VizioTV Plugin for HomeSeer 4

Description

The VizioTV plugin for HomeSeer 4 provides control of SmartCast-enabled Vizio TV models over wired or Wi-Fi network connections, particularly those produced from 2016 and beyond. The plugin allows monitoring and control over the TV's power function, input selection, volume control, channel up/down/last functions and launching onboard apps such as Netflix.

Compatibility With Vizio TV Models

We have only been able to test a couple of models of Vizio TVs but they seem to work consistently. The models we've verified are the Vizio M657-G0 and D32F-G4, both of which have been purchased in the last few years.

If you aren't sure if your Vizio TV supports control over a network connection, you can always download the plugin for a free trial and see if it discovers and connects to Vizio TVs on your network. 😊

Eco Mode

Vizio TVs have a energy-saving mode called Eco mode. Unfortunately when this mode is on, the built in management support will not be fully active and the plugin will have issues (seeing disconnects for the TV in the HomeSeer log and not being able to turn the TV on when it is off, for example).

At the end of the pairing process of the TV HSPI_VizioTV_4_0_0_1.zip with the plugin, the plugin checks the state of the Power Mode setting on the TV. If it is in "Eco" mode, a log entry will be recorded in the HomeSeer log indicating this and recommending you turn your Power Mode to "Quick Start" or other mode that isn't "Eco". There is no way for us to make the plugin work fully when Eco mode is active.

Platform support

Windows, Linux and Pi configurations are all supported. .NET Framework 4.6.2 or equivalent is required.

Initial Setup

Once installed from the HomeSeer store, the plugin will install automatically on your system. Once activated on the **Plugins->Installed** page, the plugin will automatically start searching for Vizio televisions on your local network.

NOTE: It is recommended that all your Vizio devices have powered and connected to your Wi-Fi network before starting the plugin to aid in discovering all your devices. For the units we've tested, they will respond on the network whether turned on or not. They will also power on when the pairing process is started automatically. That said, all Vizio models may not behave exactly the same so make sure they have power and are visible on the local network.

Because all Vizio TVs require a pairing process to be completed with the plugin before it can be controlled (just like any other management device), no HomeSeer objects will be created even if Vizio televisions are found. First you must complete the pairing step and then HomeSeer objects will be created.

If no devices are discovered, a message in the HomeSeer log will be generated indicating so and the plugin will begin to periodically search for new WMP-compatible devices until some are found or the plugin is deactivated.

Once devices are discovered, the plugin will store the information about them internally until pairing is completed. Then HomeSeer objects will be added.

Once all the HomeSeer devices are created, the plug-in will start monitoring each Vizio device it has been paired with.

Older Vizio Television Support

The management interface the plugin uses on Vizio TVs has been around for several years and was integrated into many models. Earlier models used a different network port (9000) than the newer models (port 7345) but the interface is supposed to be the same in both cases. As such, the plugin tries to connect to both ports on each television to determine which one is active. Only one or the other will be active on any given television. There is nothing you need to do around this but it is useful to know that both versions are allowed.

NOTE: Older models in some cases can be upgraded to newer firmware, if available, that uses the newer port. If this upgrade happens to a TV you've already paired,, you will need to delete the TV and let the plugin re-discover and pair with it (using the DELETE option on the TV's Device Configuration page (the VizioTV tab when you open a device in the HomeSeer Web UI. There is no provision for the port changing on the fly.

NOTE: We have no TV models on-hand that listen on the older port, 9000, for management commands. We have provided the support for the older port and will evaluate how compatible these models are with the newer ones in terms of the management interface.

IP Addresses

The plugin caches the IP address of the discovered Vizio TVs and uses it for future communications. If this address changes (either because it is statically assigned and you changed it or via DHCP), the plugin currently has no way to determine the new address for the TV. We recommend using address reservations in your router (or other similar mechanisms) to ensure the same address is assigned to your TVs each time.

If the IP address of one of your TVs changes, you can either manually reset it back to the previous address via your router or TV settings or delete the previous HomeSeer devices for that TV using the deletion procedure in this document and re-pair the plugin to the TV at its new address.

HomeSeer Devices and Features

The HomeSeer devices and features created by the plugin will include the following.

Main Unit Device

Each Vizio device has a root object that is created with the name of the Vizio television it is associated with. This will either be the default name the television came with or whatever name you have set for the TV through its menus. We have found the TV name setting under the **System->TV Name** menu on our televisions.

Model

The model number information retrieved from the television.

Power

Reports/controls the power setting on the television.

Inputs

Reports and controls the currently selected input on the television. The control options are variable on this HomeSeer feature as the number of available inputs on each television can be different. Some have more/less HDMI ports and other connections. The controls are therefore built dynamically based on the capabilities reported by the television. As such, you should only see input selection options for options that are actually available on your television model.

If you have provided custom input labels for your various inputs on your television, those will be read and used by the plugin during pairing. So, for example, if you've renamed HDMI-1 to display "Cable TV", the plugin will display "Cable TV" for the selected input if the physical input HDM1-1 is selected. We recommend making these naming changes on your television(s) if you haven't already BEFORE pairing the TV as the plugin will only retrieve this information when it is pairing to your television. The option to change input labels is found on our televisions under the **Input Settings** menu.

NOTE: One of the inputs is the "SMARTCAST" option which provides access to the apps installed on the television. You may select this input option if you like first, and then choose an app to launch, but we've found launching the app directly (selecting one of the controls under the Apps feature created by the plugin), automatically switches the TV to the SMARTCAST input. The SMARTCAST input also doesn't appear to work like other inputs where you come back to the source that was playing previously when you switch to one of the HDMI or other inputs. Since SMARTCAST is a virtual input (there's no physical

connection) it doesn't come back to the previous app that was running when you have switched away, presumably because it shuts down the app at that time. If you want to switch back to a particular app, simply relaunch the app directly.

Volume

Provides controls for Volume Up, Volume Down and Mute On/Off/Toggle. It does not report a volume value as the Vizio televisions do not appear to report this data (or we haven't found it yet).

NOTE: All of these volume controls appear to only control the television itself. If you are using a soundbar with an optical connection and have the TV speakers muted (or a similar configuration), these controls will probably not have any effect. You will have to control these separate sound output devices separately.

Channel

Provides controls for Channel Up, Channel Down and Last Channel (jumps to previous channel). Like the Volume feature, this only controls the television channels on the TV tuner itself, not any separate boxes (like a cable box) that are connected to the TV inputs.

DPAD

Provides basic controls for navigating around the TV and Apps menus that operate like the directional pad (DPad) buttons on the TV remote. These functions include up/down/left/right directional arrows, the OK/Select button and the Back and Exit buttons. Other options may be added over time as their usefulness for home automation becomes clearer.

Apps

Allows you to launch the various apps that are installed on your television such as Netflix, Amazon Prime Video, Redbox and so on. We have not found a way to have the television tell us what apps are installed so we have simply provided controls to launch all the apps we know are available for Vizio TVs. As more are added as time goes on, we have made the plugin retrieve the list of apps available from Vizio and generate the available app controls on the fly when the plugin starts up. If new apps are added, simply restart the plugin and it will rebuild all the apps based on the latest data.

NOTE: The apps run on the "SMARTCAST" input on the television. You do not have to switch to this input first. The television will automatically switch to it when one of the apps is launched by the plugin.

Settings Options

The options currently supported by the plugin are under **Plugins->Vizio->Settings**.

App Country

The list of apps available in the plugin is read dynamically from Vizio at startup and the Apps feature for each television is refreshed at that time (if the Update Apps At Startup option has been enabled). Vizio provides metadata that indicates which country or countries a given app is allowed to run on the television. For example, the Hulu app is marked as USA only where other apps are allowed in other countries or are marked for global use.

This setting tells the plugin which apps to include for the Apps feature in the HomeSeer interface. Using this setting, the plugin will add all apps to your list that match the country you selected or are marked as

available globally. The Vizio metadata only defines the USA, Canada, Mexico and All (global) as possible country options so those are the options provided by the plugin.

NOTE: The plugin does no enforcement of what apps are allowed to be installed/run or not. The goal of this setting is to provide a way to filter out apps in HomeSeer that aren't supported on your television by Vizio or the app owner in the region you live in. You can select any option you like (we don't check if the country you chose is really where you are). If you choose "All" and you live outside the USA, Canada and Mexico, chances are you will have some buttons for apps that won't work due to these limitations. If an app refuses to launch, it is the TV that is making that decision. Please contact us if you have an app you can launch directly on your TV but not thru the plugin.

Default: USA

Update Apps At Startup

Since new apps are being released on an ongoing basis, this option allows you to have your apps list and the buttons on the Apps feature in HomeSeer updated every time the plugin starts up. It will simply remove the current list and rebuild all the apps buttons again based on fresh data from Vizio. When this happens, any customizations you've made to the Apps feature objects will be lost.

If for some reason you don't want your apps to be refreshed at startup, disable this option.

Default: On

Send Model Data to Developer

Enabled by default. When enabled, sends a small encrypted MQTT message to us with the model number and pairing data once pairing is successful on that unit. Once a television is paired, no further information about it is sent and no personal/private info is stored or sent ever.

As there are so many models of Vizio televisions available, broad testing is very difficult but collecting this data helps us improve the plugin without having all the Vizio TV models on hand.

Default: On

Enable Debug Logging

Turns on the debug logging output for the plugin. This is output that will aid us in tracking down problems if you have one with the plugin. Generally there is no reason to turn this on during normal operation as it will fill your HomeSeer Log with a lot of unneeded data.

Default: Off

Unpaired/Offline Devices

In some circumstances, a television might reject requests from the plugin for data or control. This is usually caused by the television becoming unpaired from the plugin (e.g., someone accidentally removed the pairing connection from the television). In these cases, the plugin will not delete the HomeSeer devices and features associated with such offline devices but will simply mark them as unpaired again and stop monitoring them until the problem is resolved.

When this happens, you will see the television marked as unpaired on the Discovered Vizio TVs page. Simply go to the Vizio TVs Pairing Guided Process page and re-pair the television with the plugin. Once paired, the plugin should start monitoring the television again and update the existing HomeSeer devices and features connected to it. There is no reason to delete the HomeSeer devices and features when this happens but if you happen to do so, the plugin should recreate all of them once the pairing issue is resolved.

In cases where a TV stops responding (e.g., it loses power or is not connected to the network for some reason), the plugin will not mark the TV as unpaired as that is not the correct state to use in this situation. Instead, the plugin will simply slow down its polling of that television until the TV starts responding again. Currently the plugin waits 10 minutes between attempts when it is unable to connect to the television. When the connection is reestablished, the polling rate automatically adjusts back to normal.

Deleting TVs No Longer In Service

When you need to replace or upgrade a TV and will no longer be using the old one, you will want to delete it from the plugin's database so that it no longer attempts to monitor it. While you could just delete the HomeSeer objects manually, the plugin keeps a record of televisions it has discovered or paired to and will recreate deleted HomeSeer objects for them at plugin startup.

To delete a television completely from the plugin, including its own internal database of discovered devices and any HomeSeer devices and features associated with the unit, simply go to the Device Configuration page under the "VizioTV" tab for the Main Unit Device for that unit.

Once on the Device Configuration page for the unit you want to delete, enable the "DELETE THIS TELEVISION" toggle control and press the **Save** button.

NOTE: Once the **Save** button is pressed, there is no further confirmation or way to stop the deletion process. Please make sure it is what you would like to do before pressing **Save**. If you do delete the device accidentally, as long as it is still on the network, it will be rediscovered the next time the plugin starts and the objects for it recreated if you pair it. Only any customizations you've made to the deleted objects in the HomeSeer user interface will be lost.

If a new TV is replacing the one being deleted, you may delete the old TV as described above and then use the Vizio TVs Pairing Guided Process page to add the new one once it is installed, powered on and connected to your network.

Re-Pairing Televisions Already Paired

If a television is already paired to the plugin, it will be left off the list of unpaired televisions on the Vizio TVs Pairing Guided Process page. This avoids accidental pairing with the wrong television. As such it should not be possible to re-pair an already-paired television with the plugin. We have found, however, that our television models will not generate any issues or errors if the plugin re-pairs to a television that it is already paired to. The TV will simply accept the pairing request and send an update to the plugin. We see no reason to allow re-pairing if a TV is already paired and working correctly and have filtered paired TVs on the Vizio TVs Pairing Guided Process page.

If you want to force a re-pair process for a TV, simply go in the **System->Mobile Devices** menu on your television and remove the pairing entry for the plugin. Once this is removed, the plugin will start getting errors from the television for data requests and will mark the television as unpaired after a few minutes (pairing status can be seen on the Discovered Vizio TVs page). Once the television is marked as unpaired according to the plugin, it will be available for pairing again on the Vizio TVs Pairing Guided Process page.

If you have accidentally deleted the HomeSeer objects for the plugin representing your TVs, as long as the INI file is still intact on your HomeSeer system, the plugin will rebuild the HomeSeer objects for your TVs when it restarts.

Vizio TVs Pairing Guided Process page

As mentioned previously, before any television can be managed or have HomeSeer devices created for it, it must be paired to the plugin. This is a pretty fast and easy process and is accomplished via the Vizio TVs Pairing Guided Process page. Navigate to the **Plugins->VizioTV-> Vizio TVs Pairing Guided Process** menu option to launch this page.

Follow these steps (we recommend being able to see the TV screen during this process):

1) Press CONTINUE button on Step 1 to search for available Vizio TVs.
2) Select the television you would like to pair with from the automatically generated list in Step 2. The list will include the name of the TV (your personalized name if you've set this on the TV) and its IP address for each found. Once you've picked the TV you want to pair with, press CONTINUE. If you don't see the TV you want in the list, refresh the page.

   NOTE: Televisions that have already been paired with the plugin will be excluded from the list to avoid trying to pair them again.
3) On the television screen you will see a four-digit pairing code displayed. Enter this code into Step 3 of the page. Press CONTINUE
4) Press START in Step 4 to initiate the pairing process.
5) If all goes well, in Step 5 you will see a message that the pairing process was successful. Press FINISH to complete the process and close the page or DO THIS AGAIN if you want pair another television.

If your television fails the pairing process, please try it again. There isn't much that can go wrong other than an incorrect PIN code. If you cannot get your television to pair, please contact us with the model information so that we can try to determine if it should work or not.

When the pairing process is successful, an MQTT (IoT message) is sent off to us to send us the Vizio model number and other pairing information that will help us improve this plugin. No personal information is included, just technical data the plugin has collected.

By default this information will be sent to us but *if you do not wish to send this information*, please disable the Send Model Data to Developer option on the plugin Settings page before pairing any televisions. No data is sent until a television successfully is paired and no data is sent once the television is paired, if the option is enabled.

NOTE: You may need to refresh this page in your Web browser for it to see TVs on your network that have appeared since the page was first loaded. If the list of unpaired TVs on this page is empty but you are sure there are unpaired TVs on your network (e.g., they show up on the Discovered Vizio TVs page as unpaired), refreshing this page should cause them to be added to the list.

Discovered Vizio TVs page

The Discovered Vizio TVs page is a single place to see more detailed information about the Vizio TVs discovered on your network. Information includes:

- ➢ Device Name
- ➢ IP Address
- ➢ Manufacturer
- ➢ Model
- ➢ Pairing Status (paired or not)

You can reach this page by selecting the **Plugins->VizioTV->Discovered Vizio TVs** menu item.

Manually Add Vizio TVs page

Given the numerous configurations of networks out there, the automatic discovery process doesn't always work as we wished it would. To help take the frustration out of this process, we have added a page to manually add Vizio TVs by IP address and pair them with the plugin. We recommend using the Vizio TVs Pairing Guided Process page normally but when it isn't finding your TV, this one will probably solve the problem for you.

Similar to the Vizio TVs Pairing Guided Process page, this page has you supply an IP address to try to pair with by entering it's address in a text entry box. When you press CONTINUE, the plugin will attempt to connect to the supplied IP address on both supported management ports to see if the TV is listening on either one. If it is, the plugin will attempt to start the pairing process and you will be prompted for the pairing code displayed on your TV's screen. At this point, the process is the same as the guided process and the TV will be added to HomeSeer for you to manage.