



Communication and Processing Server Overview

The NetAcquire hardware and software product family combines three key technologies: flexible data acquisition, real-time signal processing, and high-speed networking to deliver trusted and reliable data solutions under routine and extreme conditions.

NetAcquire Hardware Capabilities

NetAcquire systems are powerful real-time input/output controllers with integrated processing and networking. They provide interfaces connect the “real world” of PCM serial, analog, and digital signals to the “network world” of interconnected data analysis and display systems.

All hardware input/output interfaces are modular to allow convenient mix-and-match system configurations that support almost any application requirement. Our COTS (commercial off-the-shelf) hardware solutions are cost effective, reliable, and compatible with most existing client hardware configurations; they are scalable to grow as your needs change.

Multiple chassis options include desktop, rackmount, and small form factors. Mobile and airborne chassis include environmental hardening and DC power.

Expansion is available up to 512 input/output channels. All I/O interfaces are software-configurable without programming. Hardware configurability allows the creation of a wide range of different instruments, from telemetry gateways to communication protocol converters.

NetAcquire Software

Full-featured and well-integrated software is an essential component of modern-day instrumentation to ensure ease-of-use and mission-critical reliability, while reducing development costs and overall risk. NetAcquire systems include all the software needed to work “out-of-the-box”:



Software	Benefit
Real-time operating system	Rapid, guaranteed response time with no dropped data. Our worst-case response time is 500 times faster than a desktop operating system.
Building-block configuration architecture	No programming required to configure systems.
Hundreds of predefined data processing components	Rapid application configuration of real-time functionality including data processing, routing, analysis, and alarming
Data recording and storage management	Automatic backup of critical data with replay capability
Remote Web-based administration, configuration and status	A graphical user interface that works from any operating system without software installation or runtime licenses
Open architecture and programmer software Toolkits	Flexible to conveniently expand the system to support unique requirements
Interactive data visualization tools, including MissionView™	Easily view incoming data in a variety of graphical formats
Security hardened software/network interfaces supporting full encryption/authentication	High system integrity and compliance with government security guidelines
High-reliability hardware with watchdog support and optional hot failover	Very high uptime (99.999%) for mission-critical applications
Extensive factory software qualification and test suites	High-assurance and controlled operating environment for mission-critical applications

NetAcquire

Distributed Architecture

NetAcquire systems use our proven client/server architecture for optimized real-time data acquisition, processing, and control. An operational system is composed of two parts: the NetAcquire server and the client PC. Core real-time activities such as data capture, processing and closed loop control are executed on the NetAcquire server close to the point of data collection. Less time-critical activities, such as data display, are located on one or more client computers running Windows or Linux.

Server Side	Core real-time activities such as data capture, buffering, processing and closed loop control are executed on the NetAcquire server close to each hardware interface — this configuration maximizes data quality and ensures timely data processing. Our worst-case performance is 500 times faster than a desktop operating system.
Client-side	Data display and operator interfaces are located on one or more desktop computers running Windows or Linux — this configuration allows familiar desktop graphic user interfaces with no distance limitation or scalability constraints.

Even in applications where a NetAcquire system is physically close to the desktop operator interface, the previously listed features result from the convenient partitioning of an application onto two processors, each running its own purpose-built software environment.

The NetAcquire software environment is open-architecture and allows customized software extensions to tailor both client and server capabilities.

Versatile Networking

Every NetAcquire product offers extremely flexible networking to enable “connect anything to anything” capability. This universal interconnection approach breaks distance limitations, works with any PC operating system, and supports an unlimited number of simultaneous user interfaces.

Physical network options include copper and fiber connections, 1Gb and 10Gb Ethernet speeds, and up to 12 physical ports per system.

Beyond physical networking, NetAcquire servers support a very wide range of network communication protocols for maximum interoperability. Available protocols include UDP, TCP, RTP, publish/subscribe, DDS, CORBA, iNET, TENA, and many more. All protocols are available simultaneously and support unlimited client connections.

NetAcquire networking includes strict security controls, including access control, lockout/inactivity monitoring, configurable permissions, and auditing functions.

Client-Side Operator Interfaces

NetAcquire “clients” are PCs on a network that either exchange data with a NetAcquire system or perform system administration.

Client PCs are often responsible for operator interface and data display. Every NetAcquire system allows convenient graphic configuration and monitoring from anywhere on the network using a regular web browser.

Powerful data display and analysis tools are available, including NetAcquire MissionView, along with third-party display packages such as LabVIEW. Programmers can even create their own custom operator interfaces using convenient software extension toolkits.

Continuous Product Support and Upgrades

Beyond electric current, every NetAcquire product is powered by the deep resources of the entire NetAcquire organization. We help our customers select the right products, install and configure them correctly, and realize their full capabilities throughout the life of the project.

NetAcquire support includes:

- Hands-on training courses
- Best-in-industry product support
- New product enhancements available for download
- Regular patches to incorporate the latest security enhancements
- Applications engineering assistance
- Software sustainment and hardware non-obsolescence engineering to support long-lifetime programs

Solutions that Fit

NetAcquire Corporation specializes in real-time distributed systems. We can configure NetAcquire solutions that are customized to your network, input/output, and processing needs.

The logo for NetAcquire Corporation, featuring the company name in white text on a dark blue rectangular background. The logo is centered within a circular graphic element consisting of two concentric, light-colored arcs.

NetAcquire Corporation

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