# Niagara 4 Automated Logic WebCtrl Driver Guide

Technical Document

baudrate.io

niagara4

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# 1 Introduction

Automated Logic or ALC [1], now part of Carrier Corporation, is one of the first building automation manufacturers who embraced BACnet standard and released a full line of BACnet products. They include fully programmable controllers for unitary / zone applications, small, medium and large extendable and non- extendable controllers, as well as front-end software WebCTRL with many advanced features like Environmental Index, Time-Lapse and Fault Detection and Diagnostics.

There is one thing ALC did differently from the rest of BACnet vendors. They chose ARCNET as a fieldbus, instead of more popular and slow MS/TP. Although ALC ARCNET uses RS-485 physical layer, it is not supported by Niagara JACE nor by almost anyone else.

Our ALC driver for Tridium Niagara communicates with ALC controllers indirectly via WebCTRL server — the standard front-end software deployed on virtually every Automated Logic BMS site. It provides access to the data in all connected controllers, ALC and third-party BACnet ones, as well as legacy ALC CMnet communication protocol.

The driver allows to automatically discover devices and points, import points into Niagara station, read point values and write into them. Points retain their names, types and unit facets, which greatly simplifies integration process.

The driver can be deployed in JACE or in Niagara Supervisor, which could reside either locally on site, or on remote premises, or on a cloud.

# 2 Requirements

- Niagara-powered device with software v4.4 (N4) or later, including Jace8000, Supervisor or their OEM versions
- WebCTRL driver module and license
- Login and password with permissions to access WebCTRL SOAP API.
- WebCTRL software with *Enterprise feature* enabled. This feature allows WebCTRL to communicate with Niagara via SOAP API. Check if this feature is enabled in your WebCTRL *About* window.

[1] All trademarks or registered trademarks are the property of their respective owners

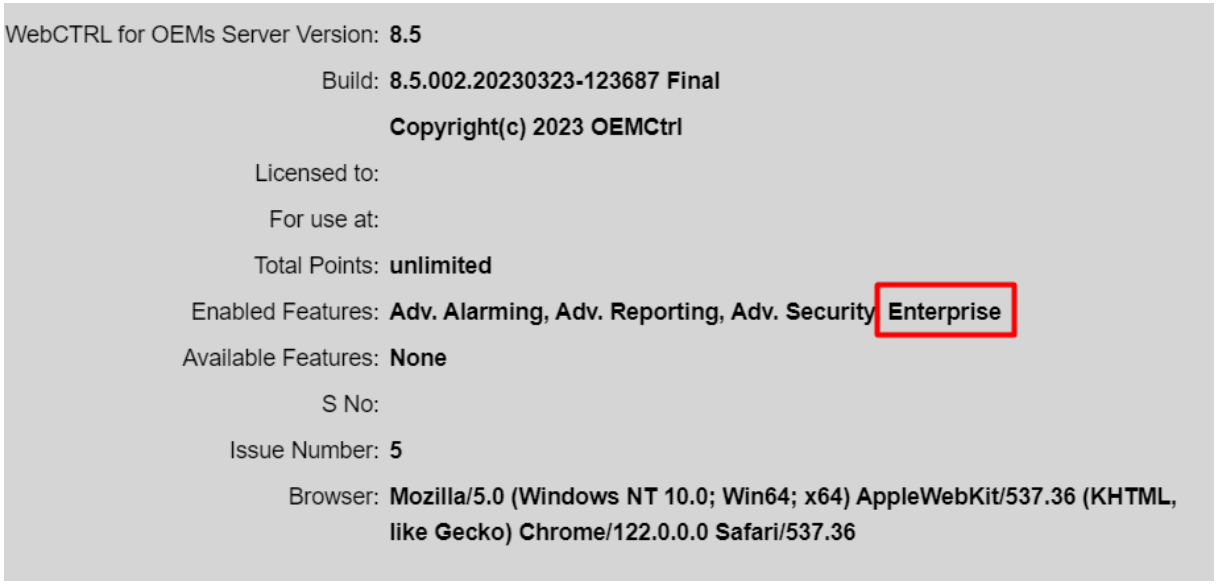


**Figure 1:** WebCTRL About Window

In order to test if SOAP API is enabled, open a web browser and navigate to the following URL: https://yourWebCTRLAddress/_common/webservices/Eval?wsdl. Use HTTP if your WebCTRL server does not use HTTPS. If you see XML content, then SOAP API is enabled.

If you see 403 error instead, WebCTRL server version is 8.0 or later, and it uses HTTP, then you need to enable SOAP API for HTTP as it is disabled by default. To do this, start ALC SiteBuilder software, open Preferences and select *Enable SOAP applications over HTTP* option.

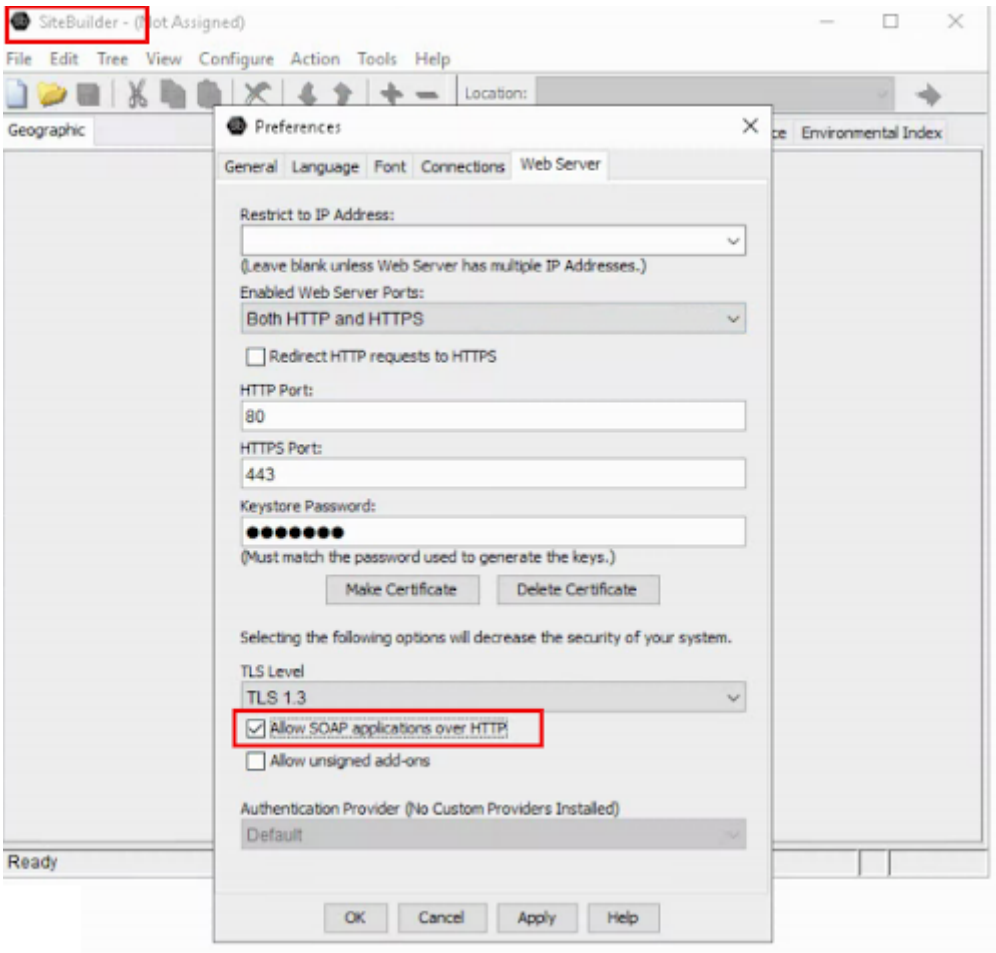


**Figure 2:** Enable SOAP API over HTTP

## 3 Quick Start

1. Copy webCtrl-rt.jar to the Niagara /modules folder of your PC and restart Niagara Workbench.
    a. If the driver is hosted on PC: restart Supervisor station.
    b. If the driver is hosted on JACE: import the module with all its dependencies into JACE and restart it.
2. Add **WebCtrlNetwork** to the station.
3. Open **WebCtrlNetwork** property sheet and copy the license code into the **License** property.
4. Add **WebCtrlDevice** to the network.
5. Set **Username**, **Password**, **Address** and **Port** properties of **WebCtrlDevice**. If the WebCTRL server uses HTTPS, set the **Https** property to true.

6. Open the device **Points** extension and click on **Discover** – you should be able to see the hierarchy of WebCTRL contents. There are many levels of components available on the server.
7. Navigate to the desired points and import them to the Niagara station. While adding a point it can be configured as a read only point or a read-write point using the type property.

# 4 WebCtrl Networks

**WebCtrlNetwork** contains many standard Niagara properties, as well as driver-specific ones:

- **License** – the code which allows the driver to run on your host.

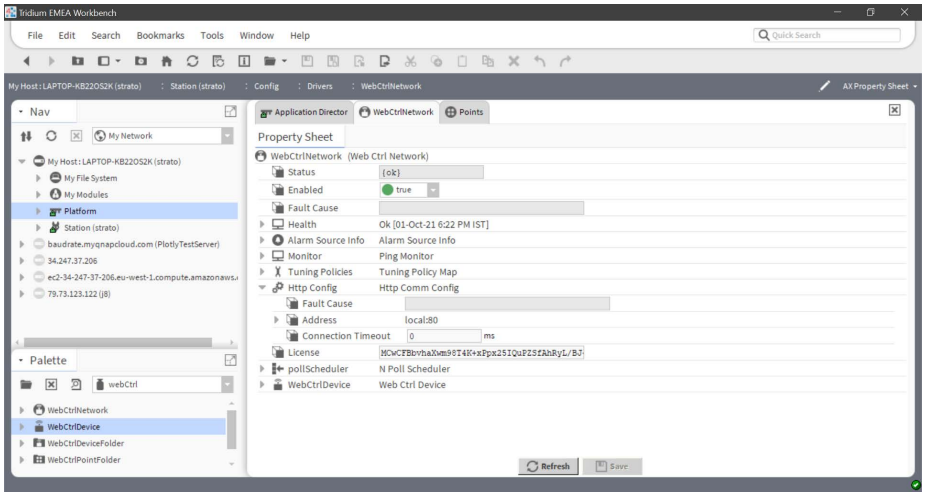


**Figure 3:** WebCtrl network properties

# 5 WebCtrl Devices

Devices are added to Niagara by pressing **New** button. Each device represents a WebCTRL server and has the following properties:

- **Username** – Username of the WebCTRL server
- **Password** – Password used to access the WebCTRL server
- **Address** – IP address WebCTRL server
- **Port** – Port number of the WebCTRL server. It is normally 80 for HTTP and 443 for HTTPS.
- **Https** – If the WebCTRL server uses HTTPS, set this property to true.
- **Point Group Size** – The number of points to be read in a single request. The default value is 100. If the WebCTRL server is slow, changing this value might improve performance.

- **Current Number of Groups** – The number of point groups. This value is automatically calculated based on the number of points and the point group size.

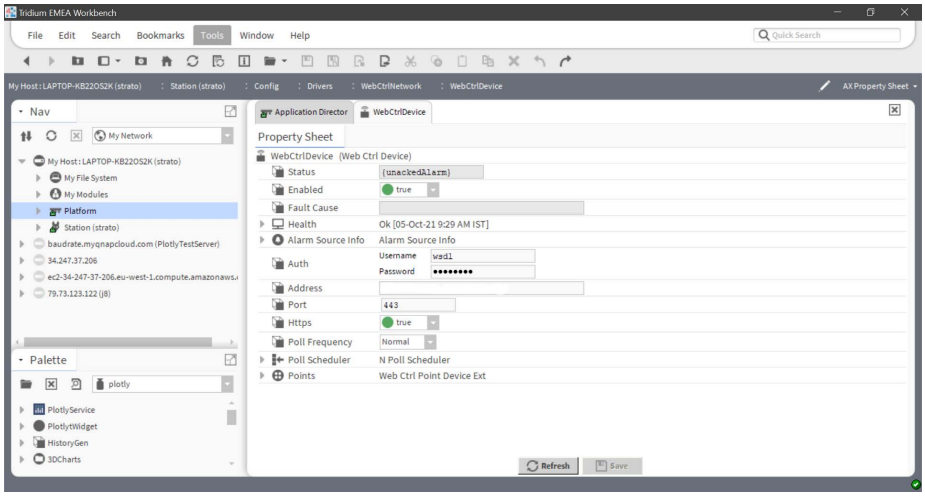


**Figure 4:** WebCtrl devices

## 6 WebCtrl Points

Point discovery allows to obtain point information directly from the server. Navigate to the desired points by expanding the tree and once you have reached the points level you can click on **Add** to import the point into the Niagara Station. The Add popup will have a Type property under which you can either choose it to be a read-only point or a read-write point.

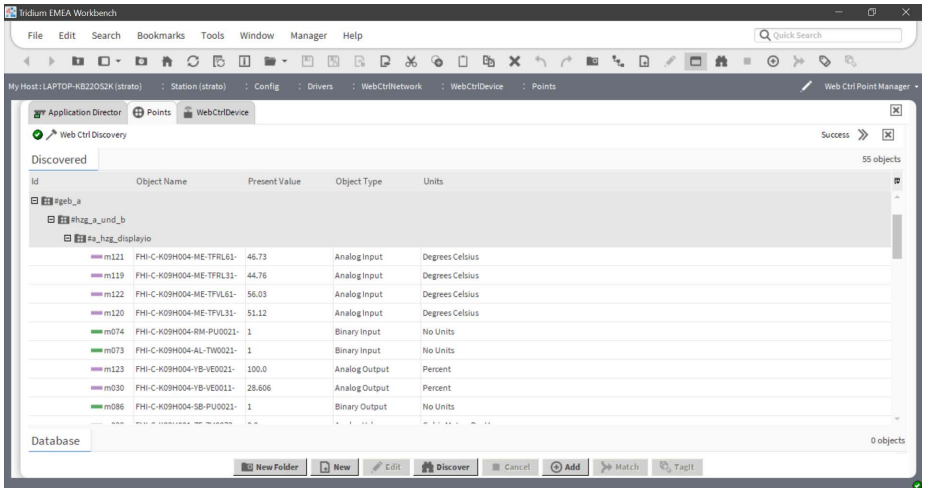


**Figure 5:** WebCtrl point discovery

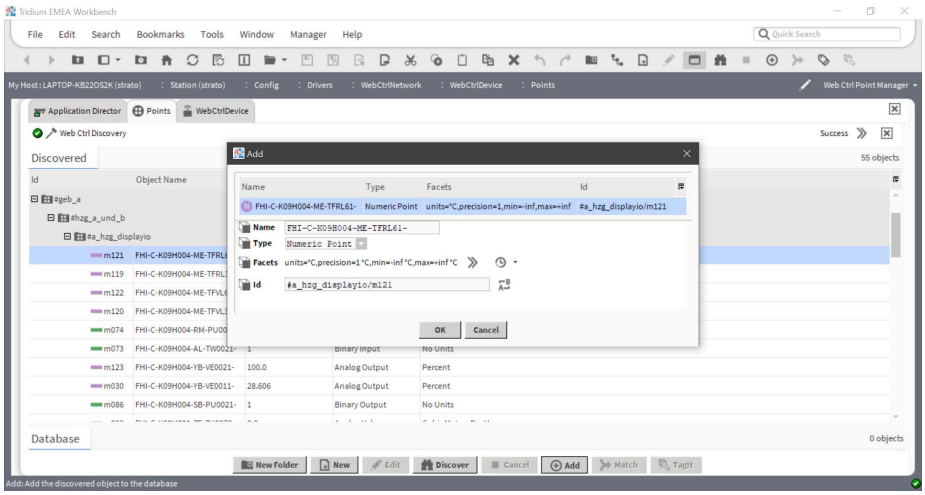


**Figure 6:** WebCtrl point adding

WebCtrl points are identified by a type. Types could be:

- Analog Input / Output / Value
- Binary Input / Output / Value
- Multistate Input / Output / Value

Points are physical inputs and outputs, depending on controller model and configuration. Software points are variables, they could be writable – also called setpoints – or read-only. Writing into point overwrites its value, i.e. the old value will be replaced.