Innovative OPC Solution for Web Services Minimizes Customer Infrastructure Costs while Maximizing Data Access

Recently, a large manufacturer of raw materials for the power generation industry needed to accomplish what would seem to be a relatively straightforward task – to gather comprehensive temperature and humidity data across facilities where vacuum furnaces operate to harden materials. Maintaining relatively stable humidity and temperature is important in this facility, as large fluctuations can adversely affect the equipment and create an inhospitable working environment for personnel. Added to this is the fact that this facility has large arrays of shipping and receiving bays which, if opened concurrently, can result in substantial influxes of humid outside air, drastically altering the temperature and humidity of the facility.

This manufacturer required a method to monitor temperature and humidity data in real-time across the entire facility in order to build a humidity profile for the building that could be used to predict environmental behavior. The engineer tasked with this project started by identifying a temperature and humidity monitoring device from AVTECH® that supported Ethernet and the SNMP protocol for accessing the environmental variables.

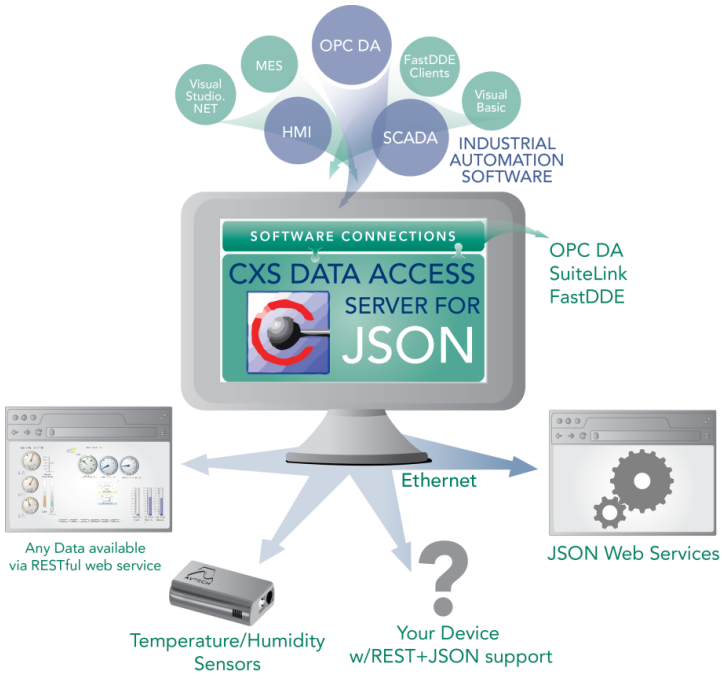
There was one caveat, though, to the feasibility of this design. The AVTECH Room Alert 3E monitoring device used in the proof-of-concept was a wired Ethernet connection only. Since the production facility doesn't have the necessary pre-existing Ethernet infrastructure that would be necessary for outfitting an array of wired monitors, this would require extensive Ethernet cabling to be run throughout the facility to accommodate the wired AVTECH monitors. The significant time and expense required to implement the required infrastructure made that option undesirable.

Then the engineer made a discovery – AVTECH also has a wireless model, the Room Alert 3W! With a wireless access method, the effort and expense requirements to implement an array of monitors would be drastically reduced. But, there was now a new obstacle - the wireless models did not support the SNMP protocol for collecting the required data. However, the wireless monitors did support access via a built-in RESTful web service supporting JSON transport.

Upon consulting further with Software Toolbox regarding this new hurdle, the engineer discovered that an OPC Server for consuming RESTful JSON web services was soon to be available that would easily facilitate consuming the required data in real-time and exposing it to their

Wonderware® software via OPC. Over the course of several months, the engineer worked closely with Software Toolbox technical support and development partner, ConneXSoft GmbH, to successfully implement an updated proof-of-concept using the OPC Server for JSON and the AVTECH unit to bring real-time temperature and humidity data into Wonderware.

Upon discovering that the wireless AVTECH units require user authentication, a supplemental development effort was immediately undertaken to add authentication support to the OPC server, so as to be compatible with the widest range of web services. Through additional collaboration between ConneXSoft development, Software Toolbox engineers and the client engineer, the required authentication enhancement was added as part of the continuous improvement process.



"Due to the responsive technical and development support of Software Toolbox and their partner ConneXSoft, it was possible to easily integrate the vital humidity and temperature data we needed without the undesirable and costly task of running Ethernet cable throughout the facility," indicated the engineer. "The initial system is expected to have around 10 wireless monitors with around 50 data points total but this concept is being considered for other buildings in the future where similar data is currently collected manually. It's great that we could work with one supplier who offers a variety of different solutions and ways to solve problems, as that saved a lot of time and stress in this project."

You can learn more about the OPC Server for JSON/REST from Software Toolbox and obtain a free demonstration version at www.softwaretoolbox.com/webservice2opc .

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