SteamLogic OPC Server

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1.1　Introduction

The Smart Wireless Gateway enables IEC62591 WirelessHART technology; wireless transmitters communicating with each other and the Gateway in a self-organizing wireless mesh network. The Gateway manages the network, its communication, security and connectivity. The gateway is the entry point for wireless device data that is then converted to a format that is compatible with other systems. In the case of steam trap monitoring this other system is SteamLogic, monitoring software. This document focuses on OPC system integration for the SteamLogic software and the Rosemount 708 Wireless Discrete Transmitter.

The objective of the SteamLogic OPC Server is to give access to the trap state that is calculated within the SteamLogic software.

1.2　OPC mapping

The following table translates the OPC value, seen by the client, to a steam trap state and user interface icon.

OPC value	State	User interface icon	Meaning
0	Good		Steam trap is functioning normally under the current settings
1	Cold		Steam trap is in a failed cold position. This steam trap may have a mechanical failure or could be plugged with solids. It could also be flooding or undersized for the application making it unable to remove enough condensate. Otherwise the steam supply could be turned off.

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OPC value	State	User interface icon	Meaning
2	Noisy		Transition state before going to fully blowthru
3	Blow Thru		Steam trap has failed in the open position. It may have a mechanical failure causing it to stick open or could be installed improperly.
4	No Data Available		There are three reasons for this status; 1. The device has recently been configured and the state has not been determined yet 2. The gateway has lost communication with the device so the state cannot be confirmed 3. The device has a fault/error causing the state to be undeterminable
5	Device Not Configured		The device has been discovered, but has not been configured with the required settings. Edit the trap details to configure the device.
6	Out of Service		Use the out of service feature in the device edit tab when a steam trap has a scheduled period of down time to eliminate presenting the trap as cold. Out of Service overrides all other trap states.

Note:
OPC Item's Quality is read from the SteamLogic's Monitor Status:

OPC value	State	User interface icon	Meaning
Good	Good		The device is operating normally and reporting live information
Bad	Bad		Device malfunction. Use AMS, 475 handheld, or other HART tool to troubleshoot

Note:
OPC Item's Timestamp is read from SteamLogic's State Change Timestamp.

The above Trap Status, Monitor Status, and State Change Timestamp icons and values are based on the SteamLogic version 1.1.0 and SteamLogic Database version 5.

The OPC TrapState item's data type is byte "VT_I1" in an OPC client.

1.3 Network architecture

This section describes the network architecture used to establish OPC communications between the SteamLogic software and the host system. This communication path will allow the calculated trap state, a timestamp, and quality to be monitored by an OPC client. All other parameters, including PV, SV, TV, and QV, are available through the Gateway protocol interfaces (Modbus, OPC, Ethernet/IP, HART-IP).

The following network architecture diagrams will help when integrating data from SteamLogic into the host system.
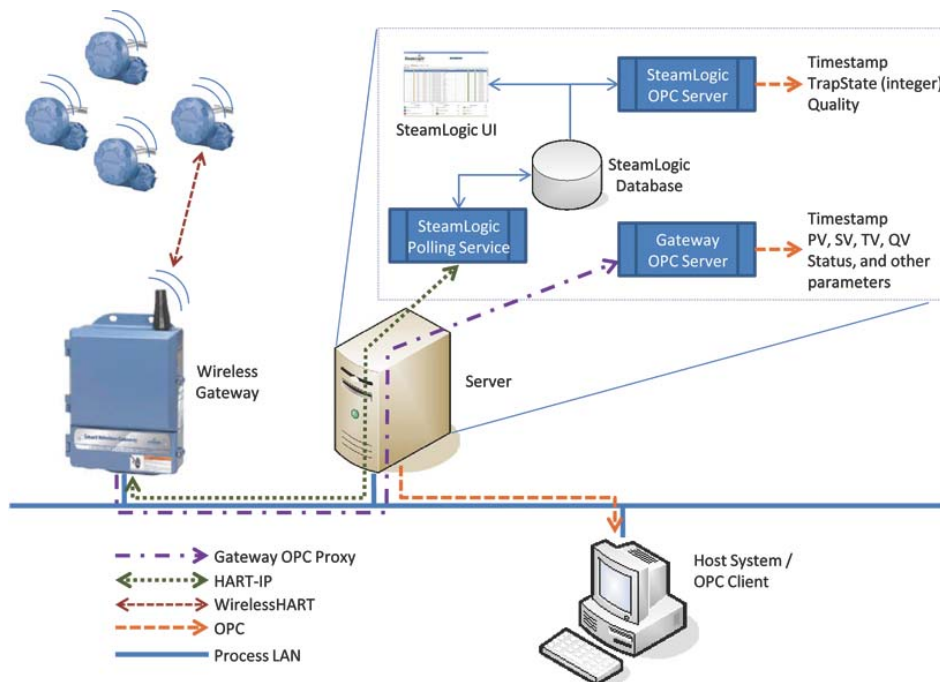
Rosemount 708 / SteamLogic OPC
Architecture Diagram
Rev. A / 20-FEB-2013

An OPC server (proxy) is provided by Rosemount as part of the SteamLogic software installation package. The Host System will need OPC client capabilities that are used to establish communications with the SteamLogic OPC Server.

As shown in the architecture drawing the Gateway transmits the device data via the HART-IP protocol to the SteamLogic polling service. The steam trap status is then calculated within the SteamLogic polling service and stored in the SteamLogic database. Using the SteamLogic OPC server the trap state can be accessed via the OPC client within the host system.

1.4 System requirements

1.4.1 Supported operating systems

- Windows XP SP 2 or latest
- Windows Server 2003 SP1 or latest
- Windows Vista SP1 or latest
- Windows Server 2008 32-bit or 64-bit, SP1 or latest
- Windows 7 Professional 32-bit or 64bit, SP1 or latest
- Windows 8 32-bit or 64bit

1.4.2 Supported OPC versions

- OPC Foundation Data Access 3.0
- Browse or connect the SteamLogic OPC Server

    "EmersionProcess.SteamLogicOpcServerDA.3" from an OPC client

1.4.3 System requirements

- Microsoft SQL Server Compact Edition 3.5 SP2
- Microsoft .NET Framework 3.5 SP1
- SteamLogic 1.2.0 or later
- Setup the Gateway(s) and configure the Rosemount 708 Wireless Acoustic Transmitters in SteamLogic

1.5 OPC server configuration

Install the latest version of SteamLogic and configure each device for use with its steam trap. After SteamLogic is installed and configured you can begin installing the SteamLogic OPC Server.

1. To configure the SteamLogic OPC Server find the program in one of the following installed locations;

    Windows XP, or Windows Server 2003 system:
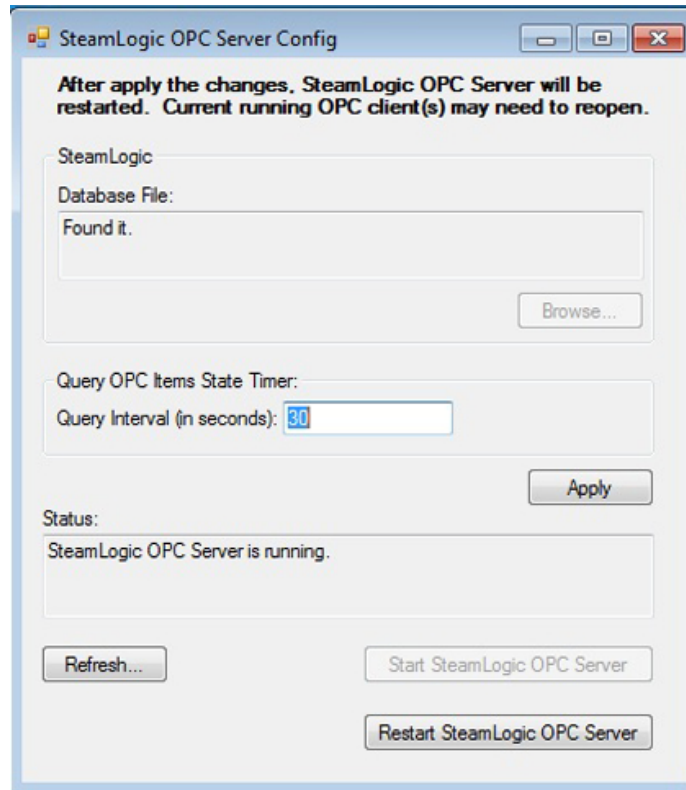   "C:\Program Files\Emerson Process Management\SteamLogicOPC"
    Windows 7, Windows Server 2008, or Windows 8 system (32 bit):
       "C:\Program Files\Emerson Process Management\SteamLogicOPC"
   Windows 7, Windows Server 2008, or Windows 8 system (64 bit):
       "C:\Program Files (x86)\Emerson Process Management\SteamLogicOPC"

2. Run SteamLogicOPCServerConfig.exe
    This file will launch a server configuration tool which locates the SteamLogic database file and sets the query interval.

3. If the database is automatically detected it will report "Found it."
    Change the SteamLogic OPC Server query database timer:

4. Press the "Apply" button to make the change(s).
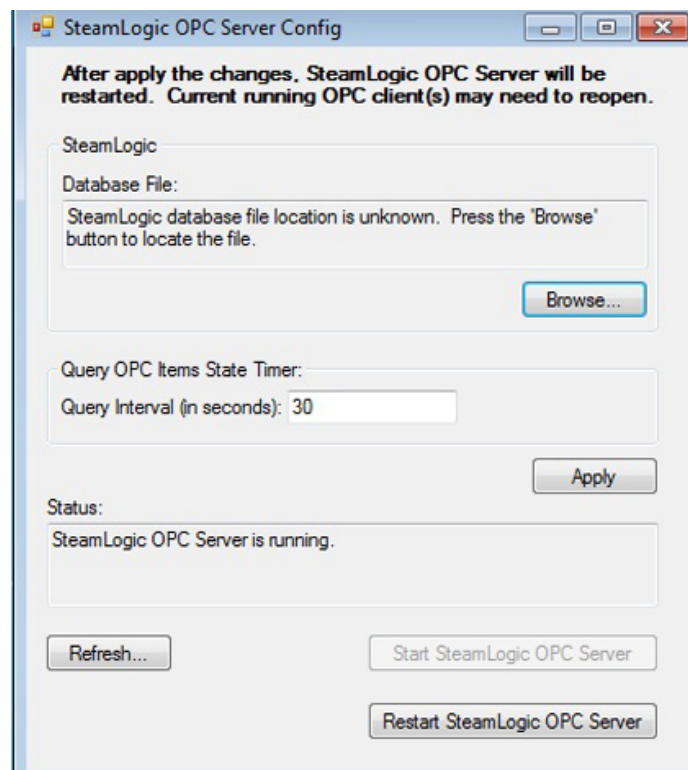
5.   If the SteamLogic database is not found in the known location:
          Press the "Browse…" button to locate the database file.

6.   Change the SteamLogic OPC Server query database timer.

7.   Press the "Apply" button to make the change(s).

The SteamLogic OPC Server will be restarted and the new file location will be saved into a user file, for use when the SteamLogic OPC Server starts.

8.   You can now close the configuration program and launch your OPC client.

9.   In your OPC client browse or connect the SteamLogic OPC Server "EmersionProcess.SteamLogicOpcServerDA.3"

Figure 1-1. SteamLogic OPC Item in an OPC Client
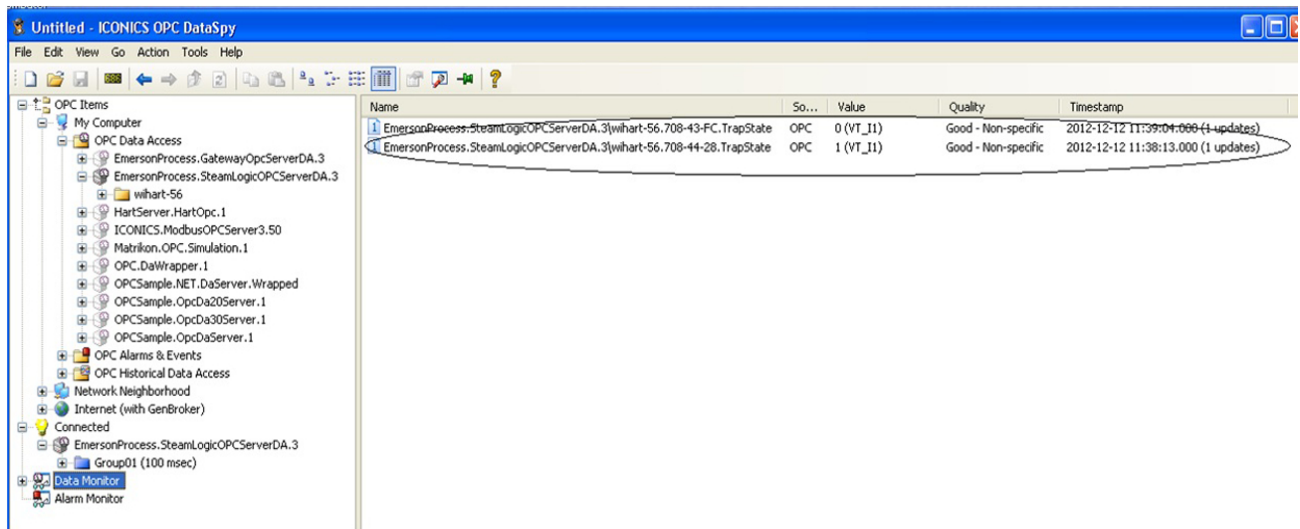
Figure 1-1. SteamLogic User Interface

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