













# **Enhance Network Availability and Management to Deliver Energy Efficiently**

The Big Data trend has resulted in a major expansion of data centers, and the vast quantities of data that are transmitted, processed, and stored by these facilities consumes huge amounts of power. In fact, according to some estimates, data centers in the U.S. account for 2% of the country's total energy consumption.

To both save energy and reduce cost, data center engineers are hard at work improving their data center's PUE (Power Usage Effectiveness), which requires high facility network availability to build critical power management and environmental monitoring systems to ensure uninterrupted service.



# Unifying Interface for Data Acquisition

Supports protocol conversion, such as Modbus RTU to Modbus TCP, I/O to SNMP, and serial-to-Ethernet to deliver a unified interface for data acquisition.



#### Tailored Features to Provide Flexibility

Supports tailored features, such as simple control logic or Ethernet cascading, to provide more flexibility and scalability to meet the different demands of data centers.



#### Rugged Design to Ensure Availability

Supports industrial-grade features to withstand harsh environments, including EMC resistance, wide-temperature operability, as well as millisecond-level network recovery.

## **Critical Power Management**

Power devices, such as ATSs (automatic transfer switches), meters, circuit breakers, and UPS controllers are installed for PUE monitoring and enhancement. Network devices installed are required to withstand the electrical interferences and keep the network uninterrupted.

- ▶ Reliability: Industrial-grade design, including a -40 to 75°C wide operating temperature, level 4 EMS protection, and Turbo Ring/Turbo Chain millisecond-level network recovery.
- Flexibility: Industrial computers that support a variety of installation options, performance ranges, and peripheral I/O interfaces.
- ▶ Simplification: High-port density Modbus gateways that support data transmission from multiple field devices.

### **Environmental Monitoring**

To avoid impacting operations, it is essential to ensure that all environmental conditions are monitored and controlled.

Flexibility: A comprehensive portfolio of switches, I/Os, device servers, protocol gateways, and embedded computers.

UPS Room

Electricity Room

- Scalability: The Ethernet gateways and I/Os support Ethernet cascading for easy and cost effective deployment.
- ▶ Simplification: The smart I/Os support SNMP and Modbus TCP to simplify data acquisition for IT and IA engineers.





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### **Featured Products**

#### **Edge Connectivity**



#### **MGate MB3660 Series Gateways**

- 8 and 16-port Modbus serial to Modbus TCP gateway
- 2 Ethernet ports with the same IP or dual IP addresses
- Supports agent mode with active polling capability



#### **NPort 6650 Series Device Servers**

- Up to 32 ports for high-density serial port requirements
- Supports Ethernet redundancy (STP/RSTP/Turbo Ring) through modular design
- Supports DES/3DES/AES for highly secure data transmissions



#### ioLogik 2500 Series Smart I/Os

- Patented "Click&Go PLUS" control logic; configure local control logic with a few clicks
- Value-added Modbus Gateway and data logging
- Supports SNMP protocol to connect IO data with the control center

#### **Industrial Computing**



#### **DA-720 Computers**

- Ultra high I/O density: 14 gigabit Ethernet ports + 18 serial ports
- DDR4 memory: Up to 32 GB with system bootable USB 3.0
- Proactive Monitoring tool for predictive computer maintenance

#### **Network infrastructure**



#### **EDS-518E/EDS-528E Ethernet Switches**

- Up to 24 Fast Ethernet ports and 4 gigabit combo ports
- EtherNet/IP, PROFINET, and Modbus/ TCP protocols supported for device management and monitoring
- IEC 61850 and IEEE 1613 certifications for power substations



#### **EDS-408A Ethernet Switches**

- Turbo Ring and Turbo Chain millisecond recovery
- PROFINET or EtherNet/IP enabled by default
- Supports MXstudio for easy, visualized industrial network management

### **Your Trusted Partner in Automation**

Moxa is a leading provider of edge connectivity, industrial computing, and network infrastructure solutions for enabling connectivity for the Industrial Internet of Things. With over 25 years of industry experience, Moxa has connected more than 40 million devices worldwide and has a distribution and service network that reaches customers in more than 70 countries. Moxa delivers lasting business value by empowering industry with reliable networks and sincere service for industrial communications infrastructures.