

Cnix Data Service Platform (DSP)

The Cnix Data Service Platform (DSP) is an integrated software framework designed to connect, manage, and analyze industrial data from various devices and systems. It bridges the gap between field devices, control systems, and IT layers, enabling seamless communication and intelligence across Smart Factory and Smart City infrastructures. DSP simplifies system integration, ensures scalability, and supports open industrial standards such as OPC UA, Modbus-TCP, BACnet/IP, and more.

1. Core Components

The Cnix DSP is composed of modular components that collectively provide flexibility, interoperability, and real-time control capabilities:

SoftDCS

A software-based Distributed Control System (DCS) that connects to field devices via protocols like Profinet, EtherIP, OPC UA, Modbus, BACnet/IP, MC Protocol and others. It attaches timestamps, computes metadata, and enables real-time alarm management through Composite Alarms and programmable logic. The distinguished features are the logical links between different kind of devices easily.

DAQ

A high-performance Data Acquisition system that archives time-series data with nanosecond precision. It includes trend charts, data browsers, and web interfaces for statistical analysis and visualization.

Live Excel

An intuitive Microsoft Excel interface that allows users to read real-time and archived data directly from DSP. Ideal for monitoring, reporting, and automating tasks without additional engineering software.

Pascal

A Digital Twin and AI inference system designed for predictive maintenance and simulation. It learns from DAQ datasets and communicates through Modbus-TCP, OPC UA and through Web.

Xgate

A lightweight communication gateway for external systems using TCP/IP. It enables third-party systems to interact with DSP data efficiently.

Xopcua

An embedded OPC UA gateway that unifies data from both OPC UA and non-OPC UA devices, ensuring interoperability across industrial and IT systems.

Gateway

A network traffic management module that bridges multiple networks while protecting the DSP from overload. It allows clustering of distributed systems into a single virtual platform.

C-Alarm

An anomaly detection-based alarm server that minimizes false alarms caused by transient noise or surges. It integrates with DAQ for waveform-based analysis and supports OPC UA for external connectivity.

XRESTApi

A RESTful interface that allows external web or cloud systems to access real-time data in DSP securely and efficiently.

2. System Layout

The DSP architecture is modular and open, allowing integration of diverse devices and systems into a unified data ecosystem. Through open protocols and APIs, DSP can link PLCs, sensors, DCS systems, and IT platforms into a single logical network. It supports modular clustering via gateways, ensuring scalability from small pilot installations to enterprise-level deployments.

Key features include real-time data linkage, distributed system clustering, programmable data engineering tools, and flexible interface options (Web, TCP/IP, OPC UA, Modbus-TCP). These capabilities make DSP ideal for building Smart Factories and Smart Cities.

3. Deployment Examples

- PSD Control System Integration: 200 subway station door control systems integrated into a unified monitoring framework.
- Airport Safety System: Over 1,400 devices across 15 airports integrated into DSP for centralized control.
- POSCO Deployment: High-speed DAQ successfully implemented for industrial-scale data collection.
- Micro Grid System: Real-time data acquisition exceeding 3 MHz with seamless device connectivity.

4. Business Value

By adopting Cnix DSP, businesses can accelerate digital transformation through unified data infrastructure. It reduces engineering complexity, enhances real-time visibility, and enables advanced analytics including AI and predictive maintenance. DSP's modularity allows partners and integrators to build customized front-end or cloud services without compromising system integrity.

For partnerships, licensing, or integration inquiries, please visit <https://www.fanswer.com> or contact the Cnix team.