

From: Steven
Subject: Array Variables

Hi Tech Support,

I have a question about array variables. I was looking at the Compass Manual and found a little information about array variables. However, with the information contained in the manual, I am not able to figure out how to use them.

Here are some of the questions I have:

- 1) How do I indicate which element within the array I want to access?
- 2) How do I preload the elements within the array?
- 3) What is the context format of the array variable?
- 4) Examples of variables used in a project?

I think array variables might make my projects more efficient and I would like to use them in my next Compass Project.

Thanks for your help.

Regards,

Steven

Hey Steven,

We do arrays a bit differently here. For starters, our arrays will always need two elements that are linked to each other. A variable with type Array, and a variable #Index with type integer.

#Index_X is the variable you set to access an element in that location. #Index_1 = 3 is accessing the 3rd element. #Index_1 = 7 is accessing the 7th element... and so on.

You can use #Index_1 through #Index_8 for our arrays. One Index can be assigned to multiple arrays. So let's say #Index_4 controls myArray1 and myArray5. If I set #Index_4 = 3; When I access myArray1 and myArray5, they will be accessing the 3rd element only. The arrays will not move locations until the #Index is changed.

Say we have an array, myArray[10], that holds 10 elements.

From C/C++, to access the 5th element in myArray, it would look like this: myArray[4];

For Compass, say we have an array, myArray, with #Index_1 linked to it.

To access the 5th element in myArray, it must be done in two steps. Set the Index number to 5 then access myArray: #Index_1=5; myArray = "Anything can go here to set the value";

Now to answer the questions:

1) How do I indicate which element within the array I want to access?

The #Index linked to the array you want to use is what you want to change. To access the 8th element in myArray, set #Index_X = 8; To access the 2nd element in myArray, set #Index_X = 2;

2) How do I preload the elements within the array?

In Compass, under the Variables window, click on the variable of type array you want to initialize. When clicked, the properties window should change to that properties of the array. Where it says "Initial Value(Same)", there is an ellipsis button "...". Click on that and set the values to "Different" so that you can change every element in the array for initialization.

3) What is the context format of the array variable?

Not really sure what you mean but the syntax in Compass is AddSetVariableActionValue twice for #Index and Array under Events and Actions.

4) Examples of variables used in a project?

Multi-zone home: I have an AV Receiver and I want to hold memory of the different properties of my Receiver because I have 4 Zones. I want to be able to know the power status, what source is used in each output, volume, Radio Tuner Status, and Mute status. In compass, I would have 5 array Variables.

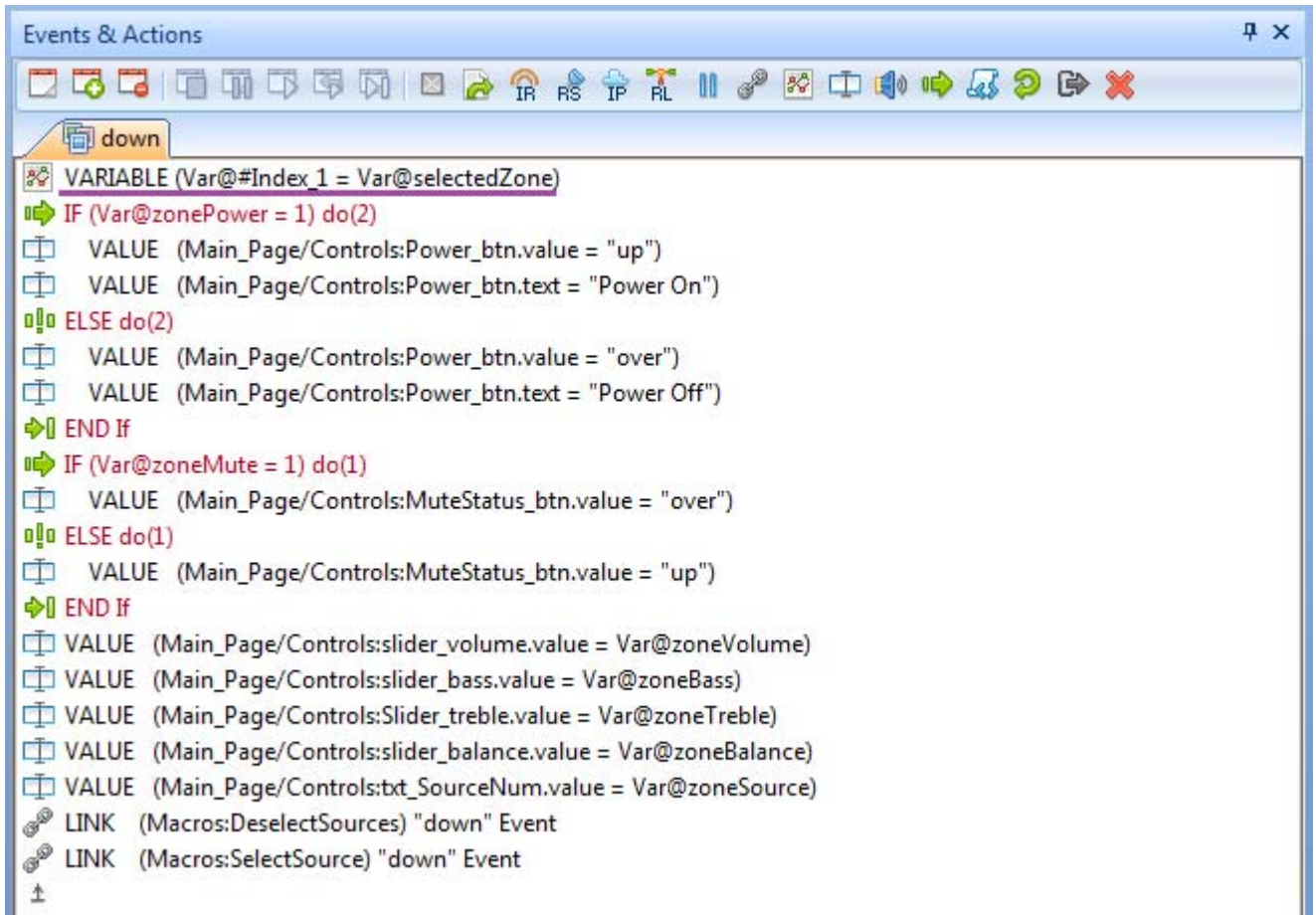
AV_Power; AV_Sources; AV_Volume; AV_Tuner; AV_Mute;

All these arrays I would link to one #Index, lets say #Index_1 for example. I would use only one #Index to control all of them because if I'm in Compass flicking through zones, everytime I move from zone 1 to 4, my #Index will change along with it.

If I flick to Zone 4, make #Index_1 = 4; now when I want to display all the properties of my AV receiver, #Index_1 is already set to 4 and all the properties for zone 4 will be accessible. I can now have a button change from Up to Down for power. Mute will turn from green to red. Volume slider will go to correct volume for that source... and so on.

If you remember from Jon's training, You usually have a Variable called selected Zone. For Events and Actions, a ChangeValue for selected zone could look like this. For the picture below, I have this macro that would execute every time I change my Zone.

See that I have a Variable zonePower. If that value was changed, then toggle the power button to the correct state. Same with Mute. Then at the bottom, the Volume, Bass , and Treble and Balance change slider values on the page. Lastly, the source would change a text box to display the source for the current zone. The last two marcos use the source variable to highlight the correct button.



This is the only code I have to write in order to do simple status update using arrays rather than having 4 variable for 4 zones(16 variables!). This looks much better than seeing:
 IF(SelectedZone==1) Then {GUI_Element = Volume1; GUI_Element = Mute1;}
 IF(SelectedZone==2) Then {GUI_Element = Volume2; GUI_Element = Mute2;}
 IF(SelectedZone==3) Then {GUI_Element = Volume3; GUI_Element = Mute3;} ... and so on.

Hopefully this helps. I know it's a bit confusing at first but once you get it down, it comes naturally. If you have any questions feel free to call me at 914-667 -9700 x243

-Tech