

bNexia is a driver designed to consolidate query and command interactions with the Nexia API and distribute individual HVAC zone updates to connected bTstats. Projects require only one bNexia driver per "Location" as defined by Nexia. This driver runs as a background process and has no interface exposed to a user (aside from the Admin Server) - the standard thermostat interface is provided by one or more paired BNet Solutions bTstat drivers.

"NEXIA" BRAND SPLIT AND RETIREMENT

Nexia, the brand, is being retired and split into two separate brands: Trane and American Standard. bNexia v9+ is required to properly connect the new API endpoints.

SETUP

There are now two cloud API services and configuration homes depending on the brand of the physical thermostat. "Configuration Site" in the following setup instructions is a generic reference and should be substituted for the appropriate "Brand" site below:

Trane: <https://tranehome.com>

American Standard: <https://asairhome.com>

First step is to setup your Thermostat(s) on the Configuration Site. This step is likely already complete but confirm they are named appropriately (and uniquely), their schedules are set and of course that they are online and connected.

Next, install one bTstat driver (not this driver) for each HVAC zone - bTstat driver and documentation are available on the BNet Solutions website.

bNexia Setup:

- 1) Within your Control4 project, install a single instance of the bNexia driver
- 2) Set the "Brand" Property to the physical thermostat's brand
- 3) On the navigation banner on the Configuration Site, go to 'Mobile' and click 'Add Mobile Device'. You will need 1 new Device per location (Most will only have a single location). What you name it doesn't matter, mine is call bNexia. Choose 'WiFi' as your mobile connection. Leave all the Thermostats selected under 'Devices this mobile device can control'. Click Save
- 4) Click 'Get Activation Code' on your newly created Mobile Device. There is an issue with Activation Codes that begin with a 0 (zero). If your code starts with a zero, request a new code. Activation codes are valid for a single use only - if you repeat the setup, you will require another Activation Code.
- 5) Within your Control4 project, enter step 3's Activation Code into the Activation Code property
- 6) Confirm Mobile ID and API Key properties are populated
- 7) Set Location Name property - if there is only one location associated with your Mobile Device, bNexia will select that location for you
- 8) Select the associated bTstat instances via the Thermostats property device selector. In most cases, all bTstat instances should be selected
- 9) Set Poll Interval. Unit is in minutes - mine is set to 1

bNexia Driver

10) bNexia setup is complete however each bTstat instance must now claim an HVAC zone - reference the bTstat driver documentation for details

PROPERTIES

DRIVER SETUP

Driver Version	Installed driver version
MAC Address	Unique network interface identifier for the Controller
Upgrade Mode	BNet Solutions drivers automatically update themselves. Options are "Automatic" and "Upgrade Now". See "Upgrade Mode" section below
Admin Token	Token required to access the driver's Admin Server

BNEXIA SETUP

Brand	Physical thermostat Brand (Trane or American Standard)
Activation Code	Code received from the Configuration Site used to validate bNexia as a mobile device
Mobile ID	Configuration Site assigned ID for bNexia
API Key	Configuration Site assigned key for bNexia
Location Name	List of available locations associated with the Configuration Site account
Poll Interval	Interval, in minutes, to retrieve the current state of Nexia thermostats. Zero (0) disables polling

THERMOSTAT SETUP

Thermostats	Device Selector property used to associate bTstat driver instances with this bNexia driver
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DEBUG SETTINGS

Debug Mode	Sets where the driver outputs debug information. See "Troubleshooting" section below for more information
Debug Level	Sets how much debug detail the driver outputs

ADMIN PORTAL

BNet Solutions drivers have a built-in Admin Portal that include an Information, Properties, Variables, Actions, Lua, Documentation and License tabs. Additionally, if the driver supports additional custom tabs, these are displayed as well.

A driver's Admin Portal can be reached using the following address template: [https://\[controller ip\]/driver/bNexia/admin.html](https://[controller ip]/driver/bNexia/admin.html) where "controller ip" is the IP Address of your Control4 Director.

Because of the security model used by modern browsers, there are two configuration steps to successfully connect to the Admin Portal:

- 1) The Admin Portal communicates to the controller via a secured websocket. The BNet Certificate Authority that signed the Admin Portal's server certificate must be trusted for your browser to make the SSL/TLS websocket connection. The BNet CA bundle must be downloaded and install as a root certificate. The bundle can be found at https://ca.bnet4solutions.com/get_ca_bundle.php
- 2) Your controller uses a privately signed Control4 server certificate that must be trusted

before your browser will allow you to navigate to the Admin Portal. On your first visit to the Portal, you will be asked to make a security exception and continue.

The Admin Portal is protected by a challenge page that requires a token to continue. By default, the token is "bNexiaAdmin". Once authenticated, the token is stored in a cookie (technically hashed, then stored) so you won't need to log in every time. The token is configurable via the driver's property page. The Admin Server is enabled by default but can be disabled entirely via the driver's property page.

UPGRADE MODE

BNet Solutions drivers can automatically update themselves. New driver functionality or capability is typically packaged as an incremental "Major" version (v3, v4 etc). "Minor" versions (v2.3, v2.4) are typically maintenance releases that update underlying libraries, address a specific issue or usability concern.

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| Automatic | When "Automatic" is selected, the driver will upgrade/update itself when a new version is available. This is currently the only available option. |
| Update Now | Checks for and upgrades to any newer Major or Minor version. |

KNOWN ISSUES AND LIMITATIONS

- Requires C4 OS v3.1.1 or greater
- There is an issue with Activation Codes that begin with a 0 (zero). If you are issued a code that begins with a zero, request a new code (the underlying JSON library trims leading zeros)
- The Thermostat device selector property specifically searches for devices installed from "bTstat.c4z". If bTstat instances are installed but not reflected in the Thermostats property, confirm the driver installation source is exactly "bTstat.c4z".

TROUBLESHOOTING

If your Roomba locks up or stop receiving commands from ANY source, perform a soft reset - please refer to <https://homesupport.irobot.com> for instructions.

All BNet Solutions products have an additional 'Submit' Debug Mode. With this mode selected, the driver creates a unique log file to capture the Lua output based on the selected Debug Level (usually set to "5 - Debug"). Once 'Submit' Debug Mode is deselected, either manually or when the Debug Timer expires, the Submit Debug Log is uploaded to the BNet Solutions Server for analysis.

The server notifies me when Submit files are uploaded but if you have not purchased a license, I will have no way to reach back out to you for troubleshooting so please email me your contact information.

TRIAL AND PURCHASE

All BNet Solutions drivers are fully functional for a 7-day Trial Period. To continue usage after the Trial Period, you will need to purchase a license. Purchase functionality is provided by the License tab that may be accessed in one of two ways:

bNexia Driver

- In Composer, on the System Design side panel, click on the driver. The License tab is displayed as a subtab of the BNet tab
- In the Admin Portal, the License tab is displayed as one of the main tabs

Once the required fields are filled in, select one of the PayPal payment options and follow the prompts to complete the purchase. Upon completion, the driver will auto-populate the license key and activate. You will receive a receipt from PayPal for the transaction.

An example License tab:

The screenshot shows the 'License' tab in the bnet Admin Portal. On the left is a sidebar with the bnet logo and product details: 'bROOMBA ADMINv9.0 (DEVICE #402)'. The main area has tabs for 'Documentation' and 'License'. The 'License' tab is selected and contains the following sections:

- LICENSE KEY**: A text input field and a red 'Set Key' button.
- LICENSE STATUS**: A table with the following data:

Valid	False
Trial	False
Remaining	Trial Expired
Revoked	False
- DRIVER COST**: \$75.00 *plus tax
- PURCHASER INFORMATION**: Three input fields for 'Email', 'First Name', and 'Last Name'.
- Payment Options**: Three buttons: 'PayPal' (blue), 'venmo' (light blue), and 'Debit or Credit Card' (grey).
- Powered by **PayPal**

There are no refunds so please review the documentation for any limitations or known issues and determine acceptance during the Trial Period.

LEGAL

By using this driver, you are indicating that you have read and agree with the Policies and Terms that govern its usage as published [here](#).

MY CONTACT INFORMATION

You can reach me at blucas@bnet4solutions.com for comments or questions.

CHANGE LOG

- v1 - 03/19 Beta Release
- v2 - 05/19 Initial Release

bNexia Driver

- Consolidated all Nexia interactions into bNexia - bTstat now only proxies commands and updates via bNexia making bTstats cloud service agnostic
- Added functionality to support new bTstat features including Auto system mode, Fan Circulation, Nexia Presets (None, Home, Away and Sleep) and Extras
- v3 - 06/19 Fixed issue when thermostat scheduling is disabled resulting in Hold Mode settings omitted from Nexia query
- v4 - 07/19 Resolved lost activation status after unclean director shutdown
- v5 - 08/19 Updated architecture modules
- v6 - 11/19 Added auto-update functionality
- v7 - 06/20 Streamlined setup and zone claim/release process
- v8 - 11/20 Major architecture overhaul
- v9 - 06/21 Support Nexia brand split