



extend Interoperability Suite 10.3.0

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.



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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 Windows Server 2003 (or any Windows platforms that pre-date these). This is because AcuBench utilizes a number of third-party libraries that have ceased to be supported on those platforms.

For this release, if you are running on the AIX 7.1 platform, the minimum requirement is version 7.1 Technology Level 4 (7100-04) , and if you are running on the AIX 7.2 platform, the minimum requirement is version 7.2 SP1.

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

Additional Requirements

General requirements

Linux-based platforms require `glibc` version 2.5 or later.

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

AcuToWeb

AcuToWeb requires the following gcc versions or later on the following platforms:

Platform	Minimum requirement
Aix6.1	GCC 7.1.0
Aix7.1	GCC 7.1.0
Aix7.2	GCC 7.1.0
HP 11.31 PA-RISC	GCC 4.3.1
HP 11.31 IA	GCC 4.2.3
Linux	GCC 4.8.0
Linux PPC	GCC 4.1.2-46
Sun Solaris 10	GCC 3.4.3
Sun Solaris 11	GCC 4.8.2

AIX and Solaris platforms require the Foreign Function Interface Library (libffi) is installed. More information and the installation packages can be found at the following:

AIX platforms: You can download an RPM package from:

<http://www.bullfreeware.com/affichage.php?id=3638>

And then install it using:

```
rpm -Uvh http://www.bullfreeware.com/download/bin/3638/libffi-20170516-1.aix6.1.ppc.rpm
```

Solaris platforms: You can download the package from:

<https://www.opencsw.org/packages/libffi6/>

General information on libffi can be found at:

<https://cffi.readthedocs.io/en/latest/installation.html>

If you are running on the Solaris 11 platform, the minimum version required to run the AcuToWeb Gateway is version 11.3.

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 `wrun32.11c`. 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.

Supported Windows Platforms

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

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 Xcentrinity 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. To run the `.msi`, you must run it from a command prompt that has 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**.



Restriction: If you specify a mapped drive, it must map to a local directory; remote mapped drives are not supported.

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	Start AcuServer as a service
Start AcuConnect	Start AcuConnect as a service



Note: Starting either AcuServer or AcuConnect as a service will only occur if you have run the `.exe` or `.msi` version of the installer with administrator privileges (see note above). If a previous version of either product is already running on its default port, an additional prompt is displayed, asking you if you want to shut down that service; you must answer **Y** if the new version of AcuServer or AcuConnect is to start - see *Notes on AcuConnect and AcuServer Installation* for more details.

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`.

Silent Installation

On Windows platforms, you can perform a silent installation of the extend Interoperability Suite using the `msiexec` command, which requires that you use the `.msi` install package that is shipped with your product. This must be run from a command line prompt that has administrative privileges.

The syntax required is:

```
msiexec /i <msi-file> INSTALLDIR=<install-directory> [INSTALLDIR64=<64-bit-install-directory>] ADDLOCAL=<product1,product2,...> [WINDOWSVERSION=<Win-version>] /qn [/L*v <log-file>]
```

where:

<msi-file>

The .msi installation file. This could be a 32-bit or a 64-bit version.

<install-directory>

The directory in which the product will be installed.



Restriction: If you specify a mapped drive, it must map to a local directory; remote mapped drives are not supported.

<64-bit-install-directory>

The directory in which the 64-bit products will be installed. This is mandatory if you are using the 64-bit installer, because it installs both 32-bit and 64-bit versions of some products, using <install-directory> for the 32-bit versions and <64-bit-install-directory> for the 64-bit versions.



Restriction: If you specify a mapped drive, it must map to a local directory; remote mapped drives are not supported.

<product1,product2,...>

A list of products and services to be installed; see *Product Variables for Silent Installation* for the comprehensive list of options.

<Win-version>

This is required for Windows versions 8 and later, in order to create the Extend Start menu. The only permissible value for <Win-version> is **PostWindows7**.

<log-file>

The path and file name of a log file in which to log the installation details.

Examples

32-bit installation:

For example, the following command silently installs the ACUCOBOL-GT runtime, Acu4GL for MSSQL, and the AcuSQL runtime to the C:\AcuInstallDir directory, and (on Windows 8 and later) also creates the extend start menu in the Windows program list:

```
msiexec /i "extend(R) Version 10.2.0 x86.msi" INSTALLDIR=C:\AcuInstallDir ADDLOCAL=Runtime,Acu4GLMSSQL,AcuSQLRuntime WINDOWSVERSION=PostWindows7 /qn
```

64-bit installation:

For example, the following command silently installs the ACUCOBOL-GT runtime, Acu4GL for MSSQL, and the AcuSQL runtime to the C:\AcuInstallDir directory, and the 64-bit runtime, Acu4GL for MSSQL, and AcuSQL runtime to the C:\AcuInstallDir64 directory:

```
msiexec /i "extend(R) Version 10.2.0 x64.msi" INSTALLDIR=C:\AcuInstallDir INSTALLDIR64=C:\AcuInstallDir64 ADDLOCAL=Runtime,Runtime64,Acu4GLMSSQL,Acu4GLMSSQL64,AcuSQLRuntime,AcuSQLRuntime64 /qn
```

Comments

You can also use the `msiexec` command to run the installation with a user interface: omit the `ADDLOCAL` parameter and substitute `/qn` for `/qf`.

You can also use the `msiexec` command to install the thin client `.msi` file that is supplied with your product: omit the `ADDLOCAL` parameter.

Product Variables for Silent Installation

The following table contains a list of possible arguments that you can use with `ADDLOCAL` when running a silent installation. Most argument names are self-explanatory; the Notes column explains those that are not.

Argument name	Notes
Acu4GLDB2	
Acu4GLDB264	
Acu4GLMSSQL	
Acu4GLMSSQL64	
Acu4GLODBC	
Acu4GLODBC64	
Acu4GLOracle	
Acu4GLOracle64	
AcuBench	
AcuConnect	
AcuConnect64	
AcuConnectDistributedProcessing	
AcuConnectThinClient	
AcuServer	
AcuServer64	
AcuSQLPrecompiler	
AcuSQLPrecompiler64	
AcuSQLRuntime	
AcuSQLRuntime64	
AcuToWeb	
AcuXDBC	
AcuXDBC64	
AcuXDBCEnterpriseEdition	The 32-bit and the 64-bit versions of <code>AcuXDBCEnterpriseEdition</code> are mutually exclusive; you may only specify one of these versions during the installation.

Argument name	Notes
AcuXDBCEnterpriseEdition64	
AcuxdbcsBat	
AcuxdbcsBat64	
AcuXDBCServer	The 32-bit and the 64-bit versions of AcuXDBCServer are mutually exclusive; you may only specify one of these versions during the installation.
AcuXDBCServer64	
BIS	
Compiler	
DevSys	The ACUCOBOL-GT Development System, which includes the following: Compiler, Runtime, WebRuntime, ThinClient, and WebThinClient.
ExtendStartMenu	The entry shown on the Windows program menu for Windows versions 8 and later. The 32-bit and the 64-bit versions of ExtendStartMenu are mutually exclusive; you may only specify one of these versions during the installation.
ExtendStartMenu64	
LicenseActivator	
LicenseActivator64	
OnlineDocumentationCHM	
Runtime	
Runtime64	
ThinClient	
VCRedist	Installs the Microsoft redistributable files, required by the extend products, if they are not already installed.
VortexJar	Required for AcuXDBCEE. The enterprise edition of AcuXDBC needs the <code>vortex.jar</code> file, which enables a Java client application to connect to your Vision database.
VortexJar64	
WebRuntime	
WebThinClient	

Examples

32-bit installation:

For example, the following command silently installs the ACUCOBOL-GT runtime, Acu4GL for MSSQL, and the AcuSQL runtime to the `C:\AcuInstallDir` directory,

and (on Windows 8 and later) also creates the extend start menu in the Windows program list:

```
msiexec /i "extend(R) Version 10.2.0 x86.msi" INSTALLDIR=C:\AcuInstallDir ADDLOCAL=Runtime,Acu4GLMSSQL,AcuSQLRuntime WINDOWSVERSION=PostWindows7 /qn
```

64-bit installation:

For example, the following command silently installs the ACUCOBOL-GT runtime, Acu4GL for MSSQL, and the AcuSQL runtime to the C:\AcuInstallDir directory, and the 64-bit runtime, Acu4GL for MSSQL, and AcuSQL runtime to the C:

\AcuInstallDir64 directory:

```
msiexec /i "extend(R) Version 10.2.0 x64.msi" INSTALLDIR=C:\AcuInstallDir INSTALLDIR64=C:\AcuInstallDir64 ADDLOCAL=Runtime,Runtime64,Acu4GLMSSQL,Acu4GLMSSQL64,AcuSQLRuntime,AcuSQLRuntime64 /qn
```

Windows 64-bit Installations

There are 64-bit versions of most extend products. These 64-bit versions are installed using a separate 64-bit version of the installer. The installation process follows the same steps as described in [Installation on Windows Platforms](#), with the following notable exceptions.

When running the 64-bit installer, if no 64-bit version exists for a selected product (for example, AcuBench), the 32-bit version is installed.

Products such as AcuConnect and AcuServer have 32-bit and 64-bit versions, and both are installed if you select these products during installation. You can also decide which version of the product to start on completion of the installation.

The AcuXDBC product is broken down into three installations: for the Data Interface, you can install both the 32-bit and 64-bit versions; and for the AcuXDBC Server and Enterprise Edition, you must choose which version to install.

By default, all 64-bit product versions are installed in the Program Files directory, and 32-bit product versions (and any supporting non-64-bit tools) are installed in the Program Files (x86) directory; although, you can change these locations during the installation. All the 32-bit versions are fully supported and functional in a 64-bit environment.



Remember: When running the license activator after the installation, the 64-bit version of the Activator utility is run, which installs license files into both the 32-bit and 64-bit directories. When running the Activator utility from the command prompt, make sure you are using the 64-bit command prompt to ensure the correct licenses are generated and placed in the correct locations; otherwise, if the 32-bit Activator utility is run, only license files for 32-bit products will be generated.

Installation Notes

Debugging files

The Windows distribution media now contains .pdb debugging files to assist customer support in solving runtime issues on a customer's machine - .pdb files enable runtime stack information to be generated.

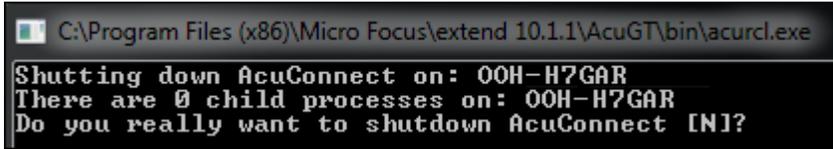
To setup this ability, copy the .pdb files from the 32-bit or 64-bit Debug directories on the distribution media to the 32-bit or 64-bit directory of the installation. 32-bit files on the media are located in Debug\Win32\bin*.pdb, and 64-bit files on the media are located in Debug\x64\bin*.pdb.

Once the .pdb files are copied, follow any instructions given to you by Customer Support.

AcuConnect and AcuServer

During the installation process, if you are installing AcuConnect or AcuServer, you can choose to automatically start those services as part of the installation process.

Those services can only be started if certain conditions are met. For example, the services will attempt to start on a default port (AcuConnect 5632, AcuServer 6523). If an existing installation is already using that port, that service must be stopped if the installation is to create and run the new service. If you do not stop the existing service, the installation can only create the new service; it cannot run it.



```
C:\Program Files (x86)\Micro Focus\extend 10.1.1\AcuGT\bin\acurcl.exe
Shutting down AcuConnect on: 00H-H7GAR
There are 0 child processes on: 00H-H7GAR
Do you really want to shutdown AcuConnect [N]?
```

If there is no previous installation, a default `AcuAccess` file is only created (in its default location of `C:\etc`) when the service starts. If you configure the installation to not start the service, no `AcuAccess` file will exist until you start the products from their respective control panels (or command line equivalents). If a previous installation exists, the `AcuAccess` file already located in `C:\etc` is used.



Note: This file and directory are not removed when you uninstall a previous product.

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.

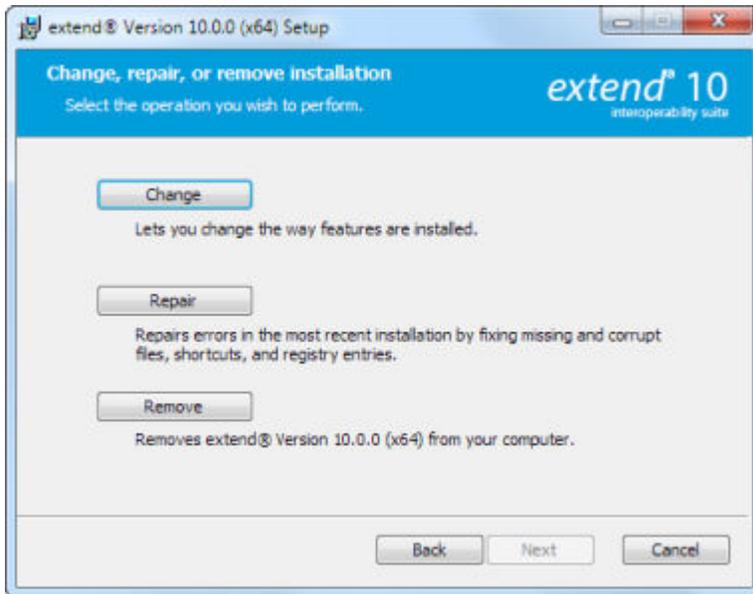
Uninstalling or Modifying Your Installation

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.

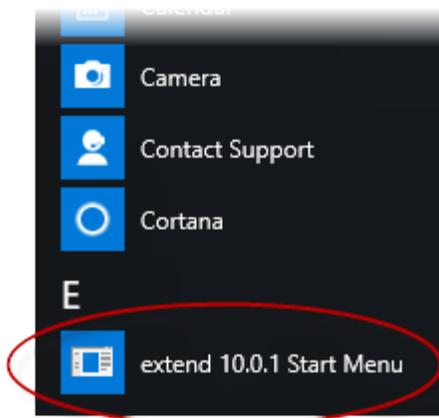
Remove Enables you to remove all products of your installation.



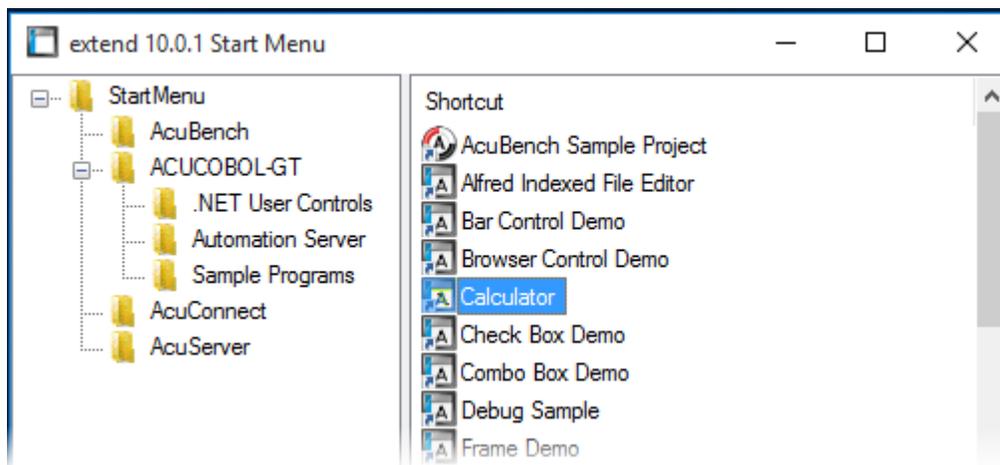
Launching extend Products on Windows 8 or Later

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:

```
ccb132 -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:

```
ccb132 -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 <prntername>

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 \\prntername
```

in the configuration file (CBLCONFI). *Prntername* 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 \\prntername" TO WS-PRINTER-NAME.
```

When the runtime opens a file assigned to "-Q <prntername>", it sets the Windows print spooler to use this printer. The printer driver must be installed on the computer from which you print. If *prntername* 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 <prntername>` 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 these 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 are delivered via FTP.

Installation Process

1. Download the product from the Micro Focus SupportLine site.



Note: Before running the installer, ensure that the `tar` utility is on your PATH.

2. Enter the following:

```
/path/to/installer/installer-name [options]
```

where *installer-name* will be something similar to `setup_acucob1010pmk59shACU`.

The following options can be included:

Option	Description
<code>-d installation-path</code>	Specifies a new default install location offered during the installation. If not specified, the default location is the current working directory (.). Any specified directory must already exist.

Option	Description
-EULA	This option can be combined with the <code>-EULA</code> option, but if it is, it will specify the location of the extracted EULA, and not the location of the installed product.
-help	Displays the available options that can be appended to the installation command.

 **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.

- From the installation directory, enter the following command to run the Activator utility:

```
./bin/activator
```

- 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.

- To start the acushare license manager service, enter the following:

```
acushare -start
```

- 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
```

- 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](#).
- 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.
- 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 `aclnt.so` (or `aclnt.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 `aclnt.so` (or `aclnt.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.11c` and `/opt/acu/bin/runcbl.11c` 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.11c` and finally `/opt/acu/bin/runcbl.11c`.

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.11c` 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 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.

Changes Affecting Version 10.3.0

If you are updating from a version of the extend Interoperability Suite prior to version 10.3.0, you need to be aware of the following changes that may affect your existing applications:

x64 native-code programs on Windows requiring recompilation

A new Windows feature called HIGHENTROPYVA is being enabled for this version of extend. It is an anti-hacking feature that randomizes load addresses and tends to put programs in the upper half of the x64 address space.

In extend 10.2.x, HIGHENTROPYVA was not supported; it was explicitly turned off. Now that it has been enabled, the result is that Windows x64 native object files compiled in version 10.2.x are now incompatible with the current runtime: you *must* recompile those programs before you can run them using the current runtime.

If you attempt to run an incompatible x64 program in extend 10.3.0, an error is generated, stating that the contained code is for a different processor family.



Note: Linux/UNIX x64 programs do not require recompilation.

File Handling configuration variables

On Windows platforms, there has been an internal change to the way files are handled. This change should not have any adverse consequences to existing applications, but as a precaution, we recommend that you thoroughly test your applications in respect to file handling, to ensure that they still function as expected.

Also, as a consequence of the change, the following configuration variables are no longer applicable, and have been removed from the product:

- MAPPED-RETRY-DEL-COUNT
- MAPPED-RETRY-OPEN-COUNT
- MAPPED-SLEEP-MILLSEC
- NT-OPP-LOCK-STATUS

Newly formatted AcuAccess file

In this release, when you use AcuServe, AcuRCL, Boomerang, or AcuToWeb you are prompted to select the AcuAccess to be used. When you select this for the first time, a new AcuAccess file is created, which includes some increased field size limit changes.

This new file is not backwards compatible with earlier versions of the above products. If you still plan to run older versions of AcuServe, AcuRCL, Boomerang, or AcuToWeb on your machine, we recommend that you take a copy of your existing AcuAccess file before you select it for use in the latest release of extend, and use the ACCESS_FILE variable to point to this file.

ACCEPT ... FROM TIME

If you are using a dest-item of PIC 9(12) or larger, the format returned is the same as the FROM MICROSECOND-TIME clause; that is, there are now six decimal places for fractional second values: HHMMSSUUUUUU (Hours, Minutes, Seconds, Microseconds). To continue to use items of this size and still return a conventional value for the FROM TIME clause, compile your program with an earlier compatibility option, such as `-c102`.

VTOP style behavior

The VTOP style, available for the radio button and check box controls, displays different behavior between the ACUCOBOL-GT runtime/thin client, and AcuToWeb - AcuToWeb behavior is as expected.

What's New

The following items are new for this release:

Acu4GL Enhancements

This section includes the enhancements related to Acu4GL.

ECN-GL570 IDENTITY column support for Acu4GL for SQL Server

Product: Acu4GL

Module: MSSQL

Machines Affected: All

Known Versions Affected: All

DESCRIPTION:

Acu4GL for Microsoft SQL Server now supports tables that contain identity columns.

Acu4GL can use the IDENTITY-COLUMN XFD directive to create an identity column in a new or existing table, or it can handle tables with existing identity columns. (See ECN-4603 for more details on the new IDENTITY-COLUMN XFD directive.)

When reading a row with READ, READ NEXT, or READ PREVIOUS, the field specified by the IDENTITY-COLUMN is filled in with the value in the row.

When writing a row with WRITE, the field specified by the IDENTITY-COLUMN is ignored, allowing the server to fill in the value.

Note: The record is not changed by the WRITE statement, but the value of the column in the database is set by the server.

When updating a row with REWRITE, the field specified by the IDENTITY-COLUMN will be used as the WHERE clause of the UPDATE statement. Similarly, when deleting a row with DELETE, the field specified by the IDENTITY-COLUMN will be used as the WHERE clause of the DELETE statement.

In both cases, the desired row must be identified by the COBOL program setting the field specified by the IDENTITY-COLUMN correctly. Otherwise, an error 23 could be returned, or the wrong row updated or deleted.

Note: SQL Server does not guarantee the uniqueness of values with the IDENTITY property, and so the interface, when creating a table, will also create a constraint to ensure uniqueness of the column.

Because there can only be one IDENTITY column in a table, the interface will not add an internally-used IDENTITY column to the table if there is a column already identified as the IDENTITY-COLUMN.

ECN-GL571 IDENTITY column support for Acu4GL for Oracle

Product: Acu4GL

Module: Oracle

Machines Affected: All

Known Versions Affected: All

DESCRIPTION:

Acu4GL for Oracle now supports tables that contain identity columns.

Acu4GL can use the IDENTITY-COLUMN XFD directive to create an identity column in a new or existing table, or it can handle tables with existing identity columns. (See ECN-4603 for more details on the new IDENTITY-COLUMN XFD directive.)

When reading a row with READ, READ NEXT, or READ PREVIOUS, the field specified by the IDENTITY-COLUMN is filled in with the value in the row.

When writing a row with WRITE, the field specified by the IDENTITY-COLUMN is ignored, allowing the server to fill in the value.

Note: The record is not changed by the WRITE statement, but the value of the column in the database is set by the server.

When updating a row with REWRITE, the field specified by the IDENTITY-COLUMN will be used as the WHERE clause of the UPDATE statement. Similarly, when deleting a row with DELETE, the field specified by the IDENTITY-COLUMN will be used as the WHERE clause of the DELETE statement.

In both cases, the desired row must be identified by the COBOL program setting the field specified by the IDENTITY-COLUMN correctly. Otherwise, an error 23 could be returned, or the wrong row updated or deleted.

ACUCOBOL-GT Enhancements

This section includes the enhancements related to ACUCOBOL-GT.

ECN-4562 x64 HIGHENTROPYVA support for x64 native code on Windows

RPI Number: 1114052

Product: ACUCOBOL-GT

Module: runtime

Machines Affected: All 64-bit

Known Versions Affected: 10.2.x

DESCRIPTION:

Previously, on some Windows machines, 64-bit programs would crash when loaded into memory beyond the first four gigabytes. The only known cases of this have occurred on Windows 10 machines using 'patched' versions of extend 10.2.0, or when external executables started the extend runtime by calling its `.dll`.

The problem was due to a new Windows feature called HIGHENTROPYVA, an anti-hacking feature that randomizes load addresses and tends to put programs in the upper half of the x64 address space.

In extend 10.2.x, HIGHENTROPYVA was not supported; it was explicitly turned off. Now, in extend 10.3.0, this feature is being turned on. The result of this is that Windows x64 native object files compiled in version 10.2.x are now incompatible with the current runtime, and *must* be recompiled.

If you attempt to run an incompatible x64 program in extend 10.3.0, an error is generated, stating that the contained code is for a different processor family.

 **Note:** Linux/UNIX x64 programs do not require recompilation.

ECN-4565 Additional function support added to C\$PDF

Product: ACUCOBOL-GT

Module: Runtime

Machines Affected: All

Known Versions Affected: 10.2.0 and later

DESCRIPTION:

Additional opcodes have been added to C\$PDF to support additional functionality offered by the libharu API.

Some existing opcodes have also been modified, taking a PIC X(n) item, with an optional length - these are indicated with an (optional) after the parameter explanation in our documentation. If the length is not given, then the length of the data item is used, and trailing spaces are stripped out before sending the string to the HARU library. If the optional length is given, that exact value is used, which may result in trailing spaces. Some examples of such functions are HPDF-PAGE-TEXTWIDTH, HPDF-PAGE-MEASURETEXT, HPDF-PAGE-SHOWTEXT, HPDF-PAGE-TEXTOUT, and HPDF-PAGE-TEXTRECT.

The following support has been added in this release:

 **Note:** As usual, see the third-party libharu API documentation (<https://github.com/libharu/libharu/wiki/API:-Document>) for a fuller explanation of how to use the functions.

HPDF-PAGE-CURVETO
HPDF-PAGE-CURVETO2
HPDF-PAGE-CURVETO3
HPDF-PAGE-CIRCLE
HPDF-PAGE-TEXTRECT
HPDF-PAGE-SETTEXTMATRIX
HPDF-SETPAGEMODE
HPDF-PAGE-GETCURRENTTEXTPOS
HPDF-SETENCRYPTIONMODE
HPDF-PAGE-ARC
HPDF-PAGE-GETCURRENTPOS
HPDF-PAGE-MOVETONEXTLINE
HPDF-PAGE-CREATEURILINKCANNOT
HPDF-SETPAGESCONFIGURATION
HPDF-ENCODER-GETTYPE
HPDF-ENCODER-GETBYTETYPE
HPDF-ENCODER-GETUNICODE
HPDF-ATTACHFILE
HPDF-PAGE-SETSLIDESHOW
HPDF-DESTINATION-SETXYZ
HPDF-DESTINATION-SETFIT
HPDF-DESTINATION-SETFITB
HPDF-DESTINATION-SETFITBH
HPDF-DESTINATION-SETFITBV
HPDF-DESTINATION-SETFITH
HPDF-DESTINATION-SEFITR

HPDF-DESTINATION-SETFITV
HPDF_CREATEEXTGSTATE
HPDF-EXTGSTATE-SETALPHAFILL
HPDF-EXTGSTATE-SETALPHASTROKE
HPDF-EXTGSTATE-SETBLENDMODE
HPDF-FILEWRITER
HPDF-STREAM-FREE
HPDF-STREAM-WRITETOSTREAM
HPDF-3DANNOTEXDATA-SET3DMEASUREMENT
HPDF-3DC3DMEASURE-SETPROJECTIONANNOTATION
HPDF-3DC3DMEASURE-SETTEXT
HPDF-3DC3DMEASURE-SETTEXTBOXSIZE
HPDF-3DMEASURE-SETCOLOR
HPDF-3DMEASURE-SETNAME
HPDF-3DMEASURE-SETTEXTSIZE
HPDF-3DVIEW-ADD3DC3DMEASURE
HPDF-ADDPAGELABEL
HPDF-ANNOT-SET3DVIEW
HPDF-ANNOT-SETCMYKCOLOR
HPDF-ANNOT-SETGRAYCOLOR
HPDF-ANNOT-SETNOCOLOR
HPDF-ANNOT-SETRGBCOLOR
HPDF-CHECKERROR
HPDF-ENCODER-GETWRITINGMODE
HPDF-FONT-GETASCENT
HPDF-FONT-GETBBOX
HPDF-FONT-GETCAPHEIGHT
HPDF-FONT-GETDESCENT
HPDF-FONT-GETENCODINGNAME
HPDF-FONT-GETFONTNAME
HPDF-FONT-GETUNICODEWIDTH
HPDF-FONT-GETXHEIGHT
HPDF-FONT-MEASURETEXT
HPDF-FONT-TEXTWIDTH
HPDF-FREEDOC
HPDF-FREEDOCALL
HPDF-FREETEXTANNOT-SET2POINTCALLOUTLINE
HPDF-FREETEXTANNOT-SET3POINTCALLOUTLINE
HPDF-FREETEXTANNOT-SETDEFAULTSTYLE
HPDF-FREETEXTANNOT-SETLINEENDINGSSTYLE
HPDF-GETCONTENTS
HPDF-GETCURRENTPAGE
HPDF-GETERRORDETAIL
HPDF-GETINFOATTR
HPDF-GETPAGEBYINDEX
HPDF-GETPAGELAYOUT
HPDF-GETPAGEMMGR
HPDF-GETPAGEMODE
HPDF-GETSTREAMSIZE
HPDF-GETTTFFONTDEFFFROMFILE

HPDF-GETVERSION
HPDF-GETVIEWERPREFERENCE
HPDF-HASDOC
HPDF-ICC-LOADICCFROMMEM
HPDF-LINEANNOT-SETCAPTION
HPDF-LINEANNOT-SETLEADER
HPDF-LINEANNOT-SETPOSITION
HPDF-LINKANNOT-SETJAVASCRIPT
HPDF-LOADICCPROFILEFROMFILE
HPDF-LOADU3DFFROMFILE
HPDF-LOADU3DFFROMMEM
HPDF-MARKUPANNOT-SETCLOUDEFFECT
HPDF-MARKUPANNOT-SETCREATIONDATE
HPDF-MARKUPANNOT-SETINTENT
HPDF-MARKUPANNOT-SETINTERIORCMYKCOLOR
HPDF-MARKUPANNOT-SETINTERIORGRAYCOLOR
HPDF-MARKUPANNOT-SETINTERIORRGBCOLOR
HPDF-MARKUPANNOT-SETINTERIORTRSPARENT
HPDF-MARKUPANNOT-SETPOPUP
HPDF-MARKUPANNOT-SETRECTDIFF
HPDF-MARKUPANNOT-SETSUBJECT
HPDF-MARKUPANNOT-SETTITLE
HPDF-MARKUPANNOT-SETTRANSPARENCY
HPDF-NEWDOC
HPDF-PAGE-CREATE3DANNOT
HPDF-PAGE-CREATE3DANNOTEXDATA
HPDF-PAGE-CREATE3DC3DMEASURE
HPDF-PAGE-CREATE3DVIEW
HPDF-PAGE-CREATECIRCLEANNOT
HPDF-PAGE-CREATEFREETEXTANNOT
HPDF-PAGE-CREATEHIGHLIGHTANNOT
HPDF-PAGE-CREATELINEANNOT
HPDF-PAGE-CREATEPD33DMEASURE
HPDF-PAGE-CREATPOPUPANNOT
HPDF-PAGE-CREATEPROJECTIONANNOT
HPDF-PAGE-CREATESQUAREANNOT
HPDF-PAGE-CREATESQUIGLLYANNOT
HPDF-PAGE-CREATESTAMPANNOT
HPDF-PAGE-CREATESTRIKEOUTANNOT
HPDF-PAGE-CREATETEXTMARKUPANNOT
HPDF-PAGE-CREATEUNDERLINEANNOT
HPDF-PAGE-CREATEWIDGETANNOT
HPDF-PAGE-CREATEWIDGETANNOT-WHITEONLYWHILEPRINT
HPDF-PAGE-CREATEXOBJECTASWHITERECT
HPDF-PAGE-CREATEXOBJECTFROMIMAGE
HPDF-PAGE-ELLIPSE
HPDF-PAGE-ENDPATH
HPDF-PAGE-EOCLIP
HPDF-PAGE-EOFILL
HPDF-PAGE-EOFILLSTROKE

HPDF-PAGE-GETCHARSPACE
HPDF-PAGE-GETCMYKFILL
HPDF-PAGE-GETCMYKSTROKE
HPDF-PAGE-GETCURRENTFONT
HPDF-PAGE-GETDASH
HPDF-PAGE-GETFILLINGCOLORSPACE
HPDF-PAGE-GETFLAT
HPDF-PAGE-GETGRAYFILL
HPDF-PAGE-GETGRAYSTROKE
HPDF-PAGE-GETGSTATEDDEPTH
HPDF-PAGE-GETHORIZONTALSCALLING
HPDF-PAGE-GETLINECAP
HPDF-PAGE-GETLINEJOIN
HPDF-PAGE-GETLINEWIDTH
HPDF-PAGE-GETMITERLIMIT
HPDF-PAGE-GETRGBFILL
HPDF-PAGE-GETRGBSTROKE
HPDF-PAGE-GETSTROKINGCOLORSPACE
HPDF-PAGE-GETTEXTLEADING
HPDF-PAGE-GETTEXTMATRIX
HPDF-PAGE-GETTEXTRENDERINGMODE
HPDF-PAGE-GETTEXTRISE
HPDF-PAGE-GETTRANSMATRIX
HPDF-PAGE-GETWORDSPACE
HPDF-PAGE-INSERT-SHARED-CONTENT-STREAM
HPDF-PAGE-MOVETEXTPOS2
HPDF-PAGE-NEW-CONTENT-STREAM
HPDF-PAGE-SETCHARSPACE
HPDF-PAGE-SETCMYKFILL
HPDF-PAGE-SETCMYKSTROKE
HPDF-PAGE-SETFLAT
HPDF-PAGE-SETHORIZONTALSCALLING
HPDF-PAGE-SETMITERLIMIT
HPDF-PAGE-SETROTATE
HPDF-PAGE-SETTEXTRENDERINGMODE
HPDF-PAGE-SETTEXTRISE
HPDF-PAGE-SETWORDSPACE
HPDF-PAGE-SETZOOM
HPDF-PAGE-SHOWTEXTNEXTLINEEX
HPDF-POPUPANNOT-SETOPENED
HPDF-PROJECTIONANNOT-SETEXDATA
HPDF-READFROMSTREAM
HPDF-RESETERROR
HPDF-RESETSTREAM
HPDF-SAVETOSTREAM
HPDF-SETPAGELAYOUT
HPDF-TEXTMARKUPANNOT-SETQUADPOINTS

ECN-4567 Extra segment size limit increased

RPI Number: 1114305

Product: ACUCOBOL-GT
Module: compiler, runtime, cblutil
Machines Affected: All
Known Versions Affected: All

DESCRIPTION:

Objects built in this version of extend can now hold a maximum of 128KB of information in the "extra" segment. The previous limit was 64KB.

The extra segment holds the encodings for PERFORMed paragraph end-points (6 bytes each) and the encoded Screen Section. This increase in size should allow for a great many large Screen Section entries in a single program.



Note: The 64KB limit still applies if you target earlier object versions, via the `-z##` compile option. Also, pre-10.3 versions of `cblutil -info` will misreport the size of an object built with the new limits, by half the size of the extra segment.

ECN-4590 ACCEPT ... FROM MICROSECOND-TIME enhancement

Product: ACUCOBOL-GT
Module: compiler, runtime
Machines Affected: all
Known Versions Affected: N/A

DESCRIPTION:

This enhancement adds support for microsecond resolution time values when supported by the underlying system.

There are two ways to access this support:

- `ACCEPT ... FROM MICROSECOND-TIME`. `MICROSECOND-TIME` is a new keyword available in this version. The associated data item should be a PIC 9(12) or larger. The format of the data is similar to the previous `ACCEPT ... FROM TIME` support, except that there are now six decimal places for fractional second values: HHMMSSUUUUUU (Hours, Minutes, Seconds, Microseconds).
- `ACCEPT ... FROM TIME` into a PIC 9(12) data item, or larger. The compiler will generate code to provide microsecond values in this case. For data items with less than 12 digits, the previous 8 digit time will be provided.

This is a change of behavior if you were previously accepting `TIME` into a larger than PIC 9(8) data item. In this case, the previous behavior may be obtained by compiling with an earlier compatibility version such as that for version 10.2 (using the `-c102` compiler option).



Note: The precision and accuracy of the time values provided depend on the operating system. As of the current date, UNIX and Linux systems will generally provide microsecond precision values while Windows systems will provide millisecond precision values with the trailing three digits being zero.

ECN-4601 Locating the .NET development tools

Incidents: 3141086
RPI Number: 1112915
Product: ACUCOBOL-GT

Module: Compiler

Machines Affected: Windows

Known Versions Affected: All

DESCRIPTION:

Microsoft no longer distributes its .NET development tools to the location that extend expects; therefore, the compiler now contains options for assisting in locating the .NET development tools (`al.exe`, `ilasm.exe`) when compiling with the .NET options `--netdll`, `--netdlls`, and `--netexe`.

Firstly, the compiler will look in the registry for the location of the .NET development tools, and you can use a new compiler option to set that value in the registry:

```
ccbl32 --NETToolsDir=<\path\to\.NET\tools>
```

If the required registry value does not exist, the compiler will first look in the old location (`C:\Windows\Microsoft.NET\Framework\v2.0.50727`), and then will examine the PATH environment variable. If the compiler fails to find the tools using any of these methods, then the compile will fail.

You only need to set this option once for each version of the compiler used, because each generated registry key is version specific. To change the directory for the .NET development tools, simply run the option again.

If, for some reason, you need to remove the registry value, you can use the following new option:

```
--ccbl32 --resetNETToolsDir
```



Note: These new options are not available in AcuBench (since they only need to be used once).

ECN-4603 New XFD directive: IDENTITY-COLUMN

Product: ACUCOBOL-GT

Module: Compiler, runtime

Machines Affected: All

Known Versions Affected: All

DESCRIPTION:

A new XFD directive, IDENTITY-COLUMN, allows you to define an identity column in your database.

You must only specify this directive on a numeric field, and the column start number and incremental value will assume the database's defaults.

If you specify this directive on more than one numeric field, all but the first directive is ignored. If you specify the directive on a non-numeric field, a warning message is generated.

The definition file `parsexfd.def` has been updated to include a new field relating to this directive. If the new directive is in effect and `C$PARSEXFD` op-code 3 is called, then this additional information is returned, but only if the group item used to capture the XFD information is large enough to accommodate the additional data.



Note: This data is only captured in the XFD if you are using an XML-style XFD file.

ECN-4604 New image type support added

Product: ACUCOBOL-GT

Module: Runtime

Machines Affected: Windows

Known Versions Affected: All

DESCRIPTION:

The ACUCOBOL-GT runtime now supports PNG and TIFF bitmapped image. These may be used wherever a JPEG file can be used.

Acceptable extensions for these files are PNG, TIFF, TFF, and TIF.

ECN-4609 Multi-monitor support added

Product: ACUCOBOL-GT

Module: Runtime, thin client

Machines Affected: All

Known Versions Affected: All

DESCRIPTION:

The ACCEPT ... FROM TERMINAL-INFO syntax has been enhanced to enable a COBOL program to be aware of a multi-monitor environment.

The copybook `acucobol.def` has extended the TERMINAL-ABILITIES structure to retrieve more information, mimicking the information returned by the Win32 API `GetMonitorInfo`.

The syntax can retrieve information for the physical and work area of up to 10 attached monitors. Couple this with the enhancement that increases the maximum screen size (ECN-4610) and you can now work across multiple monitors.



Note: This information is not available when running with AcuToWeb; however, it is available when running under thin client, in which it returns information about the display host.

ECN-4610 Maximum window size increased

Product: ACUCOBOL-GT

Module: Runtime, thin client

Machines Affected: All

Known Versions Affected: All

DESCRIPTION:

The maximum window size for any canvas has been increased from 300 columns and 200 rows to 655 columns and 655 rows.

In conjunction with the new multi-monitor support (ECN-4609), programs compiled for compatibility with version 10.3 or later will allow a canvas larger than the primary monitor.

ECN-4611 New environment variable - CBLMODE

Product: ACUCOBOL-GT

Module: All

Machines Affected: All

DESCRIPTION:

A new environment variable is now set when you start a command line development system: CBLMODE is set to the appropriate bitism for the environment (32 or 64).

The value of this variable determines the type of native code produced on Windows systems when the -n compiler option is used. In 64-bit environments, this means that you can build a 64-bit executable (specifying -n) and immediately execute it. This has the same effect as if it was built with the --x64_Win compiler option.



Note: In subsequent releases, this environment variable may enable further enhancements, but for now, its only use is that described above.

ECN-4616 Multi-lined tooltips now available

Incidents: 3156222

RPI Number: 1114188

Product: ACUCOBOL-GT

Module: Runtime

Machines Affected: Windows

Known Versions Affected: All

DESCRIPTION:

When creating a push-button that uses a bitmapped image, the Title property becomes the tooltip, which can be seen when a user hovers a mouse over the push-button. In the past, these titles are drawn as a single line, but it is now possible to display the tooltip over multiple lines.

The runtime and thin client have been modified so that the tooltips now span multiple lines if you embed a hexadecimal line-feed in the value where you would like a line break - this is best achieved using a group, containing a one or more single-byte elementary items set to a value of `x"0a"`.

ECN-4617 The BITMAP-SCALE property now available for more control types

Product: ACUCOBOL-GT

Module: Compiler, runtime

Machines Affected: Windows

Known Versions Affected: All

DESCRIPTION:

The BITMAP-SCALE property is now available to the following control types:

- Push buttons
- Radio buttons
- Check boxes

The property acts in exactly the same way as it does when applied to bitmap controls: it sizes a bitmap to the size of the control.

ECN-4619 Grid control now supports the SORT-COLUMN property

Product: ACUCOBOL-GT

Module: Runtime, compiler, thin client

Machines Affected: Windows

Known Versions Affected: All

The columns in a grid control can now be sorted without the need to click the grid column header.

You can use a new numeric grid property, SORT-COLUMN, to sort a column programmatically. Modify SORT-COLUMN to a positive value to sort the column ascending, or modify SORT-COLUMN to a negative value to sort the column descending.

If you query the property to ascertain its sort status, as well as a positive value indicating the column is sorted ascending, and a negative value indicating descending, a value of 0 indicates that the column is not sorted.

AcuBench Enhancements

This section includes the enhancements related to AcuBench.

ECN-WB694 Support for PNG and TIFF image files

Incidents: 3146442

RPI Number: 1113233

Product: AcuBench

Module: AcuBench.exe

Machines Affected: Windows

Known Versions Affected: All

DESCRIPTION:

In support of ECN-4604, support has now been added to AcuBench for PNG and TIFF files.

When adding a bitmap to a screen, you can now selecting files of type *.png, *.tif, or *.tiff.

ECN-WB696 The BITMAP-SCALE property now available in AcuBench

Product: AcuBench

Module: AcuBench.exe

Machines Affected: Windows

Known Versions Affected: All

DESCRIPTION:

The BITMAP-SCALE property is now available to the following components in AcuBench:

- Push buttons
- Radio buttons
- Check boxes

You can also set this property programmatically.

AcuConnect Enhancements

This section includes the enhancements related to AcuConnect.

ECN-AS166 new format for AcuAccess file

Incidents: 3162121

RPI Number: 1114553

Product: AcuServer, AcuConnect

Module: srvmgmt.dll / libsrvmgmt.so

Machines Affected: All

Known Versions Affected: All

DESCRIPTION:

The AcuAccess file, which is used by AcuServer, AcuRCL, Boomerang, and AcuToWeb, has been updated to increase many of the field sizes.

The Client Machine name has increased to a maximum of 128 characters, and the User Name and Local User Name have been increased to 64 characters. The Password field remains at 64 characters.

The first time you access this file with this version of the product, a newly converted version of AcuAccess is automatically created.



Warning: This change means that you cannot use versions prior to 10.3.0 of the above products with the new AcuAccess file. If you still need to use older versions, you should take a copy of your existing AcuAccess file before you select it when starting AcuServe, AcuRCL, Boomerang, or AcuToWeb in this version.

AcuServer Enhancements

This section includes the enhancements related to AcuServer.

ECN-AS166 new format for AcuAccess file

Incidents: 3162121

RPI Number: 1114553

Product: AcuServer, AcuConnect

Module: srvmgmt.dll / libsrvmgmt.so

Machines Affected: All

Known Versions Affected: All

DESCRIPTION:

The AcuAccess file, which is used by AcuServer, AcuRCL, Boomerang, and AcuToWeb, has been updated to increase many of the field sizes.

The Client Machine name has increased to a maximum of 128 characters, and the User Name and Local User Name have been increased to 64 characters. The Password field remains at 64 characters.

The first time you access this file with this version of the product, a newly converted version of AcuAccess is automatically created.



Warning: This change means that you cannot use versions prior to 10.3.0 of the above products with the new AcuAccess file. If you still need to use older versions, you should take a copy of your existing AcuAccess file before you select it when starting AcuServe, AcuRCL, Boomerang, or AcuToWeb in this version.

AcuToWeb Enhancements

This section includes the enhancements related to AcuToWeb.

ECN-AW127 AcuToWeb supports client-side .NET assemblies

RPI: 629023

Product: AcuToWeb

Module: AcuToWeb

Machines Affected: all

DESCRIPTION:

AcuToWeb now supports client side .NET assemblies, but must adhere to these rules:

- The AcuToWeb Desktop must be running alongside your COBOL program that uses the .NET assembly.
- The .NET assembly must not contain or use a graphical interface: it must be a function or set of functions that executes without a display.
- The CREATE statement should use the FILE-PATH property to locate the .dll file on which it is acting - if you do not use FILE-PATH, then AcuToWeb looks in the C:\Program Files (x86)\Micro Focus\extend x.x.x\AcuToWeb\AcuToWeb Desktop directory.
- The .dll should use the XML file format as shown in *Special Properties - FILE-PATH (alphanumeric)*.

ECN-AW133 New properties available in gateway.conf

Incidents: 3162439

RPI Number: 1115598

Product: AcuToWeb

Module: AcuToWeb

Machines Affected: All

DESCRIPTION:

There are three new properties available to the AcuToWeb config file, `gateway.conf`. They are:

path_fill_combo

The `fillcombo.js` is a JavaScript file used to populate the Alias field of the **Connection Setup** screen with aliases that you might run on a regular basis. By default, this file is located in the `AcuToWeb\Web\js` sub-directory of your installation path. Use `path_fill_combo` to specify your own `fillcombo.js` file.

Example: `PATH_FILL_COMBO C:\my-acutoweb\fillcombo.js`

timeout_atw_conn

Use `timeout_atw_conn` to insert a time delay to ensure that the connection to the AcuToWeb Desktop has been established before your application runs. Increase the value of this option if you are having connection problems for applications requiring the AcuToWeb Desktop. The default value is 100 (milliseconds); a suggested value is 450.

Example: `TIMEOUT_ATW_CONN 450`

append_log_file

`append_log_file` is a boolean flag that determines whether a new log file is created, or the existing one appended to when logging is required. A value of 1 (the default) will append to the existing file, and a value of 0 will truncate the file when it is opened.

Example: `APPEND_LOG_FILE 0`

ECN-AW134 New syntax for UNIX acutoweb-gateway script

RPI: 636243

Product: AcuToWeb

Module: AcuToWeb

Machines Affected: all

DESCRIPTION:

You can now start the AcuToWeb Gateway using your own configuration file.

The UNIX `acutoweb-gateway` startup script now includes an additional option:

```
acutoweb-gateway -c /path/to/new/gateway.conf
```

If this option is not specified, the default `gateway.conf` is used, which is located in the `acutoweb` directory of your product installation directory.

ECN-AW137 Additional encryption for obfuscated URLs

Product: AcuToWeb

Module: AcuToWeb

Machines Affected: all

DESCRIPTION:

A new configuration option, `ENABLE_RSA_ENC`, enables additional encryption to be applied to obfuscated URLs. By enabling this option, important information such as alias, user, and password is encrypted using a 2048-bit RSA key before the base64 encoding is applied as part of the obfuscation.

When `ENABLE_RSA_ENC` is enabled (that is, set to 1), a 2048-bit RSA key (`cryptRSA.pem`) is generated when the gateway is started. You must ensure that this key remains in the `AcuToWeb` sub-directory of your

product installation directory in order to correctly apply the encryption when you click **Make URL** when the **Obfuscate Param** option is selected.

By default, this functionality is disabled.

ECN-AW138 New custom Javascript file available

Product: AcuToWeb

Module: AcuToWeb

Machines Affected: all

DESCRIPTION:

A new AcuToWeb configuration variable **PATH_CUSTOM_JS** provides the ability to load your own Javascript file into the head of the host page. This file allows you to provide tracking, load other .js libraries, and call custom-created functionality that can alter or monitor specific DOM objects. You can use jQuery as a framework in this file, because it is already available as a library inside AcuToWeb.

Set the value of the variable to the path and file name of the .js file. If you use url notation to specify the file, you can use an additional parameter, **TIMESTAMP**, to refresh the browser, after a specified number of seconds, in order to pick up any updated version of the Javascript file:

```
url[HOST]:[WEB_PORT]/js/customjs.js?_=[TIMESTAMP]
```

For example:

```
www.mya2whost.com:1234/js/customjs.js?_=86400
```



Tip: The `readme.txt` file, located in `sample/AcuToWeb`, contains instructions for viewing the Tour example program with a Javascript chart.

ECN-AW141 AcuToWeb Gateway Services configuration changes

Incidents: 3159009

RPI Number: 636978

Product: AcuToWeb

Module: AcuToWeb

Machines Affected: Windows

Known Versions Affected: All

DESCRIPTION:

The **Properties** tab for a gateway service, accessible from the **Gateway Services** tab of the AcuToWeb control panel, has been redesigned.

This simplified version calls for all of the properties previously available on the tab to be set in the configuration file (`gateway.conf`) instead. On the gateway service **Properties** tab now, you simply select the configuration file, and set the (previously available) dependencies.

When selecting the configuration file, a new Edit option enables you to edit the file directly from the control panel.

Refer to *Gateway Configuration Options* for full details of the syntax used within the configuration file.

This change has been made in order to have a cleaner interface for the control panel - over time, it has become harder to find the space to accommodate new options on the panel.

This release also introduces a 64-bit version of the AcuToWeb control panel, which you can use to manage your 64-bit AcuToWeb applications. It works in exactly the same way as the 32-bit version. Care must now be taken when configuring new gateway services to ensure that unique port numbers are used across both versions. The new 64-bit control panel is accessible through the extend Start Menu, or by entering `acutoweb` from `C:\Program Files\Micro Focus\extend x.x.x\AcuGT\bin` at a command line prompt.

ECN-AW143 Recovering dropped AcuToWeb connections

Product: AcuToWeb

Module: AcuToWeb

Machines Affected: all

DESCRIPTION:

If you lose the connection to the device on which you are displaying your COBOL application, you can now leverage functionality within the WebSocket connection to attempt to reconnect to the AcuToWeb Gateway automatically. This is done by adding the following options to the `gateway.conf` configuration file:

Option	Description
MAX_RECONNECT_ATTEMPTS	The maximum number of attempts made to reconnect. Unlimited if set to null. Recommended value: 1
RECONNECT_INTERVAL	The number of milliseconds to delay (after connection has dropped) before attempting to reconnect. Recommended value: 1000
MAX_RECONNECT_INTERVAL	The time frame, in milliseconds, in which the reconnection(s) will be attempted. Recommended value: 30000
TIMEOUT_INTERVAL	The maximum time, in milliseconds, to wait for a connection to succeed before closing and retrying. Recommended value: 200000
RECONNECT_DECAY	The rate of increase of the reconnect delay. Allows reconnection attempts to back off when problems persist. Recommended value: 1

Whilst the connection is lost, a message box is displayed over the web page to prevent you from interacting with the program until a connection is reestablished. The message box is populated with a standard `Reconnection attempt in progress ...` message, but you can configure the message box to contain your own message and custom image. The `reconnect.css` file, available from the AcuToWeb sub-directory of your Samples directory, contains some sample code that you can use to customize the message box.

ECN-AW144 New option to re-orient screen layout after rotation

Product: AcuToWeb

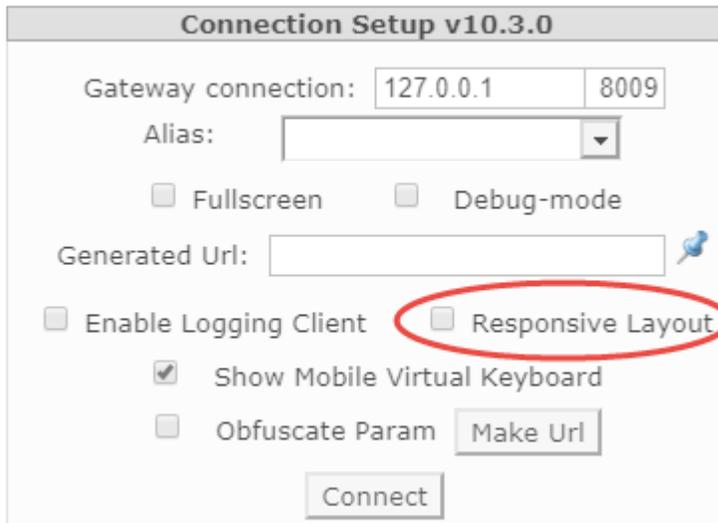
Module: AcuToWeb

Machines Affected: all

DESCRIPTION:

A new option is available on the **Connection Setup** dialog box that helps to re-orient the screen of an AcuToWeb application when the screen is rotated on a mobile device.

Select **Responsive Layout** to ensure that the COBOL UI is correctly redrawn when moving from portrait to landscape and vice versa.



ECN-AW146 AcuToWeb Themes Generator

Product: AcuToWeb

Module: AcuToWeb

Machines Affected: all

DESCRIPTION:

A CSS Theme Generator is now provided with AcuToWeb to enable you to easily generate CSS files that customize the look and feel of your AcuToWeb applications. The editor is WYSIWYG and so very little CSS scripting knowledge is required. To access the Themes Generator, click  (**Open Themes Generator**) on the **Connection Setup** dialog box.

When creating a theme, you can apply styles to the different control types used in your applications.

Each type of control has a number of pre-defined styles that you can choose from or edit to suit your requirements.

Once you have exported your finished stylesheet, you can configure it as an available theme by editing the gateway configuration file and adding a `customize_css` entry; for example:

```
...  
customize_css neon=c:\css\myNeonTheme.css  
...
```

If you need to edit a stylesheet, you can also import it into the Themes Generator, where you can edit and select existing styles, and then export it again.

AcuXDBC Enhancements

This section includes the enhancements related to AcuXDBC.

ECN-XD118 ODBC version 3 support added

Product: AcuXDBC

Module: AcuXDBC

Machines Affected: all

DESCRIPTION:

AcuXDBC has been upgraded to support ODBC version 3.

This means you can use applications that require ODBC version 3 to access your Vision data. This version provides the following new functions:

- **SQLCopyDesc** - copies descriptor information from one descriptor handle to another.
- **SQLGetDescField** - returns the current setting or value of a single field of a descriptor record.
- **SQLGetDescRec** - returns the current settings or values of multiple fields of a descriptor record. The fields returned describe the name, data type, and storage of column or parameter data.
- **SQLSetDescField** - sets the value of a single field of a descriptor record.
- **SQLSetDescRec** - function sets multiple descriptor fields that affect the data type and buffer bound to a column or parameter data.

ECN-XD119 New variable to handle 6-digit date handling

Product: AcuXDBC

Module: AcuXDBC

Machines Affected: all

DESCRIPTION:

Set the CENTURY_ROLL variable to a 2-digit value to determine the century of a 6-digit date, and then translate it to an 8-digit date.

Any 2-digit year below the value of CENTURY_ROLL is determined to be a 21st century data (that is, 20xx), and any 2-digit year above the value is a 20th century date (that is, 19xx).

Resolved Issues

The following are resolved issues for the extend products.

ACUCOBOL-GT ECN List

This section includes the ECNs relating to ACUCOBOL-GT:

ECN-4532 Errors for large variable-length data items

Incidents: 3141715

RPI Number: 1112802

Product: ACUCOBOL-GT

Module: Compiler and Runtime

Machines Affected: All

Known Versions Affected: All

DESCRIPTION:

When a data item uses the OCCURS ... DEPENDING ON clause, and the size of a single occurs element is larger than 64KB, the compiler now generates code that encodes the size correctly. If your existing programs contain such data items, you must recompile them within this version of extend, and only run it with runtime version 10.3 or later.

ECN-4587 Excessive Active-X memory consumption

Incidents: 3174581

RPI Number: 1115666

Product: ACUCOBOL-GT

Module: Runtime

Machines Affected: Windows

Known Versions Affected: 10.0.0 and later

DESCRIPTION:

Active-X controls no longer consume unnecessary amounts of memory when using sub-methods (for example, `MethodName1 : MethodName2`). Previously, the runtime would not always free the primary method handle, increasing the amount of memory used by the runtime. (This memory is technically not a leak, since the runtime still maintains a reference to the memory.)

ECN-4588 Malformed XML when non-ASCII characters in filename

Incidents: 3173162

RPI Number: 1115500

Product: ACUCOBOL-GT
Module: Runtime
Machines Affected: All
Known Versions Affected: All

DESCRIPTION:

Writing XML files that contain non-ASCII characters in the file name now produces well-formed XML. Previously, the comment that the runtime includes would include mal-formed data if the file name contain non-ASCII characters.

ECN-4589 Further functionality added to XML_KEEP_WHITESPACE

Incidents: 3175054
RPI Number: 1115760
Product: ACUCOBOL-GT
Module: Runtime
Machines Affected: All
Known Versions Affected: All

DESCRIPTION:

When adding data to an XML document with C\$XML, leading and trailing spaces are normally stripped before being written to the document. This happens regardless of the value of the XML_KEEP_WHITESPACE configuration variable.

The XML_KEEP_WHITESPACE configuration variable has been enhanced to take the following values:

Value	Description
FALSE, OFF, or 0	Removes leading and trailing white space from the data during input and output
TRUE, ON, 1, or INPUT	Keeps the white space on input, but striped out on output
OUTPUT, or 2	Stripes out the white space on input, but kept on output
BOTH, IO, or 3	Keeps leading and trailing white space from the data during input and output

The default is still FALSE, and settings within existing applications will largely continue to function as before.

ECN-4591 NetDefGen generates bad code with some included assemblies

Incidents: 3133125
RPI Number: 1112045
Product: ACUCOBOL-GT
Module: NetDefGen.exe
Machines Affected: Windows

Known Versions Affected: All

DESCRIPTION:

When a .NET assembly references an assembly whose name ends in a digit (such as `C1.Win.C1FlexGrid.2.dll`), NetDefGen no longer generates code that fails to compile.

ECN-4592 Runtime file name buffers incorrectly limited to 200 bytes

Incidents: 3120648

RPI Number: 1110872

Product: ACUCOBOL-GT

Module: runtime

Machines Affected: all

Known Versions Affected: all

DESCRIPTION:

Several file name strings in the runtime were incorrectly limited to 200 bytes, which restricted the size of file names they could hold to 199 bytes. These strings have been resized to 260 bytes, which matches `MAX_PATH` on Windows, allowing for a drive specifier plus a 256-byte file name plus a trailing NUL character.

ECN-4593 REPLACE fails if replaced tokens contain the COPY phrase

Incidents: 3176426

RPI Number: 1115807

Product: ACUCOBOL-GT

Module: Compiler

Machines Affected: All

Known Versions Affected: 8.2.0 and later

DESCRIPTION:

When a REPLACE statement uses COPY as one of the tokens to replace, the compiler no longer fails to replace the appropriate tokens.

ECN-4594 ACCEPT OMITTED BEFORE TIME 0 crashes the thin client

Incidents: 3180476

RPI Number: 1116103

Product: ACUCOBOL-GT

Module: Runtime

Machines Affected: All

Known Versions Affected: 10.2.1 and later

DESCRIPTION:

When running an application containing the following syntax, the runtime no longer crashes when running through thin client:

```
ACCEPT OMITTED BEFORE TIME 0
```

ECN-4595 AcuThin not terminating correctly

Incidents: 3171615

RPI Number: 1115888

Product: ACUCOBOL-GT

Module: Runtime

Machines Affected: All

Known Versions Affected: All

DESCRIPTION:

If the runtime crashes after executing a STOP RUN, the thin client frame now closes as expected.

ECN-4596 List-box fails to display some national characters

Incidents: 3180229

RPI Number: 1116133

Product: ACUCOBOL-GT

Module: Runtime

Machines Affected: Windows

Known Versions Affected: 10.1.0 and later

DESCRIPTION:

There is now a new configuration variable, STD-SMALL-FONT, which when set to 1 aims to support a wider range of characters than would be possible by using the default settings.

When attempting to display Cyrillic characters (or other national character types), if the characters are displaying as black boxes (rather than as the correct characters), then this could be a result of the chosen font not supporting the character type.

In such cases, you could create and use a font that includes all the characters that you want to draw, and in some cases, this will be the only available solution. Alternatively, setting STD-SMALL-FONT to 1 increases the number of character types that the runtime can display by default: it uses the system DEFAULT-GUI-FONT, which includes many more characters than the system ANSI-VAR-FONT (which is used when the SMALL and MEDIUM variables are set).



Note: Setting this variable may affect how the runtime sizes controls.

ECN-4597 Unable to register ACUCOBOL-GT COM server

Incidents: 3180052

RPI Number: 1116074

Product: ACUCOBOL-GT

Module: acugt.exe

Machines Affected: Windows

Known Versions Affected: 10.2.1 and later

DESCRIPTION:

Non-COBOL applications (for example, VB applications) can now successfully register and run `acugt.exe`, the ACUCOBOL-GT COM server. In the previous release, the register function was missing.

ECN-4598 Unhandled exception when using the extend Start menu

RPI Number: 636858

Product: ACUCOBOL-GT

Module: Runtime

Machines Affected: All Windows 8 and Windows 10

Known Versions Affected: 10.2.1

DESCRIPTION:

On Windows 8 and 10 platforms, the extend Start menu is working as expected. Previously, if you clicked the plus icon (to expand a group in the left-hand pane) and then immediately clicked the product shortcut on the right, an exception could be generated. The exception seemed to be limited to a single click of the plus icon; double-clicking the icon did not generate the exception.

ECN-4599 Compiler options not embedded in object file

RPI Number: 636832

Product: ACUCOBOL-GT

Module: Compiler

Machines Affected: All

Known Versions Affected: All

DESCRIPTION:

The compiler now correctly stores command line options used to compile a COBOL program in the object file.

Previously, not all the options were being embedded in the file. You can view the embedded options by extracting the information using:

```
cblutil -info -x <object-file>
```

ECN-4600 Long XFD directory names

Incidents: 3142496

RPI Number: 1113979

Product: ACUCOBOL-GT

Module: compiler

Machines Affected: all

Known Versions Affected: all

DESCRIPTION:

The compiler no longer generates a memory error if a long XFD directory is specified using the `-Fo` option. XFD file path/names can now be up to 260 bytes long.

ECN-4602 C\$COBOL-UTF8 fails when converting wide characters

Incidents: 3183820

RPI Number: 1116379

Product: ACUCOBOL-GT

Module: Runtime

Machines Affected: Windows

Known Versions Affected: 10.2.0 and later

DESCRIPTION:

When calling C\$COBOL-UTF8 to convert COBOL data to UTF-8, the translation now works as expected when the input consists of wide character set values.

ECN-4605 C\$JAVA CJAVA-CALLJAVAMAIN not properly passing parameters

Incidents: 3187206

RPI Number: 1116724

Product: ACUCOBOL-GT

Module: runtime

Machines Affected: all

Known Versions Affected: all

DESCRIPTION:

Parameters passed to C\$JAVA CJAVA-CALLJAVAMAIN were not properly turned into a Java array for use by the code that calls Java methods. This has been corrected.

ECN-4606 C\$XML hangs writing invalid data

Incidents: 3189030

RPI Number: 1116780

Product: ACUCOBOL-GT

Module: runtime

Machines Affected: All

Known Versions Affected: 10.2.1

DESCRIPTION:

When writing invalid UTF-8 data (that is, characters that are not valid UTF-8 characters), the runtime no longer hangs.

ECN-4607 File and record locking of Vision files on UNIX

Incidents: 3134816

RPI Number: 1112155

Product: ACUCOBOL-GT

Module: Vision

Machines Affected: all UNIX

Known Versions Affected: all

DESCRIPTION:

When opening indexed, relative, or sequential files more than once by the same runtime, file and record locking is now working as expected, as long as the environment variable `OPEN_FILES_ONCE=1` is set (which is the default setting).

Previously, there was a potential locking flaw due to the UNIX function used for locking, `fcntl()`, has the unfortunate behavior of removing all locks for a given file when any file descriptor for that file is closed. To mitigate this, the Vision library has long had a function to replace these locks after a `close()` for any remaining open file descriptors. Unfortunately, this still left a window between the `close()` and the lock replacement that allowed another process to sneak in and access a file inappropriately, which could lead to file or data corruption. This window has now been closed.

`OPEN_FILES_ONCE=1` is strict about only ever opening a particular operating system file once, no matter how many times the Vision library is asked to open that file. The file descriptor is shared by the several open instances until the final instance of the file is closed, thus eliminating the window where locks are not present in the file.

The locking window problem still remains when `OPEN_FILES_ONCE=0` is set since this mode actually opens and closes files whenever asked, without sharing file descriptors. For this reason, if you have a situation where a particular file is opened more than once from the same runtime, the use of `OPEN_FILES_ONCE=0` is not recommended.

Further corrections have also been made to the management of file access locks in both `OPEN_FILES_ONCE` modes when a file was opened more than once by the same runtime. The file access locks mark a runtime's presence in a file, to manage access by multiple processes. In `OPEN_FILES_ONCE=1` mode, a file access lock may have been incorrectly removed from a file when another open instance of that file in the same open mode was closed. In `OPEN_FILES_ONCE=0` mode, a

file access lock may not have been replaced on a file correctly after a close of another open instance of a file. Both of these situations have been corrected.

In summary, ensure that OPEN_FILES_ONCE=1 is set whenever a runtime opens a Vision library file (indexed, relative, or sequential) more than once.

ECN-4608 Runtime SORT failure with large number of variable length records

Incidents: 3189368

RPI Number: 1116826

Product: ACUCOBOL-GT

Module: runtime

Machines Affected: all

Known Versions Affected: 10.0.0 -> 10.2.x

DESCRIPTION:

When sorting a large number of variable length records, an internal error could cause the SORT code to try to read from file offset -1 in one of the temporary files used by the SORT operation. This would manifest itself as a system file error (code 30) during the SORT. This problem has been rectified.

ECN-4612 C\$XML truncates element names on UNIX

Incidents: 3186931

RPI Number: 1117061

Product: ACUCOBOL-GT

Module: Runtime

Machines Affected: All UNIX

Known Versions Affected: 10.2.0 and later

DESCRIPTION:

When creating a new element with C\$XML, element names are no longer truncated. Previously, if the new element name was longer than any of its previous element names then it could be truncated.

ECN-4613 OPENSERVE-BROWSE-FOLDER op-code failure with thin client

Incidents: 3182162

RPI Number: 1116457

Product: ACUCOBOL-GT

Module: acuthin, runtime

Machines Affected: All

Known Versions Affected: 10.1.0 and later

DESCRIPTION:

When using the thin client, the OPENSAVE-BROWSE-FOLDER op-code (of the C\$OPENSERVEBOX library routine) now returns the selected folder name correctly. Previously, it would not.

ECN-4614 Thin-client debugging of .NET controls

RPI Number: 1113162

Product: ACUCOBOL-GT

Module: runtime

Machines Affected: All

Known Versions Affected: All

DESCRIPTION:

Issues that occurred under certain circumstances, with the debugger hanging when debugging AcuConnect or .NET controls through the thin client, have been resolved.

ECN-4615 Compiler shows wrong line number in error when using Boomerang

Incidents: 3133321

RPI Number: 1112069

Product: ACUCOBOL-GT

Module: Compiler

Machines Affected: All

Known Versions Affected: All

DESCRIPTION:

When using Boomerang to precompile a COBOL program, the correct line number is now reported when an error is encountered.

ECN-4618 INQUIRE of list-box fails to return double-byte characters

Incidents: 3182821

RPI Number: 1116277

Product: ACUCOBOL-GT

Module: Runtime

Machines Affected: Windows

Known Versions Affected: 10.2.0 and later

DESCRIPTION:

Execution of the INQUIRE statement on a list-box item containing double-byte characters no longer returns corrupted data.

ECN-4620 .NET controls using stale data

Incidents: 3197705

RPI Number: 1117507

Product: ACUCOBOL-GT

Module: Runtime

Machines Affected: Windows

Known Versions Affected: 10.0.0 and later

DESCRIPTION:

When a .NET control sends an event to the COBOL program, and the COBOL program sets the EVENT-ACTION to `EVENT-TERMINATE` or `EVENT-FAIL-TERMINATE`, the runtime no longer uses stale data when processing the event.

ECN-4621 Printing crash through AcuToWeb

Incidents: 3193577

RPI Number: 1117162

Product: ACUCOBOL-GT

Module: winspool.dll

Machines Affected: Windows

Known Versions Affected: 10.2.1 and later

DESCRIPTION:

The printing process no longer crashes when printing with AcuToWeb.

ECN-4622 Incorrect screen active after message box dismissed

Incidents: 3166870

RPI Number: 1115115

Product: ACUCOBOL-GT

Module: Runtime

Machines Affected: Windows

Known Versions Affected: 9.2.0 and later

DESCRIPTION:

When multiple threads are running, and one of which is a message box, the correct window is now in focus after the message box has been dismissed.

ECN-4623 National characters truncated

Incidents: 3196987

RPI Number: 1117528

Product: ACUCOBOL-GT
Module: Runtime
Machines Affected: Windows
Known Versions Affected: 10.2.0 and later

DESCRIPTION:

When displaying national data, the runtime no longer truncates (or appends to) existing data whilst displaying the new data.

ECN-4624 Columns printing incorrectly when spooling

Incidents: 3198179
RPI Number: 1117594
Product: ACUCOBOL-GT
Module: Runtime
Machines Affected: Windows
Known Versions Affected: 10.2.0 and later

DESCRIPTION:

National data contained within a column now prints as expected.

ECN-4625 PDF file names containing spaces fail to create

Incidents: 3198354
RPI Number: 640103
Product: ACUCOBOL-GT
Module: A4PDF.dll
Machines Affected: All
Known Versions Affected: All

DESCRIPTION:

The following syntax now correctly prints file names containing spaces:

```
PRINTER -P PDF filename
```

Previously, the runtime would not preserve spaces in the name, and just use the final space-delimited part of the name.

ECN-4626 Incomplete configuration variable match when file names contain spaces

Incidents: 3196599
RPI Number: 1117422
Product: ACUCOBOL-GT

Module: runtime, vision

Machines Affected: all

Known Versions Affected: all

DESCRIPTION:

The runtime now correctly processes file names containing a space. Previously, such a file could be matched by a configuration variable with a name that matched the part of the file name before the space; for example, file `AAA BBB.DAT` could be matched by a configuration variable named `AAA` during the runtime's file name processing. This caused an incorrect file to be opened instead of the intended name containing the space.

ECN-4627 Thin client hangs when attempting to not display the splash screen

Incidents: 3192386

RPI Number: 1117079

Product: ACUCOBOL-GT

Module: AcuThin.exe

Machines Affected: Windows

Known Versions Affected: 10.1.0 and later

DESCRIPTION:

When turning off the configuration variable `ECN4444` in a configuration file, and then using the `--nosplash` parameter, the thin client no longer hangs.

ECN-4628 Creating files with national names on Windows

Incidents: 3200017

RPI Number: 1117730

Product: ACUCOBOL-GT

Module: Runtime

Machines Affected: Windows

Known Versions Affected: At least 9.2.0 and later

DESCRIPTION:

When creating a file with national characters in the name, the runtime creates the file, as expected, as long as you have `COBOL_CHARACTER_SET` set to the correct code page.

Previously, in versions prior to 10.2.0, you were required to set `TRANSLATE-TO-ANSI` to 1.

ECN-4629 Local COM object failures

Incidents: 3197827

RPI Number: 1117826

Product: ACUCOBOL-GT

Module: Runtime

Machines Affected: Windows

Known Versions Affected: All

DESCRIPTION:

When creating COM objects using the `Local:server-name` syntax (normally through the thin client), any subsequent dispatch tables no longer fail to execute on the local server. Previously, they were attempting to execute on the client, and as the client didn't have any such object, it resulted in an invalid handle error.

ECN-4630 NOTIFY-CHANGE date entry controls cause multiple terminations

Incidents: 3200708

RPI Number: 1117771

Product: ACUCOBOL-GT

Module: Runtime

Machines Affected: Windows

Known Versions Affected: All

DESCRIPTION:

When a Date Entry control has the Notify-Change style, it no longer generates multiple termination events. Previously, multiple termination events had the effect of possibly skipping the next field in an ACCEPT when the user changes the date.

ECN-4631 Literal being changed by a return value

Incidents: 3115139

RPI Number: 640325

Product: ACUCOBOL-GT

Module: Compiler

Machines Affected: All

Known Versions Affected: All

DESCRIPTION:

The compiler now detects when a literal value (such as " ") is passed to an ActiveX control in which the parameter is marked BYREF. The warning is to inform you that the ActiveX control could possibly modify the value, which would have the effect of modifying the literal value for the rest of the run unit.

pgmname, line *nnn*: Warning: Parameter *n* (*param name*) is marked BYREF, constant value *nn* is being passed

ECN-4632 INITIALIZE fails to honor -Za compile option

Incidents: 3187844

RPI Number: 1116820

Product: ACUCOBOL-GT

Module: Compiler

Machines Affected: All

Known Versions Affected: All

DESCRIPTION:

The INITIALIZE verb no longer causes memory errors when the program is compiled with the -Za compiler option. Previously, when INITIALIZE was used on elementary items, the array bounds checking was not honored when the -Za compiler option was in effect. This could cause memory problems, including crashing the runtime when referencing out-of-bounds memory.

To rectify any affected programs, you must recompile with the -Za option again.

ECN-4633 ACTION-RESTORE causes MAV when using thin client

Incidents: 3150210

RPI Number: 1115462

Product: ACUCOBOL-GT

Module: Runtime

Machines Affected: All

Known Versions Affected: 10.1.0 and later

DESCRIPTION:

When a COBOL program restores the window size just before destroying the window, the runtime no longer crashes the thin client.

ECN-4634 Remote debugging does not display debugger window on the client

Incidents: 2866239

RPI Number: 1105448

Product: ACUCOBOL-GT

Module: Runtime

Machines Affected: All

Known Versions Affected: At least since 9.1.2.1

DESCRIPTION:

When using distributed processing with AcuConnect and you want to debug the program that is running on the server, you can now correctly display the debugger window on the client.

ECN-4635 PDF library loading failed on UNIX shared library ports

Incidents: 3204405

RPI Number: 1118091

Product: ACUCOBOL-GT
Module: fsi
Machines Affected: UNIX shared library ports
Known Versions Affected: all

DESCRIPTION:

The runtime now correctly loads the PDF library on shared library UNIX ports. Previously, this failure prevented the use of some PDF features.

ECN-4636 Transparency not working with bitmaps when using thin client

RPI Number: 1116073
Product: ACUCOBOL-GT
Module: runtime
Machines Affected: All
Known Versions Affected: All

DESCRIPTION:

The TRANSPARENT-COLOR property is now behaving as expected when applied to bitmap and push-button controls, when using thin client. Previously, bitmap controls contained in Screen Sections could appear to ignore the property.

ECN-4639 Incorrect file name used during PDF file creation on UNIX

RPI Number: 640863
Product: ACUCOBOL-GT
Module: fsi/pdf
Machines Affected: UNIX
Known Versions Affected: all

DESCRIPTION:

On UNIX platforms, the `-P PDF <filename>` syntax now creates a PDF with the correct file name.

ECN-4641 MODIFY fails to update the contents of a control

Incidents: 3202615
RPI Number: 1118504
Product: ACUCOBOL-GT
Module: Runtime
Machines Affected: Windows

Known Versions Affected: 10.2.1 and later

DESCRIPTION:

The MODIFY statement now correctly updates the contents of an entry field. Previously, the runtime could incorrectly detect that the old contents were the same as the new, and so not actually modify the control.

Acu4GL ECN List

This section includes the ECNs relating to Acu4GL:

ECN-GL568 READ NEXT/PREV not returning correct record for Acu4GL for Oracle

Product: Acu4GL

Module: Oracle

Machines Affected: All

Known Versions Affected: All

DESCRIPTION:

When reading a file in an Oracle database, the correct record is returned when performing a READ NEXT or READ PREVIOUS. Previously, when performing READ NEXT and the end of file was reached (indicated by file status 10), a READ PREVIOUS read the second to the last record instead of the last record. Similarly, when performing READ PREVIOUS until the beginning of the file was reached, a READ NEXT would read the second record, and not the first.

ECN-GL569 Invalid dates not being read as zeros in Acu4GL for DB2

Product: Acu4GL

Module: DB2

Machines Affected: All

Known Versions Affected: All

DESCRIPTION:

When a COBOL program attempts to write a record containing a date or time that DB2 knows is invalid, DB2 inserts NULLs into the date or time field and writes the record. When a COBOL program attempts to read into a record from a table with a NULL date or time field, zeroes are now correctly inserted into that field in the COBOL record. Previously, unexpected values from the last read were sometimes being written.

ECN-GL572 Could not find table in different schema for Oracle database

Incidents: 3190057

RPI Number: 1116899

Product: Acu4GL

Module: Oracle

Machines Affected: All

Known Versions Affected: All

DESCRIPTION:

You can now open an Oracle table for output or I/O that exists in a different schema than the default. Previously, the table would not be found.

In some cases, a new table would be created in the default schema because it did not know that it was in a different schema.

If you would like to see the error, you can set the FILE_TRACE configuration variable to 9 and in the trace file you would see an error like the following: "ora_execute: <LOCK TABLE table-name IN EXCLUSIVE MODE NOWAIT>" "ERROR CODE = [942]: ORA-00942: table or view does not exist"

ECN-GL575 Writing fractional sections to DATETIME types

Incidents: 3203714

RPI Number: 1118118

Product: Acu4GL

Module: MSSQL

Machines Affected: All

Known Versions Affected: All

DESCRIPTION:

Acu4GL now supports the 3-digit precision provided in the fractional part of a value representing a second, when the value uses the Microsoft SQL Server DATETIME type.



Note: We recommend that you do not store values of this precision and type as keys, as due to the way that these values are stored, they may not be able to be read correctly by Acu4GL.

AcuBench ECN List

This section includes the ECNs relating to AcuBench:

ECN-WB688 ActiveX control properties not saving

Incidents: 2991332

RPI Number: 1115928

Product: AcuBench

Module: AcuBench.exe

Machines Affected: Windows

Known Versions Affected: All

DESCRIPTION:

When composing a screen with ActiveX components on it, generating the program, or even just exiting AcuBench, without showing the screen no longer causes much of the ActiveX information to be lost.

Previously, in this scenario, the generated program would be missing the ActiveX event paragraph lines and various properties.

ECN-WB689 Miscellaneous options not added to compile line

RPI Number: 636831

Product: AcuBench

Module: AcuBench.exe

Machines Affected: Windows

Known Versions Affected: Unknown

DESCRIPTION:

When setting some of the Miscellaneous compiler options, not all options (--bin, for example) would be added to the compile line, unless one of the -Z options was also set.

ECN-WB690 TAB stops incorrect

Incidents: 3179192

RPI Number: 1116006

Product: AcuBench

Module: AcuBench.exe

Machines Affected: Windows

Known Versions Affected: 10.2.1

DESCRIPTION:

When using the TAB key to indent, the cursor no longer stops on the wrong column (missing the actual tab stop).

ECN-WB691 Incorrect DATA-COLUMNS when using national settings

Incidents: 3179314

RPI Number: 1116019

Product: AcuBench

Module: AcuBench.exe

Machines Affected: Windows

Known Versions Affected: 10.2.1 and later

DESCRIPTION:

When using regional settings, and using DECIMAL POINT IS COMMA, code generated for the grid DATA-COLUMNS is no longer incorrect if one of the PICTURE clauses uses numeric edited characters (especially period and comma).

ECN-WB692 ActiveX control icons not associated with correct controls

Incidents: 3179335

RPI Number: 1116016

Product: AcuBench

Module: AcuBench.exe

Machines Affected: Windows

Known Versions Affected: Unknown

DESCRIPTION:

When selecting ActiveX controls for use in AcuBench, the controls that have icons associated with them are now correctly matched with the correct icons. Previously, when a mixture of controls with and without icons were added, some controls were matched to the wrong icons.

ECN-WB693 Duplicate code for Autoload grids

RPI Number: 636983

Product: AcuBench

Module: AcuBench.exe

Machines Affected: Windows

Known Versions Affected: All

DESCRIPTION:

AcuBench no longer generates duplicate code for setting the column headers when a grid has the Autoload property enabled.

ECN-WB695 Object folder in a project not updated

Incidents: 3181449

RPI Number: 1116171

Product: AcuBench

Module: AcuBench.exe

Machines Affected: Windows

Known Versions Affected: 10.2.1 and later

DESCRIPTION:

Successful compilation of a COBOL program now results in the object file being listed in the **Object** folder of the **File Structure** tab.

ECN-WB697 Replace-in-Files corrupts files with UNIX-style line feeds

Incidents: 3192436

RPI Number: 1117267
Product: AcuBench
Module: AcuBench.exe
Machines Affected: Windows
Known Versions Affected: All

DESCRIPTION:

The **Edit > Replace in Files** option in AcuBench no longer corrupts files that use UNIX-style line endings.

ECN-WB698 'Invalid copyfile' message when refreshing a linked COPY file

Incidents: 3193168
RPI Number: 1117105
Product: AcuBench
Module: AcuBench.exe
Machines Affected: Windows
Known Versions Affected: 10.1.0 and later

DESCRIPTION:

If you link to a COPY file in your working-storage section, and then attempt to refresh it, AcuBench now locates and refreshes the file successfully.

AcuConnect ECN List

This section includes the ECNs relating to AcuConnect:

ECN-AC102 AcuRCL control panel not saving some runtime alias options

Incidents: 3170734
RPI Number: 635960
Product: AcuConnect
Module: acurcl
Machines Affected: All
Known Versions Affected: All

DESCRIPTION:

Specifying runtime options for an alias, using `acurcl -alias` or the graphical control panel, now works as expected. Previously, some runtime options (for example, the profile option (-p)) would not be saved.

AcuToWeb ECN List

This section includes the ECNs relating to AcuToWeb:

ECN-AW135 PG UP/DN keys not functioning correctly

RPI: 1115821 1115822

Product: AcuToWeb

Module: AcuToWeb

Machines Affected: all

DESCRIPTION:

The **Page Up** and **Page Down** keys now function as they do through the Thin client.

ECN-AW136 Display and print differences when using AcuToWeb

RPI: 1116069 1116070 1116004 1115690 1115679 1115663 1115484 1116344 1116345 1116367
1116475 1116202 1116561 1116694 1116733 1116734 1116735 1116747 1116851 1116956 1117386
636347

Product: AcuToWeb

Module: AcuToWeb

Machines Affected: all

DESCRIPTION:

The following issues have been addressed with displaying and printing when running through AcuToWeb:

- The print output of the sample `graphprn` was different when using AcuToWeb.
- Printing would be in the wrong position.
- Dotted lines were missing from some print reports.
- Text is not correctly aligned in the print.
- Labels were overlapping input controls.
- When text overflows an entry-field the vertical scroll bars were not appearing.
- The up and down arrows on the spinner control were not appearing.
- Display Message box would get located to different areas of the screen.
- Using Full Screen Mode on a mobile device left some white space near the bottom edge.
- The status bar was displayed incorrectly.
- Combo-Box does not answer correctly to values edited from the keyboard.
- Push buttons were missing text.
- Grid colors would sometimes get lost.
- Procedural division display of a grid was not displaying correctly.
- ROW_COLOR was incorrect after deleting or adding records.
- Grid alignment was not correct after using C\$OPENSABEBOX.
- Last row of a grid is only partially visible.
- The comma was not respected as a decimal separator when editing a grid cell.
- Paged grid next record was not processing data correctly.

ECN-AW140 AcuToWeb Desktop SSL connections

RPI: 1115671

Product: AcuToWeb

Module: AcuToWeb

Machines Affected: all

DESCRIPTION:

The AcuToWeb Desktop now successfully attaches to an application when SSL is enabled.

ECN-AW142 INQUIRE web-browser control never sets BUSY back to zero

RPI: 1115671

Product: AcuToWeb

Module: AcuToWeb

Machines Affected: all

DESCRIPTION:

The `INQUIRE web-browser` syntax is now working as expected; previously, it was not setting `BUSY` back to zero.

ECN-AW145 COBOL set environment... statement causing AcuToWeb to freeze

RPI: 1117246

Product: AcuToWeb

Module: AcuToWeb

Machines Affected: all

DESCRIPTION:

Using the `set environment "COBOL_CHARACTER_SET" to "OEM"` statement within a COBOL program no longer causes AcuToWeb to freeze.

ECN-AW147 Handling intermediate/chain SSL certificates

RPI: 1117445

Product: AcuToWeb

Module: AcuToWeb

Machines Affected: all

DESCRIPTION:

AcuToWeb now handles intermediate/chain SSL certificates correctly.

ECN-AW148 Entering text into a combo box

RPI: 1118338

Product: AcuToWeb

Module: AcuToWeb

Machines Affected: all

DESCRIPTION:

When you tab into a combo box, you can now successfully enter text into that box.

ECN-AW149 Using a shortcut key more than once in the same menu

RPI: 1118352

Product: AcuToWeb

Module: AcuToWeb

Machines Affected: all

DESCRIPTION:

Using the same letter as a shortcut on more than one menu item now works as expected in AcuToWeb; that is, using the shortcut key multiple times will cycle through those menu items.

ECN-AW150 Debug mode not working on iPad

RPI: 1118273

Product: AcuToWeb

Module: AcuToWeb

Machines Affected: all

DESCRIPTION:

Running a program in debug mode now operates as expected when using an iPad; previously, you were not able to use the keyboard to enter any debug commands.

ECN-AW151 Gateway exposing host directories

RPI: 1118590

Product: AcuToWeb

Module: AcuToWeb

Machines Affected: all

DESCRIPTION:

When using AcuToWeb as the Web server (that is, instead of IIS or Apache), you can no longer gain access to other directories on the host machine. Previously, this was possible if certain characters were entered in the gateway URL.

AcuXDBC ECN List

This section includes the ECNs relating to AcuXDBC:

ECN-XD120 Accessing Vision data on non-default port

RPI: 1115671

Product: AcuXDBC

Module: AcuXDBC

Machines Affected: all

DESCRIPTION:

When using AcuXDBC to access Vision data through AcuServer, you can now set `acuserver_port` in `acuxdbc.cfg` to a value other than the default of 6523. Previously, communication was only successful on the default port.

ECN-XD121 UPDATE statement containing a WHERE clause not working

RPI: 1117491

Product: AcuXDBC

Module: AcuXDBC

Machines Affected: all

DESCRIPTION:

An UPDATE statement that has a WHERE clause is now working as expected. Previously, the indices were being updated, causing the query to go into a loop.

AcuXML ECN List

This section includes the ECNs relating to AcuXML:

ECN-XML031 AcuXML appends NULL byte (low-value) to READ data items

Incidents: 3194168

RPI Number: 1117180

Product: AcuXML

Module: axml32.dll

Machines Affected: All

Known Versions Affected: 10.2.0 and later

DESCRIPTION:

When reading text data, AcuXML no longer appends a low-value byte to the end of the read data.

Updates and SupportLine

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