Bringing Together Your Automation Network

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What is the most important thing on the mind of a manufacturing professional? Well, from most articles we read, there are two areas — improving manufacturing performance and reducing downtime with a wide array of solutions available to assist you with both.

You can focus on integration with your business systems to improve the real-time aspects of production management and you can focus on better production analytics to squeeze additional performance out of the equipment you are monitoring. Both identify and resolve areas of production stress — the items that impact the reliability of your manufacturing equipment. These are all valuable pursuits and they will, no doubt, deliver improvements in your production and profitability. To effectively calculate the savings, you should quantify your cost of downtime, per machine, per line, per plant area, etc. Only then will you really clearly know the return on your investments.

But as was said in a song: “The real troubles in your life are apt to be things that never crossed your worried mind: the kind that blindsides you at 4 pm on some idle Tuesday.”

What might they be? Let’s start simple — that production printer that is left off-line or that ran out of ink or paper. The storage disk that filled up. On the more disruptive side — it’s the CD left in a drive that stops a system from auto-booting. The operator that started a video session and stole all available network bandwidth, or it’s the laptop plugged into an available switch port to access a PLC needing maintenance (oops — yes, I let my kids use it to do homework the other night and hmmm — I guess they may have accidently infected it). Or, maybe the power fails and you find out your UPS backup batteries have aged and can no longer provide the power you need. These are just some of the ways that idle Tuesday can become an expensive nightmare…

Chances are, if you are like most manufacturers, you are not prepared for any of this. In an informal website poll, almost 70 percent of engineers knew about the technology that can be applied to monitor their automation infrastructure, yet only about 30 percent were actively doing so.

The solution relies upon SNMP (Simple Network Management Protocol), a communications protocol built into most of the IT infrastructure around us, from printers to UPS systems, routers, wireless access points, security cameras, PLCs, and the PCs we use in automation. Virtually everything in the IT world supports

SNMP communications. It is already there, waiting for your use. And it is supported over the Ethernet you are already using.

So, what does this all mean? Well, it means you can both monitor and control most of the equipment making up your system infrastructure. You can monitor that printer and make sure it is on-line and has the resources it needs for this production shift. You can monitor for media left in drives or measure the UPS reserve power to make sure it is ready for a power interruption. Plus, monitor your network for normal bandwidth so that you can generate alarms on abnormal situations. You can even disable unused ports on a network switch to ensure someone doesn't just plug-in a maintenance laptop without first following procedures to ensure the safety and security of your automation environment.

Monitoring devices via SNMP has typically been the domain of your IT personnel. They have tools such as HP OpenView, enabling them to discover and monitor the various bits that make up your business infrastructure. But their domain experience generally ends at the business systems. It's the automation engineer that manages the automation networks and the tools that notify operators of impending dangers are in the form of HMI (Human Machine Interfaces) and SCADA (Supervisory Control and Data Acquisition) systems. So, what do you do? You know now that you already have most of what you need in terms of devices that can give you SNMP results, all that's missing is the integration of SNMP data with your existing HMI/SCADA solution.

The missing piece to your existing HMI/SCADA system comes in the form of an Industrial SNMP (iSNMP) driver, similar to other communication drivers used in your automation system such as RSLinx, ProfiNet, Modbus, etc. An iSNMP Driver will enable your existing automation system to both monitor and manage your automation infrastructure, all the pieces that make up your automation network, the backbone of your plant.

This is not new technology. This is not rocket science. In fact, installing an SNMP communication driver and configuring it to communicate with one device, and integrate with your existing HMI/SCADA as a proof of concept can easily be done in under an hour. Expansion from there is straight forward and quantifiable. The return on this investment is likely to be the lowest hanging fruit that you'll find for a long time.

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