

## Moving to github

ctrlr is moving to **github** to make the use of the website more friendly. Please post all issues there. Also a discussion addon is enabled. I'm still working on how to deal with panel uploads.




*Control your MIDI life (MIDI editor for all your hardware)*

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## Global Persistent Variables?

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Tagged: [stateData](#)

This topic has 12 replies, 3 voices, and was last updated 3 years, 9 months ago by  computerchemist.

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Author	Posts
May 10, 2020 at 1:09 pm	#118291
 <b>computerchemist</b> <i>Participant</i> Topics: 2 Replies: 31 Total: 33	<p>Hopefully the title explains it.. I'm looking for a way to save certain global variables prior to exit and restore them again during execution. This would use the panel functions "Called before any modulators.." for load, but I'm not sure what to use for exiting.</p> <p>My bigger problem is what method I must use to store/retrieve the variables. I'd like to use the same state files that must be used when Ctrlr stores MIDI channel, etc.</p> <p>I could solve this by making a standalone ini file but then I would need to store it in the profiles section which I don't know for each operating system.</p> <p>So my question is:</p>



– How can we preserve certain variable states when the program is not being used, so they are there again at startup? Is there a special method for this?

May 10, 2020 at 3:39 pm

#118293



goodweather

Participant

Topics: 45  
Replies: 550  
Total: 595  
★★★

You can achieve this with stateData. StateData is kept in the Ctrlr cache.

Create a method SaveStateData to store the data you want to keep.  
Example:

```
stateData in the menu)

by using this method
be read when loading the panel

l at panel load

it is its value - 0 - and not its uiLabelText property 1
to reload the last file
ath, nil)

.l)
```

Create a method to read your stateData and put the values in variables.  
Example:

```
--
-- Called when data is restored
--
ReadStateData = function(--[[ ValueTree --]] stateData)

    -- Variables to be read
    sLastFileFullPath = stateData:getProperty("Last
    sLastFileName = stateData:getProperty("LastFile
    currentRootFolder = stateData:getProperty("Root

end
```

In panel properties, set  
Called when Ctrlr state is saved: SaveStateData  
Called when Ctrlr is loaded: ReadStateDate



In your PanelLoaded method, you need to check if the StateDate has been restored or not. Yep, it is sometimes failing... Example:

```
-- Check restored statedata and, if found, inform timer
if sLastFileFullPath == nil or sLastFileFullPath == ""
    sLastFileFullPath = ""
    sLastFileName = ""
    bLastFile = false
else
    -- if stateData is working then sLastFileFullPa
    -- Check if file has not been moved or been del
    f = File(sLastFileFullPath)
    if f:existsAsFile() then
        bLastFile = true
    else
        sLastFileFullPath = ""
        sLastFileName = ""
        bLastFile = false
    end
end
end
```

Last info: please be aware that StateData is only saved when the user quit Ctrlr by keeping the panel open. Thus not when simply closing a panel. A bit tricky and for sure not perfect. Good luck!

May 10, 2020 at 5:17 pm

#118299



Thanks! That is exactly what I've been looking for (and could not find!)



computerch  
emist

*Participant*

Topics: 2  
Replies: 31  
Total: 33



May 10, 2020 at 5:52 pm

#118302



Glad I could help 😊

goodweath  
er



Participant

Topics: 45  
Replies: 550  
Total: 595  
★★★

May 10, 2020 at 6:54 pm

#118304



computerchemist  
Participant  
Topics: 2  
Replies: 31  
Total: 33  
★

I have a follow on query that's still within this context (sort of) and I hope you can help with too.

I have a 3 dimensional array (table?), ProgramPatch[][] where the first element is the program number, the second element is the patch number in the program. I effectively want to store this into the State Data too.

In other languages I'd serialise the array into a string, or use a JSON library to do the same. I just can't seem to figure out the best way with LUA. What's the best way in CTRLR of storing the array and retrieving it?

May 10, 2020 at 8:17 pm

#118307



goodweather  
Participant  
Topics: 45  
Replies: 550  
Total: 595  
★★★

I have never tried but I think you can store what you want in StateData. Just make a test 😊

I suppose this is for user patches. For factory patches, just declare your table in some TablesInit() method then call that method at panel load to initialize it.

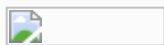
If you load user patches in some component, then they stay there even if you close and re-open the panel because in the cache of the panel.

Therefore, I'm not sure you really need to keep that in state data.

You need to experiment different ways and choose the one you like the best. This is Ctrlr 😊

May 10, 2020 at 8:21 pm

#118308



computerchemist  
Participant  
Topics: 2  
Replies: 31  
Total: 33  
★

Thanks for the pointers (again) 😊 Yes, it will store the current sliders but I can only do bulk sysex dumps to this synth so I need to store all 64 patches locally, not just the displayed one. I've probably take the long road doing that with arrays but I'll give it a go.



May 10, 2020 at 8:59 pm

#118309



computerchemist

Participant

Topics: 2  
Replies: 31  
Total: 33  
★

That just crashes and burns trying to reference the array directly – it doesn't crash while saving state, but it doesn't seem to write the arrays to the state table either. So when reading back in, I'm just getting a nil array.

May 10, 2020 at 9:35 pm

#118310



goodweath er

Participant

Topics: 45  
Replies: 550  
Total: 595  
★★★

OK. which synth is it?  
You didn't tell me if it was factory or user patches.  
Now that you gave me more info about what you want to do I can redirect you a bit.  
Please look at my Pro 2 panel.

I would use Memoryblocks (look in Juce API doc and also in another post I answered recently.

[MemoryBlock v CtrlrLuaMemoryBlock](#)

One MB would be a bank of 64 patches. Each patch has a fixed length. Starts by F0 and finishes by F7.  
When starting the panel, you load a MB of 64 patches (file on disk) and from there you can send each patch to the synth as you want.  
You also treat each patch as a MB.

May 10, 2020 at 9:44 pm

#118311



computerchemist

Participant

Topics: 2  
Replies: 31

Sorry – it was for the Korg Poly-800. I think I've taken the wrong approach then completely – because of all the bit slicing and shifting I decode the sysex in one block (it doesn't handle CC or individual patches) into a 64×99 array which I then map onto the controllers. A prog up/down just refreshes the controllers from the appropriate row in the array. When saving, I read the controllers in a loop and update the appropriate row in the array. The first element is the program and the second is the controller. So the complete program patch state is stored in a 3 dimensional array from when it leaves the sysex (file or dump) to when it need to go back to be sysex (file or dump).

Total: 33  
★

Hold up – I think I answered my own question. Why not store the sysex dump which is a MemoryBlock prior to writing, I could treat the save state as a third way of storing sysex. Duh. On it now... 😊

May 10, 2020 at 11:04 pm

#118313



Hi computerchemist,

You can store a lua table as a JSON like string:

**dnaldoog**

*Participant*

Topics: 4  
Replies: 480  
Total: 484  
★★

This is in my JD-990 panel:

ccMapArray is an table of modulator names as values with CC numbers as keys. The user can build a set of pairings for controlling the panel -> synth from a keyboard.

So I have for example a modulator I named TVFCUTFR, which is the JD-990 TVF cutoff. I want to save a mapped cc number, for example 41, to that modulator on reload, along with any other pairing.

I can save this using `stateLData:addChild` instead of Goodweather's `stateData:setProperty` by creating a new ValueTree object called ccMapping. Here I use the modulator name as a hash/key, but you could just as easily store an index too, I guess.

First I check that the table is not empty otherwise bad things happen.

```
SAVE CC MAPPING ARRAY TO stateData:child

if not rawequal(next(ccMapArray), nil) then

    local aoc=ValueTree("ccMapping")
    for k,v in pairs (ccMapArray) do
        aoc:setProperty (tostring(v),tostring(k)
    end
    stateData:addChild (aoc, -1, nil)

end -- table not empty
```

To read that ValueTree table back into Ctrlr on reload:

```
mi=stateData:getChildWithName("ccMapping")
for i=0,mi:getNumProperties()-1 do
    local k=mi:getPropertyName(i) -- k is the name
    local v=mi:getProperty(k) -- v is the cc number
```

```
ccMapArray[tonumber(v)]=k -- re-populate ccMapA
end
```

Note: In my case I am reading the value back in as the key to my table. You probably would keep it the same as how it was saved, i.e.

```
local k=mi:getPropertyName(k) -- k is the name
local v=mi:getProperty(i) -- v is the cc number
ccMapArray[tonumber(k)]=v -- re-populate ccMapA
```

I don't seem to be checking whether `mi` exists . Maybe don't have to? And `mi` should probably be declared local.

What Goodweather suggested is stored as `<panelCustomData></panelCustomData>` and `<ccmapping />` will be stored within that node as XML Attributes. (I looked this all up on XML, so I may have the terminology wrong)

```
<panelCustomData graphlinecolour="4282400832" envbackgr
```

I would leave it to you to work out how to do this with a three dimensional array or table in lua speak, but it must be doable!

This reply was modified 3 years, 9 months ago by  [dnaldoog](#).

May 10, 2020 at 11:18 pm

#118315



**dnaldoog**

Participant

Topics: 4

Replies: 480

Total: 484



[computerchemist wrote:](#)

*Why not store the sysex dump which is a MemoryBlock prior to writing, I could treat the save state as a thrid way of storing sysex. Duh. On it now... ?*

Or just do it that way!!!

```
x=function()
str="F0 43 12 03 00 00 57 f7"
m=MemoryBlock()
m:loadFromHexString(str)
end
```



```
save = function(--[[ ValueTree --]]stateData)
stateData:setProperty ("mylongsysexdump", m:toHexString
end
```

**P.S. unless you need those hash key or value names recorded ...**

This reply was modified 3 years, 9 months ago by  [dualdoog](#).

May 11, 2020 at 7:02 pm

#118325



Big shout out to both of you super helpful guys 😊  
I got it all working in the end with a mixture of both approaches.

**computerch  
emist**

*Participant*

Topics: 2  
Replies: 31  
Total: 33



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