



Dual-host Redundant Data Acquisition System for MOXA Async Server

MOXA CN2500 Async Server is an advanced and reliable serial-to-Ethernet device server that communicates with hosts over a TCP/IP Ethernet, giving system administrators centralized control of many distributed devices. MOXA is now introducing a Dual-host Redundant Data Acquisition System (DRDAS™) for Async Server that provides the industrial automation industry with a highly reliable redundant data acquisition and monitoring system that can be used in mission-critical environments.

Redundant solution demanded by mission critical applications

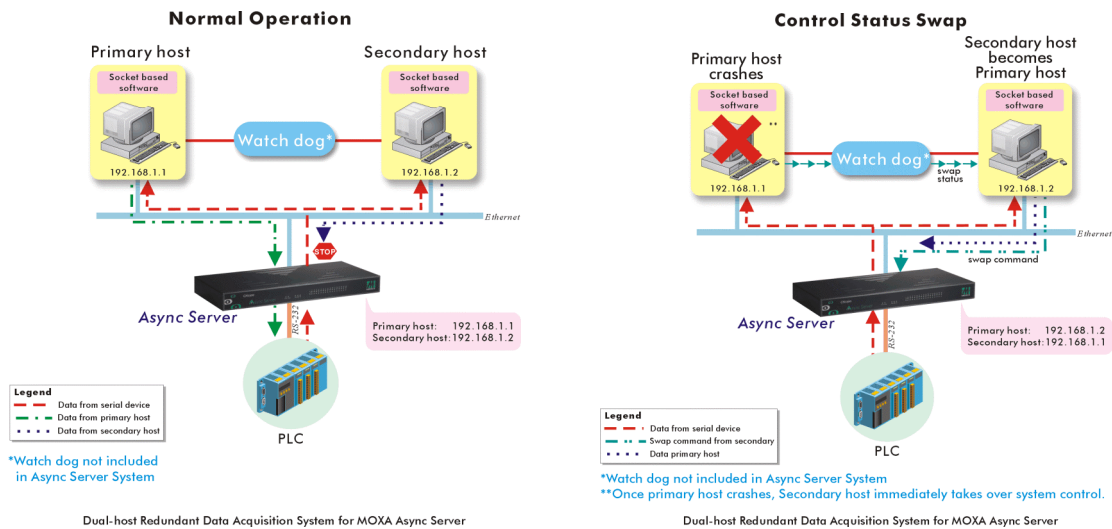
In mission critical industries, such as telecommunications, oil refining, electric power generation, chemical manufacturing, energy distribution, and monitoring of reservoirs and dams, overall system reliability is the most important consideration. In order to maintain high reliability and prevent disaster and financial loss, the automation system is required to be fault-tolerant and must be able to quickly recover from system shutdowns during any 24-hour period of operation.

Powerful DRDAS

The new DRDAS Async Server solution offered by Moxa is designed to guard against data acquisition failures caused by an unresponsive host. According to statistics, the most critical factor affecting system reliability is the host PC itself. Various mechanical components, such as the fan and hard drive, are easily damaged, leading to a suspension of the host's operating system. With the help of DRDAS and the robust MOXA Async Server, dual-host configuration will dramatically increase the overall reliability of your data acquisition system.

How does DRDAS work?

The following figures illustrate the two states in which DRDAS operates. The first figure illustrates Normal Operation, during which the Primary host can send and receive signals to and from serial devices attached to Async Server. As illustrated in the Control Status Swap figure, the Secondary host takes over full control once the Primary host stops responding.



Dual-host configuration

DRDAS works by allowing dual-hosts, designated Primary and Secondary, to simultaneously receive serial port data from the same Async Server. The Primary host can effectively both read and write data from attached serial devices using TCP/IP socket based software, and although the secondary host can *read* data from connected devices, Async Server blocks signals that the secondary host writes *to* the devices.

Alive-check watchdog

DRDAS works in conjunction with user-supplied watchdog hardware and software that is used to establish a dedicated alive-check link between the two hosts. The watchdog alerts the secondary host as soon as the primary host's OS has stopped responding. Depending on the sophistication of the watchdog system being used, the alert could be issued from anywhere between a few microseconds to one or two seconds after the crash occurs.

Secondary host takes over

As soon as the Secondary host learns that the Primary host has crashed, the Secondary host sends a series of commands to Async Server that "swap"

control-right to the Secondary host. This allows the Secondary host to take over full data acquisition and monitoring duties. Once the Primary host is back up and running, it sends a series of commands that "swap" control-right back to the Primary host, allowing the Primary host to resume full data acquisition and monitoring.

Instant and reliable redundant solution

There are different levels of redundant solution available on the market today, with dramatic differences in cost between successive levels. Async Server's DRDAS provides an instant and reliable redundant solution. Thanks to the help of DRDAS, investing in just one more PC can greatly increase the overall reliability of your data acquisition system.

Real-time control transfer

One of the key features of a redundant system is the control transfer time, which is one of the factors determining the complexity of the overall system. MOXA Async Server's DRDAS provides advanced software technology that uses commands from the Secondary host to swap control-right. For Async Server itself, the control transfer time can be as short as tens of milliseconds.

Dual-way data transmission

Serial data sent from the data acquisition point can be transmitted to different target hosts at the same time. This is an important feature that minimizes data loss during control transfer.

You may also utilize this feature to establish a data backup system or a remote monitoring system across the network.

Versatile applications

DRDAS for Async Server can be applied to the following fields.

- Telecommunications industry
- Energy control
- Energy distribution and monitoring
- Chemical/oil-refining industry
- Other mission-critical applications

Ordering Information

Async Server

CN2516:	16 port 10/100 Mbps Async Server, RS-232 230.4 Kbps, RJ45, 15 KV ESD protection
CN2508:	8 port 10/100 Mbps Async Server, RS-232 230.4 Kbps, RJ45, 15 KV ESD protection
CN2504:	4 port 10/100 Mbps Async Server, RS-232 230.4 Kbps, RJ45, 15 KV ESD protection
<p>All items support</p> <ul style="list-style-type: none">• Console Server applications• Dual-host Redundant Data Acquisition System (by request)• TCP/IP, NetBEUI, RIP-1/2, PPP, SLIP, Telnet, RTelnet, DNS, WINS• PAP, CHAP, RADIUS security protocols and dialback function• Windows 2000/NT/95/98 Native COM drivers• Linux, Unix fixed tty drivers• ASPP programmable protocol for serial device server• CN20070 RJ45 to DB9 (female) x 1• CN20040 RJ45 to DB25 (male) x 1	



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