



Bob's Place Media Engineering's ISY Insteon Plug-in User Guide Version 4.0

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The ISY Insteon Plug-in allows for bi-directional communication and control between a Universal Devices, Inc. ISY Insteon Controller and HomeSeer HS2 home automation software.

Features

- Support for ISY-26, ISY-99i series, and ISY-994i series.
- Able to control all devices, scenes, programs, and network resources configured by the ISY.
- Real-time status updates from devices, program, and modules.
- Run and query ISY programs from HomeSeer events and scripts.
- Trigger HomeSeer events based on device control, status, program status, and module updates.
- Fully integrated into HomeSeer's device model.
- Full support for the HomeSeer thermostat API for any Insteon thermostats controlled by the ISY.
- Automatic detection of the ISY controller and importing of all controllable resources into HomeSeer.
- API available for use in scripts to control devices/programs/network resources via the ISY.

Requirements

HomeSeer HS2 version 2.3.0.0 or later.

Microsoft .NET Framework run time 3.0 or later.

Universal Devices, Inc. ISY controller with firmware 2.7.6 or later.

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Insteon is a trademark of SmartLabs, Inc.

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Installation and setup

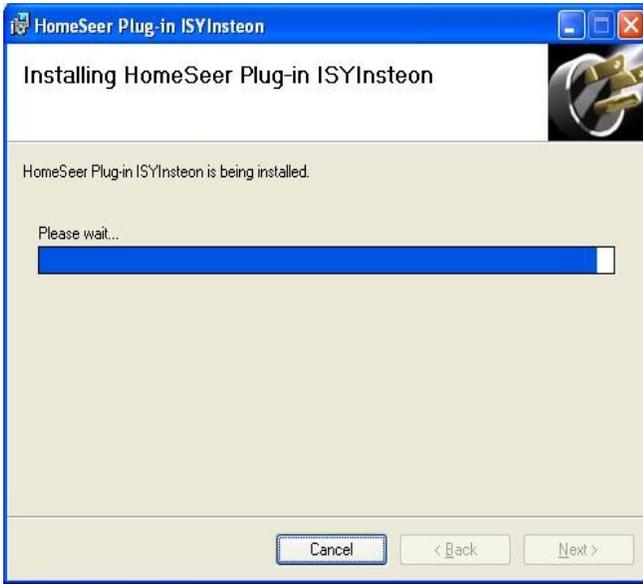
You must be running HomeSeer 2.3.0.0 or later. Using the HomeSeer updater, select the ISY Insteon Plug-in for installation. You should be running the updater from the machine with HomeSeer installed, not from a remote web browser. HomeSeer will download the installation files. Restart HomeSeer to install the plug-in.

[Add screens shots and instructions on installation here.]

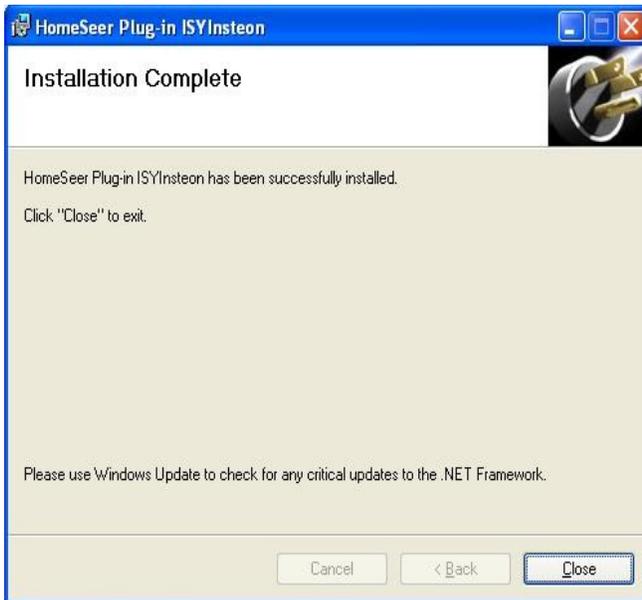


After restarting HomeSeer the ISY Insteon Plug-in installation will start. Follow the installation prompts to install the plug-in.





If you don't see the "Installation Options" window, it may have opened behind the progress window. Move the progress window out of the way to expose the "Installation Options" window.



Once the installation is complete, select the SETUP page from the HomeSeer main screen. Go to the INTERFACES tab. From there you can register, enable, and configure the ISY Insteon Plug-in.

Plug-In Interfaces								
Interface (Plug-In) Name	X10	Infrared	Other	COM Port	File Name	Version	Current License Mode	Plug-In Status
	(Click to Change)						(Click to Change)	
Insteon	Disabled		Disabled	N/A	HSPI_INSTEON.dll	1.0.0.0	<input checked="" type="checkbox"/> Included	
ISY Insteon			Disabled	N/A	HSPI_ISYInsteon.dll	1.0.1.0	<input type="checkbox"/> Unregistered	

In the list of interfaces, you should find the row for the ISY Insteon plug-in. It should look similar to this.

If you have purchased the ISY Insteon Plug-in, press the “Unregistered” button to start the registration process. If you have not yet purchased the plug-in, it will operate in trial mode for 30 days. If the “Online” registration fails, you can manually enter your license key and password (supplied by HomeSeer).

Plug-In License Information			
Insteon	<input checked="" type="checkbox"/> Included		N/A
ISY Insteon	<input type="checkbox"/> Unregistered	Purchase	None
		<input type="button" value="Online"/> <input type="button" value="Manually"/>	
		License ID: <input type="text"/>	
		Password: <input type="text"/>	
		<input type="button" value="Register"/>	

Click the DISABLED button under the “Other” column in the ISY Insteon row. It will change to a green “Enabled” button. Click the “Save” button to enable the ISY Insteon Plug-in.

Plug-In Interfaces								
Interface (Plug-In) Name	X10	Infrared	Other	COM Port	File Name	Version	Current License Mode	Plug-In Status
	(Click to Change)						(Click to Change)	
Insteon	Disabled		Disabled	N/A	HSPI_INSTEON.dll	1.0.0.0	<input checked="" type="checkbox"/> Included	Interface OK
ISY Insteon			Enabled	N/A	HSPI_ISYInsteon.dll	1.0.1.0	<input checked="" type="checkbox"/> Registered	Interface OK

HomeSeer will start the ISY Insteon Plug-in. The plug-in will attempt to locate an ISY on your network. At this point you should see a gold “Config” button on the setup screen.

Plug-In Interfaces								
Interface (Plug-In) Name	X10	Infrared	Other	COM Port	File Name	Version	Current License Mode	Plug-In Status
	(Click to Change)						(Click to Change)	
Insteon	Disabled		Disabled	N/A	HSPI_INSTEON.dll	1.0.0.0	<input checked="" type="checkbox"/> Included	Interface OK
ISY Insteon			Enabled	N/A	HSPI_ISYInsteon.dll	1.0.1.0	<input checked="" type="checkbox"/> Registered	Interface OK
			Config					

Click the gold “Config” button. This will bring up the ISY Insteon Configuration screen.

Plug-in For Universal Devices Insteon ISY - Configuration	
Enter IP Address:	192.168.92.26
Username:	admin
Password:	••••••••
<input checked="" type="checkbox"/> Automatically add new devices to HomeSeer	
<input type="checkbox"/> Display Insteon Type Descriptions	
Split Location/Name from ISY name using character :	
Set HomeSeer Location to:	Parse From Name From ISY
Set HomeSeer Location2 to:	Folder To ISY
ISY Insteon Plug-in Logging Level:	Errors
	<input type="button" value="Save"/>
Use only to update HomeSeer device records with current ISY data.	<input type="button" value="Update Device Types"/>
Search for and remove duplicate devices.	<input type="button" value="Remove Duplicates"/>

If the ISY Insteon Plug-in was able to detect your ISY, the IP address fields will be populated with the IP address of your ISY. If not, you will have to enter it manually.

Username/Password

The Username and Password fields will be populated with the default values of “admin” and “admin” respectively. If you have changed the username and/or password, enter the new values.

Automatically add new devices to HomeSeer

By default, the ISY Insteon Plug-in will automatically add any new device or scene created on the on the ISY to HomeSeer. This option allows you to change that behavior so that new devices are not automatically added. You can control which ISY devices, scenes, or programs get corresponding HomeSeer devices, using the filter section at the bottom of the configuration screen.

Display Insteon type descriptions

The ISY Insteon Plug-in can populate the HomeSeer **Device Type** fields with one of two different strings. By default, with the “Display Insteon Type Descriptions” option unchecked, a short generic type description will be used. For instance dimmer switches will have type **ISY Dimmer** and relay based switches will have the type **ISY Relay**. With the “Display Insteon Type Descriptions” checked, the device type field will use the Insteon device description, which includes the device part number. For example an Insteon SwitchLinc dimmer would have the type **SwitchLinc V2 Dimmer 600W 2476D V3.5**. Non-Insteon devices (scenes, programs, modules, etc.) are unaffected by this option.

Split Location/Name from ISY name using character

The ISY Insteon Plug-in has the ability to parse the device/scene/program names from the ISY into the HomeSeer location, location 2 and name fields. If you want to utilize this feature, check “Parse locations from name” and enter a character to use as a delimiter in the text box. For example, if parsing the name is enabled and the character is set to the “:” character:

ISY device name = “Kitchen:Overhead Light”

HomeSeer device name = “Overhead Light”

HomeSeer location = “Kitchen”

Two “:” characters can be used to parse the name and populate both the location and location2 fields.

Set HomeSeer Location to

The drop down menu will display the various options that can be used to populate the HomeSeer Location field.

Option	Description
Do Not Set	The ISY Insteon Plug-in will not modify the Location field.
Folder	Use the folder name that encloses the device.
Parent Folder	Use the folder name of the parent folder that encloses the folder the device is in.
Parse From Name	Use the separator character set above to parse the location from the ISY device name.
User Defined	You may supply a text string that will be used for all of the ISY Insteon Plug-in devices.

Set HomeSeer Location 2 to

The drop down menu will display the various options that can be used to populate the HomeSeer Location 2 field. See the table above for the menu option descriptions.

Setting both Location and Location 2 to the “Parse From Name” option will cause the parsing function to look for two delimiter characters in the ISY name. For example:

ISY device name = “Main:Kitchen:Overhead Light”

HomeSeer device name = “Overhead Light”

HomeSeer location = “Main”

HomeSeer location2 = “Kitchen”

The ISY26 has a length limitation on the name of 26 characters.

ISY Insteon Plug-in Logging Level

The log level defines how verbose the ISY Insteon Plug-in will be. The following levels are supported:

1. Errors Only – Only error messages will be written to the log.
2. Warnings – Error messages and warning messages will be written to the log.
3. Status – Errors, warnings, and device update status messages will be written to the log.
4. Notices – Errors, warnings, device status updates and additional informative messages will be written to the log.
5. Debug – In addition to the above messages, this will write messages that help isolate what section of the code the plug-in is executing at any point in time.
6. Verbose Debug – This level will write a great many messages to the log. It should only be used when trying to isolate specific problems with the plug-in.
7. All – All of the above plus messages that dump raw data received by the plug-in from the ISY. This is will also write messages with the ISY account information to help debug connection problems.

Only the first 4 levels should be used under normal conditions.

Update Device Types

This button will cause the ISY Insteon Plug-in to re-evaluate all the device information it has received from the ISY and update the corresponding HomeSeer device. Normally, the ISY Insteon Plug-in will do this automatically. This is should only be used if the device types have somehow become corrupted.

Remove Duplicates

This button will cause the ISY Insteon Plug-in to search the device list and remove any duplicate devices. In rare cases, the ISY Insteon Plug-in may get confused and re-add devices that already exist.

Save

Click this to save all your changes to the above settings. Depending on what was changed, this may cause the ISY Insteon Plug-in to restart.

Status Message Filter

Plug-in For Universal Devices Insteon ISY - Status Message Filter				
<input checked="" type="checkbox"/> Ignored ISY messages	<input type="checkbox"/> Rename	<input type="checkbox"/> Delete	<input type="checkbox"/> Add	<input type="checkbox"/> Update
<input type="checkbox"/> Trigger	<input checked="" type="checkbox"/> System	<input type="checkbox"/> Internet	<input checked="" type="checkbox"/> Progress	<input type="checkbox"/> Security
<input type="checkbox"/> Energy	<input type="checkbox"/> WeatherBug	<input type="checkbox"/> Program	<input type="checkbox"/> Program Save	<input checked="" type="checkbox"/> System Busy
<input checked="" type="checkbox"/> System Idle	<input type="checkbox"/> Status Update	<input type="checkbox"/> Ramp Rate	<input type="checkbox"/> On Level	<input type="checkbox"/> Thermostat Mode
<input type="checkbox"/> Thermostat Temp	<input type="checkbox"/> Thermostat Humidity	<input type="checkbox"/> Thermostat Fan	<input type="checkbox"/> Thermostat Setpoint	<input type="checkbox"/> Thermostat Cool SP
<input type="checkbox"/> Thermostat Heat SP	<input type="checkbox"/> Thermostat Call	<input type="checkbox"/> Thermostat State	<input type="checkbox"/> Thermostat Units	<input type="checkbox"/> Variable Update
<input type="checkbox"/> X10 Message	<input type="checkbox"/> Flex Alert	<input type="checkbox"/> IR Event	<input type="checkbox"/> NTP Time	<input checked="" type="checkbox"/> Event Queue Empty
<input type="checkbox"/> Command Queue Empty	<input type="checkbox"/> Heartbeat	<input type="checkbox"/> Watchdog Timeout	<input type="checkbox"/> Insteon Error	<input type="checkbox"/> ELK Panel

All status messages are captured from the ISY by the ISY Insteon Plug-in and by default, displayed in the HomeSeer log. Some of these can generate a lot of log messages. The above filter table allows you to selectively filter out some (or all) of these status messages.

Device Filter

The Device Filter section allows you to hide ISY devices from HomeSeer. Once the ISY devices have been enumerated, the configuration screen will have the device list with check boxes displayed. Using the buttons at the top of each column, you can change the sorting of the list. Pressing the button will sort the list alphabetically by the values in that column.

Plug-in For Universal Devices Insteon ISY - Device Filter						
<input type="checkbox"/>	Name	Parent	Folder	Location	ID	Type
<input type="checkbox"/>	Not in plugin				36453	Scene
<input checked="" type="checkbox"/>	* Den	My Programs	X10 Status		17	ISY Program
<input checked="" type="checkbox"/>	Back Drip 1			Outside	9 39 63 5	Irrigation
<input checked="" type="checkbox"/>	Back Drip 2			Outside	9 39 63 6	Irrigation
<input checked="" type="checkbox"/>	Back Drip 3			Outside	9 39 63 7	Irrigation
<input checked="" type="checkbox"/>	Back Sprk 1			Outside	9 39 63 4	Irrigation
<input checked="" type="checkbox"/>	Backup Drive			Office	9 A6 23 1	Relay
<input checked="" type="checkbox"/>	Bedroom - Hall				1 3E A 4	Dimmer
<input checked="" type="checkbox"/>	Bedroom - TV				43479	Scene
<input checked="" type="checkbox"/>	Bedroom Chest			Master	0 61 A0 1	Dimmer
<input checked="" type="checkbox"/>	Bedroom Control - 1		Master Bedroom	Master	0 75 83 1	Controller
<input checked="" type="checkbox"/>	Bedroom Control - 2		Master Bedroom	Master	0 75 83 2	Controller
<input checked="" type="checkbox"/>	Bedroom Control - 3		Master Bedroom	Master	0 75 83 3	Controller
<input checked="" type="checkbox"/>	Bedroom Control - 4		Master Bedroom	Master	0 75 83 4	Controller
<input checked="" type="checkbox"/>	Bedroom Control - 5		Master Bedroom	Master	0 75 83 5	Controller
<input checked="" type="checkbox"/>	Bedroom Floor			Master	1 40 17 1	Dimmer
<input checked="" type="checkbox"/>	Bedroom On/Off				10050	Scene
<input checked="" type="checkbox"/>	Bedroom Table			Master	E 48 2E 1	Dimmer
<input checked="" type="checkbox"/>	blank				55860	Scene
<input checked="" type="checkbox"/>	Bobshome	My Programs	Network		39	ISY Program
<input checked="" type="checkbox"/>	Brand New Scene				28696	Scene
<input checked="" type="checkbox"/>	Craft Room On/Off		Crafty Room		1433	Scene
<input checked="" type="checkbox"/>	Craft Room Table		Crafty Room	Craft	1 86 AA 1	Dimmer
<input checked="" type="checkbox"/>	Craft Swtich		Crafty Room	Craft	1 7C 81 1	Dimmer
<input checked="" type="checkbox"/>	Den Off		My Programs		10	ISY Program
<input checked="" type="checkbox"/>	Den On		My Programs		6	ISY Program
<input checked="" type="checkbox"/>	Dinning Room				B 79 72 1	Dimmer
<input checked="" type="checkbox"/>	Do Nothing again				52005	Scene
<input checked="" type="checkbox"/>	Electricity Meter				21011	ISY Module
<input checked="" type="checkbox"/>	Family Room Accent Lamp				1 43 D1 1	Dimmer
<input checked="" type="checkbox"/>	Family Room Floor Lamp				7 AE E6 1	Dimmer
<input type="button" value="Apply Filter"/>						

Devices that are filtered, are not visible to HomeSeer. The ISY Insteon Plug-in will not create a corresponding HomeSeer device and no status information will be available to other HomeSeer components.

For any devices you want the ISY Insteon Plug-in to hide, simply un-check the check box next to that device and press the **Apply Filter** button. Note that this will remove the HomeSeer device associated with the ISY device. Thus, if you have any HomeSeer triggers or scripts that use the HomeSeer device (house code / device code), they will no longer work.

If at some point in the future, you want the ISY Insteon Plug-in to create a HomeSeer device for these devices, simply re-check the check box and press the **Apply Filter** button. However, there is no way to guarantee that the new HomeSeer device will have the house/device code this device had when associated with the same ISY device in the past.

Hiding the device from HomeSeer does not mean the device is hidden from the ISY Insteon Plug-in. This means that any ISY Insteon Plug-in specific triggers or actions will continue to function. The ISY Insteon Plug-in will continue to receive notifications from the ISY for the device and will keep it's internal state for the device up-to-date.

Advanced Feature

It is possible to change the order of columns in the filter device display but this involves editing the ISY Insteon Plug-in's configuration file manually. Open the file "isy_settings.ini" in the HomeSeer Config directory with an editor such as Notepad.

The column order is controlled by a setting called "ColumnOrder". If this setting exist, you can change the order by changing the order of the column numbers. If it does not exist, you can add it. The default is:

ColumnOrder = 6,1,2,3,0,4,5

Which makes the displayed column order be Checkbox, Parent, Folder, Location, Name, ID, Type

Column Name	Column Number
Name	0
Parent	1
Folder	2
Location	3
ID	4
Type	5
Enable Checkbox	6

ISY Insteon Plug-in Status Screen

When the ISY Insteon Plug-in is installed it will add a plug-in status button to the HomeSeer web interface.

The first section of the status display provides some basic information about the ISY Insteon Plug-in. It also contains handy links to the configuration page and to the ISY's Admin Console. The **Pause Plug-in** button will

Plug-in For Universal Devices Insteon ISY	
ISY Insteon:	1.0.2.28 Release
ISY:	ISY 99i 1024 IR
ISY Firmware:	3.1.0
ISY Time:	3/19/2011 12:59:10 PM
ISY Insteon control	
Plug-in Configuration	Pause Plug-in
Launch Admin Console	Resync with ISY

disconnect the plug-in from the ISY. When resumed, the plug-in will re-establish the connection with the ISY. The **Resync with ISY** button will cause the plug-in to update it's internal state with the current ISY state.

The next section displays statistics about what the ISY Insteon Plug-in is controlling. How many devices, scenes, programs, etc.

Device statistics	
ISY Devices:	72
Unique Devices:	41
- ApplianceLinc 2456S3 V2.8:	1
- ControlLinc 2430 V0.0:	2
- EZFlora Sprinkler Controller V15.15:	1
- Generic X10 device:	1
- Icon Appliance Adapter 2856S3 V2.8:	1
- Icon Appliance Adapter 2856S3 V3.2:	4
- Icon LampLinc V2 2-Pin 2856D2 V2.8:	1
- Icon On Off Switch 2876S V2.8:	1
- Icon On Off Switch 2876S V6.0:	1
- Icon Switch Dimmer 2876D V0.0:	1
- Icon Switch Dimmer 2876D V2.6:	6
- iMeter Solo 2423A1 V0.0:	1
- iMeter Solo 2423A1 V8.7:	2
- INSTEON IOLinc 2450 V3.3:	1
- INSTEON Thermostat Adapter 2441V V9.1:	1
- KeypadLinc Dimmer 2486D V2.6:	1
- KeypadLinc Dimmer 2486D V2.8:	1
- LampLinc Dimmer, Dual-Band 2457D2 V0.0:	1
- LampLinc Dimmer, Dual-Band 2457D2 V3.10:	1
- LampLinc V2 2456D3 V2.4:	4
- LampLinc V2 2456D3 V3.7:	1
- Motion Sensor 2420M V0.0:	1
- SwitchLinc V2 Dimmer 600W 2476D V2.7:	4
- SwitchLinc V2 Dimmer 600W 2476D V3.5:	1
- TriggerLinc 2421 V0.0:	1
Scenes:	32
Programs:	58
Network Resources:	2
Modules:	5
Variables:	5

ISY Devices is the total number of devices the ISY reported. Devices like keypads are reported as multiple devices, each button represents 1 device.

Unique Devices is the number of Insteon addresses reported by the ISY. For this count, a keypad would count as 1 device.

The actual devices are enumerated and counted so that you can see how many of each type and version you have installed.

Some of the counts will only show up if you have one or more of that category.

Each Insteon Thermostat installed will have a section that displays the current status of that thermostat. This section is optional and will only be displayed if you have at least one thermostat installed.

Thermostat - Thermostat - Main	
Temperature:	69 Degrees
Humidity:	39%
Cool Set Point:	76 Degrees
Heat Set Point:	70 Degrees
Operating Mode:	Heat
State:	Off

If the WeatherBug module is installed on the ISY, the current data for all the weather parameters will be displayed.

WeatherBug	
Temperature:	37.4 F
High Temperature:	37 F
Low Temperature:	32 F
Feels Like:	27 F
Temperature Rate:	0 F
Humidity:	81 %
Humidity Rate:	0 %
Pressure:	29.88 inches
Pressure Rate:	0 inches
Dew Point:	31 F
Wind Speed:	21 mph
Average Wind Speed:	21 mph
Wind Direction:	S
Average Wind Direction:	S
Gusts:	40 mph
Gusts Direction:	S
Rain:	0.33 inches
Light:	0 %/h
Light Rate:	0 %/h
Rain Rate:	0 inches/h
Max Rain Rate:	0

If the Electricity module is installed on the ISY, the current parameters will be displayed.

Energy Monitor	
Channel 1:	W, W, kWh, V, A
Channel 2:	W, W, kWh, V, A
Channel 3:	W, W, kWh, V, A
Channel 4:	W, W, kWh, V, A
Channel 5:	W, W, kWh, V, A
Channel 6:	W, W, kWh, V, A
Channel 7:	W, W, kWh, V, A
Base Price:	\$
Current Price:	\$

These sections are optional and will only be displayed if you have purchased the module for your ISY.

The Settings section displays the current configuration settings of the ISY Insteon Plug-in.

Settings	
HomeSeer Location:	Parse From Name
HomeSeer Location2:	Folder
Location Separator:	:
Type Descriptions:	Short
Automatically add new devices:	True
ISY Insteon Plug-in Log Level:	Status Updates
Scene Tracking:	True

The Backlog section shows some internal counters that allow you to track how active

Backlog	
Commands:	0, 0
Messages:	0, 153

the ISY Insteon Plug-in has been. There are two counters that are tracked. The number of commands that have been queued to send to the ISY and the number of messages from the ISY that are queued waiting to be processed. The counters are displayed as current, maximum.

ISY Insteon Plug-in Thermostat Control

If you have one or more Insteon thermostats installed, the ISY Insteon Plug-in has multiple ways to access it. The thermostats are accessible from the main HomeSeer status page, via the HomeSeer thermostat API and from a ISY Insteon Plug-in Thermostat Status page.

ISYInsteon Thermostat Status							
Thermostat	Operating Mode	Fan Mode	Temperature	Humidity	Cool Setpoint	Heat Setpoint	System Status
Thermostat - Main	Heat	Auto	69 Degrees	39%	76°	70°	Off

The Thermostat Status page will display a row for each thermostat installed. You can change the operating mode, fan mode, and set points from this screen.

Device Control

In general, devices and scenes will follow the standard HomeSeer conventions for device control for X10 type devices. The HomeSeer status screen will list all the devices along with their current status. If the device is controllable, it will have on/off/dim controls, as appropriate. Scripts can be used to send commands and query the status of the ISY Insteon devices.

ISY program control does not map to standard X10 commands. In the HomeSeer device control menus, programs will show the program status values; True, False, Running True, and Running False instead of the on/off/dim. Since HomeSeer expects the “device” status to change based on the user's menu selection, the ISY Insteon Plug-in maps the request for status change to the appropriate ISY command using the following mappings:

Status	Command
TRUE	RunThen
Running TRUE	RunThen
FALSE	RunElse
Running FALSE	RunElse

Triggers

The ISY sends notifications to the ISY Insteon Plug-in for many different events. Most of these can be used to generate triggers in HomeSeer. The following events can be used for triggers:

Trigger Type	Trigger
Device Triggers	On, Fast On, Off, Fast Off, Begin Manual Change, Stop Manual Change, Status, Error
Thermostat Triggers	Temperature, Humidity, Set Point, Mode, State, Change
Thermostat Mode	Heat, Cool, Auto, Program Auto, Program Heat, Program Cool

Triggers	
Thermostat Heat/Cool Call Triggers	Off, Heat, Cool
Program Triggers	Becomes True, Running True, Becomes False, Running False, Enabled, Disabled
Weather Triggers	All WeatherBug parameters
Energy Monitor Triggers	Utilization, Total Utilization, Polarized Utilization, Voltage, Current
IR Triggers	Press, Hold, Release, Double
X10 Triggers	On, Off, Dim, Bright
ELK Triggers	Disconnected, Connected, Disarmed, Armed Away, Armed Stay, Armed Stay Instant, Armed Night Instant, Armed Vacation
FLEX Triggers	True, False
NTP Triggers	Date/Time

The ISY Insteon Plug-in continuously listens for event notifications from the ISY. The incoming notifications are queued and processed in the order they are received. Once processed, the notifications are translated into HomeSeer triggers. HomeSeer will then check the trigger string and activate any matching trigger. Note that some of the above triggers require optional ISY modules to be installed.

Conditions

The ISY Insteon Plug-in supports HomeSeer's ConditionUI and allows ISY events and device status to be combined in complex logical conditions.

Actions

The ISY Insteon Plug-in installs actions into HomeSeer for the various commands that can be executed by and through the ISY.

Action Name	Parameter	Action
ISY Program	Program ID	Run If, Run Then, Run Else, Enable, Disable, Run at Reboot, Don't run at Reboot, Stop
ISY Dimmer	Device or Scene	On, Off, Fast On, Fast Off, Dim, Bright
ISY Relay	Device	On, Off
ISY Scene	Scene ID	On, Off, Fast On, Fast Off, Dim, Bright
ISY Thermostat Control	Device	Set Mode, Set Fan Mode, Increment Set Point, Decrement Set Point
ISY Thermostat Set	Device	Set Point, Heat Set Point, Cool Set Point, Humidity

ISY X10 Command	X10 Address	On, Off
ISY Network Resource	Resource ID	Run
ISY Energy Management	Device	On, Off, Fast On, Fast Off

Thermostat API

The ISY Insteon Plug-in fully supports HomeSeer's Thermostat API for Insteon enabled thermostats. Scripts can make use of this API to query and control any Insteon thermostats connected to the ISY.

For more information on the Thermostat API see the HomeSeer documentation.

Function	Parameters	Return	Description
Nthermostats	N/A	Integer	1's based number representing the number of thermostats that the plug-in is managing.
ThermLoc	Thermostat Number	String	Call ThermLoc(x) for each thermostat to retrieve the location name for the thermostat – the location is part of the thermostat's name, and if the plug-in does not name the thermostat using the HomeSeer "Location Name" syntax, then a null value ("") should be returned.
ThermName	Thermostat Number	String	Call ThermName(x) for each thermostat to retrieve the name for the thermostat.
NTemps	Thermostat Number	Integer	Call NTemps(x) for each thermostat that the plug-in supports, and it should return a 1's based integer representing the number of temperature readings that each thermostat supports (e.g. a thermostat might support an indoor and outdoor temperature reading)
SupportsStat	Thermostat Number Sensor Number	Boolean	Call SupportsStat(x,y) for each temperature reading that each thermostat supports to determine if there is a full thermostat there or (Return=False) if it is only a temperature sensor.
SupportsCoolSet	Thermostat Number Sensor Number	Boolean	Call SupportsCoolSet(x,y) for each SupportsStat=True to determine if the thermostat supports a separate cool setpoint. If the Boolean return is False,

Function	Parameters	Return	Description
			then the setpoint is referred to as "Setpoint". If the return is True, then the primary setpoint is referred to as HEAT and the secondary setpoint is COOL.
SupportsDirect	Thermostat Number Sensor Number	Boolean	Call SupportsDirect(x,y) for each SupportsStat=True to determine if the thermostat supports direct temperature setting. The return of False means that the thermostat supports setbacks rather than direct temperature setting.
SupportsHold	Thermostat Number Sensor Number	Boolean	Call SupportsHold(x,y) for each SupportsStat=True, to determine if the thermostat supports a hold mode on the thermostat.
SupportsHoldOverride	Thermostat Number Sensor Number	Boolean	Call SupportsHold(x,y) for each SupportsStat=True, to determine if the thermostat supports a hold mode on the thermostat.
NumSetbacks	Thermostat Number Sensor Number	Boolean	Call NumSetbacks(x,y) for each SupportsDirect that returns False to determine how many setbacks the thermostat supports. The returned value is a 1's based integer.
SupportsAux	Thermostat Number Sensor Number	Boolean	Call NumSetbacks(x,y) for each SupportsDirect that returns False to determine how many setbacks the thermostat supports. The returned value is a 1's based integer.
SupportsOperating	Thermostat Number Sensor Number	Boolean	Call NumSetbacks(x,y) for each SupportsDirect that returns False to determine how many setbacks the thermostat supports. The returned value is a 1's based integer.
GetTemp	Thermostat Number Sensor Number	Double	Current Temperature
GetHeatSet	Thermostat Number Sensor Number	Double	Heating Setpoint Temperature
GetCoolSet	Thermostat Number Sensor Number	Double	Cooling Setpoint Temperature
GetModeSet	Thermostat Number Sensor Number	Integer	Current Thermostat Mode Setting
GetFanMode	Thermostat Number	integer	Current Thermostat Fan Mode Setting

Function	Parameters	Return	Description
	Sensor Number		
GetHoldMode	Thermostat Number Sensor Number	Integer	Current Thermostat Hold Mode Setting
GetCurrentMode	Thermostat Number Sensor Number	Integer	Current Thermostat Operating Mode. e.g. GetModeSet may return AUTO, and GetCurrentMode can then be used to determine if it is currently COOL, HEAT, or AUX)
GetOperating	Thermostat Number Sensor Number	Boolean	True if the thermostat is currently calling for Heat or Cool
CmdSetHeat	Thermostat Number Temperature Sensor Number	Integer	Set the heat setpoint temperature.
CmdSetCool	Thermostat Number Temperature Sensor Number	Integer	Set the cool setpoint temperature (If supported)
CmdSetMode	Thermostat Number Mode Sensor Number	Integer	Set the thermostat operating mode.
CmdSetFan	Thermostat Number Mode Sensor Number	Integer	Set the thermostat fan operating mode.
CmdSetHold	Thermostat Number Mode Sensor Number	Integer	Set the thermostat hold mode. (If supported)

For the thermostat Mode:

0=Off, 1=Heat, 2=Cool, 3=Auto, 4=Aux (If Supported, a.k.a. Emergency Heat)

For the thermostat fan mode:

0=Auto, 1=On

For the thermostat hold mode:

0=Off Hold, 1=Hold (if Supported)

For the Cmd____ functions:

0=Success, n <> 0 =Failure Error Code

ISY Insteon API

The ISY Insteon Plug-in API provides a means for HomeSeer scripts to interact with the ISY Insteon Plug-in and the devices it controls. The API provides access to capabilities not exposed through the standard HomeSeer interfaces.

string ActivateResource(string id)

Takes a network resource ID as the only parameter and sends the command to the ISY to activate (run) that network resource.

The string returned is the HTTP response from the ISY.

string ControlDevice(string address, string cmd, int level)

Sends a command to a device. The parameters are:

- The device address. For Insteon devices, this will be the Insteon address. For scenes, this will be the ISY scene ID.
- The command. This is the ISY command. For example: DON, DOF.
- The level. For dimmer devices, this is between 0 and 255. For relay devices, this is 0 or 255.

string RunProgram(string address, string cmd)

Sends a command to the ISY to execute a program. The address is the ISY program ID. The command is an ISY program command. For example: "RunElse", "RunIf"

string QueryDevice(string address)

Query the ISY for the status of a device. The only parameter is the device address.

string RequestStatus()

Requests the status of all devices controlled by the ISY. The status is returned in an XML formatted string.

string RequestConfig()

Requests the ISY configuration information. This returns an XML formatted string containing the ISY's configuration information.

string RequestTime()

Request the current time and date from the ISY.

string RequestLastSetTime()

Request the last time the ISY received via NTP.

int EnergyMonitorNumChannels()

Request the number of data channels currently collecting energy data.

double EnergyMonitorUtilization(int channel)

Get the energy utilization value for a channel.

double EnergyMonitorTotalUtilization(int channel)
Get the total energy utilization value for a channel.

double EnergyMonitorPolarizedUtilization(int channel)
Get the polarized energy utilization value for a channel.

double EnergyMonitorVoltage(int channel)
Get the voltage value for a channel.

double EnergyMonitorCurrent(int channel)
Get the current value for a channel (in amps).

double EnergyMonitorValue(int channel, int key)
Get a value from the energy monitor using a key. The key values are:

1. Number of channels
2. Utilization
3. Total Utilization
4. Polarized Utilization
5. Volage
6. Current

double WeatherValue(int key)
Get a value from WeatherBug using a key. The key values are:

1. Temperature
2. High Temperature
3. Low Temperature
4. Feels Like
5. Temperature Rate
6. Humidity
7. Humidity Rate
8. Pressure
9. Pressure Rate
10. Dew Point
11. Wind Speed
12. Average Wind Speed
13. N/A
14. N/A
15. Gust Speed
16. N/A
17. Rain
18. Light level
19. Light Rate

void ReSync()
Shutdown communication with the ISY and then re-connect to the ISY. This will reset the ISY Insteon Plug-in with the information from the ISY.

Int GetVariable(string id)

Get the current value of variable identified by <id>.

void SetVariable(string id, int value)

Set the variable identified by <id> to the value specified.

Tips

Start small. If you're new to the ISY, start by adding only a few devices and experiment with the ISY scenes and programs. Once you understand the basics, create a plan. Things will go a lot easier if you know ahead of time what scenes you want and how you want the devices to interact.

Use a consistent device naming convention.

When adding devices with the ISY, name them like this:

"Location:Switch Name"

For example,

"Kitchen:Sink Lights"

"Kitchen:Sink Lights Slave"

Notes:

1. You can set any character as the delimiter between the location and name. Pick one you aren't likely to normally use when naming your devices.
2. Naming them this way will allow the plug-in to import both their location and their names
3. HomeSeer has some restrictions on what characters can be used in locations and names. Below are the ones currently known. The Insteon ISY Plug-in will ignore these characters but it is probably best to abide by HomeSeer's rules.
 - Beginning and trailing spaces aren't allowed and are silently removed by HomeSeer.
 - Apostrophes aren't allowed and are silently removed.

Then you can set up your 3 and 4 way switches by creating a scene for each set of switches. All the switches in a 3 or 4 way circuit would be controllers for the same scene.

I would suggest including the word "scene" in your names, like

"Kitchen:Sink Light Scene"

which would be a good name for a scene using the two switches above.

Use folders to organize your setup.

Folders created on the ISY are accessible to the ISY Insteon Plug-in and can be used to better organize your devices and scenes. Consider a multi-story home.

Create a folder for each floor; Main, Upstairs, Basement.

Create a folder for each room and put them in the appropriate floor folder so you end up with something like this:

- Upstairs
 - Guest bedroom
 - Master bedroom
- Main
 - Kitchen
 - Dinning
- Basement
 - Game room

This information can be imported into HomeSeer's device location fields. So Location 2 could be the floor and Location could be the room.

ISY first. By using an ISY, you are putting it in charge of your INSTEON devices. So make sure you have everything functioning properly before starting the ISY Insteon Plug-in and importing the ISY configuration. While the ISY Insteon Plug-in will try to stay current with changes as they are made on the ISY, it is possible for the two to get out of sync. The easiest way to re-synchronize the ISY Insteon Plug-in is to disable it and then re-enabled it.

Error Messages

The ISY Insteon Plug-in log output has a number of different levels of verbosity. In most cases, an “Error” message means that something has failed. In some cases this is fatal and the ISY Insteon Plug-in will no longer be functioning properly. In other cases it means that the data received by the ISY Insteon plug-in was not correct. “Warning” messages indicate that something unexpected happened but it was not fatal. The ISY Insteon Plug-in is still functioning normally, however, you should investigate the source of the warning. All other messages are simply for information or debugging purposes. They do not indicate a problem with the ISY Insteon Plug-in.

The list of message below represents most of the messages you might possible encounter. However, it is not an exhaustive list.

ISY Insteon Plug-in Initialization Errors

- "ISY initialization Username or Password string is too short."
- "ISY initialization Username is missing. Initialize Failed."
- "ISY initialization Password is missing. Initialize Failed."
- "ISY initialization Username / Password authentication failed."
- "ISY initialization failed, Unknown reason."
- "ISY initialization failed to locate an ISY on the network."
- "ISY initialization UPNP Broadcast returned no data."
- "ISY initialization bad description document - <xml>"
- "ISY initialization failed to connect to the ISY web services interface."
 - "Is the ISY's firmware version 2.6.6 or later?"
- "ISY configuration query failed."
- "ISY configuration failed to get current log level."
- "ISY configuration failed to set log level to 1."
- "ISY configuration failed to get current date & time."
- "ISY module configuration query failed."
- "ISY node configuration query failed."
- "ISY node configuration query returned no devices or scenes."
- "ISY node configuration folder enumeration failed at <i>"
- "ISY program configuration query failed."
- "ISY scene configuration timeout waiting for nodes to be configured."

ISY Insteon Plug-in Errors in incoming XML messages

"ISY Message: XML is invalid."
"ISY Message: XML does not contain a root node."
"ISY Message: XML missing a required element."
"ISY climate message: XML missing a required element."
"ISY program message: XML missing program ID."
"ISY information message: XML has unparsable EventInfo data: <EventInfo>"
"ISY update message: XML for <action>, missing a required element."
"ISY energy message: XML missing a required element."
"ISY NTP message: XML missing a required element."

ISY Insteon Plug-in Communication Errors

"ISY network communication failure: <exception>"
"ISY network communication out of memory error."
"ISY network communication failed to read message data: <error>"
"ISY network communication connection dropped: <exception>"
"ISY network communication command failed: <command>"
"ISY network communication control URL is NULL."
"ISY network communication <service> failed with <http response>"
"ISY control general failure."
"ISY control command is NULL."
"ISY Control failed. <address> is not a valid device address"

ISY Insteon Plug-in Device Related Errors

"ISY device mapping failure for <device code>"
"ISY SetIO function unknown command <command>"
"ISY ButtonPress function called with null device"
"ISY unable to translate command <command>"
"ISY device list is empty."
"ISY tried to rename an unknown device <address>."
"Unable to set HomeSeer location for <name> because no HomeSeer device is configured."
"Unable to parse house code and/or device code from X10 device address."

ISY Insteon Plug-in Trigger Errors

"ISY trigger parsing failed for <reason>"

ISY Insteon Plug-in Condition Errors

"Condition format invalid: <condition>"

ISY Insteon Plug-in Program Resources Errors

"ISY REST called with missing URL."

"ISY REST request to URL, <url>, failed with <response>"

Warning Messages

ISY Insteon Plug-in Initialization Warnings

- "ISY initialization Username or Password string too long. <name> is greater than 10 characters."
- "ISY initialization Username or Password string contains an illegal character."
- "ISY initialization broadcast timeout."
- "ISY network configuration query found unknown element <name>"
- "ISY configuration device info update failed: <message>"
- "ISY configuration query attempt <attempt> failed."
- "ISY node configuration query failed: <message>"
- "ISY node configuration query returned an empty device list."
- "ISY node configuration query returned an empty scene list."
- "ISY node configuration query internal error."
- "ISY module configuration <module> (<id>) is not currently supported."
- "ISY scene configuration <scene> has a NULL profile."
- "Invalid debug level specified in config file: <level>"
- "X10 House code may be invalid: <house code>"
- "<device> not found in node list."

ISY Insteon Plug-in Communication Warnings

- "ISY network communication notification read timeout: <message>"
- "ISY network communication read returned NULL, forcing subscription restart."
- "ISY network communication failure: <message>"
- "ISY network communication missed status report for device <device>."
- "ISY busy timeout waiting for ISY to be idle."

ISY Insteon Plug-in Device Warnings

- "ISY Message: invalid device reference for <address>"
- "ISY Message: <name> not (yet) mapped to HomeSeer device."
- "ISY Message: configuration change request <reason> ignored."

"ISY Message: received Weatherbug event but weather device not configured."
"ISY Message: type <type> is not supported."
"ISY Message: XML node, <node>, not known."
"ISY Message: XML update event with unknown action: <action>"
"ISY Message: received energy monitor action, <action>, which is unknown."
"ISY Message: received Energy Monitor event but no monitoring device configured."
"HomeSeer/ISY device name differ."
"ISY trigger unknown conditional: <condition>"
"ISY trigger <trigger> is not valid."
"Thermostat Heat/Cool State event parse error."

ISY Insteon Plug-in Public Function Warnings

"ISY SetIO All Units Off command ignored."
"ISY SetIO All Lights On command ignored."
"ISY SetIO Unit Bright command ignored."
"ISY SetIO All Lights Off command ignored."
"ISY SetIO Extended Code command ignored."
"ISY SetIO Hail Request command ignored."
"ISY SetIO Hail Ack command ignored."
"ISY SetIO Preset Dim 1 command ignored."
"ISY SetIO Preset Dim 2 command ignored."
"ISY SetIO Status Request command ignored."
"ISY SetIO Dim To Off command ignored."
"ISY SetIO No CMD command ignored."
"ISY SetIO Any CMD command ignored."
"ISY SetIO Value Increment command ignored."
"ISY SetIO Set On command ignored."
"ISY SetIO Set Off command ignored."
"ISY SetIO Set Any command ignored."
"ISY SetIO Value Decrement command ignored."
"ISY SetIO unknown value for program status <status>"

"ISY ButtonPress button <button_name> is unsupported.

ISY Insteon Plug-in Internal Bugs Warnings

"ISY internal unknown node type: <type>"

"ISY internal unknown command: <command>"

"ISY internal device lookup with invalid index <index>."

"ISY group configuration query internal error"