



# **Micro Focus Visual COBOL Development Hub 2.1 Update 1**

---

A large, decorative graphic consisting of multiple overlapping, wavy blue lines that create a sense of motion and depth. The lines are in various shades of blue, from dark to light, and are set against a light blue gradient background.

**Release Notes**

**Micro Focus**  
**The Lawn**  
**22-30 Old Bath Road**  
**Newbury, Berkshire RG14 1QN**  
**UK**  
<http://www.microfocus.com>

**Copyright © Micro Focus 2009-2013. All rights reserved.**

**MICRO FOCUS, the Micro Focus logo and Visual COBOL are trademarks or registered trademarks of Micro Focus IP Development Limited or its subsidiaries or affiliated companies in the United States, United Kingdom and other countries.**

**All other marks are the property of their respective owners.**

**2013-03-22**

# Contents

<b>Micro Focus Visual COBOL Development Hub 2.1 Update 1 Release Notes</b>	<b>4</b>
<b>Installation</b>	<b>5</b>
System Requirements for Visual COBOL Development Hub	5
Hardware Requirements	5
Operating Systems Supported	5
Software Requirements	5
Installing Visual COBOL Development Hub	6
Downloading the Product	6
Installing	6
Installing as an Upgrade	8
UNIX Installer Issues	8
Configuring the Remote System Explorer Support	8
Repairing	9
Uninstalling	10
<b>Licensing Information</b>	<b>11</b>
<b>Known Issues</b>	<b>12</b>
<b>Resolved Issues</b>	<b>13</b>
<b>Updates and SupportLine</b>	<b>17</b>
Further Information and Product Support	17
Information We Need	17
Creating Debug Files	18
<b>Disclaimer</b>	<b>19</b>

# Micro Focus Visual COBOL Development Hub 2.1 Update 1 Release Notes

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



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

# Installation



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

## System Requirements for Visual COBOL Development Hub

### Hardware Requirements

The disk space requirements are:

- Between 26 and 33 MB for the Sentinel RMS license server depending on the platform.
- Between 206 and 427 MB for Micro Focus Development Hub depending on the platform.



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

### Operating Systems Supported

- POWER running AIX 6.1 TL7 SP5/7.1 TL1 SP5 - 32/64-bit
- x86-64 running Red Hat Linux 5.5/5.8/6.3, Oracle Linux 6.3 with Red Hat Kernel compatibility mode, Oracle Linux 6.3 with Unbreakable Enterprise Kernel - 32/64-bit
- SPARC running Solaris 10/11 - 32/64-bit
- x86-64 running Solaris 10/11 - 32/64-bit
- x86-64 running SuSE SLES 11/11 SP2 - 32/64-bit
- System Z running SuSE SLES 11 SP2 - 32/64-bit
- System Z running Red Hat Linux 6.2/6.3- 32/64-bit
- HP IA 11.31 - 32/64-bit

### Software Requirements

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

- Before installing on Red Hat 6.x, 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.x, 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.

1. Java Platform Standard Edition (Java SE) 6 Update 27 or Java 7 is required to execute COBOL JVM code and for native COBOL and Java interoperability.



**Note:** On AIX 6.1 v2, the minimum required version is Java 6.0 SR10.

You can download Java SE from [www.oracle.com](http://www.oracle.com) and install it anywhere on your machine.

- 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.



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

If you have a network server, you must update the license server before installing the product as the client is not able to communicate with license servers of versions older than 10000.2.660. 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>.

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

- 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 Visual COBOL Development Hub

### Downloading the Product

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

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

### Installing

To use the Web Installer:

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

```
chmod +x webinstaller_visualcobol_devhub_2.1_update1_platform
```

2. Run the installer with superuser permissions:

```
./webinstaller_visualcobol_devhub_2.1_update1_platform
```

If you don't run this as superuser you will be prompted to enter the superuser password during the installation.

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

1. Give execute permissions to the setup file:

```
chmod +x setup_visualcobol_devhub_2.1_update1_platform
```

2. Run the installer with superuser permissions:

```
./setup_visualcobol_devhub_2.1_update1_platform
```

If you don't run this as superuser you will be prompted to enter the superuser password during the installation.

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

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

```
./webinstaller_visualcobol_devhub_2.1_update1_platform -  
installlocation="full path of new location"
```

or

```
./setup_visualcobol_devhub_2.1_update1_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.



**Note:**

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

```
./setup_visualcobol_devhub_2.1_update1_platform -skipsafenet
```

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

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

While the file is present, the SafeNet installer does not make changes to the installation or shutdown the running license daemons. If 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/VisualCOBOL/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.)

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



**Note:** For information about the Visual COBOL Development Hub, check the help for Visual COBOL for Eclipse that is available online on the [Micro Focus Infocenter](#).

## Installing as an Upgrade

This release works concurrently with version R4 of Visual COBOL, so you do not need to uninstall it. There are two options for installing the latest version in this case:

- Move the R4 installation to a different location and install the latest version to the default install location, `/opt/microfocus/VisualCOBOL`.

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

1. Execute the following command:

```
[ as root ] mv /opt/microfocus/VisualCOBOL /opt/microfocus/VisualCOBOLR4
```

2. Install the latest version as described in the section *Installing*.

- Install the latest version in a different location and set the environment to point to it. To do this, run the Visual COBOL 2.1 Update 1 installer with the `-installlocation` option:

1. Execute the following command:

```
./InstallFile -installlocation="/opt/microfocus/VisualCOBOL2.1"
```

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

```
./opt/microfocus/VisualCOBOL2.1/bin/cobsetenv
```

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

## 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 Visual COBOL Development Hub running on the UNIX machine and handling all requests from the IDE for building and debugging programs. Visual COBOL Development Hub 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 on the Development Hub 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.

## Repairing

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

# Uninstalling

To uninstall this product:

1. Execute as root the `Uninstall_VisualCOBOL2.1.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 License Manager or the prerequisite software. To completely remove the product you must uninstall the Micro Focus License 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 Visual COBOL R4 release.
- This release requires the latest version of SafeNet licensing software. See *Software Requirements* in this document for more details.
- 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.

**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.

# 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:

## COBOL Watchpoints

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.

## Co-existing with Earlier Micro Focus Products

### Run-time system error due to COBCONFIG

A run-time system error occurs if the COBCONFIG environment variable is set when you run a Visual COBOL application or when you use Visual COBOL to edit or create projects and the configuration file it refers to contains entries that are not valid for Visual COBOL.

For example, this might happen if you have Studio Enterprise Edition installed and COBCONFIG is set for it.

To work around this issue, ensure that Visual COBOL is not running and then modify the configuration file by doing one of the following:

- If the invalid tunable is not needed by another application, remove it from the run-time configuration file.
- Add the following as the first line in the configuration file:

```
set cobconfig_error_report=false
```
- Unset COBCONFIG or set it to another configuration file that does not contain the invalid tunable for the particular session you are running in.

## File Handling

- When using a CGI/ISAPI application developed with the Net Express HTML Forms Designer in Visual COBOL, you may receive an error “unresolved external symbol \_NMCNVRTI” or “unresolved external symbol \_NMCNVRTO”.

To work around this issue, add the corresponding .obj file to the **Additional Directives** in the project properties, or use them from the command line to link the application: `cbllink filename.cbl NMCNVRTI.OBJ` (or `cbllink filename.cbl NMCNVRTO.OBJ`, respectively).

- If you are accessing Vision files through the Vision file handler (as opposed to the default Micro Focus File Handler) and you are upgrading from Visual COBOL version 2.0 to version 2.1, you must first uninstall version 2.0, otherwise the Vision file handler may not function correctly.

## Fileshare

A write of a record with an alternate key where the alternate key is the first value for that key may now return a 0/2 file status rather than a 0/0 status if a record with that alternate key value has been deleted by uncommitted transaction (possibly the same transaction as that performing the write).

# 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.

- [Compiler](#)
- [Data Tools Converter](#)
- [Data Tools Vrecgen \(Character\)](#)
- [Documentation](#)
- [File Handling - External File Handler](#)
- [File Handling - Sort](#)
- [JVM - Debugger](#)
- [MF Communications Server](#)
- [MF Directory Server](#)
- [MVS REXX Emulation](#)
- [NCG](#)
- [RTS](#)
- [Setup Issues \(UNIX\)](#)
- [SQL: COBSQL](#)
- [SQL: OpenESQL](#)
- [XML syntax support runtime](#)

## Compiler

[Back to List](#)

- Specify an environment variable with the USE and DIRECTIVES Compiler directives (e.g. USE"\$myDirs") to locate a directives file.  
1086063 (2592063)

## Data Tools Converter

[Back to List](#)

- The dfconv replacement input and output filenames are no longer truncated to the filename lengths used within the profile file.  
1086569 (2599741)

## Data Tools Vrecgen (Character)

[Back to List](#)

- The source files for the VRECGEN and VRECGEN2 utilities are now stored in the .\src folder in the product installation.  
1087209 (2603963)

## Documentation

[Back to List](#)

- The SSRANGE Compiler directive is provided for emulation of the IBM mainframe compiler of the same name; because of this, its scope is limited to the syntax permissible in a mainframe dialect.  
1087083 (2605408)
- To ensure no loss of functionality when accessing Vision and RM/COBOL data files, you should use the appropriate IDXFORMAT Compiler directive setting or file handling option, and not use the CALLFH(ACUFH) Compiler directive. See 'Configuring Access to Vision Files' and 'Configuring Access to RM/COBOL Data Files' for more information.  
593437 ( )
- All COBOL CICS programs that call user exits need to be compiled with the NOAMODE directive.  
593780 ( )
- The documentation now clarifies the EZACICM.MOD location.  
1086693 (2599949)
- The documentation now includes information about the -stcpssl cassub option.  
1087060 (2605136)
- The documentation has been updated to provide more information about the MFJAMS LISTCAT command.  
594069 ( )
- The documentation has been updated to remove references to ERRORLEVEL in Unix environments.  
1087575 (2610423)
- The casrdtex documentation has been updated to include several more supported parameters.  
594324 ( )

### **File Handling - External File Handler**

[Back to List](#)

- EXTFH configuration options specified under the FOLDER tag now work correctly with UNIX files when they are specified with an absolute path in the SELECT statement of a COBOL program.  
1086089 (2594733)
- RMFM record lock timeouts now work correctly on UNIX.  
1087015 (2602108)

### **File Handling - Sort**

[Back to List](#)

- A SORT RETURN statement now returns a 9/230 error for the return past EOF.  
1087358 (2606867)
- SORT now terminates with return code 16 and throws a 9/013 error when the catalogued input file is not physically present.  
1087529 (2607690)
- SORT now terminates with return code 16 and displays error message "SORT103E Invalid operator .JOINKEYS." when the JCL contains the JOINKEYS parameter.  
1087311 (2607369)

### **JVM - Debugger**

[Back to List](#)

- The JVM COBOL Debugger could only locate copybooks that were located in the same directory as the COBOL program.

1086348 (2597430)

## **MVS REXX Emulation**

[Back to List](#)

- Execs residing in temporary datasets allocated to SYSEXEC or SYSPROC no longer sometimes fail to load.

1086478 (2579785)

- The bpxwunix() function is now supported by the REXX engine.

1085190 (2584045)

## **NCG**

[Back to List](#)

- An error when linking on Solaris Intel 64 bit with the latest versions of Solaris 10 has been fixed.

1086852 (2602536)

- Display statements of the type "display a(1:i\*c) at 0101" could cause the generator to fail when in debug mode.

1088048 (2607368)

## **Setup Issues (UNIX)**

[Back to List](#)

- During installation, the CheckDiskSpace function no longer relies on English text strings from the UNIX df command.

1086610 (2600117)

## **SQL: COBSQL**

[Back to List](#)

- The COBSQL preprocessor could not process options longer than 65 characters.

1085597 (2589416)

## **SQL: OpenESQL**

[Back to List](#)

- The SQL JVM Run-Time .jar library file is now supplied as part of the Micro Focus COBOL deployment products for UNIX.

1087595 (2610662)

- The OpenESQL preprocessor sometimes generated incorrect query lengths for EXEC SQL PREPARE INTO FROM statements, resulting in the SQL queries being truncated.

1087324 (2607761)

- The ODBC pre-compiler now allows you to define host variables after the DECLARE CURSOR SQL statement if they are not defined in the PROCEDURE DIVISION.

1086501 (2599123)

- When using the SQL Server Native Client ODBC driver, the OpenESQL Run-Time System now correctly processes SQL Server data defined as VARCHAR(MAX).

1086665 (2601192)

## XML syntax support runtime

[Back to List](#)

- The XML preprocessor now generates correct output for the COUNT IN clause.  
1086285 (2596137)



# 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.

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

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

To run `mfsupport`:

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

This creates a log file, `mfpoll.txt`, in that directory.

4. When the script finishes, send the `mfpoll.txt` file to your Micro Focus SupportLine representative.

**Note:**

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

## Creating Debug Files

If you encounter an error when compiling a program that requires you to contact Micro Focus 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.

# Disclaimer

This software is provided "as is" without warranty of any kind. Micro Focus disclaims all warranties, either express or implied, including the warranties of merchantability and fitness for a particular purpose. In no event shall Micro Focus or its suppliers be liable for any damages whatsoever including direct, indirect, incidental, consequential, loss of business profits or special damages, even if Micro Focus or its suppliers have been advised of the possibility of such damages. Some states do not allow the exclusion or limitation of liability for consequential or incidental damages so the foregoing limitation may not apply.

Micro Focus is a registered trademark.

Copyright © Micro Focus 1984-2013. All rights reserved.