Example 2: surround/3D sound output, optionally plus a sub-woofer

(The following steps assume that your audio configuration and rank routing settings are at their defaults initially, but if they aren't, then you could optionally reset them back to their defaults using *General settings* | *General configuration wizard*, and then *Organ settings* | *Organ configuration wizard* with each applicable organ loaded in turn, respectively.)

Let's say you want to use four pairs of speakers (main-front, upper-front, main-rear, upper-rear pairs) for 3D sound output, perhaps with an additional mono sub-woofer fed as a mix-down.

First decide which of the 128 mixer presets you want to configure, and which rank routing/voicing preset. We'll assume 1 for both (the default) for simplicity.

Load an organ (e.g. St. Anne's). Using the 'Settings | Audio ... routing' tab on the Touch Menu (View | Touch menu), make sure that the currently-loaded organ is using (for this example) mixer preset 1:



Now open the General settings | Audio mixer screen. Make sure that the 'Mixer buses for mixer preset 1' node is expanded in the left-hand browse list:



Select the following entry (mixer bus) in the left-hand browse list:

• [Within the mixer preset 1 node]: Master mix 1 'Stereo mix 1 (main/recording)'.

In the right-hand pane, set its 'Audio output (device) channel(s): Channel(s)' setting to '<none>':



Now instead select the following entry (mixer bus) in the left-hand browse list:

• [Still within the mixer preset 1 node]: Master mix 5 'Perspctv mix: outp persp 1 (front 1/main)'.

In the right-hand pane, set its 'Audio output (device) channel(s): Channel(s)' setting to the stereo pair of audio device channels that you want to use for your main front stereo pair of speakers:

		Audio Mixer (for a	dding reverb, surround/3D soun	d, or multi-channel outpu	t)			
·	In On O	Select one or more items to adjust their settings Buses for mixer preset: 1 Master mix 1 'Stereo mix 1 (main/recording)' Master mix 2 'Stereo mix 2 (headphones)' Master mix 3 'Stereo mix 3 (sub-woofer)' Master mix 4 - Sureroor mix 4 (aux reverb mix)' Master mix 4 - Sureroor mix 1 (front 1/main)' Master mix 5 'Descredor mix outp. nexts 1 (front 1/main)'	For basic stereo output, or for su appropriate audio output (device control panel. You can use differen perspectives via the 'Perspective to learn more. Related screem	rround/3D output (with def) channels for the relevant s for them. You can adjust p nt mixer presets for different e mix:' adjustments on th	ault audio routi master mix bu er-organ reve organs, and pa e rank voicing	ng settings), simply sele ises for the mixer prese rb wetness on the audi an organs' ranks to sur anypanning screen. Click	ect the t you want to o settings round/3D the info button	0
if.		Meeter mix 6 'Perspecty mix: outp persp 2 (front 2/upper)'	Organ:		Rank voicing	& surround/3D panning	Rank routing	g
		Master mix 7 'Perspctv mix: outp persp 3 (rear 1/main)' Master mix 8 'Perspctv mix: outp persp 4 (rear 2/upper)' Intermed mix 1	Organ routed to: mixer preset 2	Audio settings control par	el General:	Mixer bus groups	Audio device .	
		Intermed mix 2	Bus properties					
L		Intermed mix 5	Bus name (optional): Perspctv m	ix: outp persp 1 (front 1/mair)			
		Interned mix 7 Interned mix 7	Bus is in groups: <not applicable<="" td=""><td>for mix buses></td><td></td><td></td><td>Change .</td><td></td></not>	for mix buses>			Change .	
L		Primary 0001 Primary 0002 'Outp persp 2 (front 2/upper)'	Bus audio processing					
		Primary 0003 'Outp persp 3 (rear 1/main)' Primary 0004 'Outp persp 4 (rear 2/upper)' Primary 0005 'Outp persp 4 (rear 1/main): sekrs 01'	Impulse response reverb	Lev	el adjust (dB):	0.00 🗘 Stereo balar	nce (%): 0.00	0
		Primary 0000 Outp persp 1 (front /main): spkrs 02' Primary 0006 'Outp persp 1 (front 1/main): spkrs 02' Primary 0007 'Outp persp 1 (front 1/main): spkrs 03'	Select <none></none>					
		Primary 0008 Outp persp 1 (front 1/main): spkrs 04	Wet pre-delay (ms)	: 0.00 🗘 Fade out?	from: <non< td=""><td>e> 🗘 in: <</td><td>none> 🗘</td><td></td></non<>	e> 🗘 in: <	none> 🗘	
		Primary 0010 Primary 0011		Wet mi	x %: 0.00	Reverb wet level adju	st (dB): 0.00	0
		Primary 0012 Primary 0013	Audio output (device) channel(s)				
		Primary 0014 Primary 0015 Primary 0016		Chan	el(s): Stereo	: 0001/0002 [=>0001 1	/ =>0002]	0
		Primary 0018 Primary 0018		Level adjust (dB): 0.	00 🗘 Send	point: From the outpu	t of this bus	3

Now instead select the following mixer bus in the left-hand browse list:

• [Still within the mixer preset 1 node]: Master mix 7 'Perspctv mix: outp persp 3 (rear 1/main)'.

In the right-hand pane, set its 'Audio output (device) channel(s): Channel(s)' setting to the stereo pair of audio device channels that you want to use for your main rear stereo pair of speakers:

		Audio Mixer (for adding reverb, surround/3D sound, or multi-channel output)
	In On O Select one or more items to adjust the super formixer preset. 1 State Buses for mixer preset. 1 Naster mix 1 "Stereo mix 1 (main/record) C C Master mix 1 "Stereo mix 1 (main/record) C C Master mix 2 "Stereo mix 2 (mater) C C Master mix 3 "Stereo mix 2 (mater) Master mix 4 "Stereo mix 4 (aux record) C C C C Master mix 4 "Stereo mix 4 (aux record)	their settings coording)' coording)' coording)' control panel. You can use different mixer presets for different organs, and par organs' ranks to surround/3D perspectives via the 'Perspective mix:' adjustments on the rank voicing/panning screen. Click the info button to learn more. Related screens
\triangleleft	A Master mix 6 'Perspectv mix: outp p A Master mix 7 'Perspectv mix: outp p A Master mix 8 'Perspectv mix: outp p A Master mix 8 'Perspectv mix: outp p	ersp 2 (front 2/upper)' Organ: Rank voicing & surround/3D panning Rank routing ersp 3 (rear 1/main)' ersp 4 (rear 2/upper)' Organ routed to: mixer preset 2 Audio settings control panel General: Mixer bus groups Audio device
	○ ○ Intermed mix 2 ○ ○ Intermed mix 3 ○ ○ Intermed mix 4 ○ ○ ○	Bus properties Bus name (optional): Perspctv mix: outp persp 3 (rear 1/main)
	 くくくくくくくくくくくくくくくくくくくくくくくくくくくくくくくくくくくく	Bus is in groups: <not applicable="" buses="" for="" mix=""> Change</not>
	 Primary 0002 'Outp persp 2 (front 3 Primary 0003 'Outp persp 3 (rear 1 Primary 0004 'Outp persp 4 (rear 2 Primary 0005 'Outp persp 1 (front 3) 	2/upper)' /main)' /upper)' /main): spkrs 01'
	C C C Primary 0006 'Outp persp 1 (front 1 Primary 0007 'Outp persp 1 (front 1 O C C Primary 0008 'Outp persp 1 (front 1 O C C Primary 0009	(/main): spkrs 02' /main): spkrs 03' //main): spkrs 04' Wet pre-delay (ms): 0.00 ♀ Fade out? from: <none> ♦ in: <none> ♦</none></none>
		Wet mix %: 0.00 🗘 Reverb wet level adjust (dB): 0.00 🗘
		Channel(s): Stereo: 0003/0004 [=>0003 / =>0004] Image: Channel(s) Level adjust (dB): 0.00 Image: Stereory Constraints Image: Stere

If you use want to use full 3D sound output (four speaker pairs), then:

Also select the corresponding device channels for your front-upper and rear-upper speaker pairs for the following two buses respectively:

- [Still within the mixer preset 1 node]: Master mix 6 'Perspectv mix: outp persp 2 (front 2/upper)'.
- [Still within the mixer preset 1 node]: Master mix 8 'Perspctv mix: outp persp 4 (rear 2/upper)'.

If you want to use a mono sub-woofer, or stereo pair of sub-woofers, connected to separate audio device channel(s), then:

Select the following entry in the left-hand browse list:

• [Still within the mixer preset 1 node]: Master mix 3 'Stereo mix 3 (sub-woofer)'.



... and in the right-hand pane, set its 'Audio output (device) channel(s): Channel(s)' setting to the audio device channel(s) – either mono or stereo pair, depending on your sub-woofer(s) – that you want to use for your sub-woofer(s). (Mono channels can be found near the end of the drop-down channel list, after the stereo pairs.)

OK the mixer screen.

Now on the Organ settings | Rank voicing and surround/3D/perspective panning screen, for each of the relevant 'Perspective mix: ...' adjustments (in the drop-down list at the top-right of the screen) in turn, use the MSTR ('master') slider to 'pan' each of the organ's virtual ranks (within the 'Rank routing/voicing preset: 1' node in the rank list) as desired to/between your corresponding pairs of surround/3D speakers:



For example, to route one or more virtual ranks entirely to a 'rear' surround pair of speakers, all that you would need to do is to select the rank(s) on the voicing/panning screen (you can select multiple ranks at once, to change their settings/routing simultaneously), then:

- 1. Select the 'Perspective mix: source persp to output persp 1 (front 1/main)' adjustment, then use the 'MSTR' slider to set all of the adjustment's pipe sliders to 0% (rather than the adjustment's default of 100%, since all ranks are routed entirely to the 'front' by default), and:
- 2. Select the 'Perspective mix: source persp to output persp 3 (rear 1/main)' adjustment, then use the 'MSTR' slider to set all of the adjustment's pipe sliders to 100% (rather than the adjustment's default of 0%).

The values don't have to be fully 100% or 0%; in-between values can be used to position ranks/pipes virtually 'between' the relevant speakers.

As you play the organ (with some stops drawn, of course), you should now hear that the ranks sound through the desired pairs of speakers.

Load any other organs you may have and, in the same way, 'pan' their ranks as desired.

Example 3: simple multi-channel audio with 8 speakers configured as stereo pairs all in a single group, optionally plus a sub-woofer

(The following steps assume that your audio configuration and rank routing settings are at their defaults initially, but if they aren't, then you could optionally reset them back to their defaults using *General settings* | *General configuration wizard*, and then *Organ settings* | *Organ configuration wizard* with each applicable organ loaded in turn, respectively.)

This example is particularly easy to set up, because Hauptwerk's default settings are already configured appropriately for 4 stereo pairs in a group, apart from actually selecting the desired audio interface channels.

First decide which of the 128 mixer presets you want to configure, and which rank routing/voicing preset. We'll assume 1 for both (the default) for simplicity.

Load an organ (e.g. St. Anne's). Using the 'Settings | Audio ... routing' tab on the Touch Menu (View | Touch menu), make sure that the currently-loaded organ is using (for this example) mixer preset 1:



Now open the General settings | Audio mixer screen. Make sure that the 'Mixer buses for mixer preset 1' node is expanded in the left-hand browse list:



Select the following entry (mixer bus) in the left-hand browse list:

• [Within the mixer preset 1 node]: Master mix 1 'Stereo mix 1 (main/recording)'.

In the right-hand pane, set its 'Audio output (device) channel(s): Channel(s)' setting to '<none>'.

Audio Mixer (fo	or adding reverb, surround/3D sound, or multi-chan	inei output)	
m Uni 0 Select one or more items to adjust their settings Buses for mixer preset: 1 0 0 Master mix 1:Stereo mix 1 (main/recording)' 0 0 Master mix 2:Stereo mix 2 (headohones)' 0 0 Master mix 3:Stereo mix 3 (sub-woofer)' 0 0 Master mix 4:Stereo mix 4 (aux reverb mix)' 0 0 Master mix 5:Personty mix: outpoersp 1 (front 1/main)'	Fee basic stereo output, or for surround/3D output appropriate audio output (device) channels for the use- and optionally select reverbs for them. You ca control panel. You can use different mixer presets for perspectives via the 'Perspective mix:' adjustm to learn more. Related screens	It (with default audio routing settings), simp e relevant master mix buses for the mixer an adjust per-organ reverb wetness on th or different organs, and pan organs' ranks nents on the rank voicing/panning screen	oly select the preset you want to e audio settings to surround/3D b. Click the info button
Master mix 6 'Perspctv mix: outp persp 2 (front 2/upper)'	Organ:	Rank voicing & surround/3D pa	nning Rank routing
 Asster mix 8 'Perspctv mix: outp persp 4 (rear 2/upper)' Antermed mix 1 	Organ routed to: mixer preset 2 Audio settings	control panel General: Mixer bus grou	Audio device
 Intermed mix 2 Intermed mix 3 	Bus properties		
 ♦ ♦ ♦ Intermed mix 4 ♦ ♦ ♦ Intermed mix 5 	Bus name (optional): Stereo mix 1 (main/recording)	
 Intermed mix 6 Intermed mix 7 Intermed mix 8 	Bus is in groups: <not applicable="" buses="" for="" mix=""></not>		Change
 O O Primary 0001 	Bus audio processing		
 Primary 0002 'Outp persp 2 (front 2/upper)' Primary 0003 'Outp persp 3 (rear 1/main)' Primary 0004 'Outp persp 4 (rear 2/upper)' Primary 0005 [Outp persp 4 (rear 2/upper) 	Impulse response reverb	Level adjust (dB): 0.00 🗘 Stere	o balance (%): 0.00
 Primary 0006 'Outp persp 1 (front 1/main): spkrs 02' Primary 0006 'Outp persp 1 (front 1/main): spkrs 03' 	Select <none></none>		
 O Primary 0008 'Outp persp 1 (front 1/main): spkrs 04' O O Primary 0009 	Wet pre-delay (ms): 0.00 🗘 Fi	ade out? from: <none> 🗘 in</none>	n: <none> 🗘</none>
 Primary 0010 Primary 0011 		Wet mix %: 0.00 🗘 Reverb wet lev	el adjust (dB): 0.00 🗘
 Primary 0012 Primary 0013 	Audio output (device) channel(s)		
 C C Primary 0014 C C D Primary 0015 		Channel(s): <none></none>	0
 ♦ ♦ Primary 0016 ♦ ♦ Primary 0017 ♦ ♦ ₽ 	Level adjus	st (dB): 0.00 Send point: one	٥

If you want to use a mono sub-woofer, or stereo pair of sub-woofers, connected to separate audio device channel(s), then:

Select the following entry in the left-hand browse list:

• [Still within the mixer preset 1 node]: Master mix 3 'Stereo mix 3 (sub-woofer)'.

	In	On	0	Select one or more items to adjust their settings	
\sim				Buses for mixer preset: 1	
	۰,	۰,	٠,	Master mix 1 'Stereo mix 1 (main/recording)'	
	۰,			Master mix 2 'Stereo mix 2 (headphones)'	
				Master mix 3 'Stereo mix 3 (sub-woofer)'	
	۰,			Master mix 4 'Stereo mix 4 (aux reverb mix)'	
	۰,			Master mix 5 'Perspctv mix: outp persp 1 (front 1/main)'	
	۰,			Master mix 6 'Perspctv mix: outp persp 2 (front 2/upper)'	
	٠,			Master mix 7 'Perspctv mix: outp persp 3 (rear 1/main)'	
	۰,			Master mix 8 'Perspctv mix: outp persp 4 (rear 2/upper)'	
	۰,			Intermed mix 1	
				Intermed mix 2	

... and in the right-hand pane, set its 'Audio output (device) channel(s): Channel(s)' setting to the audio device channel(s) – either mono or stereo pair, depending on your sub-woofer(s) – that you want to use for your sub-woofer(s). (Mono channels can be found near the end of the drop-down channel list, after the stereo pairs.)

Now in the left-hand browse list select each of primary buses 0005-0008 in turn and use the 'Audio output (device) channel(s): Channel(s)' setting to select the appropriate stereo channel pairs for them, assigning a distinct pair of your main speakers (device channels) to each of those four primary buses.



Go to the *General settings* | *Audio mixer bus groups* screen and simply note how the mixer preset's group 0005 contains just those four primary mixer buses (0005-0008) with the default settings. Hence when we route ranks to that group the pipes within the rank will be distributed automatically amongst those four primary mixer buses (speaker pairs).



Note how primary mixer buses 0005-0008 and bus group 0005 have meaningful names on their respective screens, to help indicate what they're used for, but feel free to change those names if you wish. If you have more than four main speaker pairs then you could simply select their device channels for additional primary mixer buses (0009, 0010, etc.) on the mixer screen, name those buses meaningfully, and use the groups screen to add those buses into bus group 0005.

Go to the Organ settings | Rank routing ... screen and select a rank in the left-hand browse list. Simply note how the rank has its 'Rank output perspective 1 (front 1/main): Destination mixer bus/group' setting set to group 0005 (with default settings). Hence the rank will be routed to that group, and thus the rank's pipes will be assigned amongst the primary mixer buses that are members of that particular group (i.e. amongst primary buses 0005, 0006, 0007 and 0008).



Draw a single virtual stop and play a chromatic scale. You should hear successive pipes allocated (cyclically) to different pairs of speakers. On the mixer screen, note how the virtual audio activity LEDs illuminate for the corresponding primary mixer buses – a useful aid for troubleshooting routing, if needed.

Example 4: multi-channel audio with 8 speakers configured as stereo pairs, with whole organ divisions routed directly to individual stereo pairs, optionally plus a sub-woofer

(The following steps assume that your audio configuration and rank routing settings are at their defaults initially, but if they aren't, then you could optionally reset them back to their defaults using *General settings* | *General configuration wizard*, and then *Organ settings* | *Organ configuration wizard* with each applicable organ loaded in turn, respectively.)

Let's refer to your four speaker pairs as 'Division A speaker pair', 'Division B speaker pair', ..., 'Division D speaker pair' (using letters instead of numbers, so as to avoid any confusion with the mixer bus numbers).

First decide which of the 128 mixer presets you want to configure, and which rank routing/voicing preset. We'll assume 1 for both (the default) for simplicity.

Load an organ (e.g. St. Anne's). Using the 'Settings | Audio ... routing' tab on the Touch Menu (View | Touch menu), make sure that the currently-loaded organ is using (for this example) mixer preset 1:



Now open the General settings | Audio mixer screen. Make sure that the 'Mixer buses for mixer preset 1' node is expanded in the left-hand browse list:

	• • •		Audio Mixer (f	or add
Γ	In	On O	Select one or more items to adjust their settings	Fc
	\sim		Buses for mixer preset: 1	au
	۵,		Master mix 1 'Stereo mix 1 (main/recording)'	or
	۵,	°, 🌖	Master mix 2 'Stereo mix 2 (headphones)'	Yc
			Master mix 3 'Stereo mix 3 (sub-woofer)'	'P
_	۲		Master mix 4 'Stereo mix 4 (aux reverb mix)'	F
_	۲		Master mix 5 'Perspctv mix: outp persp 1 (front 1/main)'	
			Maatar mix 6 (Decenety mix) outs percen 2 (front 2/upper))	

Select the following entry (mixer bus) in the left-hand browse list:

• [Within the mixer preset 1 node]: Master mix 1 'Stereo mix 1 (main/recording)'.

In the right-hand pane, set its 'Audio output (device) channel(s): Channel(s)' setting to '<none>'.

	Audio Mixer (fo	or adding reverb, surround/3D sound, or multi-channel output)
<	Her On O Select one or more items to adjust their settings Buses for mixer preset: 1 Master mix 1 'Stereo mix 1 (main/recording)' Master mix 2 'Stereo mix 2 (headphones)' Master mix 3 'Stereo mix 3 (sub-woofer)' Master mix 4 'Stereo mix 4 (aux reverb mix)' Master mix 5 'Perspctv mix: outpersp 1 (front 1/main)'	Ser basic stereo output, or for surround/3D output (with default audio routing settings), simply select the appropriate audio output (device) channels for the relevant master mix buses for the mixer preset you want to use, and optionally select reverbs for them. You can adjust per-organ reverb witness on the audio settings control panel. You can use different mixer presets for different organs, and pan organs' ranks to surround/3D perspectives via the 'Perspective mix:' adjustments on the rank voicing/panning screen. Click the info button to learn more. Related screens
	Image: Solution of the sector secto	Organ: Rank voicing & surround/3D panning Rank routing Organ routed to: mixer preset 2 Audio settings control panel General: Mixer bus groups Audio device
	Intermed mix 2 Intermed mix 3 Intermed mix 3 Intermed mix 5	Bus properties Bus name (optional): Stereo mix 1 (main/recording)
	 A future d mix 6 A future d mix 7 A future d mix 8 A future d mix 8 A future d mix 9000 (000 future care 2 (feest 2 /unex)) 	Bus is in groups: <not applicable="" buses="" for="" mix=""> Change Bus audio processing</not>
	 C Primary 0002 Outp persp 2 (ront 2/upper) C Primary 0003 Outp persp 3 (rear 1/main)' C Primary 0004 'Outp persp 4 (rear 2/upper)' C Primary 0005 'Outp persp 1 (front 1/main): spkrs 01' C Primary 0006 'Outp persp 1 (front 1/main): spkrs 01' 	Level adjust (dB): 0.00 🗘 Stereo balance (%): 0.00 🗘
	C C Primary 0007 'Outp persp 1 (front 1/main): spkrs 03' Primary 0007 'Outp persp 1 (front 1/main): spkrs 03' Primary 0008 'Outp persp 1 (front 1/main): spkrs 04' Primary 0009 C C Primary 0010	Select Select Select Select Select Wet pre-delay (ms): 0.00 Pade out? from: <none> \$</none>
	Image: Constraint of the second se	Wet mix %: 0.00 🗇 Reverb wet level adjust (dB): 0.00 🗘
		Channel(s): <none> Channel(s): Level adjust (dB): 0.00 Send point: <none></none></none>

If you want to use a mono sub-woofer, or stereo pair of sub-woofers, connected to separate audio device channel(s), then:

Select the following entry in the left-hand browse list:

• [Still within the mixer preset 1 node]: Master mix 3 'Stereo mix 3 (sub-woofer)'.

	In	On	0	Select one or more items to adjust their settings	I
\sim				Buses for mixer preset: 1	
	۲,			Master mix 1 'Stereo mix 1 (main/recording)'	
	۲,			Master mix 2 'Stereo mix 2 (headphones)'	
				Master mix 3 'Stereo mix 3 (sub-woofer)'	
	۲,			Master mix 4 'Stereo mix 4 (aux reverb mix)'	
	۲,			Master mix 5 'Perspctv mix: outp persp 1 (front 1/main)'	
	۲,			Master mix 6 'Perspctv mix: outp persp 2 (front 2/upper)'	
	۲)			Master mix 7 'Perspctv mix: outp persp 3 (rear 1/main)'	
	۲,			Master mix 8 'Perspctv mix: outp persp 4 (rear 2/upper)'	
	۲,			Intermed mix 1	
	1			Intermed mix 2	

... and in the right-hand pane, set its 'Audio output (device) channel(s): Channel(s)' setting to the audio device channel(s) – either mono or stereo pair, depending on your sub-woofer(s) – that you want to use for your sub-woofer(s). (Mono channels can be found near the end of the drop-down channel list, after the stereo pairs.)

We'll uses primary buses 0010-0013 for your four main speaker pairs. Hence first select the following entry (mixer bus) in the left-hand browse list:

[Still within the mixer preset 1 node]: Primary 0010.

Use the 'Audio output (device) channel(s): Channel(s)' setting to select the appropriate stereo channel pair for your first pair of speakers. Also change its 'Bus name' setting to something appropriate, such as 'Division A speaker pair'. (Names are optional and have no functional effect, but they do make it easier to see what's happening when configuring and troubleshooting routing.)

intermed mix 2	bus properties	
🌖 🌖 🤚 Intermed mix 3	Pur server (anti-ser)). Didata A secolar pair	
O O Intermed mix 4	Bus name (optional): Division A speaker pair	
Intermed mix 5		
Intermed mix 6	Bus is in groups: <none> Change</none>	
1 1 Intermed mix 7		
1 1 Intermed mix 8		
C C Primary 0001	Bus audio processing	
Primary 0001		
Primary 0002 Outp persp 2 (front 2/upper)	Level adjust (dB): 0.00 Stereo balance (%): 0.00	
Primary 0003 Outp persp 3 (rear 1/main)	Impulse response reverb	
O O Primary 0004 'Outp persp 4 (rear 2/upper)'		
O Primary 0005 'Outp persp 1 (front 1/main): spkrs 01'	Select <none></none>	
O C Primary 0006 'Outp persp 1 (front 1/main): spkrs 02'		
O C Primary 0007 'Outp persp 1 (front 1/main): spkrs 03'		
C C Primary 0008 'Outp persp 1 (front 1/main): spkrs 04'	wet pre-delay (ins).	
O O Primary 0009		
Primary 0010 'Division A speaker pair'	Wet mix %: 0.00 vet level adjust (dB): 0.00 vet level adju	
O O Primary 0011		
C C Frimary VV12	Audio output (device) channel(s)	
A C Primary 0013		
C C Primary 0014	Channel(s): Stereo: 0001/0002 [=>0001 1 / =>0002]	
C C Primary 0015		
C C Primary 0016	Louis adjust (dB): 0.00 Crand point. From the subset of this hus	
Primary 0017	Level adjust (db). 0.00 Send point: Prom the output of this bus	
Primary 0017		
Diman Diman Diriy		-

Now select the following entry (mixer bus) in the left-hand browse list:

• [Still within the mixer preset 1 node]: Primary 0011.

For it, select the device channels for your second pair of speakers. Also change its '*Bus name*' setting to (for example) '*Division B speaker pair*'. Do likewise for primary buses 0012 and 0013, selecting the device channels for your third and fourth pairs of speakers respectively and naming them '*Division C speaker pair* and '*Division D speaker pair*' respectively.

	Rue properties
O O O Intermed mix 2	bus properties
Intermed mix 3	Bus name (optional): Division D speaker pair
intermed mix 4	
for the Intermed mix 6	Due la la servició de constante de constan
a contract mix 6	Bus is in groups: <none></none>
C C C Intermed mix 8	
C C Primary 0001	Bus audio processing
Primary 0002 'Outpipersp 2 (front 2/upper)'	Level adjust (dB): 0.00 Stereo balance (%): 0.00
Primary 0003 'Outp persp 3 (rear 1/main)'	
Primary 0004 'Outp persp 4 (rear 2/upper)'	Impulse response reverb
O O Primary 0005 'Outp persp 1 (front 1/main): spkrs 01'	Select coope
O O Primary 0006 'Outp persp 1 (front 1/main): spkrs 02'	Object
O O Primary 0007 'Outp persp 1 (front 1/main): spkrs 03'	
O O Primary 0008 'Outpipersp 1 (front 1/main): spkrs 04'	wet pre-delay (ms): 0.00 G Fade out? from: cones.com in: cones.com
0 0 0 Primary 0009	Wet mix %: 0.00 C Reverb wet level adjust (dR): 0.00
O O Primary 0010 'Division A speaker pair'	Wet mix 38. 0.00 V Revend wet level adjust (ub).
O O Primary 0011 'Division B speaker pair'	
O O O Primary 0012 'Division C speaker pair'	Audio output (device) channel(s)
O O Primary 0013 'Division D speaker pair'	Chappel(c): Store: 0007/0008 [->0007 / ->0008]
Drimony 0015	
Primary 0015	Lough a finite (dD) 0.00 0. Or and exist. From the automb of this hum
Primary 0017	Lever adjust (db): 0.00 Send point: From the output of this bus
Primary 0017	

We won't normally be using mixer bus groups for routing in this example, since groups exist solely to distribute individual pipes within a rank around amongst several speakers/pairs within the group, whereas in this example we'll be routing ranks (divisions) as a whole to individual speaker pairs. Hence although we could theoretically use groups, there would only be one mixer bus (stereo speaker pair) in each group anyway, and so there would be no advantage in using the group – routing directly to the mixer bus (as we will be doing) would be simpler to set up and would give exactly the same result. However, we'll set one up anyway, in case you later decide to use it for any ranks (and since there was a bug in Hauptwerk v8.0.0/8.01 in which mixer buses might not sound if they weren't members of at least one group).

Go to the General settings | Audio mixer bus groups screen. Make sure the 'Mixer buses for mixer preset 1' node is expanded in the left-hand browse list, and select the 0010 entry (group) in the left-hand browse list. In the right-hand pane, change its name to (for example) 'All speaker pairs', and tick primary buses 0010-0013 to put them in the group, then OK the screen.

	Select one or more items to adjust their settings Groups for mixer preset: 1 0001 0002 'Outp perspectv 2 (front 2/upper)' 0002 'Outp perspectv 2 (roat 1/maip)'	Virtual pipe ranks can optionally be routed to mixer b to a group its pipes will be distributed amongst the m define which mixer primary buses are included in eac organs. Click the info button to learn more.	bus groups for multi-channel audio. When a rank is routed nixer's primary buses within the group. Use this screen to ch group. You can use different mixer presets for different
	 0004 Outp perspect o (real (main)) 0005 'Outp perspect 1 (front 1/main)' 0006 0007 	Organ: Organ routed to: <no loaded="" organ=""> Audio settings</no>	Rank voicing & surround/3D panning Rank routing s control panel General: Mixer/reverb Audio device
0	0009	Bus group properties	
	Ø 0010 'All speaker pairs'		
	0011	Name for this group (optional): All spea	ker pairs
0, 0,	0012	Number of organ's ranks routed to group: <pre>cno organ</pre>	Change
•, •,	0013	Number of organis ranks routed to group. <no organi<="" td=""><td>Change</td></no>	Change
•, •,	0014	Audio mixer's primary buses in group	
 , , 	0015		
()	0016	Mixer bus	Currently in groups
<, <,	0017	0001	<0000
(), (),	0018	0002 'Outpinersp 2 (front 2/upper)'	0002
e, e,	0019	0002 Outp persp 2 (non 2/upper)	0002
•, •,	0020		0003
\sim	0021	0004 'Outp persp 4 (rear 2/upper)'	0004
\sim	0022	0005 'Outp persp 1 (front 1/main): spkrs 01'	0005
	0023	0006 'Outp persp 1 (front 1/main): spkrs 02'	0005
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	0025	0008 Outp persp 1 (front 1/main): spkrs 04'	0085
	0026	0009	<none></none>
	0027	0010 'Division A speaker pair'	0010
	0028	🗸 0011 'Division B speaker pair'	0010
<i>.</i>	0030	✓ 0012 'Division C speaker pair'	0010
	0031	0013 'Division D speaker pair'	0010
é é	0032	0014	<none></none>
0	0033	10045	mana
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0	0035		
0	0036		
	0027		Help OK Can

Now go to the Organ settings | Rank routing ... screen. For each rank listed in the left-hand list, use the 'Rank output perspective 1 (front 1/main): Destination mixer bus/group' setting to route the rank to the desired one of your four primary mixer buses (0010 'Division A speaker pair', 0011 'Division B speaker pair', 0012 'Division C speaker pair', or 0013 'Division D speaker pair') according to the rank's division. For example, you might choose to route all the organ's Pedal ranks to 'Division A speaker pair', its Great ranks to 'Division B speaker pair', and so on. (Note that you can highlight multiple ranks at once in the left-hand list, in order to change their settings simultaneously.)

	Audio Mixer (Primary) Buses/Groups (for multi-channel output)
In On O Select one or more items to adjust their settings	Main/upper part of rank Bass part of rank
Rank routing/voicing preset: 1	
O O O Pedal: Open Diapason 16 (Octave 8 Fifteenth 4)	Virtual pipe ranks are routed to mixer primary buses, or to bus groups, for multi-channel audio. When a rank is
0 02 Pedal: Echo Bass 16	routed to a group its pipes will be distributed automatically amongst the mixer's primary buses within the
0 C 03 Pedal: Sub Bass 16 (Flute Bass 8)	group using the chosen algorithm. Use this screen to define which ranks are routed to which buses or groups.
0 C C C C C C C C C C C C C C C C C C C	the 'Perspective mix:' adjustments on the rank voicing/panning screen. You can usually leave the settings for
C C C C Creat: Open Diapason Small 8	output perspectives 2-4 at their defaults. Click the info button to learn more.
0 0 0 07 Great: Dulciana 8	Related screens
🔿 🥥 🥥 08 Great: Lieblich Gedact 8	Organ: Rank voicing & surround/3D panning Organ routed to: rank routing/voicing preset 1 [=> mixer preset 1]
🕚 🥥 🕘 09 Great: Principal 4	
C C O 10 Great: Clear Flute 4	Audio settings control panel General: Mixer bus groups Mixer/reverb Audio device
11 Great: Fifteenth 2	
12 Great: Mixture IV	Rank routing properties
13 Oreat: Trumper 8 (Clanoff 4)	Rank output perspective 1 (front 1/main)
 If Swell: Geigen Principal 8 	Destination mixer hus/group:
🥥 🌑 🧶 16 Swell: Rohr Flute 8	Bus 0012 'Division C speaker pair'
🥥 🌑 🧶 17 Swell: Viola Di Gamba 8	Bus allocation algorithm
3 (1) 18 Swell: Voix Celestes 8	
 Is Swell: Salicet 4 	Allocation algorithm note offset: 0
O O 20 Swell: Flauto Magico 4 O 0 21 Swell: Piccolo 2	
 Section 2 Section 2 Section 2 Section 2 Section 2 	Rank output perspective 2 (front 2/upper)
 Q Q Q Q Swell: Contra Fagotto 16 	Destination mixer bus/group: Bus 0002 'Outpipersh 2 (front 2/upper)'
🥥 🌒 🔍 24 Swell: Trumpet 8	bus oooz outpiperspiz (non zjupper)
🍳 🍳 🧶 25 Swell: Oboe 8	Bus allocation algorithm: <pre>cnone></pre>
0, 0, 0, 26 Swell: Clarinet 8	Allocation algorithm providents in a 10
27 Noise: Blower	
20 Construction	Rank output perspective 3 (rear 1/main)
30 Noise: Tremulant Mechanism	Destination mixer bus/group: Bus 0002 (Outp perce 2 (rear 1/main))
31 Noise: Swell Box Shutters	
> Rank routing/voicing preset: 2	Bus allocition algorithm: <pre> cnone> </pre>
Donk souting huising assessts 2	
 Audio Mixer (for a 	adding reverb, surround/3D sound, or multi-channel output)
In On O Select one or more items to adjust their settings	
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 Buses for mixer preset: 1 	For basic sterey output, or for surround/3D output (with default audio routing settings), simply select the appropriate au dio output (device) channels for the relevant master mix buses for the mixer preset you want to
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Draw a single virtual stop and play it. You should hear pipes sounding through the pair of speakers (primary bus) to which you routed the stop's rank. On the mixer screen, note how the virtual audio activity LEDs illuminate for the corresponding primary mixer buses – a useful aid

Load any other organs you may have and use the Organ settings | Rank routing ... screen to assign their ranks to the desired bus groups.