Domoticz Bridge plug-in for openLuup
Documentation for version 0.15

IMPORTANT: This is beta software... use is at your own risk !!! This is software for technically savy users at this stage and not supported except by my goodwill...

What this is: a way to drive a Domoticz home automation setup from an openLuup environment

Rationale: I wrote this plugin after testing a new HA setup for my main home based on a Rapsberry Pi / Aeotec Z-Wave GEN5 stick / Domoticz, instead of the MiOS/Vera system I have had running at my vacation home.
I found Domoticz to be an excellent HA platform but I like the Luup environment running on Vera system much better from a scripting perspective as well as from its huge list of plugins. On the other hand, Domoticz can drive many more hardware platforms then Vera... I therefore wrote this plugin to get the best of the two platforms :)

For more info on openLuup see http://forum.micasaverde.com/index.php/board,79.0.html

For more info on Domoticz see www.domoticz.com

What this does:

- clone devices from a Domoticz installation to an openLuup environment
- mirror Domoticz device variables/status as openLuup devices
- mirror openLuup device variables to Domoticz virtual sensors
- perform certain actions (from the UI or from scenes/plugins, etc...) within openLuup that are mirrored on the Domoticz

What this does not do:

- given the complexity of matching Domoticz devices and actions with openLuup's, only device types and actions that have been programmed will work within openLuup... Other devices will appear as "Generic" and with a CurrentLevel variable representing its current Domoticz data (also displayed in the AltUI device object)
- house modes, security status and openLuup devices mirroring to the Domoticz system are not yet implemented.

Supported devices (to be updated as appropriate):

- Switch (On/Off, dimmer, pushbutton)
- Blinds/Window covering (only partial support as I cannot test with a physical device)
- Motion, door/windows and Smoke sensors (Vera "SecuritySensor" serviceId)
- Common sensors (temperature, humidity, light, energy)

Contact me if you have a device type that is not supported and I will see if I can implement it. To do this, please at a minimum provide me with some device data collected from the following query in a web browser (adjust for a user/password as needed by following Domoticz API documentation):
http://<domoticz IP:port>/json.htm?type=devices&rid=<the device idx>

Installation:

a) on the openLuup system:

1. Make sure your openLuup system is properly installed, with all the MiOS/Vera device and icons added to the relevant "/etc/cmh-lu" and "/etc/cmh-ludl/icons" directories. See Appendix 1 for more on this.
2. If you are planning to run one or more VeraBridge plugin(s) on the openLuup system, you MUST install these before installing the DomoticzBridge… Failure to do so will likely result in device numbering conflicts on the system (VeraBridge does not know about DomoticzBridge, while DomoticzBridge will check for existing VeraBridge plugin(s)).
3. From the AltAppStore on a running openLuup system, install the plugin
4. In the openLuup UI, edit the newly created plugin device: "control panel" / "device attributes" and set the IP to the system running Domoticz (if same system than openLuup, best is to use a localhost address such as 127.0.0.1).
5. If your Domoticz system is accessed from a port other than 8084 you must set the DomoticzBridge device variable "DomoticzPort" to the appropriate port number.
6. If needed, you can specify that certain Domoticz devices should not be "cloned" on the openLuup system by adding their Domoticz idx number to the "ExcludeDevice" DomoticzBridge device variable (in CSV string format, e.g. 41,88)
7. perform a Luup reload

b) on the Domoticz system:

1. Copy the "script_device_openLuup.lua" from https://github.com/999LV/DomoticzBridge/tree/master/DomoticzScript to the scripts folder of your Domoticz installation (e.g. /home/pi/domoticz/scripts/lua/ on a standard Raspberry Pi install), using your favorite file utility, e.g. WinSCP
2. Make sure the Domoticz settings for "local network" includes the IP of the openLuup system for password free communication (for now, it is assumed both Domoticz and openLuup are running on either same hardware or LAN, hence no security implemented)
3. If the openLuup system is running on an IP other than "127.0.0.1" (that is the same system than Domoticz), you need to add a Domoticz user variable called "openLuupIP" as "string" with the value of the proper IP.
4. Should you have many Domoticz devices that have continuously changing values (e.g. power usage) and that do not need instant updating in openLuup, you can exclude these from the synchronization communication loop between the two systems (to reduce overall system load and also avoid clogging the logs) by adding a Domoticz user variable called "openLuupNoNotify" as "string" with the idx of these devices (in CSV format, e.g. 41,52,88). These devices will thereafter only be updated by the system wide polling (every 60 seconds). To avoid better system behavior (time outs), it is important to add to this "openLuupNoNotify" list any virtual device used to mirror an openLuup device (see below)

“Reverse” Mirroring:

Starting with Version 0.15, DomoticzBridge implements the mirroring of “local” openLuup devices on the “remote” Domoticz system. This is for instance useful to push the value of certain sensors from one system to another.

Implementation is as follows (please follow the steps exactly in the below order to avoid any race condition between the two systems):

1) In Domoticz:
   - create the relevant virtual device(s) (e.g. temperature sensor, electricity meter, etc…) and make note of the idx for each of these devices
   - see https://www.domoticz.com/wiki/Domoticz_API/JSON_URL's#Update_devices.2Fsensors to identify whether each device variable will require a “nvalue” or “svalue” API call… Please not that currently only one parameter can be set at one… meaning either one nvalue or one svalue… If you need, multiple openLuup variables can be mirrored to a single Domoticz virtual device by making in 2) below multiple variable watches.
   - Add to the “openLuupNoNotify” user variable (see installation instructions above) the idx value(s) of the devices created in a)
2) In openLuup:
   a) In the “Misc/Lua Startup Code” menu option of AltUI, add the following code:

```
luup.attr_set ("openLuup.dzmirrors", [[
<IP of the Domoticz system>
<Domoticz idx>.<value type> = <openLuup dev no>.<serviceId>.<variable name>
]])
```

   So for example on my test system:

```
--mirrored variables for Domoticz plugin
luup.attr_set ("openLuup.dzmirrors", [[
127.0.0.1
92.svalue = 7.urn:upnp-org:serviceId:TemperatureSensor1.CurrentTemperature
93.nvalue = 8.urn:micasaverde-com:serviceId:HumiditySensor1.CurrentLevel
]])
```

   Be VERY careful in typing this, as Lua code is case sensitive and all special characters above must be typed exactly like presented above (do not miss a point or bracket for instance) !!! If you do not know how to find the device idx or numbers or variable serviceId and name, then you should probably not use this reverse mirroring feature…

   b) Initiate a reload of openLuup (in AltUI, do a “Misc/Reload Luup Engine”) and refresh your browser if needed…

   The virtual devices in Domoticz should now show their values from openLuup ! If not, first check the Domoticz or openLuup logs. I can try to help, but only with appropriate logs to support the issue…

Appendix 1 : openLuup & Vera files

openLuup requires a number of files from a Vera system to operate properly… Its author actually has devised an automated way of copying these files from a Vera system on the same network than the openLuup installation… See https://github.com/akbooer/openLuup/raw/master/Documentation/20160609%20openLuup%20User%20Guide.pdf for this.

If you are not running the VeraBridge plugin, you will need to somehow from a Vera system you own (this is unsupported by me):

- uncompress the '*.lzo' device files ('D_*.*', 'I_*.*', 'L_.*' and 'S_*.*') from the original '/etc/cmh-lu' and '/etc/cmh-ludl' Vera directories and copy these to the './files' directory in your openLuup system directory (e.g. '/etc/cmh-ludl/files/')
- uncompress the '*.lzo' icon files ('*.png') from the original '/www/cmh/skins/default/img/devices/device_states' (for UI7) or '/www/cmh/skins/default/icons' (for UI5) Vera directory and copy these to the './icons' directory in your openLuup system directory (e.g. '/etc/cmh-ludl/icons/')