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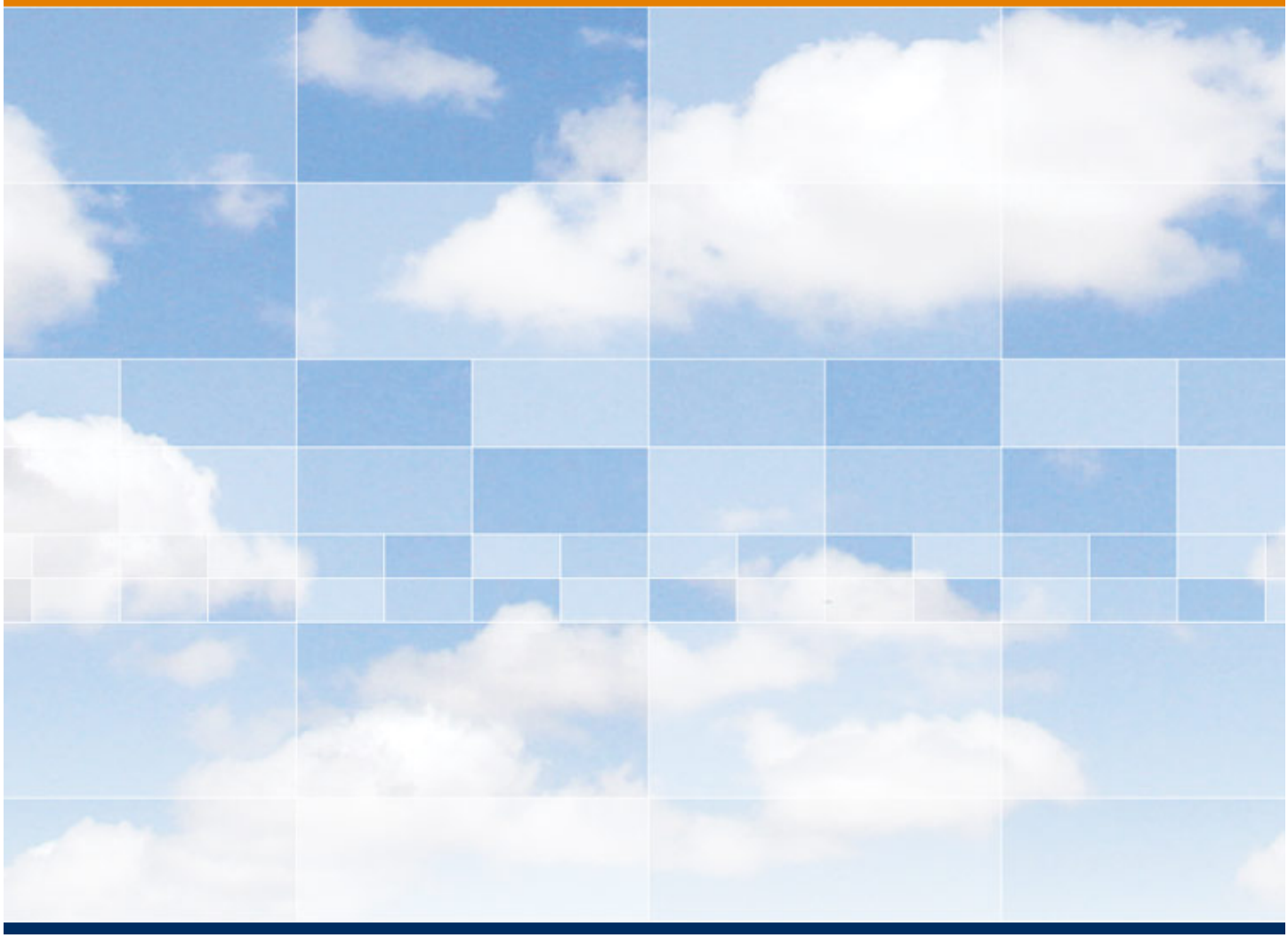

Maintaining Healthy IT Assets

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Over the past several years, there have been two significant trends in the industrial marketplace. First, control system vendors are using more Ethernet based communication networks and Microsoft operating systems. Second, many companies have an increased focus towards predictive or condition based maintenance. OPC plays an important role in both trends.

Most of the major Distributed Control System (DCS), Programmable Logic Controller (PLC), Supervisory Control and Data Acquisition (SCADA) and control system vendors are heavily utilizing Ethernet based communications as part of their distributed architectures, including routers, switches, and cabling. In addition many operator stations, engineering consoles and application platforms run on PC hardware using Microsoft operating systems. Companies that purchase and implement these systems also have other industrial assets, such as pumps, compressors, boilers, manufacturing devices, and other mechanical equipment. The pressure is on their mechanical maintenance departments to move towards predicative or condition based maintenance. The concept is simple: good, accurate and timely information on the state of the assets can be used to detect and correct impending problems before they become untimely, catastrophic failures. Finding out about a problem after it occurs, inevitably leads to more severe damage, longer downtime and loss of production and money.

It is all well and good that companies are looking to this approach for their vibrating, rotating, thermal and other mechanical based assets. However, in many cases they do not include the IT hardware associated with the collection, transmission, storage and analysis of this data in their approach. There are several reasons these key assets are ignored. They are often considered non-critical, since the IT hardware is commonplace and inexpensive. Lack of domain experience is also a factor. Control engineers do not have extensive training in IT, or the time to invest in learning the technology or keeping up to date. Similarly, IT professionals often do not have a process control background, resulting in a lack of trust and understanding between the two groups. Unfortunately, the main reason is simply a lack of awareness.

When determining what data points are important for analysis, or when putting together a maintenance process, people often overlook the connecting IT infrastructure and the data communication paths. Also process monitoring and IT monitoring tasks belong to different groups with different responsibilities, even though they share key assets. This results in a significant lack of integration between groups, even though the information and data is important and readily available.

There are many Network Management Systems (NMS) and software packages available on the market today. These have been developed and designed for managing the office based IT infrastructure, and do this very well. The problem is these systems are rarely accessible by the Process and Maintenance groups, who require certain key status values to ensure the integrity of their systems. This data is readily available today via OPC products. The IT community has a widely adopted Internet standard protocol, SNMP (Simple Network Management Protocol) which was developed to manage nodes (servers, routers and hubs) on an IP network. In addition, all Microsoft Windows operating systems provide easy access to performance monitoring information, such as memory usage, disk space, and CPU usage. The key is getting all this information to people that can act on it in a timely manner. OPC is being used to do exactly that.

Industry pacesetters are realizing that monitoring IT assets is just as important as any other piece of equipment. For example, a large North American power company is currently using a suite of OPC products, the Matrikon OPC IT Health Monitor system to monitor their IT assets in the same way that they monitor traditional plant equipment, and use it to notify the correct personnel when problems appear.

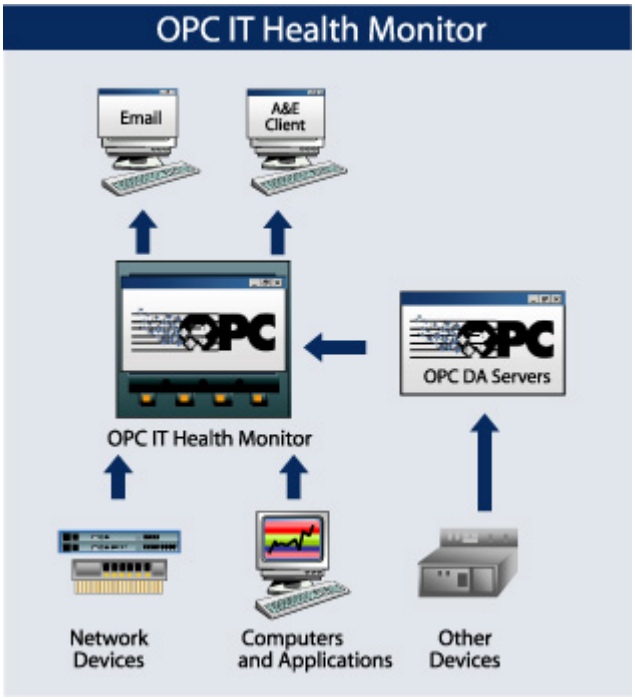

Figure 1 OPC Health Monitor Solution

OPC Servers are available to collect data and status information from a wide range of devices and systems. The OPC Server for SNMP provides connectivity to all their SNMP compliant devices such as network switches, routers, UPS (Uninterrupted Power Supply) systems and other network devices. The OPC Server for Windows Task Manager (Performance Monitor) enables the display or archive of performance information on each PC and its individual processes.

Key performance indicators and critical status tags are collected using OPC and are used to populate graphs and reports on the system HMI in real time. In addition, the data is stored in their long term process historian for later cause analysis and predicting failure trends.

Another key component of the OPC IT Health Monitor system is the notification system that provides both email and OPC Alarms and Events (A&E) messages for the monitoring of real-time OPC data sources. In addition to using this system to notify the appropriate personnel when required, the company is using the OPC A&E interface to forward the IT asset alarms to their Alarms and Events Historian. This will allow them to perform their standard alarm management and rationalization process on their IT assets, just like any other plant equipment.

The OPC IT Health Monitor application is not a replacement for the traditional NMS system. Rather it utilizes OPC to gather critical status and reliability information from the IT assets, and gets that information into the domain of the process and maintenance personnel. OPC provides a standard, scalable way to collect and archive critical IT asset data and deliver it to the decision makers so that it can be acted on in a timely manner. Getting the right data, to the right people, at the right time invariably has the right impact on the bottom line.

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For more information about OPC, visit 'OPC Exchange' at **http://blog.matrikonopc.com/**.

Eric Murphy's 'OPC Exchange' is the first blog dedicated to OPC standards based industrial connectivity technology. As OPC technology evolves so does the need for an accessible OPC resource. OPC Exchange enables users to share ideas and experiences; as well as provides access to experienced OPC professionals' world wide. OPC Exchange makes OPC information accessible to end-users, integrators and developers, as well; it connects them with the OPC community. OPC Exchange combines technical OPC information with the ease and accessibility of blogging, providing users with a high-quality, integrated 24/7 online resource.