

# NETx Multi Protocol Server

## **OPC DA, OPC UA, BACnet IP Server**

Modern building automation systems are distributed systems where the control functionality is spread across a network. Due to the differing requirements of these systems, there is no single technology that can be used to satisfy all needs. As a result, building automation systems are extremely heterogeneous where many different network technologies and communication standards are used.

The aim of the NETx Multi Protocol Server is to solve the problem that arises when heterogeneous building automation systems are used. Located at the management level, the NETx Multi Protocol Server can collect data and information from the building automation system using different technologies, protocols and systems.

## **Multiple standard interfaces to the management level**

## **Bi-directional Multi-Protocol Gateway to field protocols and technologies**

## **Logic engine for complex control functions**

# Functions

## Multi-protocol gateway (Integration of different protocols and technologies)

### Interfaces to the management level

#### **OPC**

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- OPC DA and OPC UA interface for connection to any clients for management and visualization tasks
- Access of the clients to homogeneous data point view

#### **BACnet**

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- BACnet/IP interface for creating BACnet objects (NETx Multi Protocol Server acts as BACnet device)
- Access of (third party) BACnet/IP clients to data points (e.g. KNX, Modbus, ...) of the NETx Multi Protocol Server
- Transfer of data point values to third party vendor BMS systems
- COV subscription is supported
- Automatic or manual selection of objects possible

#### **oBIX and other Web Service Interfaces for IoT**

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- Standardized, open web service interface for home and building automation
- RESTful web service based on http and XML
- Connection to third party systems
- oBIX 1.1 interface supporting HTTP binding and XML encoding
- Supports HTTPS (TLS 1.2) and HTTP basic authentication
- Support for oBIX watches
- Conform to KNX Web Services which provide the possibility to use the NETx Multi Protocol Server as a standard conform KNX Web Service gateway

## **Interfaces to the field/automation level**

- Bi-directional data exchange between different protocols and technologies
- Integration of open protocols like KNX, BACnet, Modbus, OPC, SNMP, MQTT
- Integration of application-specific systems like Oracle Fidelio/Opera, Protel, Infor, VingCard, Kaba or Salto
- Other interfaces via embedded script engine or .NET API possible
- Automatic conversion for different data types
- Manual conversion via integrated Xlogic engine

### **KNX**

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- Integration of KNX data points over KNXnet/IP tunneling protocol
- Integration of KNX networks using any KNXnet/IP routers and interfaces
- All KNX DPTs are supported
- Easy import from ETS 4,5 and 6 using the freely available ETS-App – "NETx BMS App Secure"
- ESF-import-export for older ETS3 projects

### **BACnet**

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- Integration of BACnet data points over BACnet/IP client protocol
- Integration of other BACnet media (e.g. BACnet MS/TP devices) over BACnet/IP router possible
- Automatic discovery of BACnet devices via BACnet Explorer
- Besides standard functions COV, BBMD and proprietary BACnet object types are supported
- More details – **BACnet PIC at [www.netxautomation.com](http://www.netxautomation.com)**

### **Modbus**

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- Integration of Modbus data points (coils, discrete inputs, holding registers, input registers) over Modbus/TCP client interface
- Additionally, native Modbus/RTU over TCP and UDP is supported
- Connection to Modbus RTU devices with IP network over IP-to-RS485 converters possible

### **SNMP**

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- Support of SNMP V1, V2 and V3
- Cyclic polling over OID
- Support of SNMP Traps
- Writing of SNMP objects and SNMP device monitoring
- Monitoring hardware (e.g. printer and servers) in offices or computing centers

## OPC DA

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- Integration of data points of third party OPC servers (e.g. fire detection)
- Explorer for simple data import available
- Data exchange with different systems possible

## Data import

### KNX data import from ETS 5 project

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#### NETx BMS App Secure

Import of the whole KNX project incl. all meta information with NETx BMS App Secure: KNX group addresses, KNXnet/IP router and interfaces, Security information for secure KNXnet/IP routers and interfaces, ETS project structure incl. network topology (areas, lines, devices and communication objects), Building and trade view, Export of all KNX data point types (KNX DPTs), Export of the configuration of KNX/DALI gateways for NETx LaMPS Module

- NETx BMS App Secure recognizes the configured IP addresses of the KNXnet/IP routers and interfaces
- Automatic assignment of KNX group addresses to KNXnet/IP routers and interfaces
- Integration of multiple ETS projects in one project possible
- Multiple use of the same group addresses is supported (extension of the group address by the IP address of the KNXnet/IP router or interface)
- Available for ETS5
- The NETx BMS App Secure can be downloaded separately (<https://www.netxautomation.com/tools/netx-bms-app-secure>)

### Import data points (BACnet Objects) from connected BACnet devices

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- The BACnet Explorer is an online discovery tool for detecting BACnet devices and their objects
- Easy import of BACnet configuration data
- The BACnet Explorer is included in the NETx Multi Protocol Server by default

### Import of OPC data

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- Import of OPC data with integrated Cluster Explorer from other OPC servers or other NETx Multi Protocol Servers
- Data point synchronization per mouse click without deeper understanding of the internal data structure of the server

## **Monitoring and Analysis**

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- NETx Multi Protocol Server runs as Windows service
- Configuration and maintenance within NETx Core Studio
- Displaying data points (incl. values and properties) as item tree
- Changing data points during run-time possible
- Telegram monitor for monitoring field devices and for analyzing network traffic

## **Adding extended control functionality**

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- Adding new functionalities with graphical function block programming (XLogic Editor) or embedded LUA Script engine
- Ready for use control logics included
- Creating virtual data points and specific data structure possible

## **Clustering**

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- Defining a NETx Multi Protocol Server hierarchy combined with other NETx MP Servers or NETx BMS Platform.
- Exchange of data points between sub servers via Wide Area Network (WAN) possible
- Integration of sub data points in a central main server is supported

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## Minimum System requirements

### Hardware

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Depending on project size. At least:

- PC: Intel or AMD - 1.8 GHz (multi-core recommended)
- RAM: 8 GB
- Hard disk: 64GB

### Supported operating systems

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- Windows 10
- Windows Server 2016 (64 bit)
- Windows Server 2019 (64 bit)

### Licensing

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Software	Product ID	Data points
HOME	S10.04.0.00.0001	1.000
BASIC	S10.04.0.00.0002	2.500
STANDARD	S10.04.0.00.0003	5.000
PROFESSIONAL	S10.04.0.00.0004	10.000
ENTERPRISE	S10.04.0.00.0005	20.000

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