now import SYSOUT data sets with a maximum LRECL of 32K which is the system limit.

2658439 (1090815)

## **Run-Time System**

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- When a container end event is received, all external files that are open in the container now close correctly.

2513669 (1079282)

## **SQL: COBSQL**

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- COBSQL Pro\*COBOL error messages displayed only up to 80 characters.

2681983 (1092788)

- Previously, commented-out END-EXEC statements were causing a Compiler error. COBSQL now ignores such statements.

2680341 (1092533)

- The COBSQL precompiler was updated so it does not attempt conversion of source lines containing the continuation character.

2663986 (1090930)

## SQL: DB2 ECM

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- When a CREATE TABLE statement contained a PARTITION parameter, the HCO DDL processor sometimes generated invalid DDL.  
2682214 (1092725)
- A new option (SAVEDDL) is available in the HCO DDL processor. With this option set, any DDL converted from the input DDL file is saved and not executed. The DDL processor now supports specifying the IN <tablespace> and COMPRESS <option> parameters but not modifying them.  
2673448 (1091907)
- Previously, the HCO IMPORT tool could go into a loop if the LOB column was in the import data set.  
2673443 (1091887)
- When compiling on a 64-bit systems, the DB2 pre-compiler incorrectly generated an error "DB0121 Package name is too long."  
2673259 (1091920)
- The HCO DDL processor now accepts column names greater than 18 characters. Previously, in this situation, you received SQLCODE error -205 when the DDL was processed.  
2673085 (1091829)
- The HCO IMPORT tool now supports a new parameter (SAVEDEL) which enables converting DSN import files to delimited format. When used with this parameter, the HCO IMPORT tool only converts the file and does not perform an actual import.  
2672865 (1091891)
- The HCO Import Data tool was not checking for invalid lengths passed for VARCHAR column data; the tool now checks this and when an invalid length is passed, issues an error message identifying the affected column.  
2661781 (1091056)

## SQL: HCO for SQL Server

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- HCOSS now handles statements of type "SET hostVariable = CURRENT SQLID" correctly.  
2693537 (1093690)
- The HCOSS Assess Application Migration tool flagged CALL statements as errors without checking parameter directions. These CALL statements are now flagged as 'in doubt' to initiate an assessment of parameter directions.  
2685247 (1093156)
- The OpenESQL preprocessor and runtime now support AMODE(31) address pointers and swapping COMP fields in SQLDA for user-defined mainframe style SQLDAs.  
2684229 (1092978)
- COBOL stored procedures could not perform database updates when called from a SQL Server trigger.  
2680257 (1092809)
- OpenESQL and HCOSS now correctly compile statements that contain CASE expressions.  
2679336 (1092605)
- OpenESQL now supports a generic syntax for setting and rolling back to transaction save points that work with Oracle, DB2, and SQL Server.  
2676145 (1092138)
- Although mainframe DB2 supports FETCH INSENSITIVE from SENSITIVE STATIC cursors, which has a SQL Server equivalent KEYSET cursor, SQL Server does not support FETCH INSENSITIVE from KEYSET cursor. This is a permanent limitation.

2676140 (1092137)

- OpenESQL did not support BLOB, CLOB, and DBCLOB host variables larger than 64K.

2649752 (1089622)

## SQL: OpenESQL

[Back to the list](#)

- OpenESQL did not support using the DB2 VALUES INTO statement with DB2 LUW.

2694069 (1093906)

- The OpenESQL preprocessor incorrectly rejected host variable character definitions that contained x'091' characters.

2692065 (1093465)

- You can now specify SQL(NOCHECKSINGLETON) in applications that require compatibility with older products to check for unfetched rows after a singleton SELECT. In such cases, the returned SQLCODE value is zero rather than an error or a warning.

2691736 (1093420)

- The SQL(TSTAMPSEP) compiler directive could not be explicitly set to a space character, for example SQL(TSTAMPSEP= ). This is now the default setting unless overridden by specifying SQL(DIALECT=MAINFRAME).

2691212 (1093364)

- In the IDE, the TSTAMPSEP directive was not listed as an OpenESQL compiler directive option.

2685702 (1093116)

- When SQL(NODETECTDATE) is set after SQL(DIALECT=MAINFRAME), HCOSS does not attempt to convert date, time or timestamp literals in static or dynamic SQL statements.

2685422 (1093615)

- DB2 LUW applications could not use DECLARE GLOBAL TEMPORARY TABLE statements that were not syntactically valid for DB2 z/OS.

2685219 (1093346)

- The sqlda.cpy copybook could not be compiled using the ENTCOBOL mainframe dialect.

2682522 (1092825)

- A new XA switch module is now available that supports XA recovery.

2680297 (1092528)

- Previously, you would receive error COBCH002 when SQL(NOPRE) was specified because the ODBC precompiler would try to generate code using a variable which was not defined.

2679267 (1092438)

- The OpenESQL pre-compiler generated code that swap COMP host variables incorrectly if the SQL statement got an SQL runtime error.

2677606 (1093013)

- The OpenESQL precompiler sometimes incorrectly generated swap code for COMP host variables if they were used for both input and output in same SQL statement which resulted in SQLCODE of +100 being returned.

2675122 (1092454)

- A problem with SQL(CHECK) no longer occurs when using binary host variables.

2673281 (1091832)

- A problem with nested select queries in ESQL 'select into' statements has been fixed.

2672519 (1091768)

- Previously, an incorrect code was generated for an INSERT statement that used an indicator variable array when DBMAN=ADO was set.  
2671938 (1091715)
- The support for EXEC SQL GET DIAGNOSTICS has been extended to include DB2\_ROW\_NUMBER, ROW\_NUMBER and COLUMN\_NUMBER as diagnostic items that can be retrieved by an application.  
2670955 (1091611)
- The OpenESQL preprocessor could sometimes improperly decode DBCS host variable characters which resulted in receiving an "ES0109 Invalid data name" message.  
2670725 (1091594)
- The OpenESQL pre-compiler incorrectly changed the underscore character (\_) to a dash character (-) in an EXEC SQL WHENEVER statement.  
2670723 (1091593)
- Dynamic SQL statements were not releasing JDBC cursors.  
2670548 (1091585)
- OpenESQL for JVM COBOL prevented type byte[] host variables from being used.  
2667023 (1091240)
- The SQL Directives information available within the Visual Studio and Eclipse IDEs contained an error regarding the available options for the XDB(DATE) and XDB(TIME) directives.  
2666213 (1091185)
- Some issues relating to the use of PIC G /PIC N DISPLAY-1 and some DBCS host variables have been resolved.
- When using Data Direct ODBC drivers, PIC N NATIONAL host variables always uses UTF-16 instead of UTF-8 which previously happened on some platforms.
- Some problems with using Data Direct's ODBC driver for Microsoft SQL Server have been fixed.

### Web Service Client

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- Support for nested COUNT IN clauses has been added to the generated Web Service Console Client. Empty and unused array fields will no longer be returned in the client output.  
2278428 (1066547)

### XDB Server

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- MFDB2UNL.CBL now allows the use of semi-colons within SQL statements.  
2661513 (1090755)

### XDB: Problems not classed above

[Back to the list](#)

- Previously, TESTCOVER configuration could cause spurious errors in XDB utilities.  
2677742 (1092299)

### XML Syntax Support Preprocessor

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- PREXML now handles conditional compilation correctly.  
2665552 (1091113)

- An XML file being opened for input is now closed correctly.  
2664760 (1091006)

### **XML Syntax Support Runtime**

[Back to the list](#)

- The XML run-time system now handles non-US EBCDIC characters correctly.  
2665518 (1091086)

# 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 WebSync service, where you can download fixes and documentation updates.
- The Knowledge Base, a large collection of product tips and workarounds.
- Examples and Utilities, including demos and additional product documentation.

To connect, enter <http://www.microfocus.com> in your browser to go to the Micro Focus home page.



**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](http://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.

## 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.

### Data Manager

When using Data Manager, please be ready to provide the following in addition:

- The version number for the z/OS component, found on the **Main Menu** panel.
- Whether you are using the Standard or Client/Server configuration.

- The data stores you are working with, including client-side and server-side versions where appropriate.
- Details of the data store contents, for example:

```
DDL, DCLGEN, or SYSPUNCH (for SQL data stores)
Copybooks (SEQ, VSAM, GDG, DL/I)
FDT (ADABAS)
DBD (DL/I)
```

## Creating Debug Files

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

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