

Software Audio Console

Scene Tutorial

Introduction:

I am writing this tutorial because the creation and use of scenes in SAC can sometimes be a daunting subject matter to much of the user base of SAC. So my attempt at a tutorial here is to help make this process easier for users to understand so that more users will embrace and hopefully make good use of the Scene recall ability built into SAC.

This tutorial will be geared mostly towards use of SAC in theatrical productions, since that is what I specialize in doing and how I approach the use of SAC. However hopefully all SAC users will find this tutorial of some value and will be able to take some information from it that they can apply to their needs, regardless of what audio environment they are working in.

Lastly, before you read this tutorial, please realize that I am going to make the assumption that you have already made yourself familiar with the SAC user interface, that you have read through the Help File/SAC documentation at least once if not several times. I will try to explain some of the more advanced steps in detail, but I am going to glance over steps that I would consider the basic operation of SAC.

I feel it's also worth noting that I didn't invent these methods all by myself in a vacuum. Some of the practices I'm following here are based on decades worth of standard mixing practices in professional theatre, most of which I can not take any credit for creating or coming up with myself. I simply took standard theatre mixing practices and applied them to the SAC user interface and way of working. Several of my ideas here have also been implemented from reading and discussing these topics on the SAC User's Forum or from taking suggestions from the forum and adopting them to the needs for my work.

Basic Layout of the SAC Channels:

Before I discuss my use of Scenes I probably have to explain how and why I set up channel orders in SAC and the thought process behind these methods. My channel orders in the F-Mixer are set up in a way to allow me to choose which Input or Output channels in SAC will appear on a fader of the control surface used to mix the show.

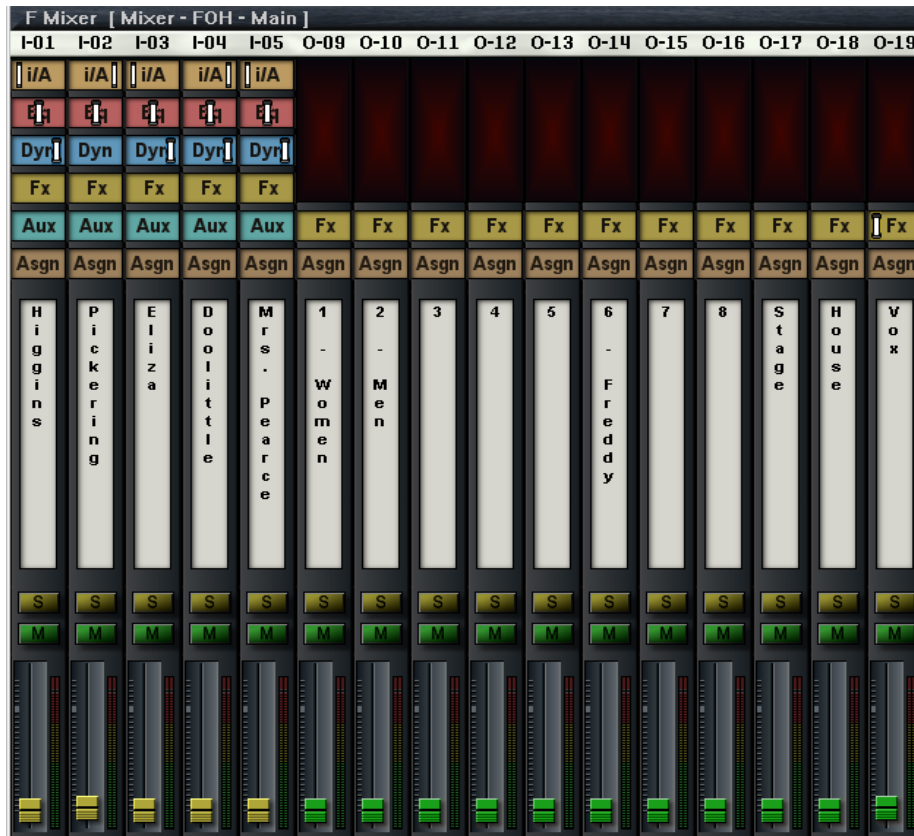


In the above view of the F-Mixer window you can see how I've arranged the first 16 channel strips for a recent show. These 16 channel strips are then all that is used by the mixer/operator of the show to run the show. I always turn off all of the Hardware Link options (under the Mixer Menu – Navigation Links). By doing this, the operator will have 16 faders that he or she can manipulate that will always be the first 16 channel strips on any given mixer. Keep in mind that you can place the channels in a different order on each mixer. So I can give the operator the ability to control 16 different channel strips on each of SAC's 25 separate mixers. I do put this ability to use and I will demonstrate how later in this document.

You'll see that the first 5 strips are Input channels. These are the principle character's wireless microphones channels. Since they are used fairly often during the show these faders will never change what they do during the show.

The next 8 strips are Outputs 09 – 16. These outputs are used in Group Latch Mode. These faders are reassigned to multiple tasks during the show via Scenes. These become the replacement for DCA or VCA subgroups typical on mid to high end live sound mixing

consoles. In the above screen shot, the faders are being used to control 5 individual wireless microphones. However in the very next scene recall those faders are almost completely reassigned to different tasks.



In this scene Output 9 & 10 are used to bring up all the Womens' and Mens' wireless mics respectively. So the operator brought up a single fader or pair of faders to bring up all the chorus that were wearing wireless microphones. As it turned out we only ended up using 6 Group Latch Outputs on this production and Output 14 was always assigned to Freddy, so we could have simply moved his Input fader over to the 6th channel strip/slot in the F-Mixer. But we didn't know that when the technical rehearsals started which is why the flexibility was available to use, even though we ended up not making use of it. In some shows I often run out of Group Latches and have to come up with some creative ways to make the 6 to 8 faders that we reassign during the show work. It all depends on the needs and complexity of the show.

The last 3 channel slots you'll see are Outputs 17 – 19. These are also fixed and serve a single purpose during the show. They are used as Master Orchestra Levels to the Stage Monitors, Master Orchestra Levels to the Main Sound System and Master Vocal Levels to the Main Sound System. The two faders for the Master Orchestra levels are set to work in Group Latch Mode. (I'll go into some detail about how I manage my orchestra routing later in this document.) The Master Vocal Fader operated like a traditional Submaster and all Wireless Mics were first mixed down to Output 19, and then they were routed to the Main Outputs for the sound system. This allows the operator to have a single fader that would bring up and down all the wireless mics.

Recording the Scenes:

- **General Notes Regarding Scenes:**

I think first with regards to writing scenes in SAC I should cover a couple of basic ideas that are somewhat unique to the way scenes work in SAC.

First, I think the most important concept to keep track of when working with scenes within SAC is to try to narrow down the amount of data that is recalled by each scene to only the parameters that need to be changed during the course of the show. This can be somewhat confusing for some users that may be used to some of the more popular hardware digital mixing consoles, since many of them take the approach of saving the current state of every setting in the console (or almost all settings) and then upon recall you may recall safe some of the settings for some or all channels so that when you recall a scene some parameters won't be recalled. SAC works best approached in the opposite manner. Rather than recalling every setting except those that are recall safed, it is easier in SAC to write a scene that will only target the exact parameters on the specific channels you wish change from one scene to the next.

Secondly, while it is best to select which channels and parameters of those channels you wish to have recalled by a scene during the creation of the scene, there is no reason you can not save a scene that targets certain channels and parameters at one point in time and then at a later point in time change which channels and parameters are recalled by that scene. *(Note: This assumes that you have the latest build of SAC, although this functionality has been in SAC for some time, early builds of SAC may not have all the functionality I will cover within this document.)*

When you make changes or modify a scene (this is after you have initially created the scenes, so I'm jumping ahead a bit here), there are three basic ways you can do so:

1. You can change which channels and parameters are recalled within a scene, without updating any of the data contained within that scene. Note, that when you do this, the data that will be recalled will be the settings from when the scene was originally created.
2. You can update the data contained within the scene (the settings of the parameters), while not changing the selected channels. This allow you to update the settings of all the selected channels that are part of a scene while not changing which channels are selected within that scene. You'll see why this is very helpful later in this tutorial.
3. Or you can update both the selected channels and parameters as well as updating the settings stored in the scene for those channels. Essentially this is completely overwriting the existing scene with all new data. The only difference between this and creating an entirely new scene is that you don't have to create a new name for the scene.

- **Step 1: Creating Selected Channels**

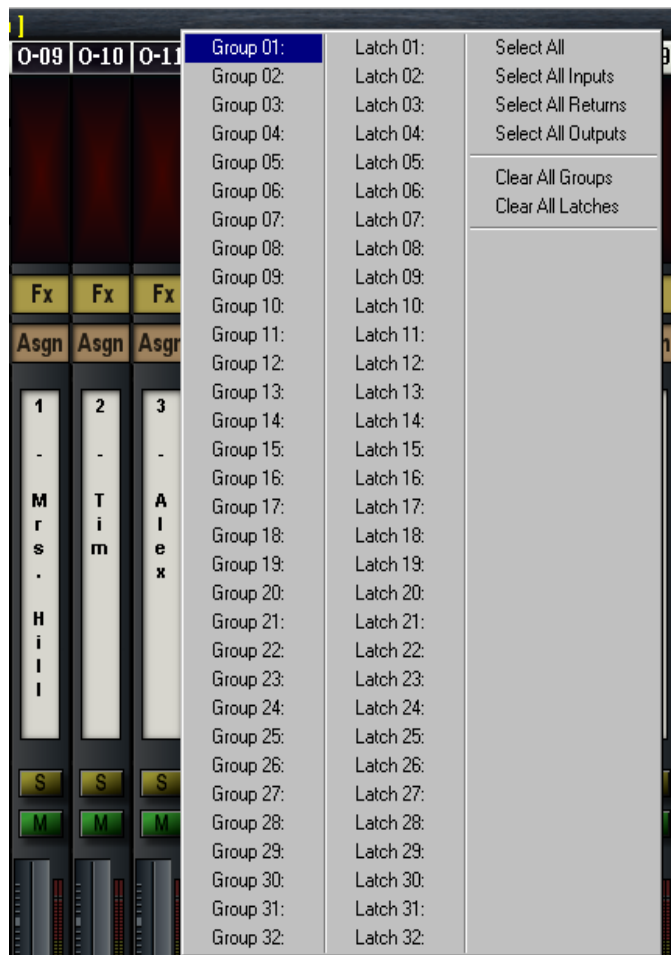
The first thing I almost always do when I'm ready to start writing scenes is to make it easy to select the channels I'll need to change during the course of a show via Scene control. I do this so that when I am working during rehearsals and I need to create a scene I do not need to take a lot of time to select channels (possibly across multiple mixers even) and then create a new scene. Using one of the two techniques below, I can select the channels I'll need most often fairly quickly and then create a new scene. There are two ways to do this and often I will set up both methods just so I have them at the ready.

1. Method #1 – Set up temporary channel groups:

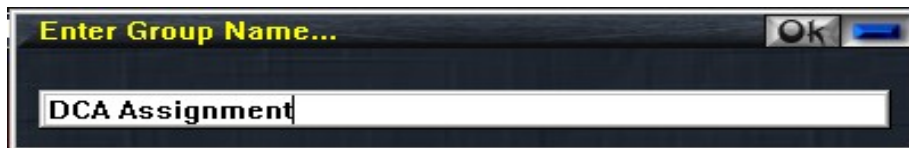


So for my work, the channels I am most often going to be creating scenes for are the Group Latch Outputs that I use like DCA Groups, and the Wireless Mic Input channels that will be assigned to those Group Latch Outputs over the course of the show. So above I have selected all the Group Latch Outputs (Outputs 9 – 16) and Wireless Mic Inputs (Inputs 6 – 17) that will be addressed via the scene recalls over the course of the show.

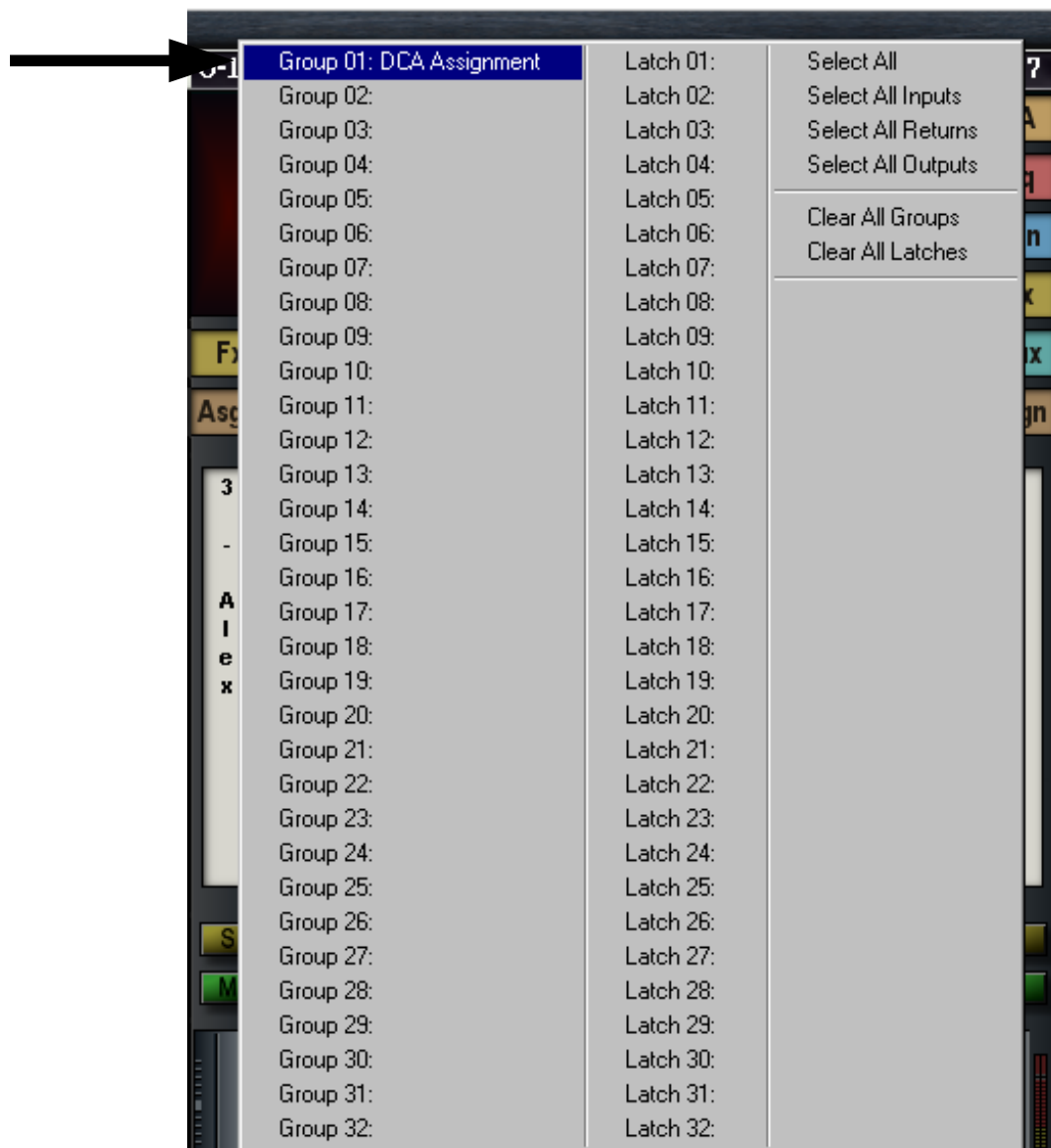
Next I'll create a temporary group in SAC for these selected channels by right clicking on the title bar of the F Mixer window. The Groups/Latches dialog will pop up.



And by holding down Ctrl and Clicking on any of the Groups in the left hand column I can create a new Channel Temporary Group. I will then be prompted to name this new group.



In this example I have given Group 01 the name DCA Assignment so I will know the purpose of this temporary group. Now that I have created this temporary group, I can now easily recall this channel selection by right clicking on the title bar of the F Mixer and then clicking on Group 01: DCA Assignment.



And this way I will instantly have all my Outputs and Inputs needed for DCA Assignments selected.

O-09	O-10	O-11	O-12	O-13	O-14	O-15	O-16	O-17	O-18	O-19	I-06	I-07	I-08	I-09	I-10	I-11	I-12	I-13	I-14	I-15	I-16	I-17
											i/A	i/A	i/A	i/A	i/A	i/A	i/A	i/A	i/A	i/A	i/A	i/A
											Dyn	Dyn	Dyn	Dyn	Dyn	Dyn	Dyn	Dyn	Dyn	Dyn	Dyn	Dyn
											Fx	Fx	Fx	Fx	Fx	Fx	Fx	Fx	Fx	Fx	Fx	Fx
											Fx	Fx	Fx	Fx	Fx	Fx	Fx	Fx	Fx	Fx	Fx	Fx
											Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux
											Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux
Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn
Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn
1 Mrs. Hill	2 Tim	3 Alex	4	5 Trey	6 Freddy	7	8	Stage	House	Vox	Carolyn	Ginny	Leslie	Liz	Lydia	Alex	Chris	Tim	Trey	Freddy	Mrs. Hill	Mrs. Higgins
S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M

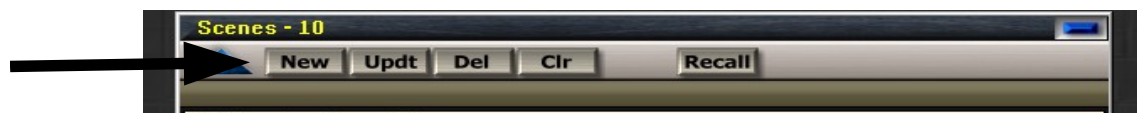
2. Method #2 – Creating a Scene that will select channels for you

As odd as it may sound, one way to speed up the creating of scenes can be to create scenes. I guess you could refer to these as helper scenes or shortcut scenes. These likely won't actually be used during the performance itself, but they are used to perform functions quickly that might otherwise take several steps with the mouse and/or keyboard.

So typically I would also create a DCA Assignment Scene as well. Basically all this scene is going to do is select specific channels for me but not recall any data. So to do this, I will select my Group Latch Outputs and Wireless Mic Inputs as before.

O-09	O-10	O-11	O-12	O-13	O-14	O-15	O-16	O-17	O-18	O-19	I-06	I-07	I-08	I-09	I-10	I-11	I-12	I-13	I-14	I-15	I-16	I-17
											i/A	i/A	i/A	i/A	i/A	i/A	i/A	i/A	i/A	i/A	i/A	i/A
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											Dyn	Dyn	Dyn	Dyn	Dyn	Dyn	Dyn	Dyn	Dyn	Dyn	Dyn	Dyn
											Fx	Fx	Fx	Fx	Fx	Fx	Fx	Fx	Fx	Fx	Fx	Fx
											Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux
											Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn	Asgn
1 Mrs. Hill	2 Tim	3 Alex	4	5 Trey	6 Freddy	7	8	Stage	House	Vox	Carolyn	Ginny	Leslie	Liz	Lydia	Alex	Chris	Tim	Trey	Freddy	Mrs. Hill	Mrs. Higgins
S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
[meter]	[meter]	[meter]	[meter]	[meter]	[meter]	[meter]	[meter]	[meter]	[meter]	[meter]	[meter]	[meter]	[meter]	[meter]	[meter]	[meter]	[meter]	[meter]	[meter]	[meter]	[meter]	[meter]

Then I go to the SAC Scenes Window and click on New.

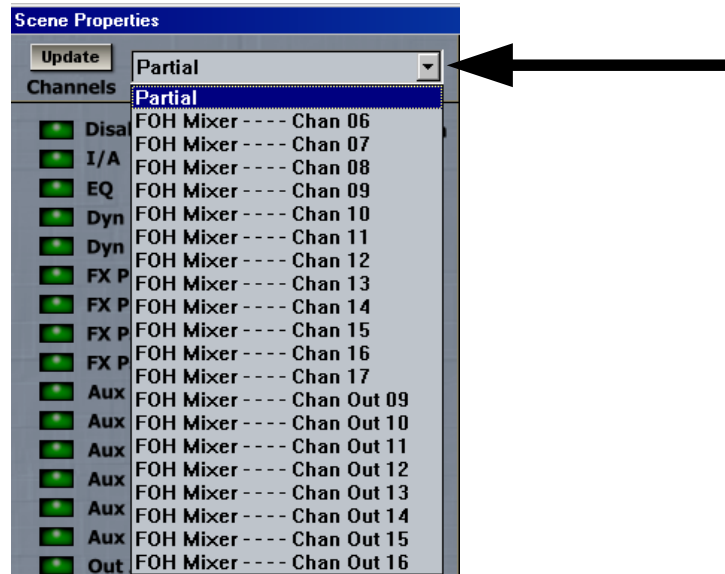


SAC prompts me to give the new scene a name.

(keep in mind that all Scene names must be unique, you can not have two scenes with the same name because SAC creates individual files for each Scene that are stored with your Mix file)



Once I have typed in the new scene name and hit enter or clicked on the OK button, I am presented with the SAC Scene Properties window. In this window I can double check which Input and Output channels are selected to be part of this scene by clicking on the drop down arrow next to the display labeled Partial.



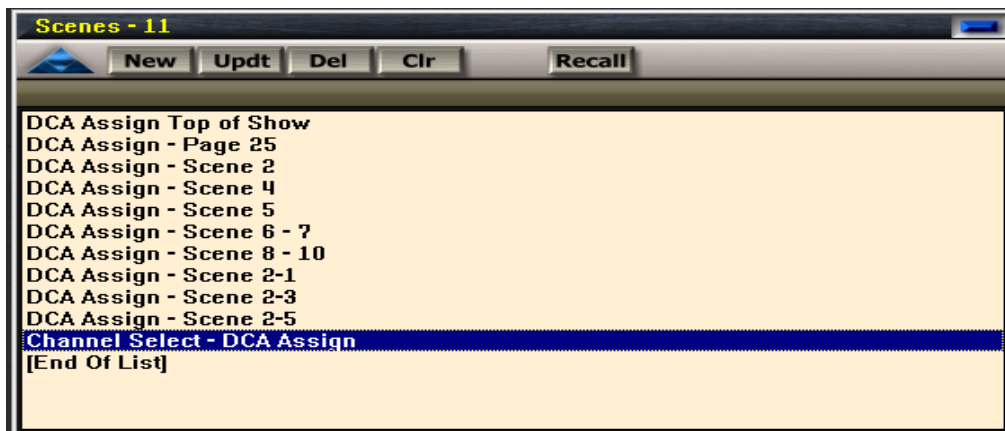
Note that if this box displays “All”, then no channels were selected when you pressed the New Scene button. This means that basically all channels on all mixers are selected. Typically I avoid creating any scenes that address “All” channels because unless you really wish to recall every setting on all 25 Mixers within SAC it can cause a lot of issues.

If you made a mistake and forgot to select a channel or you selected too many channels, you can always go back to the F Mixer window, even while this Scene Properties dialog box is on the screen and then select additional channels or deselect channels and then click the Update button in the very top left hand corner of the Scene Properties window. After you have done that, you can click on the drop down button again to double check you have the correct channels selected. The channel selections will also still be visible in the F Mixer window as well.

Next I will select what data is to be recalled.



In this example, I have only selected the “Select Partial Chans” Option. What this lets me do then is to use a Scene Recall in SAC that does nothing but select channels for me in the F Mixer window. No channel data will be recalled.



You can see the new Scene that I created now listed at the bottom of the Scenes list.

So when I Recall this scene, I can quickly go from this state in SAC:



To This:

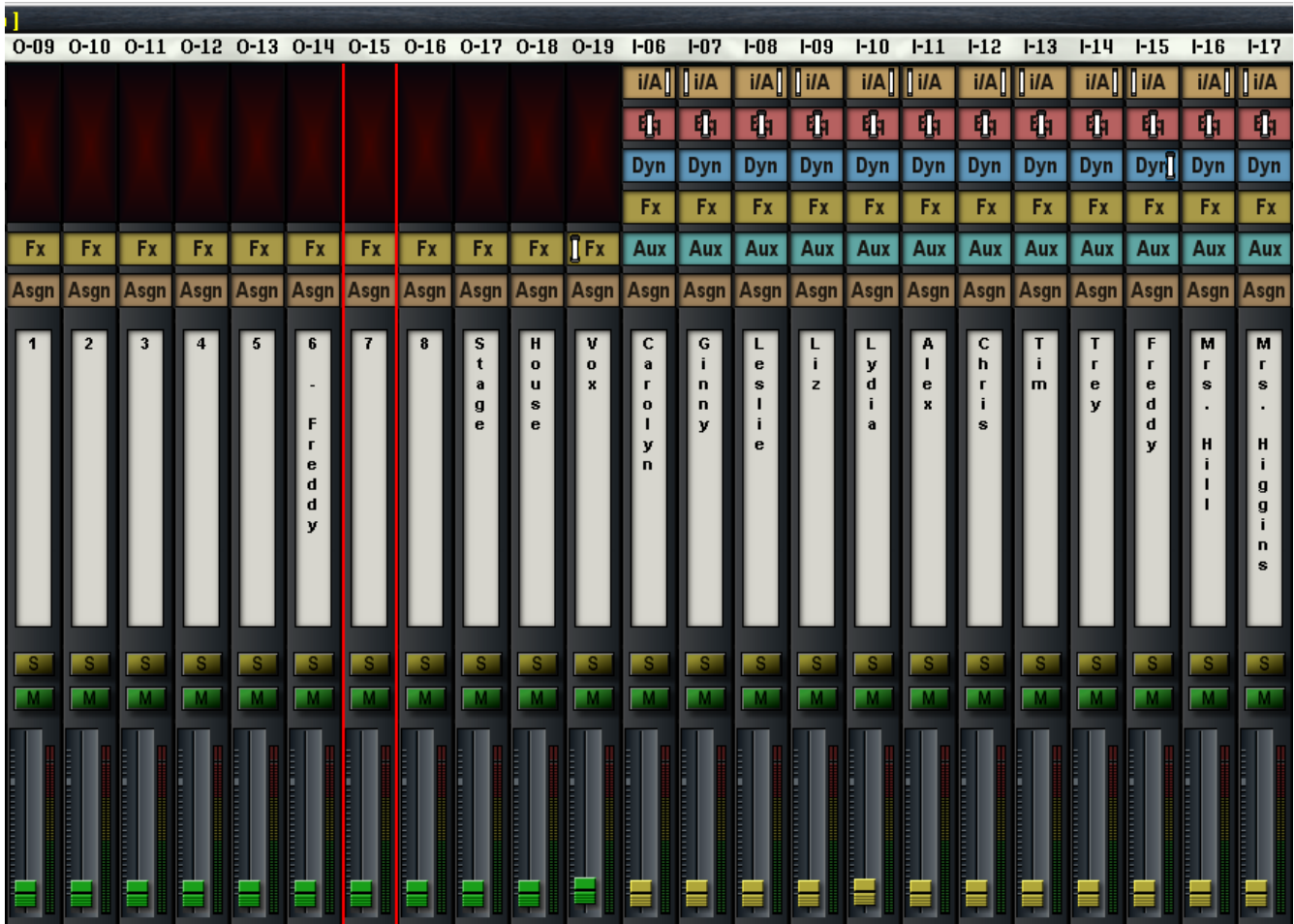


- **Step 2: Assigning Inputs to Group Latches**

So now that I have a fast and easy way to select all the channels I wish to control in my DCA Assignment Scenes I am ready to start creating the DCA/Fader Assignments and saving them into new scenes.

For the sake of this tutorial I am going to show I create a scene where each of my Group Latch faders controls a single wireless mic channel and a scene where I have 2 Group Latches that will bring up all the chorus mics, one fader each for female and male chorus members. This is a pretty typical use of the Group Latch behavior for me on the shows I work on.

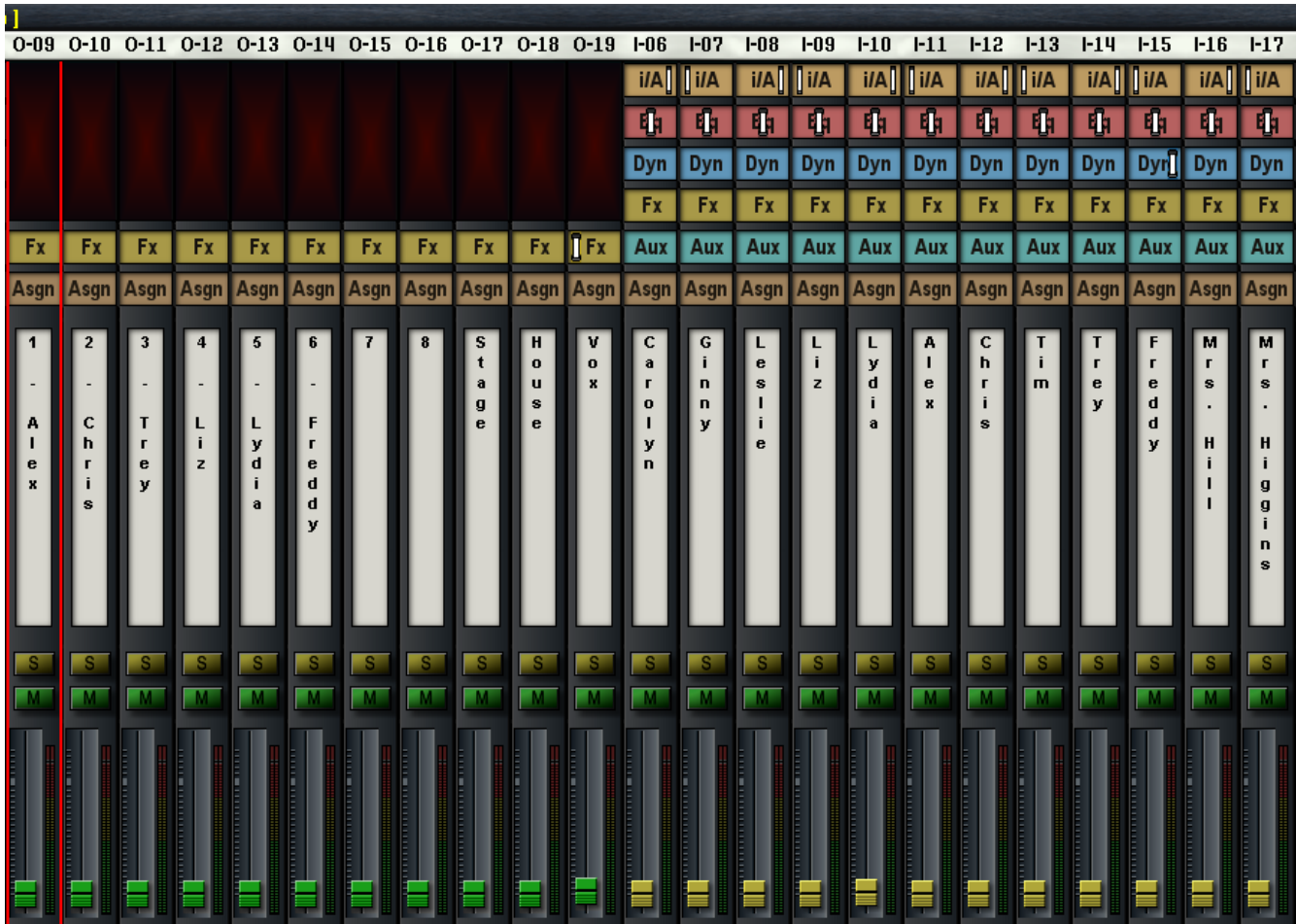
Below is my default fader layout, which has most of the faders assigned to no wireless mics at all.



Just so you can have a better visual reference, here is a screen shot of the Z Mixer view showing the output assignments for Inputs 06 – 17. Note that they are all assigned only to Output 19 at the moment. Remember that Output 19 is being used a submaster for all wireless mic levels. So all wireless mics will always be assigned to Output 19 for the entire show.



The next step would be to rename the Group Latch channels, to reflect which wireless mic I want assigned to each fader, as such:



Then I will go back to the wireless mic inputs and assign the correct inputs to the corresponding Group Latch. At this point, it's important to note that I also double check to make sure that all my faders are at -inf. The reason I want to double check this is so that faders on the Group Latch outputs will match the input fader. I don't want to move the Group Latch fader and have the input fader either jump to it's maximum level fairly quickly or hardly move at all. Either of those can happen if you are not certain that the faders are at identical levels when you assign an input to a group latch.



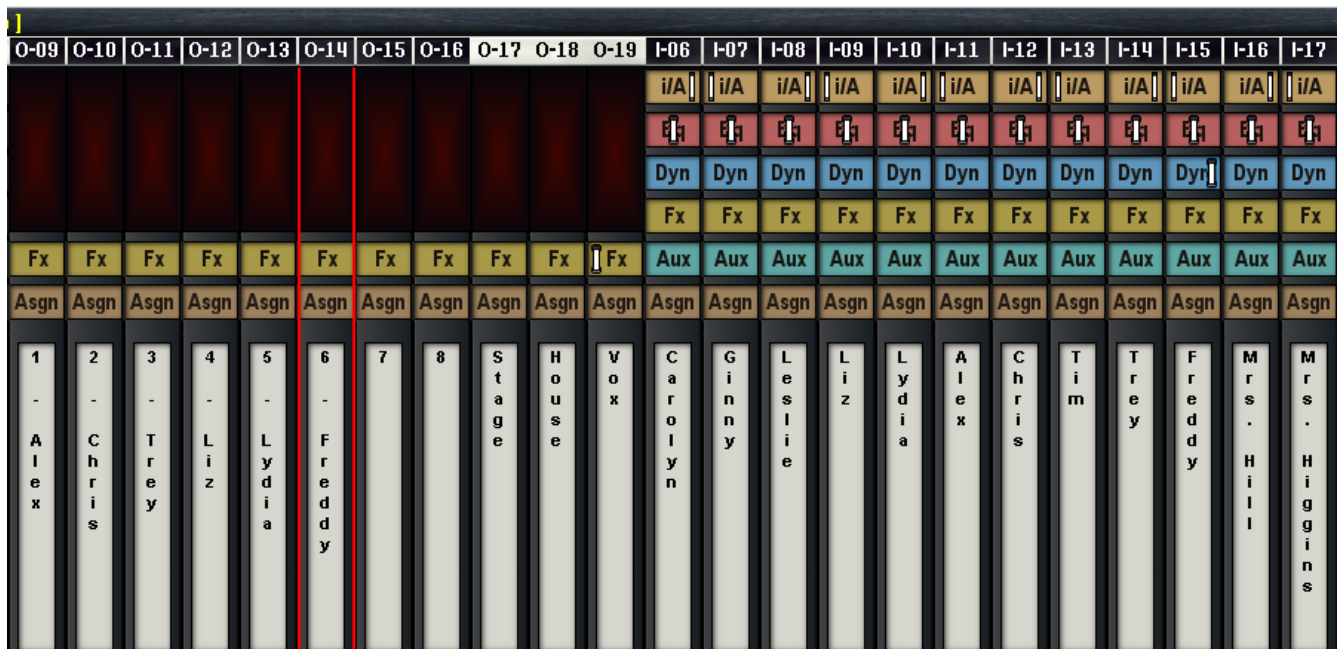
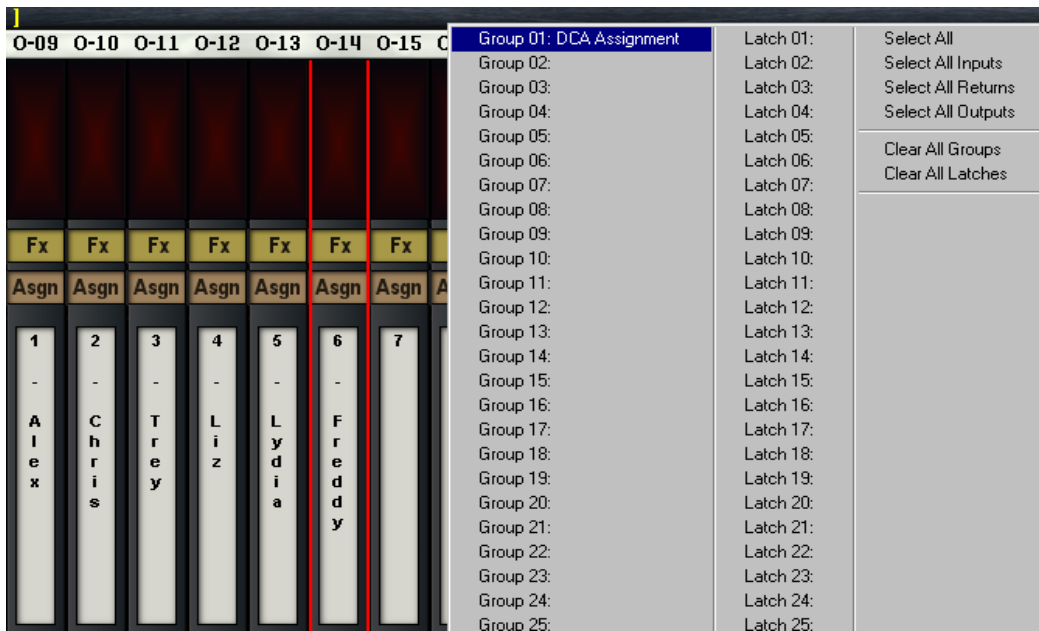
With this done, the Group Latch Faders will now control the corresponding input fader.



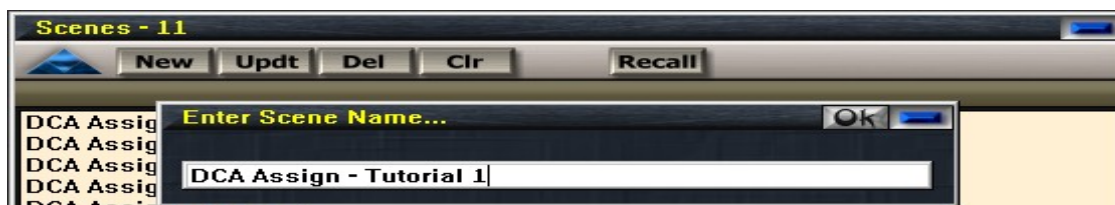
Typically I will just quickly move each fader to make sure that each latch is correct and that the faders are all at the same levels. Once I have done this, I make sure all my faders are down, and create the scene.

(Keep in mind that since the group latch faders are controlled via my control surface, it's a simple matter of bringing each fader up and down quickly on the control surface to check that all the settings are correct.)

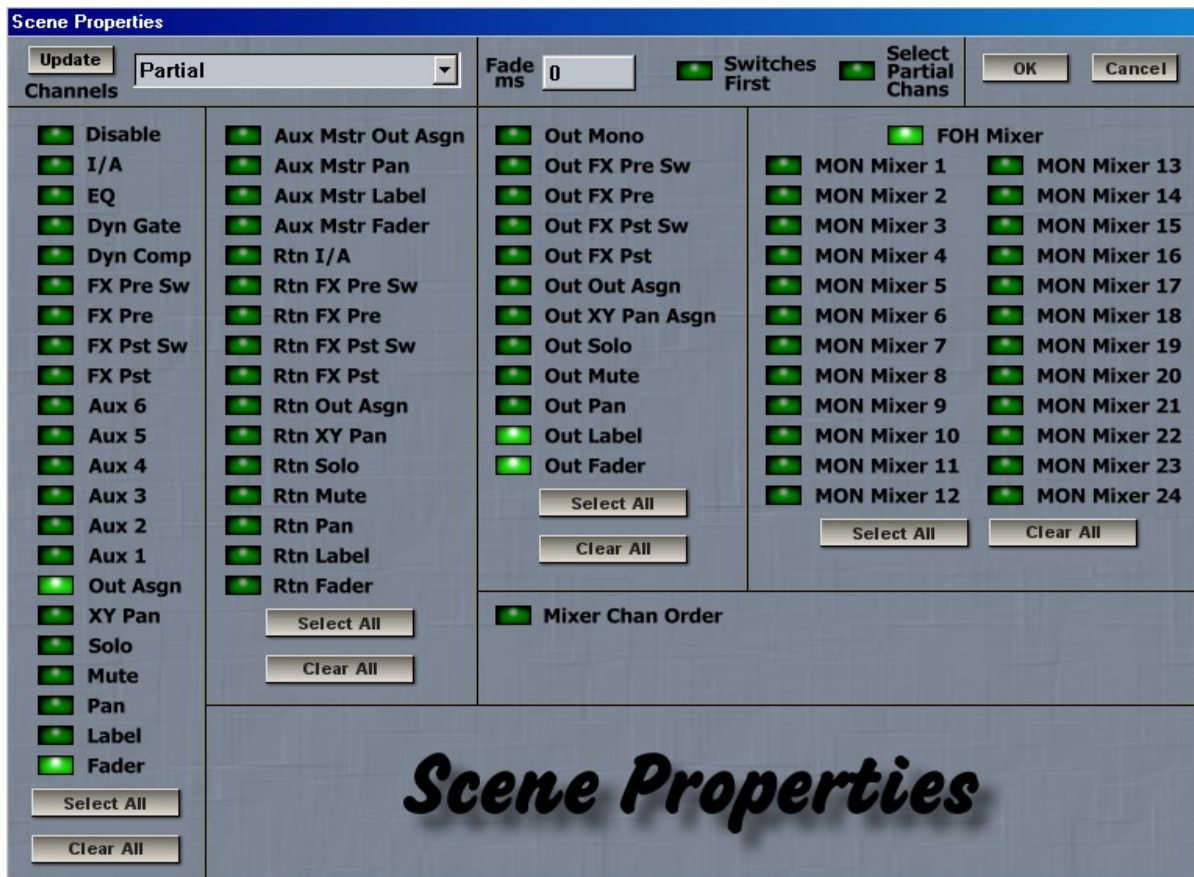
To write the new scene, I use one of my two methods to select the appropriate channel strips in SAC. For this example, I am going to use the temporary latch groups.



With the appropriate channels selected, I create a new scene and give it a name.



Now I select the appropriate channel parameters that I wish this scene to recall.

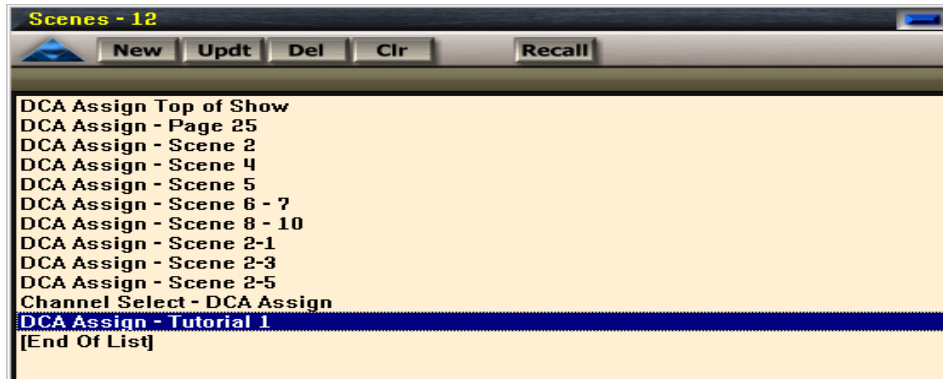


I think it's worth a brief explanation of why I have chosen each of these parameters.

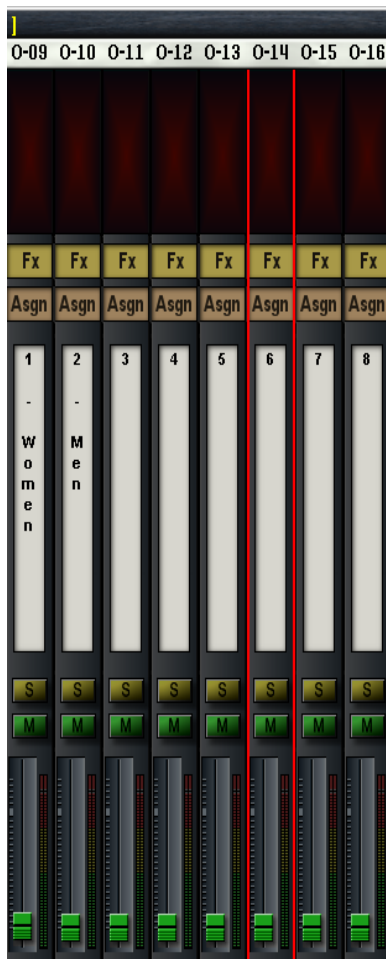
1. In the far left column are the parameters that can be recalled on Inputs. I have selected the Out Assgn parameters because that is the parameter that tells each Wireless Mic Input channel, which Group Latch/DCA fader it is assigned to.
2. I want to recall the input fader level, so that if a scene is recalled while any of the input faders for the wireless mics are currently turned up, this will immediately bring that input fader all the way down. This serves two purposes, first, I want to make sure all the faders are at -inf when the scene is recalled so that Group Latch faders are at the same level as the input faders, and second the board op doesn't have physical faders for the input faders, only the Group Latch outputs, so I don't want them to have accidentally left up a channel which might go unnoticed if the input fader is no longer latched to one of the Group Latch Outputs.
3. The second column is for parameters that are part of the Auxiliary Master Outputs and Auxiliary Return channels. Since I'm not attempting to recall any of those functions I simple leave them all unselected.
4. The third column is for selecting functions that are part of the Output Chanel. Here I have selected Out Label, so that as I recall each Scene, the labels on the Group Latch Outputs will change and show an appropriate label for the function they are serving within that Scene.

5. I selected Out Fader for the same reasons I want to recall the input faders. So that Group Latch and Input faders are in identical positions of -inf and so that no groups are accidentally left up when the scene is recalled.
6. Lastly the far right hand section allows you to recall parameters on specific mixers within SAC. In this case I'm only recalling this data on the FOH Console, so I select FOH Mixer and leave the rest unassigned.

Once I have all the correct parameters selected, I can click OK and my new scene is created. You should also notice that SAC has unselected the channels in the F Mixer for you automatically.



Now I can create my next scene, where I want all the chorus assigned to just two Group Latch faders. I go back and relabel my Group Latch Outputs and adjust my Output Assignments on the Inputs.



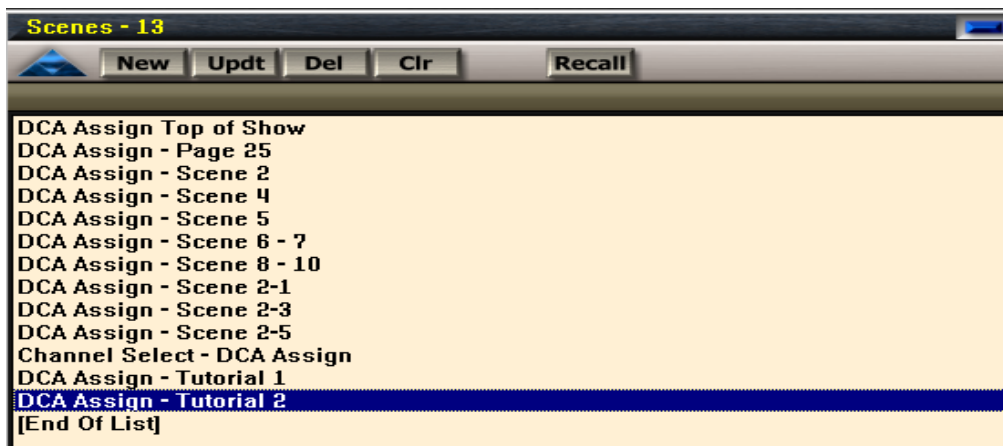
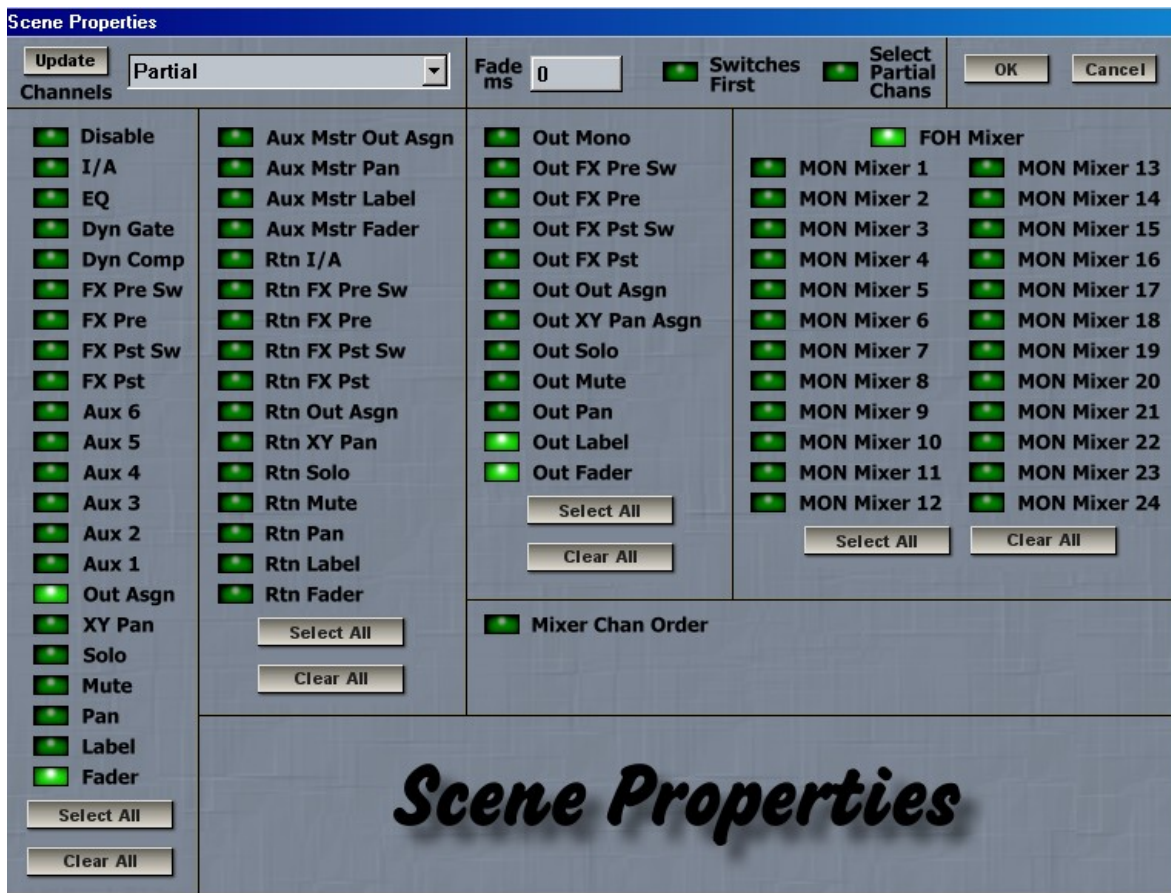
Note that Wireless Mics 16 and 17 were not part of the Chorus for this show.

Now we can bring up just two Group Latch Output faders to control 10 channels of Wireless Mics.



Next I write a new scene that will allow these setting to be recalled during a performance.





Now that I have these two scenes written, I can quickly and easily recall these scenes during a performance and reassign the Group Latch Outputs to different combinations of hardware faders to control several channels of wireless microphones.

As you can see in these screen shots, this particular show had 10 different Group Latch assignments over the course of a performance. This example is actually a fairly simple show even though there were 17 channels of wireless used in the show. Some shows can be much more complex as in some productions actors may swap between chorus roles and smaller

featured characters several times during the course of a performance. In shows like that, there can be a lot of Group Latch reassignments during the show.

Mixing the Orchestra:

In order to give my mixer the control they will need during the performance, I typically set up two separate mixes of the orchestra microphones. The first is a mix that is created primarily so the actors on stage can hear the music. The second mix is sent to the FOH sound system for the audience. Since there is typically a fair amount of bleed from the on stage monitors into the house, what the audience actually hears is typically some combination of the live orchestra sound, bleed from stage monitors and the FOH mix. Obviously these will all vary greatly depending on the type and style of the show, where the orchestra is located, size of the house and many other factors. So by creating a separate mix for the stage monitors and FOH, I can tailor each to fit the needs at hand as much as possible. For example an onstage monitor mix might have a piano or keyboard mixed in a bit louder than you would want for the audience to hear, but this can help actors find their pitches better in some instances.

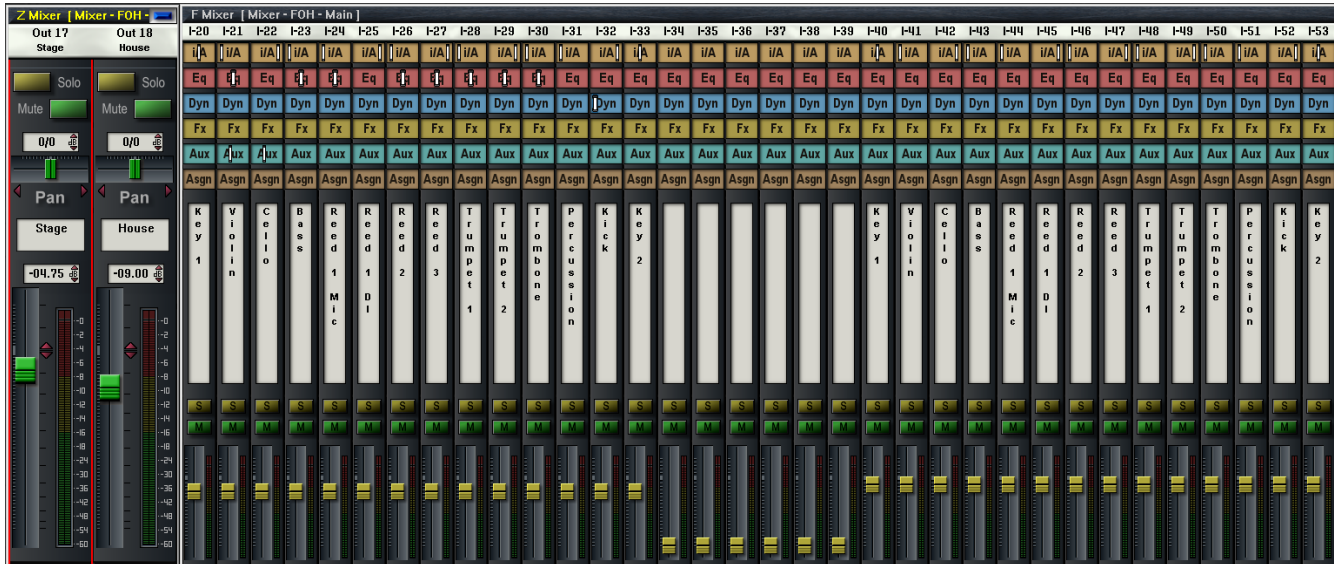
It's also important that I keep the number of controls my mixer needs to manipulate during the course of a performance to a minimum. Not only do I do this because we don't really have all that many faders available on the control surface, but also because just maintaining a proper mix of the wireless mics from performance to performance can be a big enough challenge that if I can do something to make it easier for my operator to mix the show, I will typically do so.

So that leads me to how I accomplish this within the SAC mixing environment. And the best way I have come up with to achieve all that I want to be able to do is to use up two sets of Input channels in SAC for the Orchestral Mics. So each mic in the Orchestra Pit is assigned to two separate inputs in SAC. The first set of inputs are used for my FOH mix and the Second Set of Inputs are for the Stage Monitor Mix. For Example:



As you may have seen in some of the previous screen shots, I have Group Latch faders that the board op will actually control the over all levels of the orchestra with during the performance.

Here is a screen shot showing a Z Mixer view of the Group Latch Outputs and the Orchestra Mic Inputs.

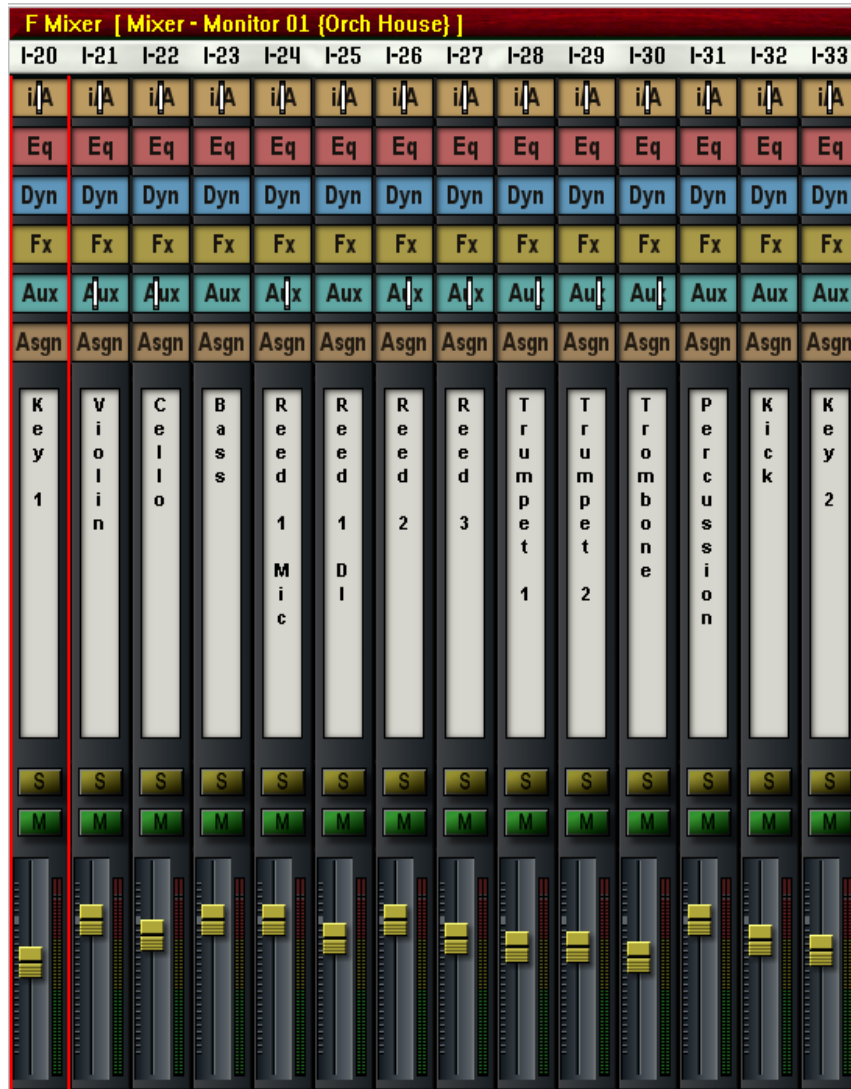


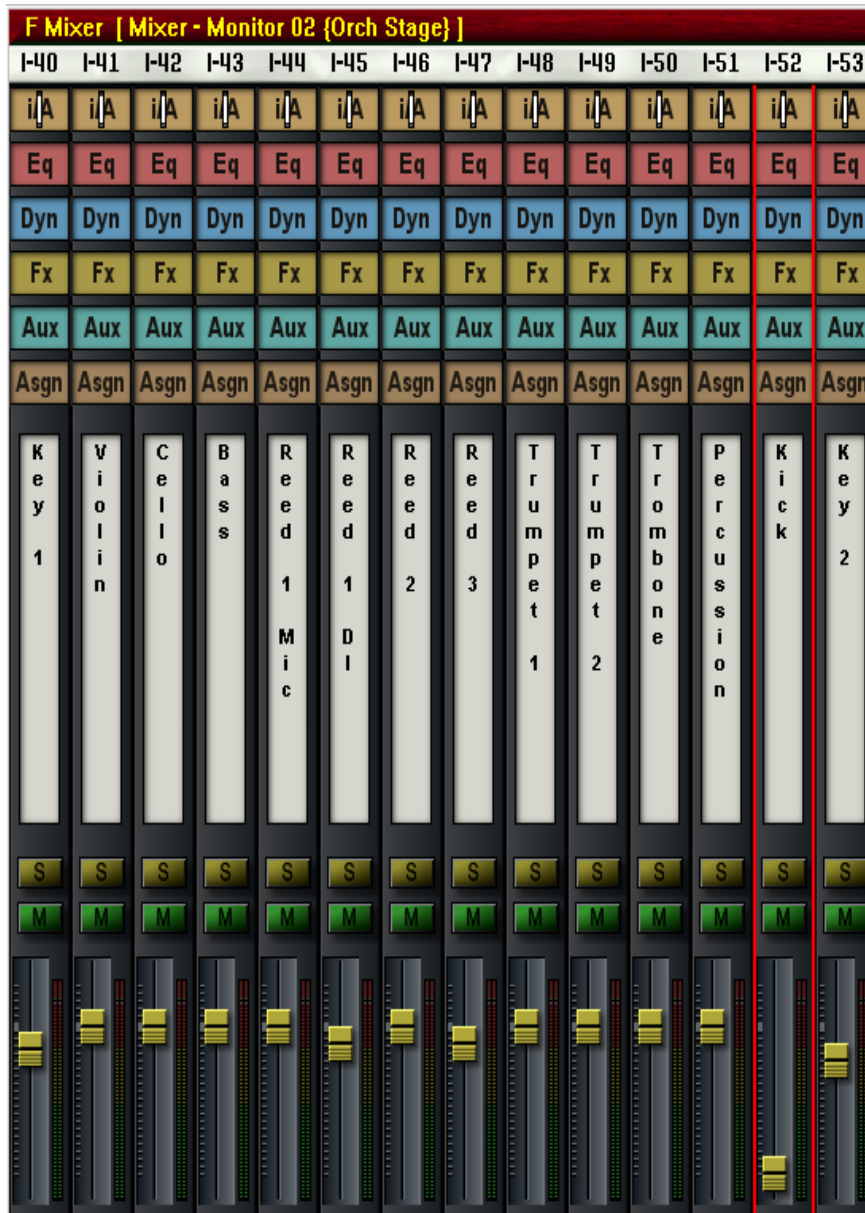
Note that again, I am using a 1 to 1 relationship here between the levels of Group Latch Output faders and the Orchestra Mic Input faders.

Of course an orchestra mix where all the inputs are brought up to the exact same level would sound fairly horrendous in most cases. So in order to actually balance the levels for each mix, I use the Monitor Mixers in SAC essentially like a large Matrix Mixer. I do any EQ and Dynamics processing on the FOH console inputs. The show in this example was fairly simple from that standpoint. The orchestra for this show was on a platform upstage, so there was really very little in terms of stage monitor feeds for this show.

Typically I use Monitor Mixer #1 for my FOH Orchestral Mix and Monitor Mixer #2 for my Orchestra to Stage Monitors Mix. The first thing I'll do is to change the channel order on Monitor Mixer #1 and #2. The reason I do this, is so that my board op can use the faders on the control surface to adjust the balance between orchestra mics quickly and easily by jumping to one of the two Monitor Mixers. Sometimes I'll have more than 16 inputs from the orchestra so I will occasionally set up some Group Latch Outputs on the Monitor Mixers to consolidate the channels down to 16 faders for my operator. However I find the need to do that fairly rare, as typically my board op will only need to tweak the orchestra balance when something isn't working correctly or when we have substitute musicians in the orchestra pit. When we do have subs we typically know about it in advance and so we can plan for that, and it's as simple as making an adjustment on the input attenuators of the FOH console orchestra mic inputs. Occasionally we also just tweak the gain on the preamps themselves.

Here is a screen shot of Monitor Mixer #1 and #2 from this sample show:



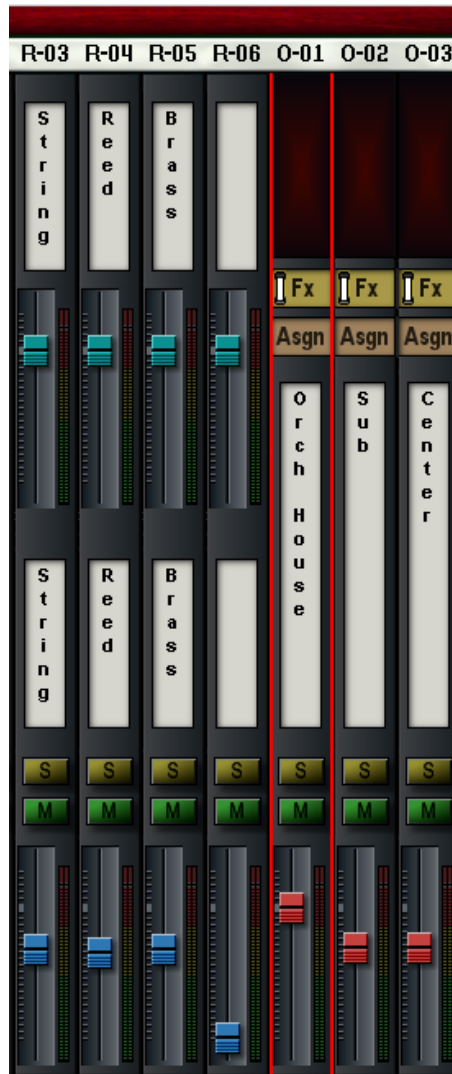


Note that the Input Taps on these two monitor consoles are set to post fader from the FOH Mixer. This way, all the volume levels are controlled on the FOH mixer, and hence can be controlled by my board operator during the show, using the control surface. But the balance between instruments is done on Monitor Mixer #1 and #2. Also I typically do all effects processing such as reverbs on the Monitor Consoles. Usually reverbs are only used on the FOH Orchestra Mix.



Obviously routing each orchestra mic to appropriate system outputs is then also done on each Monitor Mixer.

Example FOH Outputs:



Example Stage Monitor Outputs:

