Micro Focus COBOL Server 2.2 Update 2 Release 2

Release Notes

2015-04-28

Contents

Micro FocusCOBOL Server 2.2 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.

These release notes include information about the Release 2 installers for COBOL Server 2.2 Update 2 which include fixes up to HotFix 6 of the 2.2 Update 2 release. The Release 2 installers replace the GA installers of COBOL Server and include any fixes delivered with HotFixes 1 to 6 of 2.2 Update 2. See *Deployment to Windows XP and Windows Server 2003* in the *New Features* section for more information.

COBOL Server Variants and Deploying Applications

Visual COBOL is available in different IDE variants, each one of which is targeted by one specific variant of the development product:

- COBOL Server - the deployment environment for COBOL applications created with Visual COBOL for Visual Studio 2010 or Visual COBOL for Eclipse
- COBOL Server 2012 - the deployment environment for COBOL applications created with Visual COBOL for Visual Studio 2012
- COBOL Server 2013 - the deployment environment for COBOL applications created with Visual COBOL for Visual Studio 2013

You can install and use all COBOL Server variants with the same license.

You can only deploy applications to the specific variant of COBOL Server that is targeted by the Visual COBOL variant used to build the applications. For example, if you build your application using Visual COBOL for Visual Studio 2012, you can only deploy the target files to COBOL Server 2012. The application will not run in COBOL Server or COBOL Server 2013.

Micro Focus Heartbleed Update

The OpenSSL library used in this product has been updated to the latest version, 1.0.1i, to fix various vulnerabilities.

> **Note:** Visual COBOL now includes support for creating Web service and Enterprise Java Bean applications using the Interface Mapping Toolkit (IMTK) in conjunction with Enterprise Server. If you are upgrading to this release from an earlier version of Visual COBOL, you may need to apply for a new authorization code in order to access the functionality - please contact Micro Focus SupportLine to receive an updated authorization code. Note that the Visual COBOL Personal Edition license does not support the IMTK functionality.

Installation

Installing on Windows

System Requirements for COBOL Server for Windows

Hardware Requirements

The disk space requirements are approximately:

Platform	COBOL Server	Sentinel RMS License Manager
x86 Windows platforms	100MB	25MB
x64 Windows platforms	200MB	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:

- The Enterprise Server feature is not supported on Windows XP or Windows Server 2003.

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:

- On Windows Server 2003, you must have Microsoft's Windows Imaging Components (WIC) installed before you start installing COBOL Server.

  Download the 32-bit version of WIC from *http://www.microfocus.com/docs/links.asp?vc=wic* and the 64-bit version - from *http://www.microfocus.com/docs/links.asp?vc=wic64*.

- The Microsoft .NET Framework - the setup file installs Microsoft .NET Framework 4 with COBOL Server, .NET Framework 4.5 with COBOL Server 2012, or .NET Framework 4.5.1 with COBOL Server 2013. 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.
  - .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 COBOL 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, apart from Windows Server 2003. 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 Visual COBOL client and a new licensing server on the same machine.

  If you have a network server, you must update the license server before installing the product as the client is not able to communicate with license servers of versions older than 10000.2.660. On Windows, you can check the version of your license server by clicking **Help > About** in the Micro Focus Licensing System 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 COBOL Server features, you might be required to obtain and install additional third-party software in addition to the prerequisite software installed automatically by the COBOL Server setup file. The following information specifies the third-party software required for each feature.

- *Application server support for JVM COBOL* on page 7
- *Consolidated Trace Facility* on page 7
- *Database Access* on page 7
- *XML Extensions* on page 7

Application server support for JVM COBOL

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

The following application servers are supported using the following JDKs:

Application Servers	JDK version	Containers support version
Tomcat 7.0.39	1.6 / 1.7	Servlets 2.5
JBoss 7.1.1	1.6 / 1.7	Servlets 2.5
WebLogic 12.1.1	1.6 / 1.7	Servlets 2.5
WebSphere 8.5	1.6 / 1.7	Servlets 2.5

You need Oracle's JDK. The earliest supported release of Oracle's JDK 1.6 is 1.6.027. You can download Oracle's JDK from *Oracle's Web site*

Consolidated Trace Facility

• The Microsoft .NET Framework 2.0 or later is required for the CTF Viewer. It is available from the Microsoft .NET downloads area.

Database Access

Before you can use COBOL 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.

XML Extensions

• XML Extensions has the same requirements as Visual COBOL. Both 32-bit and 64-bit versions are available. See the *XML Extensions for Visual COBOL*, available from the Visual COBOL product documentation section of the Micro Focus SupportLine Web site for more details.
• Additionally, XML Extensions may be used in conjunction with Terminal Server.

Installing COBOL 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

• Visual COBOL is available in different IDE variants, each one of which is targeted by one specific variant of the development product:

  • COBOL Server - the deployment environment for COBOL applications created with Visual COBOL for Visual Studio 2010 or Visual COBOL for Eclipse

- COBOL Server 2012 - the deployment environment for COBOL applications created with Visual COBOL for Visual Studio 2012
- COBOL Server 2013 - the deployment environment for COBOL applications created with Visual COBOL for Visual Studio 2013
- COBOL Server 2010, COBOL Server 2012 and COBOL Server 2013 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) or a process (on UNIX) from an existing product is stopped and uninstalled. On Windows, do this as follows:

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

     ```
     net stop mf_ccitcp2
     ```

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

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

     For CCITCP2: `ccitcp2 -u`

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

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

     a. Open a COBOL 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

Installing as an Upgrade

This release will update an existing installation of COBOL Server 2.2.

Important:

- Before installing 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 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.

Before installing, check *Installation Restrictions and Requirements*.

Installing

Note: See *Installing as an Upgrade* first for important information when upgrading an existing installation of COBOL Server.

These are the steps to install this product:

1. Run the `cs2010_222_r2.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 the topic *Software Requirements*.

   Note: The respective installation files for COBOL Server 2012 and COBOL Server 2013 are `cs2012_222_r2.exe` and `cs2013_222_r2.exe`.

   `r2` stands for Release 2 of version 2.2 Update 2 of COBOL Server. The `r2` installers are provided with HotFix 6 of 2.2 Update 2 and enable you to install COBOL Server 2012 and COBOL Server 2013 on Microsoft's Windows XP and Windows 2003 platforms for the deployment of native and managed COBOL applications. Note that SOA functionality is not supported on these platforms. See *New Features* for more details.

   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 **Add or Remove Programs** (Windows XP) or **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 COBOL Server but you can install it if you wish.

COBOL Server Installation Options

To install COBOL Server you run `cs2010_222_r2.exe` which contains a number of product `.msi` files (Windows Installer packages). When run, `cs2010_222_r2.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 - `cs2010_release.exe`. For COBOL Server 2012, the filename is `cs2012_222_r2.exe`, and for COBOL Server 2013 - the filename is `cs2013_222_r2.exe`.

`cs2010_222_r2.exe` can take a number of parameters, enabling you to specify a number of different types of installation:

- Standard Installation

    Format:
    `cs2010_222_r2.exe`
    Summary:
    Full installation including License Manager and COBOL Server. During installation you can specify options including the location to which the components are installed.

- Non-interactive Installation

    Format:
    `cs2010_222_r2.exe /passive`
    Summary:
    Full installation, but the components are installed non-interactively using default options and directories.

- Silent Installation

    Format:
    `cs2010_222_r2.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:
    `cs2010_222_r2.exe /q InstallFolder=d:\cobolrts`
    Summary:
    Full installation, but the components are installed non-interactively with no user interface, and COBOL Server is installed to `d:\cobolrts`.

To see what parameters you can use, execute the following from the command line: `cs2010_222_r2.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 COBOL 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 COBOL Server section, click **Documentation**.

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

Note: For applications created with earlier Micro Focus products or earlier versions of Visual COBOL, note the following:

Database Access	Managed applications using SQL(DBMAN=ODBC) that were compiled in Visual COBOL 2.1 Update 1 must be recompiled in Visual COBOL 2.2 Update 2.
Existing Applications	Application executables that were compiled using earlier Micro Focus products must be recompiled from the sources using Visual COBOL.
Open PL/I Compiler	**Important:** If you are installing this release as an upgrade to Enterprise Developer 2.2 Update 1, after the upgrade you must rebuild any applications that are compiled using the –zp1 option.

The behavior of the –zp1 option has been reverted to that of versions of Enterprise Developer earlier than 2.2 Update 1, with an additional correction relating to Char Varying data items.

The behavior has been restored to that in Enterprise Developer versions earlier than 2.2 where, when compiling with –zp1, all parameters are treated as unaligned. (In Enterprise Developer 2.2 Update 1, the behavior when compiling with –zp1 was to not treat parameters as if unaligned).

When using the –zp1 compiler option, all Character Varying data items are now treated as if unaligned. In previous versions of Open PL/I, for Character Varying data items, the –zp1 unaligned requirement was applied only to structure members and parameters.

To illustrate the change, consider the following example:

```
zptest: proc options(main);

  dcl 1 st1,
    2 c char,
    2 x(4) char(7) var init ('a', 'xx', 'yyy', 'zzzz');

  dcl y(4) char(7) var init ('a', 'xx', 'yyy', 'zzzz');

  dcl sub entry ((4) char(7) var);

  call sub (x);

  call sub (y);

end;

sub: proc (z);

  dcl z(4) char(7) var;

  dcl i fixed bin(31);

 do i = 1 to hbound(z);
     z(i)  = 'x';
  end;

end;
```

Where:

- For x and z, each char (7) var item is 7 plus 2 bytes which equals 9 and then multiplied by 4 equals 36.
- If y were aligned on half-word by default, each array element is half-word aligned and each equals 10 bytes (9 + 1 pad byte), and the total size equals 40 bytes.
- At call sub (x), the calling argument and parameter are matched.

- At the `call sub (y),` the `y` element size (10 bytes) is mismatched against the parameter `z` element size (9 bytes) due to –zp1. This is incorrect and causes unexpected program behavior.

Due to this correction of treating all Char Varying data items as if unaligned when using –zp1, the size of CHAR VARYING arrays now differs from previous versions of Open-PL/I. For example:

```
   dcl X(4) char(7) var;

   Put skip list (size(X))  /* size is 36 bytes vs. 40 bytes in
previous versions of Open-PL1 */
```

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**.

To repair your installation on older versions of Windows, such as Windows XP:

1. Click **Start Menu > Control Panel > Add/Remove Programs**.
2. Click your Micro Focus product in the list of installed programs.
3. Click **Click here for support information**.
4. Click **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** (or **Add/Remove Programs** on older versions of Windows) in **Control Panel**.
3. On older versions of Windows such as Windows XP, ensure that **Show Updates** (at the top of the Add or Remove Programs dialog) is checked, so that any hot fixes or WrapPacks are listed.
4. 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 COBOL Server and Micro Focus License Administration. Uninstalling only COBOL 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
```

Installing on UNIX

System Requirements for COBOL Server for UNIX

Hardware Requirements for COBOL Server

The disk space requirements are approximately:

Platform	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	296	1.18	592	33
HP IA	619	2.48	1240	61
System Z running Red Hat Linux	254	1.02	508	34
x86-64 running Red Hat Linux	263	1.05	526	40
SPARC running Solaris	308	1.23	616	38
x86-64 running Solaris	284	1.14	568	30
System Z running SuSE SLES	257	1.03	514	34
x86-64 running SuSE SLES	266	1.06	532	40

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

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

  In addition, on IBM System z (390), you must have the following operating system libraries installed:

glibc-*.s390 glibc-*.s390x libgcc-*.s390 libgcc-*.s390x	
Additional libraries for HCO for SQL Server Tools	glibc-devel-*.s390 glibc-devel-*.s390x

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

- Oracle's Java Platform, Enterprise Edition (Java EE) 6 or Java 7 is required to execute COBOL JVM code and for native COBOL and Java interoperability. The earliest supported release of Java 6 is 1.6 Update 27. 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 1.6 is 1.6.0.13. 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 JDL 1.6 is Java 6.0.13. 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 licensing software. For local servers, you do not need to install it separately, as the setup file installs a new Visual COBOL client and a new licensing server on the same machine.
>
> If you have a network server, you must update the license server before installing the product as the client is not able to communicate with license servers of versions older than 10000.2.660. On Windows, you can check the version of your license server by clicking **Help > About** in the Micro Focus Licensing System 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 COBOL Server features, you might be required to obtain and install additional third-party software in addition to the prerequisite software installed automatically by the COBOL Server setup file. The following information specifies the third-party software required for each feature.

- *Application server support for JVM COBOL* on page 15
- *Database Access* on page 15
- *Java Development Kit (JDK)* on page 15
- *XML Extensions* on page 15

Application server support for JVM COBOL

Back to Top

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

The following application servers are supported using the following JDKs:

Application Servers	JDK version	Containers support version
Tomcat 7.0.39	1.6 / 1.7	Servlets 2.5
JBoss 6.1	1.6 / 1.7	Servlets 2.5
WebLogic 12.1.1	1.6 / 1.7	Servlets 2.5
WebLogic 12.1.1 on AIX 6.1	1.6.0 SR10 FP1 / 1.7 Release 1	Servlets 2.5
WebSphere 8.5	1.6 / 1.7	Servlets 2.5
WebSphere 8.5 on AIX 6.1	1.6.0 SR10 FP1 / 1.7 Release 1	Servlets 2.5

🖉 **Note:**

- On AIX and zLinux, you need to have IBM's JDK. The earliest supported release of IBM's JDK 1.6 is 1.6.0.13. 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 JDL 1.6 is Java 6.0.13. You can get the HP-UX Java JDK from *HP's Web site*.
- On all other platforms, you need Oracle's JDK. The earliest supported release of Oracle's JDK 1.6 is 1.6.027. You can download Oracle's JDK from *Oracle's Web site*.

Database Access

Back to Top

Before you can use COBOL 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.

Java Development Kit (JDK)

Back to Top

Compiling Java	Either the IBM or the Oracle Java Development Kit (JDK), version 1.5 or later, is required for compiling Java. The JDK is downloadable from the Oracle and IBM Web sites. 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
```

IMTK	The JDK is required for generating Java interfaces using the Deploy tool in the Interface Mapping Toolkit or the `imtkmake` command.

After installing the JDK, you need to set up your Java environment.

XML Extensions

Back to Top

- XML Extensions has the same requirements as Visual COBOL. Both 32-bit and 64-bit versions are available. See the *XML Extensions for Visual COBOL*, available from the Visual COBOL product documentation section of the Micro Focus SupportLine Web site for more details.

• Additionally, XML Extensions may be used in conjunction with Terminal Server.

Installing COBOL Server for UNIX

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.

Installing

These are the steps to install this product:

1. Give execute permissions to the setup file:
   ```
   chmod +x setup_cobol_server_2.2_update2_platform
   ```
2. Run the installer with superuser permissions:
   ```
   ./setup_cobol_server_2.2_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/VisualCOBOL`, (COBDIR).

   To install in a different location use the `-installlocation="Location"` parameter to specify an alternative directory location. For example:
   ```
   ./setup_cobol_server_2.2_update2_platform -installlocation="full path of
   new location"
   ```

   > ✏️ **Note:** You can use variables or the tilde syntax for the path for `-installlocation`. For example, the following examples are equivalent:
   > ```
   > -installlocation="/home/myid/installdir"
   > ```
   > ```
   > -installlocation="~myid/installdir"
   > ```
   > ```
   > -installlocation="~/installdir"
   > ```
   > ```
   > -installlocation="$HOME/installdir"
   > ```

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

   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, `-EDadminID="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`.

✏️ **Note:**

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

  ```
  ./setup_cobol_server_2.2_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.

After Installing

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

1. To set up your product, execute:

   ```
   . /opt/microfocus/VisualCOBOL/bin/cobsetenv
   ```
2. To verify that your product is installed, execute:

   ```
   cob -V
   ```

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

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

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

Installing as an Upgrade

This release works concurrently with the previous version of COBOL 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/VisualCOBOL`, by default).

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

  1. Execute the following command as root:

     ```
     mv /opt/microfocus/VisualCOBOL /opt/microfocus/VisualCOBOLversion
     ```
  2. Install the latest version as described in the section *Installing*.

* Install the latest version in a different location and set the environment to point to it. To do this, run the COBOL Server installer with the –installlocation option:

  1. Execute the following command:

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

> **Note:** You can use variables or the tilde syntax for the path for `-installlocation`. For example, the following examples are equivalent:
>
> ```
> -installlocation="/home/myid/installdir"
> ```
>
> ```
> -installlocation="~myid/installdir"
> ```
>
> ```
> -installlocation="~/installdir"
> ```
>
> ```
> -installlocation="$HOME/installdir"
> ```

2. Execute cobsetenv to set the environment and point to the new install location:

```
. /opt/microfocus/VisualCOBOL/cobsetenv
```

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

Installing silently

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

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

```
-silent -IacceptEULA
```

For example, execute:

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

After the application installation is complete you can install the license silently by executing the following commands:

If you have access to the Internet and an authorization code	Run the following as root:
	
	`cd /var/microfocuslicensing/bin`
	`./cesadmintool.sh -authorize AuthorizationCode`

If you don't have access to the Internet but have a file from Micro Focus that contains the license string	Run the following as root:
	
	`cd /var/microfocuslicensing/bin`
	`./cesadmintool.sh -install FileName`
	
	where *FileName* is the name of the text file that contains all the license strings to be used.

UNIX and Linux Installer Issues

Installing on Linux	On Linux, the 32-bit version of Java is required to install and use Visual COBOL for Eclipse. When you start the installation, if the 64-bit version of Java is already installed on your Linux machine, you might not be able to install Visual COBOL. This is a *known issue* with the Oracle Java installers for Linux which prevent you from installing both the 32-bit and the 64-bit versions of Java on the same machine. To work around this problem: • Download the 32-bit Java distribution in a compressed .tar format from the Oracle Web site. • Untar the distribution into a location different from the one used for the 64-bit Java version. For example, untar in `/usr/local/java32` and not in `/usr/local/java`. • Set JAVA_HOME and LD_LIBRARY_PATH to the 32-bit version of Java so that it is used to install and run Visual COBOL.

License Infrastructure Installer

- On some Solaris platforms, you can receive the following error message when SafeNet license server needs to be installed or upgraded on your machine:

```
tar: /safenet.tar: No such file or directory
```

To resolve this issue, wait for the installation to complete and then perform the following:

1. Navigate to the `safenet` directory in the COBDIR location.
2. With superuser permissions execute: `./MFLicenseServerInstall.sh`

- **Note:** The following information applies when you are installing on Red Hat Enterprise Linux (RHEL) 7. (RHEL 7 is a beta version and support for it is a technical preview only).

Certain configuration changes in RHEL 7 (such as the `/etc/inittab` file no longer available) required a change in the MF SafeNet license installer for this platform and the way you can manually manage the licensing service.

By default, the MF SafeNet licensing service is still configured so that it starts automatically when starting your machine. Only on RHEL 7, you must use the `systemctl` command available with the OS if you need to override the default behaviour – for example, if you do not want run the MF SafeNet licensing service at start-up or if you do not want the service to automatically start when you are configuring trace levels.

1. Create a file, MFSafeNet.service, in `/usr/lib/systemd/system/` with the following contents:

```
----------- start of /usr/lib/systemd/system/
MFSafeNet.service -----------
    [Unit]
    Description=Micro Focus SafeNet licensing daemons.
    Documentation=http://supportline.microfocus.com

    [Service]
    Type=forking
    ExecStart=/var/microfocuslicensing/bin/startboth.sh
    ExecStop=/var/microfocuslicensing/bin/stopboth.sh
    Restart=no

    [Install]
    WantedBy=multi-user.target
-----------  end of /usr/lib/systemd/system/
MFSafeNet.service  -----------
```

2. Use the systemctl command to manage the SafeNet service:

```
[ asroot ] systemctl option MFSafeNet
```

Where some of the values that *option* can take are:

reenable	Installs the SafeNet service.
is-enabled	Checks the status of the SafeNet service. Does not require root privileges.
start	Starts the SafeNet service.
stop	Stops the SafeNet service.
restart	Restarts the SafeNet service.
disable	Disables the SafeNet service so it does not start when the machine is booted.

enable	Enables the SafeNet Service so it starts when the machine is booted.

For more information about systemctl, refer to the help available with the RHEL OS.

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.

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_COBOLServer2.2.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.
> - The latest version of the SafeNet licensing software is required. See the *Software Requirements* section in this document for more details.
> - Your entitlement for using this product is governed by the Micro Focus End User License Agreement and by your product order. If you are unsure of what your license entitlement is or if you wish to purchase additional licenses, contact your sales representative or *Micro Focus SupportLine*.

To buy and activate a full unlimited license

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

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

To start Micro Focus License Administration

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.

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

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.

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

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**.

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

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

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

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

To obtain more licenses

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

New Features in COBOL Server 2.2 Update 2

Character set enhancements

The following character sets, available using the MFCODESET environment variable, have been enhanced or added in this release:

- Thai Extended (0066) - new
- Korean (0082)
- Simplified Chinese (0086)
- Traditional Chinese (0886)

There are also a number of double-byte character sets that are now capable of mixed single-byte and double-byte character conversion; see the definition of MFCODESET in *Environment Variables in Alphabetical Order* for more information.

Deployment to Windows XP and Windows Server 2003

Note: This feature has been added in HotFix 6 of Micro Focus Visual COBOL for Visual Studio 2012 and 2013 and COBOL Server 2012 and 2013 2.2 Update 2.

A new cbllink option, -y, is available for Visual COBOL for Visual Studio 2012 or 2013 that enables you to create native and managed COBOL applications that you can deploy to Microsoft's Windows XP and Windows Server 2003 platforms.

When deploying on these platforms, you must use new installers, known as Release 2 versions, for COBOL Server 2012 and COBOL Server 2013 2.2 Update 2. Note that SOA functionality is not supported on these platforms.

To prepare your applications for running on Windows XP or Windows Server 2003:

1. Apply HotFix 6 to your installation of Visual COBOL 2.2 Update 2 for Visual Studio 2012 or 2013.
2. Recompile your application in Visual COBOL using the `cbllink -y` option.
3. Install COBOL Server 2012 or 2013 2.2 Update 2 Release 2 onto the deployment machine that is running Windows XP or Windows Server 2003.

   You can download the Release 2 installers from the *Product Updates* section of the *Micro Focus SupportLine Web site*. Refer to the readme for installation instructions.
4. Execute your application in COBOL Server 2012 or 2013 on the machine running Windows XP or Windows Server 2003.

Language Environment (LE) Support

Language environment is a set of standard callable routines and run-time options that can be used in any application that is written in a programming language that supports LE. It is intended to facilitate the development of mixed-language applications. This is provided with HotFix 4 of Visual COBOL and COBOL Server 2.2 Update 2.

For more information, see *General Reference > Language Environment (LE) Support* in the Visual COBOL product help.

External Security Facility (ESF)

The Enterprise Server External Security Facility (ESF) now supports caching the results of some security queries. This can improve the performance of enterprise server instances and of the MFDS when they are configured to use external security.

To enable caching, you need to set non-zero values for the **Cache limit** (maximum size of the cache) and **Cache TTL** (Time To Live, or how long before a cached result expires) settings on the **MFDS Security** tab, the **Default ES Security** tab, or on the **Security** tab for an individual enterprise server. (Currently, the cache settings for Security Managers have no effect; you need to set cache parameters on one of the three Security pages mentioned earlier.)

For more information, see *http://supportline.microfocus.com/examplesandutilities/doxygen/caching.html*.

New tunables

The following tunables have been added in this release:

reduce_java_signals This tunable specifies the options that are passed to a JVM when mixing Java and COBOL.

Known Issues

Refer to the *Known Errors 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.
ICETOOL Emulation	ICETOOL emulation for managed code is not available in this release.
Installation	• Before installing 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. • 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. • On UNIX, check *UNIX Installer Issues* before you start the installation.
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).

Note: On Windows, COBOL Server 2012 and 2013 2.2 Update 2 have new Release 2 installers that replace the GA installers. The Release 2 installers are provided with the HotFix 6 update of 2.2 Update 2 and include any fixes delivered with HotFixes 1 to 6. These release notes include information about the issues resolved with these HotFixes on Windows that could potentially result in a change in behavior:

- *Significant Changes in Behavior or Usage in 2.2 Update 2 Release 2*
- *Significant Changes in Behavior or Usage in HotFix 5*
- *Significant Changes in Behavior or Usage in HotFix 4*
- *Significant Changes in Behavior or Usage in HotFix 3*
- *Significant Changes in Behavior or Usage in HotFix 2*
- *Significant Changes in Behavior or Usage in HotFix 1*
- *Significant Changes in Behavior or Usage in 2.2 Update 2 GA*

Significant Changes in Behavior or Usage in 2.2 Update 2 Release 2

Back to Top

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

- *CAS Security*

CAS Security

Back to the list

- The Enterprise Server External Security Facility now includes MLDAP ESM Module 2.0, with a new algorithm for identifying the best-matching resource-access rule and ACE for resource-access security checks. This algorithm is faster and matches most customers' expectations.

  The new algorithm also provides an optional "username substitution" feature. It can be enabled by setting "rule substitutions" to "yes" in the `[Operation]` section in the Security Manager configuration text area. When this is enabled, the string "${user}" in a resource-rule name will be replaced with the name of the user that makes the request. For example, a DATASET rule named "USERS.${user}.**" would apply to datasets with the requesting user's name as the second qualifier. In rare cases, customers with complex, ambiguous resource-access security rules might see experience changes in behavior as a result of the new algorithm. The old algorithm is still supported and can be enabled by setting "version 1 authentication" to "yes" in the `[Operation]` section of the Security Manager configuration.

  2807531 (1097783)

Significant Changes in Behavior or Usage in HotFix 5

Back to Top

This HotFix does not include any changes that could affect the behavior of existing applications.

Significant Changes in Behavior or Usage in HotFix 4

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

Host Compatibility Option for SQL Server (HCOSS)

The mainframe dialect DB2 CHAR() function now calls a new SQL Server scalar function dbo.MFCHAR(). To create the new function in your application's SQL Server database, you can either:

*   Run a DSN bind against the customer database.

    Or:
*   Execute the `%ALLUSERSPROFILE%\Micro Focus\Enterprise Developer\hcoss \InstallDigitsFunction.sql` script.

    Additionally:
*   The return type for the HCOSS DB2 CHAR() function has changed from CHAR(255) to VARCHAR(255).

2804069 (1097253)

Significant Changes in Behavior or Usage in HotFix 3

This HotFix does not include any fixes that result in changes in behavior or usage.

Significant Changes in Behavior or Usage in HotFix 2

This HotFix does not include any fixes that result in changes in behavior or usage.

Significant Changes in Behavior or Usage in HotFix 1

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

*   *File Handling - External File Handler*
*   *J2EE Connector*

File Handling - External File Handler

*   Custom file handlers (using DYNREDIR) are now called for each part of a concatenated file.

    2795077 (1096322)

J2EE Connector

*   This release provides a new command-line argument to Java, mf.ssl.algorithm, which can be set to an appropriate algorithm.

    2799213 (1096684)

Significant Changes in Behavior or Usage in the 2.2 Update 2 GA

Back to Top

- *Compiler*
- *Compiler Front-end*
- *Documentation*
- *J2EE Connector*

Compiler

Back to the list

- When using the HOSTRW directive with the mainframe dialect, Report Writer will now produce the full range of ASA control characters and will emulate mainframe print files.

  2697615 (1094527)

Compiler Front-end

Back to the list

- Fixed Binary (p<=7) is now an 8-bit, signed, 2's complement binary integer by default.

Documentation

Back to the list

- The default setting for the MFALLOC_PCFILE environment variable has changed; the default is now set to Y, which means that when cataloguing a file that has a DCB attribute of DSORG=PS, a physical file is created for it if one does not exist. Previously, the default was set to N, which meant that a file was not created.

  2697571 (1094370)

J2EE Connector

Back to the list

- The listSystem.properties file in package com.ibm.ctg.client was missing documentation for some sections.

  (606556)

Resolved Issues

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

✎ **Note:** On Windows, COBOL Server 2012 and 2013 2.2 Update 2 have new Release 2 installers that replace the GA installers. The Release 2 installers are provided with the HotFix 6 update of 2.2 Update 2 and include any fixes delivered with HotFixes 1 to 6. These release notes include information about the issues resolved with these HotFixes on Windows:

- *Resolved Issues in 2.2 Update 2 Release 2*
- *Resolved Issues in HotFix 5*
- *Resolved Issues in HotFix 4*
- *Resolved Issues in HotFix 3*
- *Resolved Issues in HotFix 2*
- *Resolved Issues in HotFix 1*
- *Resolved Issues in 2.2 Update 2 GA*

Resolved Issues in 2.2 Update 2 Release 2

Back to Top

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

- *.NET Compiler*
- *CAS Security*
- *MF Directory Server*
- *SQL: DB2 ECM*
- *SQL: OpenESQL*

.NET Compiler

Back to the list

- For class programs containing COBOL files declared in the OBJECT section, it is now possible to explicitly add the program to a run unit. Previously, this would cause a run-time exception.

  2819597 (1099273)
- The use of the SCREEN SECTION CONTROL phrase in .NET unverifiable code no longer causes the generation of illegal code.

  2818736 (1099170)
- For class programs containing COBOL files declared in the OBJECT section, it is now possible to explicitly add the program to a run unit. Previously, this would cause a run-time exception.

  2802641 (1099053)

CAS Security

Back to the list

- Audit SNMP:Cannot find module (NET-SNMP-PASS-MIB).

  2817175 (1098946)

MF Directory Server

Back to the list

- The Enterprise Server Administration web page makes additional authorization checks before displaying screens.

    2819069 (1099192)
- The Enterprise Server Administration web page no longer displays sensitive session data.

    2818974 (1099178)
- Password length restriction has been fixed in the Enterprise Server Administration login page.

    2818973 (1099179)

SQL: DB2 ECM

Back to the list

- The DB2 ECM incorrectly generated code to process SET CURRENT PACKAGE PATH, resulting in SQLCODE -4952 when executed.

    2817342 (1098963)

SQL: OpenESQL

Back to the list

- Windows GUI projects compiled with the SQL compiler directive might throw a MicroFocus.COBOL.Program.COBOLStopRunException on GOBACK.

    2816463 (1098907)

Resolved Issues in HotFix 5

Back to Top

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

- *.NET Compiler*
- *CAS (COBOL App Server) General*
- *CAS Security*
- *Compiler*
- *LE370 Support*
- *MF Communications Server*
- *MF Server Administrator (GUI)*
- *Setup*

.NET Compiler

Back to the list

- Verification or run time errors are no longer produced when NUMPROC(ACOS) is specified, and a level 88 item is declared for a numeric item in the Linkage section of your program.

    2815137 (1098693)

CAS (COBOL App Server) General

Back to the list

- You can now use the environment variable *ES_ESM_DISABLE_DFLTUSER_ESMAC* in order to disable the ESMAC default user. When this variable is set, the "DEFAULT" button on the logon screen is disabled and a valid userid and password must always be entered.

  2813092 (1098438)
- DBCS fields are now processed correctly when the PS attribute is set in the DSECT rather that defined in the MAP in single field, groups and OCCURs.

  2811683 (1098233)

CAS Security

Back to the list

- This release enables you to prevent an Enterprise Server Monitor and Control (ESMAC) user from displaying an enterprise server's environment variable settings using the "Env. Vars." button or the direct URL. To enable this feature, you need to create a new element (ENV*) in the LDAP schema in the CN=MFESMAC group below CN=Enterprise Server Resources. This release includes an updated copy of the supplied LDIF import files that contain this change. Once this element is installed in the security manager, you can control the visibility of the environment variables page by configuring the group/user access rights using the microfocus-MFDS-Resource-ACE attribute.

  2811696 (1098264)

Compiler

Back to the list

- Data names that start with a numeric digit and contain DBCS characters are now accepted by the Compiler.

  2813223 (1098456)
- A MOVE operation of an alphanumeric literal to an unsigned numeric DISPLAY field under RM/COBOL emulation now executes correctly.

  2812561 (1098446)

LE370 Support

Back to the list

- The Language Environment functions CEEGMT, CEEUTC and CEELOCT now return the number of seconds to millisecond precision.

  2796098 (1098276)

MF Communications Server

Back to the list

- An issue with leaked sessions for IMS Connect conversations has been corrected.

  2797552 (1096486)

MF Server Administrator (GUI)

Back to the list

- If access to Enterprise Server Administration is restricted by use of an MLDAP ESM-based external Security Manager, you can now configure a user to have access to the "Security" menu item but not to the "Options" menu item.

  2804728 (1097916)

Setup

- Micro Focus COBOL Server 2012 and COBOL Server 2013 now support Microsoft Windows XP and Windows Server 2003 platforms.

  2804421 (1097492)

Resolved Issues in HotFix 4

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

- *Compiler*
- *File Handling - External File Handler*
- *LE370 Support*
- *MF Directory Server*
- *MF Server Administrator (GUI)*
- *MLDAP API Interface*
- *XML syntax support runtime*

Compiler

- The Compiler no longer errors preprocessed lines containing non-ASCII characters in the indicator area. Previously, this could cause user programs using the htmlpp preprocessor to fail to compile.

  2805067 (1097977)
- The specification of an alphanumeric literal in the VALUE clause of a DBCS data item (i.e. the G\N prefix is missing) is now accepted as an MF extension. This still generates an error under mainframe dialects, but can be hidden/suppressed like any other flag message.

  2798426 (1096574)

File Handling - External File Handler

- MFSORT now takes the record length from a previous output file, if its record length is specified, rather than defaulting to the value in the SORTIN statement.

  2808188 (1098243)

LE370 Support

- Mainframe Language Environment support (LE Services) is now available in Micro Focus Visual COBOL and COBOL Server.

  2799388 (1097806)

MF Directory Server

- It is now possible to expand and collapse items within the tree view of the external security manager security resources in Enterprise Server Administration.

  2801421 (1096979)

MF Server Administrator (GUI)

Back to the list

- Previously, when expanding or collapsing items in the tree view for external Security Manager within Enterprise Server Administration, items associated with a user or a group no longer would always move to the top of the resource list.

  2803399 (1097848)

MLDAP API Interface

Back to the list

- The MLDAP ESM module now recognizes a wider range of errors that indicate that the specified LDAP server is unavailable and, if configured, the server will retry to establish a connection.

  2799921 (1098128)

XML syntax support runtime

Back to the list

- The namespace prefix in the namespace declaration is now handled correctly when the element itself does not contain a prefix.

  2799691 (1098150)

Resolved Issues in HotFix 3

Back to Top

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

- *.NET Compiler*
- *CAS (COBOL App Server) Security*
- *Compiler*
- *File Handling - Fileshare*
- *NCG*
- *Run-Time System*

.NET Compiler

Back to the list

- The INITIALIZE statement is now working as expected when applied to a group item where an OCCURS subgroup follows a FILLER data item. Previously, this could produce bad code, initializing incorrect areas of the group.

  2805149 (1097372)

CAS (COBOL App Server) Security

Back to the list

- The number of security manager user group members displayed by the Enterprise Server Administration and the esfadmin tool is no longer limited to a maximum of 1024.

  2807579 (1097703)
- Trying to use the SNMP audit emitter with Enterprise Server no longer fails with a run-time system error 114.

  2800729 (1096951)

Compiler

• Compiling a program with the COBSQL preprocessor, which contains a COPY REPLACING statement with trailing spaces in the replacement pseudo text, now works as expected.

  2807470 (1097737)

• When importing a Visual COBOL source file, the generation of a CBLast (COBOL Abstract Symbol Table) file no longer hangs when instructed to process a COBOL.DIR file.

  (609062)

File Handling - Fileshare

• When a file is closed under Enterprise Server, the file's details are correctly removed from Fileshare. Previously, some details were not removed.

  2810549 (1098111)

NCG

• An error has been fixed in COMPUTE statements of the following form: COMPUTE a = b / constant where a and b are COMP-3 or DISPLAY; a has greater than 19 digits and b has less than or equal to 19 digits, and constant is a literal which is a power of 10 (such as 10, 100, 1000, etc.)

  2808008 (1097715)

Run-Time System

• On a 32-bit Enterprise Server running on Windows, tasks that are blocked in the operating system can now be canceled without terminating the SEP process.

  2807997 (1097918)

Resolved Issues in HotFix 2

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

• *CAS (COBOL App Server) General*
• *Compiler*
• *Documentation*
• *File Handling - External File Handler*
• *File Handling - Fileshare*
• *MLDAP API Interface*
• *Run-Time System*

CAS (COBOL App Server) General

• An issue with dynamic debugging has been fixed where, previously, the ports that were freed were not being reallocated.

  2785911 (1095510)

Compiler

- Compilation with a mainframe dialect, of a program containing a CALL statement with a mixture of non-01 level group items and literals, now proceeds as expected with no internal error produced.

  2803613 (1097190)

Documentation

- The product documentation about the START statement and Relation Conditions now states that THEN may be used instead of THAN.

  2799291 (1096903)
- The Enterprise Server documentation for Retain Periods has been updated to include additional information specific to spool output.

  2790146 (1095777)

File Handling - External File Handler

- The rollback recovery process is now working as expected.

  2802180 (1097066)

File Handling - Fileshare

- When handling indexed files, the correct .IDX file is now being processed.

  2803247 (1097279)

MLDAP API Interface

- The MFDS GUI and the ESFADMIN utility now display the pages with LDAP query results.

  2681539 (1092705)

Run-Time System

- The tunables default_cancel_mode and subsystem_cancel_mode both have a new setting, which enables programs to remain in memory after they are canceled; this is opposed to the default behavior, which physically removes .dll files and shared objects from memory when they are canceled.

  2690881 (1096628)

Resolved Issues in HotFix 1

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

- *CAS (COBOL App Server) General*
- *Compiler*

CAS (COBOL App Server) General

Back to the list

- The characteristics of an FCT that references a cataloged file are now refreshed on each file open.

  (606250)

Compiler

Back to the list

- A source line longer than the maximum supported by the compiler no longer receives an error about truncation if the line is simply a comment.

  (607851)

Compiler - Managed Code

Back to the list

- When compiling for managed code (.NET or JVM), a zero length literal used as a value for a PIC N data item no longer crashes compilation with run-time error 181.

  2799176 (1096677)
- Comparisons between PIC N or PIC G items and ALL hex-literals are now working correctly.

  2795393 (1096266)

File Handling - External File Handler

Back to the list

- The ACUFH interface between the MF File Handler and the RM File Manager will no longer report an 05 status (optional file created) to more than one COBOL run unit for creation of the same file. The 05 status will be reported to the COBOL run unit that actually created the file. The RM File Manager that runs under ACUFH and the Micro Focus File Handler for Visual COBOL now includes optimizations that enable it to use pread and pwrite system calls and to report status 99 (record locked) quicker. These optimizations match the optimizations added to the RM File Manager within RM/COBOL.

  (607495)

MF Directory Server

Back to the list

- The MFDS GUI now correctly displays external Security Manager resource ACL strings that are greater than 3K byte length.

  2800727 (1096978)
- The MFDS -x XML export option was not exporting Windows Monitoring and Management configuration values for enterprise server instances.

  2794382 (1096428)

Run-Time System

- An error in generated code when initializing comp-2 data items from fractional literal values has been fixed.

  2800938 (1096960)

XML Syntax Support Run-Time

- The XML I/O run-time used to read the whole document into memory which caused an out-of-memory error.

  2801337 (1096999)

Issues Resolved in 2.2 Update 2 GA

- *.NET Compiler*
- *.NET ESQL Support*
- *.NET Run-Time System*
- *Adis*
- *CAS (COBOL App Server) General*
- *CAS Admin Console*
- *CAS Security*
- *CAS XA Switch modules*
- *CCI TCP/IP*
- *Compiler*
- *Codeset Support*
- *Documentation*
- *ES Cluster*
- *File Handling: External File Handler*
- *JVM: Compiler*
- *JVM: Run-Time System*
- *MF Communications Server*
- *MF Directory Server*
- *MFA Server*
- *MFA SyncMon*
- *MFBSI*
- *MFIO*
- *NCG*
- *OO Run-Time System (32-bit)*
- *Run-Time System*
- *Setup Issues*
- *SQL: Cobsql*
- *SQL: DB2 ECM*
- *SQL: OpenESQL*
- *Unassigned*
- *Web Service Client*
- *XML syntax support runtime*

.NET Compiler

Back to the list

- Comparisons between PIC N or PIC G items and ALL hex-literals are now working correctly.

  2795393 (1096266)
- The CURRENT-DATE function, using reference modification with an implied length (e.g. FUNCTION CURRENT-DATE(3:)), now behaves as expected when compiled to managed COBOL.

  2788009 (1095691)
- In Managed COBOL only, an unreferenced elementary field of an "IS EXTERNAL" data item would not be initialized by the INITIALIZE verb, even though the containing group item was referenced. This is now working correctly.

  2787385 (1095405)
- The performance of the .NET Compiler has been enhanced. Previously, programs that included multiple pointers and comp-5 items with value clauses could take a long time to load. The use of the XML preprocessor could lead to this condition, since it generates data of this type.

  2784731 (1095278)
- Correct behavior is now being displayed when the INITIALIZE statement is used on DBCS data, where the initializing literal is a single-byte alphanumeric.

  2784714 (1095079)
- Exponentiation with a literal exponent of 2 (or multiple of 2) on a signed field is now working as expected. In previous versions of the product, such an operation could lead to invalid code.

  2784503 (1095063)
- Compatibility of SPZERO with native COBOL code has been improved in the following two cases: 1) If a-9 = space (where a-9 is defined as pic 9(n) DISPLAY) With SPZERO on, this comparison will now always yield a false result. 2) Move a-x to a-9 (where a-x is pic x(n) and a-9 is pic 9(n)) In the case where a-x contains spaces, this move will now result in a-9 containing zeroes.

  2676477 (1093768)

.NET ESQL Support

Back to the list

- When using OpenESQL for ADO.NET, the first execution of a statement for SQL Server no longer locks the varbinary host variable sizes.

  2791617 (1095920)
- The OpenESQL pre-compiler sometimes generated incorrect code if a PIC X(n) VARYING host variable was used in a COBOL JVM project.

  2787380 (1095934)
- The managed SQL run-time system now correctly handles variable string lengths for both 49-level COMP fields and 49-level COMP-5 fields.

  2782088 (1094793)
- The OpenESQL native ODBC wrapper used in managed applications would sometimes incorrectly set index past the end of table before moving information to the table which resulted in a COBOL subscript error.

  2780447 (1094665)

.NET Run-Time System

Back to the list

- In managed code, multiple processes using the same input file in a SORT statement will no longer get intermittent open failures.

2790155 (1095759)

Adis

Back to the list

- When using X"AF" function 81, screen attributes are now inherited correctly.

    2782580 (1094878)
- Using an ACCEPT statement followed by a display of an OUTPUT RIGHT item and an ERASE EOL item no longer causes a corruption of a screen section.

    2695444 (1093924)

CAS (COBOL App Server) General

Back to the list

- Using the INPUTMSG parameter for the XCTL and LINK commands is now working correctly.

    2790518 (1095805)
- On user syncpoint, a 500-error no longer returns to the client if the application did not issue a WEB SEND.

    2780958 (1094671)
- When linking to a program with a channel, the current channel was not always honoured.

    2779977 (1094556)
- Enterprise Server is not longer sending a FREEKB to the terminal at the end of a task when there is more work pending for the terminal.

    2691707 (1093544)
- You no longer receive an intermittent signal 11 in MFCS during shutdown.

CAS Admin Console

Back to the list

- When starting an enterprise server instance, the location of the work files may differ depending on whether the instance was started using a browser or from the command line. See the documentation for "system directory" in the topic "Server Instance Properties General".

    2660616 (1090612)

CAS Security

Back to the list

- The es-ldap-update.cmd script has been updated for the Visual COBOL product line. The script is used to install a sample set of security definitions when LDAP-based security is used with Enterprise Server.

CAS XA Switch modules

Back to the list

- EXEC SQL RESET CONNECTION has been updated and is used to drop Global Temporary Tables at the end of tasks.

    2693269 (1093613)
- EXEC SQL SYNCPOINT has been updated and now correctly handles ON COMMIT actions for DECLAREd global temporary tables.

    2682648 (1093611)

CCI TCP/IP

- CCITCP client connections could intermittently fail on some platforms due to transient errors in the TCP/IP stack. CCITCP is now more aggressive at detecting and retrying client connections under these conditions. This primarily affects COBOL Web services clients, some Enterprise Server command-line utilities, and Fileshare clients.

    2794263 (1096355)
- INT and CSO modules that use the Casfile API can now successfully connect to SSL-secured Enterprise Server listeners.

    2696022 (1094318)

Compiler

- Programs with a mainframe dialect that contain a paragraph declaration that is not preceded by a period and that is previously referenced now compile as expected.

    2793046 (1096112)
- Complex table VALUE syntax is now working as expected.

    2792013 (1095954)
- Compilation no longer hangs when REPLACE and COPY REPLACING is active and the source code has multiple lines ending in a comma.

    2791425 (1095905)
- READ and WRITE statements with the RM filehandler for files defined with the "RECORD VARYING FROM 0 TO ..." syntax now behave as expected.

    2785986 (1095385)
- An INSPECT CONVERTING statement on a subscripted sliding item now executes as expected.

    2785328 (1095244)
- Setting the LINE-COUNT(2) Compiler directive on a project no longer causes the IDE to crash during a background syntax check.

    2784751 (1095114)
- Data items with DBCS characters which are defined as SQL data types are now processed correctly.

    2783799 (1094976)
- The OSEXT and COPYEXT directives now work with quoted names (with or without spaces).

    2780350 (604653)
- Compiling programs that use both the "WITH DEBUGGING MODE" and "IS INITIAL" clauses now produces correct object code.

    2779266 (1094498)
- Programs that use an external report file now execute as expected.

    2698699 (1094352)
- The performance of the syntax constructs "SET ADDRESS OF .. TO ADDRESS OF ..." when using the AMODE compiler directive has been improved.

    2697051 (1094174)
- A MOVE of 'ALL <alphanumeric literal>' to a numeric display item is now correctly emulated under DIALECT(RM).

    2648551 (1089534)
- The IDE now correctly indicates the location of errors in multi-program source.

    2541308 (1081744)

- Using Watch/Quick Watch on a data item with subscripts, where one of the subscripts is also subscripted, now produces the correct results.

  2463792 (1075281)
- A program that exceeds the system limit of 254 DETAIL groups for a report now receives an appropriate error message "COBCH1692S Too many DETAIL groups specified for report".

  2458349 (1096071)

Codeset Support

Back to the list

- The offset of input segments is now calculated correctly. In order to apply the fix, you must regenerate the MFS source.

  2695463 (1093948)

Documentation

Back to the list

- The documentation for the MFBSI CTF trace option has been corrected in the online help. It now reads: mftrace.comp.mfbsi.emx#all = true

  2693323 (1093631)
- The description for the MULTI-NESTED topic under DB2 Compiler Directive Options was incorrect.

  2783274 (1094953)
- The topic about the ILSMARTLINKAGE Compiler directive in the product help now includes information about the get_Reference() method (JVM COBOL) and the .Reference property (.NET COBOL) that the classes and types generated with ILSMARTLINKAGE produce. If you pass such a class or type as a parameter to a program that receives it "by reference", you need to use the "by reference" object by specifying the get_Reference() method or .Reference property, respectively. This returns an object that encapsulates the ILSMARTLINKAGE parameter so it be used with a method that is declared as "by reference". You also need to use get_Reference() or .Reference with the RunUnit:Call() method.

  2779516 (1094514)
- The setup file installs the product and any missing third party software, and will install the Java 7 Update 27. This information is now included in the *Software Requirements* section of the product help.

  2785427 (1095199)
- The setup file installs the product and any missing third party software, and will install the .NET Framework v4.0. This information is now included in the *Software Requirements* section of the product help.

  2672774 (1095057)

Enterprise Analyzer Integration

Back to the list

- An issue with the DISPLAY ... LINE statement being unable to process expressions has been fixed.

ES Cluster

Back to the list

- In a clustered configuration of Enterprise Server, on some platforms, MFCS could crash during startup of an enterprise server instance due to attempting to process communications with the cluster manager before initialization was complete.

File Handling - External File Handler

- An automatic close of a file opened in a container no longer causes a rollback.

  2790362 (1095956)
- Previously, a file could be left with its integrity bit set to transactional if a process included a mix of transactional and non-transactional opens and the last close of the file was a non-transactional one.

  2785682 (1095657)
- The transaction log now correctly shows the timestamp for the prepare, commit and rollback operations.

  2784948 (1095162)
- If a VSAM file is opened for an OUTPUT in a RANDOM/DYNAMIC access mode, the file virgin state is changed to a non-virgin even if no records are written to it. If the file is opened for an OUTPUT in a SEQUENTIAL access mode, its virgin state is retained.

  2781975 (1094779)
- The MFALLOC_PCFILE environment variable now works as expected. Previously, it would be bypassed when the ES_ALLOC_OVERRIDE environment variable was also specified.

  2692290 (1093977)
- During Open OUTPUT of a VSE VSAM reusable file, with DISP=OLD, the file is no longer reset; the file is opened in EXTEND mode.

  2638640 (1089073)

JVM - Compiler

- The INSPECT CONVERTING statement, when applied to DBCS data, now produces the expected results when compiling to JVM COBOL.

  2784715 (1095080)
- A STRING statement that has contiguous literal operands with a total length of more than 8192 bytes no longer causes system errors during compilation.

  2700765 (1094513)
- When compiling JVM COBOL, moving subscripted operands to multiple targets now works as expected.

  2695442 (1093923)
- Previously, with JVMGEN on, the Compiler was failing to compile a program that includes a working-storage section with a very large number of VALUE clauses. Although this may still happen in some cases, the incidence of problem programs has been greatly reduced.

  2693676 (1094165)

JVM - Run-Time System

- Previously, when compiling an application with the JVMGEN Compiler directive and the application included a large number of "value" clauses in the working-storage section, the "value" clauses were not always.

  2784025 (1095274)
- Negative single digit results no longer evaluate to zero.

  2696486 (1094062)

MF Communications Server

- Certain Enterprise Server administration actions such as notifying a running enterprise server of a security update could cause MFCS to hang.

  2784219 (1095045)

MF Directory Server

- The Enterprise Server Administration no longer terminates when trying to display a list of users registered on an external Security Manager.

  2788461 (1095505)
- The 64-bit MFDS is now able to read and write XML configuration data.

MFA Server

- This release provides a fix for abend 0C4 in XDBWWWM0.

MFA SyncMon

- Previously, PDS members without ISPF statistics caused an error message "Input string was not in a correct format" when processing the timestamp. Now the current time is used. SyncMon2 also downloads the entire PDS every time.

  2783738 (1094996)
- The product now displays a useful error message and not an exception when a user specifies an illegal output.
- Removing a rule from the SM2 dialog no longer causes other rules to be removed from the dialog.

MFBSI

- Support has been added for the Control-M $JULIAN/$GREG/$WEEK# functions using the Control-M expression or variable parameters.

  2698531 (1094301)

MFIO

- Specifying a leading ";" in an environment variable containing a file path no longer results in the file not being found.

  2693286 (1093707)

NCG

- Using a "MOVE alphanumeric-item to numeric-item" statement in programs generated with the CHECKNUM directive now correctly results in a Run-Time System error 163 (invalid numeric data) message.

  2796191 (1096340)

- Building programs that use DIALECT(RM) and that contain calls with more than eight parameters no longer fails with a RTS 114 error.

  2788746 (1095583)
- An issue with statements of type "compute edited-item = expression", where expression evaluates to a value larger than the value that edited-item can store, and so truncation is required, has been fixed. This only affected Intel x86 32-bit generated code when the HOSTARITHMETIC Compiler directive was set.

  2782400 (1094841)
- Compiling code that contains alphanumeric intrinsic functions with very long parameters could previously result in an error at generate time. It now generates successfully.

  2782306 (1094942)
- A bug in the MOVE statement where the source item is S9(15)V99 COMP-3 and the target item S9(8)V9(9) comp-3 has been fixed.

  2697129 (1094607)
- The performance of arithmetic with COMP-3 items on the 390 platform has been greatly improved.

  2683340 (1092877)
- Programs that include 8-byte comp/comp-5 variables in a PERFORM loop termination condition, with the OPT Compiler directive specified, now compiles successfully in 32-bit mode.
- An issue with the code generated for alphanumeric moves on Intel x86-32 when the OPT(4) Compiler directive was specified has been fixed.
- You no longer receive an RTS 114 error when processing invalid directives.
- You no longer receive an RTS 200 error in debuggable generated code (.gnt) programs compiled with the amode(31) Compiler directive.
- A problem with setting breakpoints on some EXEC SQL statements has been fixed.

OO Run-Time System (32-bit)

Back to the list

- Native object-oriented programs with multiple methods that use local-storage data now execute as expected.

Run-Time System

Back to the list

- You can now use a configuration file that has a spacey filename to start Audit Manager as a service.

  2785459 (1095200)
- The debugger now displays correctly the content of non-ASCII characters in programs compiled with the CHARSET(EBCDIC) Compiler directive.

  2782246 (1094947)
- In some situations, the processing of a Run-Time System error in an Enterprise Server container could cause the container to hang or crash. This has been fixed.

  2690883 (1094783)

Setup Issues

Back to the list

- The mfsupport permissions have been modified so that any user with access to the product can now run mfsupport.

  2781319 (1094713)

SQL: Cobsql

- COBSQL now correctly processes source lines that only contain a single character at column 72.

  2781493 (1094727)
- COBSQL now correctly processes SQL statements with continuation lines.

  2781299 (1094716)

SQL: DB2 ECM

- A new directive option, DB2(ALEBRA), has been added to the DB2 ECM preprocessor to prevent ASCII/EBCDIC translation of host variables used in SQL statements. DB2(ALEBRA) is applicable only when using the EBCDIC character set and the Alebra Remote DB2 Access software.

  2789897 (1095736)
- Programs using SQL TYPE AS CLOB compiled with host variables were flagged with COBCH0233S Compiler error because the reserved word "AS" is not supported in mainframe dialects such as Enterprise COBOL. The DB2 pre-compiler now resolves this by adding "AS" as a valid reserved word.

  2698988 (1094584)
- While editing the source code in the IDE during syntax checking, the DB2 pre-compiler sometimes generated incorrect error messages for DECLARE CURSOR statements if they were defined in the WORKING-STORAGE section when the DB2 BACKGROUND PARSING option was set to NONE.

  2698133 (1094267)
- COMP-3 host variables prevented the porting of JVM COBOL object code between machines with different byte ordering architectures.

  2695871 (1094325)

SQL: OpenESQL

- The OpenESQL preprocessor incorrectly terminated a host variable lookup resulting in a COBES0109 error.

  2795391 (1096265)
- Using a SQL Server fast forward cursor with an ODBC driver that does not support MARS caused a rollback when the cursor was closed.

  2793798 (1096126)
- Applications migrated from earlier products that used the tokens ON and ROW_NUMBER as column names in SQL statements were compiling with errors.

  2793301 (1096088)
- The OpenESQL preprocessor produced a compilation error for EXEC SQL select ... INTO <TableName> ... END-EXEC.

  2792715 (1096102)
- The OpenESQL runtime for ADO.NET was incorrectly returning the native database error in SQLERRD(1).

  2790152 (1095758)
- A problem fetching decimal columns using OpenESQL for ODBC in locales where the decimal point is not '.' has been fixed. In addition, to optimize performance for the majority of ODBC applications, the default setting for SQL(DECDEL) has been changed from NODECDEL to DECDEL=LOCAL. Use an explicit SQL(NODECDEL) directive for Windows applications that change the effective locale dynamically at runtime.

2788986 (1095766)

- The insertion of values larger than 8000 characters from a PIC X host variable into a SQL Server VARCHAR(MAX) column caused an error.

2787574 (1095428)

- Some valid ODBC SQL expressions caused the OpenESQL preprocessor to issue errors when it encountered a 'BY' token.

2787068 (1095429)

- Valid SQL "PARTITION BY" clauses caused compiler errors when using OpenESQL.

2786991 (1095386)

- Performance of the OpenESQL runtime system for ODBC required improvement when fetching character data.

2785410 (1095165)

- The OpenESQL preprocessor generated invalid code resulting in undefined ECM error code 302 when an array host variable was mixed with regular host variables in a parameter list in the EXEC SQL CALL statement.

2785284 (1095354)

- A memory leak occasionally occurred when multiple prepares of the same dynamic SQL statement existed in the OpenESQL JDBC runtime system.

2784039 (1095123)

- The OpenESQL preprocessor incorrectly interpreted the SQL CONCAT character as DBCS when using SQL(CONCAT=124) for the CONCAT character, resulting in compilation error.

2783615 (1094981)

- When compiling for ODBC, the OpenESQL preprocessor now generates an error message, COBES0123, when it encounters an EXEC SQL statement that contains a host or indicator variable that uses a subscript. Subscripts of this type are not supported in ODBC.

2781022 (1094686)

- The GEN-HV-FROM-GROUP SQL compiler directive option intermittently caused truncation of SQL VARCHAR data type occurrences.

2780748 (1094649)

- SQL(CHECK) caused compilation errors when compiling source programs containing DBCS characters in column names. Programs containing DBCS characters in column names that were compiled using SQL(NOCHECK) caused runtime errors.

2780185 (1094588)

- The GEN-HV-FROM-GROUP compiler directive option has been added to the OpenESQL preprocessor to support the selection of multiple levels in a group item. Specify SQL(GEN-HV-FROM-GROUP) when compiling to generate host variables for each elementary definition in a group record.

2699622 (1094395)

- OpenESQL for JDBC did not correctly open insensitive cursors.

2699442 (1094415)

- OpenESQL Assistant was inconsistently inserting the query function in the "B" area for queries and column 8 for other code.

2697908 (1094190)

- The OpenESQL preprocessor sometimes incorrectly defined host variables when an indicator variable array was used with an SQL statement.

2696332 (1094052)

- You no longer receive errors when parsing Oracle INTERVAL expressions.

2694071 (1094337)

- A problem that prevented a COBOL stored procedure from being called from a nested trigger has been fixed.

  2690749 (1094042)
- The restriction that program names in an application must be unique in the first 24 characters in order for OpenESQL to handle cursors correctly has been increased to 30 characters. This is to restore backwards compatibility with earlier Micro Focus products.

  2685901 (1093808)
- HCOSS now provides better control for ODBC applications that use data that: o Uses the DATE and TIME formats specified by SQL(DATE) and SQL(TIME) o Is stored as character data in the database You can now do any of the following: o Specify host variable types to use with DETECTDATE. o Set the ODBC runtime to determine parameter data types by querying the server (this option uses additional runtime overhead). o Tag string literals in SQL statements with special SQL comments that specify the type of literal. With this option, literals tagged with /*#CHAR*/ are not reformatted when SQL(DIALECT=MAINFRAME) is set.

  2685625 (1093540)

Unassigned

Back to the list

- A channel created by a program invoked by a CALL statement is now visible to the programs running at the same level.

  2698335 (1094225)

Web Service Client

Back to the list

- Namespaces not declared on the schema root, i.e. declared either with an element declaration or on the WSDL root, will now be processed properly and no longer ignored.

  2583853 (1085102)

XML syntax support runtime

Back to the list

- The HTMLPP preprocessor now handles copybooks with filenames longer than eight characters correctly.

  2783315 (1095092)

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*. 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.

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

To run `mfsupport`:

1. Start a UNIX shell.

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

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

   📝 **Note:**

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

Creating Debug Files

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

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