OUT OF THE WHITE BOX –

Better Thinking Pays Off
For VARs

**A Computone Corporation
RAS Solution Discussion Paper**

COMPUTONE *Corporation*

THE PROBLEM

VARs who have been supplying solutions based upon servers that accommodate multiple users at the same time as well as those whose applications require connection of multiple serial I/O based devices, have been wrestling with the problems associated with Moore's law for years. Gordon Moore, a founder of Intel, postulated that the performance of computers would double every three years. Every time the computer bus is redesigned to accommodate increases in throughput to take advantage of increased CPU performance, the I/O cards in the box become obsolete.

THE PROBLEM'S HISTORY

There are well over one hundred operating systems and almost as many variations of Unix, per tunes.org web site. Every time an operating system changed to add functionality that takes advantage of processor speed and increased memory size, the drivers for the I/O cards in the box did not work. There have been over eight fundamental bus designs in the short life of PCs, per the yale.edu web site concerning I/O bus architecture. The serial I/O cards attached directly to the bus within a computer system that accommodated the form factors, sometimes were memory mapped, I/O mapped, polled, interrupt driven or buffered to accommodate the current architecture. Once new architecture was accepted, then the old cards were worthless. One approach worked best with architecture A, but failed with architecture B. As mentioned above, as form factors changed so did the size of the I/O card and rarely did the real estate become larger.

Cabling pin-outs and distances from the host server were another problem that had to be addressed when the I/O was accomplished through cards in the server box. The end-user devices could be located anywhere, but the cable had to be connected directly to the back of the server. If the solution provider decided to accommodate several technologies such as varieties of Unix and/or Microsoft® operating systems, different driver software had to be loaded and tested.

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THE SOLUTION

The serial I/O card solution produces little gain for either the solution provider or the end-user. The primary interest of the VAR is to install a solution and get paid for the application. The primary objective of the end-user is to have a solution that works consistently. There has to be a better way. Consider a solution for connecting serial I/O devices that is 'OUT OF THE BOX', meaning out of the server box. Remote access servers (RAS) are a better alternative.

The RAS server is connected to the network via Ethernet cable. It is not directly cabled to the application server. Any application server on the network can access the serial I/O ports in the RAS server. Multiple servers can share a RAS server. For a single application, several low-density RAS servers can be attached to the network in different locations and still be accessed through the application server. Since the RAS server is not connected directly to the bus in the server, it is not sensitive to changes in server architecture (refer to Diagram 1). The actual driver software resides in the RAS servers and is accessed by the application server via a host-based daemon; there is not a device driver issue as server operating system versions are installed. The host-based daemon handles the anomalies that would occur in accessing the serial ports over the network. When the daemons are properly engaged, virtually any application can interface properly with the serial devices as if they are directly connected with local drivers. The RAS solution provides flexibility and a very competitive price point. What more could an integrator want in a RAS solution?

## DIAGRAM 1 – LOCAL NETWORK RAS SOLUTION

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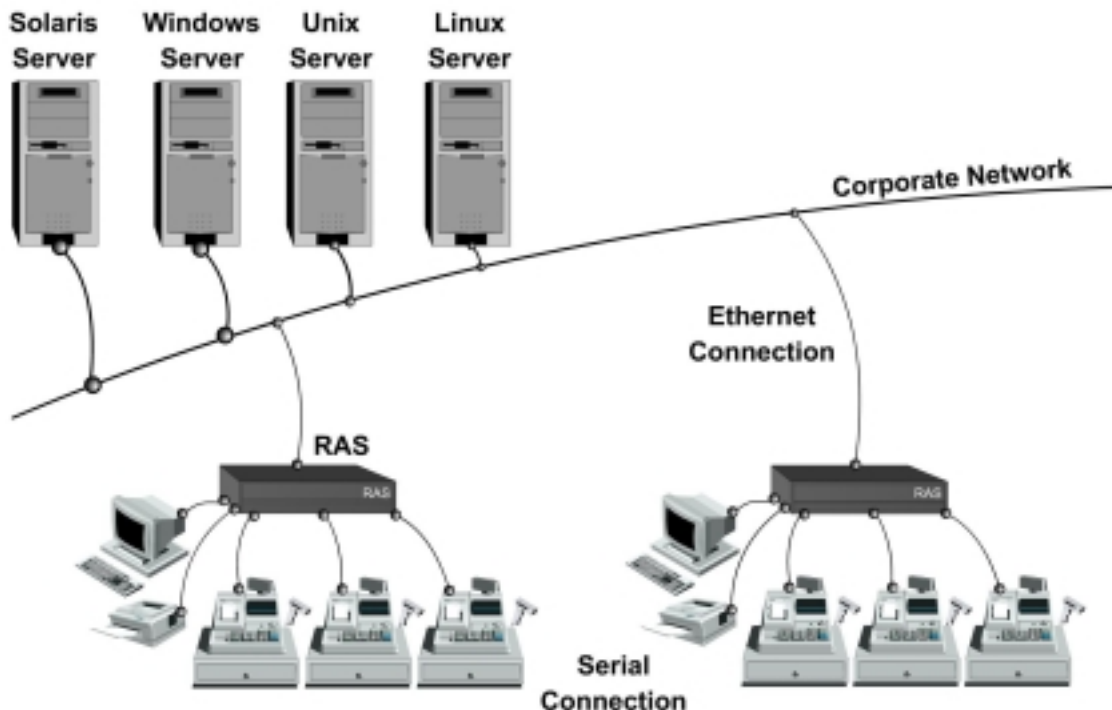
THE BENEFITS

There are more benefits to the RAS solution. Computone RAS servers are based on industry standard infrastructure, including RS-232 serial ports, TCP/IP protocol and standard cabling. This assures that the RAS servers can connect and operate seamlessly within virtually any network environment regardless of operating systems or applications. The RAS servers simultaneously function as a remote access server, communications server, terminal server and print server providing network versatility.

For remote access connectivity, the RAS servers offer an easy to use web browser interface that assures easy installation and configuration. They also reduce administrative costs by allowing connectivity to all your networks from a single location (refer to Diagram 2). For remote access communication, the Computone RAS servers provide a low total cost of ownership.

DIAGRAM 2 – REMOTE NETWORK RAS SOLUTION
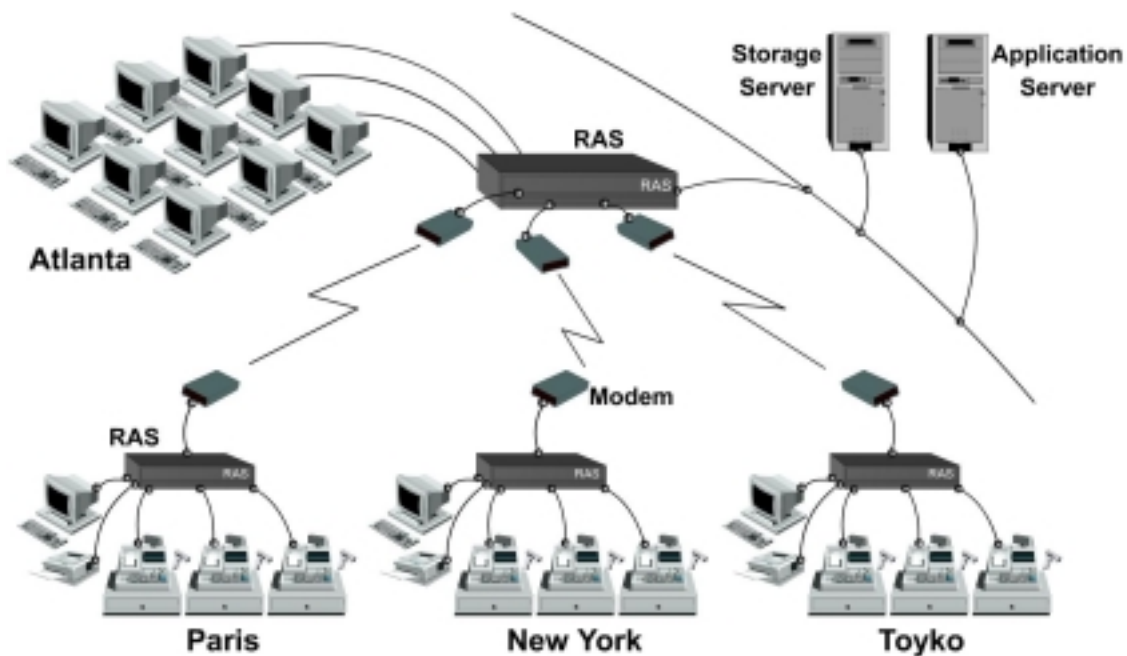
HOW ARE THESE SOLUTIONS IMPLEMENTED?

1. In a parts information supplier to various repair centers, small Sun® servers are placed in the repair location and the serial I/O devices are connected to servers by RAS servers providing flexibility in placement of the serial devices and the ability to manage remotely.

2. In the redesign of a Pharmacy application, several serial devices are used in various locations around the pharmacy. Using RAS servers, the application providers can disperse these servers around the pharmacy and have short runs of serial cables to the serial devices. This flexibility in design made the project feasible.

3. A large retailer uses RAS servers to connect all of the serial devices in the store to one of several servers available for applications and availability.

WHAT THIS MEANS TO VARs

By thinking 'out of the box' and using RAS servers in their applications, VARs can have more flexibility. They can provide better service at a lower cost. They can maintain their investment over a longer period of time with assurance that it will not become obsolete the next time the server architecture changes. They can connect serial devices over a dispersed geography. The VAR can sell more for less cost and make more money. Begin using RAS servers and its related technology today and start reaping the benefits associated with customer satisfaction and increased profitability.

For more information on the Computone RAS Solution, visit our web site at http://www.computone.com/.

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