Satchwell Driver for Tridium Niagara

User Guide

baudrate.io

niagara4

February 22, 2026

Contents

1 Introduction **2**

2 Requirements **2**

3 Quick Start **2**

4 Satchwell Network **3**

5 Satchwell Devices **3**

6 Satchwell IAC **3**

7 Satchwell Micronet **4**

8 Satchwell Points **4**

9 FAQ **5**

9.1 Can I mix IAC and Micronet controllers on the same RS-485 bus? 5

9.2 What baud rate should I use? 5

9.3 How many controllers can I connect per RS-485 segment? 5

9.4 I cannot discover any controllers 5

9.5 Points are not reading 5

1 Introduction

The Satchwell[1] driver for Tridium Niagara enables integration of legacy Satchwell controllers with modern building automation systems. The driver supports two Satchwell product families:

- **Satchwell IAC** (Intelligent Advanced Controllers) – communicates via SatchNet Protocol (SNP) over RS-485
- **Satchwell Micronet** – communicates via Native Communication Protocol (NCP) over RS-485

Both protocols support automatic device and point discovery, point reading, writing, and overriding. The driver is ideal for retrofit applications in healthcare, education, and commercial environments, enabling centralized control and energy optimization without replacing existing field hardware.

Satchwell controllers were widely deployed across Europe under the Satchwell, Invensys, TAC, and Schneider Electric brands. Despite being legacy products, they continue to operate successfully in many buildings worldwide.

2 Requirements

- Niagara-powered device with software v4.8 or later, such as JACE, Supervisor, or any OEM version
- Satchwell driver module and license
- RS-485 serial port on the JACE, or a serial-to-IP converter
- IAC controllers with SNP, or Micronet controllers with NCP

3 Quick Start

1. Copy satchwell-rt.jar module to Niagara /modules folder and restart the software.
    a. If the driver is hosted on PC: restart Supervisor station.
    b. If the driver is hosted on JACE: restart JACE from the platform.
2. Open the station in Workbench.
3. Open the **Palette** and locate the **satchwell** palette.
4. Drag and drop **SatchwellNetwork** from the palette onto the **Drivers** container in the station.
5. Enter license code in **License** property under **SatchwellNetwork**.
6. Configure the serial port settings (RS-485).
7. Right-click on the network and select **Discover** to find all connected controllers.

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

8. Select the desired controllers and press **Add** to import them into the station.
9. Expand a device, right-click on the point manager, and select **Discover** to find all points.

4 Satchwell Network

The Satchwell Network manages the RS-485 connection. One network supports up to 32 controllers on a single RS-485 segment.

Network properties:

- **License** – the code that allows the driver to run on your host.
- **Serial Config / Port Name** – COM port name (e.g., “COM1”).
- **Serial Config / Baud Rate** – communication speed. Must match the controller configuration.
- **Serial Config / Receive Timeout** – time in milliseconds to wait for a controller response.
- **Poll Scheduler** – specifies polling rates for periodic data reading:
  - Fast Rate: 5 seconds
  - Normal Rate: 10 seconds
  - Slow Rate: 30 seconds

In most cases only **License** and **Serial Config / Port Name** values need to be changed.

5 Satchwell Devices

Devices represent individual IAC or Micronet controllers. During discovery, all controllers on the RS-485 segment are automatically found with their names and types.

Device properties:

- **Address** – unique address of the controller on the RS-485 bus.
- **Poll Frequency** – polling rate: Fast, Normal, or Slow, corresponding to the **Poll Scheduler** rates.

6 Satchwell IAC

Satchwell Intelligent Advanced Controllers (IAC) are versatile devices for VAV, terminal units, zone control, or custom applications configured via the “Bubbleland” graphical programming tool. IAC controllers use SatchNet Protocol (SNP) over RS-485.

Supported IAC models:

MMC 3601	MMC 4601	IAC 200
IAC 400	IAC 420	IAC 600

7 Satchwell Micronet

Satchwell Micronet controllers support three protocols: Native Communication Protocol (NCP), ARCNET, and LonWorks, depending on the configuration. The driver uses NCP, which is available in all Micronet controllers via RS-485.

The driver supports both Micronet generations:

- **"Bus-du-jour"** – original Micronet generation.
- **Micronet 50** – newer generation.

Supported Micronet models:

MN300	MN440	MN500	MN620
MN350	MN450	MN550	MN650

8 Satchwell Points

Points are automatically discovered with names, types, and unit facets. The driver supports reading, writing, and overriding of point values. Satchwell engineering units are automatically mapped to standard Niagara units.

Each point proxy extension contains:

- **Point Address** – address of the point within the controller. Set during discovery.
- **Poll Frequency** – polling rate: Fast, Normal, or Slow, corresponding to the **Poll Scheduler** rates.

For writable points, writing a value sends it to the controller. Writing a null value releases the override and returns the point to its program-controlled state.

The driver also supports time synchronization with controllers to minimize configuration disruptions.

9 FAQ

9.1 Can I mix IAC and Micronet controllers on the same RS-485 bus?

No. IAC and Micronet use different protocols (SNP and NCP respectively). They must be on separate RS-485 segments with separate Satchwell Networks in the Niagara station.

9.2 What baud rate should I use?

The default baud rate depends on the controller type and the existing system configuration. Refer to the original system documentation for the correct baud rate setting.

9.3 How many controllers can I connect per RS-485 segment?

Up to 32 controllers per RS-485 segment, as limited by the RS-485 standard.

9.4 I cannot discover any controllers

- Check RS-485 wiring and termination resistors at both ends of the bus.
- Verify the COM port name is correct and the port is not in use by another application.
- Ensure controllers are powered and have valid unique addresses.
- Verify the baud rate matches the controllers on the bus.
- Check that the license is valid.

9.5 Points are not reading

- Verify the device is online (device status should show **ok**).
- If the device shows **down**, check RS-485 wiring and device address.
- Increase **Receive Timeout** if the network has high latency.