



What is SCADA?

Supervisory Control and Data Acquisition (SCADA) is a system used in industrial processes to control and monitor various devices and processes operationally in real-time. SCADA is a type of control system architecture that enables centralized monitoring and control of remote industrial equipment, such as pumps, valves, motors, sensors, and other industrial devices used in industrial facilities.

Industrial Computers, Inc. manufactures its rackmount computer systems to be the hardware platform for SCADA applications for either Microsoft or Linux based operating systems.

The primary components of a SCADA system include:

1. **Supervisory Host:** In an industrial setting, this is the central industrial PC or industrial server that runs the SCADA software. The host collects data from remote devices, processes the information, and provides a graphical interface for operators to monitor and control the industrial processes.
2. **Remote Terminal Units (RTUs):** These are hardware devices located at remote sites that interface with the field devices. RTUs are responsible for collecting data from sensors and sending commands to actuators based on the instructions received from the supervisory host.
3. **Programmable Logic Controllers (PLCs):** PLCs are like RTUs but are often used for controlling specific industrial processes or equipment within a local area.
4. **Human-Machine Interface (HMI):** The HMI is the graphical user interface that allows operators to visualize the data, control devices, and manage the processes in real-time. It presents information in the form of graphs, charts, and other visual representations.
5. **Communication Infrastructure:** SCADA systems rely on communication networks to exchange data between the supervisory host and remote devices. This can include wired networks (such as Ethernet or serial communication) or wireless networks (such as radio, cellular, or satellite communication).

SCADA systems find applications in many industries, including manufacturing, defense and security, power generation, water treatment, oil and gas, transportation, healthcare, and more. They play a crucial role in improving operational efficiency, reducing downtime, optimizing resource utilization, and ensuring safety by providing real-time insights into industrial processes and allowing operators to take appropriate actions.



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– Networking Engineer, Manufacturing Industry

In “Simple” Terms

SCADA is a computer system used to monitor and control processes and equipment. SCADA systems help operators and engineers oversee large-scale processes and gather data from remote locations.

Imagine you have a big factory with many machines and systems working together to produce goods. SCADA acts like the eyes and ears of the factory. It uses sensors and instruments to constantly collect data from these machines, such as temperature, pressure, or production rates.

The data collected by SCADA is sent to a central computer, where it is displayed on a user-friendly interface. This interface shows real-time information, like graphs and charts, to help the operators understand what is happening in the factory at any given moment.

But SCADA does more than just report data. It allows operators to control the factory too. They can use the interface to adjust settings, turn machines on or off, or even trigger alarms if something goes wrong. This way, they can respond quickly to any issues and keep the factory running efficiently and safely.

Our custom-built rackmount PCs, embedded PCs, and panel PCs help monitor and control industrial processes to enhance efficiency, safety, and reliability, thereby leading to better productivity and reduced operational costs.

**Want to explore your SCADA options?
Contact us to learn more!**

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