extend Interoperability Suite 10.0.1

Release Notes

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extend 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 links to external web sites. Micro Focus cannot be responsible for the contents of the website or for the contents of any site to which it might link. Web sites by their nature can change very rapidly and although every attempt is made to keep links up-to-date, Micro Focus cannot guarantee that external links will always work as expected.

extend System Requirements

Note: This product includes software developed by the University of California, Berkeley and its contributors.

Hardware Requirements

extend software has the following requirements:

For Windows:

- The amount of disk space needed to install the ACUCOBOL-GT development system is typically less than 35 MB.
- AcuBench® requires at least 20 MB for installation.
- You need an additional 40 MB to install all of the other extend products.
- Use of .NET controls with the runtime and thin client requires .NET Framework 4.0.

For all other platforms:

- The amount of disk space needed to install all extend products is typically less than 35 MB.

Supported Operating Systems

Note: AcuBench no longer supports Windows XP or earlier platforms. This is because AcuBench utilizes a number of third-party libraries that have ceased to be supported on those platforms.

For this release, platform support has been added for Windows Server 2016.

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

Additional Requirements

AcuServer:

- Each server machine must be networked to UNIX, Linux, or Windows clients with TCP/IP. TCP/IP is not sold or supplied by Micro Focus.
- All servers must have a copy of the AcuServer license management file.
- Windows clients can run any TCP/IP software that uses a `WINSOCK2` compliant `ws2_32.dll`.
- Unless you have an unlimited license for AcuServer, all UNIX servers must run the current version of `acushare`, which is included on the AcuServer distribution media.
- All servers must have a copy of the license file activated by the product installation script. This file is named `acuserve.alc`.
- Client machines must have an ACUCOBOL-GT AcuServer-enabled runtime. All Windows runtimes Version 5.0 and later are AcuServer-enabled. To verify that your UNIX runtime is AcuServer-enabled, type `runcbl -v` in a Command prompt and look for this line.

  ```
  AcuServer client
  ```
- Servers being accessed by the ACUCOBOL-GT Web runtime must have a multiple-user ACUCOBOL-GT runtime license that accommodates each concurrent user that is anticipated. (If you anticipate 100 concurrent users of the Web runtime, you need a 100-user runtime license on the server in addition to the AcuServer license file. Alternatively, runtime users can install a local or network floating license for the runtime themselves.

AcuBench:

- Intel Pentium III CPU, 300 MHz; Intel Pentium IV, 2 GHz recommended
- 128 MB of RAM recommended
- 120 MB of available hard disk space recommended
- mouse
- 800 x 600 VGA display or better; 1024 x 768 VGA display recommended

AcuSQL:

- Your COBOL application must run on a Windows system or a UNIX system supported by Micro Focus. Unless otherwise indicated, the references to Windows in this manual denote supported Windows operating systems. Where necessary, individual versions of those operating systems are referred to by their specific version numbers.
- AcuSQL must be installed with the ACUCOBOL-GT development system on your Windows or UNIX system.
- If using a database other than Microsoft SQL Server, you must have a working ODBC level 2 API connection to your database, including any required networking software support.
- For SQL Server, if running the AcuSQL interface to Microsoft SQL Server, you must have the SQL Server client software from Microsoft. Use the Query Analyzer to see if the SQL Server client software from Microsoft is on your system. For information on opening the Query Analyzer, see the SQL Server client documentation. If the Query Analyzer opens and you are able to connect to the database, the client libraries are most likely all present. Your SQL Server data source may be hosted on one or more of the supported server operating systems.
- If you are running the AcuSQL interface to MySQL, you must have the following software:
  - MySQL 5.0 Database Server Version 5.0.18 or later (Generally Available release). Testing was done with MySQL 5.0.18 Standard.
  - MySQL Connector/ODBC Version 3.51.11 or later (Generally Available release). Testing was done with the `libmyodbc3-3.51.12.so` library. This file is available from *http://dev.mysql.com*.

  You can check the version of your server by connecting using `mysql`. The version prints upon connection. For example:

```
[testing ]: mysql
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 29 to server version:
5.0.18-standard
Type 'help;' or '\h' for help. Type '\c' to clear the buffer.
```

  Once in MySQL, you can also use the following:

```
mysql> select version();
+-----------------+
| version()       |
+-----------------+
| 5.0.18-standard |
+-----------------+
1 row in set (0.09 sec)
```

- If your application accesses DB2 data, IBM's DB2 Connect™ software is recommended. Access to DB2 databases has been tested with DB2 Connect. However, any vendor's properly configured ODBC level 2 API connectivity software should work. Your DB2 data source may be hosted on one (or more) of the supported operating systems.

Acu4GL (for ODBC) driver requirements:

Your ODBC driver must include the following functions:

- all Core ODBC driver functions
- the Level 1 function SQLColumns
- the Level 1 function SQLTables

Depending on the method of record locking you choose, your driver may also need to support some of the following function calls:

- SQLSetStmtOption
- SQLSetScrollOptions
- SQLExtendedFetch
- SQLSetPos

See A_ODBC_LOCK_METHOD in the extend online help for more information.

To test the capabilities of your ODBC driver, we have included a driver test program on your Acu4GL for ODBC installation disks. You can also consult your driver documentation to ensure that it meets these requirements.

Windows Installation

License Files for Windows

You may request a license file for one or more users. The number of users (user limit) is set in your license agreement with Micro Focus.

When you receive your products, the package includes product codes and product keys for every product you ordered. You must have the product codes and product keys to create the license file.

When you install or update your license file, place it in the appropriate directory for your version of Windows. The location is:

```
C:\ProgramData\Micro Focus\extend\x.x.x\x86\product-license.alc
```

(Where *x.x.x* is the product version number.)

Note: This location is new to extend 9.0 and later, and differs from past versions of extend products. See *Appendix C - Changes Affecting Previous Versions* in the *ACUCOBOL-GT Appendices* manual for details.

When you have multiple users or products, you may copy the license file onto each machine containing the corresponding product or place the products and license file on a shared drive. Each product must be able to locate its license file in order to function.

Note: The ACUCOBOL-GT Transaction Server runtime license file is named `wrun32.1lc`. If you are using other *extend* products, the license files must be concatenated into a special file.

The Activator Utility

The Activator Utility automates the process of creating a license file.

During installation, select **Install License Activator** on the Installation Settings page to install the Activator Utility (`activator.exe`). It is installed in the `\AcuGT\bin` sub-directory of the installation directory.

Note: Always use the version of the Activator supplied with the version of the product you have installed.

To create the required license files during installation, select **Launch License Activator** on the Installation Settings page. This will launch the Activator Utility when the selected products have installed, enabling you to enter the product code and key pairs required to create the license files.

You can also create license files after the installation by running the Activator Utility (`activator.exe`) from the location detailed above or from the Start menu.

During product installation, if the Activator detects the presence of an existing license file, the extension of the existing file is changed before a new license file is created. For example, `runcbl.alc` is renamed `runcbl.al!`. If the Activator is unable to rename the existing license file, it quits with an error message, and no new license file is created. If a license file with the back-up extension already exists, the Activator attempts to overwrite it. If that fails, the Activator quits with an error message and no new license file is created. On Windows platforms, file attributes such as Read Only are also preserved.

Changing or Updating a Windows License File

If you need to alter your license file information, contact your Micro Focus *extend* representative for updated product code(s) and product key(s). When you receive them, launch the Activator and enter the new information as prompted.

Note: If you have copied a license file to a non-default directory, remember to replace that file with a copy of the updated license file.

Installation on Windows Platforms

The Windows installation requires little interaction; the setup program copies the files into a directory you designate, or `C:\Program Files\Micro Focus\extend x.x.x` (where *x.x.x* is the version number) by default. On 64-bit machines, 32-bit executables are installed to `C:\Program Files (x86)`.

Before you run an installation, you should ensure that you have your product codes and product keys, and the product media to hand. Refer to the appropriate installation instructions below.

Also, you should ensure that you do not have another version of the extend Interoperability Suite referenced in the PATH system environment variable, as having more than one version specified may cause unexpected results.

After the installation is complete, if you have installed both the compiler and runtime, you can begin to compile and execute your COBOL programs. Basic compilation and execution techniques are described in *Compiling Your Programs* and *Running Your Programs*.

Note: If you move or delete any `.dll` files that have been installed, your products may not run as expected.

AcuBench and AcuXDBC™ must be installed locally (on the client). Server-side products such as AcuServer™, AcuXDBC™ Server and AcuConnect® are to be installed only on server machines.

Installation Steps

Attention: The installation is supplied in two formats: `.exe` and `.msi`. On the installation CD, the `.exe` is located in the top level folder, and the `.msi` is located in the `msi` folder. If you plan to install Xcentrisity Business Information Server, or start AcuServer or AcuConnect from the installer, you must run the installation with administrator privileges, from an account that is in the Administrator group.

If you install from the CD, it will automatically run the `.exe` version with administrator privileges. If you run the `.msi`, it does not automatically run with administrator privileges. To run the `.msi` with administrator privileges, click **Start**, and in the **Search programs and files** field, type `cmd.exe`, then in the list displayed, right-click **cmd.exe** and select **Run as administrator**: this opens a command prompt with administrator privileges, where you can run the install by typing the full path name of the `.msi` file.

Follow these steps to install your products.

1. Insert the product CD, or use the provided link to download the installation package from the Micro Focus website.

   If you are using the CD, it runs the `.exe` version automatically.
2. If the `.exe` version does not start automatically, or you are using the downloaded installation package, do one of the following:

   - Navigate to the CD drive, then double-click the `.exe`.

- Navigate to the location of the downloaded file, then double-click it. (See the above note if you are running the `.msi` version.)

The installation starts.

3. On the Welcome page, click **Next**.
4. On the **End-User License Agreement** page, select **I accept the terms in the License Agreement**, then click **Next**.
5. On the **Select Installation Folder** page, click **Browse** and select installation directories for 32-bit and 64-bit (if applicable) products. Alternatively, you can accept the default location(s), then click **Next**.
6. On the **Product Selection** page, select the required products, then click **Next**.

   You must have product codes and keys to activate each product; however, you can install all products now, and activate those products for which you do not have a license at a later date. (Be aware that if you attempt to use products for which you do not have a license, you may receive error messages indicating that no license file is available.)

   Note: Ensure you select **Documentation** on this page to install and access the product user guides.
7. On the **Installation Settings** page, select one or more of the following, then click **Next**:

Select	To
Install License Activator	Install a copy of the License Activator
Launch License Activator	Launch the License Activator at the end of the installation process
Start AcuServer 32/64-bit	Start your version of AcuServer as a service
Start AcuConnect 32/64-bit	Start your version of AcuConnect as a service

Note: Starting either AcuServer or AcuConnect as a service will only occur if their pre-requisites are satisfied before you run the installer, and only if you have run the `.exe` or `.msi` version of the installer with administrator privileges (see note above).

If you selected **Launch License Activator** on the **Installation Settings** page, the **Activator Wizard** appears.

8. Type your first product code and key in the appropriate fields.

   The License Activator is case-insensitive and displays only uppercase characters. It also ignores embedded spaces and separating characters. Product codes and keys do not contain the letters "O" or "I".

   Caution: If you have a license for both the Windows runtime (`wrun32.exe`) and an Alternate Terminal Manager (ATM) runtime (`run32.exe`) for the same machine, be aware that the Activator Utility creates a license file named `wrun32.alc` for each of them. To avoid a situation in which the Activator Utility overwrites the license file for the second runtime:

   - Make a backup copy of the Windows runtime license file prior to creating (and renaming) the ATM runtime license.
   - Create the ATM runtime license and rename it to match the executable (change `wrun32.alc` to `run32.alc`) before creating the Windows runtime license.

9. If you have more than one code and key pair to enter, select **More** after typing the first code/key pair. Repeat this process until you have entered all code and key pairs, then click **Finish**.

   Each time you press **More**, the License Activator creates a separate license file for the product code and key you entered and returns you to the code and key entry screen.

10. Click **Finish** on the **Installation Complete** page to complete the installation.

Note: If license activation was successful, but you get a message during product startup indicating that the license file cannot be found, the license file may not be in the correct directory. The License Activator determines where to place the license file based on entries in the Windows registry. If no registry entry is found, the license file is placed in the same directory as the License Activator executable file, which is the `\AcuGT\bin` sub-directory of the default installation directory. If this is not the location of the product's executable file, move the license file to the directory containing the corresponding executable file; for example, move `wrun32.alc` to the directory containing `wrun32.exe`.

Windows 64-bit Installations

There are 64-bit versions of most products. These 64-bit product versions install from an installation that is separate and unique from the standard 32-bit Windows version of *extend* software. The installation process follows the same steps as described in *Installation on Windows Platforms*. Note that the 64-bit installation also installs 32-bit versions of those products that do not have 64-bit equivalents. This includes certain program executables, such as AcuBench, as well as non-executables, such as sample programs and tools.

When selecting products to install on Windows x64 platforms the 32-bit products will be installed into a special Windows folder reserved for 32-bit programs called "Program Files (x86)". The Windows **Start** menu items will use these 32-bit versions. Some of the 32-bit products have 64-bit equivalents and are automatically installed into the Windows "Program Files" directory if the 32-bit product was selected to be installed. The 64-bit "Program Files" directory only contains the executables and does not contain all of the support files. The support files are found in the "Program Files (x86)" directory along with all the 32-bit executables.

An example of a 32-bit product that does not have a 64-bit equivalent is AcuBench. When you compile and run programs from AcuBench, the 32-bit versions of the compiler and runtime are used. AcuBench does not require any path changes for this to occur. All the 32-bit versions are fully supported and functional in the 64-bit environments.

When running the license activator, the installer runs the 64-bit version of the Activator utility so that it can install the license files into both the 32-bit and 64-bit directories. If you run the Activator utility from the command prompt, make sure you are using the 64-bit version in the "Program Files" directory, because the 32-bit Activator utility will generate license files only for the 32-bit products.

BIN-REDIST and REDIST Installation Directories

The extend Windows distribution contains two directories: `BIN-REDIST` and `REDIST`.

`REDIST` contains thin client files that should be distributed along with the thin client.

`BIN-REDIST` contains Microsoft Redistributable files. These files are required in cases where the ACUCOBOL-GT `bin` directory and runtime are placed on a shared drive and users then map to that drive. The `BIN-REDIST` directory should be placed inside the shared `bin` directory.

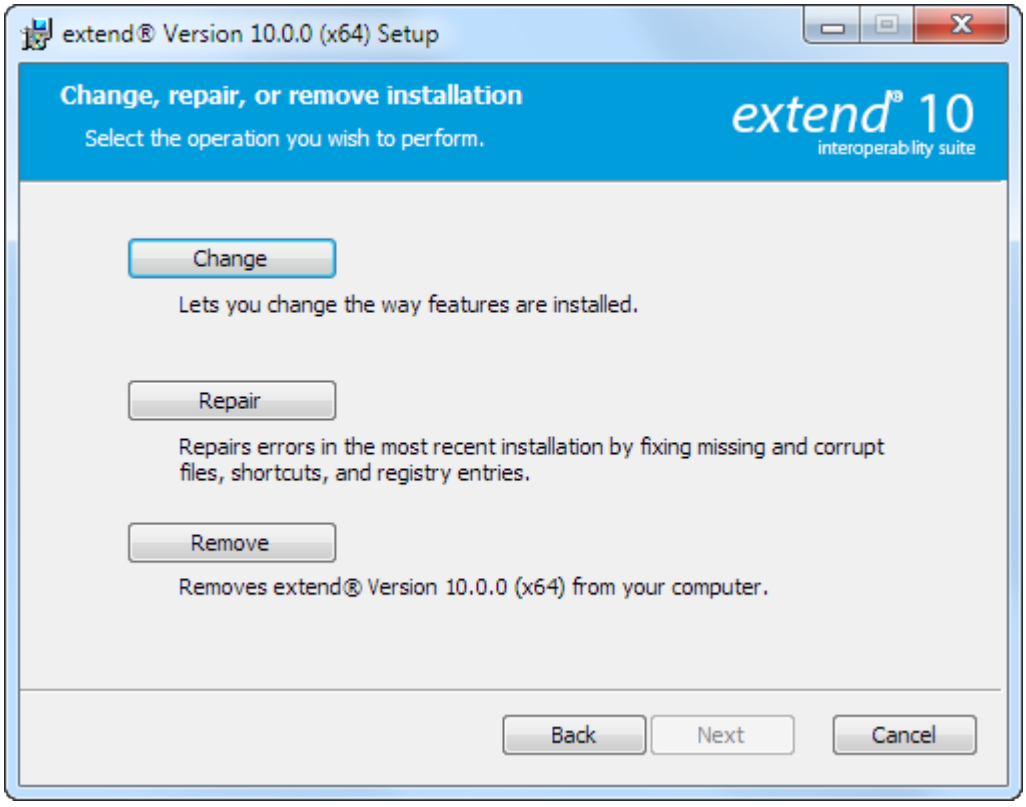
Uninstalling or Modifying Your Installation

You can uninstall or amend your current installation in one of two ways: you can run the installer again, or use the Programs and Features section in Windows. Both enable you to run the Installation Wizard, where you can perform the following program maintenance:

Change Enables you to add or remove products to and from your current installation. Any products that were already checked that you uncheck are uninstalled. Any additions are installed using the default installation path (`C:\Program Files\Micro Focus\extend` *`x.x.x`* - where *x.x.x* is the version number). There is no option to change to a non-default location, but you can overcome this with some products by copying the installed files from the default location to your preferred location. Note that this method will not work for AcuXDBC, AcuBench, and any server products that are registered as services.

Repair Enables you to reinstall the currently installed products.

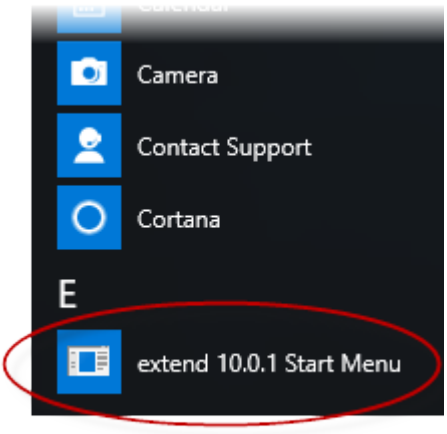
Remove Enables you to remove all products of your installation.



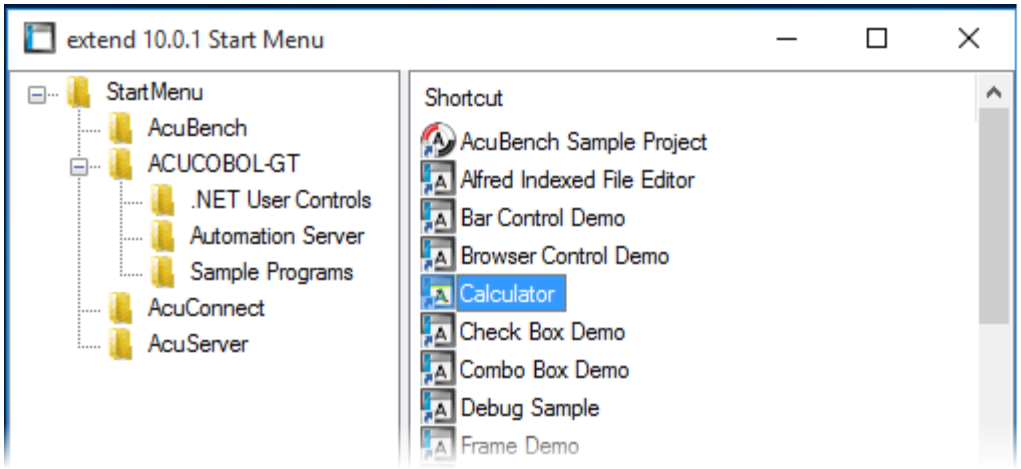
Launching extend Products on Windows 8 or Later

Since the introduction of Windows 8, the Windows program menu does not display programs in a hierarchical way. For the extend Interoperability Suite, this would mean that all the programs relating to AcuBench, ACUCOBOL-GT, AcuConnect, etc... would be displayed as a flat list, and it would be difficult to distinguish which programs were related to which products.

In order to show the programs grouped within the products they belong to, the extend Start Menu has been introduced. After installation of the extend Interoperability Suite, there will be one entry in the Windows programs menu - **extend x.x.x Start Menu** (where *x.x.x* is the version number of the installed product):



Launch this application to display a hierarchy that looks similar to the Windows program menus prior to Windows 8. Simply navigate the folders displayed in the left-hand pane to display shortcuts to the related programs in the right-hand pane. Select the required shortcut: at which point, the extend Start Menu closes and the program is launched.



Compiling Your Programs

The ACUCOBOL-GT compiler is most easily used via AcuBench. However, it is also possible to compile from the command prompt or the Windows Start menu, to establish an association between your source files and the compiler executable, or to set up one or more icons to compile individual files. For information regarding creating file associations and setting up icons, see your Windows documentation.

When you compile, if the system returns "Bad command or file name," you did not add the location of the compiler to the PATH environment variable, or you have not rebooted since installing the software.

You can check the current definition of PATH by typing `path` and pressing **Enter** at the command prompt. The default path is `C:\Program Files\Micro Focus\extend x.x.x\AcuGT\bin` (or `c:\Program Files (x86)\...` for 64-bit installations). If you do not update PATH with this entry, you must type the full path and program name to the compiler each time you compile; alternatively, you can create a `.bat` file.

Once you have verified that the compiler is in your PATH (or you have decided that you will specify the full path every time you compile), you are ready to compile your programs. Refer to *ACUCOBOL-GT User's Guide* > *Compiler and Runtime* > *Using the Compiler* for a complete list of compile options. You can also display a complete list of options by running the compiler command:

```
ccbl32 -help
```

One commonly used option is `-o`. This option is used to specify the name of the output object file. Note that ACUCOBOL-GT uses the naming convention `.acu` to indicate an ACUCOBOL-GT object file. If `-o` is not used, the compiler will name the file *`source-name`*`.acu`. If your source includes COPY files, you can copy the COPY files to your current working directory, specify their location with the `-Sp` option followed by the complete path of one or more directories, or set the COPYPATH environment variable. A typical compilation command might look like:

```
ccbl32 -Sp c:\work\lib -o sample.cbx sample.cbl
```

Running Your Programs

After a successful compilation, the resultant object file is ready for immediate execution (no link step is required). To run your program, make a note of the full path to your object file and return to the Windows desktop.

There are a variety of ways to run your program under Windows. The basic methods are:

- Running a command from the **Start** menu.
- Placing an icon for each program in a Program Group or folder, and then starting the program by double-clicking its icon.
- Naming your COBOL object files with a common file extension and then associating the extension with the runtime. After the association is established, you can run a program by double-clicking on the name of the file as it appears in Windows.
- Using the **wrun32** (or **crun32** if you are using the console runtime) command at the command prompt.

This document describes how to run a program from the **Start** menu only (although, the command line option is almost identical). The advantage of this method is that it requires no special setup. However, it is more time-consuming (than other methods) because you must type the command line options every time you execute the program. For greater convenience, it is best to set up a program icon: to do this, or to create a file association to the runtime, please refer to your Windows documentation.

1. Click the **Start** button.
2. On the Start menu, in the entry field, type the name of your ACUCOBOL-GT Windows runtime.

   The default name is `wrun32.exe`. If you changed the name of the runtime executable, enter that name.
3. Following the name of the runtime, enter any runtime options required, followed by the path and name of the COBOL executable program you want to run.
4. After you have entered the complete command line, press **Enter** to execute the program.

Note: If you did not add the `\bin` directory path to the PATH system environment variable (typically, that is: `c:\Program Files\Micro Focus\extend` *`xxx`*`\AcuGT\bin`), you will need to specify the full path to the runtime (`c:\Program Files\Micro Focus\extend` *`xxx`*`\AcuGT\bin\wrun32.exe`) each time in the command (and not simply `wrun32.exe`).

You can use the COBOL configuration variable DEFAULT_PROGRAM to specify the name of the program to execute when no program is specified on the command line. See *Appendix H* in the ACUCOBOL-GT documentation set for more configuration information.

Printing and Spooler Issues

ACUCOBOL-GT includes extended support for printing under Windows. In addition to the basic print spooler access procedures described below, the WIN$PRINTER runtime library routine provides easy access to extended Windows print spooler capabilities. See the entry for "WIN$PRINTER" in *ACUCOBOL-GT Appendices Guide > Appendix I*. Rules for printer handling are illustrated in the *ACUCOBOL-GT User's Guide > Compiler and Runtime > Filename Interpretation > Assigning Files to Printers.*

Under Windows, you may print directly to the printer by defining PRINTER in the configuration file as "-D PRN". Be aware that this does not prevent other programs from printing at the same time and as a result you may get intermixed pages.

You may also print using the Windows spooler, even if your reports have embedded control codes. The spooler allows many programs to create print files at the same time, and also allows the user to do other tasks while the report is being printed.

Note: The configuration variable WIN_SPOOLER_PORT allows you to divert printer output to a file or port through the Windows print spooler. For more information, see *ACUCOBOL-GT Appendices Guide > Appendix H* of the ACUCOBOL-GT manual set.

Before you assign your print file to the Windows spooler, you must decide whether you want to control the format of each page directly (with embedded control codes) or whether you want the print spooler to format the pages.

Spooler Formatting

There are two ways to use the Windows spooler to format your print file: "-P SPOOLER" and "-Q <*printername*>". See *Direct Control* for information on controlling the formatting yourself.

-P SPOOLER

If you want to use the default printer and font, simply assign your print file to "-P SPOOLER". For example, to assign "PRINTER1" to the spooler, enter the following line in your COBOL configuration file ("CBLCONFI"):

```
PRINTER1  -P  SPOOLER
```

By default, the runtime system assigns the "PRINTER" device to the spooler. You may change this in the configuration file by assigning "PRINTER" to some other name.

When the runtime opens a file assigned to "-P SPOOLER", it automatically initiates a job with the Windows spooler and constructs print pages in accordance with your program. The runtime uses the default printer and font. If the user looks for the job in the spooler, it is named with the current title of the ACUCOBOL-GT window.

Note:

The Windows spooler operates by drawing your report on each page. It constructs its own control codes to handle formatting. If you assign your print file to "-P SPOOLER" and your file contains device-dependent control sequences (such as those used to shift to a condensed font, or to print a form and then fill it in), the codes will be passed to the spooler as data and thus will not be interpreted correctly. If you have reports that depend on embedded control codes, you should print those directly to the device, or assign the print file to "-P SPOOLER-DIRECT," as described below.

-Q <printername>

If you want the Windows spooler to format the pages of your report, but you want to use a particular printer, assign your print file to:

```
PRINTER1 -Q \\printername
```

in the configuration file (CBLCONFI). *Printername* is the printer designation as given in the **Devices and Printers** screen. The name may be up to 80 characters long and contain embedded spaces. The name may not include the semicolon character (;) or be surrounded by single or double quotes. The pages are printed in the manner described in "-P SPOOLER", above. The sample programs `graphprn.cbl` and `prndemox.cbl` contain examples of these functions.

To determine a valid printer name, use the WIN$PRINTER library routine to obtain the name of the desired printer. (This is described in *Appendix I* under the WINPRINT-SET-PRINTER operation code in "Specifying a Printer".) Then add the following line to your code:

```
MOVE "-Q \\printername" TO WS-PRINTER-NAME.
```

When the runtime opens a file assigned to "-Q <*printername*>", it sets the Windows print spooler to use this printer. The printer driver must be installed on the computer from which you print. If *printername* is not recognized by the runtime, a dialog box allows you to choose a printer manually.

Note:

If you want to access a printer using a UNC path, you have to print directly to the printer by defining PRINTER as "-D PRN". If you use the UNC path, Windows formatting is not supported.

Direct Control

If you want to control the format of the printout yourself using embedded control codes, simply assign your print file to `-P SPOOLER-DIRECT` or to `-Q <printername>` using the `DIRECT=ON` option. For example, to assign the print job "PRINTER1" to the spooler and retain direct control over formatting, enter the following line in your COBOL configuration file (CBLCONFI):

```
PRINTER1  -P  SPOOLER-DIRECT
```

Or, use the following command to assign PRINTER1 to the spooler for printing to a specific printer while retaining direct formatting control:

```
PRINTER1 -Q printername;DIRECT=ON
```

Both of these methods cause the print job to be sent to the printer via the Windows spooler, but the program does not use the spooler to format the pages. You must use embedded control codes to handle formatting (much as you would under UNIX if you used the UNIX spooler).

When using the `-P SPOOLER-DIRECT` option, you may use the WIN$PRINTER library routine to choose a printer, but because you completely control the printer, the various options provided by WIN$PRINTER are ignored. For example, WIN$PRINTER does not set the page size, page orientation, or font. Information returned from WIN$PRINTER, such as number of lines and columns on the page, may not be accurate and should not be used. This subject is discussed in detail in Appendix I "*Library Routines*" of the ACUCOBOL-GT manual set.

Because some print drivers do not flush the last page, be sure to end your last page with a form-feed (for example, WRITE ... BEFORE ADVANCING PAGE). This ensures that all pages are printed. The ACUCOBOL-GT runtime ensures that no extra blank pages are printed at the end.

If you code WRITE...AFTER ADVANCING PAGE instead of WRITE...BEFORE ADVANCING PAGE, you might receive a blank last page. This is because a blank line written on the new page causes the Windows subsystem to flush the page for some print drivers. ACUCOBOL-GT ensures that entirely empty lines are not sent to the device (only the form-feed will be sent). But it is essential that:

- You have specified trailing space removal in your COBOL code (the default for print files).

- You have set the configuration option MIN-REC-SIZE to "0".

Your other option is to specify WRITE... BEFORE ADVANCING PAGE to avoid this potential problem.

If the user looks for the job in the spooler, it is named with the current title of the ACUCOBOL-GT window.

Printing Multiple Jobs Simultaneously

If you need to print multiple jobs at the same time, you must open multiple File Descriptors that point to "-P SPOOLER" or "-P SPOOLER-DIRECT" simultaneously. For example, you may have two simultaneous print jobs:

```
SELECT FIRST-FILE
       ASSIGN TO PRINTER "-P SPOOLER".

SELECT SECOND-FILE
       ASSIGN TO PRINTER "-P SPOOLER".

..PROCEDURE DIVISION.

..

       OPEN OUTPUT FIRST-FILE.
       OPEN OUTPUT SECOND-FILE.
```

and both will print to the default Windows printer without interfering with each other. You can call WIN $PRINTER USING WINPRINT-SETUP before one or both of the OPEN statements. Each file may have individual file status variables or may refer to a common file status variable.

This does not mean that you can open a single File Descriptor multiple times. For example, the following will return file status indicating that the file is already opened:

```
SELECT FIRST-FILE
       ASSIGN TO PRINTER "-P SPOOLER".

..

PROCEDURE DIVISION.

..

       OPEN OUTPUT FIRST-FILE.
       OPEN OUTPUT FIRST-FILE.
```

This is normal behavior and is consistent with the way file handling is implemented in COBOL and in other programming languages.

If you are using only the verbs OPEN, CLOSE, and WRITE, no further changes to your code are needed. If you are using WIN$PRINTER functionality (other than WINPRINT-SETUP) you will need to specify which print job is affected. This can be done in two ways:

1. The simplest way is to execute the WIN$PRINT operation immediately after an OPEN or WRITE statement on the intended job. Every execution of OPEN and WRITE sets the current job as the default so that subsequent activity using WIN$PRINTER is automatically directed to the job that was last accessed with an OPEN or WRITE statement.

   In this situation, if you have multiple jobs running, and you close one of them, the runtime switches to the next job in the list. For example, if you are printing jobs 1, 2, and 3, and you close job 2, the close command sets the current job to 3. If there is no job 3, the runtime attempts to set to the job that preceded the closed job (which in this case is job 1). If there are no jobs, the current job is initialized.
2. The other method is to use the WINPRINT-SET-JOB operation of the WIN$PRINTER library routine. This operation is described in *Appendix I* of the ACUCOBOL-GT manual set.

UNIX Installation

License Files for UNIX

UNIX users may request a license file for one or more users.

When you receive your product(s), the package includes product codes and product keys for every product you ordered. You require theses product codes and product keys to create license files.

The Activator Utility

The Activator utility automates the process of creating a license file. On UNIX platforms, the Activator utility operates through a command-line interface.

By default, the Activator utility program (`activator`) is placed in the same directory as the runtime and other binary executable files.

If you did not install the Activator utility with your other products, simply copy the file onto your computer and run it as you would any other executable.

Changing or Updating Your UNIX License Files

If you need to alter a license file, contact your Micro Focus *extend* representative for updated product codes and product keys. When you receive them, launch the Activator utility and enter the new product codes and product keys as prompted.

Installation Under UNIX

To install *extend* products on UNIX or Linux systems, you must have the product media, and the product codes and product keys for the products you intend to install. Your products may be delivered via FTP or CD-ROM.

Installation from FTP Site

1. Download the product from the Micro Focus SupportLine site.
2. Using a `tar` command, extract the files in the archive to your installation directory. For example:

   ```
   tar -xvf archive-name.tar /install/path
   ```

   Note: If you install ACUCOBOL-GT as a shared object library and you don't install to the default location, you need to set an appropriate library path variable specifying the location of the shared objects. For example, on an AIX system, you would need to set the LIBPATH environment variable. Note that if you log in as root or a superuser, this variable must also be set in root's environment for ACUCOBOL-GT to start. Additionally, see *SHARED_LIBRARY_PREFIX configuration variable*.

   After installation, you must use the Activator utility to license the products installed.
3. Enter the following command to run the Activator utility from the installation directory:

   ```
   /bin/activator
   ```
4. At the prompt, type the product code and product key pairs that came with your product package, pressing **Enter** after each pair: this updates the license file. Repeat this cycle until the code/key pairs for each product you have ordered are entered.

Note: Each product searches for its license file in the same directory in which its executable resides. If you move the product's executable to a new directory, you must move its license file to the same location.

5. Enter the following on the command line to start the acushare license manager service:

```
acushare -start
```

6. Navigate to the `sample` sub-directory of your installation directory and try compiling and running the **tour** program, using the following commands:

```
ccbl tour.cbl
runcbl tour.acu
```

7. If you get the message `Can't find entry for 'terminal' in 'term-lib'`", you need to configure your terminal for ACUCOBOL-GT. See *Configuring Your Terminals.*
8. Once you have the sample program running, we recommend that you edit the `cblconfig` file supplied with ACUCOBOL-GT to meet the needs of your site. In particular, you should configure it to support the printers you have attached to your system.
9. If you are using shared memory, see the instructions for configuring acushare in *ACUCOBOL-GT User's Guide* > *Runtime Manual* > *Shared Memory* > *Acushare Utility Program*.

Installation from CD-ROM

1. Insert the CD-ROM containing your products into the appropriate drive and mount it using the appropriate `mount` command for your operating system.

   Note: If you are mounting a CD-ROM on HP/UX 11.0, use the following mount command:

   ```
   mount -F cdfs -o cdcase,nosuid /dev/dev mountpoint
   ```

   where *dev* is the CD-ROM device assignment.
2. Change to the mount directory, then type the following and press **Enter**:

   ```
   ./install
   ```

   Follow the instructions on the screen to select the specific platform, installation directory, and products to be installed. If you select a directory that contains a previous version of *extend* products, you are prompted to view a list of files that will be overwritten, and if you want to proceed with the overwrite. If you decline, the installation stops, which enables you to go back and select a different directory.

   Note: For AIX Version 5.1 and later, HP-UX Version 11 and later, and Solaris Version 7.0 and later, ACUCOBOL-GT products may be distributed as shared object libraries. If you install ACUCOBOL-GT as a shared object library and you don't install to the default location, you need to set an appropriate library path variable specifying the location of the shared objects. For example, on an AIX system, you would need to set the LIBPATH environment variable. Note that if you log in as root or a superuser, this variable must also be set in root's environment for ACUCOBOL-GT to start. Additionally, see the topic *SHARED_LIBRARY_PREFIX configuration variable*.

   Note: If you install to the default installation directory (`/opt/acucorp/xxx`), we recommend you create a symbolic link to a version-independent directory such as `/opt/acu`, to allow you to use `opt/acu/bin` in your PATH setting and `/opt/acu/lib` in your shared library path setting.
3. After your products are installed, the Activator utility starts automatically: at the prompt, type the product code and product key pairs that came with your product package, pressing **Enter** after each pair, which updates the license file. Repeat this cycle until the code/key pairs for each product you have ordered are entered.

   Note: Each product searches for its license file in the same directory in which its executable resides. If you move the product's executable to a new directory, you must move its license file to the same location.
4. Enter the following on the command line to start the acushare license manager service:

```
acushare -start
```

5. Navigate to the `sample` sub-directory of your installation directory and try compiling and running the **tour** program, using the following commands:

```
ccbl tour.cbl
runcbl tour.acu
```

6. If you get the message `Can't find entry for 'terminal' in 'term-lib`", you need to configure your terminal for ACUCOBOL-GT. See *Configuring Your Terminals.*
7. Once you have the sample program running, we recommend that you edit the `cblconfig` file supplied with ACUCOBOL-GT to meet the needs of your site. In particular, you should configure it to support the printers you have attached to your system.
8. If you are using shared memory, see the instructions for configuring acushare in *ACUCOBOL-GT User's Guide* > *Runtime Manual* > *Shared Memory* > *Acushare Utility Program*.

SHARED_LIBRARY_PREFIX Configuration Variable

If you install ACUCOBOL-GT as a shared object library and you don't install to the default location, you need to set an appropriate library path variable (LIBPATH or LD_LIBRARY_PATH) specifying the location of the shared objects. The SHARED_LIBRARY_PREFIX variable helps the runtime find `libaclnt.so` (or `libaclnt.sl`) in case the LIBPATH (or LD_LIBRARY_PATH) variable is not set. libclnt.so (or .sl) is needed for AcuServer and AcuConnect support.

If a shared library name is specified without any directory information and the system call fails to load the shared library, the runtime will try to load the shared library from each of the directories specified in the SHARED_LIBRARY_PREFIX configuration variable.

The default value for SHARED_LIBRARY_PREFIX is `/opt/acucorp/`*`xxx`*`/lib`: `/opt/acu/lib`. The format of the value of SHARED_LIBRARY_PREFIX is the same as FILE_PREFIX. You can set SHARED_LIBRARY_PREFIX in the configuration file or environment, or programatically with the SET verb. Note that the runtime searches for and loads `libaclnt.so` (or `libaclnt.sl`) using the default value of SHARED_LIBRARY_PREFIX. This happens before reading the configuration file, environment, or running any COBOL code.

You can set SHARED_LIBRARY_PREFIX to an empty value if you do not want to use it.

Also, if the license is for AcuTSL, in a transactional server environment such as CICS, the runtime will add `/opt/acucorp/`*`xxx`*`/bin/runcbl.1lc` and `/opt/acu/bin/runcbl.1lc` to its list of license files to check. First the runtime checks `$ACUCOBOL/etc/license.acu`, then `/etc/license.acu`. If neither exists, the runtime will check `/opt/acucorp/`*`xxx`*`/bin/runcbl.1lc` and finally `/opt/acu/bin/runcbl.1lc`.

For cases in which users install ACUCOBOL-GT in the default location, `/opt/acucorp/`*`xxx`* or `/opt/acu`, and they have a license file, `runcbl.1lc` in their bin directory, they will not need to copy the license to `/etc/license.acu`.

Configuring Your Terminals

ACUCOBOL-GT requires data about the video environment it is running in. On Windows machines, it directly examines the hardware and configures itself appropriately. On UNIX, MPE/iX, and VMS machines, you must provide a description of the terminal you are using. This section describes briefly how to provide that information. Additional details are provided in the *Terminal Manager* section of the *ACUCOBOL-GT User's Guide.*

On systems that do not configure themselves automatically, describing the terminal to ACUCOBOL-GT involves two steps:

1. First, identify the terminal by setting the "TERM" variable.
2. Second, ensure that the terminal's characteristics are accurately described in the terminal database file.

TERM Variable

ACUCOBOL-GT determines the type of terminal you are using by looking at the setting of the "TERM" variable. On UNIX and Linux machines, TERM is an environment variable; on VMS machines, it's a symbol. Samples for both UNIX and VMS are presented below.

TERM should be set to the name of one of the entries in the terminal database. You can examine the database file for valid names. The first field of each entry consists of a list of accepted names. Some common names are "vt100", "tv925", and "wy50" for VT100, Televideo 925, and Wyse 50 terminals, respectively.

Note that on most UNIX systems, the TERM environment variable is initialized as part of the login procedure. You will need to change this only if the name used is not one listed in the terminal database. On VMS systems, the TERM symbol defaults to "vt100" if it is not defined. Thus, you need to define the TERM symbol only if you want to use a terminal that is not VT100 compatible or if you want to use some advanced features of your terminal.

As an example, suppose you want to use a VT220 terminal. In the database, "vt220" is one of the accepted names for this type of terminal. On a VMS system, you would use the following command

```
TERM == "vt220"
```

On UNIX systems with the Bourne or Korn shell, the command would be:

```
TERM=vt200; export TERM
```

Using the C shell, the equivalent command is:

```
setenv TERM vt220
```

You may want to leave the TERM variable at its current setting to maintain compatibility with other software. If the setting is not correct for ACUCOBOL-GT, you can set the "A_TERM" variable instead. If both the A_TERM and TERM variables are set, ACUCOBOL-GT uses the definition of A_TERM. This allows you to have different settings for ACUCOBOL-GT and your other software.

Terminal Database

ACUCOBOL-GT comes with a database of terminal descriptions. On UNIX machines, this is called "a_termcap". On VMS machines it is called "A_TERMS.DAT". This database contains encoded descriptions of many types of terminals. You need to select the terminal type in the database that most closely matches the terminal you are using. If you need to, you can add your own entries in the database.

By default, the terminal database should reside in a pre-selected directory on your machine. On UNIX machines, this is the "/etc" directory; on VMS machines, it is the "SYS$LIBRARY" directory. If you want to place your terminal database somewhere else, then you must define the variable "A_TERMCAP" to be the full name of the database file. For example, on a VMS system, you could place the database in the "SYS $LOCAL" directory with the following command:

```
A_TERMCAP == SYS$LOCAL:A_TERMS.DAT
```

On UNIX systems (using the Bourne shell), you might use the command:

```
A_TERMCAP=/usr/local/etc/a_termcap; export A_TERMCAP
```

The *ACUCOBOL-GT User's Guide* contains more information about setting up terminals and making full use of their capabilities, and selecting terminal types.

What's New

The following items are new for this release:

ECN-4390 Support for older ActiveX controls

Type of Change: Enhancement

Product: ACUCOBOL-GT

New Version: 10.0.1

Module: runtime, Thin Client

Machines Affected: All

RPI Number: 1102000, 1102020, 1102095, 1102337, 1102391, 1101743

DESCRIPTION:

In extend 10.0.0, some older ActiveX controls are no longer working as expected; this is the result of Data Execution Prevention, which was enabled in this version.

Data Execution Prevention (DEP) is a Microsoft security feature that monitors and protects certain pages or regions of memory, preventing them from executing (usually malicious) code.

When DEP is enabled, all data regions are marked as non-executable by default.

When DEP is disabled, vulnerabilities such as buffer overruns can leave your code exposed to an injection of malicious code within these regions, which can then be executed. For a more detailed explanation of DEP, visit the Microsoft Support site (*https://support.microsoft.com/en-us*), where you can find various articles on how it works, and how to enable and disable it on a number of platform and applications.

From version 10.0.0 onwards, the ACUCOBOL-GT runtime and acuthin client has DEP enabled. This should not generally cause any adverse effects, but where it might cause problems is when attempting to run ActiveX controls that were designed prior to the introduction of DEP; the effect is that they will most likely produce a memory access violation exception, which if not handled, will crash the application.

To enable you to continue to use these ActiveX controls, we have supplied a runtime and a thin client that allows you to run your applications with DEP disabled. However, be aware that using these executables exposes the risks mentioned above; see *DEP-aware Runtime Systems and Thin Clients* in the Help for more details.

Note: If your application utilizes the ACUCOBOL-GT web runtime, then control of DEP is governed by its containing Microsoft technologies (such as Internet Explorer). Refer to the third-party documentation for controlling DEP in that product.

ECN-4407 extend Start Menu for Windows 8 and later

Type of Change: Enhancement

Product: ACUCOBOL-GT

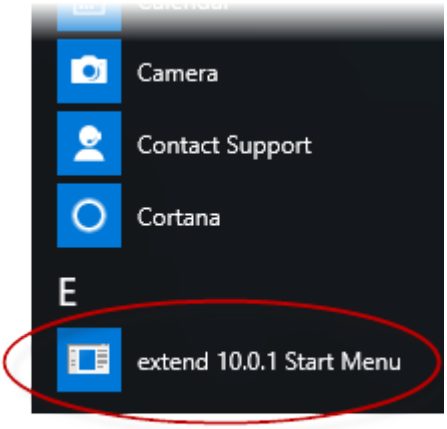
New Version: 10.0.1

Module: runtime

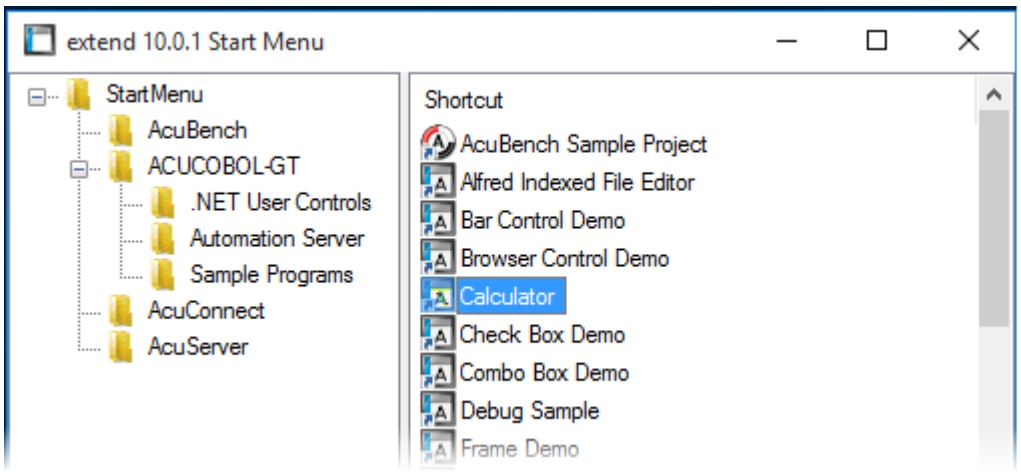
DESCRIPTION:

Since the introduction of Windows 8, the Windows program menu does not display programs in a hierarchical way. For the extend Interoperability Suite, this would mean that all the programs relating to AcuBench, ACUCOBOL-GT, AcuConnect, etc... would be displayed as a flat list, and it would be difficult to distinguish which programs were related to which products.

In order to show the programs grouped within the products they belong to, the extend Start Menu has been introduced. After installation of the extend Interoperability Suite, there will be one entry in the Windows programs menu - **extend x.x.x Start Menu** (where *x.x.x* is the version number of the installed product):



Launch this application to display a hierarchy that looks similar to the Windows program menus prior to Windows 8. Simply navigate the folders displayed in the left-hand pane to display shortcuts to the related programs in the right-hand pane. Select the required shortcut: at which point, the extend Start Menu closes and the program is launched.



New in Past Releases

New in 10.0.0

- IPv6 addressing support added
- Vision 6 support added
- SORT TABLE collating sequence enhancement
- Dynamic runtime tracing added
- Transaction management and C$RECOVERY enhancements
- ActiveX and .NET runtime license auto-generation
- ACCEPT... FROM SYSTEM-INFO now returns runtime bittedness

- Sort column indicator on grid columns added
- USE_EXECUTABLE_MEMORY change of default
- Runtime SORT improvements
- Thin client timeout enhancement
- Suggestions in Entry fields added
- Auto-detection of implicit verb termination added
- `vutil -unload` enhancement
- GRID_ENFORCE_DATATYPE variable introduced
- New help format for AcuServer and AcuRCL introduced
- SQL Server TIME data type support added
- Informix LVARCHAR data type support added
- Relative path names used in AcuBench
- Context sensitive help available in Code Editor
- Auto-created font and bitmap handles auto-destroyed
- AcuBench skeletons modifiable
- OEM_CHARACTER_SET variable introduced
- BISMkApp introduced for BIS for extend
- Apache 2.4 support for BIS for extend introduced
- XML TRANSFORM TEXT statement introduced for XML Extensions

Resolved Issues

The following are resolved issues for the extend products.

AcuBench ECN List

This section includes the ECNs relating to AcuBench:

ECN-WB942 AcuBench fails to open a COPY file from the context menu

Type of Change: Correction

Product: AcuBench

New Version: 10.0.1

Module: AcuBench.exe

Machines Affected: All

RPI Number: 1096897

DESCRIPTION:

From an AcuBench context menu, you can now open the referenced COPY files. Previously, you may have received a 'cannot open file' message; this was due to the compiler not correctly generating include and exclude patterns correctly, and thus being unable to locate the COPY file.

ECN-WB943 'Verb Block Match' and 'Find Scope' sporadically fail

Type of Change: Correction

Product: AcuBench

New Version: 10.0.1

Module: AcuBench.exe

Machines Affected: All

RPI Number: 1101151

DESCRIPTION:

The **Verb Block Match** and **Find Scope** commands now work as expected. Previously, they would sometimes fail to match the verb block, or to highlight the scope of the current verb.

ECN-WB944 Report font size change

Type of Change: Correction

Product: AcuBench

New Version: 10.0.1

Module: AcuBench

RPI Number: 1101381

Machines Affected: All

DESCRIPTION:

Font sizes within reports are now as expected. Previously, the internal calculation for the font size was done in a way that caused differences in different versions of Microsoft C, and as such, the font size written to the COBOL program changed between extend 7.2 and 9.2.

ECN-WB945 Incorrect colors in AcuBench Code Editor

Type of Change: Correction

Product: AcuBench

New Version: 10.0.1

Module: AcuBench

Machines Affected: All

RPI Number: 1101733

DESCRIPTION:

After installing a new version of AcuBench, you must remove the previous `AcuCOBOL.ini` file from the following location before you set your personal preferences for the Code Editor: `c:\Users\`*`yourname`*`\AppData\Roaming\Micro Focus\AcuBench`

Previously, after making modifications to your preferences and saving them, the `AcuCOBOL.ini` file would become corrupt, causing the wrong colors to show in the Code Editor.

ECN-WB946 LAYOUT-MANAGER causing bad code generation

Type of Change: Correction

Product: AcuBench

New Version: 10.0.1

Module: AcuBench

Machines Affected: All

RPI Number: 1101941

DESCRIPTION:

AcuBench no longer causes bad code generation when you add a layout manager. Previously, code was generated past column 72, which caused compilation errors.

ECN-WB947 Find > Find All prints too many lines

Type of Change: Correction

Product: AcuBench

New Version: 10.0.1

Module: AcuBench

RPI Number: 1101931

Machines Affected: All

DESCRIPTION:

When searching for strings in a COBOL program using the **Find All** option on the **Find** dialog, the correct results are now displayed in the **Find in Files** pane. Previously, the pane would include code that should have not been found in the search.

ECN-WB948 Find Previous hot key not working

Type of Change: Correction

Incidents: 2842192

RPI Number: 1102035

Product: AcuBench Module: AcuBench.exe

New Version: 10.0.1

Machines Affected: Windows

Known Versions Affected: 10.0.0

DESCRIPTION:

The hot key **SHIFT**+**F3** now correctly finds the previous occurrence of the current search string.

ECN-WB949 Various hot keys not assignable

Type of Change: Correction

Product: AcuBench

New Version: 10.0.1

Module: AcuBench

Machines Affected: All

RPI Number: 1101817

DESCRIPTION:

Hot keys are now working as expected in AcuBench. Previously, various hot keys were not assignable to actions. This included (but was not limited to):

- Comment/Uncomment Block
- Delete Line
- Toggle COBOL format

ECN-WB950 In-line comments not colored correctly

Type of Change: Correction

Product: AcuBench

New Version: 10.0.1

Module: AcuBench

Machines Affected: All

RPI Number: 1101969

DESCRIPTION:

When syntax coloring is active, in-line comments that start with the pipe symbol (|) are now being colored correctly as comments. Previously, they were not.

ECN-WB951 Error indicator not showing on error lines

Type of Change: Correction

Product: AcuBench

New Version: 10.0.1

Module: AcuBench

Machines Affected: All

RPI Number: 1102237

DESCRIPTION:

When compiling a COBOL program, the error indicator is now showing correctly in the Code Editor to indicate the location of an error. Previously, it was not.

ECN-WB952 USAGE HANDLE EXTERNAL data items

Type of Change: Correction

Product: AcuBench

New Version: 10.0.1

Module: AcuBench

RPI Number: 1102624

Machines Affected: All

DESCRIPTION:

External data items of USAGE HANDLE now work as expected.

Previously, ECN-WB940 introduced an enhancement to destroy bitmap and font handles that were loaded by AcuBench. This required the default value of the handles to be known, and so AcuBench was modified to set the initial value of these handles to NULL. Unfortunately, we did not detect when the handles were EXTERNAL, causing AcuBench to generate code that could not be compiled.

ECN-WB953 Undo not working in all cases

Type of Change: Correction

Product: AcuBench

New Version: 10.0.1

Module: AcuBench

RPI Number: 1102366

Machines Affected: All

DESCRIPTION:

The Undo function, using the **Edit** > **Undo (CTRL+Z)** menu option or **CTRL**+**Z**, now behaves as expected. Previously, it was not working correctly when dealing with characters past the end of a line.

ECN-WB954 AcuBench crash when right-click a tabbed window

Type of Change: Correction

Product: AcuBench

New Version: 10.0.1

Module: AcuBench

RPI Number: 1102732

Machines Affected: 10.0

DESCRIPTION:

When you right-click one of the tabbed windows at the bottom of the AcuBench screen (**Output**, **Find in Files**, etc...), when text is selected, AcuBench no longer crashes.

ECN-WB955 Comment Block/Uncomment Block acts on too many lines

Type of Change: Correction

Product: AcuBench

New Version: 10.0.1

Module: AcuBench

RPI Number: 1103027

Machines Affected: 10.0

DESCRIPTION:

When selecting full lines of code in the AcuBench editor, and the final cursor position is at the beginning of the next line, commenting or uncommenting the selection no longer affects the line containing the cursor. Previously, this line would also be (incorrectly) commented or uncommented.

ECN-WB956 Grid SORT-TYPE Date default

Type of Change: Correction

Product: AcuBench

New Version: 10.0.1

Module: AcuBench

RPI Number: 1103020

Machines Affected: 10.0

DESCRIPTION:

There is a new option, entitled **(default)**, available when explicitly setting the Date SORT-TYPE of a column in a grid. You can use it to return the column setting back to its default value, which is *month, day, year* if the current decimal point character is a point or period (.), or *day, month, year* otherwise.

ECN-WB957 Version-specific settings when multiple versions of AcuBench are installed

Type of Change: Correction

Product: AcuBench

New Version: 10.0.1

Module: AcuBench

RPI Number: 1103022

Machines Affected: 10.0

DESCRIPTION:

If you have more than one version of AcuBench installed locally, settings stored from the last time AcuBench was used (the last project opened, recent files and project lists, etc...) are displayed for the specific version they were previously used with.

Previously, the settings used would be for the last project/files used, regardless of the version of AcuBench that was next opened. This was because, starting with version 9.2, registry settings were stored under a generic AcuBench key. In the current version, AcuBench settings are stored under a version-specific AcuBench key (for example Acubench92).

ECN-WB958 Event Editor scrollbar doesn't scroll text

Type of Change: Correction

Product: AcuBench

New Version: 10.0.1

Module: AcuBench

RPI Number: 1103141

Machines Affected: 10.0

DESCRIPTION:

When editing text in the Event Editor, the horizontal scrollbar now scrolls the page as expected.

ECN-WB959 Reports generated in IE mode fail to display correctly

Type of Change: Correction

Product: ACUCOBOL-GT

New Version: 10.0.1

Module: runtime

RPI Number: 1103066

DESCRIPTION:

When generating reports for Internet Explorer, the generated HTML now displays correctly. Previously, the report was formatted incorrectly, even illegibly.

ACUCOBOL-GT ECN List

This section includes the ECNs relating to ACUCOBOL-GT:

ECN-4361 Grid fails to sort correctly

Type of Change: Correction

RPI Number: 1100966

Product: ACUCOBOL-GT

Module: runtime

New Version: 10.0.1

Machines Affected: All

DESCRIPTION:

When a COBOL program displays a window in response to a MSG-HEADING-CLICK message, the runtime no longer attempts to sort that particular column. This is because, due to a Microsoft limitation, the response treats the click as if it were in the column 0 header, and (if sorting on that column is allowed) would sort that column.

We do not recommend that you code a display window action in response to clicking on a column header, but if you do, be aware that the column will not be sorted.

ECN-4364 Runtime memory access violations when interacting with thin client too quickly

Type of Change: Correction

Product: ACUCOBOL-GT

New Version: 10.0.1

Module: runtime

Machines Affected: All

RPI Number: 1101014

DESCRIPTION:

You no longer receive memory access violations (MAVs) when using the ESC key multiple times in quick succession to close multiple windows. Previously, the runtime would try to process messages for controls that were no longer valid, and so the MAVs would occur.

ECN-4365 Crash on shutdown when using ActiveX

Type of Change: Correction

Product: ACUCOBOL-GT

New Version: 10.0.1

Module: runtime, Thin client

Machines Affected: All

RPI Number: 1100418

DESCRIPTION:

The runtime or the thin client (when in thin client mode) no longer crashes when shutting down after `C$GETEVENTPARAM` or `C$GETEVENTDATA` has been called. Previously, this was sometimes crashing if the returned parameter was an interface (IDispatch).

ECN-4366 NETDEFGEN generates invalid COBOL

Type of Change: Correction

Product: ACUCOBOL-GT

New Version: 10.0.1

Module: netdefgen.exe

Machines Affected: All

RPI Number: 1101073

DESCRIPTION:

Some .NET controls have methods, enumerations, and parameter names that are not valid COBOL identifiers, or that use long names that would result in lines that exceed column 72 in the COPY file. In such cases, the NETDEFGEN utility will not write these name to the generated COPY file and as such, those names will not be available to your COBOL program. In most cases, this means that parameters cannot be passed by name, only by location.

Previously, these names were being included, resulting in COPY files that could not be used in a COPY statement of a COBOL program, due to the errors they generated.

ECN-4368 Crash on COMMIT when using LOG-EXCLUDE-PATTERN

Type of Change: Correction

Product: ACUCOBOL-GT

New Version: 10.0.1

Module: runtime

Machines Affected: All

RPI Number: 1101336

DESCRIPTION:

The runtime no longer crashes on a COMMIT statement if a file was closed before that COMMIT. Previously, this could occur when the LOG-EXCLUDE-PATTERN variable was set, which is part of the enhanced transaction management, introduced in ECN-4313 as a way to limit the files that participate in transactions.

ECN-4369 Floating windows position differently to independent windows

Type of Change: Correction

Product: ACUCOBOL-GT

New Version: 10.0.1

Module: runtime, Thin client

Machines Affected: All

RPI Number: 1098513

DESCRIPTION:

When using multiple monitors, it is now possible to display independent windows on the secondary monitor. Previously, an independent window would only display on the primary monitor.

ECN-4370 WIN$VERSION fails on Windows 8.1 and later

Type of Change: Correction

Product: ACUCOBOL-GT

New Version: 10.0.1

Module: runtime

Machines Affected: All

RPI Number: 1101455

DESCRIPTION:

The library routine WIN$VERSION now returns the correct operating system information on Windows 8.1 and later. Previously, this would not return the correct information due to a change that Microsoft has made to their GetVersionEx() function, which this library routine uses to retrieve its information.

ECN-4371 ActiveX use causes memory access violation

Type of Change: Correction

RPI Number: 1101070

Product: ACUCOBOL-GT

Module: runtime

New Version: 10.0.1

Machines Affected: All

Known Versions Affected: 9.2.0 and later

DESCRIPTION:

You should no longer receive memory access violations when using ActiveX controls. A previous version (version 9.2.0) introduced a new internal way of tracking ActiveX dispatch tables passed to the COBOL program. Unfortunately, this caused a few errors, such as memory access violations when not all handles were freed after the COBOL program had destroyed all the handles returned by the ActiveX control.

ECN-4372 COPY/REPLACING failure

Type of Change: Correction

Incidents: 2837510

RPI Number: 1101458

Product: ACUCOBOL-GT

Module: Compiler

New Version: 10.0.1

Machines Affected: All Known Versions Affected: 10.0.0 and later

DESCRIPTION:

A COPY/REPLACING statement is now able to handle strings that are empty or only containing spaces in the BY clause. Previously, this error was introduced by ECN-4344.

ECN-4373 C$FILEINFO fails in some special cases

Type of Change: Correction

Product: ACUCOBOL-GT

New Version: 10.0.1

Module: runtime

Machines Affected: All

RPI Number: 1101211

DESCRIPTION:

Previously, C$FILEINFO could not return information for files that had the deduplication property set. C $FILEINFO can now read and return information about these files, including whether the deduplication property is set or not.

Note that having this property set results in an attribute value with a particular bit set (REPARSE_POINT = 0x200). It is up to the COBOL program to detect this and handle it correctly. Because different applications set that bit for different reasons, it is up to the COBOL programmer to know what it signifies for any particular file. The runtime itself knows nothing about reparse points. If the application in question is the Operating System (as is true with deduplication), and accessing the file is done normally, then there is nothing to concern yourself with. But be aware that files with this bit set in the attributes may require special handling outside of the purview of the runtime.

ECN-4374 Layout managers not recognizing Windows key commands

Type of Change: Correction

Product: ACUCOBOL-GT

New Version: 10.0.1

Module: runtime

Machines Affected: All

RPI Number: 1095936

DESCRIPTION:

COBOL programs that use a LAYOUT-MANAGER now behave as expected when you use the Windows key and arrow keys to maximize or restore a window. Previously, this would not work; although, using the mouse to do the same thing worked correctly.

ECN-4375 C$SOCKET timeout error

Type of Change: Correction

Product: ACUCOBOL-GT

New Version: 10.0.1

Module: runtime

Machines Affected: All

RPI Number: 1101662

DESCRIPTION:

C$SOCKET now returns the correct RETURN-CODE for AGS-READ when the socket connection times out. Previously, the RETURN-CODE was reading -1 instead of 0 when the socket got a timeout and had not read any data.

ECN-4377 Restore built-in library search paths

Type of Change: Correction

Product: ACUCOBOL-GT

New Version: 10.0.1

Module: runtime

Machines Affected: All

DESCRIPTION:

The built-in search paths that were removed from executables in extend 10.0.0 have been restored in this version.

ECN-4379 vutil -size did not report total file size

Type of Change: Correction

Product: ACUCOBOL-GT

New Version: 10.0.1

Module: vutil

RPI Number: 1099158

Machines Affected: All

DESCRIPTION:

The `vutil -size` option now reports the sizes of all file segments in the reported Vision files.

ECN-4380 Unable to execute extend executables on Windows XP

Type of Change: Correction

Product: ACUCOBOL-GT

New Version: 10.0.1

Module: runtime

Machines Affected: All

DESCRIPTION:

The extend executables (`wrun32.exe`, `run32.exe`, `crun32.exe`, `ccbl32.exe`, `acuserve.exe`, etc...) no longer report an error message on Windows XP or Windows 2003 Server, saying that they are not valid Windows executables.

ECN-4381 Crash using logutil

Type of Change: Correction

Product: ACUCOBOL-GT

New Version: 10.0.1

Module: logutil

Machines Affected: All

DESCRIPTION:

`logutil` no longer crashes when reporting on a log file. Previously, a buffer overrun would occur; this was normally inconsequential, because the overrun was by a single byte, and so never actually corrupted memory. However, Microsoft Visual Studio 2012 added runtime checks to guard against such errors, and so would cause the crash.

ECN-4382 Runtime fails to disconnect from master AcuServer

Type of Change: Correction

RPI: 1102043

Product: ACUCOBOL-GT

Module: runtime

New Version: 10.0.1

Machines Affected: All

DESCRIPTION:

The master AcuServer will no longer experience socket handle leaks. Previously, when connecting to the master AcuServer, which would then redirect access to a secondary server, the runtime would not disconnect from the master server: this caused a minor leak in the runtime, and resulted in having unnecessary open sockets, which could eventually cause the master server to run out of socket handles.

ECN-4385 vutil -check -fx error

Type of Change: Correction

Product: ACUCOBOL-GT

Module: vutil

New Version: 10.0.1

Machines Affected: all

Known Versions Affected: 6.0.0

DESCRIPTION:

The `vutil -check -fx` command no longer incorrectly reports an error indicating an incorrect abandoned record area count when there were no deleted records. This was only affecting Vision files of

version 5 or later. Previously, if a file had no deleted record areas and some abandoned record areas, the abandoned record area list was not actually checked, leading to the incorrect count.

ECN-4387 New vutil -info -x information

Type of Change: Correction

Product: ACUCOBOL-GT

New Version: 10.0.1

Module: vutil

Machines Affected: All

DESCRIPTION:

Additional information has been added to the output of `vutil -info -x`.

This information shows the current value of the file's unique record counter. A percentage is also displayed, which shows how much of the counter's range has been used so far. The counter goes from 0 to 2^32-1 (4.29 billion), and when the maximum value has been reached, the file will be marked as broken with a 42 secondary status.

ECN-4388 vutil -convert missing -6 option

Type of Change: Correction

Product: ACUCOBOL-GT

Module: vutil

New Version: 10.0.1

Machines Affected: all known

Versions Affected: 10.0.0 .

DESCRIPTION:

The `vutil -convert` command now processes the `-6` option correctly. The option was missing in the 10.0.0 release.

ECN-4391 AXDEFGEN crash

Type of Change: Correction

RPI Number: 1102460

Product: ACUCOBOL-GT

Module: runtime

New Version: 10.0.1

Machines Affected: All

DESCRIPTION:

AXDEFGEN no longer crashes when producing a COPY file for an ActiveX control that does not require a license.

ECN-4392 Window sizing differences

Type of Change: Correction

Product: ACUCOBOL-GT

New Version: 10.0.1

Module: runtime

RPI: 1101740

Machines Affected: All

DESCRIPTION:

Floating windows are now displayed as expected. Previously, in extend 10.0.0, some floating windows were sized differently than they were in previous versions. This was due to a change made by Microsoft in the way that window sizes are measured in Visual Studio.

ECN-4393 Paged grid unresponsive at end of data

Type of Change: Correction

Product: ACUCOBOL-GT

New Version: 10.0.1

Module: runtime

RPI Number: 1101553

DESCRIPTION:

Attempting to move beyond the end of the data in a paged grid control, followed by various paging/arrow sequences, no longer results in the grid control becoming unresponsive.

This problem was introduced by ECN-4297, which fixed a thin client crash in similar circumstances. This new ECN corrects both problems.

ECN-4394 Problems with -Wu compile option

Type of Change: Correction

Product: ACUCOBOL-GT

New Version: 10.0.1

Module: Compiler

Machines Affected: All

DESCRIPTION:

The -Wu compiler option that reports on unterminated statements (for example, IF without END-IF) now works as expected.

This option was introduced in extend 10.0.0 (as part of ECN-4348), but would erroneously report missing statement termination in many cases; one such example was for a format 3 ACCEPT statement (e.g. `ACCEPT dest-item FROM SYSTEM-INFO`), reporting that an END-ACCEPT was missing, when in fact an END-ACCEPT is not actually permitted.

ECN-4395 vutil issues with collating sequences

Type of Change: Correction

Product: ACUCOBOL-GT

New Version: 10.0.1

Module: vutil

Machines Affected: All

DESCRIPTION:

When a Vision file has a collating sequence, `vutil` now correctly initializes a record area. Previously, it was using an incorrect value during initialization, which could result in some records not being read from an input file. This error affected the `-rebuild` and `-check` functions.

ECN-4396 List Box controls fail to generate CMD-DBLCLICK

Type of Change: Correction

Product: ACUCOBOL-GT

New Version: 10.0.1

Module: runtime

RPI Number: 1102692

Machines Affected: All

DESCRIPTION:

List Box controls now correctly generate CMD-DBLCLICK events. Previously, the wrong event type was returned.

ECN-4398 Unicode characters in C$XML

Type of Change: Correction

Product: ACUCOBOL-GT

New Version: 10.0.1

Module: runtime

RPI Number: 1102684

Machines Affected: All

DESCRIPTION:

Unicode characters are now processed correctly by C$XML. Previously if your COBOL program converted values to UTF-8 before sending them to C$XML as children, then when writing the XML file C$XML would attempt to convert that data to UTF-8 (assuming that it was ISO-8859-1 data). This could result in garbled text.

ECN-4400 SORT spurious file status 41

Type of Change: Correction

Product: ACUCOBOL-GT

New Version: 10.0.1

Module: runtime

RPI Number: 617430

Machines Affected: All

DESCRIPTION:

A SORT operation that uses the same file in its USING and GIVING clauses no longer returns spurious file status 41 (`File is already open`) messages. This bug was previously introduced as a result of ECN-4336.

ECN-4401 Runtime crash when entry field contains a single space

Type of Change: Correction

Product: ACUCOBOL-GT

New Version: 10.0.1

Module: runtime

RPI Number: 1102902

Machines Affected: All

DESCRIPTION:

When an entry field contains only spaces, transferring focus using the **Tab** key, to another control no longer crashes the runtime.

ECN-4402 Local caching of remote files can fail

Type of Change: Correction

Product: ACUCOBOL-GT

New Version: 10.0.1

Module: runtime

RPI Number: 1102868

Machines Affected: All

DESCRIPTION:

A problem, which was introduced as a result of ECN-4343, in which cached files would grow uncontrollably, causing the runtime to loop and eventually run out of disk space, has been fixed.

ECN-4403 Garbage inserted into autofill entry drop-down lists

Type of Change: Correction

Product: ACUCOBOL-GT

New Version: 10.0.1

Module: runtime

RPI Number: 1101723

Machines Affected: All

DESCRIPTION:

When scrolling through the drop-down list of an entry field that has the Autofill property enabled, scrolling past the end of the list no longer results in garbage being placed into the entry field.

ECN-4404 TAB-COLOR used when not specified

Type of Change: Correction

Product: ACUCOBOL-GT

New Version: 10.0.1

Module: runtime

RPI Number: 1102063

Machines Affected: All

DESCRIPTION:

A COBOL program compiled for an earlier version (for instance, compiled with the `-Z91` compiler option), no longer uses the TAB-COLOR property when it has not been specified.

ECN-4405 Method not found when parameters include stored object

Type of Change: Correction

Product: ACUCOBOL-GT

New Version: 10.0.1

Module: runtime

RPI Number: 1102916

Machines Affected: All

DESCRIPTION:

Methods within stored objects can now be invoked successfully.

Previously (in version 9.2.0), a new way of storing ActiveX and .NET object references was introduced that used standard ACUCOBOL-GT handles rather than the native values. This resulted in stored object handles not being passed into the CLR correctly, and would result in a `Method Not Found` message, since the value passed was not the actual handle returned from the CLR. The runtime was also modified so that the method name returned did not include the `set_` prefix (which is automatically prepended by the C# compiler for get/set properties).

ECN-4406 Handle value clashes

Type of Change: Correction

Product: ACUCOBOL-GT

New Version: 10.0.1

Module: runtime

RPI Number: 1102804

Machines Affected: All

DESCRIPTION:

When a stored object is returned from a .NET method, it is now wrapped in an ACU handle, which is guaranteed to be unique. This avoids a number of errors previously possible when .NET handle values clashed (different handles having the same value).

One particular error was when a created object handle had the same value as a later returned stored object handle: this resulted in a method not being found, since the wrong object was being searched.

ECN-4408 MAV in the ActiveX runtime when using native controls

Type of Change: Correction

Product: ACUCOBOL-GT

New Version: 10.0.1

Module: runtime

RPI Number: 1101889

DESCRIPTION:

When using the ActiveX runtime (`AcuGT.Application`), invoking the `AcuShutdown` method no longer results in an exception when using native controls. Previously, this could happen if your application (directly or indirectly) called `ActivateActCtx()` (a Win32 function that activates a given Activation Context - see *msdn.com* for more information about Activation Contexts).

ECN-4409 Grid sort indicators don't show on grids without row headers

Type of Change: Correction

Product: ACUCOBOL-GT

New Version: 10.0.1

Module: runtime

RPI Number: 1103308

DESCRIPTION:

The grid sort indicator now displays on sortable columns for grids that do not have any row headers. Previously, it did not.

ECN-4410 C$JAVA CJAVA-CALL string argument memory error

Type of Change: Correction

Product: ACUCOBOL-GT

New Version: 10.0.1

Module: runtime

RPI Number: 1103365

DESCRIPTION:

This change fixes a memory error involving string type parameters used when calling a Java method with C $JAVA. Previously, string type parameters were processed incorrectly when freeing temporary resources. This could lead to a memory alignment error on platforms requiring aligned memory access.

AcuServer ECN List

This section includes the ECNs relating to AcuServer:

ECN-AS159 Master AcuServer losing connection to secondary servers

Type of Change: Correction

RPI: 1102043

Product: AcuServer

Module: acuserve

New Version: 10.0.1

Machines Affected: All

DESCRIPTION:

The master AcuServer no longer loses connection to its secondary servers or refuses further client connections. Previously, this could occur when too many clients connected to a master server (typically more than 1020).

AcuXDBC ECN List

This section includes the ECNs relating to AcuXDBC:

ECN-XD105 AcuXDBC Handling multiple 'when' conditions

Type of Change: Correction

Product: AcuXDBC

New Version: 10.0.1

Module: AcuXDBC

Machines Affected: All

RPI Number: 1102148

DESCRIPTION:

Using the `when` directive and referencing multiple conditions, such as the following no longer results in an error when loading the XFD:

```
...
$xfd  when ve-code-a = "//" and \
$xfd       ve-code-b = "0"  and \
$xfd       ve-code-c = "0"      \
...
```

Previously, it would produce the following message:

```
Error: Invalid A4XCondp->c_type '2'
Error: 'GENESIS_COLUMNS': Record not found.
```

ECN-XD106 AcuXDBC Oracle 11 XE returns Unsupported Info error

Type of Change: Correction

Product: AcuXDBC

New Version: 10.0.1

Module: AcuXDBC

Machines Affected: All

RPI Number: 1102511

DESCRIPTION:

When using AcuXDBC to link with Oracle 11 XE, `select * from ...` no longer results in the following message:

```
ORA-28500: connection from ORACLE to a non-Oracle system returned this
message: [TOD][ODBC Driver]UNINTYP: Unsupported InfoType
```

Previously, there was an error in `SQLGetTypeInfo`, where an error was returned if the requested type was not supported, when instead it should have returned `SQL_SUCCESS` with an empty ResultSet.

The correct `.dll` version for all `acuxdbc*.dll` files should show TOD 02.60.50.00.

Updates and SupportLine

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

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- Your computer make and model.
- System information such as operating system name and version, processors, and memory details.
- Any detailed description of the issue, including steps to reproduce the issue.
- Exact wording of any error messages involved.
- Your serial number or works order (WO) 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, or on the box in which the product was supplied, and on the red card supplied in the DVD case .

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