

a:control

Connectivity



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Introduction

This document provides a technical overview of the Diagraph GmbH solutions for printer integration and control, specifically for thermal transfer printers.

It focuses on the a:Control web services / REST services, the OPC functionality, Remote-VNC within the a:Control software, and the message broker functionality.

Diagraph GmbH is recognized as a leading developer of high-performance printing technologies that not only ensure smooth integration but also enable efficient control and monitoring of marking processes.

This document aims to provide technical insights into these key aspects of Diagraph technology and to demonstrate their applicability in various technological environments.

a:Control Web Services/ REST-Services

The a:Control web and REST services by Diagraph GmbH provide a powerful platform for seamless integration and control of printers, especially models such as NGT2, NGT4, NGT6E, NGT8, 53LTi, 53XL80, MLi, and others. These services allow remote control and monitoring of printing processes via standardized web protocols.

1. System Requirements:

- Supported OS: Windows 7 SP2 or higher
- Microsoft .NET Framework 4.8

2. Licensing:

- Each printer requires a CAL (Client Access License) for using web service functionality
- Licensing is handled via the a:Control user interface

3. Web Service Settings:

- Enabling web service functionality requires administrator rights in a:Control
- Authentication settings are configurable

4. REST Service Demo Projects:

- Practical examples of REST service requests for printer control
- Use case examples for different printer models, such as XLU, NGT, and MLi

5. Example Functions:

- Retrieve printer connection status
- Load and stop print formats
- Set and get variable values
- Check error status
- Retrieve printer information

The a:Control web services provide a flexible and robust architecture for integrating printers into existing systems. Thanks to standardized web protocols and the RESTful API, they enable simple and efficient control of printing processes across different use cases.

OPC Functionality in a:Control Software

The OPC functionality of Diagraph / Allen Coding printers is seamlessly integrated via the a:Control software, ensuring optimal control and monitoring of marking processes. The a:Control software acts as the central control component and is essential for effective use of OPC UA functionality.

Key Roles of the a:Control Software:

- **Configuration and Parameterization:**

The a:Control software simplifies configuration and parameterization of the OPC UA connection for Diagraph / Allen Coding printers. This includes setting communication parameters, security settings, and defining data points.

- **Real-Time Monitoring:**

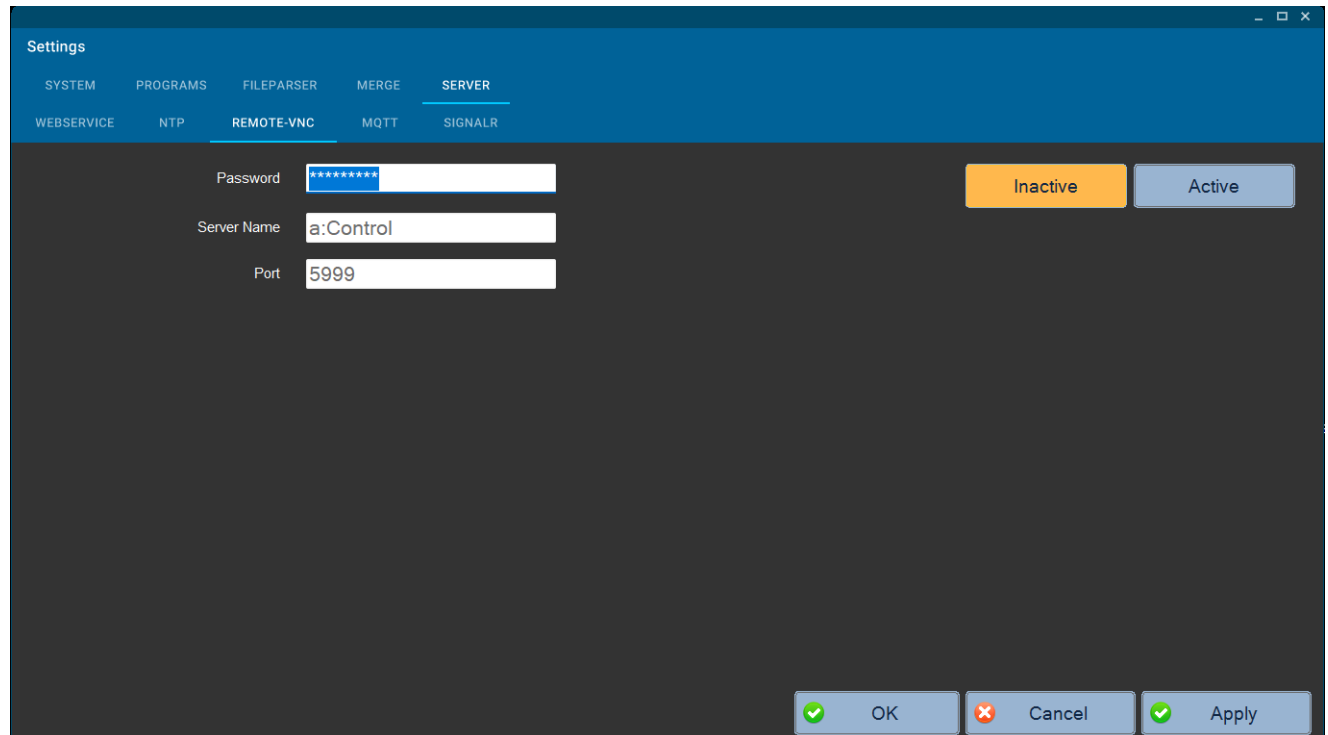
The software provides comprehensive real-time monitoring of printer status and performance. Operating parameters, error messages, and warnings can be queried in real-time by higher-level control systems to ensure quick responses to potential issues.

The a:Control software is a fundamental requirement for enabling and using OPC UA functionality in Diagraph / Allen Coding printers. This integrated solution ensures seamless communication and serves as a central interface that maximizes the overall performance and efficiency of marking processes.

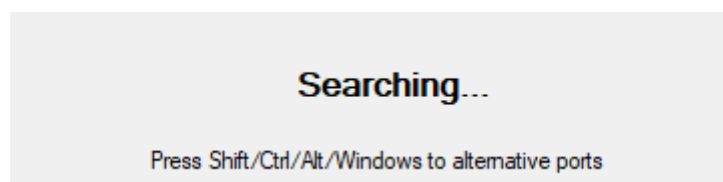
Remote-VNC in a:Control Software

The Remote VNC functionality in a:Control allows sharing the screen of an a:touch device. On the touch PC, the Remote VNC function must be activated in the a:Control program settings (Settings -> Server -> Remote VNC).

- The default password for Remote VNC is "**solutions**".



Using the client software **aControl_Remote.exe**, the screen can be located and accessed. Multiple clients can connect simultaneously using alternate ports, which are selected by pressing **Shift**, **Ctrl**, **Alt**, or the **Windows key** at startup.



TOUCH-PRO01

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DIAGRAPH

PRINT SYSTEMS LANGUAGE STICK DRIVE FORMAT LADEN

NGT2 (192.168.173.130)

Interface: 192.168.173.130:4001
Status: Not connected

Connection Options

NGT4 (192.168.173.131)

Interface: 192.168.173.131:4001
Status: Not connected

Connection Options

NGT8 (192.168.173.132)

Interface: 192.168.173.132:4001
Status: Not connected

Connection Options

XL5000 (192.168.173.57)

Interface: 192.168.173.57:30001
Status: Not connected

Connection Options

IJ-1 (192.168.173.148)

Interface: 192.168.173.148:80
Status: Not connected

a:Control Message Broker Functionality

The a:Control message broker is an innovative feature developed for efficient communication with Diagraph's NGT printers. This functionality was designed to address challenges found in traditional printer integration approaches, particularly when multiple clients need to communicate with a printer simultaneously.

Functionality:

- The message broker allows multiple clients to communicate with an NGT printer via TCP/IP using ESC sequences. This is especially important in environments where systems such as PLCs (programmable logic controllers) need simultaneous access to the printer.

Key Features:

- **Multiple Connections:**
Normally, only one client can access port 4001 on an NGT printer at a time. The message broker removes this limitation, allowing unlimited simultaneous connections.
- **Routing Requests and Responses:**
The message broker acts as a mediator between clients and the printer—receiving requests, forwarding them to the printer, and returning responses to the requesting clients.
- **Duplicating Printer Messages:**
Messages generated by the printer are duplicated by the broker and forwarded to all connected clients, keeping them updated about printer status and actions.

Setup:

- Activation is done through the a:Control system settings.
- The printer should ideally be connected via serial connection for optimal broker operation.
- After the message broker is started, multiple clients can connect using the IP address of the a:Control PC.

The a:Control message broker provides a flexible and efficient solution for environments where parallel communication with NGT printers is essential.