



# **Micro Focus Enterprise Developer 2.1 for Visual Studio**

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**Release Notes**

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# Micro Focus Enterprise Developer 2.1 for Visual Studio 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.

Enterprise Developer is a contemporary development suite for Microsoft Visual Studio 2010 that allows mainframe developers to maintain, develop and modernize mainframe applications environments regardless of whether these are to be deployed back on the mainframe or onto an alternative platform.

Enterprise Developer supports IBM COBOL, IBM PL/I, IBM Assembler, IBM CICS, IBM IMS, IBM JCL, IBM DB2, IBM z/OS file formats and common batch utilities including SORT. This means that the core mainframe online and batch applications can be developed and maintained under Enterprise Developer. These applications can then be deployed back on the mainframe or migrated onto one of the Micro Focus Linux, UNIX or Windows based production platforms.

Enterprise Developer comes in two product variants:

**Enterprise Developer Personal Edition**

Enterprise Developer Personal Edition is a free product, available for download. It is suitable for anyone who wants to become familiar with the Eclipse or Visual Studio means of editing and compiling mainframe applications under Windows.

**Enterprise Developer**

Enterprise Developer is for customers looking to modernize mainframe applications and move to an alternative platform. This option again uses either the Visual Studio or Eclipse-based IDE and includes development and test tools for all platforms currently supported by Micro Focus.

**Enterprise Developer for z/Enterprise**

Enterprise Developer for z/Enterprise targets customers modernizing applications for deployment back on the mainframe or any of the z/Enterprise partitions. This option uses the Visual Studio or Eclipse-based IDE, mainframe integration and workflow management. It also includes tools to support development and test on z/Linux and AIX and x86 environments.

If you are currently using Enterprise Developer Personal Edition variant and you want to use Enterprise Developer, please contact your Micro Focus representative and ask for a free trial.



**Important:** Application executables that were compiled using earlier Micro Focus products must be recompiled from the sources using Enterprise Developer. For more information, read the section *Upgrading to Enterprise Developer for Visual Studio 2010* in the product Help.

# Installation



**Note:** If you are installing on Solaris, please read [UNIX Installer Issues](#) first.

## System Requirements for Enterprise Developer for Visual Studio

### Hardware Requirements

Enterprise Developer has the following requirements in addition to the requirements of Microsoft Visual Studio. See the Visual Studio documentation for details of the Microsoft requirements.

The disk space requirements are:

- 58MB for the Sentinel RMS license server
- 200MB for Micro Focus COBOL integration into Visual Studio



**Note:** This includes the space needed to cache information locally so that you can modify the installation without the original source media.

The disk space requirements for UNIX/Linux are:

- Between 26 and 35 MB for the Sentinel RMS license server depending on the platform.
- Between 206 and 427 MB for Enterprise Developer depending on the platform.



**Important:** The UNIX installation requires extra disk space that equals the size of the product you install.

### Operating Systems Supported



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

The following platforms are supported:

#### 32-bit Windows Platforms

- Windows Server 2008 SP2
- Windows 7

#### 64-bit Windows Platforms

- Windows Server 2008 SP2
- Windows Server 2008 R2
- Windows 7

#### Citrix and Terminal Server

- Windows Server 2008 SP2
- Windows Server 2008 R2
- Windows 7



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

The supported UNIX and Linux platforms are:

- POWER running AIX 6.1, 6.6, 7.2 - 32/64-bit
- x86-64 running Red Hat Linux 5.5, 5.8, 6.2, Oracle Linux 6.2 (Red Hat Kernel compatibility mode) - 32/64-bit
- Oracle Linux 6 Update 2 with Unbreakable Enterprise Kernel Release 2
- SPARC running Solaris 10, 11 - 32/64-bit
- x86-64 running SuSE SLES 11, 11 SP2, Oracle Linux 6.2 (Red Hat Kernel) - 32/64-bit
- 390 running SuSE SLES 11 SP1 - 32/64-bit
- Itanium running HP/UX 11.31 - 32/64-bit

## Software Requirements



**Note:** If you use the Micro Focus Web Installer to install this product, it checks your system and installs the missing prerequisite software.



**Important:** This release requires version 10000.2.990 or later of the Micro Focus licensing software. For local servers, you do not need to install it separately, as the setup file installs a new Enterprise Developer client and a new licensing server on the same machine.

If you have a network server, you must update the license server before installing the product as the client is not able to communicate with license servers of versions older than 10000.2.660. On Windows, you can check the version of your license server by clicking **Help > About** in the Micro Focus Licensing System Administration tool. 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/websync/SLM.aspx>.

### Windows:

If you choose to install using the full image, you need to install the following software beforehand:

- A full version of Microsoft Visual Studio 2010 (Premium, Professional, or Ultimate), or the Microsoft Visual Studio Integrated Shell.



#### Note:

- Microsoft Visual Studio Express Edition is not supported.
- You can download the Visual Studio Integrated Shell from the [Microsoft Download Center](#). If you choose to install the Shell, ensure you run the installer to complete the installation - run `vsintshell.enu.exe` from the location where you installed the download.

The following functionality, tools and features have additional requirements:

### Visual Studio IDE

- Microsoft Windows SDK is required if you are using Visual Studio Shell. See the [Microsoft Download Center](#) and search for Windows SDK.
- Microsoft .NET Framework 4.0. This is included with the above versions of Visual Studio.

### Enterprise Server

- A Web browser, such as Microsoft Internet Explorer 6.0 or Netscape Navigator 6.1, is required for Enterprise Server Administration in Enterprise Server.

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

- To use Enterprise Server Administration, scripting or JavaScript support must be enabled in your browser. This is on by default in Internet Explorer in most Windows operating systems. Also, active content must be allowed and not blocked. To enable both these in Internet Explorer:
  1. Click **Tools > Internet Options**.
  2. On the **Security** tab, click **Custom Level**. In the **Scripting** section, under **Active Scripting**, click **Enable**.
  3. On the **Advanced** tab, scroll down the list to the **Security** section, and ensure the item **Allow active content to run in files on My Computer** is checked.
- Enterprise Server Help requires the Java Runtime Environment on some Windows systems to enable the Search facility to work.

### Enterprise Server for .NET

- Microsoft .NET Framework 4.0
- Microsoft SQL Server 2008 R2. (For beta or development installations, SQL Server Express 2008 R2 is sufficient.)

You can download Microsoft's SQL Server from <http://www.microsoft.com/sqlserver/en/us/get-sql-server/try-it.aspx>.

- A TN3270 terminal emulator. Micro Focus Rumba is supplied with this product.



**Note:** You also need to enable IIS and some additional Windows features. Read the *Quick Start* section in your Enterprise Server for .NET help for further instructions on how to set up your operating environment.

### Java Compilation

- The Java Development Kit (JDK) is required for compiling Java. The JDK is downloadable from [www.oracle.com](http://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
```

### OpenESQL

- Database access is supported using the OpenESQL preprocessor with applications compiled as .NET managed code to access relational databases using ODBC 3.0-compliant drivers. Refer to your driver vendor's documentation to determine whether your driver is suitable for use with OpenESQL.
- Dynamic SQL using the SQL Descriptor Area (SQLDA) is not currently supported for OpenESQL applications compiled with the SQL(DBMAN=ODBC) directive.
- For COBOL stored procedures, please review requirements specified in the *SQL CLR Integration* section below.

### SQL CLR Integration for Visual Studio 2010

The following software is required to use the SQL CLR integration feature, which is specifically for the development and deployment of COBOL stored procedures under Microsoft SQL Server.

Projects based on the SQL CLR Database Project template require:

- Visual Studio Professional 2010, Premium 2010, or Ultimate 2010
- SQL Server 2008 R2 targeting .NET CLR v2.0 frameworks (2.0, 3.0, 3.5)

Projects based on the SQL Server Database Project template require:

- All of the following:
  - Visual Studio Shell 2010, Visual Studio Professional 2010, Premium 2010, or Ultimate 2010
  - Subsequent installation of:

- Visual Studio 2010 SP1 (for any previously installed edition of Visual Studio 2010)
- Microsoft SQL Server Tools (SSDT SDK)
- Any of the following:
  - SQL Server 2008 R2 targeting .NET CLR v2.0 frameworks (2.0, 3.0, 3.5)
  - SQL Server 2012 targeting .NET CLR v4.0 framework (4.0) or .NET CLR v2.0 frameworks (2.0, 3.0, 3.5)
  - SQL Server Azure targeting .NET CLR v4.0 framework (4.0) or .NET CLR v2.0 frameworks (2.0, 3.0, 3.5)

### Windows Forms

- Microsoft Visual Studio is required for using the Service Interfaces feature to generate Windows Forms and ASP.NET Web site test clients.
- Microsoft Internet Information Service (IIS) is also required for generating Windows Forms test clients.

### UNIX/Linux:

- Before installing on Red Hat 6.1, you must have the 32-bit operating system libraries installed:

GNU Standard C++ Library - libstdc++(i686 version)

The object files for development using standard C libraries – glibc-devel (i686 version)

Check the [Red Hat Web site](#) for more information.

- To use the Web installer on Red Hat Enterprise Linux 6.1, you must have the following bug fix updates for Red Hat installed:

glibc-2.12-1.25.el6\_1.3.i686.rpm

openldap-2.4.23-15.el6.i686.rpm

nss-pam-ldapd-0.7.5-7.el6.i686.rpm

zlib-1.2.3-25.el6.i686.rpm

nss-3.12.9-9.el6.i686.rpm

nss-util-3.12.9-1.el6.i686.rpm

cyrus-sasl-lib-2.1.23-8.el6.i686.rpm

You do not need these updates if you use the full product setup file to install the product.

- You need to install Xterm, the terminal emulator for the X Window System. Xterm is part of your Linux/UNIX distribution but is not installed by default. Use your Linux/UNIX installation media to install it.
- Set the JAVA\_HOME environment variable. When installing the product, set this variable to a 32-bit Java installation or the installation terminates. For example, execute the following:

```
JAVA_HOME=java_install_dir
```

where *java\_install\_dir* is the path to the JAVA installation directory such as `/usr/java/javan.n`

- Add `$JAVA_HOME/bin` to your system PATH variable. To do this, execute:

```
export PATH=$JAVA_HOME/bin:$PATH
```

- Set the LANG environment variable to pick up localized messages. The LANG settings are English and Japanese only.

## Installing Enterprise Developer for Visual Studio



### Note:

- This version of the product is a full install.

- It is recommended to install this product using the Web Installer. The Web Installer helps you install any missing prerequisite software and the product on your machine.

## Installation Restrictions and Requirements

Before starting the installation you should consider the following:

- Enterprise Developer and Enterprise Server cannot co-exist on the same machine.
- Visual COBOL and Enterprise Developer cannot co-exist on the same machine.
- If, when you install Enterprise Developer for Visual Studio 2010, the machine does not have Microsoft Visual C++ 2010 Redistributable Runtime already installed, it is installed as required by Enterprise Developer. The installation of Microsoft Visual C++ 2010 Redistributable Runtime adds a number of .dll files, without digital signatures, into the winsxs directory.
- 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 serviceprocess from an existing product is stopped and uninstalled. Do this as follows:

1. Stop the service, using either the Windows Service Management Console GUI or from a command line prompt by typing: `net stop mf_ccitcp2` Only one instance of the MFDS or CCITCP2 service can run on a Windows machine.
2. Uninstall the MFDS or CCITCP2 service.

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

For CCITCP2: `ccitcp2 -u`

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

1. Stop and uninstall the MFDS service, as described above.
2. Reinstall the earlier version, as follows:
  - a. Open an Enterprise Developer command prompt.
  - b. Install the service. Enter the following command: `mfdss -i`
  - c. Start the service. Enter the following command: `net start mf_ccitcp2`



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

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

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

## Downloading the Product

1. Use the download links in your Electronic Product Delivery email.

For more information follow the links for the install instructions and the End User License Agreement.

# Installing

To use the Web Installer:

1. Double-click the EnterpriseDeveloperVisualStudio21\_webinstaller.exe file.
2. Click **Start** in the Web Installer dialog and follow the instructions to install the prerequisite software and the product.

Alternatively, you can use the setup file on your machine and install the product as follows:

1. Run the EnterpriseDeveloperVisualStudio21.exe file and follow the wizard instructions to complete the installation.

The installer installs Enterprise Developer as well as Micro Focus RUMBA and Enterprise Server for .NET.



## 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 Manager. By doing this you maintain the existing Sentinel RMS license files while adding the Micro Focus License Manager. 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 Windows **Add or Remove Programs** 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 Visual Studio and the .NET Framework that are available at the [Microsoft Download](#) site.
- If you install JDK you might be prompted to install the latest update. The latest update is not required for use with Enterprise Developer but you can install it if you wish.

## Installing as an Upgrade

This release does not work concurrently with earlier releases and installing it uninstalls previous versions of the product.

Before installing, check *Installation Restrictions and Requirements*.

## Installing Micro Focus Enterprise Developer Unix Component

### Downloading the Product

1. Use the download links in your Electronic Product Delivery email.

For more information follow the links for the install instructions and the End User License Agreement.

### Installing



## Note:

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

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

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

To use the Web Installer:

1. Give the Web installer file execute permissions as follows:

```
chmod +x webinstaller_entdev_2.1_platform
```

2. Run the installer from the Process User ID login:

```
./webinstaller_entdev_2.1_platform
```

When the installer starts it will prompt you to enter the superuser password so it can perform operations that require root permissions.

3. If necessary, execute the `$COBDIR/bin/casperm.sh` script to configure the Enterprise Server permissions and settings.

Alternatively, you can use the setup file and install the product as follows:

1. Give execute permissions to the setup file:

```
chmod +x setup_entdev_2.1_platform
```

2. Run the installer from the Process User ID login:

```
./setup_entdev_2.1_platform
```

When the installer starts it will prompt you to enter the superuser password so it can perform operations that require root permissions.

The COBOL environment is installed by default into `/opt/microfocus/EnterpriseDeveloper`.

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

```
./webinstaller_entdev_2.1_platform -installlocation="full path of new location"
```

or

```
./setup_entdev_2.1_platform -installlocation="full path of new location"
```

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, `-ESadminID="esadm"`. The default user ID is the one that runs the installer.
- CASrtDir** Specifies the location where the Enterprise Server run-time system files are placed - for example, `-CASrtDir="/home/esuser/casrt/es"`. The default location is `/var/mfcobol/es`.



**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_entdev_2.1_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 later licensing needs to be updated, remove the file and install Sentinel RMS server manually.

## Set Up the Environment

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

1. To set up your product, execute:

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

2. To verify that your product is installed, execute:

```
cob -Version
```



**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 (`etc/profile`, `etc/bashrc`, etc.)

## UNIX Installer Issues

### 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`

### License Server

On UNIX, 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.

## Configuring the Remote System Explorer Support

The remote development support from the Eclipse IDE relies upon Enterprise Developer running on the UNIX machine and handling all requests from the IDE for building and debugging programs. Enterprise Developer provides a UNIX daemon, the Remote Development Option (RDO) daemon, which initiates the RDO as Eclipse clients connect to it. Whichever environment is used to start the RDO daemon will be inherited for all servers and hence all build and debug sessions.

## Starting the Daemon

 **Important:** Before starting the daemon you must have the following on your UNIX machine:

- a version of Perl
- a version of Java
- the `as` (assembler) and `ld` (linking) programs on the path, as specified by the `PATH` environment variable

To start the daemon on the default port (4075) as a background process, perform this command with superuser authority:

```
$COBDIR/remotedev/startrdodaemon
```

The daemon will now listen for any Eclipse client processes connecting to that machine on port 4075. If you want to use another port, then specify another port number on the `startrdodaemon` command.

The daemon can also be configured to instantiate the servers on a specified port or range of ports. This is particularly relevant when you want to only open certain ports through a firewall. To do this, perform this command with superuser authority:

```
$COBDIR/remotedev/startrdodaemon [<port> | <low port>-<high port>]
```

where:

- `<port>` is the port number the daemon should use to listen for connections from Eclipse on the client machine. If no value is given, it will be assigned a default value of 4075. This value matches the value assigned within the Eclipse installation.

For example,

```
$COBDIR/remotedev/startrdodaemon 4999
```

This command will start a daemon listening on port 4999 and will use random server ports.

- `<low port>-<high port>` is the range of ports on which the servers (launched by the daemon) should use to communicate with Eclipse on the client machine.

For example,

```
$COBDIR/remotedev/startrdodaemon 4080 4090-4999
```

This command will start a daemon listening on port 4080 and server ports will be in the range 4090 to 4999.

## Stopping the Daemon

To stop the daemon, type the following command (with superuser authority):

```
$COBDIR/remotedev/stoprdodaemon <port>
```

## Configuring the Environment

You may need to configure some aspects of the environment before you start the daemon. This is because when a build or debug session is initiated from one of the Eclipse clients, the environment used will be inherited from whatever was used to start the daemon. A typical example of the kind of environment that might need to be set up would include database locations and settings for SQL access at build/run time.

## After Installing

You are now ready to run Enterprise Developer. From the Windows taskbar click **Start > All Programs > Micro Focus Visual COBOL > Visual COBOL for Visual Studio**.

Please refer to the *Start Here* and *Product Information* sections in your product Help. Here, you will find information on getting started including tutorials and demonstration programs.

**Note:**

- The first release of Visual Studio 2010 has a browser-based help system, Microsoft Help Viewer 1.0, which does not include an index for the locally-installed help. Navigation of the content is only available using the table of contents and Search and the help contents for the Help system does not expand and collapse in the same way as previous Help systems.
- If you have problems trying to view the Micro Focus help, ensure that the Visual Studio Help Library is pointing to local help. From the Visual Studio menu click **Help > Manage Help Systems > Choose online or local help** and check the **I want to use local help** button.
- Visual Studio 2010 SP1 provides an upgrade of the help system, Microsoft Help Viewer 1.1, which provides a stand-alone help viewer with an index and a fully expandable table of contents.
- If you do not wish to install Visual Studio 2010 SP1, you can install some third party tools that enable the index or the fully expanding table of contents. Read <http://kb.microfocus.com/display/4/kb/article.aspx?aid=31484> for more.

## Repairing

### Windows

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

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

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

### UNIX

If a file in the installation of the product becomes corrupt, or is missing, we recommend to reinstall the product.

## Installing Mainframe Access Server

### Introduction

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

### Requirements

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

Variable	Description
<i>drive</i>	
<i>userid</i>	TSO user-ID for FTP to your mainframe

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



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

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

### Install Mainframe Access Server

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

Follow these steps to load Mainframe Access Server:

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

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

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

**a. Start FTP:**

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

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

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

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

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

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

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

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

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

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

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

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

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

5. Start Mainframe Access Server.

### After installation

Since the program libraries can change between versions, it is necessary to either create new procedures, or back up the old procedures, and at least modify the `DSNQUAL=prodhlq` within your MFA sample started task procedures as provided by Micro Focus. The *prodhlq.LOADLIB* and *prodhlq.SASC.LINKLIB* must both be authorized.

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

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

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

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

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

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

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

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

If you are migrating from Host Connectivity 3.01 WebSync 10 or earlier, you may want to retain your existing `CNTL` members from your current version as an installation test. You can simply copy the existing

MFA started task JCL and change the STEPLIB to reference the new product libraries. You will however be required to modify the MFAS started task JCL since the module names for Data Connect have been changed to allow co-residence within the same authorized library as MFA.

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

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

## Uninstalling

### Windows

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

1. Log in with the same user-ID as you used when you installed the product.
2. Click **Uninstall a program** under **Programs in Control Panel**.
3. On versions of Windows Vista and later, click **View installed updates** in the left-hand pane.
4. Select the product and click **Remove** or **Uninstall**, respectively.

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.



**Note:** The installer creates separate installations for Micro Focus Enterprise Developer , Enterprise Server for .NET, and Micro Focus License Manager. Uninstalling only Enterprise Developer does not automatically uninstall Enterprise Server for .NET, the Micro Focus Licensing Manager or any of the prerequisite software.

Enterprise Server for .NET must be uninstalled before you remove Enterprise Developer. To completely remove the product you must uninstall the Micro Focus Licensing Manager as well.

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

Some registry entries are not removed by the uninstallation process and you need to manually delete them.

The following folders might not be removed:

- The *Micro Focus Product Name* folder in the Start menu - you can delete it manually.
- %systemdrive%\Users\Public\Documents\Micro Focus - includes the binaries and the log files of the samples which you have built.
- %ProgramData%\Micro Focus - includes some data files used by the Micro Focus licensing system.
- %Program Files%\Micro Focus - you can delete it manually.

In addition, the following registry entries are not removed. These are created the first time that an Enterprise Server that has been enabled for performance monitoring starts up:

- Micro Focus Server\Performance\Active Servers
- Micro Focus Server\Performance\PerfIniFile

### UNIX



**Note:** Before you uninstall the product, ensure that the Enterprise Server Regions and the Micro Focus Directory Service (MFDS) are stopped.

To uninstall this product:

1. Execute as root the `Uninstall_EnterpriseDeveloper2.1.sh` script in the `$COBDIR/bin` directory.



**Note:** The installer creates separate installations for the product and for Micro Focus License Manager. Uninstalling the product does not automatically uninstall the Micro Focus Licensing Manager or the prerequisite software. To completely remove the product you must uninstall the Micro Focus Licensing Manager as well.

To uninstall Micro Focus License Manager:

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:

- This release uses the license keys for the Enterprise Developer 2.0 release.
- If you are unsure about what your licensing policy is or what sort of license you require, consult your System Administrator or Micro Focus SupportLine to obtain a valid license.

**Windows** Use the Authorization Code, supplied with your delivery notice, to license your product. To do this:

1. Click **Start > All Programs > Micro Focus License Manager > License Management System**.

The dialog box for the Micro Focus License System Administration Tool will be displayed.

2. Click the **Authorize** tab.
3. Enter your Authorization Code and click **Authorize**.
4. Close the Micro Focus License System Administration Tool.

If you wish to install the license silently, execute the following after the product has been installed:

```
start /wait <install-dir>\bin\cesadmintool -term activate  
AuthorizationCode
```

## UNIX

The Micro Focus Licensing System is installed into the `/var/microfocuslicensing` directory.

To license your software:

1. Run the Micro Focus Licensing Administration utility:

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



## Note:

- You need permissions to write to the license file which normally means you need to log in as root.
  - Make sure Java is on the PATH before you run the utility. See *System Requirements* for more information.
2. Select an option as appropriate and press **Enter**:

### If you have access to the Internet:

Select **Online Authorization**. You will be prompted to enter the Authorization Code supplied with your delivery notice.

### If you do not have access to the Internet:

You need the license strings. In order to obtain them, you need your Authorization Code, your Machine Id and a machine with access to the Internet.

- a. Choose **Get Machine Id** and press **Enter**.
- b. Make a note of the information which is displayed.
- c. On the machine which is connected to the Internet, open <http://supportline.microfocus.com/activation/> in a browser.
- d. Follow the instructions to obtain the license strings and save them to a text file.
- e. Copy the text file to the first machine on which you are installing the product.

- f. At the command line, select **Manual License Installation** from the licensing options and enter the full name of the file containing the license strings.

# Enterprise Developer Editions and Licenses

Enterprise Developer comes in the following variants:

<b>Enterprise Developer Personal Edition</b>	Enterprise Developer Personal Edition is a free product, available for download. It is suitable for anyone who wants to become familiar with the Eclipse or Visual Studio means of editing and compiling mainframe applications under Windows.
<b>Enterprise Developer</b>	Enterprise Developer is for customers looking to modernize mainframe applications and move to an alternative platform. This option again uses either the Visual Studio or Eclipse-based IDE and includes development and test tools for all platforms currently supported by Micro Focus.
<b>Enterprise Developer for z/Enterprise</b>	Enterprise Developer for z/Enterprise targets customers modernizing applications for deployment back on the mainframe or any of the z/Enterprise partitions. This option uses the Visual Studio or Eclipse-based IDE, mainframe integration and workflow management. It also includes tools to support development and test on z/Linux and AIX and x86 environments.

Both Enterprise Developer for z/Enterprise and Enterprise Developer are available for evaluation from Micro Focus and both have concurrent and named user license options.

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

## To activate Enterprise Developer Personal Edition

1. Start Enterprise Developer.

If you have not installed a license for the Team Edition of the product, starting the IDE and trying to create a COBOL project opens the **Micro Focus Enterprise Developer Product Licensing** dialog box. If you choose to cancel this dialog box, you can invoke it again from **Help > Micro Focus Product Help > Product Licensing**.

- a. If you purchased the license for the Team Edition of the product, click **I have a full Enterprise Developer Team Edition license** and then click **Finish**.
  - b. If you do not have a license for the product, click **I want to activate the free product**.
2. If you haven't registered your email address yet, click **registration page** and follow the instructions on that page.
  3. Ensure that the email address you used to register the product is in the **Email address** text entry field. You need to use the same email address you used for the registration.
  4. Select one of the following options:

**Automatic** Use this if you have Internet access.

1. Click **Activate License** to activate your copy of Enterprise Developer Personal Edition.

**Manual** Use this if you are not connected to the Internet.

1. Click **Send email**.

This opens your default mail client and creates a new email filled in with the details to send to Micro Focus about activating your copy of the free Personal Edition of the product.



**Note:** If there is no mail client installed on your machine, you will be presented with a template that includes the email address, the subject and the contents of an email to send with a mail client of your choice. Do not modify the details.

You will receive a response email with details about your authorization request.

2. Paste the contents of the response email in the designated field in the **Micro Focus Enterprise Developer Product Licensing** dialog box.
3. Click **Activate License**.

This displays a message confirming your request for authorization has been successful.

4. Click **Close**.

## To request and activate a 30-days trial license for Enterprise Developer Team Edition

1. In the IDE, click **Help > Micro Focus Product Help > Product Licensing**.

This opens the **Micro Focus Enterprise Developer Product Licensing** dialog box.

This dialog box also opens if you try to use a feature that is only available in Team Edition of this product.

2. If you haven't registered your email address yet, click **registration page** and follow the instructions on that page.
3. Type your email address in the **Email address** text entry field.

You need to use the same email address you used for the registration.

4. Select one of the following options:

**Automatic** Use this if you have Internet access.

1. Click **Activate License** to activate the trial license for Enterprise Developer Team Edition.



**Important:** If, after you click **Finish**, you click the **Cancel** button in the progress dialog box to stop the activation process, the trial license might have registered on Micro Focus servers but not yet be registered on your machine. If you request a trial again then you can get a message saying that a trial license has already been used. If this happens, you should contact a Micro Focus Sales representative to obtain a new license.

You can do this by sending an email to [EDTEBuyNow@microfocus.com](mailto:EDTEBuyNow@microfocus.com), or selecting **Help > Micro Focus > Buy Now** and using the contact options in the dialog box.

**Manual** Use this if you are not connected to the Internet.

1. Click **Send email**.

This opens your default mail client and creates a new email filled in with the details to send to Micro Focus about activating the trial license for the Team Edition of the product.



**Note:** If there is no mail client installed on your machine, you will be presented with a template that includes the email address, the subject and the contents of an email to send with a mail client of your choice. Do not modify the details.

2. Send the email.

You will receive a response email with details about your authorization request.

3. Paste the contents of the response email in the designated field in the **Micro Focus Enterprise Developer Product Licensing** dialog box.
4. Click **Activate License**.

This displays a message confirming your request for authorization has been successful.

5. Click **Close**.

After activation, you can see how many days your trial license has remaining by selecting **Help > Micro Focus > Product Licensing**.

### To request a 30-days trial license for Enterprise Developer Personal Edition+ and Team Edition+

Contact your Micro Focus Sales representative to request a 30-day trial license for Enterprise Developer Personal Edition+ or Team Edition+.

## To purchase a full unlimited license

1. In the IDE, click **Help > Micro Focus Product Help > Product Licensing**.

This opens the **Micro Focus Buy Now** dialog box.

2. Ensure that the email address you used to register the product is in the **Email address** text entry field.
3. Click **Send email**.

This opens your default mail client and creates a new email filled in with the details to contact Micro Focus. Send the email.

If there is no mail client installed on your machine, you will be presented with a template that includes the email address and subject line for an email to send to Micro Focus using a mail client of your choice.

You will be contacted by a Micro Focus Sales representative.

# What's New

The following sections outline the new features that have been added in this release of Enterprise Developer for Visual Studio 2010.

## Features Added in Enterprise Developer 2.1



**Note:** There are differences between the two variants of Enterprise Developer you might have installed. Enterprise Developer Personal Edition provides a development environment that supports analysis, editing and syntax checking of COBOL and mainframe programs outside of the mainframe environment. It does not, however, support off-mainframe debugging, unit testing and building of projects. To build, debug, and execute the demonstration application, you need Enterprise Developer.

### Enterprise Developer Enhancements

#### Assembler option

Now you can use a standalone Assembler debugger which is independent from the IDE to the debug Assembler applications. This enables System administrators to debug Assembler applications as an aid in problem determination when setting up Assembler routines for use in an offload development and test environment.

#### Associating file extensions with the COBOL language

This release includes enhancements to the way you associate file extensions and extensionless files with the COBOL language.

If you are importing existing COBOL applications into Visual Studio, it is recommended that you create associations with COBOL within the IDE for any extensions that are not traditionally used in COBOL.

#### Building to .int, .gnt, and .lbr files

All sources for native COBOL and mainframe subsystem projects can be built to either `.int` or `.gnt` files. Native COBOL projects can optionally be bundled into an `.lbr` file.

#### Compiler directives

The following new Compiler directives are now available

- `DISPLAY` - Defines the default behavior of standard `DISPLAY` statements.
- `COMP1` - Specifies the behavior of a `COMP-1` data item.
- `COMP2` - Specifies the behavior of a `COMP-2` data item.
- `RESTRICT-GOTO` - Generates a syntax error for `GO TO` statements that transfer control to outside of the current section.
- `ILSMARTRESTRICT` - Limits the generation of properties in `ILSMARTLINKAGE` classes to non-redefining elementary items.

The following Compiler directives have changed:

- `DATAMAP` - Two new parameters allow you to display either the address or offset values for data items in your program.

## Enterprise Server

- CICS External Call Interface (ECI) - Micro Focus proprietary support for ECI is now available. ECI uses the Micro Focus BINP protocol and negates the need for third-party middleware. For more information about ECI support, read the section *IBM External Call Interface (ECI)* in your product help.
- Enterprise Server Batch Clustering is now available as a technology preview. Features include:
  - Support for sharing of both the catalog and spool between multiple batch regions is included as a technology preview.
  - Allows multiple batch regions to share commonly configured resources by providing global locking facilities to manage contention.

For further details about this feature, contact your Micro Focus technical account management team.

- Micro Focus Batch Scheduler Integration solution - enables you to submit, execute, and feedback between Enterprise Server and a scheduler that controls JCL job execution.
- Support for running TSO commands in a TSO batch session using the IDAEFT01 (IKJEFF01) utility is now available.
- The `mfd`s `-x` export command line option has been extended to support repository export to an XML-format file. The syntax is as follows:

```
mfd
```

s `-x` [*repository type*] [*repository address*] [*server name*] `<opts>` `<user id>` `<password>`

Where:

- |   |  |
|---|--|
| <b>[<i>repository type</i>]</b>                                       | <ul style="list-style-type: none"><li>• 1 = file:///</li><li>• 5 = XML</li></ul>   |
| <b>[<i>server name</i>]</b>   | * = export all servers   |
| <b><code>&lt;opts&gt;</code></b>                                      | <ul style="list-style-type: none"><li>• D = (default) do not delete or overwrite any existing repository contents at specified location</li><li>• O = delete and overwrite any existing repository contents at specified location</li><li>• S = export server and security manager configuration</li></ul> |
| <b><code>&lt;user id&gt;</code> and <code>&lt;password&gt;</code></b> | the MFDS credentials required if administration access is restricted   |

- The new `-g` option is used to allow XML format repository import. The syntax is as follows:

```
mfd
```

s `-g` [*repository type*] [*repository address*] `<opts>` `<user id>` `<password>`

- |                                  |                       |
|----------------------------------|-----------------------|
| <b>[<i>repository type</i>]</b>  | 5 = XML               |
| <b><code>&lt;opts&gt;</code></b> | Not currently in use. |

- XML repository import - extends the MFDS repository export to XML and import from XML introduced in Enterprise Developer 2.0 to UNIX platforms. This allows administrators to export, modify and then reimport Enterprise Server instance configuration data in XML format.

## Mainframe Access

**MFA Server** MFA Server has been updated to version 4.00 (BASE), and provides the following enhancements:

- Double-byte character support using the following code pages:
  - Traditional Chinese with Taiwanese additions (BIG5)
  - Korean (KSC5601)
  - Simplified Chinese (SCHINESE)

Japanese - Kanji (SJISKANJI)  
Traditional Chinese (TCHINESE)

- Additional qualifiers for use with the new code pages:

**default**

EBCDIC SI/SO added on upload, removed on download

**-SOSI-K**

EBCDIC SI/SO assumed on upload, preserved on download

**-SOSI-A**

ASCII SI/SO assumed on upload, preserved on download

**-SOSI-S**

Spaces converted to SI/SO on upload. SI/SO converted to spaces on download



**Note:** This will only work correctly with text that originates on a host.

### Enterprise Server Application template

This release includes an Enterprise Server Application template that you can use to create a Visual Studio project for COBOL service interfaces that do not require mainframe support.

### HCO for SQL Server

**Rowset Cursors**

HCOSS now supports rowset cursors.

**SPD Generator**

The SPD Generator now supports functions.

### IMS support

- Non-discardable message exit (early release) - provides you with functionality present in Mainframe IMS that allows messages destined for an abended IMS application program to be deleted, put on the suspend queue, requeued to the original transaction, or routed to an alternate destination.
- IMS printer support (early release) - IMS application LU1, LU3 MFS, or LTERM output can now be spooled to printers using TCP/IP protocols. You now have the ability to print IMS output on local or networked printers.



**Note:** Print spool API support is not available. Users are responsible for associating printers with a user or a department.

### OpenESQL

**ODBC**

Added support for a generic one-phase commit for ODBC XA switch module.

**SQL  
Compiler  
Directive  
Options**

OpenESQL has been enhanced to support the the following new SQL compiler directive options:

**DATE**

Controls the reformatting of date values in output parameters and in input parameter character host variables when DETECTDATE is also specified.

**TIME**

Controls the reformatting of date values in output parameters and in input parameter character host variables when DETECTDATE is also used.

- DATEDELIM** Specifies a single character as the delimiter between the year, month, and day components to override the default delimiter determined by the HCOSS DIALECT or DATE directive specification.
- TIMDELIM** Specifies a single character as the delimiter between the hour, minute, and second components to override the default delimiter determined by the HCOSS DIALECT or TIME directive specification.
- TSTAMPSEP** Specifies a single character as the separator between the date and time parts of timestamp and date/time data.

**SQL Server** We now support Microsoft SQL Server 2012.

## Open PL/I

The following enhancements to the Open PL/I feature are now available:

- Support for WCHAR data types and associated built-in function enhancements. See the *Open PL/I Language Reference Manual* in the *General Reference* section of your product help for more information.
- Support for bigendian CHAR VARYING on Intel chipsets.
- Support for the following built-in functions: PLICTF, PLIFILL, PLIMOVE, PLIOVER.
- Support for character picture data types. See the *Open PL/I Language Reference Manual* in the *General Reference* section of your product help for more information.
- Preprocessor for SQL Server (HCOSS).
- New PLITEST debugger attach facility.
- Macro Preprocessor enhanced to support multiple closure.
- Macro Preprocessor enhanced to support up to 100 byte variable names.
- Macro Preprocessor enhanced to support %SELECT,%DO WHILE,SYSVERSION, ||=
- Macro Preprocessor support for the -incafter Compiler directive to allow for addition of an include file without modifying the customer sources.
- The DB2 LUW Precompiler has been enhanced to allow specification of userid and password.
- Integration with Visual Studio 2010.
- Early Adopter Support for 64-bit PL/I on Solaris. The -pic option is not supported for 64-bit.
- Early Adopter Support for Oracle on Windows using the ODBC interface.

## Tutorials

The following tutorial is now available in the *Getting Started* section in your product help:

**Tutorial:** AACT is a sample CICS 3270 transaction that comprises several Assembler programs and a single BMS map, and uses the resource definitions in the file dfhdrdat. This  
**Assembler** tutorial walks you through the steps required to implement and test the AACT transaction.

**Managing the Mainframe in Eclipse** This tutorial shows you how to develop and debug applications on or off the Mainframe. The tutorial is based on the Bankdemo sample application.

## UNIX and Linux platforms support

Micro Focus Enterprise Developer Unix Component enables you connect to remote UNIX machines and use them to create, edit, and debug all project types. The following systems are supported:

- POWER running AIX 6.1, 6.6, 7.2 - 32/64-bit
- x86-64 running Red Hat Linux 5.5, 5.8, 6.2, Oracle Linux 6.2 (Red Hat Kernel compatibility mode) - 32/64-bit

- Oracle Linux 6 Update 2 with Unbreakable Enterprise Kernel Release 2
- SPARC running Solaris 10, 11 - 32/64-bit
- x86-64 running SuSE SLES 11, 11 SP2, Oracle Linux 6.2 (Red Hat Kernel) - 32/64-bit
- 390 running SuSE SLES 11 SP1 - 32/64-bit
- Itanium running HP/UX 11.31 - 32/64-bit

## Working with mainframes

Enterprise Developer Team Edition+ now includes direct access to the mainframe from within Eclipse. This functionality provides the following features:

**Direct access to the mainframe** The mainframe environment is integrated directly into the Eclipse IDE. Developers can use the Remote Systems Explorer view to the mainframe and directly access it with the JES Explorer and MVS Explorer views to:

- Browse and edit their data sets
- Edit and Submit jobs for execution
- Run ISPF dialogs
- Review Job output on the spool or catalog

**Remote Mainframe Development** Developers now have full control of development activities directly on the mainframe. This means from within a single IDE you can:

- Integrate directly to mainframe source control systems to check out, check in, and promote members directly to your personal mainframe area.
- Use smart editing capabilities such as - Background Parsing to detect syntax errors as they are entered; Content Assist when writing COBOL code; Source Outline view and navigation when editing programs that are on the mainframe.
- Syntax check and compile applications directly on the mainframe while the error messages are output to the Eclipse editor which ensures compilation issues can be quickly viewed and resolved.
- Unit test applications on the mainframe, and even run debug sessions directly from the Eclipse IDE if you have the debugging tools on the mainframe.

**Easy customization** Enterprise Developer includes a unique component called Workflow Manager, a graphical modeling tool that allows you to customize quickly the Enterprise Developer Eclipse-based User Interface and directly integrate tools, such as source control, either directly on the mainframe, or on the workstation. This means that your development environment is fully customizable and you can integrate familiar development workflow in Eclipse. Workflow Manager means:

- Complete integration with major source control systems out-of-the-box becomes possible.
- You can create predefined models to support different development processes. These can be managed and deployed centrally.
- There is no requirement to develop Eclipse JAVA plugins in order to extend the IDE User Interface which puts you in control.
- Comprehensive and deep integration becomes affordable.
- Developer acceptance is high and productivity gains are realized.

## General Enhancements

### Managed code enhancements

#### Delegates and Events

This release provides support for combining delegates, using the METHOD keyword to specify method groups, and implicit conversion from a method group or an anonymous method to the suitable delegate type.

#### Handling Invalid Numeric Data

The handling of invalid numeric data is controlled by a number of Compiler directives: HOSTNUMMOVE, HOSTNUMCOMPARE and SIGNFIXUP. These directives were previously only available in native code but are now supported in managed code.

#### Resolving Types

In this release, the Compiler attempts to resolve types to those defined in the current compilation unit wherever possible. The Compiler will attempt to resolve such types to an external name only if no suitable type exists in the current compilation unit. For example:

```
$set ilusing"System"  
class-id MyNamespace.EventHandler.  
01 o type EventHandler.  
end class.
```

In this release, `01 o type EventHandler.` resolves to `MyNamespace.EventHandler` and not to `System.EventHandler`.

#### Specifying Properties

In previous versions of the products, properties declared using the PROPERTY keyword on a data item were generated as final properties. Starting with this release, they are generated as virtual properties by default. In order to make the properties final, you need to specify the word FINAL following PROPERTY. This change may affect the generation of Proxy classes, for example, if you are using WCF.

# Known Issues

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

In addition, please note the following:

- |                          |  |
|--------------------------|--|
| <b>COBOL Watchpoints</b> | The debugger ignores a COBOL watchpoint that is hit if there is no statement following the statement that modifies the data on which that watchpoint is set.   |
| <b>ICETOOL Emulation</b> | ICETOOL emulation for managed code is not available in this release.   |
| <b>Enterprise Server</b> | On versions of Windows Vista and later, Enterprise Server listens only on the IPv4 loopback address (127.0.0.1). As a result, an attempt to connect to localhost with a TN3270 emulator such as RUMBA may fail. To work around this issue, in your emulator's configuration use 127.0.0.1 in preference to localhost or your host machine's name.  |
| <b>Native COBOL</b>      | On Windows XP, when building a native COBOL application in Visual Studio, a dialog may pop up with error "Unhandled exception at 0xc0006866 in cobol.exe: 0xC0000005: Access violation reading location 0xc0006866)". This is caused by Symantec antivirus runtime protection. To resolve this, you need to apply the following fix from Symantec: <a href="http://www.symantec.com/business/support/index?page=content&amp;id=TECH97280&amp;locale=en_US">http://www.symantec.com/business/support/index?page=content&amp;id=TECH97280&amp;locale=en_US</a> . |

# Resolved Issues

The resolved issues that customers have reported are listed in this section. The numbers that follow each issue are the Reported Problem Incident number followed by the Customer Incident Numbers (in parentheses). RPIs that have numbers only (and no text) are included to confirm that the RPIs have been fixed, since no further information is required.

- [.NET Compiler](#)
- [.NET CICS \(General\)](#)
- [.NET ESQL Support](#)
- [.NET Native Debug](#)
- [.NET Win ishcondition=""Form/WebForm](#)
- [CAS Security](#)
- [CAS XA Switch modules](#)
- [CCI TCP/IP](#)
- [Compiler](#)
- [Data Tools editor](#)
- [Documentation](#)
- [File Handling - External File Handler](#)
- [File Handling - Fileshare](#)
- [File Handling - Sort / JCL Sort](#)
- [HCO for Microsoft SQL Server](#)
- [Interface Toolkit General](#)
- [Interface Toolkit Mapper in Visual Studio](#)
- [MF Directory Server](#)
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## **.NET Compiler**

- When compiling for managed code, you can no longer use the ALTER, ON or EXHIBIT CHANGED statements in class programs. You can only use these statements in procedural COBOL programs (i.e. programs specified with the PROGRAM-ID header).  
1084928 (2581987)
- When compiling to managed COBOL, we no longer produce an error for MOVE statements in which the source is a PIC N field and the target is an object reference of type string.  
1084133 (2572679)
- In managed COBOL, using the EXIT PARAGRAPH and NEXT SENTENCE statements in the same paragraph could lead to bad control flow.  
1084070 (2572411)
- When compiling to managed code, the ASSIGN TO DISK FROM data-name clause (of the SELECT statement) is now working correctly.  
1085027 (2582960)
- A write to a record of a file defined in a class could result in the generation of a bad code if that record was not referenced in your code.  
1083955 (2570957)
- The use of extended ACCEPT or DISPLAY statements in Windows applications (ilsubsystem"2") now produces error COBCH1634: Extended ACCEPT/DISPLAY not allowed with a Windows GUI executable (ILSUBSYSTEM"2"). Remove the syntax or change the output type of your application to 'Console Application'.  
1084365 (2575702)
- The directive NOIOCONV no longer causes the compiler to produce system errors when compiling for managed code.  
1071930 (2359629)
- When a pic x item is passed as a parameter to a method that is expecting a character (System.Character or char in C#), conversion from the current locale to the relevant Unicode character is performed. Previously, the conversion did not take place, causing corruption.  
1084595 (2577800)
- Access to indexers using zero-based indexing (e.g. display simpleIndexer[2]) is now working correctly.  
1084699 (2579210)

## **.NET CICS (General)**

- The Listener component of Enterprise Server for .NET now supports IPv6 and allows you to connect using TN3270 clients or other client programs.  
591744 ( )
- BMS maps that are of a different size than the screen or page and maps that have a fixed origin other than the default one (row 1, column 1) are now correctly processed in Managed CICS code.  
1083673 (2566140)
- The CMAP (browse mapsets) system transaction is now supported in managed code CICS applications.  
590469 ( )

## **.NET ESQL Support**

- The OpenESQL pre-compiler no longer converts underscores in COBOL host variables in EXEC SQL statements to dashes.  
1085254 (2585445)

- The default setting of SQL(BEHAVIOR) is MAINFRAME for versions of Visual COBOL and Enterprise Developer 2.0 and later. If you are upgrading existing applications that support ADO.NET, use Microsoft SQL Server, and depend on cursors that are not explicitly declared as forward-only, read-only being implemented as ADO.NET datasets, ensure that in the latest version of the Micro Focus products they use the directive SQL(BEHAVIOR=UNOPTIMIZED), or update their code to declare cursors using the scrolloption 'dataset' that requires a dataset-based cursor.

1084942 (2582082)

### **.NET Native Debug**

- JIT debugging of 64-bit processes now works correctly in Visual Studio.

589153 ( )

### **.NET WinForm/WebForm**

- Using the UI to add COBOL switches or environment variables to a COBOL Web Application (right-click the configuration file in Solution Explorer and select Edit) no longer causes a configuration error when you run the application.

1082871 (2558133)

### **CAS Security**

- The MLDAP ESM Module can now be configured to support an additional wildcard character, "+", which matches any one character in the resource, user, or group name. To enable this wildcard, set "plus-wildcard=yes" in the [Operation] section of the Security Manager configuration area.

1083460 (2565125)

### **CAS XA Switch modules**

- The XA build script has been updated to resolve an issue using the 64-bit DB2 XA switch module on x86-64 platforms running Linux.

1083129 (2560501)

### **CCI TCP/IP**

- CAS utilities such as cassub or casout, and COBOL Web Service clients, no longer timeout prematurely when used with an SSL-enabled connection.

1082906 (2557202)

### **Compiler**

- The DBCSSOSI directive now compiles correctly.

590357 ( )

- DISPLAY MESSAGE BOX ... RETURNING syntax now returns an E-level error message stating that it is unsupported in this COBOL system.

584600 ( )

- You can now configure the DATAMAP clause to output either addresses or offsets. DATAMAP(ADDR) or DATAMAP with no option shows addresses. DATAMAP(OFFSET) shows offsets. Compile managed COBOL code sets DATAMAP(OFFSET) at the end of directive processing as addresses are not available for managed code.

1054182 (2093752)

- Compilation of ACU DISPLAY windowing syntax will no longer receive spurious internal error messages during a background syntax check.

591227 ( )

- Compiling with a large number of ADDSYN directives specified now works as expected.

1083917 (2567767)

- The maximum value for the PAGE LIMIT clause has been increased from 999 to 9999.

1084391 (2576431)

- DISPLAY(CONSOLE) is a new directive available to override the behavior set by RM or ACU directives, so that standard DISPLAY syntax is processed as standard ANSI DISPLAYs, directed to CONSOLE. RM and ACU directives set DISPLAY(CRT) immediately, allowing you to set DISPLAY(CONSOLE) after either of those directives, if required.

1084496 (2577799)

- A compiler bug that produced illegal int-code for "call ... returning pointer-item" under DIALECT(RM) has been fixed.

1085375 (2586367)

### Data Tools Editor

- The Data File Editor now allows editing of an EBCDIC data file on a DBCS OS.

1083716 (2567163)

### Documentation

- Information detailing the process of XML-enabling COBOL applications that was previously left out of the Visual COBOL documentation has been reinstated and is now available under Programming > COBOL Programming > XML Input/Output.

1084142 (2573343)

- When entering the path of the IBM MQ libraries for the ES\_MQ\_LIB and ES\_MQ\_LIB\_XA environment variables, in AIX environments the library must be an object inside a shared object.

1084692 (2578515)

- When you create or edit a CICS SIT resource in ESMAC, the paths of recoverable and non-recoverable temporary storage queues are now specified in separate fields, Path (rc) and Path (nr).

1084877 (2578440)

### File Handling - External File Handler

- Reading IDXFFORMAT"9" records non-transactionally over fileshare no longer causes any issues.

1083646 (2566578)

- When opening a mainframe file for input, the file is now not optional as per the mainframe.

1082362 (2506971)

- When attempting to OPEN I/O a read-only file using the RM/COBOL File Handler, a 37, 07 error message is displayed if the program is running in ANSI85 mode. The error message is not displayed if the program is running in ANSI74 mode.

1084329 (2573607)

- Cobfhrepro now works correctly when session id is specified.

590271 ( )

- Invalid XML syntax in MF.MFFH.XML has been corrected.

589406 ( )

- The maximum field length that MFSORT supports for PD summary fields is extended from 9 bytes to 18 bytes.

1084961 (2581353)

### **File Handling - Fileshare**

- If you are accessing RM/COBOL files through Fileshare, the RETRYLOCK option is now working correctly.  
1084744 (2579930)
- Closing a file using FSVIEW now correctly removes the file from fileshare's open file table.  
587706 ( )
- The FSVIEW option 'stats get' gives the statistics for current users, peak users, file opens and peak file opens. The corresponding FSVIEW API is FSV-C-get-stats.  
1083664 (2567737)
- FSVIEW will no longer process the last command in a command file twice.  
589764 ( )

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

- The informational "Operand 'VLSHRT' Ignored" message has been removed from the sort sysout.  
1083225 (2562501)
- Using SYMNames sometimes caused SORT to use the wrong field position and lengths.  
1083320 (2563738)
- Data format FI is now supported in the OUTREC edit fields section.  
1083495 (2565051)
- SORT now works correctly when there are concatenated VB files with different record lengths in SORTIN.  
1084194 (2573990)
- SORT now gracefully handles the error when there is an INCLUDE/OMIT condition with invalid HEX/ Binary digit.  
1084231 (2574465)
- SORT now ignores the operand 'WORK' along with its value.  
1081023 (2533397)
- A sort using SORTTEMPSPACE no longer ever results in a COBRTS 252 error.  
1081943 (2546898)
- CENTWIN and Y2PAST are now supported as PARMs.  
1080717 (2531364)
- The MFSORT help screen now shows that OPTION is supported.  
590260 ( )
- SORT worked incorrectly for multiple fields to be converted in INREC/OUTREC/OUTFIL OVERLAY syntax.  
1084481 (2577157)
- The TOTAL field length calculation now works correctly when TOTALs are zeros.  
1082887 (2558079)
- Trailers are now included in the SYSOUT outfil record count.  
1084193 (2573272)
- Records following HEADER2 and HEADER3 will now be the correct length.  
590270 ( )
- Header lengths are now calculated correctly, taking line feeds into account instead of giving a SORT099I error. Headers will now be printed for outfiles that do not have any records.  
1083701 (2565909)

- SORT now works correctly when SYSIN is given as LSEQ PDS Member.  
1082529 (2550678)
- When using MFJTOOL with a VB input file, an appropriate error is thrown when the output file is not VB or has not worked successfully when the output file is VB. Previously, a COBRTS 139 error was thrown.  
1084567 (2577626)
- Sort now works correctly when OPTION COPY is given before the SORT FIELDS in SYSIN.  
1083679 (2565053)
- SORT caused different sort processing for large sort cards. This has been fixed so SORT now returns an error message and exits the sort processing when the sort card has more than 1024 INCLUDE/OMIT conditions.  
1084065 (2571660)
- When using MFSORT, smaller records are padded to the size of the minimum record length of a VB file and the record length is changed to the minimum of sortout.  
1082943 (2554482)
- Sort now displays HEADER2 at the start and TRAILER2 at the end of each page.  
1083702 (2566545)

### **HCO for Microsoft SQL Server**

- "UPDATE WHERE CURRENT OF <cursor name>" SQL statements now work as expected when executed against SQL Server databases.  
1085003 (2580194)
- HCOSS Schema Extract tool now correctly returns table names with trailing spaces.  
1084492 (2576626)

### **Interface Toolkit General**

- A problem with an incorrect CLASSPATH when generating EJB service interfaces on UNIX has been resolved.  
591300 ( )

### **Interface Toolkit Mapper in Visual Studio**

- You can now specify the character set of Enterprise Server Application projects, ASCII or EBCDIC, on the COBOL tab in the project's properties.  
592224 ( )
- Some unwanted characters that appeared in the Application Files to Deploy dialog have been removed.  
592622 ( )

### **MF Directory Server**

- A problem with some of the security configuration pages in the Enterprise Server Administration HTML GUI not being displayed correctly in Mozilla Firefox Web browser has been resolved.  
592374 ( )
- When you used Enterprise Server Administration to create a new security resource entity, the initial ACL string value was displayed as an incorrect value.  
592375 ( )
- In Enterprise Server Administration, if a server listener has been defined to use SSL, the "Authorise" URL now uses a hostname instead of an IP address if the Communications Process Control Channel

listener has been defined using a hostname address. This avoids potential issues where the IP address might be invalid on a remote client because of NAT configuration.

1083989 (2563805)

- If MFDS\_DNS\_RESOLVE=Y is set in the MFDS process, you could get sign on errors. These were caused by the HTML GUI "Log On" menu option URL using the IP address and not the fully qualified hostname. These issues have now been fixed. As well as resolving the NAT address issues for remote clients, the HTML GUI "Log On" menu option also allows browser clients to connect to the GUI without receiving a certificate warning. This has been fixed in versions of the MFDS 1.14.27 and later.

1084209 (2573815)

- On Solaris platforms, attempting to access the Historical Statistics Facility for an Enterprise Server instance from the Enterprise Server Administration console causes the MFDS process to terminate.

592029 ( )

## **MFIO**

- Logons to MFA sometimes failed because the userid or password contained zeros.

1082548 (2552652)

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

- The WEB OPEN function is supported.

1081796 (2545562)

## **MTO - CICS ESMAC**

- If external security is configured (MLDAP) and the default ESMAC user is not allowed to login, the region does not startup.

1082337 (2550800)

## **MTO - JCL Utils**

- In IEBGENER, if the SYSUT1 dataset is a DUMMY dataset it will now be processed as an empty dataset.

1083514 (2565707)

## **MVS REXX Emulation**

- The DATE() function now formats the year correctly when converting between a Julian and a standard date format.

1083437 (2564240)

- The LISTDSI external function now correctly sets values for the SYSREFDATE and SYSMGMTCLASS variables.

1084902 (2581611)

## **Open PL/I CICS Preprocessor**

- A problem with mflpx erroneously passing the compiler options -opt and -noopt to mfexecpp has been fixed.

1085080 (2582970)

## Open PL/I Macro Preprocessor

- You no longer receive errors when the Macro Preprocessor processes an %INCLUDE filename when it is preceded by a %DECLARE statement with the same name.

1084534 (2578366)

## Open PL/I Compiler

- A problem when PIC variables of the same size are used as DO loop control variables has been fixed.  
1078110 (2500306)
- A problem when using a named constant with a VALUE using the DIM built-in has been fixed.  
1083576 (2566024)
- You no longer receive erroneous diagnostic messages or Compiler errors when compiling PL/I programs that miss or include a mismatched END; statement.  
1085247 (2585031)
- A problem with specifying REORDER on an ON ERROR block has been fixed.  
1084879 (2581350)
- A problem passing fixed bin(15) results from built-in functions to subroutines with ANY parameters when using the -bigendian compile switch has been fixed.  
1083470 (2561007)
- Previously, when a Compiler error message contained a variable name or variable description that consisted of 79 bytes or more of contiguous data without a space, a protection violation occurred when trying to compile.  
1084456 (2577444)
- When using the VALID built-in function on a zero-suppressed PIC variable that is based on the address of a character variable containing character zeros, VALID no longer fails the PIC variable.  
1084429 (2576882)
- A function call with an empty argument list is now allowed without parentheses. For example: dcl e fixed bin (31); dcl ent returns (fixed dec(6,0)); e = ent(); e = ent; /\* equivalent, issues diagnostic call func assumed \*/  
589546 ( )
- Calling an undeclared entry is now allowed for mainframe compatibility with a level E diagnostic. This is not recommended practice.  
589367 ( )
- Open PL/I now supports the VALIDDATE() built-in.  
589374 ( )
- Performing fixed bin big-endian array assignments failed when conversion was required.  
1084139 (2571825)
- A problem when declaring an automatic char varying item with a length specified using the SIZE or STG built-in function has been fixed. For example: dcl x char(4); dcl str char var (stg(x));  
1083710 (2568134)
- A problem passing a char(\*) parameter to an external subroutine declared with options(nodescriptor) has been fixed.  
1081856 (2546480)

### **Open PL/I Debugger**

- Variables declared with DEFINED POS(x) were not displaying correctly in Codewatch. This issue has been fixed but, to avoid this problem when debugging with Codewatch, you need recompile any source code that includes such variables with -deb.

1084063 (2571824)

### **Open PL/I Macro Preprocessor**

- Previously, an attempt to compile PL/I source which contained macro language and the macro language contained an assignment statement where one of the literal constants was larger than 4096 bytes could result in a protection violation in mfpp.exe. This has been enhanced so that you can now use literal constants up to 16392 bytes. If you exceed this limitation, an appropriate message is displayed.

1084405 (2576694)

### **Open PL/I Run-Time System**

- When writing to a JCL SYSOUT without any DCB specified, if you utilized RECORD IO, specified RECSIZE in the file declaration's ENV attribute, and opened the file implicitly, RECSIZE was ignored and a default of 121 was applied.

1085170 (2584746)

- Previously, when utilizing PLIDUMP to generate a callstack, if a hard error occurred, then the callstack would not correctly reflect all of the stack frames.

590218 ( )

### **Open PL/I SQL Preprocessor**

- In Enterprise Developer 2.1, EXEC PP should be used.

1082329 (2545557)

### **Run-Time System**

- The call MVS\_REGISTER\_DDNAME is an MFE-only call used by the IDE. FileHandler no longer calls this routine.

1083028 (2559292)

- IF NUMERIC validation of COMP-3 slack nibbles (when there is an even number of digits in the picture clause) is now done in a way that is compatible with that on the mainframe.

1083801 (2569340)

- The RUN program now accepts command line arguments of up to 1023 characters long.

1083215 (2561567)

- When running a full-screen application inside a terminal emulator on Linux, the actual size of the terminal is read at startup and reread when the terminal is resized. This behaviour is also supported on AIX, HP/UX, and Solaris. The Micro Focus vt220 terminfo entry now correctly describes a 24-line display. A vt220-25 terminfo entry is included for compatibility with the previous behaviour.

1084817 (2579335)

### **Setup Issues**

- When working on managed SQL applications, you no longer receive syntax check errors caused by some COBOL SQL .dll files that were previously missing.

1084318 (2575613)

### **SQL: COBSQL**

- The Cobsq preprocessor was updated to no longer misinterpret WORKING-STORAGE items whose definitions were spread across multiple source lines.  
1080078 (2507684)
- The Cobsq preprocessor has been updated to correctly process variables defined as USAGE COMP after an EXEC SQL INCLUDE SQLCA when the CP preprocessor directive NOSQL is specified.  
1084463 (2577593)
- The Cobsq preprocessor has been updated to correctly process Pro\*COBOL-generated data items when the first WORKING-STORAGE variable in user code contains a VALUE clause with the literal value on a separate source line.  
1084753 (2579264)

### **SQL: DB2 ECM**

- The DB2 pre-compiler now generates GOBACK instead of STOP RUN at the end of program source, so that poorly coded programs do not fail when running under IMS or other transaction monitors.  
1083235 (2559616)

### **SQL: HCO for SQL Server**

- The HCO for SQL Server BIND tool results are no longer limited to the OpenESQL Maximum Row Count setting.  
1085321 (2586047)

### **SQL: OpenESQL**

- The OpenESQL preprocessor has been updated such that when a program or application is compiled with the SQL(DBMAN=ADO) compiler directive, the calls generated do not modify user data when a null value is returned.  
1083563 (2561563)
- The OpenESQL preprocessor no longer accepts singleton select statements that have no INTO clause, or host variables that are not preceded by a colon, apart from SQLDA references in dynamic SQL. In rare cases where a singleton select without an INTO clause is required, code it by placing the SELECT statement inside of a BEGIN/BEND block.  
1084430 (2576585)
- The ODBC Compiler did not identify specialized classes such as ENUMS, and incorrectly generated SQL interface code for them that caused Compiler errors. The ODBC Compiler has been enhanced so that it no longer generates SQL interface code for those classes.  
1083144 (2561349)
- Previously, the SQL pre-compilers did not always recognize the EXEC SQL INCLUDE statements during the syntax checking phase and returned incorrect error messages.  
1085057 (2582967)

### **Vision File System**

- When you configure your application to return RM/COBOL file status codes, by setting COBFSTATCONV=rmstat, the codes returned are ANSI'85 codes.  
1082469 (2553438)

## Visual Studio IDE

- Compile extensionless COBOL files with the IDE no longer fails.  
591781 ( )
- Previously, if you started debugging using CBL\_DEUGBREAK and there was a COBOL source file open in the editor, when you stopped debugging its dictionary file (.idy) was not being released. This resulted in any subsequent builds and rebuilds failing. This problem has been resolved.  
588696 ( )
- The IDE no longer ignores certain Run-Time System errors from the Compiler which previously caused the build to fail without an explanation.  
591692 ( )
- The native COBOL projects in Visual Studio have been enhanced so that you can now build them to multiple executables - each COBOL program in the project producing a separate executable.  
590335 ( )
- Command line arguments are now passed to the program when started via the 'Start without Debugging' option in the Visual Studio IDE.  
568188 ( )
- You no longer receive an error message when adding an event handler to an object in a COBOL WPF project if the .xaml code behind file includes a class that does not have methods in it.  
591072 ( )
- A new setting has been added to the COBOL tab in the project properties, "Generate listing option", which produces an .lst file in a Listing subfolder in the project directory. The "Generate directives file" setting now generates the directive file in the project output directory.  
1077662 (2494484)
- Previously, Visual Studio used to always rebuild the entire project after you changed the project properties or added files when there were build error. This has been changed so that during subsequent builds Visual Studio only rebuilds the files that are out-of-date.  
1084393 (2576400)
- There is now a build summary report for projects that compile to multiple output files.  
1084506 (2578006)
- Using drag and drop in Solution Explorer to move a file from one project to another no longer leaves a copy of the file in the original project directory on the disk.  
592120 ( )
- A problem with using drag and drop to add files to projects in Solution Explorer has been resolved. It now correctly creates copies of the files in the project folder when the CTRL button is pressed.  
567446 ( )
- A problem with the item templates in the Add New Items dialog box not available for PL/I projects has been resolved.  
1084876 (2581187)

## XDB DCLGEN Utility

- A protection violation sometimes occurred when you used the XDB Declaration Generator tool on 64-bit Windows platforms.  
591030 ( )

## XDB Server

- Support has been added to enable the execution of DESCRIBE INPUT statements.

1079821 (2508551)

- A mutex deadly embrace no longer results in a server hang.

1085199 (2583889)

### **XML syntax support runtime**

- An issue with the PREXML preprocessor has been resolved and it now does not truncate data names longer than 30 characters.

1085342 (2586384)

- In previous releases, the documentation for XML Input/Output was missing from the online help. This documentation is now included in the online help.

1084119 (2572393)

# Updates and SupportLine

Our Web site gives up-to-date details of contact numbers and addresses.

## Further Information and Product Support

Additional technical information or advice is available from several sources.

The product support pages contain a considerable amount of additional information, such as:

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

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



**Note:** Some information may be available only to customers who have maintenance agreements.

If you obtained this product directly from Micro Focus, contact us as described on the Micro Focus Web site, [www.microfocus.com](http://www.microfocus.com). If you obtained the product from another source, such as an authorized distributor, contact them for help first. If they are unable to help, contact us.

## Information We Need

However you contact us, please try to include the information below, if you have it. The more information you can give, the better Micro Focus SupportLine can help you. But if you don't know all the answers, or you think some are irrelevant to your problem, please give whatever information you have.

- The name and version number of all products that you think might be causing a problem.
- Your computer make and model.
- Your operating system version number and details of any networking software you are using.
- The amount of memory in your computer.
- The relevant page reference or section in the documentation.
- Your serial number. To find out these numbers, look in the subject line and body of your Electronic Product Delivery Notice email that you received from Micro Focus.

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

Alternatively, you might be asked to provide a log file created by the Consolidated Tracing Facility (CTF) - a tracing infrastructure that enables you to quickly and easily produce diagnostic information detailing the operation of a number of Micro Focus software components.

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 which does not contain `etc/cobver`, the script outputs the contents of `/opt/microfocus/logs/MicroFocusProductRegistry.dat` which keeps a list of the installed Micro Focus products.

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

## Creating Debug Files

If you encounter an error when compiling a program that requires you to contact Micro Focus technical support, 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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