

CitectSCADA 7.20

Release Notes for Service Pack 4

The V7.20 Service Pack 4 includes several product updates and enhancements, providing improvements in stability, performance and functionality.

Important:

As per recommended practice, all projects should be backed up prior to commencing the Service Pack installation.

Important:

Upgrade and recompile all projects after installing this Service Pack. If not performed, a 'conflicting database size' message will occur.

By default, the Project Editor will prompt to perform the upgrade after the configuration tools are launched. However, if you cancel the upgrade, you can select another upgrade to occur at startup by editing the Citect.ini file, setting [CTEDIT] Upgrade=1, and restarting the Project Explorer.

In some instances a full compile may be required after an upgrade. If using Incremental Compile (which is the default) re-run a compile, and select to continue when prompted to perform a full compile.

For projects using CSV_Include templates, run **Update Pages** (in Graphics Builder→Tools→Update Pages).

Hot Fixes

Customers who have hot fixes installed should check the release notes to ensure the applicable fix is included in V7.20 Service Pack 4 - please contact [SCADA Global Support](#) if in any doubt.

SCADA Global Support recommends V7.20 users apply the Service Pack as soon as practically possible.

Note For general information about service packs, see Knowledge Base article Q2181.

This service pack applies to two of the products shipped with CitectSCADA version 7.20:

- a) CitectSCADA
- b) CitectSCADA Web Server

Separate service pack installers have been created for these products, allowing you to choose which products to upgrade to Service Pack 4.

Note For CitectSCADA IDC Service Pack 4, please contact SCADA Global Support.

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Service Pack Installation

Select the relevant install procedure below:

Existing CitectSCADA version 7.20 Users

1. Run patch file "CitectSCADA SCADA 7.20 Service Pack 4.exe".

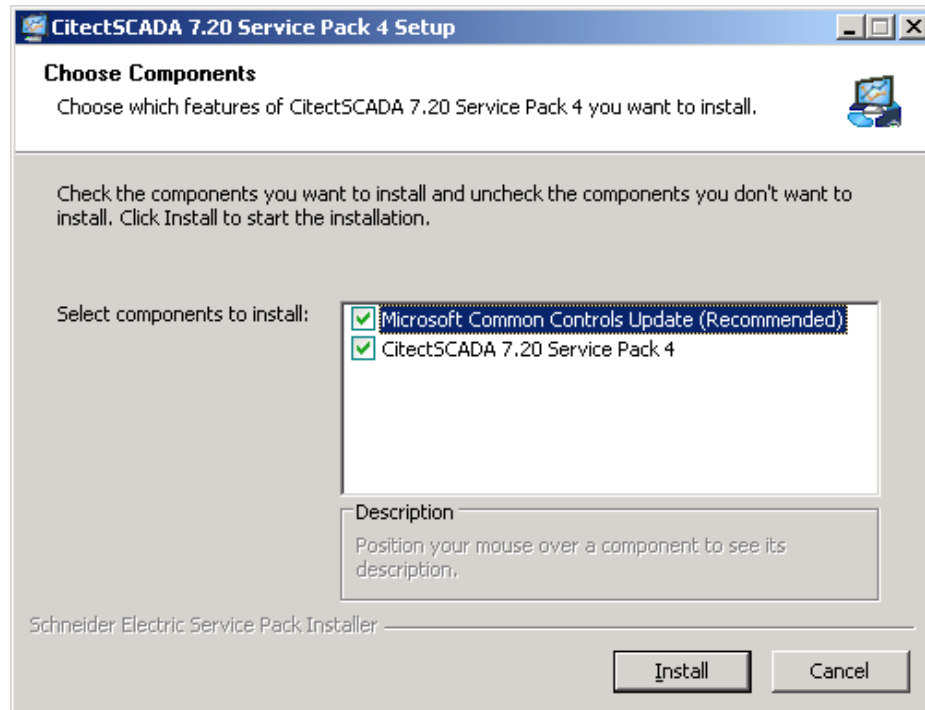


Figure 1: Service Pack Installer

2. Click 'Install' and follow on-screen instructions to install "Microsoft Common Controls Update" and "CitectSCADA 7.20 Service Pack 4".

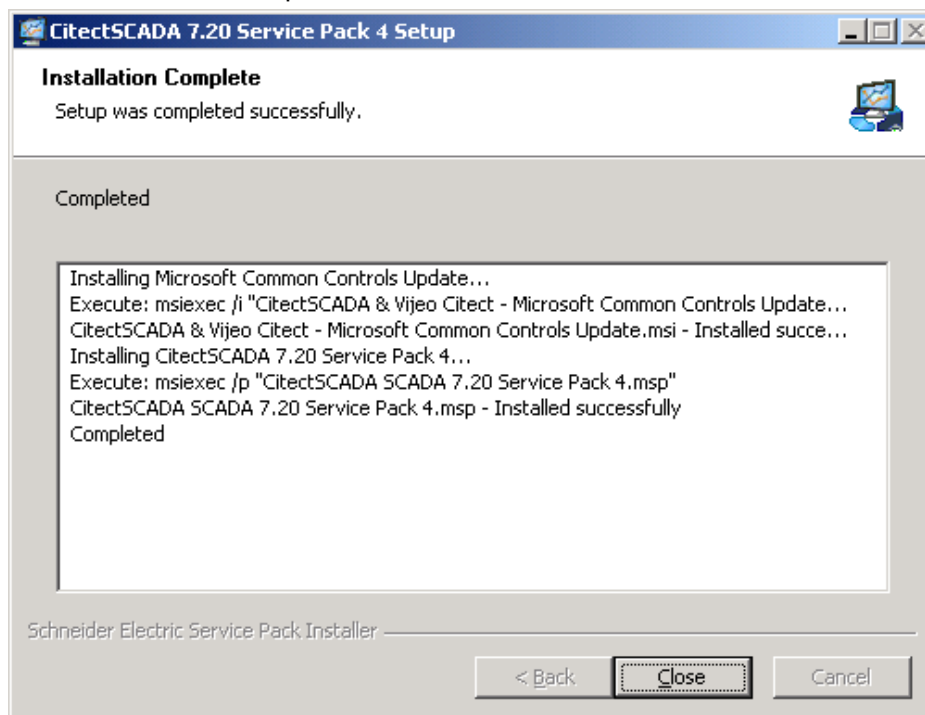


Figure 2: Installation Complete

3. Click 'Close' button to exit the installer.
4. Open Citect Explorer, wait until upgrade has completed.
5. For any project using CSV_Include templates:
 - a. Select the project in Citect Explorer.
 - b. In Citect Graphics Builder, select Tools→Update Pages, then click Yes to continue.
6. Perform a full compile - when using Incremental Compile (which is the default) re-run the compile and select to continue when prompted.
7. For any webclient project whose graphics pages were updated in step 3, redeploy:
 - a. Run Citect Explorer→Tools→Web Deployment Preparation.
 - b. Follow the steps below for "Upgrading CitectSCADA 7.20 Web Server to Service Pack " and re-save the project deployment.

New CitectSCADA 7.20 Users

1. Install CitectSCADA 7.20.
2. Open Citect Explorer for the first time and then close.
3. Run patch file "CitectSCADA SCADA 7.20 Service Pack 4.exe" and follow on-screen instructions to install "Microsoft Common Controls Update" and "CitectSCADA 7.20 Service Pack 4".
4. Open Citect Explorer, wait until the upgrade has completed.
5. For any project using CSV_Include templates:
 - a. Select the project in Citect Explorer.
 - b. In Citect Graphics Builder, select Tools→Update Pages, then click Yes to continue.
6. Ensure the Incremental Compile menu option (in Project Editor→Tools→Options) is turned OFF before recompiling each project.

Upgrading CitectSCADA 7.20 Web Server to Service Pack 4

Note For web client operation you need to have completed one of the above install procedures for CitectSCADA 7.20 Service Pack 4, before Installing the Service Pack 4 for CitectSCADA Web Server.

To upgrade CitectSCADA 7.20 Web Server:

1. On your web server(s) (machines running IIS), run patch file "CitectSCADA WebServer 7.20 Service Pack 4.exe". This will install an updated CAB file: "CitectSCADAWebClient_7_20_4_38.cab" which will become available to your web clients.
2. On all your web client machines, take the following actions:
 - a. Open ARP (Add or Remove Programs) by choosing Start→Settings→Control Panel→Add or Remove Programs.
 - b. Locate the entry 'Citect Web Client 7.20' and click 'Remove'. If this item is not listed in ARP, you should delete the %windir%\system32\citect\webclient\720 directory. (NB: %windir% indicates the default windows installation directory.)
 - c. In the CitectSCADA Web Deployment Configuration (in Internet Explorer):
 - i. Select 'CitectSCADAWebClient_7_20_4_38.cab' from the Client Control drop down menu.
 - ii. Save the deployment by selecting the action to save deployment.

Service Pack Uninstall

The procedure for removing (rolling back) Service Pack 4 varies according to the Operating System you are running.

All Windows Versions

Before following one of the procedures below, backup your citect.ini file to a temporary location. Use the Computer Setup Editor (via Tools menu) to determine the location of this file. This step is required as the uninstall procedure may revert some settings back to their default. Additionally, unless you are restoring your projects to the backups made prior to Service Pack upgrade, you will need to backup the citect.frm file from the Bin directory. Restore the citect.ini file (and possibly citect.frm) to their original location upon completion of the uninstall procedure.

During the uninstallation process the user will be prompted to specify the CitectSCADA 7.20 installer location if it is no longer accessible. The following message is shown if CitectSCADA 7.20 has been installed from a DVD: "The feature you are trying to use is on a CD-ROM or other removable disk that is not available". Hence when uninstalling SCADA service pack 4 the user will have to specify the CitectSCADA 7.20 installer location. Locate the MSI installer for the CitectSCADA 7.20 product via the Browse button and then click OK. The SCADA installer is located in the "Citect" folder under the main installation directory (e.g. your DVD drive).

Note To uninstall Microsoft Common Controls update, please open "Programs and Features" (Windows Vista/7) or "Add or Remove Programs" (Windows XP/Server 2003) and uninstall "CitectSCADA/Vijeo Citect – Microsoft Common Controls Update".

Microsoft Windows 7, Vista, Server 2008 and Server 2008 R2

Note On these operating systems, the Web Server Service Pack cannot be uninstalled independently from the base application. Instead the CitectSCADA Web Server must be uninstalled to remove both the base product and Service Pack, and then the base product may be reinstalled. This has been documented in Knowledge Base article Q5450.

To uninstall products other than the Web Server:

1. Open "Programs and Features" by typing its name in the Start Search bar then selecting it from the list:

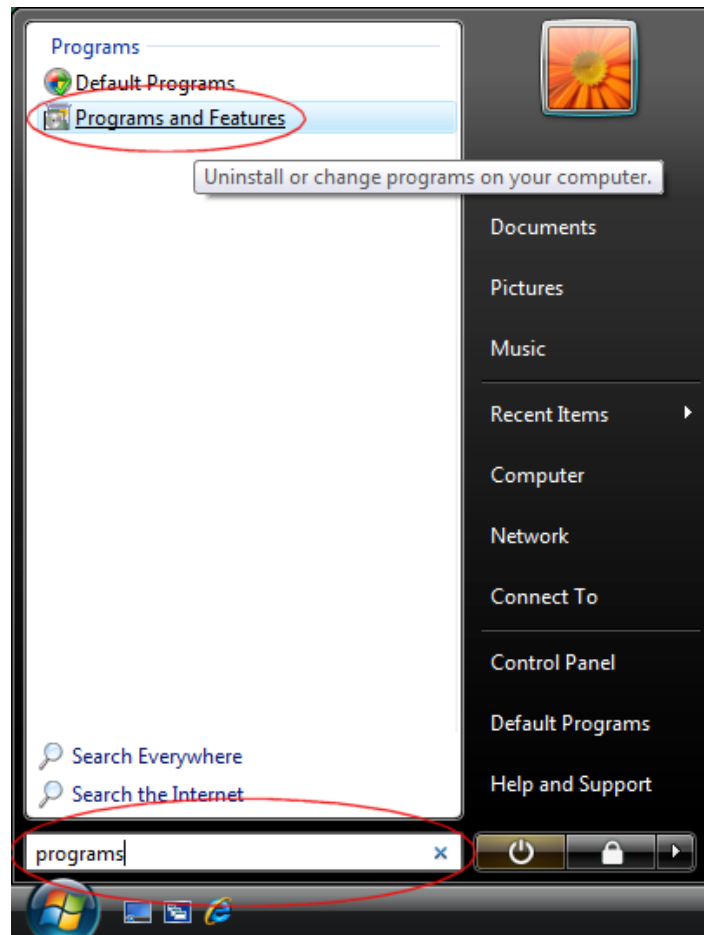


Figure 2: Programs and Features

2. Select "View installed updates" from the side panel that is presented:

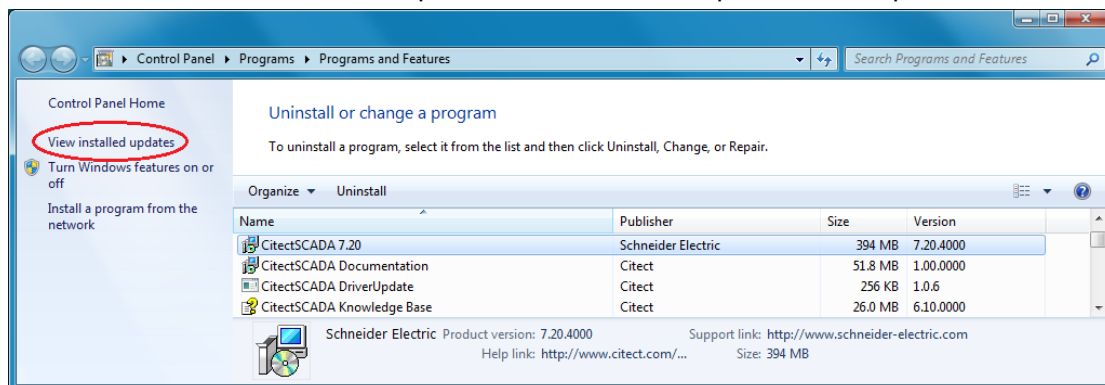


Figure 3: View installed updates

3. Select "Service Pack 4" for the appropriate product then click Uninstall:

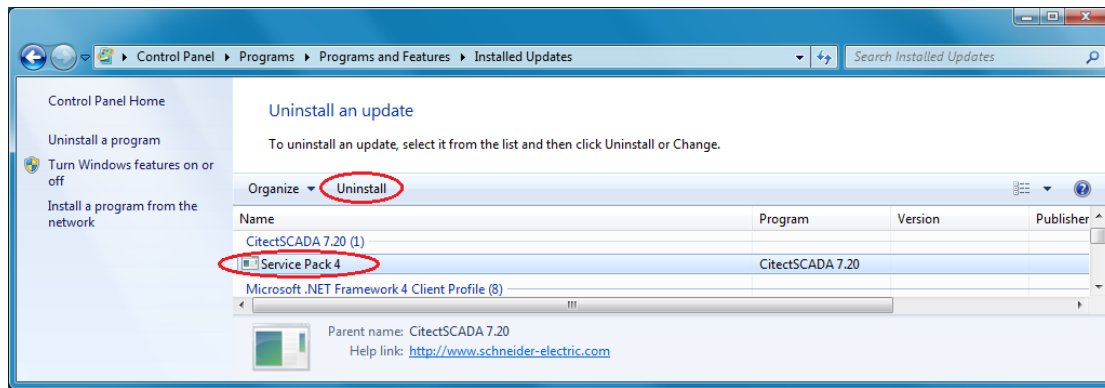


Figure 4: Uninstall an update

Note If you have User Access Control switched on, the orange UAC dialog will be displayed before the uninstaller is launched. Select allow and proceed with the uninstallation. This is a limitation imposed by the User Access Control and cannot be avoided.

4. Open Citect Explorer, wait until upgrade has completed.
5. For any project using CSV_Include templates:
 - a. Select the project in Citect Explorer.
 - b. In Citect Graphics Builder, select Tools→Update Pages, then click Yes to continue.
6. The Incremental Compile menu option (in Project Editor→Tools→Options) should be turned OFF before recompiling each project.

Microsoft Windows XP SP3 or Server 2003

To uninstall:

1. Open ARP (Add or Remove Programs) by choosing Start→Settings→Control Panel→Add or Remove Programs.
2. Make sure the 'Show Updates' checkbox is ticked as follows:

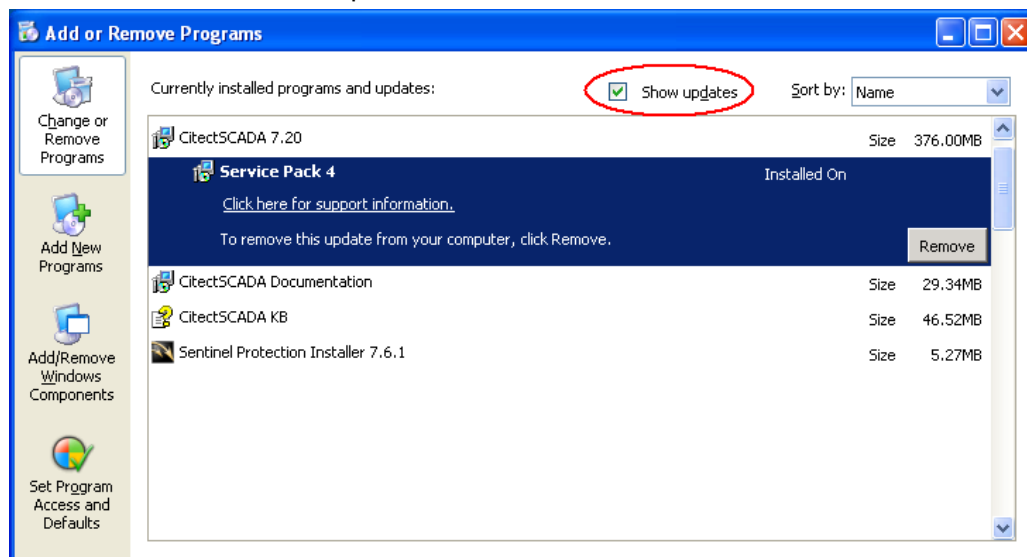


Figure 5: Service Pack 4 visible as an update

3. You should see the service pack listed as a sub-entry under the parent product.

4. Select this sub-item and click 'Remove'.
5. Open Citect Explorer, wait until upgrade has completed.
6. For any project using CSV_Include templates:
 - a. Select the project in Citect Explorer.
 - b. In Citect Graphics Builder, select Tools→Update Pages, then click Yes to continue.
7. The Incremental Compile menu option (in Project Editor→Tools→Options) should be turned OFF before recompiling each project.

Uninstallation of Web Server and Web Client(s)

The CitectSCADA servers and web client(s) must be running the same service pack. This means that to uninstall CitectSCADA 7.20 Service Pack 4, it is also necessary to modify the deployments on the web server, and uninstall any web clients that connect to the downgraded servers. This will allow the web server to install the correct web client version when next used.

Note CitectSCADA 7.20 Service Pack 4 web client cabinet (CitectSCADAWebClient_7_20_4_38.cab) will update the Microsoft Rich Text control (RichTx32.ocx) on your web client machines. As per Microsoft best practices, this control will not be downgraded to the original version after uninstalling the web client.

Files changed in this Service Pack

Listed below are the files updated or added to the CitectSCADA product after installing 7.20 Service Pack 4.

Added Files - CitectSCADA

Added Install Path and File - CitectSCADA
_CommonAppDataFolder_Citect\CitectSCADA 7.20\User\CSV_Include\eqstate.dbf
_CommonAppDataFolder_Citect\CitectSCADA 7.20\User\CSV_Include\eqtype.dbf
_CommonAppDataFolder_Citect\CitectSCADA 7.20\User\Include\eqstate.dbf
_CommonAppDataFolder_Citect\CitectSCADA 7.20\User\Include\eqtype.dbf
_CommonAppDataFolder_Citect\CitectSCADA 7.20\User\System\eqstate.dbf
_CommonAppDataFolder_Citect\CitectSCADA 7.20\User\System\eqtype.dbf
_CommonAppDataFolder_Citect\CitectSCADA 7.20\User\Tab_Style_Include\eqstate.dbf
_CommonAppDataFolder_Citect\CitectSCADA 7.20\User\Tab_Style_Include\eqtype.dbf
_ProgramFilesFolder_Citect\CitectSCADA 7.20\Bin\Citect32.exe.config
_ProgramFilesFolder_Citect\CitectSCADA 7.20\Bin\CtExplor.exe.config
_ProgramFilesFolder_Citect\CitectSCADA 7.20\Bin\EquipGen.exe
_ProgramFilesFolder_Citect\CitectSCADA 7.20\Bin\RuntimeManager.exe.config
_ProgramFilesFolder_Citect\CitectSCADA 7.20\Bin\SchedEng.chm
_ProgramFilesFolder_Citect\CitectSCADA 7.20\Bin\SchedOp.chm
_ProgramFilesFolder_Citect\CitectSCADA 7.20\Bin\sequityp.dbf
_ProgramFilesFolder_Citect\CitectSCADA 7.20\Bin\sresstat.dbf
Citect.Platform.Scheduling.dll

Updated Files - CitectSCADA

Updated Install Path and File - CitectSCADA	Notes
_CommonAppDataFolder_Citect\CitectSCADA 7.20\Config>tagdriv.ini	
_CommonAppDataFolder_Citect\CitectSCADA 7.20\Data\Example.ctz	
_CommonAppDataFolder_Citect\CitectSCADA 7.20\User\CSV_Include\activex.zip	
_CommonAppDataFolder_Citect\CitectSCADA 7.20\User\CSV_Include\CSV_Alarms.ci	
_CommonAppDataFolder_Citect\CitectSCADA 7.20\User\CSV_Include\CSV_Database.ci	
_CommonAppDataFolder_Citect\CitectSCADA 7.20\User\CSV_Include\equip.DBF	
_CommonAppDataFolder_Citect\CitectSCADA 7.20\User\Include\AFilter.ci	
_CommonAppDataFolder_Citect\CitectSCADA 7.20\User\Include\citect.ci	
_CommonAppDataFolder_Citect\CitectSCADA 7.20\User\Include\CtTimeScheduler.ci	
_CommonAppDataFolder_Citect\CitectSCADA 7.20\User\Include\CTUTIL.CI	
_CommonAppDataFolder_Citect\CitectSCADA 7.20\User\Include\equip.DBF	
_CommonAppDataFolder_Citect\CitectSCADA 7.20\User\Include\export.ci	
_CommonAppDataFolder_Citect\CitectSCADA 7.20\User\Include\graph.ci	
_CommonAppDataFolder_Citect\CitectSCADA 7.20\User\Include\info.ci	
_CommonAppDataFolder_Citect\CitectSCADA 7.20\User\Include\LABELS.DBF	
_CommonAppDataFolder_Citect\CitectSCADA 7.20\User\Include\numpad.ci	
_CommonAppDataFolder_Citect\CitectSCADA 7.20\User\Include\PADisplay.ci	
_CommonAppDataFolder_Citect\CitectSCADA 7.20\User\Include\spc.ci	
_CommonAppDataFolder_Citect\CitectSCADA 7.20\User\Include>tag.ci	
_CommonAppDataFolder_Citect\CitectSCADA 7.20\User\System\equip.DBF	
_CommonAppDataFolder_Citect\CitectSCADA 7.20\User\System\HARDALM.DBF	
_CommonAppDataFolder_Citect\CitectSCADA 7.20\User\System\HARDALM.txt	
_CommonAppDataFolder_Citect\CitectSCADA 7.20\User\Tab_Style_Include\activex.zip	
_CommonAppDataFolder_Citect\CitectSCADA 7.20\User\Tab_Style_Include\DisplayFile.ci	
_CommonAppDataFolder_Citect\CitectSCADA 7.20\User\Tab_Style_Include\equip.DBF	
_CommonAppDataFolder_Citect\CitectSCADA 7.20\User\Tab_Style_Include\PROJECT.CIT	
_CommonAppDataFolder_Citect\CitectSCADA 7.20\User\Tab_Style_Include\TabAlarm.ci	
_CommonAppDataFolder_Citect\CitectSCADA 7.20\User\Tab_Style_Include\Tabmenu.ci	
_CommonFilesFolder_Citect\CiAnalyst.dll	
_CommonFilesFolder_Citect\CiASCDrv.dll	
_CommonFilesFolder_Citect\CiDBFDrv.dll	
_CommonFilesFolder_Citect\CiDebugHelp.dll	
_CommonFilesFolder_Citect\CiMeterX.ocx	
_CommonFilesFolder_Citect\Cimitsubishidrv.dll	
_CommonFilesFolder_Citect\CiMitsubishiTagBrowse.dll	
_CommonFilesFolder_Citect\CiOPCDrv.dll	English

CommonFilesFolder \Citect\CiOPCDrv.dll	German
CommonFilesFolder \Citect\CiOPCDrv.dll	Spanish
CommonFilesFolder \Citect\CiOPCDrv.dll	French
CommonFilesFolder \Citect\CiOPCDrv.dll	Italian
CommonFilesFolder \Citect\CiOPCDrv.dll	Japanese
CommonFilesFolder \Citect\CiOPCDrv.dll	Korean
CommonFilesFolder \Citect\CiOPCDrv.dll	Russian
CommonFilesFolder \Citect\CiOPCDrv.dll	Chinese
CommonFilesFolder \Citect\CiOPCTagBrowse.dll	English
CommonFilesFolder \Citect\CiOPCTagBrowse.dll	German
CommonFilesFolder \Citect\CiOPCTagBrowse.dll	Spanish
CommonFilesFolder \Citect\CiOPCTagBrowse.dll	French
CommonFilesFolder \Citect\CiOPCTagBrowse.dll	Italian
CommonFilesFolder \Citect\CiOPCTagBrowse.dll	Japanese
CommonFilesFolder \Citect\CiOPCTagBrowse.dll	Korean
CommonFilesFolder \Citect\CiOPCTagBrowse.dll	Russian
CommonFilesFolder \Citect\CiOPCTagBrowse.dll	Chinese
CommonFilesFolder \Citect\CiSchneiderDrv.dll	English
CommonFilesFolder \Citect\CiSchneiderDrv.dll	German
CommonFilesFolder \Citect\CiSchneiderDrv.dll	Spanish
CommonFilesFolder \Citect\CiSchneiderDrv.dll	French
CommonFilesFolder \Citect\CiSchneiderDrv.dll	Italian
CommonFilesFolder \Citect\CiSchneiderDrv.dll	Japanese
CommonFilesFolder \Citect\CiSchneiderDrv.dll	Korean
CommonFilesFolder \Citect\CiSchneiderDrv.dll	Russian
CommonFilesFolder \Citect\CiSchneiderDrv.dll	Chinese
CommonFilesFolder \Citect\CiSchneiderTagBrowse.dll	English
CommonFilesFolder \Citect\CiSchneiderTagBrowse.dll	German
CommonFilesFolder \Citect\CiSchneiderTagBrowse.dll	Spanish
CommonFilesFolder \Citect\CiSchneiderTagBrowse.dll	French
CommonFilesFolder \Citect\CiSchneiderTagBrowse.dll	Italian
CommonFilesFolder \Citect\CiSchneiderTagBrowse.dll	Japanese
CommonFilesFolder \Citect\CiSchneiderTagBrowse.dll	Korean
CommonFilesFolder \Citect\CiSchneiderTagBrowse.dll	Russian
CommonFilesFolder \Citect\CiSchneiderTagBrowse.dll	Chinese
CommonFilesFolder \Citect\CiTagBrowse.dll	
CommonFilesFolder \Citect\ciTextBox.ocx	
CommonFilesFolder \Citect\CiTrans.dll	
CommonFilesFolder \Citect\ciTreeView.ocx	
CommonFilesFolder \Citect\CiTrendArchiveFileOffset.dll	
CommonFilesFolder \Citect\CiTrendArchiveFileOffset8Byte.dll	
CommonFilesFolder \Citect\CiTrendArchiveInterpolator.dll	
CommonFilesFolder \Citect\CiTrendManager.dll	
CommonFilesFolder \Citect\Ct_ipc.dll	
CommonFilesFolder \Citect\CtApi.dll	
CommonFilesFolder \Citect\CtEng32.dll	
CommonFilesFolder \Citect\CTODBC32.dll	
CommonFilesFolder \Citect\CtRes32.DLL	English
CommonFilesFolder \Citect\CtRes32.dll	German
CommonFilesFolder \Citect\CtRes32.dll	Spanish
CommonFilesFolder \Citect\CtRes32.dll	French
CommonFilesFolder \Citect\CtRes32.dll	Italian
CommonFilesFolder \Citect\CtRes32.dll	Japanese
CommonFilesFolder \Citect\CtRes32.dll	Korean
CommonFilesFolder \Citect\CtRes32.dll	Russian
CommonFilesFolder \Citect\CtRes32.dll	Chinese
CommonFilesFolder \Citect\CtUtil32.dll	
CommonFilesFolder \Citect\DatabaseExchange.ocx	
CommonFilesFolder \Citect\ItemList.exe	
CommonFilesFolder \Citect\ItemList.ocx	
CommonFilesFolder \Citect\MenuBar.ocx	
CommonFilesFolder \Citect\MsgBox.exe	
CommonFilesFolder \Citect\MsgBox.ocx	
CommonFilesFolder \Citect\Protection.dll	

ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\AlarmServer.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CiDebugHelp.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CiExceptionMailer.dll	English
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CiExceptionMailer.dll	German
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CiExceptionMailer.dll	Spanish
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CiExceptionMailer.dll	French
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CiExceptionMailer.dll	Italian
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CiExceptionMailer.dll	Japanese
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CiExceptionMailer.dll	Korean
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CiExceptionMailer.dll	Russian
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CiExceptionMailer.dll	Chinese
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CiExceptionmailer.exe	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\Citect.CitectSCADA.DSServers.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\Citect.CitectSCADA.Kernel.KernelTaskQueue.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\Citect.CitectSCADA.Migration.exe	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\Citect.CitectSCADA.RuntimeConfiguration.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\Citect.CitectSCADA.TagGen.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\Citect.CitectSCADA.TimeSynchronization.Networking.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\citect.frm	English
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\citect.frm	German
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\citect.frm	Spanish
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\citect.frm	French
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\citect.frm	Italian
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\citect.frm	Japanese
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\citect.frm	Korean
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\citect.frm	Russian
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\citect.frm	Chinese
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\Citect32.exe	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\Client.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\ComputerSetupEditor.exe	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CSAPSI.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\Ct_ipc.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CtApi.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CtBack32.exe	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CtCicode.exe	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CtCmp32.exe	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\Ctcomdlg.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CtDraw32.exe	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\ctdraw32.tlb	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CtEdit32.exe	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CtEng32.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CtExplor.exe	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\Ctg32.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CtIndex.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CtKC.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CtMenu32.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CtOpc32.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CTOPC32.exe	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CtProj.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CtRegion.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CtRender.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CtRes32.DLL	English
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CtRes32.dll	German
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CtRes32.dll	Spanish
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CtRes32.dll	French
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CtRes32.dll	Italian
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CtRes32.dll	Japanese
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CtRes32.dll	Korean
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CtRes32.dll	Russian
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CtRes32.dll	Chinese
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CtSetup.exe	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CTTAGDB.dll	

ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CtUtil.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CtUtil32.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CtVersion.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\CtVersion.xml	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\DBFAccess.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\DIR.DBF	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\Diskdrv.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\Dlg32.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\DriverRuntimeInterface.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\ERRSTR.DBF	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\ERRSTR.NDX	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\ExprWiz.exe	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\FtpSvr.exe	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\FUNC0.DBF	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\IoServer.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\ManagedDep.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\ManagedUtil.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\ParameterLUT.xml	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\PlatformHost.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\PLUSADOCon.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\PolledDataSource.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\Protection.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\ReIndex.exe	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\ReportServer.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\Rscite32.exe	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\RuntimeConfiguration.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\RuntimeConfigurationDatabaseAccess.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\RuntimeManager.exe	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\SARGDIG.DBF	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\SchneiderIdentity.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\SentinelProvider.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\SEQUIP.DBF	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\SKEYBOAR.DBF	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\Techdo32.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\TimeSyncConfig.exe	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\TimeSyncService.exe	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\Tools32.dll	
ProgramFilesFolder \Citect\CitectSCADA 7.20\Bin\TrendServer.dll	
Citect.Platform.Collections.dll	
Citect.Platform.Logging.Formatter.dll	
Citect.Platform.Logging.TraceListeners.dll	
Citect.Platform.PSI.Client.dll	
Citect.Platform.PSI.Interfaces.dll	
Citect.Platform.PSI.MessagesV1.dll	
Citect.Platform.PSI.Server.dll	
Citect.Platform.Tasks.dll	
Citect.Platform.Transport.dll	
Citect.Platform.Transport.Interfaces.dll	
Citect.Platform.XmlUtils.dll	

Added Files - CitectSCADA WebServer

Listed below are the files added to the CitectSCADA *WebServer* product after installing 7.20 Service Pack 4.

Added Install Path and File - CitectSCADA WebServer

Citect\client\720\CitectSCADAWebClient_7_20_4_38.cab

Updated Files - CitectSCADA WebServer

Listed below are the files updated in the CitectSCADA *WebServer* product after installing 7.20 Service Pack 4.

Updated Install Path and File - CitectSCADA WebServer

Citect\locales\demsg.xml
Citect\locales\esmsg.xml
Citect\locales\frmsg.xml
Citect\locales\itmsg.xml
Citect\locales\jamsmsg.xml
Citect\locales\komsg.xml
Citect\locales\rumsg.xml
Citect\locales\zhmsg.xml

Known Issues

The example project uses the OPC protocol so the OPC driver needs to be installed to be able to run the example project.

This Service Pack also contains the known issues described below.

<i>Issue Number</i>	<i>Issue Title and Description</i>
42749	WebServer Service Pack cannot be independently uninstalled on Windows Vista and Windows 7 On Microsoft Vista and Windows 7, the Web Server Service Pack cannot be uninstalled independently from the base application. Instead the CitectSCADA Web Server must be uninstalled to remove both the base product and Service Pack, and then the base product may be reinstalled. This has been documented in Knowledge Base article Q5450.

Issues resolved in this Service Pack

This Service Pack resolves the issues described below. If you have any hotfixes installed on your current version, please check if they are included in this service pack. If the hotfix is not included in the list below, or you have any concerns regarding the issues covered, please contact Support *before* installing this Service Pack.

Licensing

56639 - When a client is shutting down, it may accidentally request a control license which could be leaked.

Client will not ask for license when it is shutting down and Server will return the license which cannot be forwarded to the client.

Project Development Utilities

36998 - Single byte characters with value greater than 127(non-English characters) couldn't print successfully from Project Editor, e.g. Swedish characters.

Single byte characters with value greater than 127(non-English characters) couldn't print successfully from Project Editor, e.g. Swedish characters. This issue has been fixed.

51757 - Gradient-filled rounded rectangles are incorrectly rendered

The gradient fill of rounded rectangles bleeds outside the rounded corners in Graphics Builder and at runtime. This issue has been resolved.

52728 - Graphic Builder does not display non-English character sets correctly

In some non-English locales, Graphics Builder may render text incorrectly. This issue has been resolved.

53307 - Nested genies with default values do not expand correctly

Nested genies that have default values (e.g. "%Key=Default%") will be incorrectly expanded. This has been resolved.

54578 - Animation Number (AN) of the graphic objects changes when they are grouped.

In Graphics Builder, when designing a page, AN's of objects change when grouped. This has been fixed.

55456 - "Create Roles from User security information" on Migration Tool generates a misleading error on user entries with empty role

When a user attempted to migrate 7.20's project on V7.20 again with "Create Roles from User security information" option, the migration tool might generate a general exception dialogue and the migration process stopped. Now the tool skips

user database if it's not eligible to be imported, the error will not appear any more so that the migration process will finish without the interruption.

56343 - Disabled style from a group incorrectly overrides a member's style

A group's disabled style will always override the member's disabled style even if the group is not disabled. This issue has been resolved.

57891 - Problems with nested groups disabled on insufficient privilege. (Related references 57638, 56343)

A nested group that disables on insufficient privilege with disable mode "hidden" is not hidden when a user with insufficient privileges logs in and navigates to the page. This has now been fixed.

Compiler

53579 - The compiler now raises a warning if it finds a missing operand between tags.

A new warning in the compiler has been added for this. If the compiler detects a missing operand between tags and/or constants then this warning is raised. The warning will also be raised if the function returns a value without a return type.

54637 - Compiler does not generate an accurate error when CR/LF characters are in the address field of a variable tag

Although variable tags might have newline characters at its address field, compiler did not generate any error for full compile and then started generating "Cannot read from file" error for incremental compile only. Now compiler is able to detect those newline characters on the address field and generate "BAD IO Device Variable" errors on the bad address fields for full compile so that users can fix those wrong address fields straightforwardly.

54982 - The compiler can now raise a warning for a variable address bad boundary problem.

A new warning in the compiler has been added for this. When the [General]CheckAddressBoundary parameter is set to 2 and the compiler detects a variable address bad boundary problem then this warning is raised.

CtAPI

55938 - Repeatedly call ctOpen/ctClose may cause CtAPI client application crashes.

Fixed the issue that when a CtAPI client application calls ctOpen/ctClose repeatedly the application may crash after a certain number of times.

56105 - Historian Data Service crashes on close or while attempting to reconnect

Fixed the issue that when a CtAPI client application calls ctOpen/ctClose repeatedly the application may crash after a certain number of times.

58704 - Resolve CTAPI connection failure with Hotfix HF710SP452892.1
(Related references 56694, 52892, 57437, 58897)

Resolve CTAPI connection failure with Hotfix HF710SP452892.1 where Process Analyst failed to connect to SCADA running as a service on the same PC.

Process Analyst

51291 - Process Analyst resets vertical scale to tag scales while autoscale is on.

Process Analyst would reset the vertical scale periodically upon Info Request refresh introduced as part of online changes. The reset of the scales should not occur if auto scaling is enabled. This issue has been rectified.

56626 - Data Request rate is not working correctly. (Related references 54723, 57412)

Data Request rate was throttled back based on the trend period (calculated as view span divided by number of samples). This has been rectified and Data Request rate is now the same as that set by the user through the control properties. Also, maximum number of samples has been increased from 5,000 to 10,000.

Alarms

51133 - Disabled alarms are now ordered by TIME rather than STATE for multi cluster systems.

When disabled alarms are displayed they are now ordered by TIME, TAG, CLUSTER and STATE by default. This is different to other alarm pages which have a default ordering of STATE, TIME, CLUSTER and TAG.

51173 - Alarms from multiple clusters are now deleted from a summary page.

When the AlarmDelete() Cicode function is used with mode 1 on an alarm summary page with alarms from multiple clusters the alarms on the page will now be deleted.

52757 - Alarms may have incorrect or zero timestamp.

The alarm server was not expecting bad quality sample, and only had one shot at getting the value of the timestamp. So, if the first event retrieved contains a bad quality sample then the timestamp was bad. Quality or error was not checked. This has been rectified where bad quality alarm is retained in the queue until it receives good quality time stamp or times out within 30-45 seconds. If timeout occurs, the alarm is stamped with the time it was first enqueued.

53064 - Timestamps on suppressed multi-digital alarms are mistakenly updated when tag subscription is updated + Request of new INI parameter to update suppressed alarm timestamps

Timestamps on suppressed multi-digital alarms were mistakenly updated, when the subscriptions of tag values connected to those alarms are updated. Now they show the timestamps of latest alarm state changes as expected, regardless of tag subscription updates. In addition, a new INI parameter "[Alarm]UseVisibleTimeAsAlarmActiveTime" is implemented to update alarm timestamps of suppressed alarms when being unsuppressed by turning off more prioritised alarms.

53755 - CPU load of Standby Alarm server is about 100% for 5-10 minutes after startup.

CPU load of Standby Alarm server was about 100% for 5-10 minutes after startup. This issue has been fixed.

54041 - Second and following Rate of change Analog Alarm were ignored

Analog alarms with "Rate" of Change condition work in the same way as the first one.

54130 - Alarm entries may appear in non-alarm pages

Due to a race condition, the Animator may render alarm entries in non-alarm pages. This issue has been resolved.

54652 - Analog Rate of Change (ROC) Alarms can be triggered inappropriately.

Inappropriate triggering of Rate-Of-Change (ROC) Alarms can occur, especially since Service Pack 2 when a system is lightly loaded. This has now been mostly fixed. Flickering of ROC Alarms when the rate is close to the pre-set value, or other types of ROC Alarms such as Time-stamped Analog Alarms have NOT been fixed.

55477 - Standby Alarm Server takes too long to start up if summary is sorted and summary length is large.

Alarm events are stored in a sorted list, if summary is required to be sorted. Storing this would take a long time. We now do it more efficiently hence it starts up faster.

56430 - Hardware alarm logs include unwanted CR+LF characters

Some trend archive error messages had CR+LF characters embedded in them. When the error messages were captured and stored in an ASCII comma-delimited file (or similar), the CR+LF characters were still present. This caused a new line to be signalled at an inappropriate place (part way through the error message) when the file was processed. And this caused the data to be displayed incorrectly. This was resolved by removing the CR+LF characters and replacing them with spaces.

56743 - Problems with synchronization of alarm properties

Before this enhancement alarm lists and alarm properties were obtained via different trans - sometimes the trans were connected to different alarm servers. This could result in alarm lists and alarm properties displayed on the same page showing conflicting information when the alarm servers were out of sync. Alarm Servers can get out of sync if alarm trigger signals are transitory. After this enhancement alarm lists and alarm properties are obtained from the same alarm server via the same tran. This means the even if the alarm servers are out of sync the information displayed on a SCADA page will be consistent.

57224 - High Resolution Alarms may cause access violation in the Alarm Server on shutdown.

High Resolution Alarms may cause access violation in the Alarm Server on shutdown. This issue has been fixed.

57930 - Improved diagnostic information when FmtOpen and FmtClose are not used properly.

User can get detailed diagnostic information from log and Hardware alarm page will be responsive when all formats are exhaust due to misuse of FmtOpen/FmtClose.

58405 - If there are too many alarm updates on alarm servers, global client will be slow.

If there are too many alarm updates on alarm servers, global client will be slow. This issue has now been addressed.

Trends

52170 - "Trend Data not ready" hardware alarm occurs each time an old style trend page is opened.

"Trend Data not ready" hardware alarm occurs each time an old style trend page is opened. This has been fixed.

53015 - The 1st trend on the SPCXRSCart page now prints correctly.

The SPCSpecLimitGet and SPCProcessXRSGet cicode functions did not return the correct values. Change made so that these functions now return the correct values. The USL and LSL parameters on the Weight_SPC trend in the example project did not match the expression, these values changed so they match the expression.

53027 - Applying a rubber band on a trend page leaves artifacts

Drawing a rubber band on a trend page from right to left or from bottom to top leaves artifacts. This issue has been resolved.

54464 - Trend files cause hardware alarm "Trend Property Mismatch" if period is set to 90:00:00 (90 Hours)

Using a period of 90:00:00 (90 Hours) you see the hardware alarm "Trend Archive Property Mismatched". This happens when the Period is set to 80:00:00,

60:00:00, 40:00:00, 59:00:00 or 99:00:00. Using 120:00:00, 240:00:00 or 360:00:00 all seem to work properly.

Fix Details: The Trend 'Time' field (time after midnight) is now not checked. While it is not recommended that customer change the Trend 'Time' field (time after midnight), we cannot reliably enforce that at present and the system should cope with the change.

54636 - **New Trend AcquisitionRate and WriteRate stats**

If the AcquisitionRate always exceeds the WriteRate, the system will use increasing amounts of memory and eventually fail. In a healthy system with plenty of spare capacity, the WriteRate will substantially exceed the AcquisitionRate and the InUse% will be less than 50%. When 'tuning' the Trend parameters it is important to maximize WriteRate without overloading the kernel task system resulting in tasks running late.

New Stats [Citect Kernel - Table TrendQueues - FlushQueueLength]

AcquisitionRate - the number of trend data bytes acquired per second (calculated at startup)

WriteRate - the number of trend data bytes written to the hard disk per second (moving average)

InUse - the percent of time the system is spending writing trend data to the hard disk

New Stats [Citect Kernel - General]

Task Late Time - the number of milliseconds tasks are running late

Tasks are running late - DeltaCheck. If tasks are late by more than 250ms more than 4 times in a row, an entry will be added to the syslog file. Syslog Entry example: *"#datetime# Warning: Tasks are running 260 ms late"*

Memory below safe limit - HealthCheck. If the amount of available memory (address space) is less than 90000 a Citect hardware alarm will be generated and an entry will be added to the syslog file. Syslog Entry example: *"#datetime# Warning: Memory below safe limit. Memory Total = 80000 KB (Min=90000)"*

Trend FlushQueueLength too large - HealthCheck. If the FlushQueueLength is greater than twice the number of trends a Citect hardware alarm will be generated and an entry will be added to the syslog file. Syslog Entry example: *"#datetime# Warning: FlushQueueLength (31000) greater than double NumberOfTrends (15000)"*

54805 - **Trend synchronization now shows correct progress**

Fixed errors in the trend progress calculation function;

Fixed errors in trend log synchronization algorithm which would have caused dead lock at the end of sync in some cases.

55553 - **The SCADA program could only access 2GB of memory address space**

This fix enables the SCADA program to access 4GB of memory address space

55891 - **Trend system will not trigger Sharing Violation when need to roll over old trend history file.**

Trend system will close the old trend history file before re-open it for new trend samples to avoid sharing violation error which would cause high CPU usage.

IO System

53337 - **Kernel window does not clarify what type of active state a unit is in.**

Kernel window does not clarify what type of active state a unit is in. This issue has been fixed.

53600 - **A variable tag array that is longer than that allowed for the driver crashes the run time.**

ProtoDir.DBF contains the list of supported drivers. Corresponding to each driver there is MAX_LENGTH field. It is possible to compile a project containing a variable tag array for a driver such that the total number of bits in the array exceeds the MAX_LENGTH value but below 2048. In such cases the project may crash on start up. Now it logs a message in syslog.

54127 - **Crash in Kernel32.dll when servers get bulky communication messages**

There was possibility to generate an unhandled exception when a server resizes its receive buffer for bulky data via internal I/O communications, which has been resolved now by fixing data size calculation.

55077 - **CtApi doesn't allow carriage return in String Field and can cause access violation.**

CtApi doesn't allow carriage return in String Field and can cause access violation. This issue has been fixed.

55805 - **High CPU usage on Primary IOserver, while shutting down Standby IOserver**

When shutting down an IOserver that only has Standby IOdevices (Not Activated), CPU usage on the running Alarm Server and Primary IOserver increases. The clients were sending out unnecessary Tag Exists requests (for each subscribed tag) when the standby was shut down. The clients now do not send out unnecessary Tag Exists requests (for each subscribed tag) when the standby is shut down.

56089 - **A filter is added to control events being placed into Event Queue.**

DRI will only place Events (real or fabricated) into EventQueue by default. A new INI parameter [IOserver]EventQueueModeFilter can be used to set this filter. Where:

0 - Filter out nothing - i.e. all will pass through.

1 - Filter out Time Stamped Alarm/Trend events - these only relate to field time stamped events (note some drivers, e.g. DNPr, may fabricate these events).

2 - Filter out SCADA PSI events - these events push all field changes to clients and Servers.

The default mode is 2.

N. B. For the DNPr driver

(1) The driver can be prevented from fabricating field events from Class 0 responses via [DNPR]PushIntegrityStaticsAsEvents

(2) The default value for the filter mode provides the same behaviour as the driver's original event queue.

57498 - IO Server crash due to concurrent access on a subscription object

There was a potential issue to perform an unsafe access on an internal object during subscribing/unsubscribing a data source, which can cause an exception. Now the object is protected so that the exception will not happen.

57771 - No synchronization when Primary IOServer is shutting down

No synchronization when Primary IOServer is shutting down, this issue has been fixed.

58100 - CPU will max out, and Citect processes crash eventually when a large number of IO devices are defined in the project.

CPU will max out, and Citect processes crash eventually when a large number of IO devices are defined in the project. This issue has been resolved.

59081 - Enhanced Syslog.dat entries

Syslog.dat is enhanced to have additional log entries about internal timer, task and driver status. New logging citect.ini parameters;

[Kernel]TaskLogging (default = 0 = OFF) for task status logging, and
[IOServer]LibraryLogging (default = 0 = OFF) for driver load status logging.

Cicode

41880 - The correct value is now returned from a function called by the MsgRPC function.

When a variable tag is returned from a function called by the MsgRPC Cicode function the correct tag value will be returned.

50334 - Array tags with other tags as the index can now be used in the Pulse Cicode function.

When an array tag with another tag as the array index is used in the pulse function the array index is separated and evaluated before being sent to the function that does the pulse.

52654 - Popups can now be resized based on content.

A new mode has been added to Winsize to allow a popup to be resized based on its content rather than window size.

53347 - Function using Super Genie substitution as argument does not compile in CitectSCADA 7.20

Compiler would produce error "Tag not defined" and "Close bracket expected" when compiling MyFunction("Cluster",?1?). This problem has now been fixed.

53935 - FileFind shows "Invalid Pathname" error in syslog when calling FileFind with a valid path, e.g.'[RUN]*.RDB'.

FileFind shows "Invalid Pathname" error in syslog when calling FileFind with a valid path, e.g.'[RUN]*.RDB'. This issue has been fixed.

54007 - LowWord Cicode function returns wrong value when the input is over 32767

LowWord cicode function will return a non-negative integer representing the low 4 bytes. E.g. LowWord(32769) = 32769

54152 - Fix issues in CiCode functions TrnExport* where the milliseconds info was missing when mode contains 8

CiCode functions TrnExportCSV, TrnExportDBF, TrnExportClip and TrnExportDDE now returns milliseconds info when mode contains 8.

54296 - IODeviceinfo("devicename",10) returns 1 when in a redundant IO setup when the iodevice is not connected.

IODeviceinfo("devicename",10) returns 1 when in a redundant IO setup when the iodevice is not connected. This issue has been fixed.

54709 - Custom alarm actions caused a crash

Crash occurs on site due to massive tasks created by custom alarm actions. This issue has been fixed.

54840 - Saving floating point number into Global and local variable get different results (Related references 54591, 55083)

When save a floating point number to a INT type global variable in Cicode, it will be rounded to nearest integer, as it does on local variable.

54983 - Cicode SELECT statements throwing "incompatible type" error on global variables if the files are in a certain order.

Cicode SELECT statements throwing "incompatible type" error on global variables in a file which is picked up later by the compiler, than the file containing the case statement. On NTFS this order is alphabetical. This issue has been resolved.

55212 - MenuReload() Cicode function was only performing the reload if the menu configuration had been recompiled.

MenuReload() Cicode function was only performing the reload if the menu configuration had been recompiled. This issue has been resolved and the MenuReload() Cicode function now always performs the reload.

55766 - Cicode "TagInfo()" couldn't retrieve external tag(non-Citect tag) information in multi-process mode in SBT project

Cicode "TagInfo()" couldn't retrieve external tag(non-Citect tag) information in multi-process mode in SBT project. This issue has been solved.

55781 - Tags in reports may have incorrect values if the device is down

If a device is down, tags in reports may have values set to '0' instead of the last known value. In some cases, the values may flicker between '0' and the last known value. This has been resolved.

55867 - Syslog contains wrong log entries when using Exec() Cicode

The Exec() Cicode function will log "Invalid path name" entries in syslog even if the path is valid. With the fix, Exec() will no longer prematurely check for invalid paths and log them. If a path is indeed invalid, the return value of the function call is sufficient.

55889 - SendKeys may block indefinitely

The SendKeys Cicode function may block indefinitely when given an invalid window title. This has been resolved.

55996 - Loss of precision in arithmetic operations on scaled integer tags.

Loss of precision in arithmetic operations on scaled integer tags has been rectified by their data type being set to Double if the Scaling or Offset different than unity. This conversion is applied on the Server side.

56106 - The Display Client will crash when calling TaskCall. (Related references 55778)

Display Client will crash when TaskCall is called from a Task that is killed before TaskCall returns. This has been fixed.

56254 - User created windows now can be resized to a smaller size instead of stuck on full size. (Related references 55727)

Windows with mode 1024 created by WinNewAt() now can be resized to a smaller size instead of stuck on full size by using CiCode function WinSize().

56628 - The TYPE field of query<n>.dbf will have same value for same type of alarms (Related references 53477, 57413)

The TYPE field of query<n>.dbf generated by CiCode function CTAPIAlarm() will have same value for same type of alarms, as it was in version before 7.00.

56630 - Fixed DevOpen fails in client process for some configuration (Related references 53089, 57415)

In multi-process mode, Cicode function DevOpen in Client process is able to open those devices which are defined with non-empty "cluster name" and empty "process".

57528 - TagGetScale() crashes when the given tag name is too long

TagGetScale() cicode function crashed with a long tag name, which was caused by mis-truncation of tag names. Now the issue has been resolved and the function operates successfully.

Display System

40479 - **DspDel Cicode function allows deleting of bitmaps within a symbol set.**

DspDel Cicode function allows deleting of bitmaps within a symbol set. Under certain circumstances, this could lead to a crash. This behaviour has been fixed. A hardware alarm will now be raised if deleting a bitmap within a symbol set is attempted.

54518 - **Alarm timestamp is not updated when system time zone is changed** (Related references 52792)

As the runtime updated its alarms only when one of its properties is changed, it did not react to any time zone change after runtime startup. As now the runtime detects time zone change, it refreshes its alarm list when time zone is changed.

54845 - **Unable to navigate into graphic pages after displaying Ampla web client in IE ActiveX**

The Ampla webclient/web browser control creates a new .Net AppDomain. When the SCADA system attempts to run its tasks the AppDomain is not what it expects and it fails, leaving the Animation task in a 'dodgy' state. The fixed code now detects the AppDomain and prevents the SCADA system processing tasks when the wrong AppDomain is current. As we did not use managed (.Net) code in v6.10 and previous, those versions would not have been affected.

55025 - **The animation cursor (focus rectangle) is flickering during runtime**

The animation cursor (focus rectangle) was flickering during runtime - especially on 'busy' graphics pages. The screen is now drawn to an internal buffer before being 'blitted' to the visible screen. The citect.ini parameter to turn on the new functionality
[ANIMATOR]FlickerFree = 1 (default = 0 = off)

55218 - **High CPU for the client process for pages with a large number of dynamic text objects**

In 7.20, pages with a large number of dynamic text objects consumed significantly more CPU in the client process than in 7.10. This issue has been resolved.

55278 - **Citect client crashes while adding a trend pen to a trend graph using Cicode function TrnSetpen() and a 'preselected' trend**

The Citect client crashes while adding a trend pen to a trend graph using cicode function TrnSetpen() and a 'preselected' trend that has already been deleted. When a trend was deleted, the pointer to the 'preselected' trend was not reset. Then, in specific cases, when TrnSetPen() was called using the 'preselected' trend, the Citect client crashes.

56629 - **Text may appear bold if a page is resized** (Related references 53854, 57414)

If a page is resized and its aspect ratio is not maintained, text may appear bold. This issue has been resolved.

56649 - Animator crashes during page navigation if an external message pump is active via an embedded Active-X object

External message pumps on an embedded Active-X object could break Client Runtime's task scheduling which might result in a crash during page navigation. Now the task scheduling is not affected by those external message pumps during page navigation. However, regardless of this fix, external components like Active-X controls should always return as soon as possible because they can slow down the overall performance of Client Runtime.

58190 - Halted foreground codes leak "Code.String" queue

There was possibility to leak internal string queue if a foreground Cicode block is halted, regardless of the way of being halted. The memory leak caused by this issue is now fixed.

Runtime Issues

51684 - The alarm filter form is now initialized correctly.

When the alarm filter form is displayed on standard alarm pages no hardware alarm is generated and the initial parameters of the form are setup correctly.

52148 - CiCode RealToStr() causing crash when called with 3 arguments only

Intermittent (rare) crash has been fixed when calling RealToStr() Cicode function with 3 arguments only or with 4th argument being an empty string.

53444 - Crash when WinFree() function called by clicking a custom button on Process Analyst popup window.

There was possibility to crash runtime when a custom button on Process Analyst popup window calls WinFree() function, which is because of an internal pane cache pointing destroyed pane handle and/or destroyed animation symbol table during time gap between WinFree() function call and update of internal cache. As proper validation routines have been implemented, now runtime ignores invalid handles without crash.

53720 - [Win]ScreenSaver=0 does not suppress Screensaver when Runtime is not in focus

As Citect Runtime was not able to suppress Windows screen saver while Runtime is unfocused, the process for suppressing screen saver has been revised. Please note that the suppression of screen saver will not work if the system global policy disallows it.

54028 - IO server may crash if there is a large amount of value changes occurring or too many IO Devices with persistence enabled

When IO Devices are configured for redundancy across two or more IO Servers, tag value changes from the field result in cache replication messages being sent from the IO server that is active for the device to the peer IO servers. This replication was very aggressive, resulting in high CPU usage and potentially crashes if there were a large amount of value changes and the active IO server became too far behind in sending the replication messages. This problem has now been resolved by changing the IO cache replication to occur periodically.

This is controlled by the new citect.ini parameter
[IOServer]CacheReplicationPeriod. Default = 5 seconds. Min = 1, Max = 2147483 (Signed long /1000)

Only the newest value for each tag that has changed will be replicated, reducing the amount of messages sent. IO Servers could also crash if they had a large number of IO devices configured with persistence enabled. Every IO device was persisting at exactly the same time, causing a large spike in memory and CPU usage for systems with many IO Tags. This problem has been resolved by automatically staggering the persistence of IO Devices on an IO server throughout the persistence period.

54072 - Shutdown processes slow with V7.20

From v7.20, clients connect to servers via the platform (.net) layer rather than the C++ api methods. When a shutdown occurs while the client is attempting to connect to the server, the client waited until the connection attempt timed out before shutting down. The fix was to cancel the connection attempt on shutdown.

54164 - Runtime crashes with [Kernel]BufPoolProtect=1

While processing Cicode instructions, there was possibility to use a code object which is already executed and released from memory. [Kernel]BufPoolProtect parameter detected this situation during startup, which blocks to start any project with this parameter enabled. Now as this behaviour is fixed by testing the object before use, Runtime does not crash with [Kernel]BufPoolProtect=1 anymore.

54219 - The standby alarm server may crash when cancelling startup

The standby alarm server may still process some requests even though its startup was cancelled. This could lead to a crash. This issue has been resolved.

54345 - Time(), TimeToStr() does not return correct time when Daylight Saving Time setting is changed after runtime startup

As the internal time zone information caches were not able to be updated during runtime, there was possibility to calculate wrong local time values after changing Daylight Saving Time configuration on Windows. As now SCADA runtime detects this setting change and updates its internal caches, it reflects DST setting changes on time-related functions.

54508 - Set access level of transport sessions to standby server

Fix the issue that access level of transport sessions to standby server may not be set properly and some hardware alarms would be triggered.

54628 - Simplified Chinese characters cannot be stored in string tag

Variable Tags with string type can contain Simplified Chinese characters when the "system default locale" is set to "Chinese (Simplified, PRC)".

54814 - Table handle allocation performance issue may result in hang

Table handle allocation performance issue may result in hang. This issue has been fixed.

54844 - No notification to client if stand-by server goes down

If, in your system, there is a stand-by Report, Alarm or Trend server and if either the primary or the stand-by goes down then there is no notification to the user. Now a hardware alarm is generated continually until the server comes back online. The ServerIsOnline Cicode function has been extended to return the status of the specific server if the mode parameter is one.

54929 - Unit stuck in STARTING state

After a few failover attempts (using IODeviceControl(<unit>,1,1 or 0)), a unit with a Maxpending of one seems to get stuck in STARTING state when viewed in the kernel. This issue has been rectified.

54947 - Shutdown crash due to scheduled rebinding on servers

When a Server starts up, it will bind to each configured Network adapter and listen for connections. If there is a problem with this binding process, the binding will be reattempted every five seconds. There is a rare race condition where the Server can be shutdown with a rebinding attempt still enqueued, leading to an Access Violation (Exception 0xC0000005). This has now been fixed

54969 - Crash could occur during system logging when the log file is unavailable.

An I/O Exception could occur when attempting to write to the system log, if for example the log file is unavailable. In some cases this could lead to a crash. This crash has now been resolved.

54993 - SQL aggregate functions do not return results in 7.20 SP3

A field name validation procedure is implemented on 7.20 SP3 so that SQL aggregate functions such as "SUM()", "COUNT()" were not able to return results. Now those results have become accessible again as V7.20 SP2 and below. In addition, some field names which contain commas, curly braces and spaces that Citect Runtime cannot handle on SQL recordset will be converted to valid ones by replacing those inaccessible characters with underscores ('_').

55166 - Broken named pipe connection and high CPU usage in Citect client and local server process

If a server (such as a trend server) took a certain period of time to respond to a client's request to open a named pipe, the named pipe would not open and both the client and the server would consume large amounts of CPU indefinitely.

55484 - DspInfoNew() can lead to an error when executed on an AN with a CICODE function that takes a large number of arguments

Using DspInfoNew() on a popup that contains a call to a CICODE function that takes a large number of arguments can lead to a "Error Local Stack overflow". A new Citect.ini parameter [General]InfoStackSize with values between 800 to 32000 (default 800) has been added so that the buffer size can be increased.

55661 - Running multiple clients processes at the same time

Running multiple clients at the same time is now possible when passing the /X option to Citect32.exe. Additional clients will use up control client licences.

55857 - The cicode startup function now starts with the CODE_MODE_USER mode.

The Cicode startup function now starts with the CODE_MODE_USER mode to ensure it does not run after the alarm server has shut down.

56124 - Tag values do not update on startup unless Sleep is used at beginning of the startup Cicode function (standby running)

This issue was 'uncovered' when the code change for bug 54028 was added. Before that, all tags were replicated every replication period regardless of if they had changed nor not, thus hiding the startup issue. When the startup Cicode is run during primary IO server startup, the Cicode is attached to the standby IO server. There was a small window where Cicode tag updates made during the primary IO server startup and replication could be made only on the standby IO server and not be replicated to the primary IO server.

56209 - Callback of asynchronous tag operations can access an invalid Cicode thread

When some tag I/O operations invoke their post operations, there was possibility to access a wrong Cicode thread after page switch. Now those post operations are cleaned up before page switch.

57921 - Possibilities of access violation on Windows user login and CTAPI Cicode command

There was possibility to violate memory access rules when a Windows user logs in, if the role for relevant Windows group has an entry command or an exit command. Now this issue is fixed. In addition, Cicode execution via CTAPI potentially had this issue and is also fixed now.

58532 - TagGetProperty(), TagGetScale() cause memory leak when called on local variable tags

There was possibility to leak internal cache memory for TagGetProperty() and TagGetScale() Cicode functions. The memory issue is now fixed.

Tag Browsing

51504 - Refreshing tags using FastLink via OFS results in (auto generated) alarms being deleted and created again

The previous method of comparing two sorted lists did not work in some cases. Note: The sort order is dependent on the 'key' fields as defined in the XML file. The new method for comparing the existing records with the refreshed data is more robust and does not rely on the order being exactly right and also allows for duplicates, etc.

Web Client

52569 - **The [LAN]NetBios parameter has been removed from the Web Client.**

The [LAN]NetBios parameter is no longer added to the citect.ini for the web client. So the hardware alarm showing "Generic General Obsolete parameter LAN NetBios" will no longer display.

53882 - **Fixed WinNewAt Cicode function in the WebClient to work with mode 64 (Always on top).**

Fixed WinNewAt Cicode function in the WebClient to work with mode 64 (Always on top). Previously mode 64 was ignored by the WebClient.

General

49934 - **DevRead and DevReadLn fail when used with a device with a period defined.**

DevRead and DevReadLn fail when used with a device with a period defined. This issue has been fixed.

51595 - **Crash when using WinFree() via a Button to close a popup containing an ActiveX control**

Closing a popup Window that contains an ActiveX Control can lead to a crash if the ActiveX was in the middle of method call. Typically an Access Violation Exception. For this scenario to occur, the ActiveX control needs to pump Windows messages during method calls, so this would normally be a rare situation. This has been fixed by forcing all CICODE run via Touch page elements to run in the background rather than in the foreground.

51606 - **Crash could occur in DDE (Dynamic Data Exchange) subservice.**

The DDE (Dynamic Data Exchange) subservice could cause a crash under certain conditions. This issue has been resolved.

51991 - **Incorrect alarm state in the Alarm History Summary and/or Process Analyst.**

When alarms scroll off the Alarm History Summary (set with [Alarm] SummaryLength INI parameter), the current state of the alarm may be incorrect. This issue has been rectified in this fix.

53004 - **The CTRL key is no longer being ignored when the CTRL+SHIFT+... keyboard command is used.**

When the check is done for pressing the shift key only it now checks that the shift key has not already been processed, for example if the CTRL+SHIFT combination is used.

53442 - Primary IO Device goes offline when IO Server with standby IO Device is shutdown

During the shutdown of Standby Server, the LogicalUnitActivate() is being called for the Standby Unit and then later StopUnit() is called for that Unit resulting in Shutdown.

This issue had now been fixed.

53519 - Add a server specific parameter for IO server [IOServer.cluster_name.ioserver_name].EnableEventQueue.

In addition to [IOServer]EnableEventQueue, IO Server will respect server specific parameter [IOServer.cluster_name.ioserver_name].EnableEventQueue. The precedence is:

[IOServer.cluster_name.ioserver_name].EnableEventQueue

[IOServer].EnableEventQueue

default value (FALSE)

53656 - Crash on IO Server when TagEventQueue is in use with [IOServer]EnableEventQueue=1 and massive events from DRI drivers

There was possibility to crash IO Server or break event queue and/or Cicode operations because of unsynchronised event queue operations performed by internal worker threads on IO Server. These operations are now synchronised properly so that event queue does not cause this issue any more.

54286 - TaskNew may affect the calling code's tag subscriptions

Calling TaskNew may affect the calling code's tag subscriptions. This may result in tags having bad quality. This issue has been resolved.

54346 - Changing DPI resizes text but no other graphic objects

When the DPI is increased to 125% or more by going to Control Panel\Appearance and Personalization\Display The text is increased in size but not the other graphics objects

By setting [Animator]ReverseDpiScaling = 1, font sizes are reduced internally so that when Windows increases font sizes, the resulting font size is the same as (or very close to) the designed size.

54472 - Tags that are out of range on a v7.20 server result in #COM for a 7.10 client

7.10 clients expect good quality when a tag value is out of range. 7.20 servers, however, send out uncertain quality. This issue has been resolved by modifying the 7.20 servers to handle this special case.

54706 - To increase the maximum value of the [Alarm]ScanTime, currently the range is 0 - 60000ms.

It is not possible to set the [ALARM]ScanTime parameter to a value higher than 60000ms. Change made to allow a value higher than 60000 for this parameter.

54843 - Alarm Filtering by area does not work correctly

When setting user area to filter alarms on one machine, the result of this was being reflected on other machines.

55062 - Numerous Params.dat files in logs directory.

Numerous Params.dat files in logs directory. This issue has been fixed.

55858 - Server connections are now marked as trusted when the [LAN]Securelogin parameter is set to 0.

When the [LAN]Securelogin parameter is set to 0 connections between redundant servers are marked as trusted so the cache is updated between them.

55915 - A new parameter has been added to control whether the about box is displayed at runtime.

The [Win]ShowAbout parameter has been added to control whether the about box is added to the ALT-SPACE menu at runtime.

Allowable Values:

0 - Do not show About menu item

1 - Show About menu item (default)

56427 - Pages and popup pages are hanging for a while before data is displayed on the screen

Pages and popup pages are hanging for a while before data is displayed on the screen. This issue has been resolved.

56610 - RPC function call such as ServerIsOnline may cause high CPU and memory leak.

RPC function call such as ServerIsOnline sometimes needs to be carried out by another server, so the message will be forwarded to that server and a copy of the message will be saved. The saved message was not cleared properly. Now it will be cleared when the corresponding ack message arrives.

56631 - The size of the memory buffers for network output can continually grow in size.

The size of the memory buffers for network output can continually grow in size. This issue has now been addressed.

57017 - Citect does not support more than 32767 events defined in project (Related references 56364, 58706, 58895)

Citect does not support more than 32767 events defined in project. This issue has been resolved.

57197 - Alarms on global client may be slow if connecting many clusters

Alarm processing would collect alarm information from all clusters when any alarm server indicated a change in alarm information. This has been optimised to only request new alarm information from the specific cluster that indicated a new alarm.

57982 - In a multi-cluster system if one alarm server hangs, global clients will not display alarms for any clusters.

In a multi-cluster system if one alarm server hangs, global clients will not display alarms for any clusters. This issue has now been addressed. Added ini [Alarm]AlarmListRequestTimeout (default is 10) to configure the number of seconds to wait for an Alarm Server to Respond before resetting the connection.

58119 - Pending alarm property writes are not expired properly if a redundant server is configured but has not been active

If an alarm redundant system is configured but no redundant server has been active, redundancy messages for alarm property writes stay on the alarm server. This issue is fixed now so that the process expires old redundancy messages as per timeout period.

58212 - PageClose() in the command of an An could cause display client crash sometimes.(Related references 55735, 58899)

The scheduling mode of CiCode code in the command of Animation point is changed to avoid display client crash in some case.

Remaining Modules

44632 - Syntax error when "(", ")", "{", and "}" are used in Tag Import / Equipment XML Templates

Curly braces and round brackets on XML templates were regarded as special characters and could not be used as normal literals. Now double curly braces are exceptionally converted to singular ones to express curly braces and round brackets are not regarded as special characters any more, when used in tags other than <calculator> tag.

50756 - The compiler now picks up duplicate user names in included projects

When a user name is defined in multiple projects a compile error will be raised.

50998 - Window from FormNumPad goes off screen when cursor is too low

When current cursor is close to the bottom of the screen, CiCode function FormNumPad will place the numpad window above the cursor so that the whole numpad window will be within the screen.

51623 - Error 424 "tag not found" just after startup when performing tag operations.

When IOserver is configured to execute startup CICODE, there are login timing issues that can lead to (IOserver) Tag not found errors. The behaviour has now been changed for InProc and OutProc TRAN modes so that this should no longer occur.

53103 - "General Stack Overflow" error when DLLCall/DLLCallEx function is called while another DLLCall/DallCallEx is on progress.

It is not allowed to call DLLCall-like functions in overlapped way but there was possibility to happen, which caused "General Stack Overflow" error with unexpected shut down. Now those exceptional cases are handled by runtime so that a new DLLCall will not start until the former one is finished.

53780 - Translation correction in installer and forms

Corrected some Spanish translation strings in Installer and forms.

53871 - Correction of "Cache Reads" and "Cache RD Ahead" in General Statistics

"Cache Reads" and "Cache RD Ahead" in General Statistics will show correct positive value when the number of reads is huge (greater than 21474836).

54125 - Window created by WinNewAt will be at correct position and correct size

The window created by CiCode function WinNewAt will be at designated position and with normal size when [Animator]FullScreen=1 and [Page]DynamicSizing=0

54451 - Unity Fastlinx tag import bit addressing is incorrectly done for *.08 and *.09

Now tag import procedure for Unity FastLinx regards all address fields as unsigned decimal numbers.

54669 - The "Save compiled" option will no longer set the project as uncompiled when restoring to the same version.

When a project is backed up using the "Save compiled" option. and then that backup is restored to the same Citect version the project will no longer be set as uncompiled.

54870 - EquipGen templates on Example project generate invalid comments on some of generated tags

There were a few of invalid comment tags on the bundled EquipGen templates of Example project, which is now resolved.

55388 - The period of the Time Synchronization Service can now be configured in hours and minutes.

The period of the Time Synchronization Service can now be configured in hours and minutes. Previously, this was restricted to just hours. The period is inputted

in the format HHH:MM and has a range of 1 minute to 168 hours and 59 minutes, inclusive.

57917 - Login with Windows username causes memory leak

The memory leak caused by Windows user logins is now fixed.

Issues resolved in Service Pack 3

The following issues were resolved in Service Pack 3.

Licensing

53078 - **Licensing. Version 7.20 Client cannot connect to the v7.20 SP2 Server.**

When fixes require an update of the Post Release Version, older versioned clients or servers required the [LAN]EarliestLegacyVersion setting to be used. This has been deemed to be overly strict and so we have now relaxed default message version checks to use only Product Major and Minor Versions.

Project Development Utilities

53731 - **Comm failure with sliders even if page has a default cluster** (Related references 53033)

In a multi-cluster project, sliders fail even if a default cluster was specified when opening a page. This applies to sliders using non-cluster-qualified tags only. This has been resolved.

Compiler

52959 - **Remapping using data type suffixes causes "Bad Raw Data Type" and "Tag Not Found" compilation errors**

Remapping with suffix data type on address field was not recognised properly so that compiler generated compile errors on V7.20 SP1. Since now the compiler has ability to apply data type suffixes on address fields as expected, it will no longer generate compile errors with suffix data types on remapping.

Process Analyst

52727 - **Blinking pens on Process Analyst**(Related references 50438)

Pens no longer blink on Process Analyst

53544 - **Properties ObjectView in Process Analyst not refreshed or delayed.**

Properties, such as scale, in ObjectView of the Process Analyst were not refreshed or delayed. This fix ensures that the scale is updated immediately after displaying page containing Process Analyst.

Alarms

51051 - **User events do not appear in the tab-styles alarm summary page**

User events do not appear in the tab-styles alarm summary page. This issue has been resolved.

51761 - **In a redundant alarm system, if the local alarm server has an alarm server request that contains a record id that is not a valid SLID for that server it may cause the remote alarm server to crash.**

In a redundant alarm system, if the local alarm server has an alarm server request that contains a record id that is not a valid SLID for that server it may cause the remote alarm server to crash. This issue has now been fixed.

52794 - **Suppression does not work when alarms are triggered simultaneously**

Suppression of Multi-State Digital Alarms does not suppress if higher priority alarm is off and unacknowledged as it should per Help, also suppression does not work with simultaneously triggered alarms of different priorities. If a high priority alarm and a lower priority alarm are triggered simultaneously, the lower priority alarm should be suppressed. The suppression code has been changed to suppress lower priority alarms being processed in the same alarm cycle as the triggered high priority alarm.

53839 - **Shutdown crash caused by timing related issue in the networking layer.**

Shutdown crash caused by timing related issue in the networking layer. This issue has been fixed.

Trends

52708 - **[CICODE] TrnAddHistory() fails to add a long month after adding the previous month.**

When adding periodic monthly Trend Files from an older recording period, files that follow months which do not have 31 days often fail to add. This has now been fixed.

IO System

50528 - **The IO Server crashes if a page has an invalid scan time**

If a page has an invalid scan time, navigating away from that page may cause the IO Server to crash. This issue has been resolved.

51970 - **DrvDebug() is not thread safe and leads to crashes.**

Certain drivers use a multi-threaded model. So enabling diagnostic tracing for these drivers can lead to incomplete\garbled trace messages, and can occasionally cause IO Server to crash. This has now been fixed.

53014 - **When Primary IO device is offline some Tags are showing as #BAD on all client machines**

When Primary IOdevice is offline some Tags are showing as #BAD on all client machines. However, other tags belonging to the same IOdevice are showing as GOOD quality. Doing a TagRead() to the offending tags, solved the issue. Affects projects with Primary and Stand-by IO servers that each have its own device (two IO Servers, with a two PLCs, one each)

53133 - **Stale value displayed on client after writing to a bit in PLC that automatically reset to '0'**

When the customer issues a start command the PLC will reset the start command. The old value will continue to display on SCADA. The only way to fix the problem is to perform a tag read. Chain of events:

- From SCADA, writing to a bit in PLC: setting that bit to '1'. i.e: MyTag=1 -> Value of bit is set to '1' on Citect graphic page
- > Write command sent to PLC
- > Write command successful
- > PLC automatically reset that bit to '0'
- > Citect still displays '1' on graphic page for that specific bit (Stale value displayed) -> Customer does a TagRead() from Citect to that specific bit
- > Value of the bit gets correctly updated on graphic page

NOTE:

All tests are done with [Code]WriteLocal=1 set in the citect.ini file
When the value is written to the PLC we save the last value of the tag in the IOserver. Then when the value is read from the PLC we compare the read value with the last value; if they are different a notification is sent to the client. If the values are the same, no notification is sent. However there was a problem for digital tags values. The wrong bit was set when the tag was written and when the tag was read the comparison didn't find a change, therefore no notification was sent.

After the fix, the tag value shown on the graphic page should match the value in the PLC (or the PLC simulation).

53900 - **Unhandled exception when massive tag operations performed with long strings on non-English environments**

There was possibility for SCADA Runtime to raise an unhandled exception when massive tag operations have performed with long strings on non-English environment cause by miscalculation of data size. As the calculation has been fixed, now runtime can perform tag operations properly.

Cicode

52065 - **Negative array indexes causes exceptions (crashes).**

Negative array indexes cause exceptions (crashes).

Examples:

```
x = array[-1];
```

```
array[-1] = x;
```

```
x = TagRead("array[-1]");
```

```
TagWrite("array[-1]", x);
```

Negative index use should result in a 'hardware alarm'.

Hardware Alarm: "Generic General Value is out of range array"

52427 - **TaskKill must not kill the task it is running from**

In the original version of LogOutIdle and WaitIdle, the WaitIdle function calls LogOut which attempts to kill the current task it is running on. In this case we can avoid using KillTask by letting the WaitIdle function exit out of the wait loop by setting a flag.

52571 - **There is no way of getting the user name of a Windows user through cicode without it including the domain name.**

UserInfo(1), UserInfo(2), Name() and FullName() are Cicode statements to get user names from CitectSCADA but for Windows user names none of them returned Window user name only but combined with domain or machine name. Now a new parameter for Name() Cicode function is added, hence users are able to use Name(0) statement to get Windows user name without domain/machine name. Here is the new usage of Name() function:

Syntax: Name([bIncludeDomain])

bIncludeDomain = 0: Return Windows user name only

bIncludeDomain = 1: (Default) Return Windows user name with domain name

This parameter is ignored for normal CitectSCADA account.

Please note that this fix does not change UserInfo() and FullName() functions and has no effect on existing projects.

52661 - **SQL Functions returns mismatched data on recordset when braces, commas and/or spaces are used in field names**

SQLGetField() Cicode function returned mismatched data when braces, commas and/or spaces were used on field name of DB table. Although those fields on recordset are basically inaccessible on Cicode, their data still persisted on memory and caused this issue. Now those fields and their data are completely removed on recordset by runtime, SQLGetField() function works properly. In order to access fields which contain those characters, use "AS" (alias) keyword on SELECT query statement to change field name instantly on recordset.

52735 - **ProcessAnalystSetPen() Cicode function does not support Digital Trends and Alarms**

ProcessAnalystSetPen() Cicode function was for Analogue Trends and did not support Digital Trends and Alarms. Now this function has an optional parameter for pen types to create so that it is possible to add those pens programmatically.

53137 - **TagInfoEx(sName,0,...) sets no error even if sName does not refer to a valid Tag**

While calling TagInfoEx((sTagName,0,...), the tag names were parsed for syntax and as the requested property was the tag name itself, it would return no error if the syntax of the tag name was OK, even if there is no valid tag by that name. Now no error code is set only if there is a variable tag, local variable or alarm tag by that name.

53433 - Valid but expired password returns Authentication Failed rather than Password Expired.

When logging into Citect using a Windows user that has expired the error code 439 (Authentication did not succeed) is returned rather than the expected 375 (Password Expired). This has been fixed.

Display System

52539 - Pipe objects get distorted when run in full screen mode

Pipe objects can be rendered incorrectly in full screen mode. This problem has been resolved.

Runtime Issues

52235 - AlarmServer was crashing on shut down - Exception 0xc0000005 occurred at location 0x638eaf70

Customer experienced crash on alarm process:

Exception 0xc0000005 occurred at location 0x638eaf70

It seems like the crash happened on shutdown.

As the system was shutting down AlmServerExit() seems to be executed before EventExit(). This causes AlmSLIDRTStructMap to be set to null before EventExit(). Introduced in v7.20 alarm changes.

The alarm shut down code has now been split to shut down the alarm processing tasks and clean up the alarm object allocations at appropriate times.

52695 - Long delays on startup or intermittent hang-ups in display client

Some customers might experience a delay of approximately 15 - 30 seconds on CitectSCADA startup, or intermittent hang-ups of the same duration at runtime when the display client becomes unresponsive. This issue has been resolved by adding the <generatePublisherEvidence> setting to files Citect32.exe.config and RuntimeManager.exe.config and moving the files from the Citect config folder to the Citect Bin folder.

52793 - Crash on IO Server on shutdown when using cicode function IODeviceInfo()

The IOServer crashed (created an exception report) on closing down if it was running for more than a few hours. On shutdown the array, NetToHnd, was freed and nulled correctly, but some cicode was still running. That cicode called IODeviceInfo("2",12) which then (eventually) called UnitNetworkToHnd() which used NetToHnd (which was NULL by then), and this caused a crash.

UnitNetworkToHnd() was changed to check that NetToHnd was not NULL before being used. If NetToHnd is NULL, UnitNetworkToHnd() will return (invalid unit) - the same as if an invalid unit parameter was passed by the cicode function. Note: There may be other shutdown problems if user cicode is not terminated before the system is shutdown.

52920 - Crash on shutdown (TrendServer)

When a heavily loaded TrendServer is shutdown before the clients are shutdown, it could crash. This was due to internal components being shutdown and cleaned

up in the wrong sequence. The internal shutdown sequence has been changed and the crash should no longer happen.

53019 - Crash on shutdown - powerlogic driver (update from PLC after shutdown)

VijeoCitect v7.20 spk3 (latest development version), using PLogic Driver v4.00.08.00001 *and an active device* crashes on system shutdown. Tag updates from the driver should not be processed during shutdown.

Tag Browsing

52713 - Importing tags using OFSOPC driver hangs, greys out and stops responding

No actual failure, but the program looked 'hung' while it was importing tags from OPC. The program now displays the number of seconds taken to load tag information in the progress dialog window. Example: "Loading... 24 Seconds"

Web Issues

52567 - Pages with names containing non-alphanumeric characters are not accessible via the &StartPage parameter in Web Client.

When using the &StartPage=PAGENAME URL parameter in the address bar of Internet Explorer, PAGENAME page might not be loaded as expected if the name contains non-alphanumeric characters such as underscore '_' or space ' '. This problem has been resolved.

52906 - Page switching functions do not resize the popup window size on WebClient

On WebClient, page switching functions did not resize popup window size properly after page switching when [Page]DynamicSizing parameter is 1, which caused distortion of the switched window. WebClient does not keep the original popup window size while switching page, all content is now correctly displayed after switching page by expanding the window size.

Remaining Modules

51037 - **Dynamic objects in some pages are not displayed**

In some instances, tags can get stuck waiting for initial data if local writes are enabled. This leads dynamic objects not being displayed in some pages. This issue has been resolved.

51062 - **Server processes stop unexpectedly earlier than allowed period on multi-process demo mode**

There was possibility to stop server processes on demo mode earlier than allowed running time due to miscommunication between client and server processes. Now the procedure has been fixed to have accurate information so that demo mode will work for expected time.

51491 - **Long delay opening Citect Explorer with no internet access.**

Whenever a signed managed assembly is loaded, Certificate Revocation List (CRL) checks are made. Systems that do not have a clear route to the Internet will then take a long time to fail with each CRL check. This has now been fixed by configuring the runtime to skip these checks.

51957 - **Crash (Exception 0xc0000005) in DifferenceCompare in Citect.Platform.PSI.Interfaces.dll.**

A crash (Exception 0xc0000005) in DifferenceCompare (Citect.Platform.PSI.Interfaces.dll) can occur under certain circumstances. This fix resolves the issue.

52667 - **Startup crash when using DRI with case mismatched IO server names**

A crash related to unusual (manually modified) project setup is fixed

52712 - **String tag value becomes blank on Non-English environments.**

There was possibility to make string tags blank on Non-English Windows or "Language for non-Unicode programs" (as known as System Default Locale) is not English on Version 7.20. As string tag value is persisted on runtime in Unicode, when runtime gets string value it converts entered value to Unicode and vice versa. However the runtime used different locales to convert them in some cases, which caused blank tag value. Now this converting always uses System Default Locale setting, string tag value is persisted as expected.

52824 - **Crash when shutting down Citect**

Crash on Citect shutdown (by using cicode Shutdown() function, by using the close [X] button, or by selecting shutdown from the Runtime Manager).

52858 - **Rotation of a group containing a vertical or horizontal line does not work properly**

When a group contains a vertical or horizontal line, the computation of the centre axis offset (pivot) of the group does not take the line into consideration. This has been fixed.

53729 - **Possible crash when using IODeviceControl**(Related references 51997)

When you try to use the IODeviceControl() CICODE command with an action type of 16, CITECT can crash if the Primary and any Standby Devices go offline.

53924 - **Speedlink doesn't support the creation of Time Stamped Digital Alarms**

Speedlink did not support the creation of Time Stamped Digital Alarms due to required fields not existing in the configuration file (DBF). This problem has now been resolved by adding the required fields to the DBF.

Enhancements

Scheduler

Scheduler is a component of the Report Server with an ActiveX control that enables you to link your system to a calendar. Scheduler can be used to optimize energy usage and to plan maintenance days whereby any equipment that is not required can be turned off at a time which is pre configured. Please refer to Scheduler Read Me and User Guide for further details.

Issues resolved in Service Pack 2

The following issues were resolved in Service Pack 2.

Project Development Utilities

51086 - Project Upgrade does not flag changes in project RDB field sizes.

Project Upgrade does not flag changes in project RDB field sizes. This issue has now been addressed.

Example Project

50837 - On page based on the Hardware template from the tab_style_1 library, high CPU usage may be observed if parameter [Alarm]HeadingFont is not specified

On page based on the Hardware template from the tab_style_1 library, high CPU usage may be observed if parameter [Alarm]HeadingFont is not specified. This problem is now fixed.

51282 - New parameters are added for customizing tab style templates

New parameters are added for customizing the tab style templates. They allow the system integrators to implement their own Cicode functions / configuration to override some aspects of the templates such the text fonts of the menu bar, contents of the default menus, context menus for the alarm pages and display value of the alarm fields.

51639 - CSV and TXT file types are incorrectly listed as supported formats for alarm export

CSV and TXT file types are incorrectly listed in the "Save As" dialog of the alarm export button launched from alarm pages based on the tab style template library. These options are now removed from the dialog.

Compiler

50977 - Compiler incorrectly allows an alarm area value to be less than 0 or greater than 255

Compiler raises a compile error if the value supplied to alarm area is out of the range of 0 to 255

CTAPI

51748 - CtApi: Scrolling to the last record does not the correct record count

In CtApi, the function ctFindScroll(hSearch, CT_FIND_SCROLL_LAST, ...,...) is expected to return the record count but is offset by 1.

52389 - A memory leak can occur when calling the ctTagRead function

Process Analyst

51106 - Unable to save to FileLocation_Local when using IProcessAnalyst.SaveToFile(Related references 50161)

Mode 0 (Filelocation_local) on SaveToFile does raise hardware errors and does not save the file as expected.

51667 - Loading pen properties for an automatically added pen (and other changes) in process analyst takes a long time to be displayed.

Loading pen properties for an automatically added pen (and other changes) in process analyst was taking 30 seconds to display, but should be displayed almost immediately.

A memory leak occurs when calling the ctTagRead function to read tags from I/O devices in offline state. The function behaves correctly with devices in online state. This issue has been fixed.

Alarms

50282 - Newly added Multi-Digital Alarm was incorrectly in the alarm state while it should be off

Previously, when a Multi-Digital Alarm of state 000 was added via server side online change, its state 000 alarm condition was incorrectly interpreted. The issue has now been resolved.

50755 - A multi-digital alarm record modified via server reload would not trigger an alarm when its current state was changed to be active

A multi-digital alarm record modified via server reload would not trigger an alarm when the alarm condition of its current state was changed from 0 to 1. This issue has now been resolved.

A new alarm would be raised against the current state if the trigger condition of the current state is changed from 0 to 1; if the change is from 1 to 0, the previously raised alarm would disappear if it was acknowledged; or the alarm would be displayed as off and unacknowledged if it was unacknowledged.

51415 - The alarm server loads the alarm save file inefficiently

The alarm server loaded the alarm save file in an inefficient manner. This issue has been resolved.

51416 - Hardware Alarms lose focus in 7.20

Hardware alarm display objects assigned by AlarmDsp() Cicode function kept refreshing themselves and losing their focuses, which prevented users from doing any interactive controls such as clicking on them. Since these objects are able to keep the focus now, it is possible to handle user inputs like clicking to

acknowledge the alarm. In addition, it is also possible to properly scroll alarm lists using AlarmSetInfo() Cicode function.

51544 - Changes made through AlarmSumSet are not replicated to the redundant alarm server

Changes made through AlarmSumSet are not replicated to the redundant alarm server. This problem is now fixed.

51552 - A new alarm is not captured if it has the same timestamp as when the alarm entered the off state

Timestamped analog and timestamped digital alarms were not capturing new alarms if they went to into the off state and then at exactly the same timestamp transitioned into an on state. This problem has has now been resolved.

51968 - A memory leak occurs when calling the cicode functions AlmTagsOpen and AlmTagsClose multiple times

The cicode function AlmTagsOpen opens an alarm browse session, and the function AlmTagsClose closes the browse session. Not all memory associated with the browse was being freed in the AlmTagsClose, resulting in a small memory leak each time these functions are called as a pair. This problem has now been fixed.

52404 - Alarm field format {High} displays 6 decimal point constantly in active alarm page

When using alarm display field {High} in the alarm display format, the High setpoint of the alarm will always be displayed with 6 decimal point. For example, when we set the High setpoint of an analog alarm to 100.52, in runtime when alarm is triggered, active alarm page will show the High setpoint value as 100.519997. Variable tag is REAL data type and format is ###.##. The alarm tag format is also set to ###.##. Please note that the same issue may apply to field {HighHigh}, {Low}, {LowLow}, etc. The secondary problem is that unset alarm threshold values should not appear as 3.4e38.

IO System

49730 - The compiler does not raise an error when two IODevices are configured with the same persistence file path

Runtime was crashing if two IODevices were configured with persistence enabled and the same persistence file path. This problem could occur when the two IODevices were on the same IO server or in two different IO servers that were running on the same PC. The compiler should have been identifying this incorrect configuration and raising a compile error to stop the project from being run until the configuration was corrected. This compile error has now been added.

50732 - IO server runtime crash if specifies the non-printable characters in the persistence path

IO server runtime crashes if non-printable characters exist in the persistence path. Example: [RUN]?DISK_PLC.cache (the '?' is invalid)
The crash still occurs, but the invalid path is now logged so the erroneous configuration setting can be quickly identified and rectified.

51119 - IO Server crash at start up when the [Data] directory is removed and IODevices use default persist path

If a folder does not exist at runtime it is a general practice to create the folder automatically - this wasn't being done for the data folder when the project used persisted devices. Missing folders should be created if they do not exist. An error will be logged if the folder cannot be created. Not having the persistence data folder is more serious than the alternative of having a wrongly named data path.

51794 - A memory leak occurs when calling the cicode function DllCallEx multiple times

The cicode function DllCallEx allocates memory for the arguments passed into it when it is called. This memory should have been freed once the dll call had completed, but it was not. This problem has now been fixed.

52718 - Pop up menu is slow. It can be clicked again, and a second menu is created.(Related references 50130)

The semaphore used by the CICODE DspPopupMenu() to prevent re-entry during menu operation was not implemented correctly. Specifically, the CICODE DspPopupMenu() function leverages CTUTIL!DspPopupMenu which creates a native thread running its own WndProc. On a busy system, this can take hundreds of milliseconds to launch/render the Menu, thus the need to properly protect against re-entry. This has now been fixed.

Cicode

50464 - Error 424 "Tag not found" at startup under heavy CPU load

This error code could be produced when a client timed out waiting for server responses to tag exists requests. A new error, 532 "Tag resolve timeout", is produced instead. The timeout is also now configurable via [Client]ResolveTimeout (in milliseconds, default 3000).

50963 - DevOpen causing crash when opening corrupt dbf

Using DevOpen to open a corrupt dbf causes the runtime to crash. A H/W alarm ("File not Citect format") should be generated instead of the runtime crashing.

51056 - Wrong cicode function may be called if the same function name is defined multiple times.

Wrong private cicode function may be called at runtime if the same function name is used multiple times across several cicode files with the same file name. For example, private function ABC in Cicode.ci located in one of the included projects

and another private function ABC in Cicode.ci located in the main project. This issue has been fixed.

51124 - Client process unhandled exception occurs when assigning string value in cicode

Directly assigning a long string in cicode under specific conditions will cause an exception to occur in the client process. No exception log is created; a window's popup informs that the process has stopped.

Conditions:

initial string declaration such as:

```
STRING sStr1 = "2011-01-18 17:44:32.908 +10:00 [TRACE] [DCB ] [IODev..
```

Cicode debugger attached.

Stack windows open in cicode editor.

51305 - v7.20 CSV_MessageBox in multi monitor environment displays a pop-up box on wrong monitor

CSV_MessageBox uses an ActiveX control written in Visual Basic 6.0.

Unfortunately VB6's "Screen" intrinsic property is not multi-monitor aware, so it returns the width and height of the Primary monitor, only. This have now been fixed.

51743 - SuperGenie opened by AssWin() displays #ass if SetLanguage() is called

Super Genies opened by AssWin() function lost its associations after calling SetLanguage() function. When the Super Genies were closed and reopened to display new pages on the designated locale, the associations were closed as well during page closing. This meant the way to refresh existing pages had to change. SetLanguage() function now use new way to refresh Super Genies without closing them.

52064 - DspInfo(hInfo, 9, 0) does not return the "Cluster" name, it is returned blank

A pointer to retrieve cluster names wasn't assigned properly by the function DspInfo(hInfo, 9, 0) in some cases. Since the code path which occurred this issue has been fixed, now the client process can retrieve proper cluster names using DspInfo() Cicode function.

52081 - PageProcessAnalystPens() function doesn't replace the pens but rather adds them

PageProcessAnalystPens() did not replace trend tags of existing pens on the given *.PAV file by user unlike Cicode Reference but rather adds new trend pens on the given pane, which made users impossible to utilize pre-defined *.PAV files in order to apply prepared pen styles. Since this function now replaces trend tags of the existing pens on *.pav file, it is possible to pre-define pen styles on *.PAV files. The other pens on the given pane will be removed but any other pens on other panes will be kept as are.

52215 - AssTag() with invalid cluster name causes exception

AssTag() Cicode function caused an unhandled exception when they were called with invalid cluster names. Since this exception is handled properly now, AssTag() function does not occur exceptions but returns proper return values when it is given invalid cluster names.

52572 - Cicode function ServerIsOnline() traps an error when the server is off-line

When the target server is off-line the Cicode function ServerIsOnline() generates a 'Citect hardware error' rather than returning the correct status. The Cicode function ServerIsOnline() should return 1 when the server is online and 0 when the server is off-line and not show a hardware error.

Display System

49251 - Parameter [Page]StartupMode does not take effect on monitors other than the primary monitor

Parameter [Page]StartupMode does not work well under Multiple Monitors setup. The startup mode only applies to the window on the primary monitor. Windows on other monitors starts up with the default mode. This problem is now fixed. The parameter applies to windows on multiple monitors (configured via parameter [MultiMonitors]Monitors) when Vijeo Citect starts.

Runtime Issues

49871 - Crash if COPY and RUN projects are very different.

While SCADA runtime is executing, if the Copy path in the CtEdit Section of the Citect.ini file in the Config folder, is changed to point to a completely different project the application malfunctions. This has been fixed by refusing to use a project in the Copy path if the project name is different.

50868 - Malformed data crashes a 7.20 server

Setting the "Port" field on a 7.10 project to same value as the "Port" field in a 7.20 project causes the old data format to be sent to a port expecting the new data format. In practise, the 7.10 "port" should be set to the same value as the 7.20 "Legacy Port".

51011 - Alarm server crashes eventually if it has a significant number of configured alarms

A single alarm server with around 150,000 configured alarms was not able to process some tasks in a timely manner. Those backlogged tasks eventually grew until the system was unable to allocate more space. This issue has been resolved.

51089 - Trend Server crashed due to Trend.Acq kernel task not allowing other kernel tasks (esp. CSAtoPSI.KernelTaskQueue) to run

A TrendServer with 50k+ trends was hogging the kernel processing. Processing all 50,000 trend tasks took over 40 seconds. This meant that other kernel tasks did not get a fair run and the number of tasks in the CSAtoPSI.KernelTaskQueue grew and grew. The trend acquisition task now runs for about 100 ms before allowing other kernel tasks to run. Trend acquisition continues from where it was left off on the next execution of the task. This means the statistics calculations had to change.

51430 - The title of the Cancel button in Japanese language might appear truncated

When using the Message Cicode function with the Mode parameter set to 1 in Japanese language, the title of the Cancel button appears truncated. This problem has been resolved.

52188 - Prompt message flickers/goes away/does not appear when trend popup is called through custom script

A Citect internal feature was over-writing the message a user wrote to the 'prompt' field with an error message and with "" (blank) when there was no error. Citect internal features should not (in general) display error messages in the 'prompt' field. The 'prompt' field is normally reserved for messages generated by the customers' projects. Error messages of this type should be displayed as Citect 'hardware' errors.

52230 - Use of global String variables in CiVBA code can cause Citect runtime to crash.

Use of global String variables in CiVBA code can cause Citect runtime to crash. This issue has now been fixed.

52348 - [CICODE] Subscription handle passed to TagSubscribe Callback function is truncated to 4 characters resulting in action on wrong tag.

If you use TagSubscribe's callback functionality, the subscription handle passed back is first converted to a string and then incorrectly truncated to the first four characters. Subscriptions whose handles are greater than 9999 will then be passed back an incorrect subscription handle when the event is fired. This has now been fixed.

Web Issues

51831 - The URL parameter StartPage=<page name> is not always working in WebClient

When the StartPage URL parameter is used in WebClient, the specified page might not be loaded, and the default page defined in citect.ini will be displayed instead. This issue has been resolved.

Remaining Modules

47659 - "Invalid Time Format" compile errors after upgrading v7.0 projects (Related references 42623)

Some period strings valid in French and German installs of Citect v7.0 could not be upgraded in v7.20. This would result in "Invalid Time Format" errors at compile time. This fix provides an addition to the Migration Tool, where all period strings contained in French and German v7.0 projects will be upgraded.

50293 - Accumulator does not work if all three counters are not defined

Accumulators only work if all three counters - number of triggered times, run time and totalized value - are present on the configuration, or they do not save accumulated data on variable tags. Now accumulators work with any possible combination of these three counters, it is possible to select one to three counters to use instead of configuring all counters on accumulator configuration.

50306 - Display Client V 7.20 start up is more than 3 times slower than in v7.10 using a multiple cluster project.

There was a performance problem with the Display Client in V 7.20 taking a very long time to start on a multi cluster project. Compared to V 7.10 it was taking 3 times more time for the Display Client to start. Performance optimizations have been done and the client start up time has been reduced substantially. Now it is slightly below the start up time in V 7.10 using the same project.

50435 - TZD field of the Timestamp present in the SYSLOG.DAT file is not showing the correct Local time offset from the UTC.

TZD field of the Timestamp present in the SYSLOG.DAT file was not showing the correct Local time offset from UTC when Windows was configured to observe Daylight Savings Time. This has now been corrected so that both SYSLOG.DAT and TRACELOG.DAT files show the same UTC offset.

50443 - IOServer process crashes during startup

A race condition was possible in the IOServer process that can manifest in a crash. This issue has been resolved.

50469 - INI entries surrounded with quotes are being misinterpreted

INI entry reading has been reverted to original behaviour

50545 - Corrected missing string substitution fields discovered in several of the Localized versions.

A handful of substitution string fields were discovered missing in the localization of Chinese, German, Japanese, Spanish and Russian. These have been put back in order.

50608 - Compile Error - Operand Expected and Close Bracket Expected with Blank Genie Substitution and non-default display value

When a genie parameter is not set (left empty) for a numeric object with a non-default format (e.g. "###"), an expression code of "():###" (TXT_STR) is generated and saved in the page .CTG file which then fails to compile. Compile Error:

Field: TXT_STR

Table: PGDynObj.dbf

Error: Operand Expected

Context: Line [1]:({}):###

What should happen is the same thing if a numeric object with an empty numeric expression field is added to a page - ####.# is displayed

Note:

The problem was in the Citect Graphics Builder (it was saving the wrong information). An existing problem of this nature can't be 'fixed' automatically, the user will have to use the fixed Citect Graphics Builder to edit the page and re-save it to make it save the right thing. After doing that the compile will succeed.

50676 - IDeviceInfo does not reflect IO Device State changes made using IDeviceControl

In configuration with two redundant instances of the same I/O device configured on the same I/O server, the IDeviceInfo call on the client returns a value which is not consistent with the current I/O device state on the I/O server. After the code disables the unit, the code now initiates a heartbeat which will then update the server information.

50710 - Project dbf add-in crashes when Master.dbf contains two or more projects with the same title.

When Master.dbf contains two or more projects with the same title (as a result of mucking around with EnvironmentManager, etc.) the project dbf add-in crashes.

Example Master.dbf:

JRS_1Rollup Hampton Conveyor Control System

JRS_2Nitric

JRS_3Include

JRS_4Legacy CitectSCADA generic features/templates

JRS_5Template CitectSCADA generic features/templates

50721 - Corrected missing string substitution fields discovered in the Chinese version.

This is a duplicate of bug 50545. A handful of substitution string fields were discovered missing in the localization of Chinese. These have been put back in order.

50809 - Bug 50809 - Citect.ini parameter [Kernel]WinShutdown should be online changeable

[Kernel]WinShutdown parameter was not online changeable, which made users impossible to change the policy to Windows session ending after startup of their projects. Since it is online changeable now, it is possible to change the way to respond to shutdown attempts using Computer Setup Editor after startup of user projects.

50892 - "Cannot Create Task <IO Server name>" at startup

Defining multiple primary IO devices with the same name would result in the error "Cannot Create Task <IO Server name>" at startup. This situation is now detected at compile time, with an error "Same primary IO device name used with two different network numbers".

50961 - The DisableConnection parameter in .INI file disables redundancy connections.

Users can set DisableConnection = 1 to prevent the display client from connecting to a particular server. However, if the server has redundancy configured, communications between the primary and standby servers are broken. This issued has been fixed.

50975 - Invalid error message, "Class does not support Automation or does not support expected interface".

When changing back and forth between pages that contained ActiveX object and when CiVBA code was being used, an invalid error message was logged. An internal variable was not being cleared correctly when the page was closed. This resulted in the invalid error message being logged.

51123 - Re-purpose the 'Citect 0' statistics to report on the cycle time and execution time of the page animation routine (Related references 48149)

Previously, the 'Citect 0' statistics recorded the time between page loads. i.e. The operator loads 'Page 1' and then 90 minutes later loads 'page 2'. This statistic was not very useful so it has been removed and replaced with two new statistics.

Page Table Stats

PageAnm 0 = page animation redraw time (Window 0)

PageLoad 0 = page load time (Window 0)

The first Citect window created (e.g. containing a main Citect page) will have the number 0, the next Citect window created (e.g. containing a popup page) will be 1, etc.

(Cycle) Min Max Avg CPU (Exec) Min Max Avg Count PageAnm 0 0.020 0.355
0.177 02 0.001 0.022 0.003 1157 PageLoad 0 0.283 0.283 0.283 00 0.283 0.283
0.283 1

These example statistics show that one page was loaded in the main window and that it took 0.283 seconds to load the page elements, subscribe the tags and display the information.

The stats also show that it is taking 0.003 seconds on average to animate the page each animation cycle and that the animation cycles are occurring every 0.177 seconds on average.

51125 - Crash when using latest version of PlusADOCon with CSV_DB_* functions(Related references 50845)

Customers who had updated to a later version of PlusADOCon.dll (1.17.0.0+) were experiencing a crash when using the CSV_DB_* functions. This was because the interface to the DLL had changed. This issue has now been fixed.

51438 - DRI does not filter out memory-mode IO Devices

This bug can result in DNPR or other driver errors at startup, when both memory and non-memory-mode IO Devices are on the same channel.

51505 - Crash when performing kernel dump on TrendServer in CSAtoPSI.Subs list (length 50k+)

When performing a kernel dump on TrendServer with 50k+ subscriptions, the kernel dump failed in the middle of outputting the CSAtoPSI.Subs list. The length of the tables output to the kernel.dat files should be able to be regulated and should not result in excessive file size or CPU use. The new Citect.ini parameter, [Debug]MaxTableOutputLength (Default=200, Max=32000, -1=unlimited), will limit the length of tables when they are output to a kernel.dat file.

51585 - Carriage return and Line feed do not display properly in 7.20

Control characters (ASCII code less than 32) in string tags were replaced with space characters during tag read procedure of I/O server, which made it impossible to store control characters such as Carriage Return and Line Feed characters in string tags. Since tag read procedure do not modify control characters any more, it is possible to store and display control characters in string tags properly.

51671 - Client process crashed when calling InfoForm on a display tag with cluster name as prefix

A pointer wasn't initialized at declaration or by the function InfoGetClusterTag() in some cases. The function, InfoGetClusterTag() was changed to use arrays rather than addresses of pointers to null terminated char strings. The client process should not crash when calling InfoForm on a display tag with cluster name as prefix (fully qualified name).

51753 - The processing of a tag write callback on different thread to the Kernel Task main thread may result in an Unhandled ArgumentOutOfRangeException in Subscriptions List after startup.

The processing of a tag write callback on different thread to the Kernel Task main thread may result in an Unhandled ArgumentOutOfRangeException in Subscriptions List after startup. This issue has now been fixed.

51881 - Stand-by alarm server fails to pick up after primary goes down

When the primary alarm server goes down, the stand-by suffers a keep alive timeout and generates a MSG_CLOSE event. At this stage the standby should set itself to primary.
In previous versions this was done on MSG_ERROR.

52131 - Graphics Builder Automation Interface broken by 7.20 service pack 1

Graphics Builder Automation Interface broken by 7.20 service pack 1. Specifically, seven new members were added to IGraphicsBuilder interface in an improper

way, breaking backwards binary compatibility. That is with anything that uses early binding. A more robust implementation is now in place, with the new members added to the end of the existing interface.

52193 - For Category and Priority based alarm queries, the Alarm Server does not check whether there is a redundant peer available before sending the tran message.

For Category and Priority based alarm queries, the Alarm Server does not check whether there is a redundant peer available before sending the tran message, and the tran error logging produces a garbled trace. This issue has now been fixed.

52227 - Cicode using TaskKill on active Cicode could cause a crash

Cicode using TaskKill could be terminating Cicode which is currently active but pre-empted to run the TaskKill Cicode. In this situation, when the Cicode running TaskKill completes and the Cicode execution environment attempts to re-instate the previous Cicode, the execution environment will crash. This has been fixed.

52522 - Cannot remove or change saved credentials saved during modes 5 or 6 for [Client]AutoLoginMode.

When certain [Client]AutoLoginMode types are used, the details of a successful login are saved. When [Client]AutoLoginMode is changed to one which requires you to login via the login dialog, these previously saved credentials were not being deleted. This has now been fixed.

52719 - Accumulator startup crash on multi-cluster system (Related references 51389)

This problem has now been resolved.

Issues resolved in Service Pack 1

The following issues were resolved in Service Pack 1.

Installation

42873 - **Service pack patches don't overwrite newer DLLs.**

Applying a service pack to an installation containing a hotfix newer than the service pack would not overwrite the hotfix files. This has now been fixed.

43936 - **Project status is not being set to "Uncompiled" after Service Pack Install.**

Project status is not being set to "Uncompiled" after Service Pack Install. This issue has now been rectified.

Project Development Utilities

48864 - **Graphics Builder runtime error when object links are missing on the page**

Graphics Builder generated a runtime error when it opens a page with missing object links and a user tries to cancel the process. It has been fixed. Link updates cancellation does not cause the Graphics Builder error.

49585 - **Objects on top of a Gradient Filled rectangle disappear from Graphics Builder**

Graphics Builder display error has been fixed. Gradient filled objects used to disappear when another window or a dialog overlapped them.

50202 - **Tag import fails for OPC tags with spaces in branch.**(Related references 46491, 47730)

Tag import is failing for OPC tags with spaces anywhere in the branch name. This has now been fixed.

50204 - **Only 7 of the 8 characters in EngUnits field are displayed at runtime**(Related references 24451)

The compiler was failing to allocate enough space for all 8 characters of the engineering units field. This has now been resolved.

50228 - **Cannot display any object larger than the computer's display resolution**(Related references 47067, 47557)

Graphics Builder crops any symbol or genie that is larger than the current display resolution. This issue has been resolved.

50278 - **Moving a number or text object erases a gradient filled rectangle object underneath in the Graphic Builder**

When moving a number or text object on top of a gradient fill rectangle object, the rectangle object appears erasing in the Graphic Builder. This problem has been fixed.

50454 - **Upgrading a project causes Graphics Builder to crash**

A substitution string was missing in two strings of the German version. This causes Graphics Builder to crash when upgrading an old project. This issue has been resolved.

50485 - **Symbol set 'Array expression' field is not saved properly**

The symbol set 'Array expression' field was not being saved properly. It should be saved properly.

50744 - **Web Deployment creation fails using a non-default INI file**(Related references 49547)

Web Deployment creation fails using a non-default INI file. This has been corrected.

50745 - **Opening a genie page with an ActiveX control may produce an error**(Related references 50315)

Opening a genie with an ActiveX control may result in a popup with the following message:

"The ActiveX control is conflicting with Citect and may produce unreliable results. It is strongly recommended that you remove this ActiveX control from the page, save the page and then close and restart Citect Explorer to avoid further problems."

This issue has been resolved.

Example Project

49412 - **Phantom Tab menu toolbar is displayed on windows that are beyond the limit of 9**

Up to nine (9) instances of the tab menu toolbar (one on each window) can be displayed on screen at the same time. On the windows that are beyond this limit, phantom items would be displayed on the tab menu toolbar. The limitation is now handled gracefully such that no items will be displayed on windows that are beyond the limit.

Compiler

50738 - **Compiler crash compiling large CICODE fragments within Reports**

When Reports containing\using large amounts (>32KB) of CICODE are compiled, the Compiler would crash. This has now been fixed.

50836 - **In remapping, "<UNIT>|<ADDRESS>|" gives compile error "Tag Expected"**

"<UNIT>|<ADDRESS>|" syntax has been re-enabled for the remapping functionality

Alarms

40919 - **Writing to a local variable configured as an integer array takes too long.**

Writing to a local variable configured as an integer array takes 10 times longer than to a local variable configured as a string array, if that local variable is attached to the alarm description field in the digital alarm form. This issue has been fixed.

42023 - **Setting the thresholds property of time-stamped analog alarms would not update the threshold value in standby alarm server.**

When an alarm threshold property was set, the threshold value on the primary alarm server was updated, but the value of the same threshold on the standby alarm server was not updated. This issue has now been resolved.

44329 - **AlmTagsGetField() function could not return the correct value of "GROUP" (Suppression Group) and "PRIORITY" (Suppression Level) fields.**

The following issues only affect Multi-Digital Alarms.

AlmTagsGetField() function could not return the correct value of "GROUP" (Suppression Group) and "PRIORITY" (Suppression Level) fields. The values in the configuration fields "Suppression" and "Level" were not correctly used by the runtime system. This issue has now been resolved. In this release, a new keyword "LEVEL" has been used to represent suppression level instead of "PRIORITY", because "PRIORITY" has been used to represent category priority. The same keyword "GROUP" is used to represent suppression group.

50091 - **Alarm servers startup is significantly slower in v7.20**

To avoid on-the-fly alarm categories validation, the alarm categories' loading was changed from demand-driven to at-startup. This change reduces system load at runtime but it causes unwanted delay for projects with lots of alarm categories, so the loading is changed back to demand-driven after improving the run-time validation code.

50147 - **A Multi-Digital alarm will trigger continuously when in an off state if state 000 is configured to trigger the alarm**

When a Multi-Digital alarm was in a state that has been configured as an off state, the state was being incorrectly set to match that of state 000 (all three variable tags with value 0). So if state 000 was configured to trigger the alarm, the alarm was then triggering every alarm scan. This problem has now been resolved.

50232 - **The millisecond component of alarms is always formatted to be zero(Related references 49958)**

v7.10 SP3 introduced internally generated millisecond-resolution timestamps for digital and analog alarms, however this was not correctly formatted. This results in all alarms displaying a timestamp of .000. For PowerLogic SCADA customers this was also resulting in some event log entries being overwritten. This has now been fixed.

50720 - **Alarm server crashing when an alarm becomes active**

Alarm server may crash when the alarm area is not in the range 0 - 255, this has been fixed

Trends

50224 - **When SPC Trend Plot is printed the span may not match the displayed span**(Related references 43911)

SPC Trend Plot when printed shows the same span as the on-screen span even when the sub-group size is not 1

50494 - **Trends setup to roll over monthly and yearly do not work in 7.20**

Monthly trends would fail to reload if the previous month did not have 31 days. Similarly, yearly trends would fail to reload if the previous year did not have 366 days.

IO System

47983 - **When using more than 256 modnet devices get "Channel Offline Cannot talk" for all channels** (Related references 45339, 38535, 40418, 46257, 48669)

When a test project is with 512 channels configured, then the error "More than 250 Ports defined" does NOT appear. If the number of channels is increased to 513 or more, then the error "More than 512 Ports defined" appears.
Note: The Kernel Tasks was set to 32767 and Kernel Queues was set to 8000. And if not then 'Kernel tasks exceeded' and 'kernel Queues exceeded' errors show up during starting, and the IOserver never starts.

The test project consists of 512 channels of which 4 channels are connected to Real PLC and the rest are connected to a MODBUS Simulator running in a remote machine. When this test project is run, NONE of the channels come ONLINE, and an error "Channel Offline Cannot talk" is logged in Syslog for all the channels.

If the number of Channels is reduced to 256, then all of the Channels and Units come ONLINE. If the number is increased to 257, then one of the channel goes OFFLINE and the rest come ONLINE. If it is further increased to 258, then two of them go OFFLINE and the rest come ONLINE. In summary, based on the test results, only 256 channels are being handled properly by the MODNET driver. The driver was changed to allow for more than 250 devices, but the SCADA program also needed to be changed.
The SCADA program was combining the board number and the channel number into one 16 bit integer (8 bits for each).
The fix is to use only the top 4 bits for the board number (max 16) and the bottom 12 bits for the channel number (max 4096).

Both the Modnet driver change and the SCADA change must be applied to allow the use of more than 256 modnet devices.

49977 - QualityToStr(q,3) is showing the "Device comm. Loss" instead of "Waiting For Initial Data"

The string representation issue has now been resolved.

50176 - Alarm server CPU usage is 20% higher than it should be

The timer responsible for timing out unresponsive client subscriptions was taking up more CPU usage than it should have been. This was causing higher than expected CPU usage, especially on the alarm server. This problem has now been fixed.

50201 - IODevice cache field has no effect (Related references 49676)

Setting Cache TRUE/FALSE dropdown on the IODevices form has no effect on whether reads are cached or not, only the Cache Time is used. This has been fixed - setting Cache to FALSE will now disable caching regardless of the configured Cache Time

50213 - Mismatched protocols, ports and/or memory modes between Primary and Standby devices should produce compile-time errors.
(Related references 46861, 34122)

Mismatched protocols, ports and/or memory modes between Primary and Standby devices should produce compile-time errors. This has now been corrected.

50447 - Trends and Alarms are not updated when running an IO server containing multiple DRI based drivers

Only one driver was able to register to update trends and alarms through the DRI. This was causing alarms and trends to only update on one of the drivers in the IO server. This problem has now been fixed.

50766 - When many devices are configured, losing a connection leads to a non-responsive I/O server.

When the network disconnected for an I/O server, each device going offline caused an event which would send a heartbeat message. As the number of devices increased, the performance hit of this increased exponentially eventually leading to a system that does not respond for minutes. Heartbeat messages are now rate limited to prevent this scenario.

51214 - Alarm and Trend values can have incorrect time stamp for TagReadEx calls.

Alarm and Trend values can have incorrect time stamp for TagReadEx calls. This issue has now been rectified.

Cicode

46714 - LogoutIdle Cicode function is inaccurate.

LogoutIdle Cicode function is inaccurate. This issue has been resolved.

49542 - 0 was returned when calling ServerGetProperty using RDBMemTime on a Trend server with no trend tags defined.

0 was returned when calling ServerGetProperty using RDBMemTime on a Trend server with no trend tags defined.

This issue has been resolved. RDBMemTime on a Trend server now returns the time-stamp of _Trend.RDB that was loaded into the memory.

49835 - The "I/O Device Statistics" form does not display IO devices that have a "Number" over 4095

The "I/O Device Statistics" form does not display IO devices that have a "Number" over 4095. This issue has been resolved.

50200 - Cicode QueLength() returns incorrect value(Related references 49571, 48907)

QueLength() returned a 16 bit signed integer, rather than a 32 bit integer. This presents a real problem for queues longer than 32767 -> queue length may be reported as a negative number, or an incorrect positive number (eg for queues longer than 65534).

The issue has now been resolved.

50547 - Only one trend pen added when using pagetrend()

When illegally calling the blocking PageTrend cicode function on a foreground cicode task, the first pen was still added even though the cicode was aborted. This has been rectified, and now the aborted cicode will not result in any pens being added (and a Hardware Alarm will be generated). This blocking function should only be called on a background cicode task.

50910 - DllCallEx truncating LONG return type to SHORT causing incorrect data to be returned from the DLL call.

DllCallEx truncating LONG return type to SHORT caused incorrect data to be returned from the DLL call. This issue has now been rectified.

Display System

49893 - Static square object configured with gradient fill disappears at runtime

A static object configured with gradient fill on the tab template will disappear at runtime after the page has been resaved. This problem has now been fixed.

49994 - Fullscreen mode [Animator]FullScreen = 1 or 2 does not work when DynamicSizing is turned off

Fullscreen mode [Animator]FullScreen = 1 or 2 does not work when DynamicSizing is turned off. This problem is now fixed.

50007 - Under the parameter setting of [Page]DynamicSizing = 0, scrollbars may not appear / hide properly when switching between pages of different sizes

Under the parameter setting of [Page]DynamicSizing = 0 (which turns off dynamic sizing / scaling of page contents), when the user switches between page of different solutions, scrollbars may not show or hide as expected. This problem is now fixed. By default, scrollbars will appear if the page content does not fit the window and vice versa. The scrollbars can be permanently turned off by setting Citect.ini parameters [Page]AllowHScrollbar and [Page]AllowVScrollbar to 0.

50190 - Number or text object won't rotate within a group that has the rotation movement property set

When a number or text object is placed within a group and there is a value set for the angle within the group's rotation movement property page, the number or the text object will not rotate with the group in runtime. This problem has been fixed.

50203 - Button shows a stripe when the cursor is hovered over another graphic(Related references 44769)

XP-style buttons with custom fill colours may be rendered with a stripe when the cursor is hovered over another graphic object. This issue has been resolved.

50223 - Keyboard Commands (ENTER) does not register following a pop-up box / menu (Related references 42726)

When a popup menu is dismissed/cancelled by clicking away from it, the Enter key no longer works properly. Specifically, you need to either press the Escape key, or click something that captures keyboard focus. There were also issues when used by touch screen systems. These problems have now been fixed.

Runtime Issues

42814 - [Code]WriteLocal=0 does not work for page or user subscriptions(Related references 42397)

Subscriptions automatically created for pages, as well as manually created by calling the TagSubscribe cicode function, were not honouring the [Code]WriteLocal parameter. Instead they were being forced to update the local cache on any write.

Tag Browsing

50214 - Tag import from OFS was taking a long time if there were many tags.(Related references 48890)

Tag import from OFS was taking a long time if there were many tags. This issue has been fixed.

50219 - Tag import fails after recreating a deleted project (Related references 44643)

If Tag Import is used to import tags into a project and that project is subsequently deleted and recreated, further attempts to import will result in an invalid template error. This error was caused by the template path being saved to the citect.ini file and not recreated with the new project. The issue has been resolved, if a template file does not exist the normal default is used.

Web Issues

48928 - **Web Client not updating components deployed via ACTIVEX.ZIP and/or MISC.ZIP**

When deploying new components to Web Clients via ACTIVEX.ZIP and/or MISC.ZIP, existing versions of these were not being updated. This has now been corrected.

50883 - **The URL parameter StartPage=<page name> is not working in WebClient.**

When the StartPage URL parameter is used in WebClient (eg. http://localhost/Citect/scada.htm?DeployDir=Example&ProjectName=example&ClientCAB=720/CitectSCADAWebClient_7_20_0_598.cab&AccessMode=RW&StartPage=LoopPage), the specified page is not displayed by the browser. This issue has been resolved. Note: the parameter name is case sensitive.

Remaining Modules

50062 - **A server may shutdown with a Software Protection Failure as a result of tran write failures**

When running some large projects, the following message was noticed in the IoServer Syslog file: TranWrite(0, 246): State != TRAN_STATE_ONLINE, state=0 This was due to an incorrect connection state transition on the connection established between the IoServer and the client. Eventually this error will cause the server to shutdown with the following error "Software Protection Failure. Cannot connect to Client.". This problem is fixed.

50105 - **CodeTrace causes a crash for some built-in CiCode functions**

If CodeTrace is active, some built-in CiCode functions may cause a crash by using values as pointers. This issue has been resolved.

50210 - **CtOPc32.exe crash when writing to tags or disconnecting**(Related references 48633)

Under heavy loads, or when deleting groups on client disconnection, Citect's OPC server would occasionally crash. This has now been fixed.

50211 - **Externally defined CiVBA functions are not executed in some circumstances**(Related references 48070)

After installing Hotfix HF710SP246889 to enable the CiVBA code to compile, some CiVBA functions that call other CiVBA functions in another BAS file may not run. This has been addressed by changes in our code to overcome a limitation in the 3rd party VBA code.

A hardware error has also been provided to provided notification if the situation happens again.

50217 - Windows cannot shutdown while Citect is running despite [Kernel]WinShutdown=1(Related references 48866)

Windows shutdown sequence was blocked by Runtime Manager window while Citect is running despite [Kernel]WinShutdown=1. Runtime Manager has been fixed so that it will conditionally respond to WM_QUERYENDSESSION based on [Kernel]WinShutdown. The issue has now been resolved.

50218 - CSV_MessageBox() does not display the correct text for user-defined buttons on Vista(Related references 46354, 50746)

CSV_MessageBox() does not display the correct text for user-defined buttons on Vista and Windows Server 2008 operating systems. This was caused by change in sequence of child windows (controls) in the operating system MessageBox. The fix applies text on buttons irrespective of their sequence in the parent window.

50220 - Advanced Filters will not filter Alarm Summary by time and date(Related references 38852)

Advanced Alarm Filter Does Not Work on Alarm Summary List.

When filtering Alarm Summaries, the current Alarm's data was being used instead of the historical data recorded within each such Alarm. The issue has now been resolved.

50225 - CiTextBox doesn't allow multiline(Related references 45495)

CiTextBox allows multiline

50226 - Foreground SQL is prevented by default. A hardware alarm is generated if an SQL Cicode function is invoked in foreground.(Related references 46692)

Foreground SQL is has always been problematic, but can also cause crashes in SCADA. By default, the user SQL Cicode calls are no longer allowed in foreground Cicode.

50227 - Runtime scales the expression for fill animations incorrectly(Related references 46736)

If a complex expression is defined for a fill animation, the runtime produces incorrect results. This issue has been resolved.

50231 - Windows Error Reporting prevents process restart after crash(Related references 49810)

A dialog asking to send crash information to Microsoft can appear after the runtime crashes, in which case the process will not restart. Note that [CrashHandler]NoEmail=1 must be set to prevent the analogous Citect dialog and ensure the process restarts.

50524 - Reports are not executed if a Standby Report is defined in the project.

If a Standby Report Server is defined in a CITECT project, neither of the Report Servers would run reports. This has now been corrected.

50743 - Retain column widths on refresh in DatabaseExchange ActiveX.
(Related references 49776)

We did not implement any code to retain changes to column widths made by the user at runtime, so that when a table refreshes, the widths reset. This has now been fixed.

50746 - CSV_MessageBox() does not display the correct text for user-defined buttons on Vista(Related references 46354)

CSV_MessageBox() does not display the correct text for user-defined buttons on Vista and Windows Server 2008 operating systems. This was caused by change in sequence of child windows (controls) in the operating system MessageBox. The fix applies text on buttons irrespective of their sequence in the parent window.

50780 - The SCADA system should record the non-default SCADA parameter settings(Related references 50621)

A new file, "Params.dat" has been added to the log folder that contains a historical record of the non-default SCADA parameters.

Example:

[Params.dat]

2010/12/01-14:42:07.847 [Code] Threads= 128 Default= 64 2010/12/01-14:42:07.852 [Code] TimeSlicePage= 5000 Default= 500 ...

Also, the kernel dump has been extended to include a complete list of current SCADA parameter settings.

Example

CiCode: DumpKernel(0x0100, "Parameters")

[kernel.dat]

Citect Diagnostics Wed Dec 01 2010 02:43:53 PM

=====

-----Parameters

[ALARM.CLUSTER1.ALARMSERVER1] CLUSTERS= Cluster1

[ALARM.CLUSTER1.ALARMSERVER1] CPU= 0

[ALARM] ALARMDISABLE= 0

...

50983 - Tag name is not printed in the log message if a Super Genie substitution contains type casting

When a substitution for Super Genies contains both data type and association in the form of ?<Data Type> <Association>?, the actual variable tag name doesn't appear in log messages when the Super Genie is displayed or used. This problem has been rectified.