



DOMOSAPIENS ENHANCED IP DRIVER FOR LEVITON/HAI OMNI AND LUMINA PANELS

This driver enables you to control a LEVITON/HAI IP-capable system using the new Control4 security interface.

IMPORTANT: OS 2.8 or later is required for this driver to work properly. Version 10 or above of this driver will only work with the driverCentral marketplace and licensing.

DRIVER CAPABILITIES

- Provides enhanced security support through a new Security Panel main driver fully compatible with OS 2.8 and above. The previous main security driver remains available at version 7.4.x for pre-OS 2.8 systems.
- Supports all Areas, Zones, Units, Codes, Thermostats, Macro buttons, Messages, Voice Messages and Access Readers handled by the panel connected to the driver.
- Access Readers are supported with requests, events and by allowing door locking and unlocking under programming control (see the Programming section below) and optionally via the Navigator interface.
- New lightV2 drivers with for HAI/UPB lighting loads (dimmer and non-dimming) with Button and Advanced Lighting Scene connectors.
- UPB keypads connected to the HAI panel are also supported.
- ****NEW**** Somfy ILT blinds are supported if HAI firmware is at level 3.4 or higher.
- Uses an IP encrypted connection with the panel for faster and secure communications as well as immediate feedback on events.
- Enhanced thermostat support, including presets and scheduling, is provided through a new thermostatV2 companion driver compatible with OS 2.7 and above.
- Support for HAI's Extended Range Temperature and Humidity Sensor (31A00-8) is provided through a new thermostatV28 companion driver compatible with OS 2.7.
- Time and date are updated automatically every 24 hours on the HAI panel, and an Action is provided to update manually.
- Provides a simplified installation, based on naming different items in the HAI configuration. A new "friendlier" character (">") may now also be used to indicate lighting units.
- Zone groups allow easy but sophisticated control and programming.
- Zone groups can trigger Control4 relays for direct control.
- A Navigator Function allows the user to bypass/restore individual zones or all zones in a Zone Group.
- Ability to send notifications for key events (Alarms, Arming/Disarming and Troubles).
- Ability to turn lights On and flash lights when in Alarm.
- Improved History logging of events, available in the Navigator interface.
- Mirrored relay bindings are created for HAI Units and Access Readers (door lock) having a special name, with ability to control if end users may unlock doors via Navigators (without an access card).

- Provides support for the HAI Two-Way Audio/Voice Alarm Module with appropriate connections.
- New programming variables are set at the beginning of the exit delay for immediate arming feedback to the user.
- New programming variables are available for each thermostat to report current thermostat humidity level and remote sensor temperature.
- New programming variables contain the last User number (and name) to Arm/Disarm as well as the last zone to become Not Ready and the last zone to be Restored.
- Programming support is provided to:
 - Quickly arm and disarm a single area or all areas.
 - Bypass/restore zones and activate Emergency modes.
 - Manage Access Readers, including ability to lock and unlock connected doors with an optional delay.
 - Turn Units ON and OFF with an optional delay.
 - Pulse Units ON, OFF or AUTO.
 - Issue Console (keypad) messages.
 - Issue Voice messages.
 - Manage lighting events, loads (Dimmer and Non-Dimming) and keypads.
- Programming events are triggered when entry and exit delays start.
- Actions (“Print Status Report” and “Print Debug Log”) simplify reporting of issues.
- Includes the Domosapiens Inter-Devices Facility (DIDF) to allow other drivers to monitor and control individual elements through this driver (see detailed section in this document).

QUICK INSTALL (SEE FULL INSTRUCTIONS BELOW)

- Activate the driver with the license you purchased from our website. The driver will operate for 48 hours without an Activation Key.
- Set the Omni or Lumina panel to a static IP address or ensure it always receives the same IP address from the DHCP server via a MAC-based reservation.
- Ensure the HAI panel firmware is at level 3.00 or above, otherwise the driver will not work properly.
- Ensure the Controller port number configured in the HAI system is 4369 (the default). To use a different port, refer to the instructions included in the download package.
- Ensure that appropriate elements are properly named in the Omni/Lumina configuration, as per instructions.
- Enter the IP address of the Omni or Lumina panel using the Connections area of Control4.
- Enter the Security Key of the panel into the Properties.
- Enter the Default User Code under Properties for each active area. This eliminates the need to expose user codes in programming, thus increasing security.

- If desired, enter the Zone numbers for your Fire detectors, Medical contacts, Panic buttons and Zone Groups, separated by commas (ex.: 12, 22, 51). Leading spaces for each are ignored. For Zone Groups A to G, you may start the list with a non-numeric group name (ex.: Water Detectors, 17, 32, 35).
- Connect the zone Control Outputs to appropriate Sensor devices.
- When appropriate, add and connect companion drivers for thermostat, lighting elements and extended range sensors to the project.

IMPORTANT: AS THEY WILL BE REMOVED IN A FUTURE CONTROL4 OS RELEASE, AVOID USING THE AREA/PARTITION VARIABLES “HOME_STATE”, “AWAY_STATE” AND “DISARMED_STATE” AS EVENTS OR AS CONDITIONALS. THE DRIVER OFFERS ALTERNATIVES YOU CAN USE.

SUPPORT

For support on this driver please go to <https://help.drivercentral.io/>. Give a detailed description of the problem and also include the version number of the driver and the version of Control4 OS that you are using.

AUTO UPDATE

This driver is updated with fixes and new features from time to time. To ensure your project uses the latest version, set the Automatic Updates property of the main driver to On. If required, companion drivers will also be updated automatically.

CHANGELOG

8.0.0	October 15, 2015	Initial Release
10.0.0	July 17, 2017	Migrated to driverCentral, added History Log, Lighting/flashing support and Notifications, issues fixed
11.0.0	May 3, 2019	Updated driver infrastructure, Advanced Lighting Scenes support for flashing and individual areas, documentation moved inline
11.1.0	November 23, 2019	Support added for Somfy ILT blinds, minor issues fixed with Email Notifications
11.2.0	February 18, 2020	Added property to skip requesting feedback after unit commands, fixed Lua error with Zwave locks
11.3.0	March 16, 2020	Entry/exit delays now dynamic
11.4.0	March 5, 2021	Updated licensing, added European models, added optional forced OFF command for dimmers, added Humidity setpoints for Extended Range Sensors, lighting/units special prefix character now optional

FULL INSTRUCTIONS

Introduction

The Omni and Lumina control systems from Leviton/HAI provide comprehensive security, energy management and sophisticated lighting control. This manual assumes that the Omni and Lumina systems are already installed and working. For details on installing the Omni and Lumina systems, please go to the Leviton Security & Automation website.

Test before you install

We recognize that it may not be easy to test this driver in the office. However, it is really important that you are not trying to set this up on the Friday afternoon before the property is supposed to be handed over. Your first installation may take a little longer than you expect!

Please ensure that the Omni and Lumina systems are working correctly *before* you install the driver. Adding Control4 won't magically fix any underlying problems. This is especially important if you are adding Control4 to an existing HAI system that you didn't install.

Known Issues and Limitations

- Beeping does not work consistently when displaying a console message with Beep
- X-10 lighting is NOT supported

Important Notes (“Before you begin...”)

- If your current project already includes one of the Control4 legacy HAI security drivers, it is recommended that you back your project up and delete the legacy HAI security driver before adding this new IP driver. This will eliminate any potential conflicts.
- Before adding the main *securitypanel* (OS 2.8+) driver and any of its associated companion drivers to the project, you want to prepare the HAI panel configuration by naming some of - if not all - the Areas, Zones and Thermostats as well as all Units and Access Readers you plan to access with this driver, using the HAI PCAccess configuration utility. This allows full and easy setup of this driver.
 1. At a minimum, name the highest-numbered item used in main categories (Zones and Thermostats). For example, if zone 27 is the highest-numbered zone you plan to use, then you must give it a name in the configuration. The driver will always add the zone number as a prefix to your zone connection name, as was done in the legacy drivers. Similarly, the driver will add the thermostat number as a prefix to your thermostat connection name. Naming the lower-numbered zones and thermostats is optional and the driver will give all unnamed items a generic name as required. Also, please note that only named zones will be displayed on the navigators as NOT READY or BYPASSED.
 2. Areas are treated differently: the driver will always generate the maximum number of areas supported by the panel. Areas, including Area 1, if named in the panel configuration, will have their name set accordingly. Areas which are not configured in the HAI panel will be disabled and named “UNUSED”.
 3. You may define special names for some Units in your HAI configuration. This will trigger the creation of a RELAY or an HAI_LIGHTING connection for each such Unit.

****NEW** IMPORTANT:** prefixing a unit name with a special character, as indicated below, is used to limit the number of bindings generated while reading names from the HAI panel. It is possible, however, to bypass this using the new “Prefix for Unit Names” property. Selecting “Prefix not required...” removes the need to prefix names in the HAI configuration and will generate bindings for all named lighting and optionally all other units. This **does not** apply to Access Reader names.

A RELAY connection will mirror the ON or OFF state of the Unit or Flag and can be used to give feedback to the user or perform other tasks as appropriate. Simply prefix the Unit or Flag name with “&” in the HAI configuration (for example: &MyUnit). The driver will remove the “&” character and add the Unit number as a prefix to the connection name. This would primarily be used for HAI Outputs and Flags. Similarly, if Units are used for HAI/UPB lighting loads and keypads or Somfy ILT blinds, you need to name all such Units and prefix their names with “\$” or “>” (instead of “&”) in the HAI panel configuration (for example: \$MyLight or >MyLight). The driver will remove the “\$” or “>” character and add the Unit number as a prefix to the connection name. See the separate section on HAI/UPB Lighting Support, later in this document for more information. Loads (Dimmer and Non-Dimming) may be included in Control4 scenes as well as programming and together with keypads, loads will generate button press events for programming.

IMPORTANT: although Somfy blinds are treated as lighting units by HAI and an HAI_LIGHTING connection is created for such units by the HAI driver, use the new ‘HAI Somfy ILT Blind’ driver which connects to the HAI_LIGHTING connection.

4. You may also define special names for Access Readers. For each such Access Reader, this will trigger the creation of a RELAY connection which will mirror the state of the controlled door lock. Simply prefix the Access Reader name with “&” in the HAI configuration. The driver will remove the “&” character and add ‘R’ and the Access Reader number as a prefix to the connection name.
 5. Be aware that if you have specified in your HAI panel configuration new devices (by defining a name for Areas and/or Zones and/or Thermostats and/or special names (“&” and/or “\$” and/or “>” for Units and/or “&” for Access Readers) for the first time in a given category, a reboot of the Control4 director will detect this and create the appropriate bindings for each such new category. All you need to do after this is to make the appropriate connections.
- As you go through the installation steps, check the Driver Information field in the Properties tab which will display important status information.
 - If you need to replace an HAI panel after successfully installing the driver, please see the recommended steps at the end of the Driver Installation section.

Driver Installation

1. Copy all the required drivers from the distribution package to your Control4\Drivers directory. In Composer Pro, you will find these drivers under Manufacturer “HAI”; they will be identified with “Domosapiens” in their name and “IP” or “Network” next to the “Local” indicator. In addition, the version number is included.

For the main security driver, the version labeled “Leviton/HAI Omni (Domosapiens - OS 2.8+)” is new and is intended for OS 2.8 and above. The older version (“HAI IP Omni Lumina (Domosapiens)”) is unchanged, but includes all up-to-date fixes.

For thermostats, the version labeled V2 is intended for OS 2.7 or later. Preferably use this version.

For remote sensors, the version labeled **V28 is new** and is intended for OS 2.8 and later. Preferably use this version. If you are using OS 2.7, use the version labeled V2.

2. Add either (but **ONLY ONE!**) main security driver to the project and activate it as per the appropriate procedure. If you have an existing installation of this driver and wish to use the new security interface with OS 2.8 and above, **you need to do a clean install of the main security driver (only)**. You do not need to change the companion drivers (thermostats, lighting, units, etc.). Simply add the new main security driver to your project and activate it with the same license key. Later, disconnect (IP) the old driver from your HAI panel, redo the required connections with the new security driver as well as the main driver-related programming and delete the old security driver from your project. Please note that Driver Update is not possible as the new security driver has a different name and uses a different proxy. Some behaviors are different with the new security interface. Please see the section “Considerations for the new security interface (OS 2.8+)” below.
3. If necessary, modify the Panel TCP Port property. This should match the port you have configured in the HAI panel (the default is 4369). Unless you absolutely have to modify this, it is recommended to leave it at the default value. This will ensure maximum effectiveness between the Control4 Director and the HAI panel using this driver. If you do need to change the default value, it is best that you do it now, before connecting to the panel for the first time.
4. Identify the HAI panel by specifying its IP address in the Network tab (Connections).
5. Do not change the Thermostat Scale at this time as it will be defaulted to the value configured in the HAI panel. If you wish, you may change the scale after the driver’s initialization is complete (“Communicating with panel normally”).
6. Set the Panel Encryption Key. This key must be specified as 32 hexadecimal digits and must match the security key obtained from the panel. For ease of use, you may enter hyphens or spaces in the key (they will be ignored). For example:

01-02-03-fa-d5-e6-97-a8 b1-c2-76-44-55-9a-fc-c0

IMPORTANT: after you enter the Panel Encryption Key, the driver communicates with the HAI panel to retrieve a lot of information. It is possible, during this time, that the communications pause and even that Composer disconnects from the Director. Be patient, as connection and communications resume after a short delay (10 to 20 seconds, approximately).

Look for validation messages in the Driver Information field. The driver will then obtain all required information from the HAI panel, including all names (this can be quick or take several seconds – watch for the progress in the Driver Information area). If everything had been

named properly in the HAI configuration, as described above, this is all that is needed. Reminder: at a minimum, you should name the highest-used Zone and Thermostat as well as all the active Units, including lighting (if in use).

- The Number of Areas field will be set to the maximum supported by your panel. This cannot be changed.
 - If you have not named any Zones in the HAI panel, the Number of Zones field will be 0 and no Zone bindings will have been created. If you need Zone bindings, you should name at least the highest-numbered Zone you need in the HAI configuration and run the Action "Update Zone Names".
 - Similarly, if you have not named any Thermostats, their available number will be 0 and no Thermostat bindings will have been created. If you do not plan to use HAI Thermostats, nothing else is required. Otherwise, name at least the highest-numbered Thermostat you need in the HAI panel configuration and run the Action "Update Thermostat Names".
7. The new version of the main security driver automatically creates and names entries for all areas defined in your HAI configuration. You may delete older instances of "Security Partitions" from your project, if you were using any.
 8. Enter the User Codes to be used in Programming. **You need to enter a code for every active area, even if they are the same.** This is found under Properties for each Area and eliminates the need to expose user codes in programming, thus increasing security. Note that the Default User Code for Area 1 is used whenever a programming command is entered for "All Areas".
 9. If required, next add to the appropriate rooms enough instances of the companion drivers: Thermostat or Thermostat V2 (one for each Omnistat2 thermostat connected to your panel), Dimmer (one for each HAI/UPB dimmer load), Non-Dimming (one for each HAI/UPB non-dimming load), Keypad (one for each HAI/UPB Scene Keypad and/or House Status Keypad you wish to keep on using in the Control4 environment), Somfy ILT Blind and Extended Range Sensor V28.
 10. Optionally, you may specify lights which will be turned On when an Alarm state is triggered. An Advanced Lighting Scene (ALS) may also be connected (TOP is the ALS itself, BOTTOM is the same ALS, provided it has a Toggle scene properly defined in the Agent). When the Alarm is reset, the lights/ALS will return to their original state. Similarly, you may specify lights or Advanced Lighting Scene(s) which will be flashed during an Alarm state. For ALS, connect the scene to the TOGGLE (FLASH) connection and make sure the ALS has a properly-defined Toggle scene. These lights/ALS will return to their original state when the Alarm is reset or after the maximum duration selected (Property). If your project contains more than one area, connections will be created for Advanced Lighting Scenes responding to Alarms in each area. Otherwise, use the 'All Areas' connections.
 11. Optionally, you may specify email addresses to receive a notification when specific event occur. Prefix the email address with Flags and a colon. Flags may be 'A' (Alarm), 'S' (Armed or Secured), 'D' (Disarmed) and 'T' (Trouble). Several addresses may be separated by a

semicolon. For example:
ASD:myaddress@mymail.com;A:myphonenumber@myprovider.com;T:mydealer@hismail.com
. In this example, Alarms and Arming/Disarming notifications will be sent to 'myaddress@mymail.com'. Alarms will also be sent to the cell phone (verify the specific address used by your provider) and Trouble reports will be sent to the dealer. A property also allows to specify the Subject field to be used in notifications.

12. If you wish to use the Zone Group facility, this can either be done now or later. See the section on the Zone Group Facility later in this document.
13. Next, proceed with connecting the bindings which will have been created. You may need to refresh the connection list for the main security driver to see the newly-added Areas, Zones, Thermostats, Units and Access Readers (if any). Do this by selecting another item in Connections and re-selecting the main Security driver.

- Assign one or more rooms to each security area device for direct control, although the Navigator interface will always allow you to easily select a different area.
- Connect the driver's Zone Contact Sensors to real contacts which can then be used in programming. The Zone Contact Sensors follow the state of the Zone: CLOSED (Zone is Secure) or OPEN (Zone is Not Ready). The new security driver will automatically determine the type of contact each zone is connected to and will update the Navigator interface accordingly. Please see the section "Considerations for the new security interface (OS 2.8+)" below.
- Connect the driver's Thermostats, if any, to instances of the HAI Omnistat2 Thermostat driver or the Omnistat2 Thermostat V2 driver (both part of this package) you will have added to the project. If you use the V2 driver (supported on OS 2.7 and later), you will have access to full preset and scheduling facilities as well as, for the RC-2000, Humidity display and controls. **IMPORTANT: this requires you to disable scheduling on the RC-2000 itself, if it was enabled** (Setup/Installation Settings/Program Settings/Program Mode: None).

It is important that each physical Thermostat have an address corresponding to the Thermostat binding of this driver. By default, the scale, which applies to ALL thermostats linked with this driver, is set to the scale defined in the HAI panel configuration. Update as appropriate. Please note that the scale applies only to the Navigator interfaces and that each physical HAI thermostat can be individually set (in its SETUP) to Fahrenheit or Celsius for display. Any change of scale by programming or through the Navigator interface will be applied to all HAI Navigator Thermostats.

- Connect the RELAY bindings (created for Units and/or Flags with a name starting with "&", unless you have specified that the prefix is not required for other units) to appropriate items in your project. The Relays follow the state of the Unit or Flag: OPENED (unit is OFF or Flag is 0) or CLOSED (unit is ON or Flag is 1). In addition, it is possible for the user to directly control the HAI Units and Flags by interfacing with a Motorization device you will have connected to a RELAY (a fireplace, a fountain or simply a relay, for example). Toggle and Pulse operations are supported.

- Connect the HAI_LIGHTING bindings (created for Units with a name starting with “\$” or “>”, unless you have specified that the prefix is not required for lighting units) to the appropriate instances of companion drivers (Dimmer, Non-Dimming, Keypad and Somfy ILT Blind) you will have installed. Verify the address of each Unit on its Properties page. For Keypads, also set the appropriate type and enter the custom Link numbers, if required.
- Connect the ‘Rnn’ RELAY bindings (created for Access Readers with a name starting with “&”) to instances of Door Lock you will have added to the project (found under “My Drivers”, “Motorization”). The Relays follow the state of the lock: OPEN (door is LOCKED) or CLOSED (door is UNLOCKED). Please note that you should not change the default type (“Toggle”) for such Door Locks, as the “Pulse” type is not meaningful nor supported in this case.

IMPORTANT NOTE: when such RELAY bindings are connected to Door Lock items, the latter will appear on Navigator screens and the user could unlock and leave a door unlocked without a valid access card. Determine the appropriate security requirements for your installation and if required, modify the property (“Door Unlock by Navigators”), which becomes visible when such RELAY bindings are created, in order to customize what is permitted in unlocking doors via Navigator screens. Locking doors is always permitted.

- If Extended Range Temperature and Humidity sensors are used, connect each instance of the companion driver to the zone where the corresponding sensor is physically connected.
14. There are two bindings available for the HAI Two-Way Audio/Voice Alarm Module, if installed. It is possible to connect the “Page Output” CONTACT_SENSOR binding to the device where the actual HAI audio card page output is connected. In this case, the driver will mirror this into a new variable (see the Programming section below). The audio “Page Output” binding is created for convenience and may be used as appropriate.
 15. Check the driver's Room Selection connection for Security Area 1, to ensure that you have access to a security Navigator panel.
 16. Once you have made all the connections, you should refresh the Navigators.
 17. Actions in the Actions tab NEED NOT be used in normal operation except “Print Status Report” which provides a snapshot of key driver elements and can be used for diagnostic purposes. The Actions “Update Access Reader Names”, “Update Area Names”, “Update Thermostat Names”, “Update Unit Names” and “Update Zone Names” can be used if you have added, deleted or modified corresponding items names in your HAI configuration and wish to have your related bindings updated accordingly. Please note that updating names now keeps existing connections, but you should still verify your bindings after performing any of these actions (the Bindings! warning in the Action name is intended to remind you of this).

If you have done major name changes in many areas of your HAI panel configuration, you may instead use “Get all Names” which effectively combines the effect all five Actions listed above, but all existing connections are deleted (the ***All bindings!!! warning in the Action name is intended to remind you of this). When you use an “Update ... Names” Action, the driver reads a lot of information from the panel and will not let you trigger another Action until the previous one has been completed.

The Action “Reset Keys and Disconnect” can be used if the HAI panel needs to be replaced with a new panel (hence with a different security key and possibly even a different panel model). Please see below for the recommended steps in replacing a panel.

18. Setting the Debug Mode to "On" will show the exchange of messages as well as some other information in the Lua tab. You may adjust the Debug Duration.
19. After making your connections, wait a few minutes before performing any disruptive operation (such as powering off or rebooting the Director, for example), in order to allow the Director to properly save all your settings.
20. If you need to replace an HAI panel after the driver has been successfully installed and working, the following steps are recommended:
 - a. After replacing the HAI panel, configure it fully using PCAccess
 - b. Use the driver’s Action “Reset Keys and Disconnect”
 - c. In Composer’s Network Connections tab, connect the new panel by first disconnecting the old panel and then entering the new panel’s IP address (which could be the same)
 - d. Enter the new panel’s Encryption Key in the driver’s Properties page
 - e. The new panel’s configuration should be read at this time. Check the bindings generated by the driver on its Connections page. If necessary, make any required changes in your HAI panel configuration and use the Action ‘Get all Names’ until your bindings are adequate. Then, make the appropriate connections.

Considerations for the new security interface (OS 2.8+)

The new security interface available with OS 2.8 and above offers a significantly improved user experience for security panels. The HAI IP driver takes advantage of the new functionalities, including partition naming and access, exit delays, zone statuses, emergency keys, alarms and troubles. In designing the adaptation of the driver, care has been given to maintaining the ease of configuration previously available. However, the following items need to be considered:

- Area naming is carried over from the HAI configuration. As the new security driver is installed, 8 generic area (partition) devices are created, but they are configured properly (name and whether or not they are used/enabled) as soon as connection is established with the HAI panel. Afterwards, if desired, you may change the name of a specific area by renaming its device in Composer. Unused areas will be labeled as such. **DO NOT delete them from your project.**
- Zones are created in a fashion similar to the former security driver. The new functionality (zone type and location) is provided by connecting each zone with one of the standard sensor devices (available in Composer, in the My Drivers tab) best representing its type. While the

driver can set some of the zone types directly from the HAI configuration, best results are obtained by using the standard sensor devices. The zone types defined in the new security interface are:

1. Contact Sensor
2. Exterior Door
3. Exterior Window
4. Interior Door (use the special stub driver supplied with this package*)
5. Motion Sensor
6. Fire (use the special stub driver supplied with this package*)
7. Gas (use the special stub driver supplied with this package*)
8. Carbon Monoxide
9. Heat
10. Water
11. Smoke
12. Pressure
13. Glass Break
14. Gate
15. Garage Door

* Since the interface defines three zone types which are not currently provided as standard sensor devices ("Fire Sensor", "Gas Sensor" and "Interior Door Contact Sensor"), the distribution package for this driver contains three stub drivers for these devices. Once installed in your drivers directory, they will be available in Composer Search tab, under Manufacturer "Generic". Should standard drivers become available for these three sensor types in the future, you would be encouraged to switch to the standard drivers at that time.

If you wish to prevent a zone from showing up in the Navigator Zone panel, you can either:

- Define a zone as Auxiliary in the HAI configuration and not connect it to any sensor device in Composer,
- Or
- Connect it to the new stub sensor driver named "Hide This Zone" found in the same location as the three stub drivers mentioned above. This stub sensor driver may be connected to a zone in addition to another sensor driver, if required.

When you make changes to zone connections or their HAI configuration after the installation is completed, simply use the Action "Update Zone Names" to ensure that Composer and the Navigators are kept in sync.

- Using the Properties area, Zones tab, you may define the 'Can Control' attribute of zones (simply double-click on a zone). When this attribute is checked, the proxy will automatically define a relay for the zone. You may then connect this relay to a Control Output relay binding (the Controller's, for example). The relay is then activated when the user selects/presses the corresponding zone area in the new security Navigator interface. The relay connection can be

done IN PARALLEL with another connection to the Control Output binding, as would be the case for a Garage Door device. This way, the user can control the garage door, for example, either from the normal Garage Door icon or from the corresponding zone in the security Navigator interface. Please note that for garage doors, you should ensure that 'Pulse Control' is also checked.

- If you also wish to use the Advanced Lighting Timer driver from Domosapiens (available from driverCentral) to control lights and other functions from security zones (such as motion sensors, doors, gates, etc.), simply connect instances of the Generic Contact Timer driver to the appropriate zone contact sensors, in addition to the sensor devices described above.
- The state "Disarmed Not Ready" is triggered when the panel is disarmed and at least one zone connected to an "exterior" sensor device ("Door Contact", "Window Contact" and "Garage Door") is open. For doors to not be considered for Ready state, use the "Interior Door Contact" sensor described above.
- The History tab of the Navigator interface lists all the events which have been recorded by the new security interface and filters are available. This facility requires that you add the History Agent to your project (Agents tab in Composer).
- The Functions button has a new function to bypass/restore individual zones or all zones part of a Zone Group (A to G). To specify a zone, simply enter its number. The function will respond with the current name and status (ACT for Active and BYP for Bypassed) of the zone and request the type of action desired. To do the same on a Zone Group, simply enter a zone number from 201 to 207, corresponding to Zone Groups A to G. The Action "Print Zone Report" can help by showing the current status of zones.
- The HAI "Auxiliary" emergency mode is mapped to "Medical" in the Navigator interface.
- Should it be necessary to clear a trouble or status message in the Navigator interface, use the Function "Clear Message/Trouble".
- Do not forget to enter the new "Default User Code" under Properties for each Area, to specify the User Code to be used in Programming.
- If you wish to upgrade a current installation of this driver to the new security interface, ensure that the installation is updated to OS 2.8 and above, add the new security driver to your project, redo the connections and programming and then **remove the former security driver from your project**. Unfortunately, a simple Driver Update is not possible. The "Driver Installation" section contains more information.

Managing Zones

Zone names and types may be managed in different ways and it is important to know how the new security panel proxy (OS 2.8 and above) interacts with the driver.

The usual way to initialize the zones is the following:

1. Install the driver, activate it and make the IP connection with the HAI panel.
2. Specify the HAI panel key.
3. The driver then reads all names from the HAI panel and creates the zones with the proxy, using the zone names retrieved from the panel. At this time, some zones will have a type determined from their HAI zone type.

At this point, there are two possibilities:

- Connect each zone to an appropriate sensor device to indicate its type, as described in the previous section, and then execute the Action “Update Zone Names”. This will determine the zone types and update the proxy again. The proxy will then have the right zone names (same as the HAI panel) as well as the right zone types (based on the type of sensor connected to each) and the rooms they are located in. This process may be repeated as required.

Or

- Use the Zones tab in Properties to update individual zones. Each zone that you modify this way is now “protected” by the proxy and you will no longer be able to update it from the HAI panel. If you wish to remove that protection, use the Action “Delete and recreate a zone”. The zone will retain its previous name and type, but you will have to reconnect any binding you previously had for this zone. The zone will now be updatable again from the HAI panel and the connected sensor devices. This process is available on a zone by zone basis and any zone not updated this way may still be updated by the global process (“Update Zone Names”). As the driver is informed when you modify a zone manually, it tries provide an accurate picture when you use the Action “Print Zone Report”.
4. A final note: when you update zones with the Action “Update Zone Names”, it may take a while for Composer to show the new status in its Zone tab (under Properties). Although the update is usually done quickly, a delay of up to 20 seconds is not unusual. Also, in some cases, you may even have to refresh the display by selecting another driver and reselecting the HAI IP driver in order to see the changes. If changes do not show up, then some zones might be protected, as described above.

Zone Group Facility

The HAI driver allows you to group zones together so that a single output can be set to “follow” one or several zones. Zone Groups may drive a Contact Sensor, much like individual zones, as well as an optionally connected Control4 physical relay. The driver has 3 standard Zone Groups: Fire, Medical and Panic. An additional 7 Zone Groups are also available (“A” through “G”). A given zone may be specified in more than one Zone Group. The Property “Select Zone Group to show” allows you to show one or all Zone Groups. In a given Group, separate zone numbers with commas such as: 2, 16, 31, 44 (spaces are ignored). In the case of Zone Groups “A” through “G”, the list of zones may start with an optional non-numeric Zone Group Name (ex.: Water Detectors, 17, 23, 29).

- In the Fire Zone Group, you may want to specify your zones related to smoke detectors, for example. The Fire Zone Group will be activated (“Not Ready”) if any of its zones become “Not Ready”. Pressing the “Fire” button on a keypad or the Control4 Navigator interface as well as a Fire Alarm state from the DSC panel will also activate the Fire Zone Group. When activated, its Contact Sensor becomes “OPENED” and if a Control4 relay is connected to the group’s RELAY connection, it will be energized (“CLOSED”).
- In the Medical Zone Group, you may want to specify your zones related to medical equipment, for example. The Medical Zone Group will be activated (“Not Ready”) if any of its zones become “Not Ready”. Pressing the “Medical” or “Ambulance” button on a keypad or the Control4 Navigator interface will also activate the Medical Zone Group. Its operation, including its relay, is similar to that of the Fire Zone Group above.
- In the Panic Zone Group, you may want to specify your zones related to panic buttons, for example. The Panic Zone Group will be activated (“Not Ready”) if any of its zones become “Not Ready”. In addition, pressing the “Panic” button on a keypad or the Control4 Navigator interface will also activate the Panic Zone Group. Its operation, including its relay, is similar to that of the Fire Zone Group above.
- Other Zone Groups may be specified as you require. A Zone Group will be activated (“Not Ready”) if any of its zones become “Not Ready”. Its operation, including its relay, is similar to that of the Fire Zone Group above.

Additional Functions Available Through Programming

In addition to the normal programming functions available for a Security system, the following additional facilities are available under the main driver in Programming. Please note that the new security driver available with OS 2.8 and above has new programming events, variables and commands. Verify if they apply to your installation. Standard events created by the proxies are available under each partition. In addition, the driver provides a rich set of additional events and these are available under the main driver itself. Please note that these events may not be presented in a perfect order in Composer.

- Use the driver's new variables `AREA_n_ARMED_HOME_IMMEDIATE` and `AREA_n_ARMED_AWAY_IMMEDIATE` (where n is the Area number), either of which is set to 'true' at the beginning of the exit delay. Either variable will remain 'true' until the system is disarmed. There is one such set of variables for each Area and eight set of area variables will always be created, even if your panel supports less than eight areas. Simply ignore the variables which do not apply.
- New variables `AREA_n_ARMED_MODE` and `AREA_n_PREVIOUS_MODE` contain the current and previous modes for Area n. Modes are defined as follows:
 - 0: Disarmed
 - 1: Armed in Day Mode
 - 2: Armed in Night Mode
 - 3: Armed in Away Mode

- 4: Armed in Vacation Mode
- 5: Armed in Day Instant Mode
- 6: Armed in Night Delayed Mode

The previous mode variables can be used to determine, for example, which armed mode the panel is being disarmed from and thus drive appropriate programming.

- A new variable AREA_NUMBER contains the current area number, as appropriate for certain security events.
- Two new variables are defined for each thermostat: "THERMOSTAT_HUMIDITY_LEVEL" and "THERMOSTAT_REMOTE_TEMP". These variables are updated as changes are reported by the corresponding thermostat and contain valid values only if supported by the thermostat (0-100 for humidity level and a temperature in degrees using the selected scale – Fahrenheit or Celsius). Values of -40 mean that the information is not available from the thermostat.
- Two new variables contain the Number and Name (not the 4-digit code) of the last user to Arm or Disarm the panel: "LAST_USER_NUMBER" and "LAST_USER_NAME". Note that these variables are only set after the completion of the Exit delay. The USER_NAME will be one of the following:
 - The name you will have provided for a specific user number in the HAI configuration
 - "User n", if no name was provided for a specific user number
 - One of the following special names: "Duress code", "Keyswitch", "Quick arm", "PC Access" and "Programmed", corresponding to USER_NUMBER 251 to 255 respectively.
- Two new variables contain the number of the last zone to become Not Ready ("LAST_ZONE_NOTREADY") and the last zone to be restored ("LAST_ZONE_RESTORED"). These can be used to detect from where someone is entering the house, for example, and turn on the appropriate lights.
- Use the driver's new variable PAGE_OUTPUT_ACTIVE which indicates the state of the HAI Two-Way Audio/Voice Alarm Module "Page Out" dry contact, if a connection is established with a Control4 input device. This Boolean variable is set to 'true' if the dry contact is closed and 'false' otherwise.
- Access Readers are supported in programming with an event ("When an Access Reader has been Activated") which is triggered when an Access Reader is used (including its attached door lock) or when an "Access Reader Status with Event" command is issued in programming.

When an Access Reader event is triggered, six new variables contain meaningful information: the event code (see below), the reader number which triggered the event, the most recent user number having accessed the Reader, whether access was granted or not (true or false), whether the door is currently unlocked or not (true or false) and the number of seconds remaining for the unlocked state (if applicable). All these values, except the event code, are read-only.

The variables created for Access Control reader handling are:

ACCESS_READER_EVENT_CODE (a number)

Set to indicate the nature of the event for this Access Reader. Possible values are:

- 1: reader access event, no door lock state change
- 2: no reader access, but door lock state change
- 3: reader access event and door lock state change
- 10: programming request, no trigger
- 11: programming request with trigger

ACCESS_READER_NUMBER (a number)

The number of the Access Reader having triggered the event or being requested by programming

ACCESS_READER_LAST_USER (a number)

The user number of the most current user having accessed this reader

ACCESS_READER_LAST_USER_GRANTED_ACCESS (true/false)

true: access was granted
false: access was not granted

ACCESS_READER_DOOR_UNLOCKED (true/false)

true: door is currently unlocked, remaining time is in the next variable
false: door is currently locked

ACCESS_READER_DOOR_SECONDS_REMAINING (a number)

The number of seconds remaining in the unlocked state

It is possible to request the current status of an Access Reader via programming. Two methods are available. One request will trigger the Access Reader event once the information is available. The programming associated with processing Access Reader events will then be run. The other request implies that the current programming will insert a small delay (a delay of 500ms is reasonable) while the information is obtained from the panel and the variables updated, before resuming with the normal flow. In this case, it is recommended to set the ACCESS_READER_EVENT_CODE variable to 0 before issuing the request. When the variables are set properly, the driver sets this code to 10, which can be validated at the end of the small delay described above.

Access Readers are also supported by allowing to Lock an attached door or to Unlock it, optionally for a specific duration. Use 0 to Lock/Unlock all doors connected to Access readers. The Unlock duration is limited to 64,800 seconds (equivalent to 18 hours). Durations higher than 99 seconds are rounded up to the next minute and durations higher than 5,939 seconds

are rounded up to the next hour. Use 0 seconds for unlimited Unlock. As there is no validation on the Access Reader number (other than the supported range), ensure that only a valid Access Reader number is used.

IMPORTANT NOTE: when programming to unlock doors, always evaluate the security requirements of your installation, as unlocking doors connected to access readers would normally require a valid access card.

- Macro Buttons may be activated (“Pressed”). As there is no validation on the Macro Button number (other than the supported range), ensure that only a valid Macro Button number is used.
- Units may be turned ON or OFF, both optionally for a specific duration. The duration is limited to 64,800 seconds (equivalent to 18 hours). Durations higher than 99 seconds are rounded up to the next minute and durations higher than 5,939 seconds are rounded up to the next hour. In addition, Units may be pulsed (ON, OFF or AUTO) for up to 2000 milliseconds. AUTO will pulse the Unit OFF if it is initially ON and vice versa. As there is no validation on the Unit number (other than the supported range), ensure that only a valid Unit number is used.
- A Message may be displayed on a console (keypad) with or without an audible warning (Beep) and LED blinking. Please note that during testing, audible warnings have not been consistent. A command also allows removing a single message or clearing all messages from all areas. As there is no validation on the Message number (other than the supported range), ensure that only a valid Message number is used.
- A Voice message may be activated. As there is no validation on the message number (other than the supported range), ensure that only a valid Voice message number is used.
- An event is available when the HAI panel requests ALL lights to come ON or OFF. This would typically be used in an alarm situation. An associated variable (*Name updated in 7.2.0*) indicates which area this event applies to.
- Commands are available to set a lighting load (Dimmer) to a specific level, to set lighting loads (Dimmer and Non-Dimming) ON or OFF, to set a 6-button keypad unit to a specific scene, to set specific LEDs of 6-button and 8-button lighting keypads ON or OFF and to Activate/Deactivate specific Links (used in HAI/UPB lighting).
- Events are created when any button on 6-button and 8-button keypads is pressed, as well as when the top or bottom of rocker lighting switches is pressed. For keypads, an associated variable indicates if the Link was activated (“True”) or Deactivated (“False”). This can be used to trigger any Control4 action.
- A command is available to activate a Keypad Emergency event (Burglary, Fire or Auxiliary) in a specific Area. This is the same as using the Activate Emergency buttons in the Navigator interface.

- Commands are available to quickly arm/disarm one or all areas, instead of having to program button presses.
- Commands are available to bypass/restore individual zones, all zones in a given area or all zones in all areas.
- An Event is triggered when a Macro Button is pressed at the HAI panel. The Button number is available in the variable "MACRO_BUTTON_NUMBER".
- Events are triggered at the beginning of entry and exit delays.
- Events are triggered when the HAI panel drops Offline and when it comes back Online.

HAI/UPB Lighting Support

This section provides more details on how support is implemented for HAI/UPB lighting devices. This includes lighting loads (Dimmer and Non-Dimming) and keypads (6-button Scene Keypads and 8-button House Status Keypads).

While the use of HLC (HAI Lighting Control) is not mandatory, the main driver and its companion lighting drivers are optimized for the HLC approach, where the Unit numbers for switches and keypads, the Link numbers and the behavior of all components are predefined. If you define the units as such, HLC is implemented when you use PCAccess to configure the UPB devices. After this is done, UPStart may optionally still be used to set default LED behaviors, to adjust the fade rates or enable/disable dimming on some rocker switches, for example. Detailed documentation on HLC can be found on the HAI web site (Knowledge Base). Two articles are especially noteworthy: "Applying HAI Lighting Control (HLC)" and "Can I configure non-HLC products to work like the HAI Lighting Scheme?".

The actual UPB devices may be set up using PCAccess (HLC approach) or UPStart (custom or legacy approach) or a mixture of both, but they must always be specified in the PCAccess configuration with a Unit name starting with '\$' and downloaded as such in the HAI panel. The other important item is the Unit number which the driver uses to communicate with each device. If you are using UPStart to set up one or more physical UPB devices in a non-HLC approach, please read the information below for proper setup of rocker switches and keypads.

If you only wish to use lighting loads (Dimmer and Non-Dimming) without any HAI/UPB keypads, simply connect each instance of the companion drivers (Dimmer and Non-Dimming) with the appropriate connection available under the main Omni-Lumina security driver. Nothing else is required. These loads may be included in any Control4 scene and can be controlled by programming.

The Dimmer and Non-Dimming companion drivers are essentially identical, except for the Navigator interfaces (a slider for Dimmers and a toggle for Non-Dimming). During testing, we have found that there is sometimes (not always) a 2 or 3-second delay between pushing the top or bottom of a rocker switch, and the notification of the event in Control4 programming. This appears to be a behavior of the HAI/UPB implementation. Also, if you observe the LED on the PIM (Powerline Interface Module) connecting your HAI panel to the electrical network, you will notice that it glows red when the panel is communicating with the UPB devices. Some communications may last a few seconds and any action you send while the LED is red, such as turning another light on, for example, will be queued by the panel and sent later. This could lead you to suspect odd behavior, but it is actually related to the implementation of UPB.

In the case of rocker switches and keypads, the drivers do not support the concepts of "press" and "release", as these actions are not available from the HAI panel. Only button pushes are

acknowledged. If you are using rocker switches programmed by UPStart (not by PCAccess as HLC devices) and wish to have programming triggered by events “When the Top (or Bottom) button is pushed”, you need to ensure that the switches will transmit their Status on a specific Link (HLC uses Link242 for Top and Link241 for Bottom). In UPStart, under Transmit Components for each device, set “Mode” to “Status Button”, and “Single-Tap”, “Double-Tap” and “Release” to “Status”. Refer to the illustration below for how to set this up in UPStart. If you are programming the devices using PCAccess in HLC mode, this is done automatically.

Edit Device: Unit 002 - \$Switch 6b1 - \$Int mural1

ID | Rocker Switch | Options | Receive Components | **Transmit Components** | Advanced | Test | Communications Test

Rocker Switch Transmission

Upon any type of rocker switch press, this device can be configured to transmit a specified command on a specified link

	Link Name	Mode	Single-Tap	Double-Tap	Hold	Release
Top	Link242	Status Button	Status	Status	No Command	Status
Bottom	Link241	Status Button	Status	Status	No Command	Status

Timed Auto Shut-Off Transmission

Upon a timed auto shut-off event this device can be configured to transmit a specified command on a specified Link

Link Name	Command
Unused	No Command

Open Link Name Table To test, name or rename Links

Read Device Program Device OK Annuler

If you also wish to use HAI/UPB Scene (6-button) and/or HAI/UPB House Status (8-button) Keypads in your installation, then read on as Links now become very important.

The Keypad companion lighting driver allows the installer to specify the type of keypad (6-button or 8-button) as well as the type of Links used (HLC or Custom). HLC corresponds to the setup done with PCAccess described above, where the Links are predefined, and Custom allows the installer to specify Link values which would be used by each button on keypads. In the Custom mode, which you would typically select if UPStart was used to configure the physical keypads, the main driver will look for specific Links to be activated or deactivated and inform the keypad companion driver which will then trigger a “button press” event for the button corresponding to the Link numbers entered in the keypad’s Properties page. If you are using UPStart to set up your keypads, refer to the illustrations below on how to set up the Transmit Components to ensure the driver gets the proper feedback. The “Activate” command on “Single-Tap” with a specific Link is the key element.

Below is an UPStart example for a 6-button keypad:

Edit Device: Unit 001 - \$Switch 6b - \$Switch 6b

IDOptionsTransmit ComponentsReceive ComponentsAdvancedTestCommunications Test

	Link Name	Mode	Single-Tap	Double-Tap	Hold	Release
ON	Link001	Custom Button	Activate	Snap On	Fade Up	Fade Stop
			Activate	Snap On	Fade Up	Fade Stop
OFF	Link002	Custom Button	Activate	Snap Off	Fade Down	Fade Stop
			Activate	Snap Off	Fade Down	Fade Stop
A	Link003	Link Activator	Activate	Activate	Activate	No Command
			Activate	Activate	Activate	No Command
B	Link004	Link Activator	Activate	Activate	Activate	No Command
			Activate	Activate	Activate	No Command
C	Link005	Link Activator	Activate	Activate	Activate	No Command
			Activate	Activate	Activate	No Command
D	Link006	Link Activator	Activate	Activate	Activate	No Command
			Activate	Activate	Activate	No Command

Open Link Name Table

To test, name or rename Links

Read Device

Program Device

OK

Annuler

Below is an UPStart example for an 8-button keypad:

Edit Device: Unit 008 - \$Switch 6b - Unit 8

ID	Options	Transmit Components	Receive Components	Advanced	Test	Communications Test
1	Link193	Toggle Button	Single-Tap: Activate Deactivate	Double-Tap: Activate Deactivate	Hold: Activate Deactivate	Release: No Command
2	Link194	Toggle Button	Single-Tap: Activate Deactivate	Double-Tap: Activate Deactivate	Hold: Activate Deactivate	Release: No Command
3	Link195	Toggle Button	Single-Tap: Activate Deactivate	Double-Tap: Activate Deactivate	Hold: Activate Deactivate	Release: No Command
4	Link196	Toggle Button	Single-Tap: Activate Deactivate	Double-Tap: Activate Deactivate	Hold: Activate Deactivate	Release: No Command
5	Link197	Toggle Button	Single-Tap: Activate Deactivate	Double-Tap: Activate Deactivate	Hold: Activate Deactivate	Release: No Command
6	Link198	Toggle Button	Single-Tap: Activate Deactivate	Double-Tap: Activate Deactivate	Hold: Activate Deactivate	Release: No Command
7	Link199	Toggle Button	Single-Tap: Activate Deactivate	Double-Tap: Activate Deactivate	Hold: Activate Deactivate	Release: No Command
8	Link200	Toggle Button	Single-Tap: Activate Deactivate	Double-Tap: Activate Deactivate	Hold: Activate Deactivate	Release: No Command

Open Link Name Table To test, name or rename Links

Read Device Program Device OK Annuler

Alarm - Control System Integration

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