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Release Notes

Niagara Release 2.3.4, Build 2.301.431

These release notes explain software changes made between the initial release of Niagara 2.3.4 (Build 2.301.428, released in June, 2003) and the current 2.3.4 release (Build 2.301.431), known as Build 431. Included are enhancements, bug fixes (previously reported issues that are now resolved), and remaining unresolved issues.

These main topics are discussed in the following document sections:

JACE-NX NOTE

Before upgrading a **JACE-NX** currently running an older build (i.e. r2.301.428 or r2.301.429), you will need to have its license file updated to change Host ID text from "NP-xxxx-xxxx" to "NX-xxxx-xxxx." Otherwise, its station will *not start*. Please contact Tridium to get an updated license file, which you can install during the upgrade. For more details, see issue 2960, page **11.**

Documentation for Niagara Release 2.3.4

The Niagara 2.3.4 Release CD includes a `\docs` folder containing all current Niagara technical documentation (at the time of the CD build). Documents are organized in various subfolders under this directory. Included is an `Index.html` file. You can use it to help find and "launch" various documents—just double-click this file to start it in your browser.

Please note that some documents are not yet updated for 2.3.4, and will show "Niagara Release 2.3" in their footer. Efforts are currently underway to update these documents.

- A major change for online Help in Niagara 2.3.4 is the relocation of most HTML source files from the "coreRuntime" module to a new "docs" module. This lets you update Niagara 2.3.4 Help and documentation by just installing a new docs module, as updates become available. Previously, you had to install an updated coreRuntime module (major upgrade).

  Please note that this means that in order to have context-sensitive and task-based Help in the JDE, *you must install the **docs** module from the Niagara 2.3.4 Installation CD.*

- When you install the **docs** module, the identical **\docs** folder (including launch document) is created under your **\niagara\r2.301.43x** folder. Included is an "Online_Help_Files" folder that contains JDE Help system HTML files. Other folders contain mostly PDF documents.
- PDF documents require the Adobe Acrobat Reader software. If you do not already have this program installed on your PC, you can install it from the Niagara Setup menu on the Niagara 2.3.4 Release CD. Select **Install Adobe Acrobat.**
- Periodically, various Niagara technical documents are **updated** and new technical documents are added. The most current docs are always available on the Tridium secure web site.

  After you log in to the Tridium secure site, select **Technical Support** then **Technical Publications**. You will see the same directory structure that exists in the **\docs** folder on the Niagara 2.3.4 Installation CD. Click on left-side "folder" controls to list contained documents in the right side.

Release Highlights

Build 431 of Niagara 2.3.4 provides a number bug fixes and several enhancements. Primarily, these changes apply to localization (foreign language support), support for newer JACE platforms, as well as tridiumx (driver) changes such as for BACnet, Modbus, and OPC Client.

Format of Release Notes

The organization and formatting of these release notes directly reflects how all issues are tracked in Tridium's internal software development system. Each item includes a unique **issue number** and a "synopsis" description line, for example:

> **906 Add absoluteTarget like relativeTarget for hyperlinks**.

When obtaining support, you may refer to any issue simply by its *issue number*.

Issues are divided into major groups according to folder or module, and then within each group, parted into three possible *types*:

- **Enhancements**—New functions or features added since the last release. A brief description of each enhancement is provided in these release notes.
- **Bug Fixes**—Problems identified and fixed by this release. Descriptions for each of these fixes are also provided in these release notes.
- **Open Issues**—Problems known to still exist in this release. All open issues are described using a three-part "Symptom, Condition, Workaround" format in these release notes.

Empty type groups or module/folder groups are not listed. For example, if a driver module had no enhancements, bug fixes, or open issues in this release, it is not listed.

Release Notes Index

- **Core Notes**
- **Tridiumx Notes (Predominately Drivers)**
- **Embedded Notes**

Core Notes

This section discusses enhancements and fixes made in Niagara modules considered as "core," such as coreRuntime and coreUI. Subsections are divided by the following module (or folder), and within each module/folder, are listed by issue type (enhancement, bug fix, open issue):

coreRuntime

Enhancements

2155 Schedule servlet summary title can be swid or description.

As part of the expanded lexicon features, a Niagara host can be configured in its lexicon files to display any Schedule object's description (vs. swid) in the schedule servlet (browser access). For example, in the schedule summary page, the title can show as:

Schedule: RTU Schedule

instead of

Schedule: /demoR2/Sim/LogicScreens/RoofTop1/RTU_Schedule

The following line in the lexicon file scheduleServlet.properties defines this:

summaryTitleType=<*value*>

where <*value*> is either swid (the default) or description.

2158 Japanese not displayed properly in schedule applet.

Japanese did not display properly in the schedule applet portion of schedule editors presented by the schedule servlet (browser access). Localization was done beforehand using the ja lexicon files scheduleApplet.properties and scheduleServlet.properties.

This was fixed in coreRuntime 2.301.429 and later.

2159 Calendar applet, order of date fields should be modifiable.

Calendar applet (browser access) needed to support localization where dates are typically expressed day/month/year instead of month/day/year. This was done in expanded lexicon files calendar.properties. See the "Niagara R2.3.x Localization" document for more complete details.

2160 Calendar applet shows localized time strings.

Calendar edit dialogs in the calendar applet (browser access) now reflect appropriate localized text strings, for example, months and days of week display as defined in the installed lexicon files calendar.properties and calendarApplet.properties.

2350 Schedule servlet needs correct order for date field.

Lexicon enhancements in 2.301.429 and later allow for reordering the display of date fields in the schedule servlet (browser access of Schedule object). For more details, please see the "Niagara R2.3.x Localization" document.

2676 Added a general calendar.properties lexicon.

A "calendar.properties" lexicon file was added to the group of lexicon files under each language subfolder (for example, for English: nre\lib\lexicon\en). It defines language used for days of the week and months, as well as the format used for date and "week and day." Formerly, these items were specified (independently) in many of the other lexicon files. Now, they are centrally maintained and defined in this single file: calendar.properties.

These items are seen in browser access to a station running on the host, for example the schedule servlet/applet, calendar servlet/applet, and ves. For more details, please see the "Niagara 2.3.x Localization" document.

2748 Master/slave feature configurable across incompatible releases.

Master/slave features of object types Schedule, NotificationClass, and Calendar need to work across releases with incompatible release identifiers.

Providing that the station with master objects is using build 2.301.429 or later, you can now configure (two) properties files in that host to allow passing of data to slave objects in remote stations running 2.0 or later.

Do this by editing two files in the "master" station's host:

1. system.properties (nre/lib/system.properties)
   Add line, as follows with value of "true":

   masterSlave.releaseSpoofing.enabled=true

2. Create file slaveReleases.properties (nre/lib/slaveReleases.properties), containing the following lines "mapping" the station-name-to-release-used:

   default=*<release to use if no station mapping specified>*
   <stationNameA>=<build release of that host>
   <stationNameB>=<build release of that host>

   Example: master station is running on host using coreRuntime 2.301.429.v1 or later, and it needs to work with slave objects in the following stations:

   Bldg_1A (using 2.202.229.v1), Bldg_2 (using 2.301.418.v1), Annex_1 (using 2.301.328.v1)

   this slaveReleases.properties file would work:

   default=2.202.229.v1
   Bldg_2=2.301.418.v1
   Annex_1=2.301.328.v1

2791 MailService can now use non-default port for SMTP.

Previously, only SMTP port 25 was supported for the MailService. Starting in coreRuntime 2.301.429.v1 and later, you can specify an alternate port for SMTP.

Do this in the MailService's config property smtpHost, using format:

smtpHost <hostnameOrIP><:*port*>

example: ourMailSrv:40 or 10.10.9.4:40

If <:*port*> is omitted, the default SMTP port 25 is used.

2823 Added gx.properties entry to disable image disposal.

In r2.3.4 (r2.301.428), a fix was added to stop flickering of Gx objects in GxPages, particularly objects referencing animated .gif files (issue #1456: "GxFloat image flicker"). Internally, fix #1456 tracks a list of images used during viewing, then upon Gx applet shutdown, disposes of those images.

It is possible that the original (pre-fix) behavior may provide better results in some cases. Starting in 2.301.429, you can disable the #1456 fix by adding the following line in the Niagara host's nre/lib/gx.properties file:

disposeImages=false

If not in the host's gx.properties file, this equates as if the value was "true".

2965 Updated EULA (End-User License Agreement)

In Niagara r2.301.430 and later, Tridium has an "End-User License Agreement" (EULA) that has been updated to better reflect our warranties, assignment policy, revised export language, and return policy. It is also consistent with the revised standard agreements we have recently updated.

3042 Browser-accessible status query form has new "includes" comparison operator.

The status query form in the status servlet (http://<host>/status/queryForm) now has an "includes" operator in the Comparison pull-down for Type Filter. This provides matching on a *partial* string within the summary text, based upon the entered Value. For example, you can select "includes" and a Value of "@ Manual" to provide a report of those objects under manual control.

Previously, you could accomplish the same results using the "matches" operator, but you had to add a wildcard (*) character on each end of your entered Value.

Bug Fixes

1882 Special event created by "Week and Day" lists wrong in browser.

When created from a web browser, a special event using the "Week and Day" option would appear to be created incorrectly (browser showed wrong day), even though the special event was as selected and appeared right in the JDE. This issue was fixed in builds 2.301.429 and later (former 2.3.4 Open Issue).

2156 Schedule Applet uses Active/Inactive not activeInactiveText.

Previously, browser access of the weekly schedule editor or special event editor would show the schedule applet displaying “Active” or “Inactive” instead of the Schedule object's activeInactiveText values. This was fixed.

2157 Schedule servlet, localized buttons do not work when pressed.

If "New", "Delete" or "Display" buttons in the schedule servlet (browser access) were localized using the lexicon file scheduleServlet.properties, when pressed by a browser user they did not work. This was fixed in coreRuntime build 2.301.429 (and later).

2815 Incorrect timezone on web alarm display.

The alarm servlet was using the default timezone for the timestamp formatter instead of setting it specifically. For some unknown reason, some systems were returning the incorrect timezone as the default.

Starting in 2.301.429, the alarm servlet was changed to set the timestamp formatter to whatever is returned from Sys.getTimeZone(). This should be the same timezone format shown in the Station object's time-based properties.

3097 Schedule servlet, next event time uses wrong timezone.

The schedule servlet was using the default timezone for the timestamp formatter, which could cause unexpected behavior on screens showing next event time. This was fixed in 2.301.430 and later; the timestamp format should be the same as in the Station object's time-based properties.

Open Issues

1690 Database connectionPool closes.

Symptom: Log archiving at Web Supervisor fails, perhaps stopping completely. The following error message appears:

ERROR: LogService.archive: Force close of connection!
WARNING: Closed pooled connection [ConnectionPool]
ERROR 42X11: The maximum length for an identifier is 128. '<long log swid that becomes table name>' is too long.

The "<long log swid that becomes table name>" is the actual SWID (system wide identifier) of the object causing the error.

Condition: One or more log objects to be archived has a SWID over 128 total characters. This typically happens with ModbusTCP devices. When an object exists which is multiple container levels under a ModbusTCP device, the total length of the object SWID can get too long. This causes the "LogService.archive: Force close of connection!" error.

An example of a long SWID name four levels below a Modbus device follows:
/Station_Name/ModbusTCPNetwork/ModbusTCPDevice/LongContainerName_1/
LongContainerName_2/LongContainer_3/Container_4/ModbusGenericAO

Workaround: Keep swids for log objects under 128 total characters. Do this by having fewer levels of containers and/or shorter object names. In general, this is a good idea for *all* objects in any Niagara station. Swids that are too long make index views harder to use.

1763 Backup service makes bad backup on station restart.

Symptom: The backup.zip file for a station (created by its BackupService) cannot be restored. Winzip reports the file as not a valid zip.

Condition: The station was restarted before the backup operation completed, that is, the new backup.zip was completely written. However, the previous backup.zip was overwritten, and is now backupOld.zip.

Workaround: Be careful not to restart a station during a backup operation. You can check the BackupService's config property "scheduledBackupTime" to find out when the automated daily backup occurs (default value is midnight). If you issued a manual "ForceBackup" command, allow ample time before restarting the station.

2003 One hour is added on MS SQL archive.

Symptom: When viewing archived data via the Niagara Database Service, and Daylight Savings is in effect, the timestamp is one hour ahead of the actual archived data.

Condition: Web Supervisor utilizing the MS SQL Server option. The MS SQL Server interface has an issue with Daylight Savings time, whereby the archived data will be displayed an hour off, (one more than actual), during the time of the year when Daylight Savings is in effect.

The data in the MS SQL Database has the correct timestamp, however an hour is added as the data is read by the Database Service. In addition, a Master Web Supervisor utilizing MS SQL Server and the Poll Archive Service will add one hour to the data as it is archived to the MS SQL Server database. In this case the result will be the time displayed at the Master Web Supervisor will be two (2) hours off, (two more than actual), and the timestamp archived in MS SQL Server at the Master Web Supervisor will be off by one hour, (one more than actual). When utilizing third party software products for reporting (Example: MS Access or Crystal Reports) the data should be correct on the Web Supervisor.

Workaround: There is no known workaround for Niagara r2.301.4xx. The issue has been traced to issues with the JDBC driver for MS SQL. Tridium is working to resolve this problem.

coreUi

Enhancements

1626 New station wizard should alphabetize driver choices.

In the JDE, the New Station Wizard now lists modules (drivers) alphabetically in the "Initial services to add" list, which makes them easier to find. Note that "default" station services still appear at the top of the list and are pre-selected, as occurred previously.

Bug Fixes

2957 Summary tab in Admin Tool showed JACE-NX with OS of Windows 2000.

When a JACE-NX was opened in the Admin Tool, the Summary tab incorrectly showed its OS as "Windows 2000" (should be Windows XP). This was fixed in 2.301.430.

Open Issues

1620 Duplicate container keeping name of original.

Symptom: Duplicate names for objects in same container. This is not allowed, yet there is a condition that will produce duplicate names. For now there is only a workaround.

Condition: Duplicating a container that contains an object that is named the same as its parent container, can cause a duplication of the name when that container is duplicated.

Workaround: Make sure that child objects do not have the same name as their parent container.

nre

Enhancements

2960 NX host string should be NX instead of NP.

The Niagara Host ID for a JACE-NX should reflect an "NX" prefix (vs. "NP"). Host ID can be seen in the Niagara Console by issuing the command:

nre -hostid

Note that Host ID is used in the JACE's license file, and is also seen when the JACE is opened in the Admin Tool.

Starting in Niagara 2.301.430.v1 and 2.301.5xx, support was added for the NX Host ID prefix, as well as the viewing of it in the Admin Tool.

NOTE: This enhancement means you will require an **updated license file** from Tridium ***before*** you upgrade a JACE-NX running an earlier Niagara release (one before 2.301.430.v1). Your updated license file should show a "hostId" value with an "NX" prefix (but otherwise be the same as it was), for example:

hostId=NX-DAB8-6C42

Otherwise, the station in the upgraded JACE-NX will ***not start*** due to a Host ID mismatch. After you receive your updated license file, you can install it during the Installation Wizard upgrade process for the JACE-NX.

An exception to this note is if your JACE-NX has an early drive image (prior to NxXpxxx-1.14). In this case, its Host ID will always have an NP prefix—the previous license file will work as is.

Bug Fix

3224 Intermittent alarms in JACE-NP with SysMon1 shadow object.

JACE-NP only (not applicable to JACE-NX used with SysMon2 shadow object)

- Resolved sysmon bug which caused intermittent false alarms to be generated. Under certain conditions, sysmon could incorrectly generate alarms if both sysmon were enabled and the SysMon1 shadow object was placed in a station database.
- Resolved a scaling problem on the CPU temperature which would cause incorrect readings. Temperature reading error was more pronounced as the temperature moved further from 40C (i.e., significant error for temperatures higher or lower than 40C).
- Resolved a data conversion problem for CPU and system fan speed calculations. Because of the conversion problem, it was possible that sysmon could report intermittent spikes of extremely high or extremely low values, even though the actual fan speed remained relatively constant.

niagarad

Bug Fix

2821 JDE (WorkPlace Pro) locked up when saving network parameters on JACE-501.

In one case, the JDE locked up after trying to save network parameter changes on a JACE-4/5 (made using the Admin Tool).

Potential for this bug exists only if a JACE-4/5 using DNS, and then only if named DNS servers cause the DNS server list to have total characters in multiple of 4.

In the one reported example of this issue, the DNS server list was:

DNS server list:	`10.121.16.52$10.50.16.15`	($ is separator character)
Characters in list:	`012345678901234567890123`	(exactly 24, causing problem)

The fix requires a new JACE OS image (i.e., upgrade the JACE-4/5 to 2.301.429 or later).

As a workaround, you can add a "dummy" DNS server that results in the DNS server list to have total characters *not* evenly divisible by 4.

Tridiumx Notes (Predominately Drivers)

This section discusses enhancements and fixes made in Niagara tridiumx modules, which are predominately "drivers." Subsections are divided by the following module (or folder), and within each module/folder, are listed by issue type (enhancement, bug fix, open issue):

andoverAC256

Bug Fix

2338 Dump from Download Manager times out on large databases.

When dumping large AC256 databases with download manager, the manager timed out before the entire dump (230Kb) completed. Related errors were seen in the manager log. This occurred because timeouts were based on dump files approximately 80Kb in size.

The fix was to extend dump timeouts. Using a large dump file (230Kb) as a metric, the following dump times were observed:

@19200 baud, 230k dump file dumps in 130 seconds
@9600 baud, 230k dump file dumps in 255 seconds
@4800 baud, 230k dump file dumps in 8.5 minutes

New dump timeouts are now as follows:

19200 baud: old value= 90, new value= 180 seconds
4800 baud: old value= 360, new value= 650 seconds
2400 baud: old value= 650, new value= 1300 seconds
1200 baud: old value= 1300, new value= 2600 seconds
600 baud: old value= 2600, new value= 5200 seconds
300 baud: old value= 5200, new value=11000 seconds

bacnet

Enhancements

2170 Enhanced setAdapter utility, PC for BACnet/Ethernet.

A PC running a station with BACnet/Ethernet must have the exact device string for the used Ethernet adapter in its nre\lib\drivers.properties file. This applies to a BACnet Supervisor or a Niagara engineering PC (used by an SI). The previous (and documented) method to edit the PC's drivers.properties file was to capture the adapter device name using either an ipconfig command (Windows NT) or the Niagara "showAdapters.exe" utility (Windows 2000 or XP Pro) and then to paste it into the appropriate line in that PC's drivers.properties file.

This method was not straightforward, and the showAdapters utility typically shows a list of "virtual" adapters (in addition to the "real" one needing selection).

In bacnet-2.305.430 and later, a "setAdapter.exe" utility can be used to automatically query the PC for "real" Ethernet adapters and presents choices to the user, so that the utility can correctly edit the drivers.properties file. To use it:

1. At the BACnet Supervisor or Niagara engineering PC, open a Niagara Console window. Type this command and press ENTER:

   setAdapter

   This returns a list of all "real" Ethernet adapters in the PC (typically one).

2. Type the appropriate number for the Ethernet adapter used for BACnet/Ethernet communications, then press ENTER. The utility automatically edits the drivers.properties file with the correct device name, for example:

   ethernet.deviceName=\\Device\\{C37783CC-84DC-430E-B3B6-25AE81E77F88}

Notes: Any running station must be restarted to process this change.

JACEs do not require this configuration, this only applies to PCs.

2788 Need way to delay polling per device.

Added capability to delay polling to specific objects or to all objects in a device. This can be used to throttle our poll rate to a BACnet/IP or BACnet/Ethernet device that cannot accept our poll rate. Enter the string:

pollDelay=<*n*>

in the "**userData**" property field for a BACnetObject or a BACnetDevice (Engineering tab).

This will introduce a delay equal to <*n*> milliseconds. If the delay is on an child object, the poll service will delay at least this many milliseconds before polling that object. If the delay is on a BACnetDevice, the poll service will delay this many milliseconds before polling each object in the device. Note the following constraints and caveats:

- This does not apply to MS/TP devices, as this sort of delay is not compatible with token handling timing constraints.
- Any delay introduced using this will add to the overall poll cycle time, so if polling is already slow, this will not help that.
- This delay is in addition to any delay imparted due to the poll service's interNodeDelay.

2958 Device ID problems.

A couple of things were found related to the maintenance of a device shadow object's device ID (Instance Number in a BACnetDevice object).

a. If copied from the Local Library, a BACnetDevice has instance number of -1, which indicates “invalid”. This is by design, and you can paste multiple devices from the Local Library, and all will have -1 instance numbers.

   However, if you assigned a device a valid number, you were **not** allowed to set it back to -1. It should be possible to set multiple devices to the “invalid” instance number of -1.

b. After changing the instance number of a BACnetDevice, it did not reregister for polling. You had to restart the station for the device to be in the poll cycle.

These issues were fixed in 2.305.430 and later. You can change the instance number of a BACnetDevice from a valid number to -1, and when changing instance number on a BACnetDevice it now automatically re-registers for polling.

Bug Fixes

1944 Memory leak suspected in BACnet/Ethernet driver.

On some jobs with JACE-NPs running BACnet/Ethernet, it was observed that the running station consumed increasing memory resources (jview.exe process as observed in Windows Task Manager) such that station performance slowed. This was originally thought to be a memory leak in the Niagara BACnet/Ethernet driver.

Later, this problem was isolated to JACE-NPs using Microsoft's JVM (Java Virtual Machine) version prior to 5.00.3240, for example, a JVM of 5.00.3167. After the JVM was updated to 5.00.3240 or later, this problem was fixed.

If a JACE-NP is running Niagara 2.3.4 or earlier, and its station is using BACnet/Ethernet, you should check the Microsoft JVM version. To check a JACE-NP's Microsoft JVM version, from a command prompt window type:

jview

The first line displayed will list version, for example "Version 5.00.3805". If the version is prior to 5.00.3240, you should obtain a newer Microsoft JVM and install it in the JACE-NP. The newer JVM for Windows NT can be obtained from Tridium’s secure web site.

Please note this problem does not occur with any JACE-4/5 or JACE-NX. Nor does it occur with any JACE-NP upgraded to 2.3.5 (which uses Sun Hotspot JVM instead of Microsoft JVM)..

2024 Unlinked Value & Writable Inputs write on device up.

When a BACnet device returns to the up state from being marked down, the input value of all Value and Writable Input objects was written to the device, even if the input is not linked. The 428a patch (and all later bacnet jars) fixes this problem by only issuing writes if the input property is actually linked.

Please note this problem applies only to the bacnet-2.305.428.v1 module.

2025 Routing messages with 0 DLEN.

In certain cases, Niagara would not properly format messages routed to broadcast addresses on destination networks.

A problem previously observed was that certain MS/TP controllers under a JACE were not "Who-Is visible" to a BACnet device on another (B/IP or B/Eth) network. The other devices used an "I-am" broadcast message with a different address format than was expected.

Symptoms were that the routed NPDU would not contain any destination address, only a source address, and a LLC length of 0. The rest of the packet then followed, with the LLC length overwritten at the correct offset, replacing the corresponding bytes in the APDU. This was fixed in the 428a patch build and all later bacnet jars.

2866 Poll now objects (PollOnDemand) not emptied during BACnet/IP or Ethernet poll.

The polling mechanism used for BACnet/IP, BACnet/Ethernet was changed in r2.3.4 such that polling delays could occur if using PollOnDemand and the currently polled device was experiencing timeouts, or simply had lots of objects. This issue does not apply to the poll mechanism used for BACnet/MSTP.

This was fixed in bacnet-2.301.429 and later. Now, during BACnet/IP/Ethernet polling, the "Poll Now" list is only emptied before each device is polled.

2868 Multiple MSTP trunks sometimes not all polling.

It was found if a JACE-4/5 had multiple enabled BACnet MS/TP trunks, a station restart might result in only one MS/TP trunk being actively polled. Sometimes polling could be restarted by disabling/re-enabling other trunks; sometimes not.

This issue was fixed in bacnet-2.305.429.v1 and later..

2955 Polling problems under certain scenarios.

At least two BACnet jobs have reported polling problems where the following symptoms were observed:

a. Upon station startup, poll statistics do not change but stay at zeroes.
b. Polling is detected: pollDebug shows data in the station's Standard Output window.
c. BACnet shadow objects can be given pollRenew commands to refresh values.
d. Some objects are updated while others are not.

Further examination found the BACnet service's “Poll Now” list to be abnormally large. This can be confirmed by going to the BACnet service's property sheet and issuing the "dump" command (results go to the station's Standard Output window).

Exposure to this problem exists if the station has large numbers (40% or more) of BACnet shadow objects being commanded (or inputs linked to allow commands), and/or where BACnet devices are slow when responding to poll requests.

Changes in bacnet-2.305.430 (and later) provides poll list management techniques that should alleviate these problems.

2973 BACnet AO not accepting write from linked input.

BACnetAnalogOutput objects with linked inputs were found not to accept a write from the input. The first input change might write, but then subsequent input writes were not processed. Priority-type analog value objects (BACnetAnalogValuePriority) may also have had the same issue. This issue was fixed in bacnet-2.305.430 and later.

2974 NullPointerException on undiscovered router.

If a router is completely unknown, i.e., not in the station's router table, and a Reject-Message-To-Network is received (usually because station was trying to discover the router, perhaps from a WhoIs or LearnNetwork command), a NullPointerException was thrown when the station tried to update the router table, because no entry existed to set as unavailable. This exception produced unnecessary and potentially confusing lines in the station's Standard Output, and perhaps an entry in the station's ErrorLog.

This was fixed in bacnet-2.305.430 and later. Now if the station receives a reject message for a router not already in its router table, it is simply ignored.

2987 BACnet objects would write even with parent BACnetDevice disabled from polling.

When a BACnet device is disabled from polling, a child object would still issue a write upon an input change or command. This should be throttled by the device's pollingEnabled property. If the BACnetDevice is disabled from polling, child objects should not write.

In bacnet-2.305.430 and later, child objects no longer write if the parent BACnetDevice is disabled.

3149 Disabled MSTP trunk with down device could not be enabled.

If you tried to enable a disabled BACnet MS/TP trunk while there are down devices, it would not work. The symptom was the trunk did not enable, and you got an error dialog saying "E_BACNET_DEVICE_IS_DOWN".

This bug was fixed in bacnet-2.305.430 and later. You can now enable a disabled MS/TP trunk that has a down device.

dataAire

Bug Fix

2805 Non-standard DART gateway address did not work.

Whenever a message is directed toward a DART gateway, the dataAire driver always uses default address 0 (DART addr 1). If the DART gateway address had been modified from default, messaging would not work.

Starting in r2.301.429, you can now specify an alternate DART address. To do this, edit the **drivers.properties** in the JACE by adding the following:

dataAire.dartAddress=<n>

where <n> is “1-based” instead of “0-based” to reflect DataAire conventions, but address in message is “0-based.”

For example, if a DART-III gateway's address has been changed from 0 to 1 (DART addr 1 to DART addr 2), the following drivers.properties line is needed:

dataAire.dartAddress=2

Leaving out the dartAddress entry in drivers.properties defaults to 0 (DART addr 1).

eas

Enhancement

2795 Added currency units.

Added a currency measure and units for dollars and several other common currencies.

Note: For currency there is no conversion between units. Changing from one currency unit to another does not affect the reported values.

lib

Bug Fix

2781 Degree Days daily reset.

The minimum and maximum temperature values should be reset at the beginning of each day. This was corrected such that degree days for the previous day are calculated upon each date change. After the calculation, the minimum and maximum temperatures for the new day are now both set to the current temperature.

lonworks

Bug Fix

3806 Station with LonWorks service but without LON adapter taxes CPU.

Computers running a station with the LonWorks service but without a physical LON adapter had major performance issues. This was due to continuous LonWorksService errors that resulted in CPU usage of up to 85%. This problem was noticed after upgrading PC hosts from 2.301.330 to 2.301.428b. This problem was fixed in 2.301.430 and later. Now, upon a station start with no LON adapter, the LonWorksService fails but CPU usage remains normal.

modbusAsync

Enhancements

2627 Station can use multiple ModbusTCPService.

Multiple ModbusTCPService(s) are now allowed in a station, such that ModbusTCPGateways and ModbusTCPNetworks can be configured to use a different ModbusTCPService. Each ModbusTCPService has its own poll scheduler and device status handler. This improves

performance of data polling and device status (particularly for native Modbus TCP devices), as devices under a Modbus TCP gateway typically respond much slower (gateway joins Ethernet to older serial Modbus async trunk). Available in modbusAsync-2.302.429.v1 and later.

2628 ModbusTCPService responseTimeout can now be set in milliseconds or seconds.

Formerly, the "responseTimeout" property of the ModbusTCPService was adjustable only in seconds, with the finest granularity of 1 second. In practical terms, this proved much too large for ModbusTCPDevices.

Starting with modbusAysnc-2.302.429.v1, the responseTimeout property in the ModbusTCPService changes to a float value (from an integer). This property is still expressed in seconds, with the following range:

responseTimeout 0.1 to 30.0 (seconds)

with an example value of 0.5

Note: This change results in a schema change, meaning that a station database should be exported to xml before upgrading, then re-imported from xml to db (or sns) after upgrading. If upgrading modules in a JACE using the Admin Tool, this is done automatically, providing that you select to backup the station database during the upgrade.

Bug Fixes

1992 Writing 0 to controller when writeOnDeviceUp was set.

ModbusGenericAO objects with unlinked input(s) would write "0" to device's target holding registers if "writeOnDeviceUp" property was True. This was fixed.

2140 ModbusObject Output properties show Out of Service if device polled.

In some cases, Modbus shadow objects in PollOnDemand containers would continue to have output properties show "OutOfService" (cyan) even when being actively polled. This was fixed. Note that this issue was related to a previous fix in 2.3.4 (2.301.428.v1), issue #1809: "Poll On Demand values not OutOfService when not actively being polled."

2347 Outputs of Modbus objects showing Out of Service (cyan).

After a station restart, outputs of Modbus objects could show out of service (cyan). Affected objects appeared to work correctly and the outputs showed correct values. This was fixed.

2710 Device Level polling did not work for ModbusTCPDevices.

If configured, device-level polling for a ModbusTCPDevice was ignored; all polling was done at an object level. This was fixed. Device-level polling is now possible for a ModbusTCPDevice.

2819 Firing simultaneous ModbusPresetCoils triggers could lock up Modbus service.

In some cases, it was found that firing too many simultaneous write triggers across multiple ModbusPresetCoils could cause an async request queue overflow. This resulted in the lockup of the ModbusTCP and ModbusAsync services.

This problem was fixed for the ModbusPresetCoil object, and the potential for this queue condition was also reviewed for other Modbus shadow objects.

Fix, As Applied To All Shadow Objects That Had Potential Queue Overflow Problem:

- ModbusBitsToRegister when in process of writing on device up only
- ModbusGenericAo when in process of writing on device up only
- ModbusGenericBo when in process of writing on device up only
- ModbusPresetCoil if user invoked commands onCommand/offCommand too quickly OR if too many simultaneous triggers for setOn/setOff
- ModbusPresetRegister if user invoked command commandString too quickly OR if too many simultaneous write triggers

2847 ModbusGenericBO in down ModbusDevice could consume lots of CPU cycles.

It was found that for a ModbusGenericBO object under a "down" ModbusDevice, it was possible for a subsequent property change attempt to continually post to the asyncEventQue. This caused the ModbusAsyncEvent thread to consume a large number of CPU cycles. This was fixed.

Open Issues

1427 Container status="down" after device IP entered.

Symptom: In or under a device container, standard Niagara objects (such as AnalogInput, BinaryOutput, AnalogLog, Schedule, etc.) all appear with a “down” status, even though device shadow objects may show with an “ok” status.

Condition: If standard Niagara objects are *added* in or under a device container *while* that device is “down,” this down status is inherited from the parent device container. Unlike any child shadow objects (representing data in that device), this status is *not* cleared when communications are established with that device, in other words, when the device goes from "down" to "ok."

A station restart is needed to synchronize object status at this point, and this symptom will not occur for these objects again.

Note: This behavior is common across all Niagara device drivers, but may be noticed more in some (ModbusTCPService for example) than others.

Workaround: Note that when adding standard Niagara objects under a “down” device container, you are essentially working “offline” for those added objects.

1884 ModbusSlave not returning illegal data address on write.

Symptom: Modbus master device receives no exception code 2 (ILLEGAL DATA ADDRESS) from a ModbusSlave station upon writing to a coil or holding register that is not mapped. From the remote Modbus device, the write appears successful, however, the ModbusSlave station found no place to store the value.

Condition: 2.301.4xx and earlier version of ModbusSlave service or ModbusTCPSlave service.

Workaround: None, apart from configuring remote Modbus master to *not write to unmapped* coils or holding registers.

1917 Schema changed. Cannot open Modbus on 2.3 station using 2.3.4.

Symptom: JDE 2.3.4 (WorkPlace Pro) "hangs" upon opening the ModbusSlaveService property sheet of some stations. You must stop and then restart the JDE.

Condition: Station being viewed uses modbusAsync-2.301.321 or earlier JAR file.

Workaround: Upgrade the station to 2.301.330, or to the 2.3.4 or later Niagara release.

2754 Modbus6xRecord & 6xString objects attempt read even if ModbusDevice is down.

Symptom: Timeout messages in station's Standard Output related to polling for Modbus6xRecord or 6xString objects while the parent target ModbusDevice is "down."

Condition: Station using modbusAsync-2.302.430 or earlier JAR file.

Workaround: None, other than to ignore these messages in Standard Output. This issue will be fixed in a later build.

modbusTCPWS

Enhancement

2975 Modbus Supervisor (ModbusTCPWSService) needs Modbus TCP Gateway support.

The Modbus Supervisor (Web Supervisor specially licensed for direct Modbus TCP integration) required support for Modbus TCP gateways. This permits access to Modbus RTU devices on the far side of the gateways.

Support for ModbusTCPGateways in a Modbus Supervisor (ModbusTCPWSService) was added in modbusAsync-2.302.430 and later.

ndio

Bug Fixes

1994 HighSpeedCounter in I/O expansion had false rollover.

For a JACE-4 series used with an external I/O board, a bug was found that would cause an NdioHighSpeedCounter object to periodically think a rollover condition occurred. This was fixed in r2.301.430.

2616 Ndio input object set to Out of Service causes fluctuating presentValue.

If the "outOfService" property of any Ndio object representing a universal input was set to "true", the object's "presentValue" property would sometimes change sporadically. This has been fixed.

2695 Conversion of covIncrement when changing between F and C.

The covIncrement property for a copied NdioThermistorType3Input object could become out of synch, especially when changing the object's tempUnits property between degrees F and degrees C. This was fixed.

3161 Lose linearization table when upgrading a voltage output object.

When using an Ndio0to10Voutput with a linearization table, the table was lost when the XML station database was updated. This problem has been corrected.

3187 NdioBinaryInput object showed wrong state on power up.

When using Ndio Binary Inputs with Normally Closed (N.C) contacts, the status of the input was indicated improperly when the JACE first powered up, if the input was closed. The status was not corrected until the input changed state. This problem has been corrected.

opcClient

Bug Fixes

2716 OPC Supervisor included groups in total object count.

The OPC Supervisor (opcClientWSService) incorrectly included OPC groups along with OPC items when comparing against the licensedObjectCount value (defined in the license file of the OPC Supervisor). OPC groups are for organization only, appear as containers in the station, and should not have been included.

Now, in the OPC Supervisor station, only OPC client objects (which represent OPC items) are compared against the licensedObjectCount value.

2723 Large installation may crash opcClient driver.

Large opcClient installations could encounter thread synchronization problems, which could cause the driver to crash. Problem was fixed with the addition of a mutex (mutual exclusion object) in the Niagara opcClient code. This allows multiple threads to synchronize their access to a shared resource.

2945 Input "writeCovOverride" on OpcClient objects did not work.

The writeCovOverride input (boolean data species) available on "output" type OpcClient objects (when linked) was not evaluated correctly. If the input was "false," it was evaluated as "true."

This was fixed in r2.301.430 and later. Now, when this input is linked on an OpcClient output object (for example, OpcClientAOObject), it overrides the "writeCovOnly" property setting of the parent OpcGroup object.

StaefaSmart2

Enhancement

1816 Quicker display of polled data (without wait for poll cycle after EEPROM read).

The staefaSmart2 driver was enhanced to display as much of a Smart2 device's data as possible during the first poll without reading any EEPROM-stored scale and offset data (bases and gains) until the second poll.

Formerly, a Smart2 device's data would not display until the poll *after* the EEPROM data was read. On jobs with many controllers, this meant it could take several minutes for initial values to display, due to the high latency between the first and second polls. The high latency was caused by retrieving EEPROM.

Reading EEPROM formerly took about 30 seconds per device but can now be completed in as little as 5 seconds for each Smart2VAV, Smart2FNC, and Smart2HTP (it still takes about 30 seconds for each Smart2DDC and Smart2MUX). In any case, this process is now performed on the second poll instead of the first.

Note that Niagara still only reads a Smart2 device's EEPROM data once upon station startup, Smart2 controller power cycle, or Smart2 device coming back online.

Bug Fix

2346 Station restart caused setpoints with interstation links to go to -1.

Problem seen with one or more Smart2 controllers. Applies where some VAV specific setpoints required either the primary multiplier or auxiliary multiplier. If interstation links were used, and the station restarted, all inputs could go to -1. At station startup, subscriptions pushed interstation values to the Smart2VAV before it was initialized. The Smart2VAV attempted validation of some of the VAV setpoint values, which required a helper object. Since the Smart2VAV was not yet initialized, the helper object was still null, and a null pointer exception resulted. This prevented Niagara from ever initializing the Smart2VAV.

system600

Bug Fixes

2720 Invalid (and too many) error log entries.

In some scenarios, the System 600 driver was found to be creating too many entries in the station's error log (ErrorLogService), including debug type info as well as some that should have been simply "nulled." This issue was fixed. Now, debug-type data that was formerly sent to the error log is instead sent to the station's Standard Output, providing the "consoleDebug" property is set to true in the System600Network object.

3204 Character "~" caused pont creation failures.

The System 600/Apogee driver would "see" points named with one or more tilde characters ("~"), but would not create corresponding shadow objects because this is an illegal name character in Niagara. This was fixed in 2.301.430 and later. Now, objects are created, substituting an underscore ("_") for each illegal character.

webuser

Bug Fix

2226 Blank home page doesn't use station default.

If a station user was created with the Web User Admin Service (browser access to administer station users), and the user's "Browser Home" field was left blank, that user does not see the station's default home page when accessing the host using the browser URL "http://<host>". This issue was fixed in webUser-2.301.429 jar and later.

Embedded Notes

These are hardware or platform issues affecting embedded (JACE-4/5) controllers.

- **Enhancement**
- **Bug Fix**

Enhancement

1918 Time check & license problem.

Any JACE-4/5 upgraded to r2.301.430 or later now has enhanced capability to recover from loss of its realtime clock (RTC), such as can occur if the battery is disconnected and the unit powered off. Previously under this scenario, the JACE would power up with an invalid time, and its station would *not* auto start. You had to open the JACE in the Admin Tool and set its time.

With this enhancement, the JACE-4/5 will power up and initialize its time to either:

- its licensed generated date, or
- its firmware (module) build date

whichever is later. This should allow its station to auto start. If the station is using the TimeSyncService, it can then automatically obtain the "real" time, without requiring manual intervention.

Bug Fix

2976 TCP sequence numbers used by JACE-4/5 are predictable.

A customer reported that a network scan of TCP sequence numbers in a JACE-4/5 was predictable, and represented a network security hole. Scan utilities such as "Nmap" (available from http://www.insecure.org/nmap) verified this vulnerability. Further investigation found this to be a known issue in the VxWorks TCP/IP stack.

A VxWorks code patch was applied to fix the problem. This fix requires a JACE-4/5 to be upgraded to release 2.301.430.v1 or later (select "Upgrade OS").

Obtaining Support for Niagara Release 2.3.4

The Tridium secure website contains a "Technical Support" page with several links, including:

- Problem Reports Form
- Technical Publications

There is also a "Download Software" page that lists Niagara software modules and programs available for download.

Contact Information

Contact information for Tridium Inc. is included below:

Tridium, Inc.
3951 Westerre Parkway, Suite 350
Richmond, VA 23233
USA

Phone: (804) 747-4771

FAX: (804) 747-5204

For **technical support** email: techsupport@tridium.com

For **suggestions** email: development@tridium.com

For **documentation feedback** email: documentation@tridium.com

For **training information** email: training@tridium.com

Tridium Web Forum

A new on-line forum for Niagara Framework users is now available for users to share information and ideas. Once registered, users can join a wide variety of discussion groups, and receive emails when new postings to a particular topic are posted.

Because many forum visitors may be friendly competitors, users will be allowed to use an alias or unidentifiable user name.

The web URL for this forum is: http://webforum.tridium.com