

# Waves MultiRack SoundGrid V9

Outboard Processing Host for Your DiGiCo Console



## Contents

The Rack in Detail .....	3
Adding Plugins to a Rack .....	6
Rack View: Controlling Your Plug-ins .....	7
WaveSystem Toolbar Buttons .....	9
Inserting a Rack into a channel .....	10
Group Properties: Organization & Latency Alignment .....	14
Snapshot Pane: Automating Your Racks .....	17
Global Paste and Recall Safe modes .....	19
Saving in MultiRack SoundGrid .....	22
Overview Window: .....	24
Viewing the Status of All of Your Racks .....	24
Show Mode .....	25
Automatic Recovery .....	26
Rescan Present Licenses .....	26
Restructuring a DiGiCo session to 96 kHz .....	27
System Monitor Window .....	27
MultiRack SoundGrid Keyboard Shortcuts .....	28

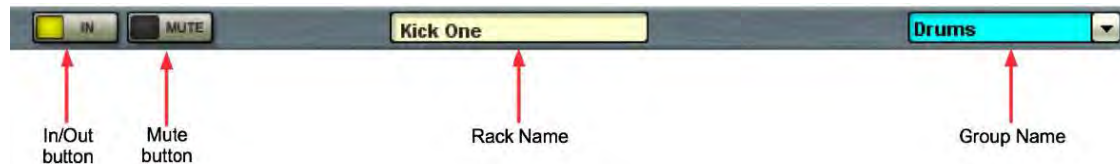
For information about upgrading software, setup and hardware connections, please refer to our “**DiGiCo Full Install**” manual:

<http://www.waves.com/manuals/digico/digico-full-install.pdf>

# The Rack in Detail

## The Rack Control Strip

At the top of each Rack there is a control strip allowing you to control the Rack and assign it to processing groups. The control strip has the following windows and buttons:



### In/Out

Disables the Rack's plug-ins and passes the signal directly from Rack **input** to Rack **output**. Typically used for “before and after” comparison or to **bypass processing**.

### Mute

Silences the Rack, but doesn't remove it from CPU processing. Muting is performed on the Rack's input to allow reverb tails and delay taps to fade gracefully.

### Rack Name

Displays the Rack's name given by matching I/O Port. Touch **Setup > Audio I/O**. Select Waves in the left column, all available I/O ports will show on the right, rename a waves port to change the name of the matching rack.

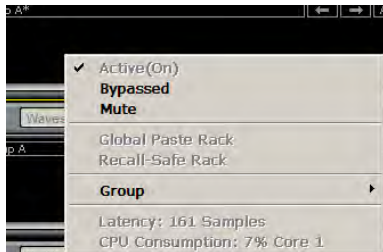
### Group Name

(“Drums” in this example)

Refers to a latency alignment group to which the Rack may have been assigned. Use the pull-down menu to assign the Rack to another latency group.

## Selecting Racks and Using Keystroke Commands:

Using a mouse, right click on the top part of a selected Rack and you will see a pull-down menu that offers several functions:



### Active(On)

The Rack is always active.

### Bypass

Disables the Rack's plug-in processing and passes the signal from the Rack input to the Rack output.

### Mute

Mutes the entire Rack but doesn't remove plug-ins from CPU.

### Global Paste Rack

Copies the Rack's parameters from the recalled Snapshot and pastes them into the selected Snapshots where "Global Paste" is selected in the Snapshot Pane. *For example, if your singer has a cold and you need to EQ the vocals differently, Global Paste allows you to change specific settings, then embed these parameter changes into all of the Snapshots you've made, rather than having to adjust each Snapshot separately.* The Global Paste function is discussed in detail in the "Snapshots" section of this manual.

### Recall Safe

Places the selected Rack or plug-in into a "safe" mode which protects it from Snapshot recalls. "Recalled Safe" racks or plug-ins are unaffected by all Snapshot recalls, even if a Snapshot has parameters that "should" be changed on Snapshot recall. This command is allowed only when "Recall Safe" Mode is selected in the Snapshots menu.

**Assign the Rack to a latency alignment group**

Presents a list of available latency alignment groups from which you can assign a latency group/s to a rack/s.

**Latency**

Displays the Rack's overall latency (accumulated inserted plug-in latencies)

**CPU Consumption**

Displays the Rack's CPU consumption (usage) on the SoundGrid Server and the core it runs on

**Input and Output Sections**



To the right of the Input Rail is the Input Audio Fader, with a range of  $\pm 18\text{dB}$ .

On the far right side of each Rack are the Output Rail and the Output Audio Fader. Rack audio input and output levels are stored within Snapshots.

## Adding Plugins to a Rack



To add a plug-in to a Rack, touch the “**plus**” (+) sign to the right of the Input Fader. Select a plug-in from the pull-down menu. An icon representing the plug-in will appear on the Rack, along with a new “**plus**” (+) sign that you can touch to add a new plug-in to the right of the existing one.

Signal flow within a Rack is always from left-to-right.

While in the Main view (or Rack view), you can always change the plug-in sequence within a Rack by grabbing a plug-in and dragging it to the desired location. Each plug-in icon has an “**In**” switch that bypasses the processor without disengaging it from the Rack. There is also a level meter on the icon that shows plug-in output level.

# Rack View: Controlling Your Plug-ins

Double touch a plug-in's icon to open its interface and enter MultiRack SoundGrid's Rack View.



Here you can adjust each plug-in parameter by selecting the parameter on screen and using the Touch-n-Turn knob or toggle to set the selected parameter. Some controls on selected plugins might appear too small for touch selection - please use Digico's keyboard with mouse for more precise operation. If you're already familiar with Waves plug-ins, this window will be very easy to use.

At the top of each plug-in window is a **WaveSystem Toolbar**, used to load, save, and compare processor settings. The layout of the **WaveSystem Toolbar** may vary from one plug-in to another. Use this toolbar to save plug-in or Rack-specific presets.

There are several quick ways to move from one plug-in to another within a Rack:


Use your keyboard's left and right arrows. This will move you through the list of plug-ins in the Rack, opening each plug-in interface as it is selected. *Note: If you have selected a parameter for editing on the current plug-in, this will not work, and may change the parameter value instead.*

Touch another plug-in icon. This will move you directly to the new plug-in and open its window.



# WaveSystem Toolbar Buttons



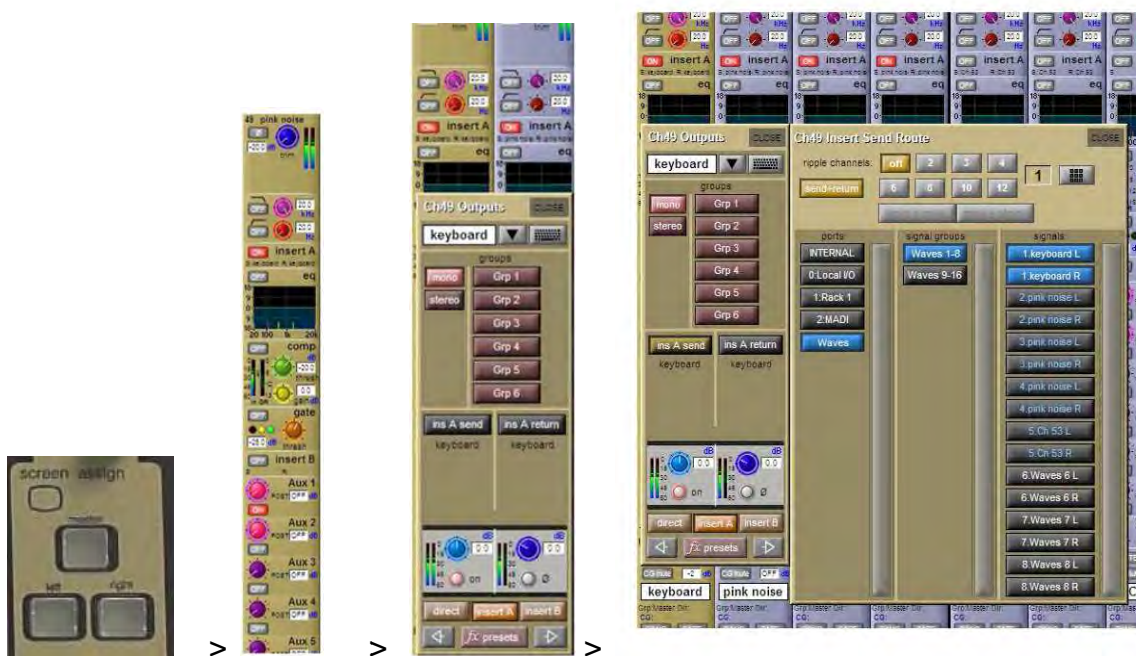
<b>Setup A (Setup B)</b>	Toggles between two setups, allowing you to compare different settings. This facilitates quick A/B comparisons and lets you determine which of two settings works best without having to save a preset. An asterisk (*) on the button indicates that changes have been made since a preset was loaded.
<b>A ► B; B ► A</b>	Copies the current settings to the second setup register. The direction of copying is from the currently shown setup to the one not shown.
<b>Load</b>	Here you load factory presets, user presets, and other preset files. Factory presets are permanent elements of the Load popup menu, created by Waves. They cannot be changed or deleted. You can turn the current settings of the plug-in you're using into a user preset by clicking the Save button. User presets can be changed and deleted, and the preset files you save through the toolbar will appear as Load menu presets until you close the preset file or close the plug-in. Some plug-ins have a very large library of presets, too large to display on the main pull-down menu. To load these library files or load presets from external files, select " <b>Open Preset File.</b> " Waves preset files are saved with an .XPS extension
<b>Save</b>	Save your plug-in presets here. You can save the current parameters as a user preset in the Preset menu, or create a new file. If you choose to save the preset as a new file — outside the plug-in's Preset menu — WaveSystem will ask you where you want to put it.
	Clicking on the Waves logo will bring up the "About This Plug-in" page, providing information about the plug-in.

# Inserting a Rack into a channel

Below are two generic examples of how you can use Waves plug-ins in your session, as an Insert and through an Aux.

## Example 1: Assigning Waves Plugins to a Channel Insert.

Open Channel view by pressing the console's **Screen Assign** Left or Right button.  
Select the desired channel, then touch **Insert** area to open sub-menu.  
Touch **Insert A** to open routing.



## Set Routing:

In the **Ports** column, choose **Waves**.  
Choose the desired **Signal Group**.  
Under **Signals**, choose the desired **Waves I/O**.

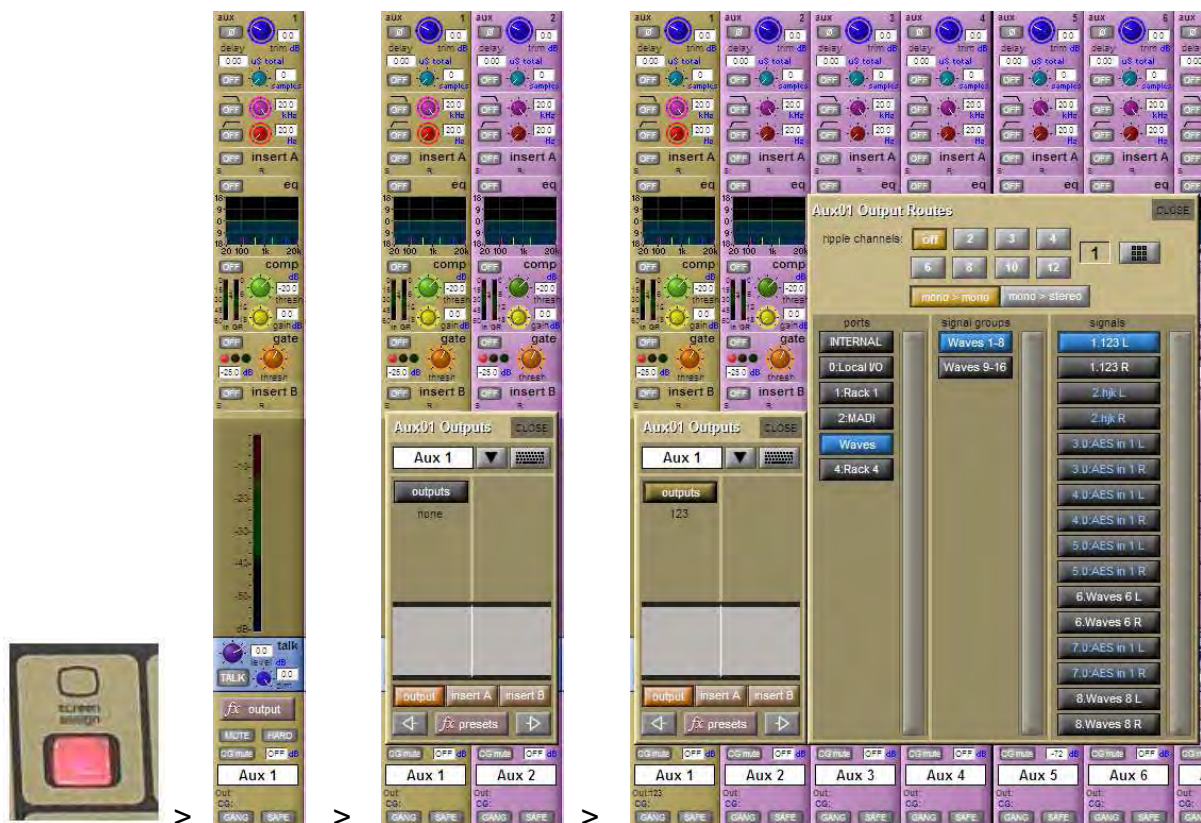
## Example 2: Setting Rack as Parallel FX

### a) FX SEND.

Open Master channel view by pressing the **"Screen Assign"** on the console's **center** section.

Select the desired **Master channel**. In the below example we will set **Mono Aux 1**.

Touch **Outputs** to open the routing panel.



### Set Routing:

In the **Ports** column, choose **Waves**.

Choose the desired **Signal Group**.

Under **Signals**, choose the desired **Waves I/O**.

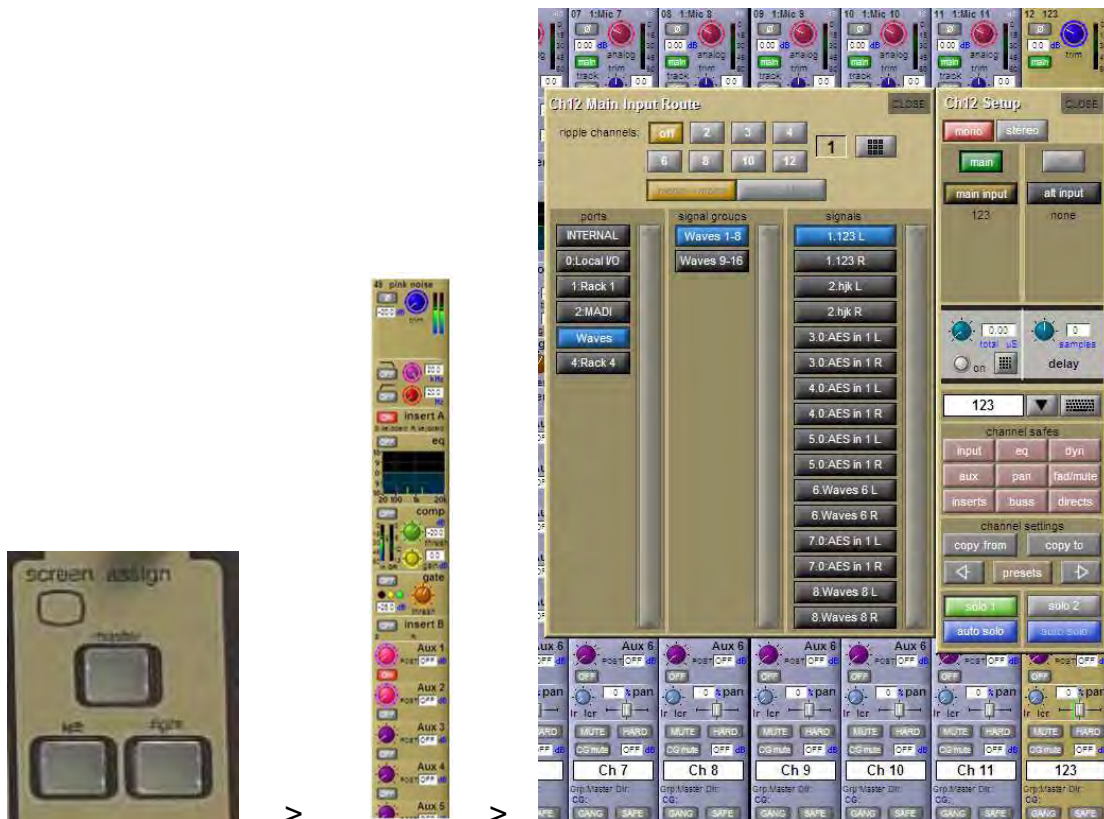
## b) FX RETURN

Open Channel view by pressing the console's **“Screen Assign”** Left or Right button.  
Select the desired input channel for **FX RETURN**, then touch **Input** area to open sub-menu.

In the **Ports** column, choose **Waves**.

Choose the desired **Signal Group**.

Under **Signals**, choose the desired **Waves I/O** (the same Rack that has been assigned for the **FX SEND**).





## Rack types: Stereo, Mono, Mono to Stereo.



Similar to outboard gear, the Waves Racks are configured to work in different modes:

**Stereo processing:** Stereo Channel Insert, Master Channel, Stereo Groups, Stereo In-Ears etc...

**Mono processing:** individual Mono Channels, Mono Aux EQ's etc...

**Mono to Stereo:** Reverbs, Delays etc...

Waves Racks types and names are set via the Console's routing:

Depending on type of input (mono or stereo) Waves will automatically load the correct Rack type.



For Mono to Stereo configuration (Reverb etc...) turn on **mono>stereo** button



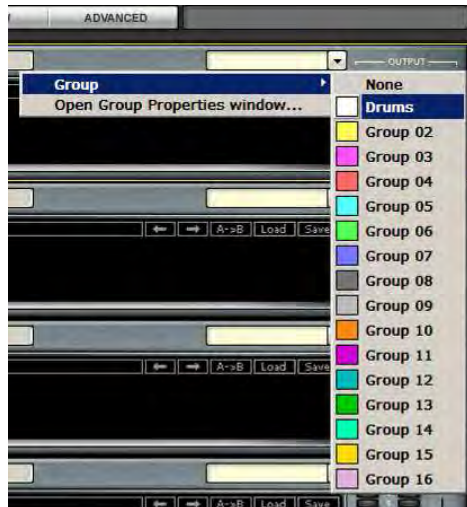
## Group Properties: Organization & Latency Alignment

This window allows you to group several Racks together. Racks often have something in common, and it may make sense to assign all of these similar Racks to a latency group. Grouping all of the channels of your brass section, or drums, or audience, then assigning these groups a color; helps you to keep track of racks in concert situations. Also, each track will display the name of the group, further aiding quick visual organization.

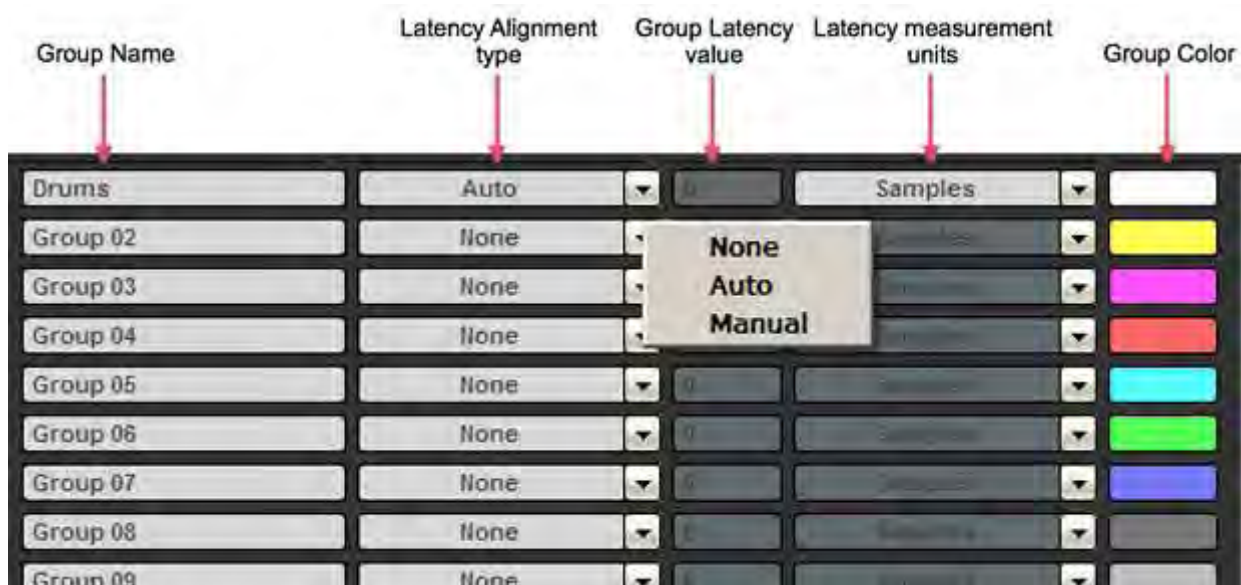


Plug-ins may impose a delay (known as “latency”) as signal passes through them. Often, this is not a problem. However, there are times you will want to time-align all of the Racks in a group, to compensate for different processor latencies that may cause phase-related problems.

Use the **Group Properties** window to create groups of racks and align their latencies. Open this window from the pull-down menu located at the top of a rack or from the **Window** menu.



In the **Group Properties** window, you can create up to 16 processing groups, each of which can contain any number of Racks.



Create a group by double clicking on a **Group Name** cell and typing the name you want to assign the group (using the external keyboard). Now, decide how you want to align the processors within the group.

- None** A group is created, but there is no latency alignment.
- Auto** The group is delayed to match the latency of the rack in the group with the greatest total latency.
- Manual** Manually delay the group by a specific value by entering it in the Latency field. The value is displayed in samples, milliseconds, meters or feet, depending on your choice in the pull-down window. The minimal value allowed for this setting matches the latency of the rack in the group with the greatest total latency.

Groups are color-coded for easier identification. Color selection is based on placement in the list, and is not user-definable.

At the bottom of the Group Properties page is the **Align All** section.



Here you can align all of the groups of Racks in order to create a unified timing for all channels. The **Auto** setting will offset all of the groups to match the timing of the group with the greatest latency, while **Manual** will delay all groups by a specific value.

Below the Align All section is the “**Speed of Sound**” setting.



This parameter control, expressed in meters per second, allows you to calibrate MultiRack SoundGrid's latency controls to match measured speed of sound. The speed of sound at sea level, at a temperature of 20 degrees Celsius and dry air, is 343 meters per second.



# Snapshot Pane: Automating Your Racks

Snapshots contain the following parameters:

1. Rack input and output gain
2. Rack in/out, mute and on/off states
3. Current plug-in parameters

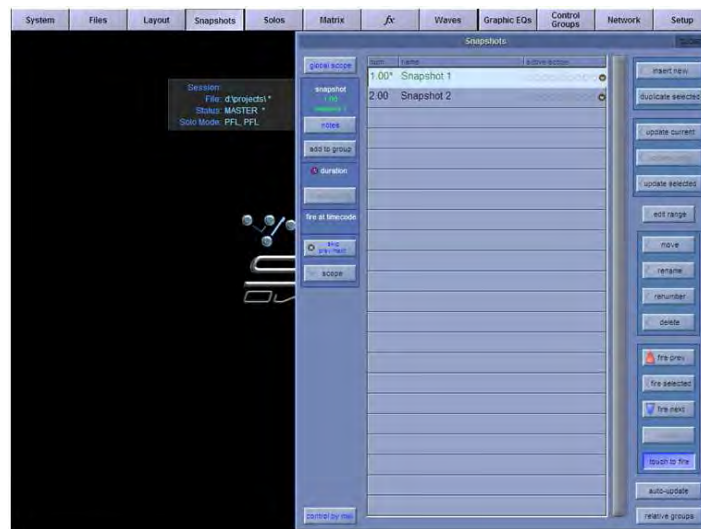
Snapshots are contained and saved as part of the Session file and are displayed as a vertical playlist.

Use Snapshots to change the state of racks (Mute/In/Off), levels, and, most importantly, the settings for the plug-ins. Snapshots do not change the physical configuration of a Session, so you cannot use a snapshot to change the audio I/O, the rack order or the plug-ins embedded in a rack.

To open the Snapshot Pane (fig. a), select **Open Snapshot Pane** from the **Window** menu (Ctrl+Shift+O).



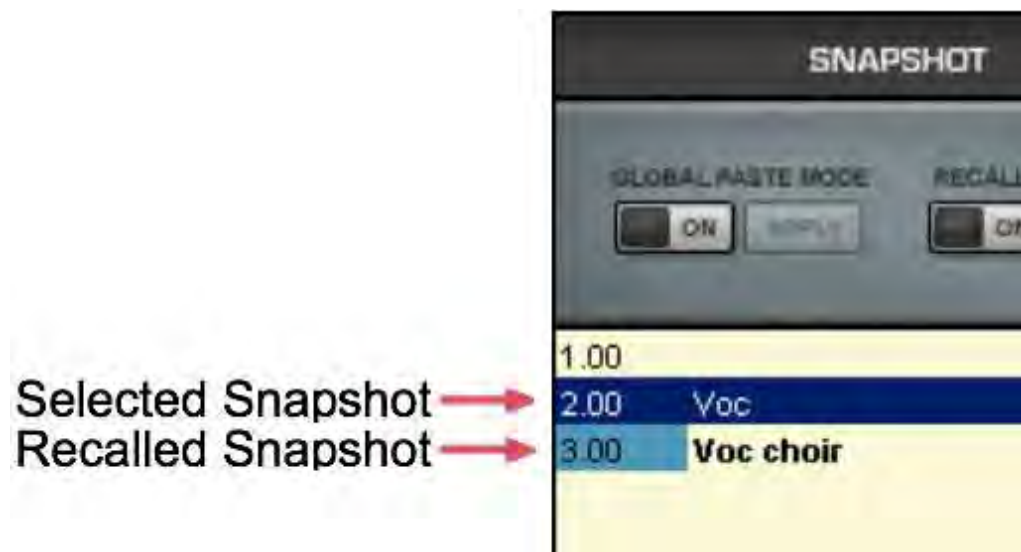
a



b

To save a Snapshot of your existing rack environment, use the console's **snapshot management** window (fig. b) (add Waves to the snapshot's scope).

MultiRack's snapshots are given the name of their corresponding SD snapshot.



Note that selected snapshots are highlighted and the currently recalled snapshot's name appears in **boldface** and its number is highlighted in **green**. At the bottom of the pane is an area where you can write notes about the selected Snapshot.

# Global Paste and Recall Safe modes

There are times when you don't want certain racks or specific plug-ins to be affected by Snapshot changes and there are times that you wish to apply a setting of a plug-in or rack across several snapshots.

The **Global Paste** and **Recall Safe** are the tools that provide you that ability.

## Global Paste

"**Global Paste**" enables you to copy a plug-in's or rack's parameters into one or more other snapshots. This is useful when you've set up several racks filled with plug-ins and you decide to change plug-ins settings across several Snapshots.

1. Recall the snapshot from which you want to copy settings.
2. Touch the Global Paste "**On**" button.

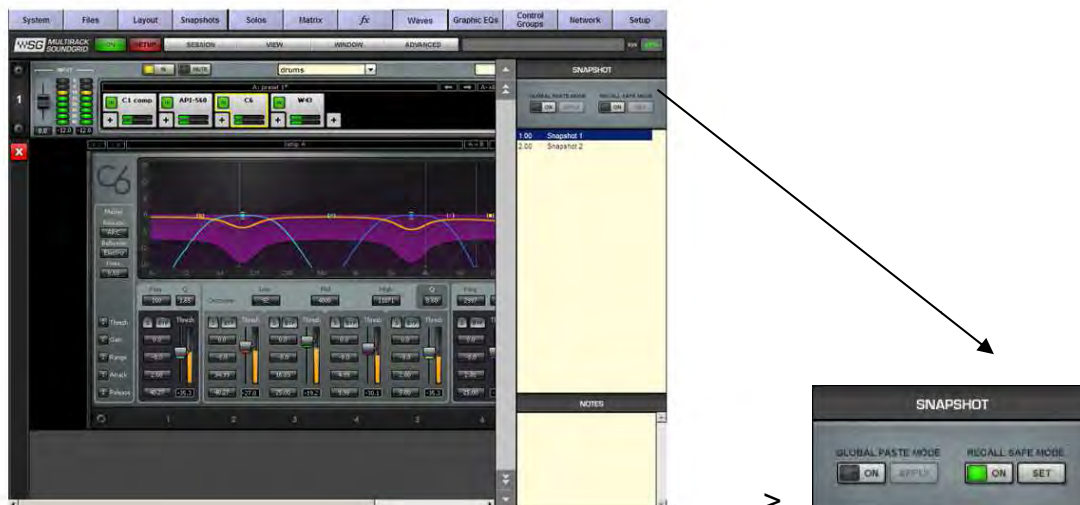


3. Select the **target snapshot/s** that you want to modify. To select multiple snapshots,  
Ctrl+Click on the desired target snapshots, or Shift+Click to select several contiguous snapshots (using a mouse).
4. In the rack windows, select the plug-in or rack to which want to copy to the selected snapshots to. Right-click on the plug-in and choose **Global Paste Plug-in/Rack** from the menu or touch the “**Apply**” button. Repeat this for each of the plug-ins or Racks whose settings you want to Global Paste.
5. Touch the Global Paste button “**On**” in the snapshot Pane once again to turn this mode off and end the process.

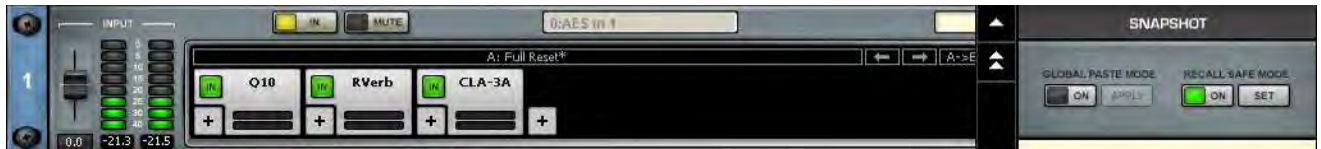
## Recall Safe

"**Recall Safe**" Mode allows you to select the racks and/or plug-ins that won't be affected as you change snapshots that would normally affect them. The recall-safe option applies within the session (not a specific snapshot).

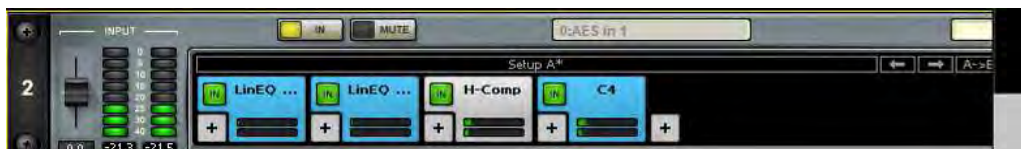
Turn Recall Safe Mode “**On**” in the Snapshots Pane



**Racks:** Select a Rack or multiple racks you want to set to Recall Safe. Touch the **“Set”** button or Right click on any of the selected Racks and choose **Recall Safe** from the pull-down menu. "Recall Safe" racks glow blue:



**Plug-ins:** Select the plug-in you want to set to Recall Safe. Touch the **“Set”** button or Right click on any of the selected plug-ins and choose **Recall Safe** from the pull-down menu. "Recall Safe" plug-ins glow blue:



To remove a rack or plug-in from "Recall Safe" mode, select the respective rack or plug-in and touch the **“Unset”** button or de-select "Recall Safe" from the right click pull-down menu in **Recall Safe** mode.

Plug-ins or racks that are set to "Recall Safe" can be edited. However, their "Recall Safe" status can be viewed only while in "Recall Safe" mode. Selecting "Recall Safe" in the Snapshots menu does not activate or de-activate "Recall Safe". Rather, it only allows you to see plug-ins and racks, and set them to "Recall Safe". When you turn "Recall Safe" mode off, racks and plug-ins which have been "Recall Safe" remain so; they just don't glow blue.

When a rack is "Recall Safe", all the plug-ins within that rack are affected, i.e. are effectively "Recall Safe" as well.

# Saving in MultiRack SoundGrid

MultiRack SoundGrid offers four different levels of “Save,” enabling you to quickly and confidently store and recall needed Session information. From most specific to most general, here are your options for saving information:

**Per Plug-in:** Each plug-in has its own WaveSystem Toolbar, so you can load and save your favorite plug-in settings without affecting the rest of the processing environment. Say you have a C4 preset that you’d like to use for the bass. Simply load the preset from the C4’s WaveSystem Toolbar’s **Load** menu.

Plug-in settings can be saved to an external USB key and loaded on to another console, given that the same plug-ins are installed and authorized on both consoles.

**Per Rack:** There’s a WaveSystem Toolbar at the top of each rack, so you can load and save settings for an entire Rack, independent of the Snapshots.

Plug-in settings can be saved to an external USB key and loaded into another console, given that the same plug-ins are installed and authorized on both consoles.

**Sessions** hold the settings for every plug-in and all racks. MultiRack Sessions are saved alongside the console’s Session file; both files are named identically and are loaded in synchronization when the corresponding console Session file is loaded.

**Snapshots** hold the settings for every plug-in and rack, and contain the information about the architecture and signal flow for the entire setup. Snapshots are created and stored on the console main Snapshot window.

The chart below illustrates the relationship between Functions and Snapshots/Presets/Session management – within the Waves MultiRack and DigiCo system.

	Plugin	Rack	Sessions	Snapshot
Rack Routing	-	-	-	all Racks
Rack input and output gain	-	single Rack	all Racks	all Racks
Rack in/out and mute states	-	single Rack	all Racks	all Racks
Plug-ins chain and parameters	Only preset for individual plug-in	all Plug-ins in single Rack	all Plug-ins	all Plug-ins

## Overview Window:

### Viewing the Status of All of Your Racks

Once you've filled several racks, you'll want a convenient way to keep track of everything happening within your processing environment. To get an overview of your racks, select **Overview** from the **View menu**. This will reveal the Overview Window, where you'll see a condensed view of each Rack.

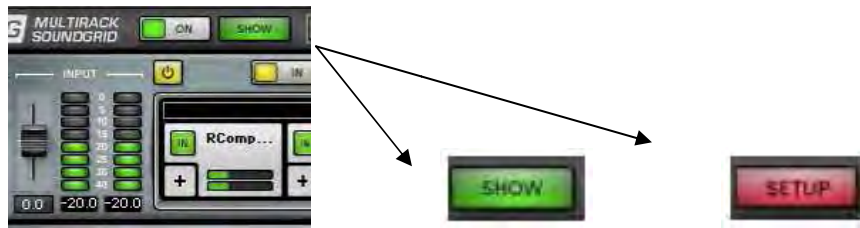


The Overview Window tells you if a rack or an individual plug-in is functioning, and it enables you to turn on or off, bypass, or mute a Rack. Clipping is also indicated for each Rack.

Use the Overview Window when you want to keep an eye on the entire processing setup. Since each mini-Rack in the Overview Window displays clipping information, you can easily watch out for over-level clipping across your entire setup.



## Show Mode



Show Mode is a “safe mode,” used during performances, that lets you adjust parameters within plugins, but not change routing, configuration, and other settings that could cause problems in a live situation.

When **Show** is selected you're locked out from much of the interface.

To Switch between Setup and Show modes, go to the **Master view->System tab->Security** and switch between **Setup** and **Live**.

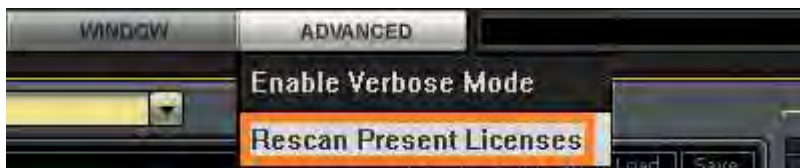


When choosing **Setup**, MultiRack will switch to Setup mode, when choosing **Live**, MultiRack will switch to Show Mode.

## Automatic Recovery

As MultiRack SoundGrid is an application for live shows, it is equipped with an automatic recovery mechanism. This means that if MultiRack SoundGrid quits unexpectedly, it will automatically re-launch and re-open the same session file it was running when it crashed, with the same snapshot that was recalled when the crash occurred (if applicable). While MultiRack SoundGrid re-launches itself, streaming and processing audio continues without interruption; only user control is lost until MultiRack SoundGrid re-loads its Session.

## Rescan Present Licenses



If you are preparing a setup and routing without licenses (i.e. without a connected USB flash drive or iLok key); the plug-ins will load in a disabled state. While the plug-ins won't process audio you can still assign inserts, FX, load plug-ins and presets.

To enable a disabled plug-in or plugins:

- Connect your USB Flash Drive (V9) and/or iLok key (V8).
- Go to **Advanced** Menu and select the “**Rescan Present Licenses**”.

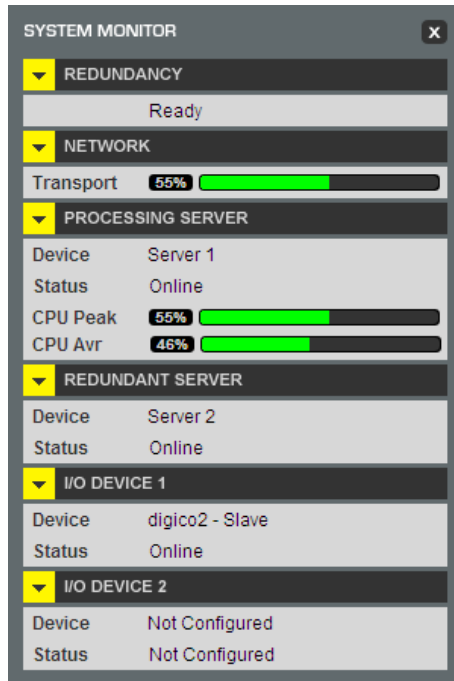
All disabled plugins will be enabled.

- You can re-enable plugins individually by right clicking on disabled plug-in and choosing **enable** option from the menu.

# Restructuring a DiGiCo session to 96 kHz

Prior to restructuring a DiGiCo session to 96 kHz, you must disconnect your SoundGrid® Server.

## System Monitor Window



Open this window from the Window menu.

This window displays real time status info on your SoundGrid network, I/O devices, and Servers.

### Redundancy

Displays redundancy status.

### Network

Displays network transport load. High loads may result in audio drops.

### Processing/Redundant Server

- **Device** – Device name
- **Status** – Server status (online or offline)
- **CPU Peak** and average loads (**AVR**) – Displays the load on the processing server. High loads may result in audio drops.

### I/O Device 1 and 2 (if available)

- **Device** – Device name
- **Status** – Device status

# MultiRack SoundGrid Keyboard Shortcuts

If you are using an external keyboard you may want to get familiar with MultiRack's keyboard shortcuts.

<u>Session Item</u>	<u>Definition</u>	<u>Keyboard shortcut</u>
Import session	Opens explorer window, import session	Ctrl+Alt+I
Export session	Opens explorer, export session	Ctrl+Alt+E

<u>Window Item</u>	<u>Definition</u>	<u>Keyboard shortcut</u>
Open Snapshot Pane	Opens/closes the Snapshot Pane in MultiRack SoundGrid window.	F7
SoundGrid Inventory	Opens the SoundGrid Inventory Window	F2
SoundGrid Connections	Opens the SoundGrid Connections Window	F3
Group Properties ...	Opens the Group Properties window	Ctrl+G
System Monitor	Opens the System Monitor window	Ctrl+M
Preferences	Opens the Preferences window	Ctrl+P

<u>Menu Item</u>	<u>Definition</u>	<u>Keyboard shortcut</u>
Main view Mode	Opens the main application view (multiple Racks)	F4
Overview Mode	Opens the overview view	F5
Rack view Mode	Opens the Rack view	F6

<u>Advanced Item</u>	<u>Definition</u>	<u>Keyboard shortcut</u>
Enable Verbose mode	Creates Log file for troubleshooting.	
Rescan Present Licenses	Starts rescan of licenses on connected iLok (v8) and/or USB Flash Drive (V9) .	Ctrl + L