Citect

"real-time intelligence"

CitectSCADA 6.10

Release Notes for Service Pack A

This document describes the modifications and fixes made in CitectSCADA version 6.10 Service Pack A as well as providing installation information.

Important: All projects *must* be upgraded and recompiled after installing this Service Pack. Failure to do so will result in conflicting database size messages. To force an upgrade, edit the Citect.ini file and set [CTEDIT] UPGRADE=1. Ensure that the **Incremental Compil**e menu option (in Project Editor Tools Options) is not checked, or set [CTEDIT] INCREMENTALCOMPILE=0.

Note: If you already have hot fixes installed on version 6.10, you should review this document carefully to ensure that the hot fixes you have installed are included in this Service Pack. In the event of a discrepancy contact your regional support office for assistance.

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

This service pack applies to four (4) of the products shipped with CitectSCADA version 6.10:

- a) CitectSCADA
- b) CitectSCADA Web Server
- c) CitectSCADA Pocket Server
- d) CitectSCADA Internet Display Client

Separate service pack installers have been created for each of these products, allowing you to choose which products you wish to upgrade to Service Pack A, depending on your requirements.

Table of Contents

Service Pack Installation

Upgrading CitectSCADA 6.10 to Service Pack A

The procedure for installing Service Pack A for CitectSCADA depends on whether you are an existing user of CitectSCADA version 6.10 or a new user.

Existing CitectSCADA version 6.10 Users

1. Run CitectSCADA_6.10_SPKA.exe.

2. Open Citect Explorer, wait until upgrade has completed, and then close Explorer.

New CitectSCADA 6.10 Users

1. Install CitectSCADA 6.10.

2. Open Citect Explorer for the first time and then close.

3. Run CitectSCADA_6.10_SPKA.exe.

4. Open Citect Explorer, wait until the upgrade has completed, and then close Explorer.

Upgrading CitectSCADA 6.10 Web Server to Service Pack A

Installing Service Pack A for CitectSCADA Web Server requires that you install Service Pack A for CitectSCADA as well, or the web client will not work correctly. You should perform installation as per one of the above two CitectSCADA scenarios, then:

1. On your webserver(s) (machines running IIS), run CitectSCADA_6.10_SPKA_WebServer.exe. This will install an updated CAB file: CitectSCADAWebClient_6_10_510.cab, which will become available to all 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 'CitectSCADA_Cab_Install' and click 'Remove'. If this item is not listed in ARP, you should delete the *%windir%\system32\citect\webclient\610* directory. (*NB: %windir% indicates the default windows installation directory.)*

   c. In the CitectSCADAWeb Deployment Configuration (in Internet Explorer):

      i. Select 'CitectSCADAWebClient_6_10_510.cab' from the *Client Control* drop down menu.

      ii. Save the deployment by selecting the action to save deployment.

Upgrading CitectSCADA 6.10 Pocket Server to Service Pack A

Installing Service Pack A for CitectSCADA Pocket Server requires that you install Service Pack A for CitectSCADA as well, or the pocket client will not work correctly. You should perform installation as per one of the above two CitectSCADA scenarios, then:

1. On your pocketserver(s) (machines running IIS), run CitectSCADA_6.10_SPKA_PocketServer.exe.

Upgrading CitectSCADA 6.10 IDC to Service Pack A

Installing Service Pack A for CitectSCADA IDC requires that you install Service Pack A for CitectSCADA on your servers, or the IDC will not work correctly. You should perform installation as per one of the above two CitectSCADA scenarios, then:

1. On each of your IDC machines, run CitectSCADA_6.10_SPKA_IDC.exe.

Service Pack Uninstall

The procedure for removing (rolling back) Service Pack A depends on which Operating System you are running.

Microsoft Windows XP SP2 or Microsoft Windows Server 2003

The following steps apply to all Follow these steps for uninstallation of an

1. Open ARP (Add or Remove Programs) by choosing Start   Settings   Control Panel   Add or Remove Programs.

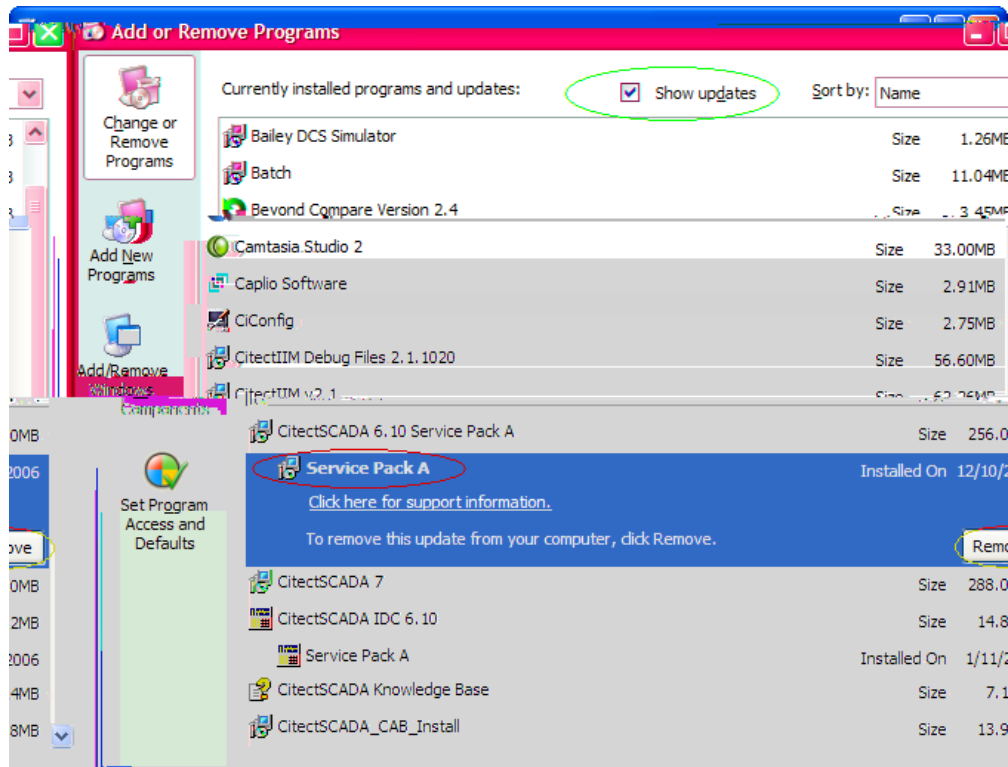2. Make sure the 'Show Updates' checkbox is ticked as follows:

Figure 1: Service Pack A 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. Once the removal is complete, highlight the parent product's entry (in this case 'CitectSCADA 6.10 Service Pack A') and click the underlined link 'Click here for support information'. The following popup will appear:
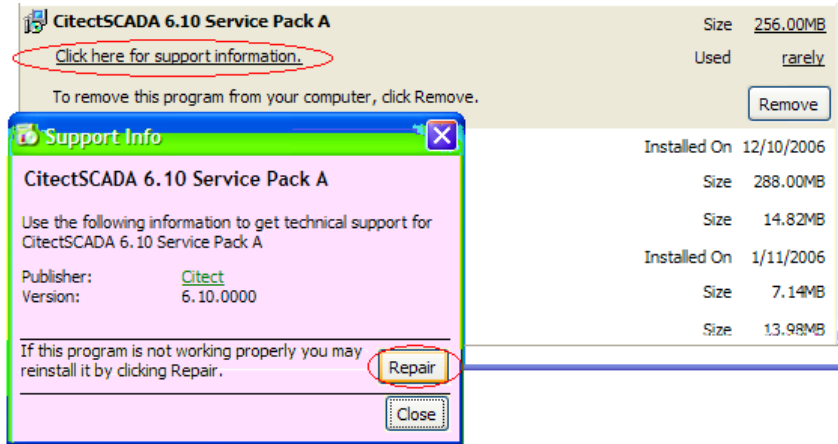
Figure 2: Support Info dialog in Windows XP SP2 and Windows 2003

6. Click 'Repair'.

7. After the repair process has finished, hit F5 to refresh the contents of the ARP window. You should now see the product name has returned to the original pre-service pack name (in this case, 'CitectSCADA 6.10').

Microsoft Windows XP SP1 or earlier or Microsoft Windows 2000

The 'Show Updates' feature of ARP (as shown in Figure 1) is not available under these operating systems, so an uninstall of the service pack must be performed manually as follows:

1. Open a command prompt e.g. Start   Run   "cmd"   [enter].

2. For each product you wish to uninstall:

   a. Copy the uninstall command from Table 1 and paste into the command prompt, and press <enter>.

Table 1: Service Pack A manual uninstall commands

Product	Uninstall Command
CitectSCADA 6.10 Service Pack A	msiexec /uninstall {9D3D5DED-7070-45D5-88E1-74CDFFDFD23D} /package {B8E39DB8-1F17-4875-8E76-65D42E22EF3E} /qb
CitectSCADA Web Server 6.10 Service Pack A	msiexec /uninstall {1C520FF9-9176-496E-924C-59ABD51171E9} /package {B7A02776-729C-4594-AF91-EF18F349E3BE} /qb
CitectSCADA Pocket Server 6.10 Service Pack A	msiexec /uninstall {4F3EB521-255C-46D2-9EDC-EEFE05BDF818} /package {B9ED286A-8705-4AAA-9CA7-B837886F65E2} /qb
CitectSCADA IDC 6.10 Service Pack A	msiexec /uninstall {8312BC18-8017-40E9-85DE-5534401C3E5C} /package {F45650E4-30B7-4E18-866A-184CAA9B9C8B} /qb
Nexa Monitoring 6.10 Service Pack A	msiexec /uninstall {DE40E6F4-67C0-4123-BFF9-FAC1FD10F5F4} /package {B8E39DB8-1F17-4875-8E76-65D42E22EF3E} /qb
Nexa Monitoring Web Server 6.10 Service Pack A	msiexec /uninstall {2800EC5A-2D0B-4A72-9FD7-C2DA7A495202} /package {B7A02776-729C-4594-AF91-EF18F349E3BE} /qb
Nexa Monitoring Pocket Server 6.10 Service Pack A	msiexec /uninstall {1CF0464C-8A59-4370-A635-0B8210FCDF4C} /package {B9ED286A-8705-4AAA-9CA7-B837886F65E2} /qb
VijeoCitect 6.10 Service Pack A	msiexec /uninstall {27020CFF-4C77-47E5-901C-2A102ED50226}

	/package {B8E39DB8-1F17-4875-8E76-65D42E22EF3E} /qb
VijeoCitect Web Server 6.10 Service Pack A	msiexec /uninstall {B366EC6D-C2D0-428F-869F-BAD41104573A} /package {B7A02776-729C-4594-AF91-EF18F349E3BE} /qb

b. Open ARP (Add/Remove Programs) by choosing Start Settings Control Panel Add/Remove Programs (or press F5 to refresh if already open).

c. You should now see the product name has returned to the original pre-service pack name.

d. Highlight the parent product's entry (in Figure 3, this is 'CitectSCADA 6.10') and click the underlined link 'Click here for support information'. The following popup will appear:
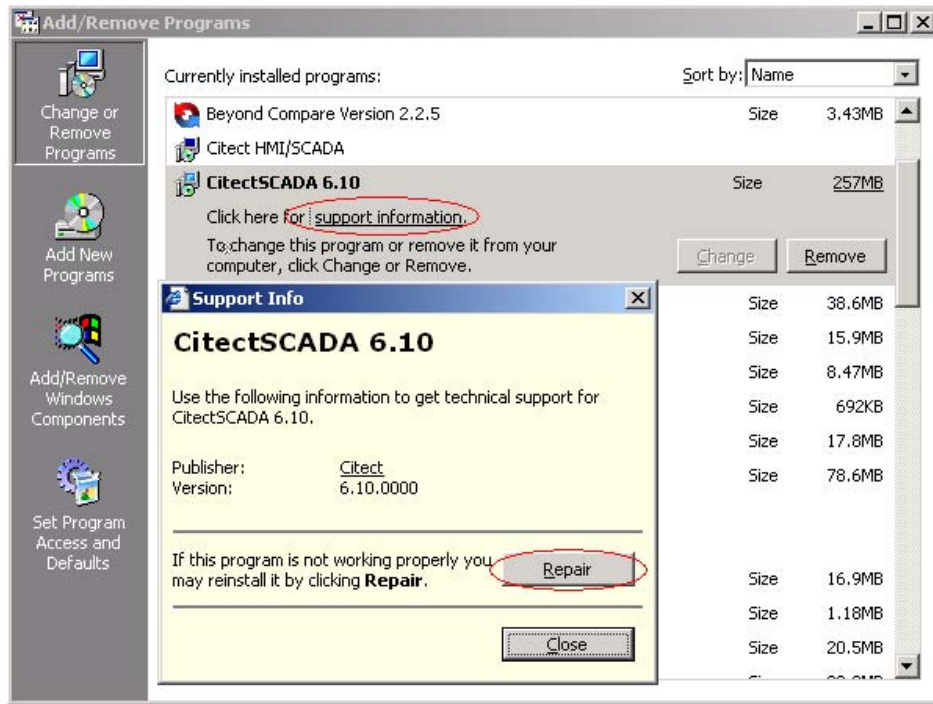

Figure 3: Support Info dialog in Windows XP SP1 and Windows 2000

e. Click 'Repair'.

f. After the repair process has finished, you should have a working version of the parent product without the service pack installed.

Updated Files

The following files have been added / updated by this Service Pack:

/bin/alarm.dll

/bin/alarmserver.dll

/program files/common files/citect/analyst.dll

/program files/common files/citect/ciascdrv.dll

/program files/common files/citect/cidbfdrv.dll

/bin/cidebughelp.dll and /program files/common files/citect/cidebughelp.dll

/bin/ciexceptionmailer.dll

/bin/ciexceptionmailer.exe

/program files/common files/citect/cimitsubishidrv.dll

/program files/common files/citect/ciopcdrv.dll

/program files/common files/citect/cischneiderdrv.dll

citectwebclient.dll (inside CAB file)

/program files/common files/citect/citrendarchivefileoffset.dll

/program files/common files/citect/citrendarchivefileoffset8byte.dll

/bin/client.dll

/bin/crmsplash.bmp (VijeoCitect and Nexa Monitoring only)

/bin/ct_ipc.dll and /program files/common files/citect/ct_ipc.dll

/bin/ctapi.dll and /program files/common files/citect/ctapi.dll

/bin/ctcmp32.exe

/bin/ctdraw32.exe

/bin/ctedit32.exe

/bin/ctindex.dll

/bin/ctrender.dll

/bin/ctutil32.dll and /program files/common files/citect/ctutil32.dll

/bin/dbghelp.dll

/bin/func0.dbf

/user/system/hardalm.dbf

/user/system/hardalm.txt

/bin/ioserver.dll

/user/include/labels.dbf

/bin/runtimemanager.exe

/user/include/trend.ci

Issues Resolved in This Service Pack

This Service Pack resolves the issues described below.

Issue Number Issue Description

22554   CtAPI Long Value returned in scientific notation which results in lost precision.

CtAPI Long Value returned in scientific notation which results in lost precision. The problem has been fixed.

26991   IsError() returns zero when an invalid fieldname is passed in the SQLGetField() Function

IsError() returns zero when an invalid fieldname is passed in the SQLGetField() Function. The problem has been fixed.

27856   Minidump exception reporting

Exception reports can now contain a Minidump.

29561   Runtime disappears when adding a trend pen with exponential scaling on the variable tag

If a tag has REAL scaling configured (i.e. raw zero / full scale) of -3.4e38 to 3.4e38, the runtime environment may disappear (without producing crash logs) when a trend pen is added that trends that tag.

29966   Swap Color Enhancement

The following cicode functions can now swap an array of colors:

* WinPrint
* WinCopy
* WinFile

See appendix for further information on using this enhancement.

30080   CTAPI read requests are blocked across non-contiguous data type blocks

The CTAPI point blocking algorithm does does not build requests in conformance with the PROTDIR options field, in particular the OPT_DISABLE_GAP_BLOCKING flag.

This allows the CTAPI to generate read requests that are blocked across non-contiguous data type blocks causing tag based drivers to return a failed block.

30165   Project start aborting due to high advanced alarm count

When the advanced alarm count was high, project startup would abort with an "out of memory - point list" error. This issue has been fixed.

30399   FastLinx for Schneider subtracts 1 from the Address of Bool Tags

FastLinx for Schneider subtracts 1 from the Address of Bool Tags. The problem has been solved.

30400   Schneider FastLinx does not Export Bool Tag

Schneider FastLinx does not Export Bool Tag. The prob noar ar f(nc)

When using FastLinx to import from an external database, abnormal behaviour is observed (such as failing to update the 'IODevice' field in a Tag form), with the possibility of causing a GPF. Note that this may occur on any of the FastLinx applications. The underlying cause of this has now been resolved.

30554   CTAPI cicode based queries not supporting '\' character embeded in data

Calls to cicode based queries, that contained data with embeded '\' characters would fail. Eg "CTAPITrend("16:37:56", "23/5/2006", 0.000, 301, 12, CPU\Usage)" would not return the trend data for "CPU\Usage". This has now been resolved.

30596   Citect32.exe can get stuck in a 100% CPU loop during Trend Redundancy Backfilling of Event Trends.

During Trend Redundancy Backfilling of Event Trends citect32 could get stuck in a loop, consuming 100% of the CPU. This occured when a file contained several thousand samples. This would cause this loop to span multiple blocks to read, leading to incorrect calculations and preventing the exit condition of the loop from being met. This problem has been resolved.

30657   List read of BYTE tags via CTAPI returns incorrect values

Reading BYTE tags the CTAPI function ctListRead will return inconsistent results for BYTE addresses that are on odd address boundaries. This problem has been resolved.

30672   Runtime Crashes when Alarm Tag Name Exceeds 31 Characters & Alarm Property Tag or Dot is Read

For an alarm created with a tag of more than than 31 characters, the runtime would crash when an alarm property was read. This has been resolved.

30684   ASCII Reports ignores the # formatting of strings, specified in the report format file.

Formatting for ASCII reports was broken by changes made to V6.00 SPKA. This has been resolved.

30768   PageTrend() cicode command fails to add trend pens to XP_Style "Trend" page.

Changes to V6.10 stopped the Cicode function pagetrend() displaying trend pens. This issue has been resolved.

30891   Response bad or garbled from ALARM device.

ALARM DEVICE could report a "Response bad or garbled" error under certain circumstances. This issue has been resolved.

30908   Process Analyst crash when leaving a PA page too quickly.

Process Analyst crash when leaving a PA page too quickly. The problem has been fixed.

30970   Memory corruption and crashes are possible depending on driver logical unit handling.

The I/O server has some dependence on a drivers handling of logical unit numbers. In certain scenarios (e.g. if that driver's I/O devices are defined below anothers in the units database and a device is re-initialised,) the I/O server can send an incorrect logical unit number to a driver. If the driver is not able to protect against invalid logical unit numbers, memory corruption and crashes can occur. This problem has been resolved.

31040   On a 2003 Server installation, unassigned DNS INI settings cause the local IP address to be used

When TCPIP is enabled, Netbios disabled, and running on a 2003 Server installation, leaving the DNS INI settings unassigned caused a node to establish a client connection with itself in place of the required server. This resulted in misleading diagnostics which indicated that the connection to the server was operational. This has now been resolved, and the failure to connect to the server is reported.

31158 OID based I/O devices may appear online but fail all read requests

CitectSCADA version 6.0 introduced OID security, ensuring that OID mismatches between I/O server and clients would cause I/O devices to appear offline.

If an I/O server and a client have OIDs that mismatch completely with no overlap, thus there are no collisions between OIDs, then the device will appear online but all requests to the server from than client will fail.

A new INI parameters is required to ensure all OIDs from the client are present on the I/O server for the device to appear online.

[IOServer]
StrictTagHandshake=1|0 (Default: 0)

If StrictTagHandshake is set to 1 then any unknown tags will cause a mismatch. This will mean that the client and server must have a perfectly matched variable database (for that unit) to be able to talk.

31170 When a Unit is offline during the init Unit process, a second unit which is on the same channel will freeze for 8 seconds.

When a Unit is offline during initialisation, a second unit which is on the same channel will freeze for 8 seconds. The problem has been fixed.

31176 ActiveX object moves when clicked under some window conditions.

Clicking on an ActiveX object (such as Process Analyst) could cause the object to move. This would occur if the page was too large for the screen and contained scrollbars. The behaviour could also be seen with the CitectSCADA Web Client when a screen was too large for the Internet Explorer window. This problem has been resolved.

31368 The alarm summary page displays less alarms per page than the 'count' parameter to AlarmDsp

If a summary alarm list is drawn using the AlarmDsp function, the number of alarms shown may be incorrect if the 'count' parameter is a large value. In this case the alarm list will appear to be truncated and swapping between different alarm page offsets will show the incorrect set of alarms.

The limit to the number of alarms that can be displayed before this problem occurs is variable, but is typically around 40. This problem has been resolved.

31417 Citect Project Editor crashes when synchronizing variable tags with a Unity database.

When FastLinx doing variable tags synchronize with an Unity database it crashes Citect Project Editor on French Windows 2000 OS. This will happen when the linked I/O device selected the "Live Update" option. This problem has been resolved.

31546 CTAPI: ctCancelIO does not cancel ctListRead operations properly

When using the CTAPI many functions, including ctListRead, support overlapped I/O.

To cancel an overlapped I/O operation the function ctCancelIO must be called passing the CTOVERLAPPED structure for the operation.

If the CTOVERLAPPED structure was for a pending ctListRead the list read operation is not canceled correctly and a subsequent call to ctListRead will fail if the read operation has not completed in the background. This problem has been resolved.

31579 Kernel drivertrace improvements

- A minor bug was fixed is some synchronus calls like init channel which used to sometimes flagged a sync call with a "<+ stamp.

The <+ stamp implies an async callback

- The 5 character hexidecimal DCB reference has been extended to 8 characters.

- Time is now the time of day with milliseconds instead of ms time since startup.

e.g.

-> 03FB8B58 44.453 Cmd: 09 CTDRV_DATABASE   ,DISKDRV, Port: DISKDRV, Unit:

IODevSch | 03FB8B58 44.453 UnitType: 1 (0x1), UnitAddr: 1 (0x1), UnitCount: 3

 <-03FB8B58 44.453 bit_size=16 maxread=128 maxwrite=128 ErrDriver 0 (0x0) for the timestamp

31651   When using an SQL database as a log device, the first record is always blank

If you use an SQL device as the log device for a graphics object (on the Access tab), the first event recorded to the device will contain no data (a blank row).

 The second event will then use the data from the first event and hence forth each new event will record the previous event's data. This problem has been resolved.

31658   Schneider Fastlinx may not import correct data from OFS OPC server

OFS OPC server requires that string tag names must have a suffix ';c' to be treated as a string tag instead of a byte array. Without knowledge of this suffix, Schneider Fastlinx may not be able to read correct data if the string tag is imported from Unity. This problem has been resolved.

31753   Alarm delay gets overwritten in digalm.dbf at Citect startup

CitectSCADA's behaviour, in allowing runtime configurable changes to the alarm delay parameter has been discovered to have the side effect of overwriting configured alarm delays.

The would occur when an alarm with delay X is defined in the system, the system is compiled, started, and an alarm is triggered. While the system was online the delay time is changed in the DIGALM.DBF database. On compiling and restarting the changes to the alarm delay would be lost.

This bug has been resolved in this service pack by adding an ini parameter to give the option of changing this behaviour:

[Alarm].useConfigLimits   Default 0 (FALSE).

Set this to 1 to force CitectSCADA to load the alarm delay and threshold values from the dbf file, rather than use those stored in the alarm save file (almsave.dat).

31820   List read of DIGITAL tags via CTAPI returns incorrect values

Reading DIGITAL tags the CTAPI function ctListRead may return inconsistent results for hotfixes that included bug 30657. This problem has been resolved.

31838   A crash can occur when using the Debug() cicode function to test a tran connection

Executing Debug(tran, x) where x is a tran connection number that has an invalid hMsg (-1) will cause CitectSCADA to crash. This problem has been resolved.

32048   Exception kernel dump does not include queue information

The kernel dump generated by the CitectSCADA exception handler does not include the kernel queue information.

The kernel queue information is needed as it shows any syslog messages that had not been flushed out to disk at the time the exception occurred. This problem has been resolved.

32149   TimeUTCOffset function always returns the current UTC offset not the UTC offset of the requested time.

The TimeUTCOffset function was returning the UTC offset of the current time, rather than that of the passed argument. This has been resolved.

32181   Improvements to the citect crash handler to place the module name and revision in the email subject.

The built-in Citect exception handler has been improved to facilitate extraction of module name and version prior to decoding the attached ZIP file.

31976   [ALARM]DisplayDisable=1 does not work for timestamp digital/analog alarms

Timestamped analog and digital alarms introduced in v6.0 would not be seen when the alarm save file (almsav.dat) was read at start up and would show invalid when an update occured. This issue has been resolved.

32619   Cyclic #COM for a standby I/O device when the primary I/O device is offline

A unit configured as a redundant standby may randomly incorrectly show #COM for points on a page if the primary redundant unit is not running. This problem has been resolved.

29810   Tag write event queue does not support "external" tags

If the tag generating a write event could not be found internally then the write event is skipped. An enhancement has been made to support this.

32302   AlarmSumAppend function does not work redundantly if actual alarm tags are used

The problem occurs when the AlarmSumAppend function is called with actual alarm tags on either the primary and standby alarm servers. This problem has been resolved.

29683   Setting [General]TagWriteEventQue = 1 crashes citect32

Setting [General]TagWriteEventQue = 1 , would cause citect to crash in V6.10R0. This has been resolved.

Appendix

Swap Color Enhancement

The following cicode functions can now swap an array of colors:

- WinPrint
- WinCopy
- WinFile

Each of these functions now has an extra optional argument which is a string specifying the name of a swap color map file. For example:

`WinPrint(sPort, xScale, yScale, bSwapBlackWhite, sMap)`

Where:

`bSwapBlackWhite` swaps the colors black and white for the purpose of printing pages with a lot of black content. Use the default value of 1 to swap black and white (optional).

By default Citect will look in the BIN directory for the map file. The format for the map file (which is a text file) is as follows:

`<Line 1:> RRR GGG BBB RRR GGG BBB [HHH] [SSS] [LLL] //comment`

`<Line 2:> RRR GGG BBB RRR GGG BBB [HHH] [SSS] [LLL] //comment`

Where:

`RRR` is a decimal red intensity value between 000 and 255.

`GGG` is a decimal green intensity value between 000 and 255.

`BBB` is a decimal blue intensity value between 000 and 255.

`HHH  SSS` and `LLL` are optional tolerance values to enable swapping a range of colors. Default values are shown below.

`HHH` is a decimal value representing the Hue tolerance.   Valid range is 0 to 360. Default = 0.

`SSS` is a decimal value representing the Saturation tolerance. Valid range is 0 to 255. Default = 2 * Hue tolerance.

`LLL` is a decimal value representing the Luminance tolerance. Valid range is 0 to 255. Default = 2 * Hue tolerance.

Leading zeros are not required, however they aid readability.

The first three RGB values specify the FROM color, and the second three RGB values specify the TO color.

The tolerance values are applied to the FROM color when replacing individual pixels in the image.

Comments may be placed at the end of each line, or on individual lines, and must be proceeded with //

Example Map file to swap the CSV_Include project:'

```
043 043 255 155 205 255 025 000 025 //Change dark blue to light blue using Hue and Luminance tolerance of 25.
000 000 000 255 255 255 //Swap black to white with no tolerance
```

Notes

A Hue tolerance range cannot overlaps with another specified Hue, or Hue tolerance range. If this occurs, there is the risk that the color will not be swapped.

Tolerances are indexed by the Hue value of the color that you are swapping from. The algorithm compares the tolerance range of a specified hue value just greater than the current pixel Hue value, and then the tolerance range of the previous specified hue value.

Tolerances are specified as HSL as this color format is designed to be useful from a human understanding of color (especially when swapping a color gradient). The swapped colors are not specified as HSL, as there is no standard way of representing colors in this format.