Quickstart Guide for Secure XML Format in DeltaV™ SaaS SCADA

XML is an independent tool for storing and transporting data

Standard Usage Example

To represent the following two time series for a specific device:

Time Stamp	POINT_IDENTIFIER_1	POINT_IDENTIFIER_2
2015-08-27 06:30:00	100	200
2015-08-27 07:30:00	110	190

The following XML format is required:

```
<SECUREREPORT AuthorizationMethod="License" Version="1.0">
        <REPORT idType="tag"
                serialNumber="DEVICE_IDENTIFIER"
                license ="ZEDI_SUPPLIED_KEY"
                valueType="raw"
                timeStampUtc="2015-08-27T06:30:00">
            <SENSOR id="POINT_IDENTIFIER_1"
                    value="100.0" />
            <SENSOR id="POINT_IDENTIFIER_2"
                    value="200.0" />
        </REPORT>
        <REPORT idType="tag"
                serialNumber="SOURCE_IDENTIFIER"
                license ="ZEDI_SUPPLIED_KEY"
                valueType="raw"
                timeStampUtc="2015-08-27T07:30:00">
            <SENSOR id="POINT_IDENTIFIER_1"
                    value="110.0" />
            <SENSOR id="POINT_IDENTIFIER_2"
                    value="190.0" />
        </REPORT>
</SECUREREPORT>
```

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Component Definitions

SECUREREPORT is the root element of the XML document, and defined the processing rules for the remainder of the content.

Element	Required	Description
AuthorizationMethod	Yes	Must be "License". Reserved for future alternate authorization mechanisms.
Version	Yes	Must be "1.0". Reserved for future alternate processing rules.

SECUREREPORT.REPORT

One or more REPORT elements represent a row in all specified time series within the report.

Element	Required	Description
idType	Yes	Must be "tag". Reserved for future alternate identification mechanisms.
license	Yes	The Zedi supplied write authorization token for this device.
serialNumber	Yes	The common alpha numeric device identifier shared between the Zedi platform and the data sender.
timeStampUtc	Yes	The UTC time stamp for the data. Please note that the string format of this timestamp is YYYY-MM-DDTHH:mm:SS (The character "T" divides the date and time portions, but there is no trailing character "Z"). Also note that HH is as per a 24 hour clock).
valueType	Yes	Identified if the values specified are instantaneous ("raw") or daily aggregate ("daily") values. Typical usage is "raw" except for some specific oil and gas applications.

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Component Definitions Continued...

SECUREREPORT.REPORT.SENSOR
One or more SENSOR elements contained in the report identify a single value in the time series corresponding with a specific measuring point.

Element	Required	Description
id	Yes	The identifier for this time series element as per the REPORT.idType setting of the parent. In the case of idType "tag", this must be the common alpha numeric series identifier shared between the Zedi platform and the data sender.
value	No [1]	The string representation of the data to be stored at this point in the time series.
units	No	An optional override for the units of measure represented by the value property. See the Unit Conversions section below for more information.
alarmStatus	No	An optional override for the alarm status of this individual value in the time series. Please see Alarming section below for more information.
word1	No [1][2]	The first word in a 32 bit IEEE floating point
word2	No [1][2]	The second word in a 32 bit IEEE floating point
wordEndian	No [1][2]	The endianness of the two words. Values are "big" and "little". When ZPP runs on a windows machine, "big" will cause the words to be consumed in a reversed order (word 2 first, word 1 second)
byteEndian	No [1][2]	The endianness of the two bytes within each word. Values are "big" and "little". When ZPP runs on a windows machine, "big" will cause the bytes to be consumed in a reversed order (byte 2 first, byte 1 second)
triggerCalculations	No [1]	This payload will not be used, but will trigger any calculations related to the specified sensor. If used, must be set to "true". If other values are supplied (value, with or without units, or IEEE floating point), then that value will be used for this sensor for the calculation.

[1] One of these must not be null.

[2] If one of these are supplied, all become required.

Create Unit Conversions

DeltaV SaaS SCADA typically deals with all unit of measurement conversion rules automatically. When devices are added to the Zedi Platform, each time series source is configured with the expected unit of measurement that will be supplied for each point on the end device.

If for some reason a data supplier needs to send data in a different unit of measurement than configured, they can supply the unit of measurement being used for the current sample in SENSOR.units.

Please contact Support at DeltaV SaaS SCADA for an up to date list of valid options for SENSOR.units for your specific instance.

Alarming

DeltaV SaaS SCADA will perform automatic alarm evaluation on all incoming data as per the time series configuration. However, it is sometimes desirable for the remote data supplier to specific alarm conditions instead of leveraging DeltaV SaaS SCADA's alarm evaluation.

If remote data sender would like to control the alarm state of a data series, they do so by supplying SENSOR.alarmStatus. Valid options are:

alarmStatus	Notes
clear	This represents both a case where an alarm state ends (clears), as well as when no alarm condition exists.
low	Range alarms
high	
lowlow	
highhigh	
rtutimeout	Data acquisition alarms
rtubackoff	
rtuoverflow	

It is vital to note that it is not possible to mix automatic alarm evaluation with specified alarm evaluation for a given SENSOR.id. Therefore, for each SENSOR.id, the data sender must either never send a manual alarmStatus, or always send a manual alarmStatus.

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DeltaV™ SaaS SCADA is an IIoT cloud-native platform designed to enable asset-intensive industries to quickly and securely connect, acquire analytics and provide control of remotely located devices anywhere, anytime by anyone of your authorized users. We help our customers become more productive, profitable and sustainable to improve life around the globe.

SECURITY

- ✓ Monthly automatic security updates
- ✓ Secure web access anywhere, anytime
- ✓ Two-factor authentication
- ✓ Backups & disaster recovery
- ✓ ~3500 Microsoft™ security experts

SCALABILITY

- ✓ Mobile app anywhere, anytime access
- ✓ Customer roadmap involvement
- ✓ Customize your user groups
- ✓ Budget friendly & low CapEx
- ✓ 26 effortless software updates in 2023

SERVICE

- ✓ Live 24/7/365 support included
- ✓ eLearning courses & workshops
- ✓ Project Management available
- ✓ Data Exchange service available
- ✓ Alarm Management available

DeltaVSaaS.Support@Emerson.com | 📞 866 732 6967 | 🌐 Global Support

North America and Latin America Global Headquarters
Emerson Automation Solutions
6005 Rogerdale Road
Houston, TX, USA 77072
T: +1 281 879 2699

Europe
Emerson Automation Solutions
Unit 1, Waterfront Business Park
Dudley Road, Drierley Hill
Dudley, UK DY5 1LX
T: +44 1384 487200

Middle East and Africa
Emerson Automation Solutions
PO Box 17033
Jebel Ali Free Zone - South 2
Dubai, UAE
T: +971 4 8118100

Asia Pacific
Emerson Automation Solutions
1 Panda Crescent
Singapore 128461
T: +65 6777 8211

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