
Oil and Gas

SCADA[™] Advantage

Release Notes version 5.6.3



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Section 1 General

Introduction

SCADAventure version 5.6.3 has been released, it enumerates known problems encountered in the final testing of this product release and identifies workarounds that help overcome the problem. The document contains additional notes that may be valuable to the customers and service personnel working with the product, it's recommended to review the 5.6.0 release notes first if you are upgrade from 5.5.0 or older versions. This document replaces the existing release notes for the prior releases and is included on the product media.

Any security measures described in this document, for example, for user access, password security, network security, firewalls, virus protection, and so on, represent possible steps that a user of a SCADAventure System may want to consider based on a risk assessment for a particular application and installation. This risk assessment, as well as the proper implementation, configuration, installation, operation, administration, and maintenance of all relevant security related equipment, software, and procedures, are the responsibility of the user of the SCADAventure System.

Supported Technology

The following technologies are supported in this version of SCADAventure

- Microsoft Windows 10 LTSC (Version 1607) for operations clients
- Microsoft Windows 10 Semi Annual (Version 1607, 1703, 1709 and 1803) for engineering clients
- Microsoft Windows Server 2016 and 2012 R2
- Microsoft Visual Studio 2017 with Update 4
- Microsoft Visual Studio 2015 with Update 3
- Microsoft SQL Server 2016 and 2014 SP2 Standard Edition - 64-bit only
- Microsoft Office 2016 - 32-bit and 64-bit
- Microsoft Internet Explorer 11
- Microsoft .NET Framework 4.6.2
- ABB Licensing 6.0.0
- Citrix¹

¹ Only supported on Windows Server 2016 since desktop services is equivalent to Windows 10.

The following technologies supported in 5.5.0 and earlier releases are no longer supported

- Microsoft Windows 7 SP1 - 32-bit and 64-bit
- Microsoft Windows 8 or 8.1
- Microsoft Windows Server 2008, 2008 R2 SP2 and 2012
- Microsoft SQL Server 2008, 2008 R2, 2012 SP1
- Microsoft Office 2007, 2010 and 2013
- Microsoft Visual Studio 2010, 2012, 2013
- Microsoft Internet Explorer 9 and 10
- 32-bit version of SCADA Advantage RTRDB
- Creating HMI's using Visual Basic 6.0
- Multiple HMI's sharing login credentials
- Multiple HMI's using variables to share information
- I/O List Export
- Deploying HMI's using CAM²

² Customers using CAM must now use alternate software deployment services either provided in Windows or by 3rd party vendors. CAM was removed due to security issues. More details below in Deploying HMI's without CAM topic.

Section 2 Installation and Upgrading

Before Installing or Upgrading

Operating systems must have Microsoft security patches up-to January 2018 or newer installed before proceeding to install or upgrade SCADAverage servers.

If you are using Visual Basic Power Pack for drawing lines, rectangles or ovals in your existing HMI, be aware that Microsoft no longer supports this technology for Visual Studio 2017. It's recommended to continue using Visual Studio 2015 and convert all lines and rectangles to use the new Line Segment component before switching to using Visual Studio 2017.

There are updates to RTRDB between 5.6.2 and 5.6.3, so after installing the software, follow the Upgrade RTRDB procedure in the installation manual.

If you haven't installed any 5.6.1 Server patch, you will receive the following error messages during the upgrade process.

```
SQL> Error: Cannot drop daytrendsummarizerview because it does not exist
```

```
SQL> Error: Cannot drop hourtrendsummarizerview because it does not exist
```

```
SQL> Error: Cannot drop trendsummarizerview because it does not exist
```

These messages are expected and can be ignored.

There are updates to APPRDB between 5.6.2 and 5.6.3, so after installing the software, follow the Upgrade APPRDB procedure in the installation manual.

Instructions for installing a new APPRDB has been removed. All existing functionality is now available in the RTRDB. However, the instructions for upgrading or migrating an existing APPRDB are still included in the installation manual.

As a reminder, Windows Automatic Maintenance can interfere and cause installation or upgrade to fail or take a long time to complete. Make sure Windows Automatic Maintenance (located under Control Panel, Security and Maintenance, Maintenance) is not running and is run prior to installing SCADAverage.

Automatic Maintenance

No action needed

Last run date: 5/4/2016 6:43 AM

Windows automatically schedules maintenance activities to run on your computer.

 [Start maintenance](#) | [Change maintenance settings](#)

Installing and Upgrading

The SCADAverage Product help includes a product installation, upgrade and migration guide. A printable PDF copy of the installation guide is located on the root of the DVD. The product help requires Microsoft OneNote. The product help OneNote book is located in the Update\Release\Media\Documentation\ABBSVHelp folder on the DVD. This folder can be copied to your personal computer where OneNote is installed for easier reading, searching and printing.

This version of the product has not been tested to install or upgrade on operating systems with newer service packs, security patches or versions of malware protection than those listed above and in the Cyber Security Guide at the time of release. ABB may require you to use a newer version of the SCADAventure or install specific product updates in order to work-around these types of problems.

Future Compatibility

Support for ODBC in HMI clients will be removed.

Support for storing reports to a SQL-Server database and corresponding CBReportStorageList HMI component will be removed.

It is recommended to remove any hard-coded references to "SCADAvision" in Software Expressions or Control Sequence Trigger Expressions or Control Sequence Step Expressions by replacing "SCADAvision" or "SCADAventure" to use the internal SERVER variable. For example, the expression

```
pv("SCADAvision", "Trend (daily) Log Free %", "value", 100) < 80
```

becomes

```
pv(SERVER, "Trend (daily) Log Free %", "value", 100) < 80
```

It's ABB's intention to drop the use of the SCADAvision DSN in future releases.

SCADAventure BOT Expressions use Perl syntax for defining an expression. This syntax will be replaced by a new Regular Expression syntax in a future release.

Storage of reports in the APPRDB will be discontinued in future versions.

Gas Measurement (PDH) and Dynocard storage in SQL-Server will be discontinued in future versions. It's recommended to begin and complete migration from SQL-Server to the integrated metering system in the real-time database using this version.

Support for PDH Web Access will be discontinued in future versions. After migrating from PDH to the integrated metering system in the real-time database, the corresponding Metering Web Access can be used.

Launching Explorer add-ins via HMI command button actions will no longer be supported.

The ability to print screen via a HMI command button action will no longer be supported.

Section 3 New Functionality and Resolved Issues

New Functionality

This section contains descriptions of the major new features present in this version of SCADA Advantage.

Microsoft Event Log supports SCADA Advantage Event Log

The SCADA Advantage Windows Event Log is accessible through the Microsoft Windows Event Viewer application. The SCADA Advantage is located under the Applications and Service Logs node in the tree.

Gas Quality Send Out Supports the usage of Alternate Name

The Gas Quality Send Out application supports the usage of the Alternate Name field with the input file.

Gas Quality Send Out Supports Analysis Download from Virtual Gas Chromatograph

Manual and Scheduled downloading of Gas Analysis to multiple Electronic Flow Measurement Meters from a virtual gas chromatograph.

OPC UA Client Protocol

OPC UA client protocol supporting the reading and writing of data, and reading of events and history from an OPC UA server.

String Point Type

Support for String Point Types used for presentation and storage of text information retrieved from a field device. The text information is often a description of the current status of an application, or the description of an event triggered by a state change. The String Point object is modeled after Analog and Digital Points and supports input configuration, text information historical logs, alarm triggering, and callout notifications.

Metering PGas Exporter

The Metering PGas Exporter support exporting Electronic Flow Measurement Data (EFM) records based on the SCADA Advantage Server local time and allows for variables to define the output filename.

Rod Pump Controller Keywords

The Rod Pump Controller object has been extended to support Keywords to define some characteristics of the specific Rod Pump Controller. Those keywords will be usable to query Rod Pump Controller based on defined characteristics.

Resolved Issues

This section details fixes delivered as patches to the previous release of SCADA Advantage that are now integrated into this version. The ID number used by ABB to track the issue is included.

Server Issues	
WID	Release Note
40322	Fixes an issue in the APPRDBExecutorEngine - now returns the EFM Meter name in the Events when using Totalflow protocol
37870	Fixes an issue when updating the Device Name for a logical device
38325	Fixes issues with FlowCal export when exporting EFM meters
38530	Fixes an issue when renaming a Zone on EFM Meter
38531	Fixes an issue with missing attributes in Audit Trail
38761	Fixes "Manual Temperature" attribute reading for EFM Totalflow meter parameter
39195	<p>APPRDBExecutorEngine: adds a feature to export raw historical data uploaded from PDH and EFM Integrated meters to CSV file format. These files will enable more detailed analysis and support for customer data issues.</p> <p>To enable raw data CSV file generation, add the following argument to the APPRDBExecutorEngine system process.</p> <p style="padding-left: 40px;">/saverawdatatodisk => files will be save into the %SVLOG% folder</p> <p style="padding-left: 40px;">/saverawdatatodisk:"C:\folderPath" => files will be save into the folderpath folder</p> <p>Once the desired data has been exported to CSV, remove the /saverawdatatodisk argument to avoid unnecessary creation of CSV export files. Restart the APPRDBExecutorEngine system process to resume normal operation.</p>
39210	Fixes an issue where control sequences would stop working
37538	Allows EFM PGas Export to generate files containing dates in Local Time format
37842	EFM History returns history values with 4 decimals
37896	<ul style="list-style-type: none"> - Fixes a problem with HDA server becoming unresponsive after a database disconnect. - Fixes a problem with HDA AdviseRaw never generating events.

Server Issues	
WID	Release Note
37923	Fixes an issue shown on calculated point when value is updated from Calc Engine
38010	<p>DNP3 Protocol</p> <p>A new parameter option has been added to the DVI command line.</p> <p>protoParam:DNP3:useHostTimestamps</p> <p>If added to the DVI command line then the DNP3 protocol driver will use the time of the host running the DVI to timestamp integrity polls instead of trying to read the device time.</p>
36126	Hides extension column from Hourly/Daily Editor
36387	Fixes issue with partial data during history upload
37736	Fixes issue with History Preview

Client Issues	
WID	Release Note
40203	Gaps Analyser Enhancements
40269	Fixes an issue when opening reports in HMIs Delivers a new SVClientInstaller.msi package
38531	Shows missing attributes in the Measurement Audit Trail Fixes an issue when saving "Producing Time" for EFM Meter in History Editor
38564	Added a new Orientation property on LineSegment so that you can 'fix' the orientation of the line to Horizontal or Vertical (as well as corner to corner). Obsoleted the Flip property.
37538	<ul style="list-style-type: none"> - Allows EFM PGas Export to generate files containing dates in Local Time format - Fixes an issue when spaces are used in FlowCal/Pgas command line arguments.
37749	HMI - Line Segment: Adds support for dash lines
37842	EFM History returns history values with 4 decimals
36046	Fixes an issue when creating a new report
36126	Hides extension column from Hourly/Daily Editor

APPRDB Issues	
WID	Release Note
38531	Shows missing attributes in the Measurement Audit Trail
36387	Fixes issue with partial data during history upload

Section 4 Known Issues

OPC UA Client

Output telemetry for String Points is not currently supported for OPC UA.

Mercury EFM Gas Analysis

Attempting to view gas analysis fails with the following errors:

Unable to correctly process configuration data.

Refresh of configuration information failed.

IndexOutOfRangeException: There is no row at position -1.

classId = EfmGasAnalysis:merc_GasAnalysis

methodId = guiReadAll

This is expected and not a bug. Not all Mercury ADT's implement commands to upload/download gas analysis.

Installing Packaged HMI on Engineering Station

Installing a Packaged HMI on an engineering station is not supported. When the package is uninstalled, some components of the engineering station are also removed resulting in a non-functional engineering station. The same issue occurs for administration tools on a server. The only way to correct is to re-install. This will be corrected in a future version.

Importing Well Test Configuration

When migrating well test configuration, an informational message similar to the following is reported by the web service in the SCADA Advantage diagnostic log

```
SVWebServices(Information): Unable to find property acknowledge_state for object <name>.
```

The property name may be different. These properties are now internal to integrated well testing, so not supported for importing. These messages are expected and can be ignored.

History Editor Printing

Several of the history editors provide the ability to switch print settings from portrait to landscape. Changes to print orientation are not working. This issue will be fixed in a future release once the components have been ported to Microsoft .NET.

Device Schedule Memory Leak

The Device Schedule System Process has a small memory leak if nothing is configured in PDH. As soon as something is configured, the leak stops.

DynoPlot and DynoPlotList HMI components

If these components are added to the main form of your HMI application, the application will quietly crash (appear in Windows Error Reporting) when the HMI is closed. This does not happen if the component is added to a sub-form. This issue will be fixed in a future release once the components have been ported to Microsoft .NET.

Package HMI

Selected folder and sub-folder names must be unique. If not unique, the following error is output.

Wix Light: ... error LGHT0091: Duplicate symbol 'Directory:...' found...

If this error occurs for a different reason, try renaming sub-folders until the error clears.

Daily Gas History Advanced Report Export Restrictions

Restrict By Reason for Change is now case-sensitive. It was previously case-insensitive when used against SQL-Server.

Filtering based on connections to upstream or downstream Plants or Batteries is not implemented.

Generate VCone Report

Opening a VCone report fails with an error similar to the following.

Unable to export report to file 'VCone Report.pdf': ActiveReports PDF export DLL error Error 212: Couldn't export PDF using font 'Arial' because characters referencing this font could not be represented with the character encoding 'WinAnsiEncoding.'

This only happens if ROCLINK800 is installed on the same computer as a SCADAverage client such as an engineering station. Removing ROCLINK800 corrupts SCADAverage ability to generate reports.

SCADAverage Client compatibility

SCADAverage 5.6.x client applications such as SCADAverage Explorer or SCADAverage HMI's cannot connect to a SCADAverage Server that is older than version 5.4.0. A warning popup appears and login is prevented.

A SCADAverage 5.6.x client (Explorer or HMI) cannot use Windows Authentication to connect to an older RTRDB server. Polyhedra authentication is the only mechanism supported. While it may appear to work, it is not supported.

When connecting to an older server, the CAM application, group and elements still appear in the navigation tree, but result in an error when selected. CAM configuration using 5.6.x is no longer supported.

Upgrading from SCADAverage versions older than 5.1.1. is not supported.

For the upgrade process to be successful, only SCADAverage systems that are version 5.1.1 or newer are supported in the upgrade process.

Web Service

Swagger UI does not support basic authentication. Using the 'Try Me' button will result in a 404 error unless OData anonymous access is enabled.

When the browser is on the same computer as the web service, using the Swagger UI and entering invalid parameters causes the inner error in the result to include a stack dump. This doesn't happen when the browser is remote and so is not considered a security issue.

OPC Server

During installation, an account is associated with the SCADA Advantage OPC DA server. The identity of the server is not created correctly and will result in the OPC DA server failing to start. Also, the identity of the SCADA Advantage OPC HDA server is not set during installation. It must be setup manually. See Setup OPC Server for more details.

The SCADA Advantage 5.6.0 OPC Server cannot be used to connect to older versions of SCADA Advantage real-time database (only 5.6.0 and newer).

HMI Crash Closing a Form during Failover

The HMI may crash if a form containing a SCADA Advantage component is closed at the exact moment the real-time database is failing over.

Potential HMI Crash when Configuration window Open when Server goes Offline

For any point control on display, if the State Limit, Fleeting Limit or Properties window is open when the server goes offline, clicking anywhere in the window besides the Close button will result in crashing the HMI. This problem happened in older releases and has not been fixed in this release.

Runtime Error Popup when Application is Closed

The HMI may briefly show a popup indicating a runtime error as the application is closing. While undesirable, it is expected and does not generate a Windows System Error Report.

HMI Slow to Exit

After the final window closes, a HMI may take up-to an additional 10 seconds to exit. This is more likely to happen when accessing features of the metering system.

PDH Meter Configuration

After opening configuration for a meter, the +/- boxes do not expand or collapse the display. Also, the buttons next to each attribute to show audit trail or device events do not work.

The PDH Main menu cannot be opened at the same time as the EFM Main menu. One must be closed before the other one opens correctly.

After selecting a function in the PDH menu, when selecting a meter and clicking on the [Filter] option at the bottom any column in the grid, entering a partner %x (ends in x), results in an error "Unable to apply filter". This is a limitation of the ActiveX ADO Filter technology being used to populate the grid. The same problem occurs from the EFM meter menu too.

EFM Meter Configuration

Viewing the audit history for changes to individual attributes of an EFM is currently not supported (like it was in PDH). To work-around, use the event summary, maintenance view and filter on the meter name to see a history of configuration changes.

After migrating PDH configuration into the real-time database, viewing which objects an EFM meter references is currently not supported. Its currently only supported for real-time and connector objects.

A deep copy version of Save As is not supported for EFM meters.

EFM Meter History

Hourly and Daily History Editor, right click actions that open new windows, results in duplicate windows each time Show Associated Events is selected. This also occurs for the PDH History editor and was present in previous versions of SCADA Advantage.

Hourly and Daily History editor grid doesn't always refresh. To work-around, right click and Refresh.

When exporting data from PDH, event signatures are not exported.

EFM Metering Application Settings

Changes to EFM Meter Application settings can take up-to 5 minutes to be effective within the HMI or SCADA Advantage Explorer. Restarting the client causes the new settings to be immediately used.

EFM Meter Parameters

Some meter parameters that were visible in a PDH meter are not visible via EFM meter parameters editor.

Metering Names

Names for any object under metering cannot contain the '/' (slash) character, or the single quote character as these are used internally.

Migrating PDH Configuration

Only meter types developed by ABB are supported. Custom meter types developed by a 3rd party are not supported. For your convenience, when importing configuration, these meter types are moved to an Unsupported sub-folder, to make it easier to migrate at a later time. Modification to import these custom meter types must be completed before migrating PDH history in order to avoid problems with the resulting archive data. Contact ABB for a quote to provide assistance.

Last downloaded meter parameter values are not preserved during import.

Migrating PDH History

Only meter types developed by ABB are supported. Custom meter types developed by a 3rd party are not supported. Any history for an unsupported meter type is discarded. It's not recommended to attempt migrating PDH History until the meter configuration is supported. Contact ABB for a quote to provide assistance.

History file names are generated to ensure the oldest data is imported first. If an exception is reported while importing the file jumps to the newest file name. After clicking Start Monitor, importing does restart at the oldest file; it's just a UI issue.

The import client only supports importing trend history that is exported from PDH. It is currently not able to import general trend data into the database history.

HMI Component Behavior at Runtime

The following SCADA Advantage HMI components may crash if properties are changed at runtime via custom code.

- CBAAlarmSummary
- CBGrid
- CBSmartMap

- CBTrend

Trusted Server Login

Trusted Server login to real-time servers older than version 5.6.x is not supported. Upgrade all servers to version 5.6.0 first. After this, trusted server login is only supported for SCADA Advantage accounts mapped to Windows Accounts. If accounts are mapped to Windows workgroup accounts, be sure to use .\ in front of the account name, e.g. .\wguser, otherwise, login will fail. If accounts are mapped to Windows domain accounts, this work-around isn't needed.

Quality Indicators

Support for displaying Quality indicators is missing from the .NET Communication Summary grid control. This will be added in a future release.

Control Sequence Engine

Sequences are not run in parallel which can limit its performance if a large number of sequences are triggered at once. If control sequences that are triggered every minute, are taking more than 1 minute to complete, the control sequence engine may appear to leak memory. It's recommended to allow more time to process the commands before new ones are triggered. This issue will be corrected in a future patch or release.

Visual C++ Runtimes fail to install without Update KB2999226

On Windows Server 2012 R2, the installation of the Visual C++ runtimes during the initial installation of SCADA Advantage will fail unless Windows Update "KB2999226" is installed on the machine. This update can be installed via Windows Update. The following popup will occur if this update is not present.



SCADA Advantage Explorer

The application may crash or hang on server restart, when configuring, when monitoring or when changing login.

When configuring a system user, trust, if the APPRDB is not connected, it's possible to get a runtime error and crash explorer.

When deleting a large number (>200) of rows such as Scheduled Requests or Exceptions, the application will be unresponsive for several minutes. Closing the application will abort the request in the server.

These problems will be corrected in a future release when the application has been ported to Microsoft .NET.

Replication

Before a SCADAventure 5.5 server can be a replication subscriber with a 5.6.x publisher, the 1.11 or higher server and client patch must be installed on the 5.5 server. Without this, errors occur in the replication event log.

When Alarm Acknowledge Replication is enabled, when an alarm for a point in manual is acknowledged at the replication publisher, the alarm does not acknowledge as expected at replication subscribers.

Replication of EntityXXXX tables and history is not implemented. As a result, connectors and real-time meters are not replicated. Also, replication of dynocards is not implemented. Contact SCADAventure support if this feature is a requirement for your project or installation.

Calculation System Process

Repeated loading and unloading a large number of points containing software expressions can cause the Calculation Engine to consume CPU for a few minutes before calculations resume. This problem will be corrected in a future release when the Calculation Engine has been ported to Microsoft .NET.

Import/Export

For now, SCADAventure only supports import/export configuration using the database SYSTEM account. This is different than previous versions which supported any user with Administrator privilege in the system zone. A future version shall restore the need for only Administrator privilege.

The default location for importing and exporting has changed from %svhome%\database\text to %userprofile%\Documents\SCADAventure\database\text.

When importing System User configuration, accounts are Disabled by default. This is an expected change in behavior. Accounts must be enabled manually or in bulk using SQL-Editor.

Trusted Server Configuration

It's not possible to configure a trusted server that references an APPRDB for a prior version of SCADAventure. The error '<DSN>' version is not compatible with '<APPRDB DSN>' is expected.

On a previous version of SCADAventure, it's not possible to configure a trusted server that references an APPRDB for a newer version of SCADAventure. The trusted servers roles are no longer present in the newer APPRDB.

SCADAventure Explorer

Any Summary: Right click -> Print or File -> Print : page setup has landscape mode option, but print preview always shows page in portrait.

Any Summary: Right click -> Find or Edit -> Find : scroll bar moves to bring found row into view, but doesn't highlight/select it.

Text editing in any properties forms: Ctrl-A doesn't select all text (although Right click -> Select All does work).

Switching between opening a trend window using SCADAventure Explorer and opening a trend window from a .NET HMI on the same computer causes the window to appear small in

the upper left corner of the screen or hugely magnified. This problem does not happen on a computer that is dedicated to showing a .NET HMI only.

These problems will be corrected in a future release when the application has been ported to Microsoft .NET.

APPRDB access to RTRDB

The APPRDB no longer uses SQL-Server's linked server mechanism for communicating with the RTRDB. .NET stored procedures are now used. These stored procedures hard-code the use of the FTSCADAventure ODBC DSN to connect to a real-time database.

HMI Resizer

Graphics designed for a 4:3 display are not resized as expected on a 16:9 wide screen display.

The resizer does not automatically resize HMI windows if the resolution of the device's screen changes while the HMI is running. Look in the %svhome%\media\samplecode folder for an example of a Resizable HMI using the .NET Screen class along with SCADAventure variables and property assignments.

The resizer does not work when used inside a HMI template. Instead, use it in the form hosting the CBTemplateViewer for resizing to work as expected.

SMS Web Service

A SCADAventure text callout device is currently limited to one type of SMS Web Service account.

SMS Callout Acknowledgement

Upon acknowledgement of a SMS callout via SMS (regardless if it is acknowledged by level 1 user or escalated user), ONLY level 1 users will receive an 'Alarm Acknowledged by - <user>' SMS message. Also, level 1 SMS callout user will not receive such SMS message if the alarm was acknowledged by non-SMS method; such as acknowledging from HMI.

HMI with a large number of Event Summary displays will use an excessive amount of CPU and sometimes crash

Each event summary pops up a dialog to pick the type of log and period. After picking 'Event Log' and a 1 minute period on the first several, if no period is selected on subsequent calls to the event summary, an error indicating too many rows will appear followed by an HMI crash.

Event Summary Properties

Accelerator keys (Alt+<key>) are not working. Use the Mouse to select options and buttons. When Device Event Log is selected, device events stored in the APPRDB are displayed. The Summary only shows data if the SQL-Server DSN is called APPRDB.

HMI Start when server Offline or First Login Cancelled

If a HMI is started when the server is offline or first login is cancelled, any CBStatus that is subsequently displayed, does not show data after successfully logging into the server. If the HMI has several CBGrids or CBInfoPads, this can also happen. In this condition, the application may not exit properly and must be closed using Windows Task Manager.

An event summary may display <Error>, with the tooltip indicating "unknown column referenced: timestamp". Selecting Filter when in this state causes the HMI to crash.

Infopad Text Formatting not preserved when printing

When printing information from the InfoPad HMI control, text formatting is not preserved.

Command button Run Report does not support parameters

The CBBCommandButton supports a Run Report command. However, this command does not support the ability to have any parameters passed to the report.

64-bit HMI Applications are not supported

All SCADAventure HMI applications must be compiled as 32-bit applications. The option to compile HMI applications as 64-bit exists when developing .NET HMI's but is unsupported. HMI applications will be compiled as 32-bit by default.

If SCADAventure is uninstalled from a computer, an older version of SCADAventure cannot be installed to that machine

Due to certain incompatibilities between versions of the software, older versions of SCADAventure installed on computers to which SCADAventure was previously installed will not operate correctly.

HMI performance will be degraded if the "Store User Preferences on this Server" option is utilized

"Store User Preferences on this Server" is an option available to System User objects in a SCADAventure server. This option causes an increase in the amount of data transferred to a machine running a client HMI and results in a decrease in performance.

SCADAventure servers will use excessive CPU resources if more than 300 zones and/or users exist

In situations in which more than 300 zones and/or users exist, log-in times can be more than 2 seconds.

SCADAventure HMI applications should be restarted once every month

If a Trend Display or Event Viewer display is left open on a SCADAventure Client machine (in SCADAventure Explorer or a SCADAventure HMI) the application will eventually crash. ABB recommends an HMI or Client application be restarted once per month.

Email a report is not retried

Only one attempt is currently made to email a report. No retries are attempted. An error is recorded in the event log when this happens. This will be corrected in a future version.

Installation Folder

During installation it's possible to Browse to an alternate folder to install the SCADAventure software. Installing to the My Documents folder does not work since the folder is user specific and not visible to system accounts.

Export to XAML

Graphic files containing custom code behind, 3rd party controls or non-visible controls such as CBResizer, CBCommandManager or CBDisplayCycler are not supported.

Reloading template graphics is also not supported.

CBFloodbar Memory Leak

The CBFloodbar uses the SymbolFactory Cutaway control which contains a small memory leak. A HMI leaks about 15MB of memory for every 1000 copies of the control created. ABB has reported the issue to Software Toolbox.

Trend Importer Crash

Make sure the instantaneous, hourly and daily archive streams are enabled, otherwise, SCADA Advantage Explorer can crash when importing large files that result in archives being created while importing.

Uninstall Licensing

After uninstalling licensing, the ABB Client License Provider remains listed under Windows Services. This has no negative impact to re-installing the ABB licensing software again.

SCADA Advantage Uninstall

The SCADA Advantage uninstall does not completely unregister all components. After uninstalling this version, installing an older version of SCADA Advantage results in a non-functioning system. It is recommended to re-install Windows before installing an older version.

GIS Map Geographic Coordinate Support

The SCADA Advantage GIS Map component only supports loading Shape Files saved using the WGS84 Geographic coordinate system (SRID=4326)

GIS Map Shape File Path

The GIS Map Shape File layer requires selecting a path to .shp and .dbf files. To avoid errors when deploying to an operator station, the .shp and .dbf files must be located in a folder relative to %svhome%\custom\bin. It is recommended to store them in a sub-folder called GISData and use the same folder when designing the GIS Map Shape File layer on an engineering station.

GIS Map Shape File Complexity

SCADA Advantage GIS Map does not spatially index the contents of a shape file. This limits the complexity to a few hundred points, lines or polygons only. Higher than this results in slow performance during map call-up or movement.

HMI Graphic Fails to Refresh Correctly on Windows 8 / Windows 2012 or newer

A HMI graphic that displays two or more Boolean values may not refresh correctly on Windows 8 / Windows 2012 or higher after disconnecting and reconnecting to the real-time database. The graphic must be closed and opened to show all the data correctly.

Visual Basic Power Pack in Visual Studio 2013 and 2015

Visual Studio 2013 and 2015 no longer includes the Visual Basic Power Pack components for drawing shapes in a form. However, the Power Pack can be manually installed from the product DVD under the ThirdPartyPrograms folder.

After installing the Power Pack into Visual Studio 2013 or 2015, manually update the HMI project to reference the downloaded version of the assembly.

Quick Trend Syntax

Because the Quick Trend syntax uses a '.' to separate class from point name when defining a pen, point names containing '.' are not supported. It is recommended to configure trend groups instead and use the Display Trend Group command.

Pipe Segment HMI Component

The Pipe Segment HMI component has been removed from the product due to designer and runtime issues within .NET WinForms.

Database Business Logic

The existing encrypted CL files (ECL) are no longer supported. They have been replaced by a more robust encryption scheme (BCL). The product does not support adding custom business logic to the real-time database.

Device Scheduler

If a device is inhibited after a request is scheduled, the request remains stuck in the scheduler until manually removed.

OPC Server Identity

When OPC server is selected for installation, after setup, the identity of an OPC DA and HDA servers is not correct. The service account password must be re-entered using Windows DCOMCNFG tool. See Setup OPC Server for more details

OPC Client Protocol

When the SCADA Advantage OPC client is connected to a remote OPC server, Windows DCOM is used. OPC Client Protocol DCOM Configuration provides details on configuring this scenario.

If the network between the SCADA Advantage OPC client and remote OPC server is interrupted, timeouts in SCADA Advantage can be a lot longer than configured. This is a limitation of Windows DCOM, not SCADA Advantage.

SCADA Advantage route switching does not work as expected for an OPC device configured for a remote OPC server with multiple IP addresses. Windows DCOM does not support protocol switching when a remote computer is multi-homed (has multiple IP addresses). To work-around, use network teaming to present a single IP address at the remote computer. This way, switching is done at the hardware level.

Windows DCOM can be bypassed by using MatrikonOPC Tunneller™.

Disaster Recovery Installation

When selecting this feature during installation, only RTRDB can be selected.

Uninstall of Disaster Recovery does not work. Installing Disaster Recovery, then uninstalling it, the server still thinks disaster recovery is installed.

Alarm Suppression

Multi group membership for a point (a member of more than one group that may be suppressed by more than one first out) is not working. As a result, cascading suppression (one group suppresses another group) is also not working. This issue will be corrected in a future patch.

Report Exporting

When logged in with domain credentials using Windows Authentication: when exporting reports it is recommended to export to the users Documents folder. Attempting to export to the root of the C:\ drive will result in the file being saved to the %appdata%\Local\VirtualStore\ path. The file explorer will display the file at the C:\ however the file does not exist at that location.

Web Bulk Template Loader

When using the Web Bulk Template Loader to load BOT Collections, please note that currently a single instance Collection is supported.

Section 5 Work Arounds

Lines not appearing in HMI graphics

If your HMI graphics contain line or rectangle shapes, these shapes use Microsoft's Visual Basic Power Pack. This was included in Visual Studio 2012, but is a separate download for 2015. To work-around, install the Power Pack. It's included on the product DVD under the ThirdPartyPrograms folder (vb_vbpowerpacks.exe).

It's recommended to switch to the new Line Segment component for drawing lines in your HMI before using Visual Studio 2017.

Adding Disaster Recover

Adding Disaster Recover to an existing RTRDB installation does not correctly register the Disaster Recovery Windows Service, to work-around, run the following commands as an Administrator user

```
cd /d %svhome%\bin
```

```
%windir%\Microsoft.NET\Framework\v4.0.30319\installutil .\SVDRService.exe
```

Reboot the computer and continue with the instructions for configuring Disaster Recovery.

RTRDB stops responding when archive device unavailable

When an archive device (such as a network share), is unavailable for several hours, the RTRDB may become unresponsive (clients are disconnected) when retrying to load archives. To work-around, move the archives to a different device to allow them to come online. Leaving the database unable to load archives for a prolonged period is not recommended and will cause a failover when redundant. ABB will correct this issue with a release.

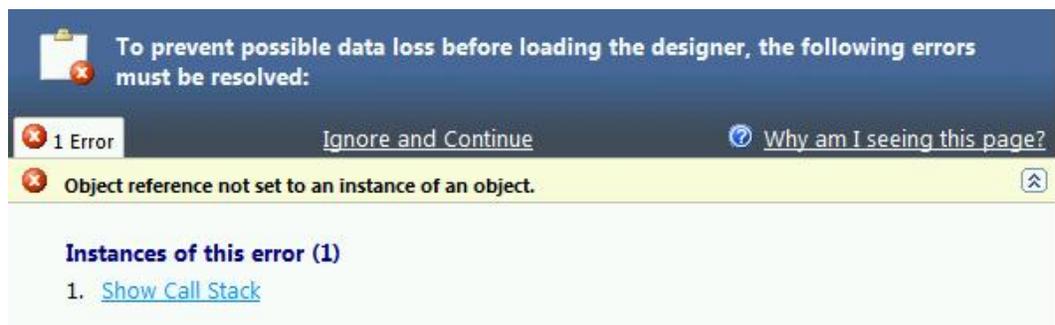
EFM Meter Settings

After changing EFM Meter application settings Device Scheduler First History Upload Days setting, the Device Scheduler System Process must be restarted before the new value takes effect.

Error Opening HMI Form Design in Visual Studio

Creating a new HMI application in Visual Studio, closing the solution, then creating a second new HMI application and opening a form results in the error "Object reference not set to an instance of an object".

To work-around, restart Visual Studio. This problem only happens when creating a second new HMI without restarting Visual Studio. It doesn't happen if opening or switching between existing HMI's.



ExecuteSQLAsUser and ExecuteSurrogateSQLAsUser Functions

Make sure all SQL statements use views. SQL statements using direct table access will result in an insufficient privilege errors in the security event log.

Both functions include a parameter for specifying the password of the user to execute the SQL statement. This is stored as clear text in the real-time database and HMI compiled code. Use an account with the least privilege needed to complete the operation. It is not recommended to use the system account name or password.

Excel Add-in

The Excel add-in uses a function with clear text user name and password to connect to the database. It's recommended to Set a Password on an Excel Spreadsheet to encrypt the file.

APPRDB Monitor

The APPRDB Monitor system process is removed during upgrade. The equivalent functionality is now in SCADA Advantage Monitor by adding the /sqlserver command line argument. This argument isn't automatically added during upgrade and must be manually added.

Running Report Fails

Running reports fail due to changes in security.

Error 5000 : Error in processing report.

[Extended Info:[Polyhedra][ODBC Driver]Communication link failure]

Edit the report definition. Review the user name of the ADO connection. The guest user is disabled by default. It's recommended to create a specific user account for reports, rather than enabling the guest account. Once changed, reports work as expected.

HMI Errors connecting to Previous Version RTRDB

Before a 5.6 HMI can connect to an older server, the previous version server must be patched. Without this, the HMI will exhibit errors in the point controls such as the tooltip showing the error "unknown column referenced: 'dvireliable'", exception popups on server failure or failover and errors in trend displays.

If the older RTRDB is version 5.5, the server must have the 550Server-v1.15 or higher patch installed to clear this error.

If the older RTRDB is version 5.4, the server must have the 540Server-v1.16 or higher patch installed to clear this error.

In both cases, the latest version of the server patch is recommended.

SCADAventure Explorer

After changing a password, at the first login prompt, entering valid credentials does not show the tree view. To work-around, click Cancel after the first login prompt. After this, right click on the DSN and select Connect or double click to login normally.

Creating a new real-time meter or connectivity type causes SCADAventure Explorer to hang. To work-around, make sure latest Microsoft security patches are installed.

Script Errors when opening PDH Meter Configuration

When opening PDH meter configuration errors such as "javascript:parent.ABB_SV_PDH_GRAPHICS()" or "javascript://parent.ABB_SV_PATH_TEXT()" appear in a popup window. To work-around,

On Windows Server, open the Windows Server Manager application. On the Local Server properties, locate the "IE Enhanced Security Configuration" option and set to Off. IT security or group policy rules may prevent changing this option. The rules must be overridden for this feature of SCADAventure to function correctly.

Trend Pen Properties Drop-down Lists

For an historical trend, when configuring the properties, on the Historical tab, Granularity sub-tab, drop-down lists under the Roll-up, Sample Period and F(x) columns may not appear as expected when running on Windows 10, Windows 2012R2 Server or newer. To work-around, the up and down arrow keys can be used to cycle through the options. Note that the possible options are listed in the Bulk Pen Settings drop downs which can also be used to change the pen settings.

Error Renaming User with Administrator privilege

Trying to rename or delete user with System Zone privilege set to Administrator, results in the following error

Could not delete from table users because of referential integrity constraint:...

To work-around, change the System Zone privilege to Configurator and Save. Then rename or delete.

OPC HDA Not Shutting Down

When a SCADAventure Device that's configured to communicate with the SCADAventure OPC HDA server is inhibited, the HDA server does not shutdown. To work around, inhibit the corresponding network instead.

System Processes Don't Start the First Time

After installing a new SCADAventure server, the first time the server starts, the System Processes may not start. To work-around, reboot the computer and, if using a central license server, make sure it's available.

After Upgrading, HMI Login Problems when using Polyhedra Authentication

When starting a HMI, the login prompt is slow, login fails for no reason or the security log records "Anonymous logon failed". To work-around, add the following to the HMI's app.config and recompile.

```
<appSettings>  
  <add key="UseWindowsAuthentication" value="false"/> </appSettings>
```

HMI Upgrades

Upgrading a HMI from Visual Studio 2008 or earlier directly to Visual Studio 2015 is not supported. To work-around, use Visual Studio 2012 or 2013 to open the Visual Studio 2008 solution and perform a HMI optimization. After this, the solution can be opened in Visual Studio 2015. The Winforms designer in Visual Studio 2015 is not 100% compatible with code behind layout prior to Visual Studio 2010.

Virtualization

SCADA Advantage does not function correctly on a virtual machine with only 1 CPU assigned. To work-around, 2 or more CPUs are required.

"Please insert disk 1" during installation

To work-around, copy the contents of the DVD to a folder on the hard disk and install from there.



I/O List Export add-in removed from SCADA Advantage Explorer

The I/O List Export add-in is a customer specific solution. It requires a specific set of BOT variables, components and templates which are not shipped with the product. The source code is provided under %svhome%\Media\SampleCode\SVIOList for those customers who wish to continue using this functionality and/or improve/customize the original implementation.

File Must exist before Upgrading RTRDB

After upgrading in-place from a previous version, make sure %svhome%\supportfiles\upgrade\poly.PRE05.06.00.00.00.cfg exists. If not, copy the previous version %svhome%\poly.cfg to this file name.

ExecuteSQLAsUser Runtime Error

A software expression containing this function fails with a runtime error "Connection must be valid and open", "Lost Connection" or "Login Failed!" when the user account is disabled, blocked, the password has expired or the maximum connections has been exceeded. To

work-around, correct the blocked account using security configuration tools. The same problem occurs for the ExecuteSurrogateSqlAsUser function too.

Standby Shuts Down with Error

Occasionally, the standby shuts down and the SCADAventure.log.txt contains the following error message:

```
RTRDB state ... frozen JCP transaction count detected
```

This occurs because the active server becomes too busy for short periods of time to send updates to the standby. Rather than the standby becoming out-of-sync for long periods of time, it is designed to shut down after not receiving updates. It's recommended to determine the root cause of the active being busy before working around the problem. Details for the work-around are documented in the topic Arbitrator Troubleshooting.

Path to SCADAventure Explorer has changed

In 5.3.1, SCADAventure Explorer is located in the %svhome%\bin folder. After upgrading, the application is now located in the %svhome%\custom\bin\system folder. Any short-cuts on the Windows desktop or task bar will need to be updated.

Historical Playback not working when HMI on server

Make sure the workstation name is not LOCALHOST and the name is entered in uppercase.

EFM Meter History Replication

EFM Meter history appears to missing from the subscriber. To work-around, increase real-time replication buffer from default of 100K to 100M.

SCADAventure Explorer or HMI crashes opening a Trend graphic

Open Windows regedit tool and navigate to HKEY_CURRENT_USER\SOFTWARE\Smartcore Systems\iVision\V2.1\Generic\Trend. Right click and Export to a file with extension .txt. Please email the exported file to SCADAventure support. To work-around the crash, delete the Trend registry key.

PDH Configuration and History Migration to Integrated Metering

The Web Service is required for migrating meter configuration and history from PDH into the new integrated metering system. If you don't want to buy a license just for migration, you must tolerate the license annoyance messages until migration is complete or request ABB to perform the migration at an hourly rate. It's probably better to just buy the license and enable the ability for future mobile applications.

HMI Packaging

When packaging HMI, ensure third party assemblies (e.g.: Visual Basic Power Pack) are included within the package.

Section 6 Cyber Security

Cyber Security Guide

The product help includes a new Cyber Security guide which covers the following topics:

- Authentication
- Access Control
- Security Zones and Network Security
- Virtualization Security
- Intrusion Detection Systems
- Audit Logging
- Secure Storage
- Secure Patch Management
- Physical Security
- Windows Host Hardening
- SCADA Advantage Hardening
- Default Security Settings Reference

Known Security Limitations

The following security limitations are known to ABB. It is ABB's intention to address these in future releases.

- By default, all System Processes are installed. Only the most common are enabled.
- By default, all application user accounts are enabled.
- By default, all Protocols are installed. Only those on the DVI command line are enabled.
- .NET code is not obfuscated and can be reverse engineered
- The SCADA Advantage Windows service uses an account that requires Administrator privileges
 - If configured, the Control Sequence Spawn Executable command could allow Administrator access to the machine. This issue is flagged in the Baseline Security Analyzer.
 - If configured, a Scheduled Task entry can launch a command that allows Administrator access to the machine.
 - If configured, a System Process can launch a command that allows Administrator access to the machine.
- The password policy allows setting the minimum password length to zero.
- The Excel add-in uses a function with clear text user name and password to connect to the database.

- The real-time database does not support encrypted communication using SSL.
- The real-time database does not support separate security administration from configuration of field operations. Users with System Maintenance automatically inherit Configuration Maintenance.
- The real-time database does not restrict user login to specific times of the day or specific workstations.
- When using SMS to Twilio web service, the port that listens for responses does not restrict access via authentication nor is encrypted. Setting up a VPN connection is possible, but has not been tested by ABB.
- SCADAventure applications do not support communication via TCP/IP version 6 (IPv6).

Section 7 Technical Support

Contact ABB SCADAventure technical support at SCADAventagesupport@ca.abb.com or your local ABB representative for assistance in problem reporting.

Reporting Issues

When submitting an issue, ABB support and development places highest priority on critical problems such as data loss, data corruption or prolonged server downtime and high priority problems such as application crashes and data or alarms not being presented correctly in the HMI. These types of problems are candidates for a patch unless a work-around is provided.

Patches are typically released once a month. Patches should be tested in a QA or test environment first to confirm there are no side effect. For patches immediately installed into a production environment that exhibit side effects, ABB reserves the right not to fix the lesser side effect if the original problem is corrected. ABB also reserves the right to withhold patches if the customers Software Maintenance Agreement (SMA) is not in good standing. Finally, in some cases, ABB may require a customer to upgrade to newer 3rd party software such as Windows or Windows patch level, SQL-Server or Microsoft Office in order to fix an issue before releasing a patch.

Before reporting an issue, confirm that rebooting Windows does not fix the issue. When reporting an issue to ABB support, please include the following common information as well as information specific to understanding and repeating the issue.

SCADAventure Version:

SCADAventure Feature:

Severity:

ID: <any ID you are using to track the issue>

Site Name:

Is this an ongoing issue or has it just started happening?

How often is it happening?

Is it specific to one tag or meter or all?

Is it specific to one computer/server or all?

What patches are installed?

Is it easy to repeat? (If Yes, provide specific steps or a simple HMI that demonstrates the problem)

Is this in production or testing?

Is this running on physical hardware or a Virtual Machine? Does it meet ABB's Hardware requirements?

Is this running in a Windows workgroup or domain?

Is the server running any customize or 3rd party extensions? (system processes, views, protocols, etc.)

In some cases, a backup of your real-time database or HMI source code is needed to repeat an issue. ABB understands there may be privacy issues and guarantees no copies will be

retained after closing the issue if requested. Otherwise, support will retain a copy for future support and internal future upgrade testing.

Issues such as unsupported devices or data processing or presentation, unexpected or occasional failovers or restarts of system processes, duplicate data, less than optimal performance under normal load or HMI window management, graphic sizing, call-up time, UI response or backwards compatibility are not considered high priority or candidates for patches. ABB will review these for inclusion in a future release. Customers are encouraged to confirm submitted issues like these are fixed by participating in the beta or release candidate programs for the next release.

Customers with custom System Processes on the server must disable these processes and confirm the issue remains before submitting to ABB. Customers running a server in a virtual machine must ensure the VM is not sharing any hardware with other VMs before submitting any performance related issues to ABB.

Section 8 How to Order

Contact ABB Product Sales at SCADAventure.info@abb.com or your local ABB representative for ordering and technical sales support.

Contact us

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