
Triangle MicroWorks, Inc. SCADA Data Gateway

What's New?

a description of the changes included in all versions of the gateway

Version 2.50.0309

June 26, 2009

Property of Triangle MicroWorks, Inc.

This Software and the associated Documentation contain proprietary information of Triangle MicroWorks, Inc. and may not be copied or distributed in any form without the written permission of Triangle MicroWorks, Inc.

Copies of the source code may be made only for backup purposes.

© 1994 - 2008 Triangle MicroWorks, Inc. All rights reserved.

This document describes features or corrections that have been added to the SCADA Data Gateway.

This section describes new features and/or bug fixes included with each new release of the SCADA Data Gateway. The symbols to the left of each revision are used to help define the following kinds of revisions:



Additional SCADA Data Gateway Features



Corrections to problems, with indications for when the problems were introduced.

Note: as of v2.22, this document only lists changes to the SCADA Data Gateway itself. Please refer to the following documents for protocol-specific changes that also affect the SCADA Data Gateway:

- [DNP3 Master Source Code Library What's New](#)
- [IEC 60870-5-101 Master Source Code Library What's New](#)
- [IEC 60870-5-103 Master Source Code Library What's New](#)
- [IEC 60870-5-104 Master Source Code Library What's New](#)
- [Modbus Master Source Code Library What's New](#)
- [DNP3 Slave Source Code Library What's New](#)
- [IEC 60870-5-101 Slave Source Code Library What's New](#)
- [IEC 60870-5-103 Slave Source Code Library What's New](#)
- [IEC 60870-5-104 Slave Source Code Library What's New](#)
- [Modbus Slave Source Code Library What's New](#)

Known Issues

- Some SDO digital data types do not display correct values
- Online Help is not complete. Please refer to the manual for help. The manual is available from the Help menu.
- When Printing the Protocol Analyzer output, blank pages may be printed after the text is printed.

Please Note: Installing Windows XP Service Pack 2 with the default configuration will inhibit OPC communications via DCOM. The OPC Foundation has prepared the following white paper with instructions for configuring Service Pack 2 for use with OPC/DCOM communications:

[Using OPC via DCOM with XP SP2.pdf](#)

Version 2.50.0309 (June 26, 2009)



Added low-level modem support.



Added SCALE option to OPC Master Data Objects (MDO).



Added PulseOnEvent Equation.



Added ability for OPC Server to use a flat structure in addition to the current tree structure.



Description: The SCADA Data Gateway would sometimes crash on startup.

Introduced: v2.0

Resolution: Fixed in v2.50.0309



Description: The SCADA Data Gateway would sometimes crash when deleting a session or sector.

Introduced: v2.00

Resolution: Fixed in v2.50.0309



Description: The OPC AE Client could “lock up” if it could not connect to an OPC AE Server.

Introduced: v2.48

Resolution: Fixed in v2.50.0309



Description: The .SCADA Data Gateway could leak handles on RS-232 connections.

Introduced: v2.00

Resolution: Fixed in v2.50.0309



Description: The SCADA Data Gateway could leak handles when receiving writes from an external OPC DA Client.

Introduced: v2.00

Resolution: Fixed in v2.50.0309



Description: Reregistration of the SCADA Data Gateway service would overwrite settings in the Services Application.

Introduced: v2.35


Resolution: Fixed in v2.50.0309





Description: Mapping T50 slave point to both internal MDO and OPC Client MDO causes internal MDO to not be mapped.


Introduced: v2.22


Resolution: Fixed in v2.50.0309


-  *Description:* The SCADA Data Gateway did not always properly remove a Sector; after deletion, the Sector could reappear when the SDG restarted.
Introduced: v2.00
Resolution: Fixed in v2.50.0309


-  *Description:* The SCADA Data Gateway would always send Double Commands as 1PASS, even when they were configured as 2PASS.
Introduced: v2.00
Resolution: Fixed in v2.50.0309


-  *Description:* OPC Write operations could improperly fail with a “type conversion error.”
Introduced: v2.48
Resolution: Fixed in v2.50.0309


-  *Description:* The SCADA Data Gateway did not display quality fields correctly for IEC 60870-5 Integrated Totals
Introduced: v2.0
Resolution: Fixed in v2.50.0309

-  *Description:* The “There are no channels defined. Would you like to create one?” prompt did not work properly.
Introduced: v2.45
Resolution: Fixed in v2.50.0309

-  *Description:* The default variation parameters for DNP3 counter objects did not properly set the default variation.
Introduced: v2.00
Resolution: Fixed in v2.50.0309

-  *Description:* The SCADA Data Gateway set the default value of LinkClass1PollCnt to 0 instead of 20 (as properly shown in the INI file description for this parameter).
Introduced: v2.00
Resolution: Fixed in v2.50.0309

-  *Description:* The SCADA Data Gateway did not properly display the kill code in the license dialog when a license was removed (killed).
Introduced: v2.0
Resolution: Fixed in v2.50.0309

-  *Description:* The Modbus FLOAT option did not work correctly.
Introduced: v2.29
Resolution: Fixed in v3.50.0309



Description: The STEADY equation would occasionally give false triggers.
Introduced: v2.33
Resolution: Fixed in v2.50.0309

Version 2.50 (August 25, 2008)



Improved Quote Request and License Request dialogs, including closing dialogs after request has been sent and reducing information requested from user on license request dialog.



Added ability to map OPC properties to MDOs.



Modified License Server to better support Windows Vista. With this version, license operations (request/install/remove) can be performed without requiring "Run as Administrator."



Changed display of Object 51 (32 bit strings) in Configuration Window to show as a hexadecimal number (instead of floating point).



Modified handling of "#" character in Point Map file; it must now be the first character on the line in order to be interpreted as a comment delimiter.



Modified default values of ApplIncrRespTimeout and ApplDNPAbsRespTimeout so that both take effect in timeout calculations.



Added a PULSE equation to generate a one-shot pulse.



Added target layer diagnostics to protocol analyzer output.



Description: Changing path in SDG Options dialog unchecked "Enable Use of Paths."
Introduced: v2.0
Resolution: Fixed in v2.50




Description: Ability to start SDG with last value/quality of MDOs (CR2075) no longer worked.
Introduced: v2.47
Resolution: Fixed in v2.50





Description: SCADA Data Gateway could not read the Point Map file if an equation was mapped to an OPC Client Tag.
Introduced: v2.47
Resolution: Fixed in v2.50




Description: Reported time was not mapped properly for OPC Condition Events.
Introduced: v2.01
Resolution: Fixed in v2.50

 *Description:* Two feedback polls could be sent after a DNP control output request.
Introduced: v2.00
Resolution: Fixed in v2.50

 *Description:* Some values could be removed from the CSV file if the OPTIONS were modified in the GUI.
Introduced: v2.47
Resolution: Fixed in v2.50


 *Description:* Incorrect line numbers were shown when displaying errors in the Point Map (CSV) file. (Displayed number was approximately twice actual line number).
Introduced: v2.0
Resolution: Fixed in v2.50


Version 2.49


 *Description:* When upgrading from v2.46 to v2.48, a new installation was installed instead of an upgrade.
Introduced: v2.48
Resolution: Fixed in v2.49


Version 2.48 (March 28, 2008)


 Added support for OPC Alarm & Events (OPC AE) Client

 *Description:* The SCADA Data Gateway could leak handles when an external OPC Client wrote to the Gateway's OPC Server.
Introduced: v2.0
Resolution: Fixed in v2.48

 *Description:* The SCADA Data Gateway ignored the PRIORITY option that could be set on command MDOs.
Introduced: v2.37
Resolution: Fixed in v2.48


 *Description:* The SCADA Data Gateway would not allow the MDO Scaling option to be set from the GUI and reported errors if this option was set in the Point Map (CSV) file.
Introduced: v2.47.0255
Resolution: Fixed in v2.48

 *Description:* The USE_DOUBLE_POINT_MAPPING on SDOs did not work properly.
Introduced: v2.12
Resolution: Fixed in v2.48


 *Description:* When mapping from OPC Client to IEC 60870-5-101 Slave data points, the SDG would always set the “Substituted” (RES1) bit in the time stamp.
Introduced: v2.0
Resolution: Fixed in v2.48


Version 2.47.0255 (March 4, 2008)


 Added ability to configure OPC Server to use event-based or poll-based event reporting via the new OPCServerReportMode configuration parameter.


 Added ability to configure “k” for IEC 60870-5-104 sessions to values larger than 12. (New max value is 32).


♥ Version 2.47 (February 14, 2008)

 *Description:* The SCADA Data Gateway would crash on exit if an OPC Client was connected to the internal OPC Server
Introduced: v2.46
Resolution: Fixed in v2.47


 *Description:* Some MDO Options, including OPCTIMEREPORTED did not take effect when changed from the GUI until the SCADA Data Gateway was restarted.
Introduced: v2.00
Resolution: Fixed in v2.47

 *Description:* The SCADA Data Gateway could lose its license if multiple Ethernet cards were installed.
Introduced: v2.20
Resolution: Fixed in v2.47



 *Description:* If the SCADA Data Gateway’s OPC Client was unable to connect to an OPC Server on startup, it would change the default data types, and overwrite them on exit.
Introduced: v2.00
Resolution: Fixed in v2.47

 *Description:* The progress bar could go to 149% during startup.
Introduced: v2.46
Resolution: Fixed in v2.47




Version 2.46.0252 (November 19, 2007)

-  *Description:* The SCADA Data Gateway server would not start.
Introduced: v2.45
Resolution: Fixed in v2.46.0252



Version 2.46.0250 (October 18, 2007)

-  The Point Map (CSV) file can now accept non-English (e.g., Cyrillic) alphabet characters in the Description field.
-  *Description:* The SCADA Data Gateway could leak handles (causing excessive memory usage) when reporting many points through its OPC Server
Introduced: v2.45
Resolution: Fixed in v2.46.0250

Version 2.46.0241 (September 6, 2007)

-  Added ability to specify the variation to use in Analog Output requests. Added MDNPAAnaOutDfltVariation parameter to configuration (INI) file and VARIATION flag to point map (CSV) file.
-  *Description:* The SCADA Data Gateway would sometimes crash when deleting internal MDOs
Introduced: v2.0
Resolution: Fixed in v2.46.0241
-  *Description:* The SCADA Data Gateway would sometimes crash when deleting MDNP channels
Introduced: v2.0
Resolution: Fixed in v2.46.0241

Version 2.46.0239 (August 8, 2007)

-  Added ability to not send spontaneous messages as a result of COT 11 (Return information caused by a Remote Command) if the data have not changed. This option only applies single point inputs and is enabled by adding M14COT11NewBehavior[*][*]=TRUE to the configuration (INI) file.
-  Modified the OPC Client root name to avoid conflicts with the name "Root."

Version 2.46.0238 (July 12, 2007)



Description: The SDG would not run with an evaluation license.
Introduced: v2.46
Resolution: Fixed in v2.46.0238

Version 2.46 (July 10, 2007)



Added ability to configure the maximum number of registers to request in Modbus transactions. The following new configuration parameters were added: MMBSessionMaxCoilRead, MMBSessionMaxHoldingRegisterRead, MMBSessionMaxDiscreteInputRead, MMBSessionMaxInputRegisterRead.



Added support for Modbus Read Exception Status (FC 0x07).



Added ability for SDG to recognize data value changes reported as non-event data, and created configuration parameter to send those events when mapping to data types that support events/spontaneous messages.



Modified protocol analyzer so that filters apply to data already in the protocol analyzer scroll back buffer.



Added ability to run on virtual machine as long as a valid USB key is present.



Made minor enhancements to licensing software, including recognition of multiple network cards.



Description: The SDG could crash when deleting a channel that mapped points and/or had an equation referenced to it (i.e., a point on the channel was used in an equation).

Introduced: v2.00
Resolution: Fixed in v2.46



Description: The SDG could crash when configured with complicated equations.
Introduced: v2.00
Resolution: Fixed in v2.46



Description: The values of the DiagIdAuxMask configuration parameter in v2.45 were not backwards compatible with previous versions. (Customers who upgraded to v2.45 and had to change these values should now change them back; customers upgrading from version prior to v2.45 are not affected).

Introduced: v2.45
Resolution: Fixed in v2.46



Description: The SCADA Data Gateway could not read an initialization (INI) file that it created when a DNP3 TCP/UDP channel was created.

Introduced: v2.44

Resolution: Fixed in v2.46



Description: The REPORT_AS_RAW function for IEC 60870-5-101/104 double points did not work properly.

Introduced: v2.39

Resolution: Fixed in v2.46



Description: The MMB channelSessionsOnline and session onLineStatus tags could remain False, even after the session came online.

Introduced: v2.14

Resolution: Fixed in v2.46

Version 2.45.0232 (May 15, 2007)



Added option to disable IEC 60870-5-101 and -104 Slave spontaneous messages on a per-point basis. This feature is controlled by the new DISABLE_EVENTS option in the options field for each tag.



Description: The SCADA Data Gateway could crash when writing to a Modbus Coil that was mapped from an OPC Client tag

Introduced: v2.00

Resolution: Fixed in v2.45

Version 2.45 (April 4, 2007)



Description: The IEC 60870-5-101/104 Slave component did not respond properly when it received a second command of the same type as a command already in progress. It will now respond with a Negative Activation Confirmation and continue to process the first command.

Introduced: v2.00

Resolution: Fixed in v2.45



Description: The SCADA Data Gateway would leak handles when performing a write operation from an external OPC Client

Introduced: v2.00

Resolution: Fixed in v2.45

Version 2.44 (February 27, 2007)



Added licensing improvements to improve stability of USB key licenses.



Improved USB Key license dialog to indicate when a USB Key cannot be licensed.



Added UDP support.



Added ability to set the quality of user-defined internal MDOs from the GUI and to save/restore their current state.



Modified SCADA Data Gateway to use Variation 2 (instead of Variation 1) when writing DNP3 Object Group 41 (Analog Outputs). Level 2 Slaves should support Variation 2.



Description: The SCADA Data Gateway could crash when reading Data Set Prototypes that did not match the expected format.

Introduced: v2.42

Resolution: Fixed in v2.44



Description: The SCADA Data Gateway could crash if a channel closed while the connector thread was processing a channel status update.

Introduced: v2.00

Resolution: Fixed in v2.44



Description: Having a large number of USB devices plugged in could cause the SCADA Data Gateway to crash.

Introduced: v2.37

Resolution: Fixed in v2.44



Description: The licensing software would sometimes show an incorrect expiration date for the Maintenance Plan.

Introduced: v2.37

Resolution: Fixed in v2.44



Description: The USB Key licensing software introduced a memory leak.

Introduced: v2.37

Resolution: Fixed in v2.44



Description: The SCADA Data Gateway would sometimes issue a “Site Key not Valid” error message when a new (valid) activation key was entered.

Introduced: v2.37


Resolution: Fixed in v2.44





Description: The licensing software would not always find a USB key if other keys were installed.

Introduced: v2.37








Resolution: Fixed in v2.44


-  *Description:* If separate Test Harness and SCADA Data Gateway USB keys were plugged into the same computer, the Test Harness and/or the SCADA Data Gateway could not find its license.
Introduced: v2.37
Resolution: Fixed in v2.44

Version 2.43 (January 5, 2007)


-  Added licensing improvements and additional license-related logging.
-  Added ability to mask spontaneous messages due to online status change of mapped points. This feature is controlled by the new *SDNPpassOnlineStatusToSlave* option in the INI file.


Version 2.42 (December 6, 2006)


-  Added support for DNP3 Data Sets and Device Attributes.
-  Added licensing enhancements and corrected known licensing issues. Clarified text and provided option to request a quotation from the license dialog.
-  Added ability to support Mode A (local freeze with spontaneous transmission) for IEC 60870-5-101 and -104 integrated totals. Added *PROVIDE_AT_SECS* option to specify when integrated totals are reported spontaneously.
-  *Description:* The OPC Server did not report analog input values correctly.
Introduced: v2.41
Resolution: Fixed in v2.42
-  *Description:* The SCADA Data Gateway could crash due to resource conflicts when multiple instances were running on the same machine.
Introduced: v2.0
Resolution: Fixed in v2.42
-  *Description:* The SCADA Data Gateway could start as a service, even though it was configured to prompt before starting as a service.
Introduced: v2.40
Resolution: Fixed in v2.42
-  *Description:* The SCADA Data Gateway did not save mappings of internal tags to internal MDOs.
Introduced: v2.39
Resolution: Fixed in v2.42


-  *Description:* The SCADA Data Gateway would not send complete frames on Modem Pool channels.
Introduced: v2.34
Resolution: Fixed in v2.42


Version 2.41 (October 13, 2006)

-  Added a new configuration parameter (MDNPreadTimeoutsAllowed) to the INI file. This parameter specifies the number of consecutive read timeouts that may occur before marking the session offline.


-  Improved logging of license-related errors.

-  *Description:* The SCADA Data Gateway could crash due to Data Execution Prevention (DEP) settings on some PCs.
Introduced: v3.0
Resolution: Fixed in v2.41

-  *Description:* When an MDO was mapped to an Internal MDO, the internal MDO did not update on startup.
Introduced: v2.39
Resolution: Fixed in v2.41


-  *Description:* The SDG Service and Event Log options accessed from the Windows Start menu did not work.
Introduced: v2.40
Resolution: Fixed in v2.41


Version 2.40.0208 (July 21, 2006)

-  *Description:* If more than one modem channel shared a modem, some channels could fail to obtain use of the modem.
Introduced: v2.35
Resolution: Fixed in v2.40.0208


Version 2.40 (August 4, 2006)

NOTE: When upgrading from a previous version to this or later versions, the install script will uninstall the previous version. As a result, registry settings (including the "Enable Use of Paths" option) will be lost and must be reconfigured after the upgrade.


-  Enhanced SDG User Manual to include more information on COM/DCOM settings, especially when configuring the SCADA Data Gateway to run as a service.

- 


Description: The SCADA Data Gateway could crash when writing to Modbus Coils that were mapped to DNP3 CROB points
Introduced: v2.39
Resolution: Fixed in v2.40

- 


Description: The SCADA Data Gateway would sometimes crash when deleting IEC 60870-5-104 channels.
Introduced: v2.39
Resolution: Fixed in v2.40

- 


Description: The SCADA Data Gateway would sometimes crash during startup.
Introduced: v2.39
Resolution: Fixed in v2.40

- 


Description: The SCADA Data Gateway would sometimes crash when editing data types in the OPC Client.
Introduced: v2.39
Resolution: Fixed in v2.40

- 


Description: The SDG could crash on exit when there were errors in INI file related to unknown tags in OPC server
Introduced: v2.00
Resolution: Fixed in v2.40

- 

Description: The Global Auto Create Tags option did not refresh the screen to show newly defined data tags.
Introduced: v2.35
Resolution: Fixed in v2.40

- 

Description: The default value of CSCTA_useTimeStamp was TRUE, resulting in the use of private data types instead of standard data types.
Introduced: v2.37
Resolution: Fixed in v2.40

- 

Description: The SCADA Date Gateway did not correctly calculate the offset when the SCALED option was enabled.
Introduced: v2.14
Resolution: Fixed in v2.40

Version 2.39 (June 21, 2006)

- 

Completed OPC certification and interoperability tests; the OPC Data Access (OPC DA) and OPC Alarm and Events (OPC AE) Client and Server are now certified as OPC Compliant.



Added Data Type UI1 to equations and internal MDOs for compatibility with T140 data points



Added the ability to map Internal (Status) MDOs to other MDOs.



Added PROVIDE_AS_RAW option to Double Point inputs. If PROVIDE_AS_RAW is selected, the raw value (0 – 3) will be presented as type Double (R8 for OPC).



Modified output controls so that a write will only occur if a valid value is presented. For example, attempting to write 0 or 3 to Double Point Command points will result in no action from the SCADA Data Gateway.



Improved OPC Client processing. The SCADA Data Gateway no longer iterates the item attributes during an add operation.



Added ability to turn off evaluation licenses. This option works around a bug in the third-party evaluation licensing software that can cause a PC crash on some systems.



Modified some mapping rules:

- The OPC client now requires a client name (i.e., an alias) when mapping through to the SCADA Data Gateway's OPC server.
- IEC 60870-5-103 point names now use "_" instead of "." to separate function type, information element, etc.
- Properties are now referenced using "#" instead of "." (e.g., tagname#Quality)

These changes may require modifications to the mappings on existing installations.



Description: T140 MDOs did not map properly.

Introduced: v237.0181

Resolution: Fixed in v2.39

Version 2.38 (March 31, 2006)



Description: When using SDNP over TCP/IP, communications could "lock up" when a connection was broken and re-established.

Introduced: v2.00

Resolution: Fixed in v2.38



Description: If a serial channel went offline, it could potentially fail to go back online.

Introduced: v2.37

Resolution: Fixed in v2.38

Version 2.37.0183 (March 15, 2006)



Added support for Siemens SIPROTEC private ASDU 205.

Version 2.37.0181 (February 23, 2006)



Added support for Areva private ASDUs.



Added ability to completely turn off logging to SOE log file. To do this, add the following parameter to the INI file:

```
EnableEventLogFile=FALSE           // If true the SOE Event Log File will be
                                     // enabled. Possible values are 0, 1,
                                     // 'FALSE', or 'TRUE'.
                                     // DEFAULT: TRUE
```

Version 2.37.0178 (February 7, 2006)



Provided OPC Client interface updates to support OPC Servers that may stop providing data updates.

Version 2.37 (November 21, 2005)



Modified start up processing to avoid the Windows-issued blocking dialog (“This action cannot be completed because the other program is busy. Choose Switch To to activate the other program”) if the OPC Server does not start immediately.



Added ability to escape OPC tag names in equations (using “” character).



Added additional error checks to onDataChange method in OPC Client.



Added ability to configure the SCADA Data Gateway to resend a GI if it returns failure for IEC 60870-5-101 and -104 protocols.



Improved the uninstall prompts to lessen the likelihood of unknowingly aborting the uninstall process.



Added a configurable channel startup delay. This feature can reduce network traffic by delaying connection requests for specified channels.



Provided an offline delay for opening channels. This feature can reduce network traffic by reducing connection attempts when a channel is offline for extended periods of time.



Added an internal channel MDO to provide the ability to force a channel reset.








Provided license reliability enhancements.







Description: Nested equations with UPDATE_IF_NO_CHANGE option can cause SDG to crash.

Introduced: v2.23

Resolution: Fixed in v2.37

-  *Description:* NAN (Not a Number) float values could cause a crash when the data value was used in equations.
Introduced: v2.00
Resolution: Fixed in v2.37
-  *Description:* When DNP3 CROB outputs were changed from the GUI, the SCADA Data Gateway always issued a Latch command, even if the point was configured for Pulse or Paired (Trip/Close).
Introduced: v2.33
Resolution: Fixed in v2.37
-  *Description:* The SCADA Data Gateway did not update the mapping of ChannelSessionsOnlineStatus on start up.
Introduced: v2.0
Resolution: Fixed in v2.37
-  *Description:* Modems pools could not be deleted without restarting the SCADA Data Gateway.
Introduced: v2.15
Resolution: Fixed in v2.37
-  *Description:* The SCADA Data Gateway could sometimes not read the Point Map file after mapping MDOs through equations, using MDO to MDO mapping, or using special characters in OPC tag names.
Introduced: v2.00
Resolution: Fixed in v2.37

Version 2.36 (October 14, 2005)

-  Added ability for the SCADA Data Gateway to write the Sequence of Events (SOE) logs to a disk-based queue. Also provided a DLL to read these events from the queue.
-  Improved registration of the SCADA Data Gateway's OPC Servers. Added registration of OPC Servers during installation, removed the register/unregister OPC Server options from the Start Menu, and removed the registration success dialogs that were displayed when starting/stopping the service or GUI versions.
-  Modified the Options dialog to simplify Service startup options. The options are now presented as three radio buttons to select these options.
-  Simplified modem configuration dialog. Removed modem flow control options; modems must be configured to use hardware flow control.



Description: Registration of the GUI-based OPC Data Access server would sometimes fail when the GUI was started while the SCADA Data Gateway Service was running.

Introduced: v2.35

Resolution: Fixed in v2.36



Description: If an equation was mapped to another MDO, the SDG would report a CSV file error on startup.

Introduced: v2.33

Resolution: Fixed in v2.36

Version 2.35 (September 26, 2005)



The SCADA Data Gateway can now be run as a Windows Service. The Options dialog now includes configuration options to start the Service when the GUI is exited.



Improved context sensitive help in SCADA Data Gateway. Clicking on the “?” and the configuration field will open a dialog box with information about that field. If context-sensitive help is not available, or if the field name is clicked, the SDG User Manual will be opened.



Set the default value for PhysComModemRedialLimit to 3, and added a mechanism to automatically reset this count when a new dial-up call (as opposed to redialing the current call) is attempted.



Description: Sudden clock changes could cause the SCADA Data Gateway to disable its license.

Introduced: v2.0

Resolution: Fixed in v2.35

NOTE: Setting the clock back one hour due to going off Daylight Saving Time or Summer Time can cause this problem.

Any SCADA Data Gateway with a 42-character Activation Key/Serial Number that is running on a system that is configured to automatically revert from Daylight Saving/Summer Time needs to install this update prior to October 30, 2005.



Description: The SDG could exit with a “pure virtual function call” error.

Introduced: v2.0


Resolution: Fixed in v2.35



Description: When points were mapped to IEC 60870-5 Master Double Commands, the SCADA Data Gateway would send the Select twice, instead of a Select and an Operate command.


Introduced: v2.0

Resolution: Fixed in v2.35

 *Description:* When configured for modem pools, the SCADA Data Gateway would immediately begin dialing upon startup, even if the ActionMask or ActionPrd were all zero.


Introduced: v2.34

Resolution: Fixed in v2.35

 *Description:* On start-up, the SCADA Data Gateway would sometimes report that file paths were invalid. (Reinitializing the file paths would prevent future instances of this message).


Introduced: v2.34

Resolution: Fixed in v2.35

 *Description:* The ramp, saw, sin, and square equations did not work properly. They would start at zero rather than at the specified start value for the initial time period.

Introduced: v2.0


Resolution: Fixed in v2.35

 *Description:* If the OPC Client refresh tag was mapped to another MDO, the SDG would report a CSV file error on startup.

Introduced: v2.33

Resolution: Fixed in v2.35bob

Version 2.34.0157 (August 23, 2005)

 *Description:* The SCADA Data Gateway could fail to start when running on Windows 2003 Server.


Introduced: v2.0

Resolution: Fixed in v2.34

 *Description:* The SCADA Data Gateway would not run on Windows NT


Introduced: v2.33

Resolution: Fixed in v2.34

 *Description:* IEC 608770-5-101 Slave configurations would not answer the modem when configured for dial-in operation.

Introduced: v2.26








Resolution: Fixed in v2.34


 *Description:* The SCADA Data Gateway did not always display the correct modem status.


Introduced: v2.26


Resolution: Fixed in v2.34


Version 2.34 (August 12, 2005)


-  Improved handling of the SCADA Data Gateway's OPC Client connections. If the initial connection cannot be made, the Client is displayed in the configuration pane, and the Point Map file retains points related to this Client.
-  Improved the SCADA Data Gateway's OPC Client reconnect logic. Updated the configuration file help to correctly show that the minimum update rate is 300 ms.
-  Added ability to map a DNP3 Trip/Close option from an SDNP CROB tag to an OPC Client tag.
-  Added new option (WRITE_BOOL_AS_ONE) to instruct the SCADA Data Gateway's OPC Client to use "1" for TRUE, instead of the OPC Standard value of "-1."
-  Changed default serial port settings of IEC 60870-5-101 and IEC 60870-5-103 to 8-bit, 1 stop bit, even parity, as specified in the standards documents.
-  Implemented Analog deadbands for Slave components. For DNP3 points, the Master can set the deadband via Object 34 requests.
-  Provided additional enhancements to modem pools. Made modem status display clearer, set connecting state to False on failure, and indicated that telephone number cannot be changed at run time.


-  *Description:* The SCADA Data Gateway could leak handles when an external OPC Client wrote to the Gateway's OPC Server.
Introduced: v2.0
Resolution: Fixed in v2.34


-  *Description:* The SCADA Data Gateway could fail to save mappings of some internal or OPC Client points, resulting in the inability to read the Point Map file on startup.
Introduced: v2.0
Resolution: Fixed in v2.34


-  *Description:* The SCADA Data Gateway would sometimes freeze with the progress bar showing 1% after saving the INI file, if it was exited via the "X" button in the upper right-hand corner.
Introduced: v2.0
Resolution: Fixed in v2.34

-  *Description:* The SCADA Data Gateway's OPC Client did not always disconnect from an OPC Server gracefully; it could issue multiple IOPCServer::GetStatus dialog boxes.
Introduced: v2.0
Resolution: Fixed in v2.34

- 


Description: When using MDO<->MDO mapping, some data types would map correctly from the GUI but would not load from the subsequent Point Map file.
Introduced: v2.0
Resolution: Fixed in v2.34
- 


Description: If the SCADA Data Gateway was configured as an OPC Client, it could issue multiple IOPCAsyncWrite errors when shutting down.
Introduced: v2.0
Resolution: Fixed in v2.34
- 


Description: The OPC Client Refresh tag could not be written from an equation.
Introduced: v2.33
Resolution: Fixed in v2.34
- 


Description: The SCADA Data Gateway would send values of 0 or 1 (instead of 2 or 3) for IEC 60870-5-103 General Commands.
Introduced: v2.0
Resolution: Fixed in v2.34


Version 2.33 (May 12, 2005)


- 


Added ability to change MDO values (on master components) via a context menu item (accessed via right click).
- 


Added a Refresh tag to the OPC client. This tag allows the OPC Client to tell its server to refresh all points. Typically, this point would be mapped to another tag such that some condition will instruct the OPC Client to request a refresh.
- 

Modified configuration window to show "unknown" if a command point has not been set, and to show GOOD quality on startup. This facilitates use with OPC Clients that will not write to any tag whose quality is not GOOD.
- 


Added "Steady" equation. This equation returns a Boolean value to indicate whether its argument has changed within the prescribed time interval.
- 


Added ability to select OPC Client tags in the equation editor screen.
- 


Modified channel editor to prevent channel alias names that contain spaces.
- 


Added help for INI file parameters. The help information also documents parameters that are not automatically saved in the INI file.
- 


Description: The SCADA Data Gateway would sometimes issue an "object is not connected to server" error and/or crash when its OPC Client was shutting down.
Introduced: v2.00
Resolution: Fixed in 2.33


-  *Description:* The SCADA Data Gateway would sometimes stop polling after DNPActionNow was modified.
Introduced: v2.00
Resolution: Fixed in 2.33

-  *Description:* The MDO Mapping Editor did not work properly for M103 points. (M103 points were not shown in the correct locations within the tree).
Introduced: v2.00
Resolution: Fixed in 2.33


-  *Description:* Changing the action period from DNPActionPrd, then saving with exit cleared the action mask.
Introduced: v2.00
Resolution: Fixed in 2.33


-  *Description:* The maximum value of LinkOfflinePollDly was incorrectly limited to 65535 milliseconds.
Introduced: v2.00
Resolution: Fixed in 2.33


-  *Description:* The Channel and gateway online status for internal channels did not update correctly.
Introduced: v2.00
Resolution: Fixed in 2.33


-  *Description:* If the Master station repeated connected and disconnected quickly, communications could hang.
Introduced: v2.00
Resolution: Fixed in 2.33

Version 2.32 (March 29, 2005)


-  Created a separate Quick Start Guide, rather than embedding it in the SDG User Manual. Added links to the Quick Start guide from the downloads page, Start Menu, and Help menu.


-  Improved wording of dialog box to include instructions on handling of deprecated parameters in the configuration (INI) file.

-  *Description:* The online indicator did not work properly for Slave sessions.
Introduced: v2.00
Resolution: Fixed in v2.32


 **Description:** Specifying CSVFileFieldDelimiter in the INI file did not change the delimiter used when the SCADA Data Gateway saved the Point Map (CSV) file.
Introduced: v2.00
Resolution: Fixed in v2.32


Version 2.31.0122 (February 23, 2005)

 **Description:** Tags would sometimes not be made available to an OPC Client that started the SCADA Data Gateway.
Introduced: v2.0 (Incomplete fix in v2.31)
Resolution: Fixed in v2.31.0122

 **Description:** The SCADA Data Gateway would sometimes falsely detect a virtual machine.
Introduced: v2.31
Resolution: Fixed in v2.31.0122


Version 2.31 (February 18, 2005)

 Modified the error message displayed when unknown (or deprecated) parameters are encountered in the configuration (INI) file. The SCADA Data Gateway now issues an error and provides an option to immediately edit the INI file.


 The following configuration (INI) file parameters were modified (CSCNx_ctrlMask contained options that did not apply to these parameter types):


Previous INI Parameter (removed)	New INI Parameter (Added)
CSENA_ctrlMask	CSENA_AllowOnePass
CSENB_ctrlMask	CSENB_AllowOnePass
CSENC_ctrlMask	CSENC_AllowOnePass

Note: This enhancement requires a change to the INI file.

 The channelResponseTimeout parameter is now based on the *channel* index instead of the *session* index

Note: This enhancement requires a change to the INI file if the channelResponseTimeout parameter was configured.

 Applied critical update to licensing software. This update results in more reliable operation, including a fix for a random "access violation" problem.

 Added support for simple (non-integrating) analog deadbands. A DEADBAND option was added to analog data types, and a new INI file parameter (AnalogDeadBandDefault) was added at the session level to configure the default analog deadband.

 Added ability to specify command priority to DNP3 commands.



Commands to write to Modbus Coils and Holding Registers now take higher precedence than commands to read any data type.



Added control of DTR signal on modem channels. The SCADA Data Gateway now drops DTR when hanging up the modem, and after verifying modem did hang up, asserts DTR if the modem will be used for dial-in.



The default redial limit is now set to 0 (no limit). Previously, it defaulted to 3, which caused the SCADA Data Gateway to stop dialing after 3 unsuccessful tries.



Removed ability to configure modem channels immediately when the SCADA Data Gateway starts up without a valid configuration file since a modem pool must be defined first.



Added another sample OPC client to the example folder. This client can subscribe to specified data types.



Description: The SCADA Data Gateway could crash when the protocol analyzer was paused and resumed if the buffer size configurations became corrupted.

Introduced: v2.0

Resolution: Fixed in v2.31



Description: Tags would sometimes not be made available to an OPC Client that started the SCADA Data Gateway.

Introduced: v2.0

Resolution: Fixed in v2.31



Description: Point mappings were not evaluated properly on startup.

Introduced: v2.0

Resolution: Fixed in v2.31



Description: Internal MDOs on internal channels were not mapped properly.

Introduced: v2.0

Resolution: Fixed in v2.31



Description: Events could be logged in the SOE file or to an OPC Alarm & Events Server, even if the logMask was 0.

Introduced: v2.0


Resolution: Fixed in v2.31




Description: Changing the xxxActionPrd tag from the GUI would clear the action mask.


Introduced: v2.0

Resolution: Fixed in v2.31


 *Description:* Configuration files with Null or invalid channel names would be accepted.
Introduced: v2.0
Resolution: Fixed in v2.31

 *Description:* The protocol analyzer would not restart if it was cleared while scrolled back from the end.
Introduced: v2.28
Resolution: Fixed in v2.31

Version 2.30 (January 19, 2005)


 The pulse time can now be specified for individual CROB commands. The pulse time is determined by the value of an MDO specified in the Options field of the CROB MDO.


 The fragment size for DNP3 Slave sessions can now be configured.

 When specifying path in the SDG View->Options window, the SCADA Data Gateway now begins browsing at the current path setting.


 Removed registration of SCADA Data Gateway file types (i.e., .INI and .LOG) with windows explorer.


 Removed sort function from Simple OPC client to simplify this code.

 *Description:* The SCADA Data Gateway could crash on shutdown due an error processing the progress window.
Introduced: v2.00
Resolution: Fixed in v2.30

 *Description:* If the action period was set to zero (to cause the SCADA Data Gateway to stop polling) and then set back to a non-zero value (to cause it to resume polling), the SCADA Data Gateway would not resume polling. (Note: the default value of the modem redial limit was set to 0 (no limit).
Introduced: v2.26
Resolution: Fixed in v2.30

Version 2.29 (December 15, 2004)

 Successfully completed DNP3 Slave Intelligent Electronic Device (IED) Certification Procedure, Subset Level 2. Certification verified by Kema.

 Added support for float values in the Modbus Slave component. The new FLOAT option on Slave Modbus Holding Register points is used to configure whether the most- or least- significant word comes first in the float data.



Added ability to set Quality flags for Internal MDOs.



Updated Configuration/Interoperability guides are now included with each release.



Enhanced ability to configure DNP3 Slave unsolicited responses. The following parameters were modified or added in the configuration (INI) file:

Previous INI Parameter (removed)	New INI Parameter (Added)
ApplCnfmTimeout[*]	SDNPApplCnfmTimeout[*]
ApplUnsolMinEvents[*][*]	Class1_SDNUnsolMaxEvents[*] Class2_SDNUnsolMaxEvents[*] Class3_SDNUnsolMaxEvents[*]
ApplUnsolNotifyDelay[*][*]	Class1_SDNUnsolMaxDelay[*] Class2_SDNUnsolMaxDelay[*] Class3_SDNUnsolMaxDelay[*]
ApplUnsolPermitted[*]	SDNUnsolAllowed[*]
ApplUnsolRetryDelay[*]	SDNUnsolRetryDelay[*]
N/A	SDNUnsolOfflineRetryDelay[*]
N/A	SDNUnsolMaxRetries[*]
N/A	SDNUnsolClassMask[*]



Modified operation of SDNP Need Time indication. The following parameter was modified in the configuration (INI) file:

Previous INI Parameter (removed)	New INI Parameter (Added)
ApplAnnounceNeedTime[*]	SDNPrespondNeedTime[*]



Description: Editing an MDO caused the tag name to be lost.

Introduced: v2.28

Resolution: Fixed in v2.29



Description: The SCADA Data Gateway could send a synchronized CTO (Object 50, Variation 1) instead of an unsynchronized CTO (Object 51, Variation 2) when it needed a time synchronization.

Introduced: v2.00


Resolution: Fixed in v2.29




Description: The SCADA Data Gateway would update the control value in the Configuration Window after a DNP3 Select request instead of after an Execute request. Control requests were properly executed after the Operate request.


Introduced: v2.00


Resolution: Fixed in v2.29

 *Description:* DNP3 Analog Output Status flags were reported as 0x00 (offline) instead of 0x01 (online).
Introduced: v2.00
Resolution: Fixed in v2.29


Version 2.28 (November 22, 2004)

 Improved scrolling of protocol analyzer display. This enhancement eliminated the initial delay when scrolling back, and significantly reduced processor utilization during scrolling.


 Added ability to configure event queue size and event mode (via xxx_SDNPeventBufferSize and xxx_SDNPeventMode fields in INI file, where xxx can be Binary, Analog, BinaryCounter, FrozenCounter, String, or VirtualTerminal). The xxx_SDNPeventMode values can be "RECENT" or "SOE."


 Modified default Channel/Session/Sector configuration so that the SCADA Data Gateway and Communication Protocol Test Harness will communicate if each uses default settings.

 Added ability to search the SCADA Data Gateway's Protocol Analyzer display.


 Modified the "Add an OPC Client" dialog box to prevent spaces in the Alias.

 Added ability to configure the SCADA Data Gateway to start minimized (via InitialWindowMode parameter in INI file).


 Added ability to configure an "offline poll interval" (via PhysComOfflinePollPeriod in INI file). This value can be used to slow down polling of offline devices in multi-drop configurations.

 *Description:* The SCADA Data Gateway would crash on startup, if the *close* button on the "no current license" license dialog box was pressed or when pressing *dismiss* after viewing the license dialog box if there was no valid license.









Introduced: v2.00
Resolution: Fixed in v2.28

 *Description:* The SCADA Data Gateway would send Direct Operate instead of Select/Operate when configured for 2PASS in configuration (INI) file.

Introduced: v2.00
Resolution: Fixed in v2.28

 *Description:* The options editor would sometimes lose settings, especially when editing previously edited settings. Additionally, the available options would not be displayed when a tag was initially created.

Introduced: v2.00
Resolution: Fixed in v2.28

-  **Description:** The SCADA Data Gateway did not allow browsing of OPC Client tags through its OPC Server.
Introduced: v2.00
Resolution: Fixed in v2.28
-  **Description:** The SCADA Data Gateway would allow points to be configured with the same user name. Browsing either tag returned the same value.
Introduced: v2.00
Resolution: Fixed in v2.28
-  **Description:** The Protocol Analyzer channel/session filters did not always work properly. Also, logging did not always resume after pausing or clearing the protocol analyzer.
Introduced: v2.00
Resolution: Fixed in v2.28
-  **Description:** The drag and drop editor allowed MDOs to be dragged to invalid levels (e.g., channels). An error is now displayed.
Introduced: v2.22
Resolution: Fixed in v2.28
-  **Description:** Timers associated with an object could continue to run after the object was deleted.
Introduced: v2.00
Resolution: Fixed in v2.28
-  **Description:** Selecting “2PASS” and “Logging 2PASS” in the equation editor were mutually exclusive.
Introduced: v2.00
Resolution: Fixed in v2.28
-  **Description:** If “Global Create Tags Auto” was checked, the SCADA Data Gateway would attempt to add points to Modbus sessions. This could result in adding invalid points. (The Modbus protocol does not provide point number information, so Modbus points cannot be added automatically).
Introduced: v2.14
Resolution: Fixed in v2.28
-  **Description:** The SDG could crash when using modem pools, and Slave devices could fail to dial out.
Introduced: v2.15
Resolution: Fixed in v2.28

Version 2.27 (October 13, 2004)



Added equation editor GUI. The GUI adds the ability to browse tags, “drag and drop” tags and functions in to the equation editor, and validate equations before saving them.



Added check to install procedure to verify user has Administrator privileges. Administrator privileges are required by the license management software.



Upgraded software licensing software, fixing several minor bugs in license validation.



Added filtering capability to trace log.



Description: The SCADA Data Gateway could crash if an OPC client was connected to the SDG's OPC Server, and an MDO was deleted in the SDG's server.

Introduced: v2.00

Resolution: Fixed in v2.27



Description: The SCADA Data Gateway did not delete OPC clients properly. When the SDG was restarted after deleting an OPC client, the OPC client could still be present.

Introduced: v2.00

Resolution: Fixed in v2.27



Description: The SCADA Data Gateway would not always start up properly when configured to start automatically when a PC restarts.

Introduced: v2.00

Resolution: Fixed in v2.27



Description: The license issue date recorded in the license dialog box could be displayed incorrectly.

Introduced: v2.00

Resolution: Fixed in v2.27



Description: When shutting down, the SCADA Data Gateway did not properly shut down the Modbus action mask.

Introduced: v2.00

Resolution: Fixed in v2.27











Description: The SCADA Data Gateway would not install to drives other than C: when using Windows 2003 Server.


Introduced: v2.00


Resolution: Fixed in v2.27


Version 2.26 (September 15, 2004)


-  Added Tag Selector dialog to support mapping of tags and equations to top-level tags.
-  Added option to treat Modbus registers as signed values.
-  Added ability to map read/write registers to separate read and write tags.
-  Added WRITE_PERIOD option for command MDOs. This option allows the user to specify a period at which command MDOs are (re)written.
-  Added ability to use an escape character (“”) around a tag name (e.g., ‘opcserver.mygroup./test/mytag’). This allows a tag name to contain reserved tokens (e.g., “/”).
-  Added ability to edit OPC point options.
-  Removed feedback point configuration from IEC command point configuration. Feedback points can be mapped to the appropriate tag.

-  *Description:* The IEC 60870-5-101 Slave component of the SCADA Data Gateway did not send an EOI (End of Initialization).
Introduced: v2.00
Resolution: Fixed in v2.26






-  *Description:* The IEC 60870-5-101 Slave component of the SCADA Data Gateway did not send cyclic data. Note: This fix required a change in the groupMask (e.g., MMENB_groupMask). Previously, the cyclic mask was 0x80000000; it is now 0x10000000. Any existing INI files using the old mask will need to be modified to use the new mask.
Introduced: v2.00
Resolution: Fixed in v2.26


-  *Description:* Mapping internal tags (e.g., onLineStatus) to OPC Client tags did not work properly.
Introduced: v2.00
Resolution: Fixed in v2.26


-  *Description:* The SCADA Data Gateway did not update values when the Forced flag was set if the SCALE option was enabled.
Introduced: v2.14
Resolution: Fixed in v2.26


-  *Description:* The installation utility did not allow setting a license key during installation. It would repeatedly display the evaluation warning dialog instead.
Introduced: v2.00.32
Resolution: Fixed in v2.00.35

Version 2.25 (August 27, 2004)


-  Added support for DNP3 XML Device Configuration Language
-  Added ability to configure frame size via the tmwgtway.ini file for IEC 60870-5-104 protocol component.
-  Added “PROVIDE_AS_RAW” option to IEC 60870-5 data points. This option allows the SCADA Data Gateway. to retrieve “raw” double point values (0, 1, 2, 3).
-  Added a confirmation dialog box to the license request dialog.
-  The Simple OPC Client that ships with the SCADA Data Gateway now waits until the SCADA Data Gateway sets the server status to Running before subscribing to tags. Note: All clients should wait for this status before subscribing to tags in order to ensure that the SCADA Data Gateway has finished its initialization.

-  *Description:* The SCADA Data Gateway would sometimes crash during shutdown when the last OPC Client disconnected if the SCADA Data Gateway was started by an OPC Client.
Introduced: v2.00
Resolution: Fixed in v2.25

-  *Description:* The SCADA Data Gateway would sometimes display an “unlicensed protocol” message while running, but the license dialog would show that the protocol was licensed.
Introduced: v2.00
Resolution: Fixed in v2.25

-  *Description:* The SCADA Data Gateway would truncate the IOA to a 16-bit value.
Introduced: v2.00
Resolution: Fixed in v2.25

Version 2.24.0104 (August 17, 2004)

-  *Description:* The SCADA Data Gateway return a failure an OPC Client attempted to read selected tags, even though the tags existed in the SDG.
Introduced: v2.22
Resolution: Fixed in v2.24.0104



Description: The GatewayOnlineMDO was always reported as False.
Introduced: v2.22
Resolution: Fixed in v2.23.0104



Description: Email address checking was too stringent in the license removal dialog. Some valid email addresses were not accepted.
Introduced: 2.00.32
Resolution: Fixed in v2.24.0104

Version 2.24 (July 9, 2004)



Added ability to map SDO points to SDO points. This feature allows two master devices to communicate with each other. When properly mapped, a control command issued by one of the Master devices will be written to the corresponding Master device as a data change.



Added ability to force an OPC Client Type to type R4 (float).



Added ability to configure the OPC refresh rate via the GUI.



Added display of point mapping in Gateway root directory.



Description: The SCADA Data Gateway did not save the equation options when equations were mapped to an SDO.
Introduced: v2.0
Resolution: Fixed in v2.24



Description: The SCADA Data Gateway would truncate, rather than round, time stamp value reported from an OPC Client.
Introduced: v2.00
Resolution: Fixed in v2.24


Version 2.23 (June 25, 2004)




Added new equation option (UPDATE_IF_NO_CHANGE) to force the SCADA Data Gateway to write the result of the equation each time it is evaluated, even if the value did not change.





Description: The SCADA Data Gateway did not save equations that were mapped to MDOs.
Introduced: v2.22
Resolution: Fixed in v2.23


 *Description:* The SCADA Data Gateway did not wait for a Start Act when the link disconnected and reconnected.
Introduced: v2.0
Resolution: Fixed in v2.23

 *Description:* The SCADA Data Gateway did not provide correct flags for DNP3 Object 12 (Binary Output) SDOs.
Introduced: v2.0
Resolution: Fixed in v2.23


Version 2.22 (June 17, 2004)


 Added ability to map MDO points to MDO points. This feature allows two slave devices to communicate with each other. When properly mapped, a data input change on one Slave device will be written to the corresponding Slave device as a control command.


 Added OPC Client Update Rate and Server Status update rate configuration parameters.


 Added ability to configure the channel Response timeout parameter.


 Added ability to add comments to Point Map file. Lines beginning with “#” character are now treated as comments.


 Added ability to schedule Counter Freeze and Counter Reset commands via the SCADA Data Gateway’s IECActionMask parameters.

 Added a counter group mask for IEC 60870-5 protocols.


 Enhanced licensing and installation processes. Added button to license screen to request Activation Key via email. If no email is available, a ZIP file with all required information is created; this file can then be emailed to sales@TriangleMicroWorks.com to request a license. Also added confirmation of maintenance plan prior to allowing upgrades.


 *Description:* The SCADA Data Gateway did not respond to read requests with the desired points if there were gaps in the point numbers.
Introduced: v2.0
Resolution: Fixed in v2.22


 *Description:* The SCADA Data Gateway did not update quality for static data points.
Introduced: v2.0
Resolution: Fixed in v2.22


 *Description:* When a TCP/IP port closed, the message “closed due to remote close” was displayed, even if the port closed for another reason.
Introduced: v2.0
Resolution: Fixed in v2.22


Version 2.21 (May 14, 2004)


 Added support for Single and Double Commands with CP56 time stamp in IEC 60870-5 components. The time stamp is configured via the INI file.


 Added support for Binary Counters (Object 20) in the DNP3 slave component.


 Modified determination of session offline status for IEC 60870-5. The session will now be taken offline only if the link fails.


 Added tags (MDOs) to display number of link and application layer timeouts.


 Improved installation utility to provide clearer description of installation options and automatically uninstall previous versions when upgrading.


 Added option on license window to send the Computer ID to Triangle MicroWorks via email.

 *Description:* The SCADA Data Gateway could crash when trying to set options on an MDO that did not exist or could not be created.
Introduced: v2.00
Resolution: Fixed in v2.21

 *Description:* If a DNP3 Master issued a Select Operate command and did not receive a response, the command could become stuck in the queue, blocking subsequent requests.
Introduced: v2.00
Resolution: fixed in v2.21

 *Description:* The IEC 60870-5-101 and -101 Master link layer could continue polling on the same session while a request was pending.
Introduced: v2.00
Resolution: Fixed in v2.21

 *Description:* The IEC 60870-5-101 and -103 components did not calculate the first byte time correctly for variable and fixed length frames.
Introduced: 2.00
Resolution: Fixed in v2.21

 *Description:* The SCADA Data Gateway would fail to display the license window if it was running on a secondary monitor.
Introduced: v2.00
Resolution: Fixed in v2.21

Version 2.20 (April 13, 2004)



Added configuration parameters to specify the location of the initialization file (tmwgtway.ini) and the help files. NOTE: When upgrading to this version of the SCADA Data Gateway, you must use Add/Remove Programs to remove or rename the current installation, but do not remove the directory or any files in it. Then install the new version. This step is required to set the default locations of the initialization and help files. The SOE log and Point Map (tmwgtway.csv) file locations continue to be specified in the initialization file.



Added support for Windows 2003 Server.



Upgraded software licensing software. The new version provides better protection against lost licenses and provides better debugging capabilities in the event a license is lost. Renamed “Site Code” to “Computer ID” and “Site Key” to “Activation Key.” Also removed ability to transfer a license. To transfer a license, kill the existing license and send the resulting Kill Code and new Computer ID to sales@TriangleMicroWorks.com.



The SCADA Data Gateway now prevents installation of upgrades if the Maintenance and Enhancement Plan has expired.



Description: The SCADA Data Gateway could crash when shutting down if an OPC Client was still connected.

Introduced: v2.00

Resolution: Fixed in v2.20



Description: The SCADA Data Gateway would sometimes respond incorrectly (rather than reporting an error) when a DNP3 Slave session received requests for unsupported qualifiers.

Introduced: v2.00

Resolution: Fixed in v2.20

Version 2.19 (March 23, 2004)



Added additional error handling to prevent crashes when closing an external OPC client and when adding an OPC Client.



Modified equation editor to allow “\” character.



Description: Requests could become stuck in the Modbus Master queue

Introduced: v2.14

Resolution: Fixed in v2.19

Version 2.18 (March 8, 2004)



Added additional error handling to prevent a crash due to a Null pointer.



Added ability to configure frame size via the tmwgtway.ini file for IEC 60870-5-101 protocol component.



Improved determination of when to mark a session offline. If a command times out, but an EOI is received between the time the command was sent and the command timed out, then the session is not marked offline.



Description: The SCADA Data Gateway could crash when unbinding an SDO from and MDO, if there were multiple bindings to the SDO.

Introduced: v2.17

Resolution: Fixed in v2.18



Description: The SCADA Data Gateway could crash when IEC 60870-5-101 and IEC 60870-5-103 channels were configured with a link address size of 0.

Introduced: v2.00

Resolution: Fixed in v2.18



Description: The SCADA Data Gateway would fail to redial or return a modem to the modem pool if the dialed device did not connect.

Introduced: v2.00

Resolution: Fixed in v2.18



Description: The SCADA Data Gateway could crash when IEC 60870-5-101 and IEC 60870-5-103 channels were configured with a link address size of 0.

Introduced: v2.00

Resolution: Fixed in v2.18



Description: IEC 60870-5 Application Layer messages were not removed from the queue when the Link Layer timed out.

Introduced: v2.00

Resolution: Fixed in v2.18



Description: A DNP3 Slave session would respond to a Reset Link command using the configured destination address, rather than the address of the Master that issued the command.

Introduced: v2.00

Resolution: Fixed in v2.18

Version 2.17 (February 13, 2004)



Added new M101ApplIgnoreMSTExtraByte configuration parameter to configuration (INI) file. This parameter can instruct the SCADA Data Gateway to ignore an extra byte following the IOA in ASDU 6 data sent by some outstations.



Added new AcceptClockSync configuration parameter. This parameter determines whether the SCADA Data Gateway will update the System (PC) Clock when it receives a Clock Sync message.



Added ability to map a single SDO command point to multiple MDOs.



IEC double points can be mapped into two Modbus coils by using the INVERTED_WRITE option. One of the Modbus MDOs will have the opposite value of the other MDO.



IEC Step commands support a filtering option so that a single step command can be mapped to two step command MDOs. One of the MDOs can be configured to allow only up commands while the other MDO can be configured to allow only down commands.



Description: The SCADA Data Gateway did not use the System time for Clock Sync commands even though the UseSystemTime option was configured.

Introduced: v2.00

Resolution: Fixed in v2.17



Description: Application Layer messages were not removed from the message queue if the Link Layer timed out.

Introduced: v2.00

Resolution: Fixed in v2.17



Description: Counter Interrogations of the General Group were formatted incorrectly, so the command did not complete.

Introduced: v2.00

Resolution: Fixed in v2.17



Description: The SCADA Data Gateway would leak memory if a DNP action mask did not complete.

Introduced: v2.00

Resolution: Fixed in v2.17



Description: Queued Modbus commands were not removed if the Master session was closed.

Introduced: v2.00

Resolution: Fixed in v2.17

Version 2.16 (January 15, 2004)



Changed Modbus Plus *RouteAddress* parameter to *RoutePath*.



Description: When configured for modem pools, the SCADA Data Gateway did not always dial out or remain connected while polling.

Introduced: v2.00.12

Resolution: Fixed in v2.00.16

Version 2.15 (December 12, 2003)



Added support for Modem Pools.



Improved handling of errors in Point Map file. If errors are detected in the Point Map file on start up, the SCADA Data Gateway issues a warning and does not write to the file until the errors are corrected.



Modified updates in the Configuration Window. The SCADA Data Gateway now only updates visible items. This change can significantly improve performance.



Simplified use of “@” command line parameter. When a file name is specified using the “@” command, that file is used for the initialization (INI) file in lieu of the TMWgateway.ini file in the executable directory.



Added MAKE_FLOAT equation. This equation combines the specified ULONG values into a single FLOAT value. It is typically used to create a float value from two Modbus registers. Example: MAKE_FLOAT(MMB.L3.T3.P1, MMB.L3.T3.P0).



Improved mapping of Quality flags between OPC and IEC 60870-5-101. This change affects mappings of quality fields for OPC Client ↔ OPC Server and OPC ↔ IEC 60870-5 quality indicators.



Improved mapping of MDOs to SDOs via drag and drop operations. The SCADA Data Gateway now prevents duplicate mapping of MDOs to SDOs via drag and drop operations. Also, if the binding operation fails, the SDO is now fully deleted.



Added ability to map DNP counters to IEC 60870-5 Integrated Totals. If the DNP counter value exceeds the range of the Integrated Total, the Invalid bit is set and the value is clamped at its minimum or maximum.



Added ability to map between IEC 60870-5-101/-104 Type 50 (Set Point Command, Short Floating Point) and DNP Object Group 41 (Analog Output Block).



Added a Sort option to the point map list view.



Removed the Unit Identifier field from the Modbus Slave session configuration window.



Added ability to specify long and short pulse durations for IEC 60870-5 output commands.



Added type casting operations to equations. This feature allows nesting of equations that have operands that are equations that return different types, such as GET_FLAGS and BIT_AND; OR and TEST_BIT. For example:

```
BIT_AND(ulong(IF(GET_FLAGS(Types.I4)==192,1,0)),ulong(IF(GET_FLAGS(Types.I4)==0,0,1)))
ulong(IF(GET_FLAGS(Types.I4)==192,1,0))&ulong(IF(GET_FLAGS(Types.I4)==0,0,1))
BIT_OR(ulong(if(TEST_BIT(Types.I4,0),1,0)),ulong(if(TEST_BIT(Types.I4,1),2,0)))
ulong(if(TEST_BIT(Types.I4,0),1,0))|ulong(if(TEST_BIT(Types.I4,1),2,0))
```



Separated IEC 60870-5-103 and 60870-5-101/-104 EOI and OnLine action masks. The following parameters were removed from the configuration file (TMWgtway.ini):

- ApplBlokngActionMask
- ApplEoiActionMask
- ApplOnlineActionMask



Description: If the SCADA Data Gateway attempted to issue a Modbus command while a prior Modbus command was still executing, the command would fail.

Introduced: v2.14

Resolution: Fixed in v2.15



Description: The SCADA Data Gateway could create duplicate entries in the Point Map File for some data types.

Introduced: v2.00

Resolution: Fixed in v2.15



Description: The SCADA Data Gateway did not read UI1 types or read and write strings from/to OPC properly.

Introduced: v2.00

Resolution: Fixed in v2.15



Description: IEC 60870-5-101/-104 Step Commands did not operate properly.

Introduced: V2.00

Resolution: Fixed in v2.15



Description: When mapping points from IEC 60870-5 to OPC Server, the SCADA Data Gateway would write control operations to the Server for both Select and Operate commands.

Introduced: v2.00

Resolution: Fixed in v2.15. The OPC Server is updated only for a valid Operate command.





Description: FreezeCountersNow and ResetCountersNow internal MDOs were being reported as the wrong type (I2 instead of Bool).

Introduced: v2.13


Resolution: Fixed in v2.15


Version 2.14.0055 (December 9, 2003)


-  *Description:* Writing certain OPC items (e.g., DNPACTIONMask0) caused a data type translation error.
Introduced: v2.13
Resolution: Fixed in v2.14.0055


-  *Description:* The progress bar was not displayed when starting or stopping the SCADA Data Gateway.
Introduced: v2.14
Resolution: Fixed in v2.14.0055

Version 2.14.0051 (November 12, 2003)


-  Improved handling of Quality flags in DNP Master component for outputs. On startup, the output point's Quality is now the Quality of the reported output point. This change allows the initial quality to be "Good" even though the last output control command is unknown.

-  *Description:* The SCADA Data Gateway did not present the correct data type of MDOs through the OPC Server
Introduced: v2.13
Resolution: Fixed in v2.14











-  *Description:* The SCADA Data Gateway did not map over-range values correctly.
Introduced: v2.00
Resolution: Fixed in v2.14

-  *Description:* The SCADA Data Gateway did not set the set "Unknown IOA" in the COT field for failed IEC 60870-5-101 and -104 commands.
Introduced: v2.00
Resolution: Fixed in v2.14


- Description:* The SCADA Data Gateway did not send a proper response when it received an IEC 60870-5-104 command for a nonexistent sector.
Introduced: v2.00
Resolution: Fixed in v2.00.24

-  *Description:* The SCADA Data Gateway did not echo IEC 60870-5-101 and -104 commands properly if the command failed due to an unknown IOA.
Introduced: v2.00
Resolution: Fixed in v2.14




Version 2.14 (October 31, 2003)

-  The SCADA Data Gateway now supports Modbus.
-  Improved database support for Master components, allowing the SCADA Data Gateway to process large numbers of points in an efficient manner.
-  Analog data points can now be scaled using linear scaling. The scaled value replaces the raw data value.
-  IEC Application layer Test Commands can now be scheduled via the IECActionMask.
-  The DNP Master “Auto Request Mode” can now be configured via the GUI.
-  The Simple OPC Client can now sort data by tag name.
-  **Description:** The SCADA Data Gateway could crash when connected to an OPC Client
Introduced: v2.14
Resolution: Fixed in v2.14
-  **Description:** If an IEC 60870-5-103 session received echoes of characters it sent (as might happen on a fiber optic ring), the SCADA Data Gateway would think the session was online, even if no Slave was present.
Introduced: v2.12
Resolution: Fixed in v2.14
-  **Description:** A Master DNP Session could send Link Status messages to all sessions on a channel without waiting for the response.
Introduced: v2.00
Resolution: Fixed in v2.14
-  **Description:** Subscribing to multiple properties of a single tag resulted in incorrect values being reported.
Introduced: v2.00
Resolution: Fixed in v2.14

Version 2.12.0048 (October 25, 2003)

-  **Description:** The SCADA Data Gateway did not update IEC 60870-5-103 points once they were created.
Introduced: v2.12
Resolution: Fixed in v2.12.0046



Version 2.12.0046 (October 22, 2003)

-  Added "USE_DOUBLE_POINT_MAPPING" option to allow IEC 60870-5 Double Points mapped from non-double point values (e.g., OPC tags or equations) to be interpreted as Double Points.
-  *Description:* If a user tag name was defined, the SCADA Data Gateway did not make properties (e.g., TimeStamp) available to its server
Introduced: v2.10
Resolution: Fixed in v2.14
-  *Description:* User-defined OPC tag names did not display properly in the Iconics browser.





Version 2.12.0045 (October 16, 2003)


-  Release Beta version of Modem Pools.


Version 2.12.0044 (October 10, 2003)


-  *Description:* The SCADA Data Gateway did not provide correct OPC Client quality values to slave points.
Introduced: v2.00
Resolution: Fixed in v2.12.0044
-  *Description:* The SCADA Data Gateway could crash when shutting down.
Introduced: v2.00
Resolution: Fixed in v2.12.0044


Version 2.12 (October 8, 2003)


-  The SCADA Data Gateway no longer generates an error when it receives a message it sent via an IEC 60870-5 protocol. This change facilitates use on a fiber optic ring.
-  Improved detection of IEC 60870-5 sessions going offline. Any application layer error will now take a session offline. (DNP sessions already detected offline sessions in this manner.)
-  Added ability to configure DNP Auto Request mode.
-  *Description:* The SCADA Data Gateway could crash when updating the Configuration window.
Introduced: v2.00
Resolution: Fixed in v2.12


-  *Description:* The SCADA Data Gateway could crash when editing IEC 60870-5-103 sessions.
Introduced: v2.00
Resolution: Fixed in v2.12


-  *Description:* The SCADA Data Gateway could crash if it failed to create a configured equation on startup.
Introduced: v2.00
Resolution: Fixed in v2.12


-  *Description:* Modifying Sessions or Sectors could cause erratic behavior.
Introduced: v2.11
Resolution: Fixed in v2.12


-  *Description:* The SCADA Data Gateway did not parse the Point Map file correctly for IEC 60870-5-103 sessions.
Introduced: v2.00
Resolution: Fixed in v2.12



-  *Description:* The Point Map File saved by the SCADA Data Gateway could fail to work on startup if equations had dependencies on other equations.
Introduced: v2.00
Resolution: Fixed in v2.12

-  *Description:* The SCADA Data Gateway did not honor shutdown requests from an OPC Client
Introduced: v2.11
Resolution: Fixed in v2.12






-  *Description:* OPC Clients could not select tags with the UserName field configured (including equation MDOs).
Introduced: v2.00
Resolution: Fixed in v2.12

-  *Description:* The SCADA Data Gateway did not send Quality Flags correctly to the OPC Client.
Introduced: v2.11
Resolution: Fixed in v2.12




-  *Description:* The SCADA Data Gateway was not properly updating the Quality Flags for Integrated Totals.
Introduced: v2.00
Resolution: Fixed in v2.12


-  *Description:* The SCADA Data Gateway sent one less link retry than was configured for DNP sessions.
Introduced: v2.00
Resolution: Fixed in v2.12
-  *Description:* The maximum address that could be entered from the GUI for IEC 60870-5-101 points was 65535, even if the point was configured for an IOA address size of 3.
Introduced: v2.00
Resolution: Fixed in v2.12. The maximum address that can be entered via the GUI is now calculated based on the IOA address size.

Version 2.11 (September 2, 2003)






-  Added the ability to write to a mapped SDO that propagates to an M103 MDO. This change allows an OPC Server to reset a point to “0” after reading it.
-  Added the ability to prevent multiple instances of the SCADA Data Gateway from running simultaneously.
-  *Description:* The SCADA Data Gateway would “freeze” when an IEC 60870-5-103 session was configured for balanced mode.
Introduced: v2.00
Resolution: Fixed in v2.11
-  *Description:* If the operator answered "no" to the "Exit anyway?" dialog box when the “Exit” command was selected while the SCADA Data Gateway was still connected to an OPC Client, the SCADA Data Gateway would leave a progress bar displayed.
Introduced: v2.00
Resolution: Fixed in v2.11
-  *Description:* SCADA Data Gateway DNP Slave sessions did not handle Object 50 Variation 1 properly if Qualifier was other than 7.
Introduced: v2.00
Resolution: Fixed in v2.11

Version 2.10 (August 20, 2003)

-  Added support for IF() operator in equations. The IF() operator returns either of two expressions depending on the Boolean value of an expression.
-  Added Simple Events to OPC Alarm & Events Server.
-  Added ability to send the tag description defined in CSV file to the OPC Alarm & Events client.

-  Added ability to specify a tag name (i.e., an alias name) for OPC Client tags. The alias name can then be used in an equation. The alias name is specified by adding 'ALIAS tagName' to the options field of an OPC Client tag.

Version 2.09 (August 8, 2003)

-  Redesigned SCADA Data Gateway database access. This redesign improved performance, resulting in less CPU utilization. In addition, it corrected problems with loading points from the OPC Client, displaying items. It also corrected several crashes that occurred during database accesses.
-  The default value of the Application Response Timeout parameter is now customized for each protocol. (NOTE: The configuration file parameter ApplAbsRespTimeout was replaced by ApplDNPAbsRespTimeout and ApplIECAbsRespTimeout. If you are upgrading from a previous version, you will need to remove ApplAbsRespTimeout from your configuration file.)
-  The SCADA Data Gateway now allows additional characters in the OPC Client tag name. All children of an OPC Client (i.e., OPC Client Tags) are now used "as is." The only delimiter character is a period between the alias name and the OPC Client tag name.
-  Added support for new configuration options (OptUseCmdActterm and ApplUse_C_SE_Actterm) to specify when the SCADA Data Gateway should expect an Activation Termination Message. OptUseCActterm was removed.
-  OPC Server points are now displayed in the Configuration window when an OPC Client has subscribed to them.



Description: The SCADA Data Gateway did not allow mapping of analog output controls.

Introduced: v2.00

Resolution: Fixed in v2.09



Description: When a Slave channel was deleted, the corresponding internal MDOs were not deleted.

Introduced: v2.00


Resolution: Fixed in v2.09





Description: When saving the configuration file, some parameters incorrectly printed the current value as the default value in the parameter description field.


Introduced: v2.00


Resolution: Fixed in v2.09


-  *Description:* The SCADA Data Gateway would crash if the user attempted to map an SDO to another SDO. (This is not a valid mapping)
Introduced: v2.00
Resolution: v2.09


-  *Description:* The SCADA Data Gateway did not always delete mappings properly.
Introduced: v2.00
Resolution: v2.09


-  *Description:* Frozen Counters were not included in the response to a Class 0 poll
Introduced: v2.00
Resolution: Fixed in v2.09


-  *Description:* A DNP Slave session would not cancel the selectTimer, which could cause a crash.
Introduced: v2.00
Resolution: Fixed in v2.09

-  *Description:* A read specifying a limited quantity would return the specified number of each object type. This fix is required to pass the DNP3 2002 Conformance Test Procedures.
Introduced: v2.00
Resolution: Fixed in v2.09

-  *Description:* The DNP Master component did not validate application sequence numbers.
Introduced: v2.00
Resolution: Fixed in v2.09. The message is discarded if the application sequence number is invalid.

-  *Description:* DNP Master broadcast messages did not set the DIR bit in link control field.
Introduced: v2.00
Resolution: Fixed in v2.09

-  *Description:* If the DNP Slave component received a Select Request message larger than 256 bytes, the SCADA Data Gateway could crash.
Introduced: v2.00
Resolution: Fixed in v2.09

-  *Description:* The DNP Link layer checked the FCB before checking the data block CRCs.
Introduced: v2.00
Resolution: Fixed in v2.09



Description: The simple OPC Client would crash when it was iconified.
Introduced: v1.00
Resolution: Fixed in v2.09



Description: The simple OPC Client would crash when it rescanned points.
Introduced: v1.00
Resolution: Fixed in v2.09

Version 2.08 (July 10, 2003)



Added link layer configuration parameters (LinkClass1PendingDly, LinkClass1PollCnt, LinkClass1PollDly, LinkClass2PendingDly, LinkClass2PollDly, and LinkClassPendingCnt) to M101/M103 protocols for consistency with v1.x SCADA Data Gateway. These parameters allow tuning the communication behavior in restricted throughput data links, such as satellite links (low throughput and long delays) and multi-point radio links (channel sharing and high Tx/Rx changeover times).



Added ability to select the following properties for OPC SDO's: DataType, Value, Quality, TimeStamp, AccessRights, and Description.



Updated documentation to improve description of OpcAESubscriptionMask and Log Masks.



Added validation code to all dialog boxes where alias names are specified. Alias names for Channels and OPC Clients cannot be blank and cannot contain a period. A period is not allowed because it is the delimiter when the SCADA Data Gateway parses a tag name. Also added some additional validation checks to these dialog boxes.



Equations are now written to the Point Map file in the same order as they were created, allowing dependencies between equations.



Removed OBJ12_syncDwnstrm and OBJ41_syncDwnstrm from the SCADA Data Gateway configuration parameters. Synchronous Downstream mode is not supported for DNP.



A '...' button was added to the serial port configuration dialog box, so the user can select from a list of serial ports available on his computer.







Added Event status overflow indication for SDNP, S101, S104.












Event buffer sizes for IEC Data Types are now configurable for slave components.



Description: The Slave DNP component did not set the over-range bit in the Flags for analog values, and analog values did not display properly in the Master component's Protocol Analyzer output.
Introduced: v2.00
Resolution: Fixed in v2.08

-  **Description:** When multiple 103 sessions were offline, the EOI action mask did not work properly.
Introduced: v2.00
Resolution: Fixed in v2.08
-  **Description:** The SCADA Data Gateway could crash when entering an equation that was invalid.
Introduced: v2.03
Resolution: Fixed in v2.08
-  **Description:** The SCADA Data Gateway could freeze when a new configuration window was opened and closed.
Introduced: v2.00
Resolution: Fixed in v2.08
-  **Description:** Deleting an item in the OPC Client would sometimes cause the SCADA Data Gateway to crash.
Introduced: v2.00
Resolution: Fixed in v2.08

Version 2.07 (June 20, 2003)

-  Added limit checks for sprintf statements. This prevents buffer corruption caused by writing past the end of the current buffer.
-  Added support for Broadcast per IEC 60870-5-101 edition 2.
-  Added automatic crash reporting. The SCADA Data Gateway will now allow the operator to send debugging information to Triangle MicroWorks, Inc. if it crashes. The operator can also send an Incident Report by using the Help Menu.
-  Slave Data Types can now be deleted using the right-click menu if no Slave Data Objects (SDOs) are defined.
-  Modified OPC Update messages in the Protocol Analyzer window to avoid truncation of data
-  Added an OPC Filter option to allow filtering of OPC update messages in the Protocol Analyzer window.
-  Improved display of point values and handling of binary and single point data. Digital values are now displayed as “on” or “off” instead of numeric values.
-  Improved Protocol Analyzer display to use terminology from standards documents; now display "SQ" instead of "SEQ" for Single/Sequence bit in IEC 60870-5 protocols.
-  Added support for OPC VARIANT Types VI_I1 (code 16, “cval” 1-byte signed byte) and VT_UI1 (code 17, “bval” 1-byte unsigned byte).



Improved message displayed when a frame is received for an address that is not configured. This message now also includes the link address.



Added configuration of event buffer size to SDG for S101 and S104. Also added indication of number of event over flows to the S101 and S104 sector. (Event buffer overflow could cause the SCADA Data Gateway to be dropping points).



Description: When multiple sessions were configured for balanced mode, some sessions didn't startup properly. The End of Initialization was not being sent by all devices.

Introduced: v2.00

Resolution: Fixed in v2.07



Description: Broadcast times did not work properly

Introduced: v2.00

Resolution: Fixed in v2.07



Description: Broadcast messages for Clock Sync & General Interrogation commands did not work properly

Introduced: v2.00

Resolution: Fixed in v2.07



Description: A read of DNP Object 60 Variation 2 that required multiple fragments would result in an "Error Unsupported" Qualifier on the Master

Introduced: v2.00

Resolution: Fixed in v2.07



Description: DNP Object 60 Variation x Qualifier 7 or 8 did not read up to the specified number if multiple object types existed

Introduced: v2.00

Resolution: Fixed in v2.07



Description: A Counter Freeze operation would cause a crash in the Source Code Library if `dnpdata_binCntrGetPoint()` returned Null to indicate that the point is currently disabled.

Introduced: v2.00

Resolution: Fixed in v2.07



Description: SCADA Data Gateway did not send IEC 60870-5-103 Time Sync messages based on ActionMasks.

Introduced: v2.00







Resolution: Fixed in v2.07






Description: The SCADA Data Gateway did not show all options in Options dialog box (for example, 1Pass/2Pass for DNP Object 12)

Introduced: v2.00

Resolution: Fixed in v2.07

-  *Description:* Mapping M101 single point command T45 to SDNP Object 12 caused a crash when clicking on T12 in SDNP in configuration window.
Introduced: v2.00
Resolution: Fixed in v2.07. Note, however, note that DNP points do not support "sync down stream"
-  *Description:* The SCADA Data Gateway would crash when attempting to connect to a Slave that was opened with a different host IP address than was specified by the Master.
Introduced: v2.00
Resolution: Fixed in v2.07
-  *Description:* The SCADA Data Gateway did not properly determine if a point was already in the forced state when it was initialized.
Introduced: v2.00
Resolution: Fixed in v2.07
-  *Description:* Clicking on the "Close" button of the Progress bar as soon as SCADA Data Gateway started up would cause it to repeatedly issue a "Progress Cancelled" dialog box.
Introduced: v2.00
Resolution: Fixed in v2.07
-  *Description:* The SCADA Data Gateway would sometimes crash when an OPC Client was deleted via the Configuration menu. The SDG would also crash if updates were received for an OPC Client point during deletion of the Client.
Introduced: v2.00
Resolution: Fixed in v2.07
-  *Description:* Writing DNP outputs from an OPC Client caused the OPC point quality to become uncertain.
Introduced: v2.00
Resolution: Fixed in v2.07

Version 2.06 (May 30, 2003)

-  Reorganized SDG Implementers Guide to move Quick Start section to the beginning of the manual and remove references to modifications to initialization file. Added descriptions of values for Standard Quality Flags.
-  Improved the "Insert request in queue:" message to assist in troubleshooting connections by providing more details about the type of message being inserted.
-  Changes made via the GUI can now take effect immediately, without having to exit and restart the SCADA Data Gateway.



The SCADA Data Gateway now starts a separate thread to connect to a server so that other channels are not affected by connection delays.



The SCADA Data Gateway now disconnects old TCP Connection when it receives a request for new connection from same Master. The user is notified when this scenario occurs.



The SCADA Data Gateway now displays dialog box to remind users of evaluation versions when their license will expire.



Description: When multiple Master DNP sessions were configured on a single channel, the SCADA Data Gateway could freeze.

Introduced: v2.05

Resolution: Fixed in v2.06



Description: When processing IEC 60870-5-103 Type 2 Data with the Invalid flag set, the SCADA Data Gateway would crash.

Introduced: v2.00

Resolution: Fixed in v2.06



Description: When the Source Code Library was resending a message because it was waiting for a data link from the Master, and another data request message was received (instead of a data link confirm message that was expected) the Source Code Library would stop sending Application Layer Messages.

Introduced: v2.00

Resolution: Fixed in v2.06



Description: The SCADA Data Gateway did not allow nesting with NOT equation (and displayed an incorrect error message).

Introduced: v2.00

Resolution: Fixed in v2.06



Description: Deleting a Session caused the SCADA Data Gateway to crash. Channels could be deleted without incident.

Introduced: v2.00

Resolution: Fixed in v2.06



Description: The DNP Transport Function Sequence Number would rollover from 62 to 0, instead of from 63 to 0.

Introduced: v2.00

Resolution: Fixed in v2.06

Version 2.05 (May 12, 2003):



Added link in Help menu to latest "What's New" document.



Added LinkOfflinePollDly configuration parameter.



Improved detection of sessions going offline. Any application layer error will now take a session offline. Receiving any valid fragment from that session will take it back online.



Improved memory management. Implemented a new memory management scheme that supports static memory as well as providing limits on the number of each type of structure that can be allocated. It also provides details on how many structures of each type have been allocated and keeps track of the maximum number that was allocated. This provides feedback that can be used in sizing applications and monitoring allocated memory. Cleaned several areas in which memory was not being freed properly.



Description: SCADA Data Gateway protocol analyzer did not display which messages were being inserted in the Transmit Queue.

Introduced: Version 2.00

Resolution: Fixed in Version 2.05



Description: The SCADA Data Gateway miscounted number of fields in the Point Map File when using nested equations

Introduced: Version 2.00

Resolution: Fixed in Version 2.05



Description: If a DNP3 slave device received any request, other than an unsolicited confirmation while it was waiting for an unsolicited confirmation, it would inadvertently cancel the unsolicited retry timer and hence stop retrying unsolicited responses.

Introduced: Version 2.00

Resolution: Fixed in Version 2.05



Description: Messages could become stuck in the Transmit Queue, resulting in repeated "Duplicate request not inserted in transmit queue" messages with no messages ever getting sent.

Introduced: v2.00

Resolution: Fixed in v2.06. The response time out was not being set for DNP messages. It is now set to the Application response timeout.



Description: DIR bit was not set on application confirmations to events.

Introduced: Version 2.00

Resolution: Fixed in Version 2.05

Version 2.04 (April 25, 2003):



Added a Data Type Column to the Visual Basic Simple OPC Client Demo.



Master Data Objects (MDOs) that should be writable (e.g., OfflineCounter, so it can be reset) are now writable.



Description: SCADA Data Gateway would intermittently crash when deleting channels or sessions via the GUI.

Introduced: Version 2.00

Resolution: Fixed in version 2.04



Description: SCADA Data Gateway connected to an OPC Server would intermittently crash when deleting data tags via the GUI.

Introduced: Version 2.00

Resolution: To be fixed in a future release



Description: SCADA Data Gateway would send “Operate” instead of “Direct Operate” commands when DNP commands were configured for 1PASS operation

Introduced: Version 2.00

Resolution: Fixed in version 2.04



Description: SDG incorrectly presented most OPC items as type “double” instead of presenting correct data type to an OPC Client

Introduced: Version 2.00

Resolution: Fixed in version 2.04



Description: The on-line flag for DNP points was not propagated through the SDG properly

Introduced: Version 2.00

Resolution: Fixed in version 2.04



Description: Only a single IEC 60870-5-101 Master sector could be configured per session. This bug only exhibited itself only if a DNP Master session was previously defined.

Introduced: Version 2.00


Resolution: Fixed in version 2.04









Description: The Simple OPC Demo crashed if no points were subscribed

Introduced: Version 1.00









Resolution: Fixed in version 2.04


-  *Description:* DNP Master binary points were not properly mapped to IEC 60870-5-101 Slave binary points
Introduced: Version 2.00
Resolution: Fixed in version 2.04

Version 2.03 (April 3, 2003):

-  Added support for Bit wise operators (AND, OR, NOT) to SDG equations functionality
-  Clock Sync Mode is now configurable (see ApplClockSyncMode in the INI file).
-  The default DNP Point number now increments when a new point is added.
-  Added a “get_flags” function to the SDG equations functionality that allows the user to obtain a TMWDEFS_ULONG for the flags associated with any data type in OPC, DNP or IEC that supports flags.
-  Added a “test bit” function to allow access to the individual bits in a TMWDEFS_ULONG data type.
-  *Description:* The SCADA Data Gateway would lock up on shutdown if an OPC Client component was still trying to connect to an OPC server.
Introduced: Version 2.00
Resolution: Fixed in version 2.03


Version 2.02 (March 20, 2003):

-  Changed the wording of OPC Server connection message to be more informative.
-  Added mappings for UPDTRSN_CTRL_BY_COMM and UPDTRSN_CTRL_AT_DEVICE to/from OPC Quality Flags (OPC_QLTY_SUBSTITUTED)
-  SDG now passes the IEC 60870-5-101/104 regression tests.
-  Added the ability to write and read data from the Intellution EDA OPC server.
-  The ApplArmSelectTime INI file parameter is now an array.
-  The default class assigned to DNP Analog Inputs was changed to 2, and the default class assigned to DNP counters was changed to 3.
-  Combined the DNP Analog and Binary Control and status types into a single Master Data Object. The DNP object types 40 and 10 are supported as part of types 41 and 12 respectively
-  Added OptFbackDelay parameter for DNP Master command points

-  *Description:* The wrong session configuration dialog box would occasionally be displayed when adding multiple sessions.


Introduced: Version 2.00

Resolution: Fixed in version 2.02

-  *Description:* The SCADA Data Gateway would intermittently crash when configured with an OPC Client and a Master session protocol


Introduced: Version 2.00

Resolution: Fixed in version 2.02

-  *Description:* The OPC Server interface did not operate properly when an RTU was put offline and back online.


Introduced: Version 2.00

Resolution: Fixed in version 2.02. Added the command MDO SessionActiveControl, which makes a session active (i.e., allow communications) or inactive (i.e., disable communications). Forcing a session online or offline is no longer an option.

-  *Description:* The Master DNP component did not use the proper pulse length when issuing trip/close binary commands.


Introduced: Version 2.00

Resolution: Fixed in version 2.02

-  *Description:* The SCADA Data Gateway would crash during exit when its OPC Client was connected to an external OPC Server and an update was received during the shutdown process.

Introduced: Version 2.00





Resolution: Fixed in version 2.02

-  *Description:* OptUseFeedbackPoll configuration file parameter did not work properly.


Introduced: Version 2.00

Resolution: Fixed in version 2.02

Version 2.01 (February 21, 2003):

-  Added the OPC Alarm and Events server.
-  Changed the Prog ID for the OPC Data Access Server from TriangleMicroWorks.IEC870.1 to TriangleMicroWorks.OPCDA.1.
-  Added the ability to edit log masks in the GUI.
-  Added the ability to edit point options in the GUI.

Version 2.00 (January 29, 2003):

 Implemented new user interface.

Version 1.22 (April 29, 2002):

SDG Added Action Mask and Period predefined tags. Removed obsolete predefined tags replaced by the Action Masks.


SDG Added the ability to specify TCP/IP node name as well as IP address in the configuration file.

SDG Added the ability to specify PULSEWIDTH in the options field for DNP Binary control points.

SDG Added the ability to directly transfer a license to a different directory.


SDG Add point mapping (.csv) file format test.

SDG Added UseSystemClock configuration parameter that allows the SDG to use the Windows system clock instead of an internally maintained clock. This is useful for systems with an external clock synchronization mechanism that updates the Windows system clock outside the SDG.

 Fixed a bug where equations would not work with IEC 60870-5-101 measured values.

Version 1.21 (April 8, 2002):

SDG Added OPC Client functionality.

 Fixed a bug which caused the Gateway to exit when an OPC Client started the Gateway through COM/DCOM.


Version 1.20 (March 11, 2002):

SDG Added DNP3 counter support to DNP3 slave component. DNP3 counter support was added to the DNP3 master component in Version 1.19.

SDG Added IEC 60870-5 Integrated Totals support to the Master and Slave 101 and 104 components.

SDG Added IEC 60870-5 Bitstring support to the Master and Slave 101 and 104 components.

SDG Added graphical display of Master and Slave data objects via the View menu bar entry.

 Fixed a bug which caused the SDG to crash when multiple sessions are configured on the same channel. This bug was introduced in Version 1.19.

Version 1.19 (February 13, 2002):

SDG New InstallShield installation.

SDG New example OPC client for Visual Basic. This client shows how to develop a simple, yet full featured, OPC client application in Visual Basic. An executable version is also installed that can be run to examine the OPC data points even if you do not have Visual Basic installed.

SDG Support optional use of time tagged commands with IEC 60870-5-101 or IEC 60870-5-104 Master components. Previously time tagged commands were always used for 104 and never used for 101, this is still the default behavior but it can be changed in the configuration file using the **AppIM101TimeTagCommands** and **AppIM104TimeTagCommands** parameters.

SDG Default object variation (variation returned when variation 0 is requested) is now configurable for the DNP3 Slave component. The default variation is now specified using the **ObjXXDfltVariation** configuration parameters. Previously this was preset to a specific value.

SDG The DNP3 Slave component now supports the assign class request from an external DNP3 Master. Previously assign class requests from a DNP3 Master were ignored.


SDG Made the Operate Feedback Poll optional in the DNP3 Master component. Previously the operate feedback poll would always run after a binary or analog command. This is configured using the **OptUseFeedbackPoll** in the configuration file.

SDG Added a **PhysComChnlName** configuration parameter to support user defined names for the different communications channels. Previously the channel name would always be the value of the **PhysComChannel** configuration parameter. It now defaults to this but the user can override the default by specifying a value for **PhysComChnlName**.

SDG Added a dialog box that will display to confirm that the OPC registration process succeeded. This allows positive feedback that the OPC registration was successful.

SDG Added support for DNP3 counters to the DNP3 Master component. The DNP3 Master component now supports counter values obtained via a static data poll or through events. There is also a new predefined point called **FreezeCountersNow** that will issue a freeze all counters request to the DNP3 slave device whenever it is updated.

SDG The **NumTxFrames** and **NumRxFrames** predefined points are now session specific. Previously these points were maintained per channel only.

 Fixed a bug in the **OnlineStatus** predefined data point. Specifically the **OnlineStatus** predefined point did not accurately reflect the state upon initial startup. This has been corrected.

Version 1.18 (October 26, 2001):


SDG Added IEC 60870-5-104 Master and Slave Component support.

SDG Added DNP3 Slave Component support.

Version 1.17 (September 26, 2001):

SDG Added DNP3 Master Component output data (command) support.

SDG Added Time Tags to Protocol Analyzer Display for IEC components.

 Fixed a bug in IEC60870-5-101 balanced mode which caused balanced communications to fail to synchronize and/or loose synchronization.

 No longer set the reserved bit when running IEC60870-5-101 in unbalanced mode.

Version 1.16 (August 28, 2001):

SDG Added DNP3 Master Component monitored data support.

Version 1.15 (August 8, 2001):

SDG Removed hardware licensing and added software licensing with support for individual features.


SDG Added MkDbl function to equations to convert two single point data values to a double point value.

SDG Added OPCTimeSource and EquationTimeSource TMWgtway.ini configuration parameters to support the use of update or reported time in equations or OPC events.

SDG Added EQTIMEUPDATE and EQTIMEREPORTEED point mapping file data point options to control event time for individual equation data points.

SDG Added OPCTIMEUPDATE and OPCTIMEREPORTEED point mapping file data point options to control event time for OPC events.

SDG Changed the maximum number of serial ports from 10 to 50 and the maximum number of sessions from 40 to 50.

 The point configuration file now accepts ';' and '|' in addition to ',' as a delimiter. These characters are valid 'csv' file delimiters and are needed in countries where a ',' is used as a decimal point.