



Control4 Driver Manual

All rights reserved.

No part of this publication may be reproduced, stored or transmitted in any form without the written permission of Lenbrook Industries Limited. While every effort has made to ensure the contents are accurate at the time of publication, features and specifications may be subject to change without prior notice.

Revision History			
Version	Date(dd/mm/yyyy)	Author	Description
0.1	03/11/2014	Remi P.	Draft (driver v1.0.8)
0.2	15/01/2015	Remi P.	Draft (driver v1.2.1)
1.0	27/03/2015	Gary S.	Reformatted. First public release (driver v1.4.1)
1.1	29/04/2015	Remi P.	Added multi-zone (driver 1.6.0)
1.2	07/08/2015	Gary S.	Updated support section
1.3	13/08/2015	Gary S.	Added known issues section
1.4	03/09/2015	Gary S.	Add support for Node 2, Powernode 2, Pulse Flex, Pulse Mini, Pulse 2 and Vault 2.
1.5	08/03/2016	Remi P.	Updated screenshot in sect 2.2 & sect 3.3
1.6	01/06/2016	Remi P.	Updated screenshot in sect 2.2 & sect 3.3; Removed the known issue in sect 7.0
2.2	01/09/2016	Gary S.	Updated known issues. Supports driver v2.2.0.
2.4	22/11/2016	Remi P.	Updated driver properties to add new features (Auto Power Off, On Room Off); add mini drivers support; updated installation note to support CI580; removed Spotify playback problem from known issue.
2.6	20/01/2017	Remi P.	Added driver installation order, note for CI580 installation, keypad connection, and event programming. Updated known issues.
2.6.2	13/04/2017	Remi P.	Updated supported NAD models; updated event programming.
2.6.4	01/06/2017	Remi P.	Updated player audio path connection for matrix switches in sect 3.1, and "Auto Power Rooms" description in sect 3.4
2.6.5	22/06/2017	Remi P.	Added a note for multi-zone grouping in sect 5.8
2.8.0	07/07/2017	Remi P.	Updated "On Room Off" feature in sect 3.4
2.8.1	17/07/2017	Remi P.	Updated sect 3.1 to add extra note to explain how the Main Off scenario works within an Audio Matrix Switch
2.8.6	22/03/2018	Remi P.	Added Reindex and RebuildIndex in section 4.2 device specific commands
2.8.7	24/05/2018	Remi P.	Added Media Scenes; updated section 6.5 Local Sources screenshot
2.8.9	06/12/2018	Remi P.	Updated supported Bluesound model in sect 1.0 and screenshot in sect 3.2
2.9.0	15/01/2019	Remi P.	Updated NAD C658 to the supported models.
3.0.0	28/06/2019	Remi P.	Updated C4 OS3 requirement and driver UI screenshots; Added Play/Pause button link in sect 3.2; Added PlayDirectInput device specific command in sect 4.2; Added support for M10; Added a known issue for iOS app; Added section 3.2 for Input Connections.
3.0.1	06/09/2019	Remi P.	Updated sect 3.3 to add preset up/down button link; updated sect 4.2 to add shuffle queue, preset up/down device specific commands; updated sect 6.1 to add multi-zone grouping note.
3.0.2	28/01/2020	Remi P.	Updated sect1.0 to add support to Bluesound Professional and others; Updated sect1.0 to add driver names; Updated sect 3.2 for more audio inputs; Added sect 4.5 for audio input events.
3.0.3	21/02/2020	Remi P.	Changed sect 4.5 from audio input events to player state variables.
3.0.5	07/12/2020	Remi P.	Added "LoadPresetByID" device specific command in sect 4.2. Updated permanent group feature in sect 6.8.
3.0.6	05/06/2021	Remi P.	Added SiriusXM and Roon support in sect 1.0; Added support to NODE,

			POWERNODE, SOUNDBAR+
3.0.8	07/12/2021	Remi P.	Added support for C700, Roksan Attessa, M10v2, B170S, and BSP200. Added Tunify service. Updated sect 6.8 for multi-zone grouping. Added "Favorite To Room" feature in sect 6.9.
3.2.0	18/01/2023	Remi P.	Updated to add Global Linein driver; Added "Rename Driver" properties in player driver. Added support to devices Alpha iQ, POWERNODE EDGE, PULSE M, C3050, and HUB.
3.2.1	28/02/2023	Remi P.	Updated section 2.1 and section 2.5 for global line in driver installation guide.
3.2.2	08/12/2023	Remi P.	Updated section 3.5 for source override selection. Added support for Presto and Pandora music services. Added support for M66, Cyrusaudio Classic Streamer and Stream-XR

Table of Contents

1.0 Introduction	6
2.0 Installation	9
2.1 Installation Order	9
2.2 Manually Installing Bluesound Zone Network Driver	9
2.3 Installing Bluesound Player Driver	9
2.4 Installing Bluesound Mini Drivers	11
2.5 Installing Bluesound Global Linein Driver	11
3.0 Configuration	13
3.1 Input / Output Connections	13
3.2 Input Connections	15
3.3 Button Link Connections	16
3.4 Hide Sources in Navigator	17
3.5 Configure Driver Properties	17
3.6 Retrieve Player Settings	19
4.0 Events Programming	20
4.1 Zone Network and Player Events	20
4.2 Device Specific Commands in Player Driver	20
4.3 Device Specific Commands in My Playlists Driver	21
4.4 Keypad Events	22
4.5 Player State Variables	23
5.0 Media Scenes	24
5.1 Media Scene Agent	24
5.2 Event Programming To Control Media Scenes	24
6.0 Using Bluesound	26
6.1 Launching Bluesound	26
6.2 Presets	26
6.3 Now Playing	27
6.4 Playlist	30
6.5 Local Sources	34
6.6 Music Services Within Player Driver	36
6.7 Direct Accessed Music Services	39

6.8 Media Zones and Multi-zone Grouping	40
6.9 Favoriting Media To Room	42
7.0 Troubleshooting	44
7.1 Notifications	44
8.0 Support	45
9.0 Known Issues	46

1.0 Introduction

This document describes how to install, config and use the BluOS Control4 driver suite. This suite consists of media service driver for player, zone network driver, global linein driver, and mini driver for each music services. They are designed to work together. Zone Network driver uses AVSwitch proxy, Player driver uses Media Service Proxy (MSP) and Amplifier proxy, and mini drivers use Media Service Proxy (MSP).

The following Bluesound and NAD players are supported with this driver:

- Bluesound NODE Gen1 (N100)
- Bluesound NODE 2 (N110)
- Bluesound NODE 2i (N125)
- Bluesound POWERNODE Gen1 (N150)
- Bluesound POWERNODE 2 (N180)
- Bluesound POWERNODE 2i (N225)
- Bluesound POWERNODE 2i v2 (N225v2)
- Bluesound FLEX (P100)
- Bluesound FLEX 2i (P125)
- Bluesound PULSE MINI (P200)
- Bluesound PULSE MINI 2i (P225)
- Bluesound PULSE Gen1 (P300)
- Bluesound PULSE 2 (P310)
- Bluesound PULSE 2i (P325)
- Bluesound VAULT Gen1 (V500)
- Bluesound VAULT 2 (V510)
- Bluesound VAULT 2i (V525)
- Bluesound PULSE SOUNDBAR (P400)
- Bluesound PULSE SOUNDBAR 2i (P425)
- Bluesound Professional B100S
- Bluesound Professional B160S
- Bluesound Professional B170S
- Bluesound Professional B400S
- Bluesound Professional BSP125
- Bluesound Professional BSP200
- Bluesound Professional BSP500
- Bluesound Professional BSP1000
- Bluesound Professional CP100
- Bluesound NODE (N130)
- Bluesound NODE X (N131)
- Bluesound POWERNODE (N330)
- Bluesound POWERNODE EDGE (N230)
- Bluesound PULSE SOUNDBAR+ (P430)
- Bluesound PULSE M (P230)
- Bluesound HUB
- NAD CI720
- NAD CI580

- NAD C3050
- NAD C390
- NAD C658
- NAD M10
- NAD M33
- NAD M50
- NAD M50.2
- NAD M66
- NAD VM130
- NAD VM300
- NAD C700
- NAD M10v2
- Monitor Audio IMS-4
- Roksan Attessa
- PSB Alpha iQ
- Cyrusaudio Classic Streamer
- Cyrusaudio Stream-XR

This driver requires Control4 OS v3.4.0 or higher. Make sure BluOS firmware is updated to the latest version.

This driver package includes the following drivers:

bluesound_media_service.c4z Player driver, one for each player

bluesound_zone_network.c4z Zone Network driver, one for each project

bluesound_globallinein.c4z Global Linein driver, two for each HUB with one for each input type (i.e. digital and analog) of the HUB

bluesound_amazon.c4z mini driver for Amazon Music, one for each project

bluesound_bugs.c4z mini driver for Bugs, one for each project

bluesound_calmradio.c4z mini driver for Calm Radio, one for each project

bluesound_customchannels.c4z mini driver for Custom Channels, one for each project

bluesound_deezer.c4z mini driver for Deezer, one for each project

bluesound_idagio.c4z mini driver for Idagio, one for each project

bluesound_iheartradio.c4z mini driver for iHeartRadio, one for each project

bluesound_library.c4z mini driver for Library, one for each project

bluesound_napster.c4z mini driver for Napster, one for each project

bluesound_nugs.c4z mini driver for Nugs.net, one for each project

bluesound_pandora.c4z mini driver for Pandora, one for each project

bluesound_playlists.c4z mini driver for My Playlists, one for each project

bluesound_presto.c4z mini driver for Presto Music, one for each project

bluesound_qobuz.c4z mini driver for Qobuz, one for each project

bluesound_qsic.c4z mini driver for Qsic, one for each project

bluesound_radiocom.c4z mini driver for Radio.com, one for each project

bluesound_radioparadise.c4z mini driver for Radio Paradise, one for each project

bluesound_roonready.c4z mini driver for Roon Ready, one for each project

bluesound_siriusxm.c4z mini driver for Sirius XM, one for each project

bluesound_slacker.c4z mini driver for XLive, one for each project

bluesound_soundmachine.c4z mini driver for SoundMachine, one for each project

bluesound_spotify.c4z mini driver for Spotify (Connect), one for each project

bluesound_tidal.c4z mini driver for Tidal, one for each project

bluesound_tunein.c4z mini driver for TuneIn, one for each project

bluesound_tunify.c4z mini driver for Tunify, one for each project

2.0 Installation

Ensure that your Control4 system is running OS 3.4.0 or higher before installing. Also ensure that your players are running the latest version of BluOS firmware.

2.1 Installation Order

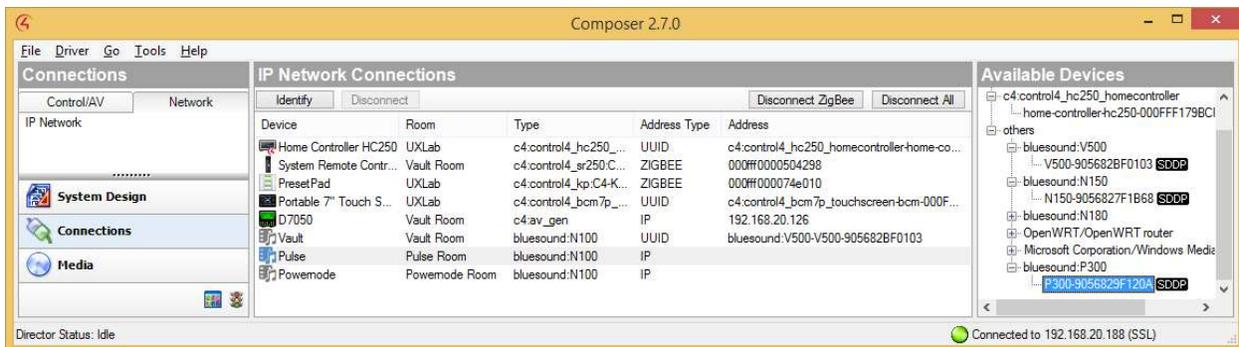
- Install Bluesound Zone Network driver (one per Control4 project)
- Install Bluesound Player driver (one for each room containing a Bluesound player)
- Install Bluesound mini driver (one per music service and per Control4 project)
- Install Bluesound Global Linein driver (recommended maximum two for each BluOS HUB, with one for digital input and one for analog input)

NOTE:

For **CI580** and **IMS-4** which have 4 zones, only the first zone is discovered by SDDP and required to enter IP address in Composer "IP Network Connections" under "Connections" => "Network". The rest 3 zones need to be manually installed. These three zones will be connected to network binding by the driver and will not show up in IP Network Connections area after director reboot.

2.2 Manually Installing Bluesound Zone Network Driver

Both Media Service and Zone Network drivers are available via the Composer application and the Control4 online driver database. Simply search for Bluesound in the Items panel, choose the room the driver is to be installed in, and double click on the driver from the search result. In this way, you will have to go to "Network" tab in Composer "Connections" to manually identify the player by dragging the player's uuid in "Available Devices" panel and dropping it into the corresponding player in "IP Network Connections" panel.

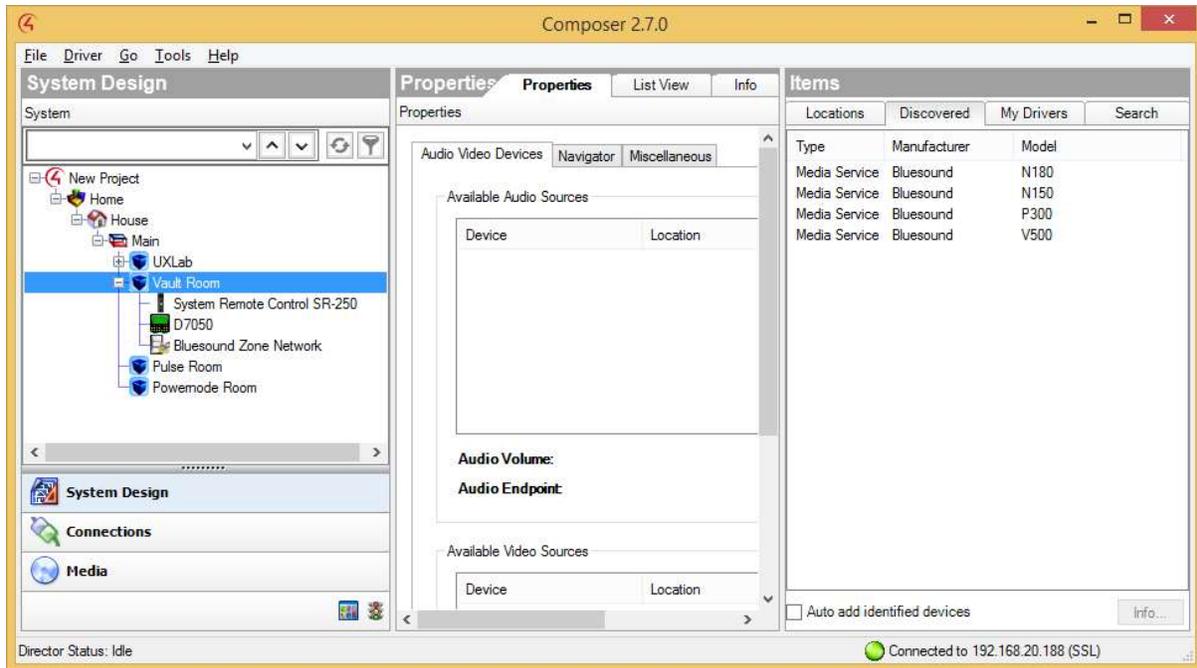


2.3 Installing Bluesound Player Driver

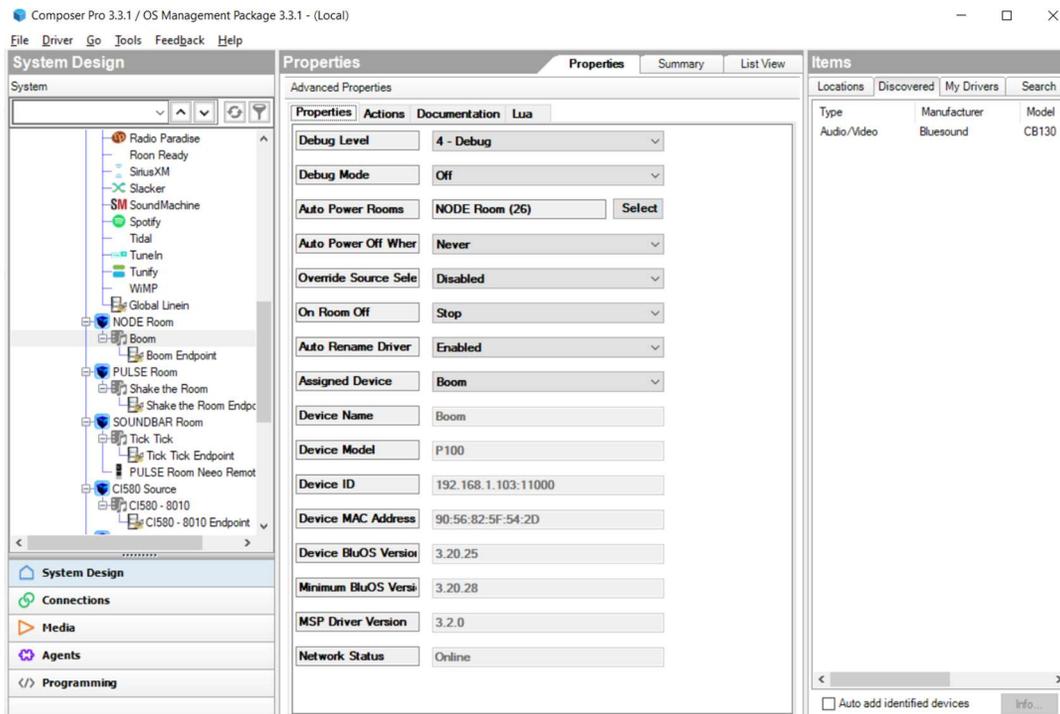
Bluesound Player driver can be installed manually in the same way as that Bluesound Zone Network driver is installed. It can also be installed automatically because Bluesound players support Control4 SDDP. The steps below show how to install Bluesound Player driver automatically in Composer.

- Select the room where the Bluesound device is to be added, e.g. Vault Room.

- Click on “Discovered” tab at right hand side of Composer. If Bluesound device is connected in the same network as the Control4 Director, Bluesound Player driver will show up under “Discovered” tab. Make sure to choose the right model for the Bluesound device. If you have more than one device having same model in the same network, right click on the MSP driver and click on “Info...” to find the right driver.



- Double click on the driver to be added. This step will add the Media Service driver to project and configure the network connection automatically. Select the player from “Assigned Device” list. The player driver will be automatically named to be the player selected.



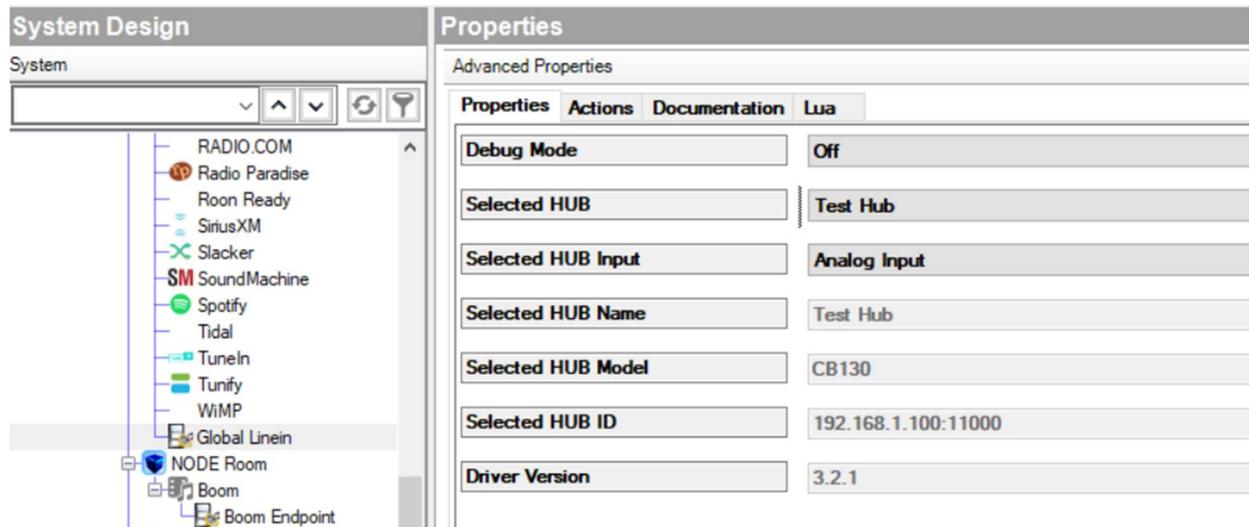
2.4 Installing Bluesound Mini Drivers

Bluesound Control4 driver provides mini drivers for each supported music service. They can be installed as per customer's needs. Each Control4 project only requires one mini driver for each service. Mini drivers have to be manually installed in the same way as that of Bluesound Zone Network driver.

2.5 Installing Bluesound Global Linein Driver

It's optional to install Bluesound Global Linein driver. It's required only if BluOS HUB is in system. It's STRONGLY recommended to install maximum two BluOS Global Linein driver for one BluOS HUB, with one for HUB's digital input and one for HUB's analog input. The driver can be manually installed in the same way as that of Bluesound Zone Network driver.

After installation, select the HUB to be controlled by the driver from the list "Selected HUB" and the input for the HUB.



The screenshot displays two panels from a software interface. The left panel, titled "System Design", shows a tree view of system components. The right panel, titled "Properties", shows the "Advanced Properties" for the selected component.

System Design Panel:

- System
- RADIO.COM
- Radio Paradise
- Roon Ready
- SiriusXM
- Slacker
- SM SoundMachine
- Spotify
- Tidal
- TuneIn
- Tunify
- WIMP
- Global Linein (Selected)
- NODE Room
- Boom
- Boom Endpoint

Properties Panel:

Advanced Properties

Properties	Actions	Documentation	Lua
Debug Mode			Off
Selected HUB			Test Hub
Selected HUB Input			Analog Input
Selected HUB Name			Test Hub
Selected HUB Model			CB130
Selected HUB ID			192.168.1.100:11000
Driver Version			3.2.1

Global Linein driver's input can be connected to audio source and output should be connected to Bluesound Zone Network driver Global Line In.

File Driver Go Tools Feedback Help

Connections

Control/AV Network

- SinusXM
- Slacker
- SM SoundMachine
- Spotify
- Tidal
- TuneIn
- Tunify
- WIMP
- Global Linein
- NODE Room
 - Boom
 - Boom Endpoint
- PULSE Room
 - Shake the Room
 - Shake the Room Endp...
- SOUNDBAR Room
 - Tick Tick
 - Tick Tick Endpoint
 - PULSE Room Neeo Remot
- CI580 Source

Control & Audio Video Connections

Global Linein

Name	Type	Connection	Input/Output	Connected To
Audio/Video Inputs				
HDMI ARC	Audio	HDMI	Input	
Analog Input	Audio	STEREO	Input	Sharp DVD-S48->Output
Phono Input	Audio	STEREO	Input	
Optical Input	Audio	DIGITAL_OPTICAL	Input	
Coaxial Input	Audio	DIGITAL_COAX	Input	
Audio/Video Outputs				
Network Line Out	Audio	RF_BLUESOUND_NET_LINEIN	Output	Bluesound Zone Network->Global Line In 1

3.0 Configuration

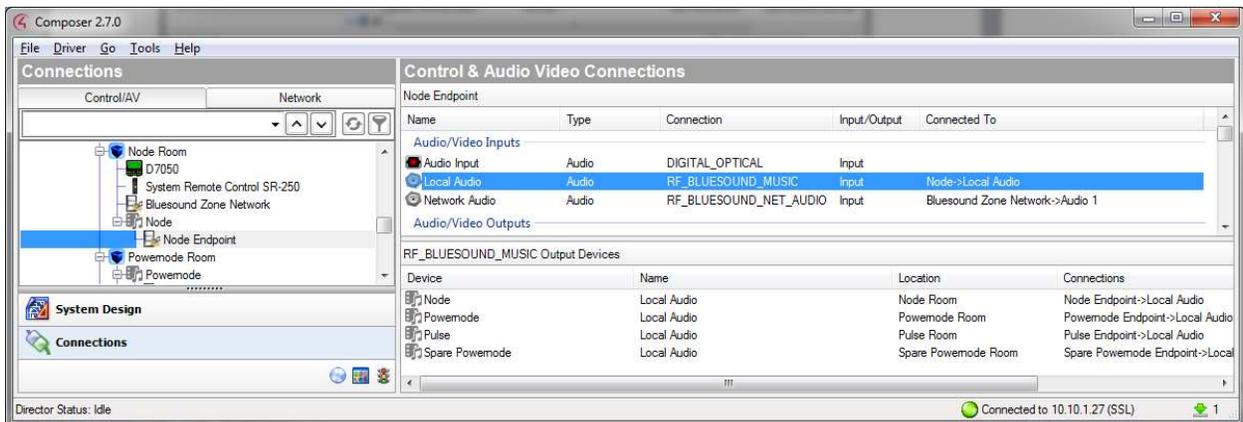
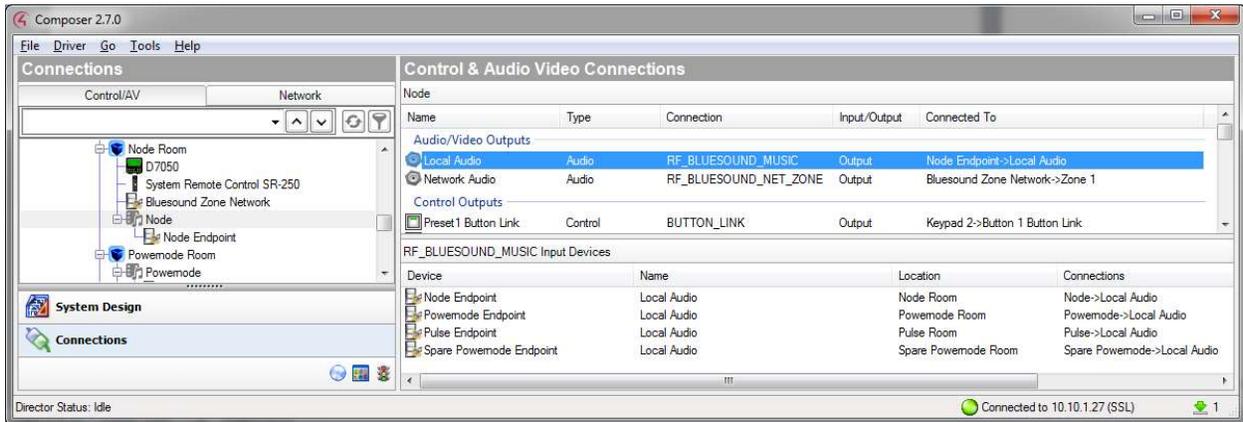
Bluesound Player driver has to be configured properly in order for all Bluesound devices in the same network to work well together.

3.1 Input / Output Connections

Bluesound Player audio path has to be complete for the driver to work properly. The audio input / output connections between Bluesound Zone Network and Bluesound Player drivers are automatically bound.

Note 1) Bluesound Player driver lists all possible audio inputs / outputs for all Bluesound models. Only the supported audio input / output should be connected for the player.

Note 2) Please **DO NOT** delete any connection between Zone Network driver and Media Service driver. In case the connection is broken, follow the example below (Node's Audio/Video Outputs and Node Endpoint's Audio/Video Inputs) to repair it.



- **If more than one player are connected to the same matrix switch, please disconnect the players' Network Audio Outputs from Bluesound Zone Network Zone** as below. Otherwise, routing source players to multiple speakers may actually group the players! **Because of the removal of this binding when the starting stream of a multiple room session is turned off it will be necessary to make sure all added rooms are turned off within Control4's UI.**

Connections

Control/AV Network

Control & Audio Video Connections

NODE-30CE

Name	Type	Connection	Input/Output	Connected To
Audio/Video Outputs				
Local Audio	Audio	RF_BLUESOUND_MUSIC	Output	NODE-30CE Endpoint->Local Audio
Network Audio	Audio	RF_BLUESOUND_NET_ZONE	Output	
Control Outputs				
Preset1 Button Link	Control	BUTTON_LINK	Output	
Preset2 Button Link	Control	BUTTON_LINK	Output	
Preset3 Button Link	Control	BUTTON_LINK	Output	
Preset4 Button Link	Control	BUTTON_LINK	Output	
Preset5 Button Link	Control	BUTTON_LINK	Output	
Preset6 Button Link	Control	BUTTON_LINK	Output	
Preset7 Button Link	Control	BUTTON_LINK	Output	
Preset8 Button Link	Control	BUTTON_LINK	Output	
Preset9 Button Link	Control	BUTTON_LINK	Output	
Preset10 Button Link	Control	BUTTON_LINK	Output	

- If a player is physically connected to a receiver, connect the player's Audio Output to the receiver's Audio Input to match the physical connection. For example, Node in the project has the optical output connected to optical input of the receiver D7050.

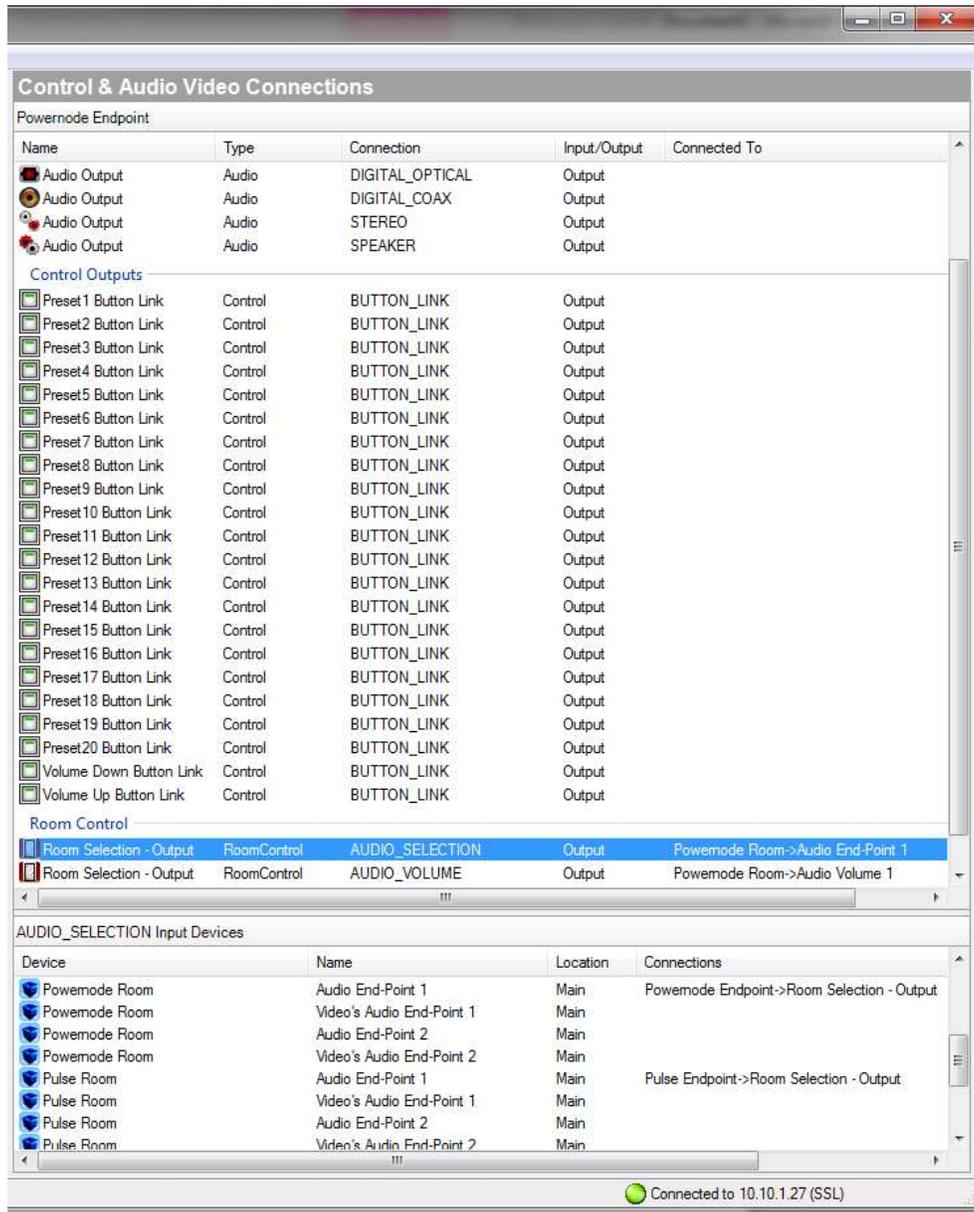
Control & Audio Video Connections

Node Endpoint

Name	Type	Connection	Input/Output	Connected To
Audio/Video Outputs				
Audio Output	Audio	DIGITAL_OPTICAL	Output	D7050->Digital Audio Input 1
Audio Output	Audio	DIGITAL_COAX	Output	
Audio Output	Audio	STEREO	Output	
Audio Output	Audio	SPEAKER	Output	
Control Outputs				
Preset1 Button Link	Control	BUTTON_LINK	Output	Keypad 2->Button 1 Button Link
Preset2 Button Link	Control	BUTTON_LINK	Output	Keypad 2->Button 2 Button Link
Preset3 Button Link	Control	BUTTON_LINK	Output	Keypad 2->Button 3 Button Link
Preset4 Button Link	Control	BUTTON_LINK	Output	Keypad 2->Button 4 Button Link
Preset5 Button Link	Control	BUTTON_LINK	Output	Keypad 2->Button 5 Button Link
Preset6 Button Link	Control	BUTTON_LINK	Output	
Preset7 Button Link	Control	BUTTON_LINK	Output	
Preset8 Button Link	Control	BUTTON_LINK	Output	
Preset9 Button Link	Control	BUTTON_LINK	Output	
Preset10 Button Link	Control	BUTTON_LINK	Output	
Preset11 Button Link	Control	BUTTON_LINK	Output	
Preset12 Button Link	Control	BUTTON_LINK	Output	
Preset13 Button Link	Control	BUTTON_LINK	Output	
Preset14 Button Link	Control	BUTTON_LINK	Output	
Preset15 Button Link	Control	BUTTON_LINK	Output	
Preset16 Button Link	Control	BUTTON_LINK	Output	
Preset17 Button Link	Control	BUTTON_LINK	Output	
Preset18 Button Link	Control	BUTTON_LINK	Output	
Preset19 Button Link	Control	BUTTON_LINK	Output	
Preset20 Button Link	Control	BUTTON_LINK	Output	
Volume Down Button Link	Control	BUTTON_LINK	Output	Keypad 2->Down Button Link
Volume Up Button Link	Control	BUTTON_LINK	Output	Keypad 2->Up Button Link
Room Control				
Room Selection - Output	RoomControl	AUDIO_SELECTION	Output	
Room Selection - Output	RoomControl	AUDIO_VOLUME	Output	
DIGITAL_OPTICAL Input Devices				
Device	Name	Location	Connections	
Sony Receiver	DVD	MSP2 Desk		
Sony Receiver	SACD/CD	MSP2 Desk		
D7050	Digital Audio Input 1	Node Room	Node Endpoint->Audio Output	
D7050	Digital Audio Input 2	Node Room		
Powemode Endpoint	Audio Input	Powemode Room		
Pulse Endpoint	Audio Input	Pulse Room		
Spare Powemode Endpoint	Audio Input	Spare Powemode Room		

Connected to 10.10.1.27 (SSL)

- If a player is the audio endpoint, connect the player's Room Control to room audio endpoint. For example, Powernode has built-in amplifier and its Room Control is connected to Room Audio Endpoint directly.



3.2 Input Connections

Bluesound Player driver provides multiple audio inputs: Analog Input 1, Optical Input 1, Coax Input 1, Analog Input 2, Optical Input 2, Coax Input 2, and HDMI ARC. Please note that the input is mapped to the player's real input. **For example, NODE 2i has 1 combined analog input and optical input. When use the analog input, connect the audio input to NODE 2i player driver's Analog Input 1. When use the optical input, connect the audio input to NODE 2i player driver's Optical Input 1. If you have POWERNODE 2i, and only analog 2 is used, connect the audio input to POWERNODE 2i player driver's Analog Input 2.**

Control & Audio Video Connections

M10-CD2D Endpoint

Name	Type	Connection	Input/Output
Audio/Video Inputs			
HDMI ARC	Video	HDMI	Input
Analog Input 1	Audio	STEREO	Input
Optical Input 1	Audio	DIGITAL_OPTICAL	Input
Coaxial Input	Audio	DIGITAL_COAX	Input
Analog Input 2	Audio	STEREO	Input
Optical Input 2	Audio	DIGITAL_OPTICAL	Input

3.3 Button Link Connections

Bluesound Player driver provides the following button links for keypad: 20 presets, preset up, preset down, volume up, volume down, mute toggle, play, pause, play/pause, stop, skip forward, and skip reverse. Connecting these button links to keypad buttons can be convenient for preset loading, player volume control, and playback control.

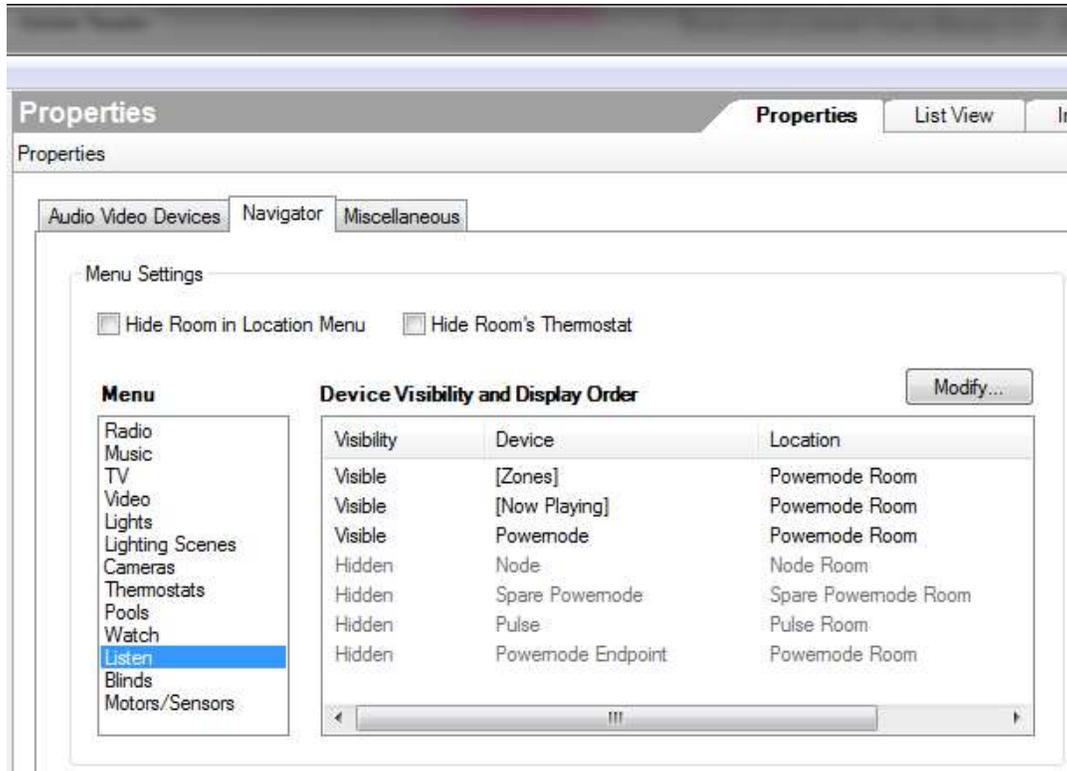
Note: It is normal that “Control Outputs” button links appear in both Player and Player Endpoint because BUTTON_LINK connection doesn’t have proxy binding.

Control & Audio Video Connections				
NODE Zi - 301A Endpoint				
Name	Type	Connection	Input/Output	Connected To
Audio/Video Outputs				
HDMI Output	Video	HDMI	Output	
Audio Output	Audio	DIGITAL_OPTICAL	Output	
Audio Output	Audio	DIGITAL_COAX	Output	
Audio Output	Audio	STEREO	Output	
Audio Output	Audio	SPEAKER	Output	
Control Outputs				
Preset 1 Button Link	Control	BUTTON_LINK	Output	
Preset 2 Button Link	Control	BUTTON_LINK	Output	
Preset 3 Button Link	Control	BUTTON_LINK	Output	
Preset 4 Button Link	Control	BUTTON_LINK	Output	
Preset 5 Button Link	Control	BUTTON_LINK	Output	
Preset 6 Button Link	Control	BUTTON_LINK	Output	
Preset 7 Button Link	Control	BUTTON_LINK	Output	
Preset 8 Button Link	Control	BUTTON_LINK	Output	
Preset 9 Button Link	Control	BUTTON_LINK	Output	
Preset 10 Button Link	Control	BUTTON_LINK	Output	
Preset 11 Button Link	Control	BUTTON_LINK	Output	
Preset 12 Button Link	Control	BUTTON_LINK	Output	
Preset 13 Button Link	Control	BUTTON_LINK	Output	
Preset 14 Button Link	Control	BUTTON_LINK	Output	
Preset 15 Button Link	Control	BUTTON_LINK	Output	
Preset 16 Button Link	Control	BUTTON_LINK	Output	
Preset 17 Button Link	Control	BUTTON_LINK	Output	
Preset 18 Button Link	Control	BUTTON_LINK	Output	
Preset 19 Button Link	Control	BUTTON_LINK	Output	
Preset 20 Button Link	Control	BUTTON_LINK	Output	
Preset Up Button Link	Control	BUTTON_LINK	Output	Configurable Keypad->Button 1 Button Link
Preset Down Button Link	Control	BUTTON_LINK	Output	Configurable Keypad->Button 2 Button Link
Volume Up Button Link	Control	BUTTON_LINK	Output	
Volume Down Button Link	Control	BUTTON_LINK	Output	
Mute Toggle Button Link	Control	BUTTON_LINK	Output	
Play Button Link	Control	BUTTON_LINK	Output	
Pause Button Link	Control	BUTTON_LINK	Output	
Stop Button Link	Control	BUTTON_LINK	Output	
Skip Fwd Button Link	Control	BUTTON_LINK	Output	
Skip Rev Button Link	Control	BUTTON_LINK	Output	
Play/Pause Toggle Button Link	Control	BUTTON_LINK	Output	

3.4 Hide Sources in Navigator

By default all Bluesound devices in the network will appear in each room having Bluesound Player driver installed as all the players are in the same network group. In each room you should hide all the Bluesound devices which are not the current room's devices under "Listen" in "Navigator" tab of room's properties. In addition, the Bluesound Player Endpoint of Bluesound Player driver should always be hidden.

For example, the screenshot below shows the device visibility of Powernode room. The players which are not in the room are hidden. Also the player's endpoint is hidden as well.



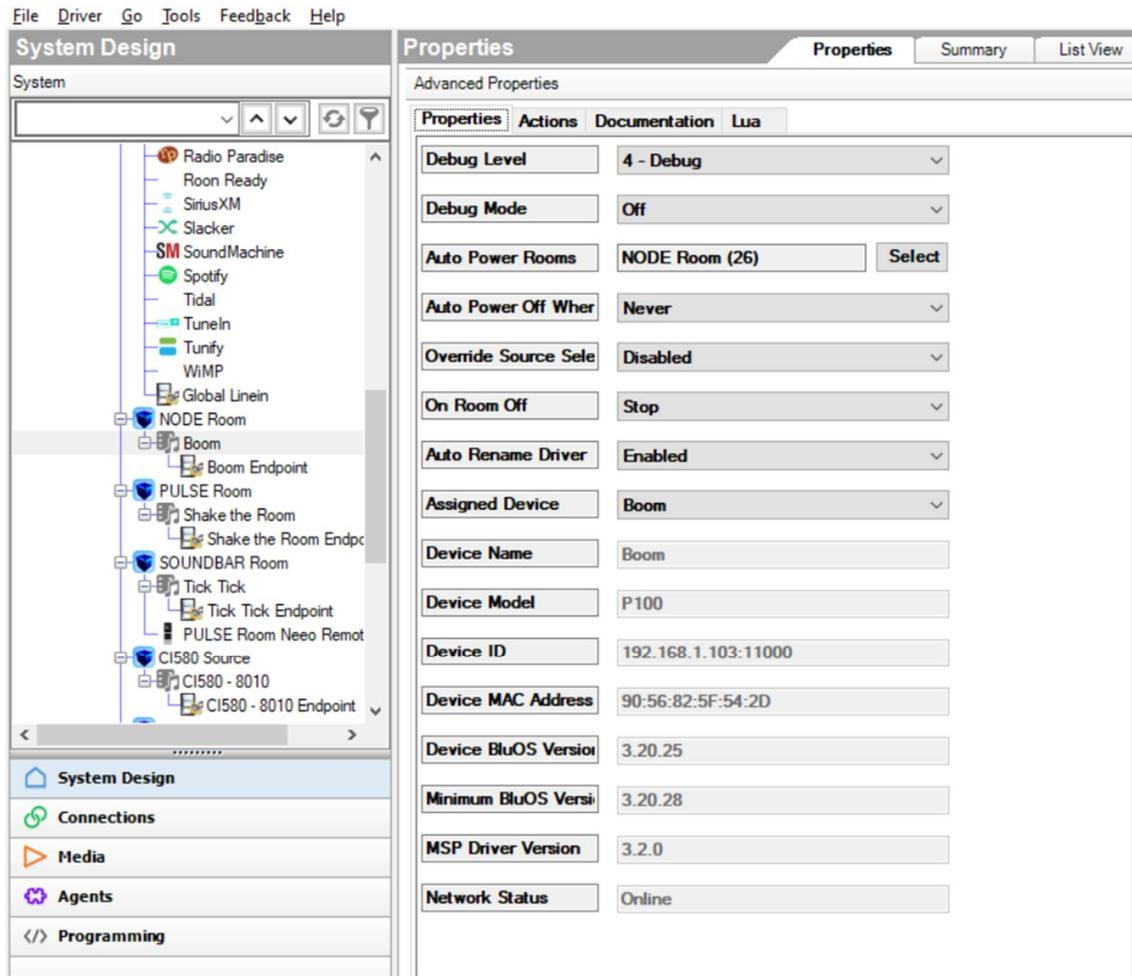
3.5 Configure Driver Properties

Bluesound Player driver provides several properties to configure debug level/mode, turn on/off auto power rooms, disable/enable source override, and display network status and driver information.

- To trace/debug the MSP driver in Lua output window, set the property "Debug Mode" to be either "Print" or "Print and Log". The debug mode "Print" and "Print and Log" has 45 minutes timeout.
- "Auto Power Rooms" gives users an option to turn on C4 room and select Bluesound players automatically by playing music stream in Bluesound native Apps. **For an unamplified BluOS player, ONLY select an Auto Power Rooms if the player is Not the only player connected to a multi-room amplifier. If the player is connected to a receiver or dedicated power amplifier, select the room the receiver/amplifier is in. For an amplified BluOS player, select the room the player is in.**

Note: If Auto Power Rooms is not set up, the zone grouping will not work properly!!!

- “Auto Power Off When” is visible when “Auto Power Room” is selected. It has “Stop, Pause, Stop/Pause, Never” options. For example, when “Stop” is selected, the room will be off when the player stops playing.
- “Auto Power Off Delay” is visible when “Auto Power Room” is selected and when “Auto Power Off When” is either “Stop”, “Pause”, or “Stop/Pause”. It has several delay options: 10 seconds, 20 seconds, 30 seconds, 1 minute, 2 minutes, 3 minutes, 5 minutes, and 10 minutes. It turns off the room after selected delay time.
- “Override Source Selection” is disabled by default when Auto Power Room is selected. If it’s disabled, Bluesound player starting to play will turn on the room in C4 and only select the Bluesound player if the room is off or a different Bluesound player is playing. If it’s enabled, Bluesound player starting to play will turn on the room in C4 and select the Bluesound player if other active sources (media player, TV, DVD, Game Control, etc.) are not external input of the player.



- “On Room Off” has four options “Pause, Stop, Clear Queue, Do Nothing”. It works in the way described below.
For ungrouped players, upon room off, it does
 - Stop: stop the playing, queue stays same
 - Pause: pause the playing, queue stays same
 - Clear Queue: clear the current playlist/queue
 - Do Nothing: player keeps playing, queue stays same

For grouped secondary player, upon room off (due to being ungrouped) it does:

- Stop, Pause, Do Nothing: stop the playing (this is part of the firmware feature), queue remains same

- Clear Queue: clear the current playlist/queue

For grouped secondary player, upon room off (due to room off) it does:

- ungroup the player from primary player, and then take On Room Off actions:
 - Stop, Pause, Do Nothing: stop the playing (this is part of the firmware feature), queue remains same
 - Clear Queue: clear the current playlist/queue

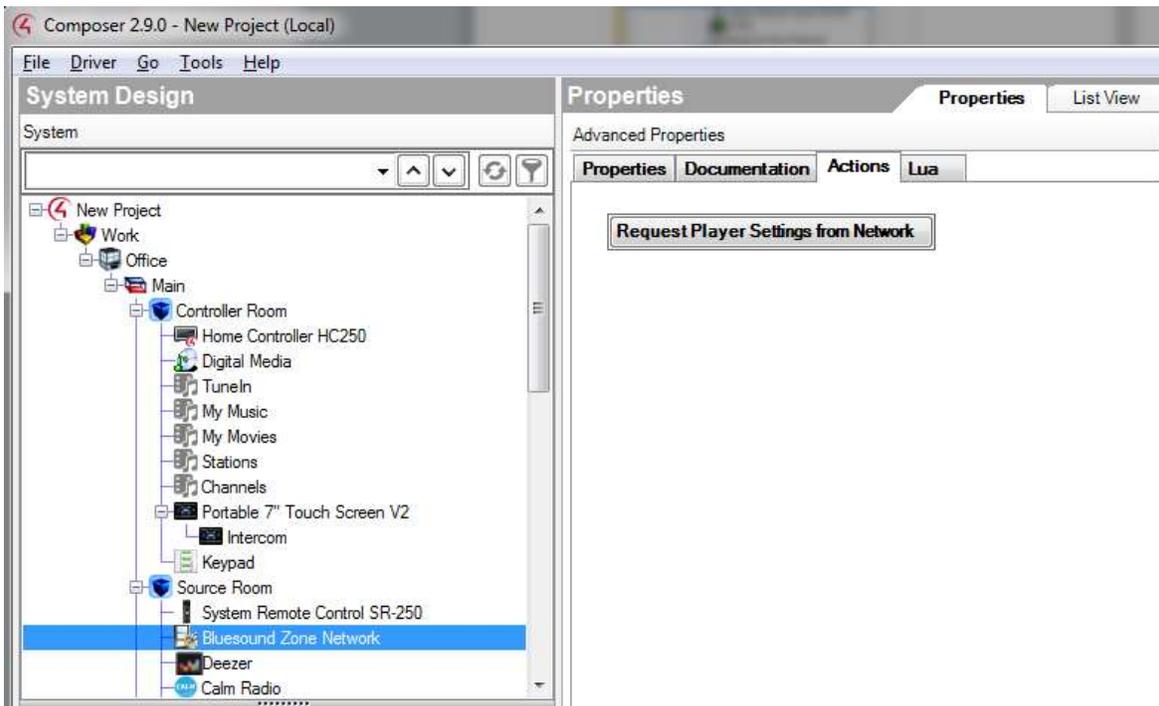
For grouped primary player, upon room off, it does:

- ungroup all players from the group, and then take On Room Off actions:
 - Stop: stop the playing, queue stays same
 - Pause: pause the playing, queue stays same
 - Clear Queue: clear the current playlist/queue
 - Do Nothing: player keeps playing

- “Auto Rename Driver” has two options: Enabled (default) and Disabled. When Enabled, selecting Assigned Device will automatically rename the player driver to be same as the Assigned Device.
- “Assigned Device” shows a list of players discovered in the network. Select one to be controlled by the player driver in the room.
- After above steps are complete, refresh navigators by clicking Composer “File” menu and “Refresh Navigators” or simply pressing “Shift + F5” keys. With everything set up properly, Player driver’s “Properties” should show the right versions of BluOS and driver, and Network Status should be Online.

3.6 Retrieve Player Settings

After all configuration work is done, clicking the action “Request Player Settings from Network” in Zone Network driver to retrieve device information of Bluesound devices in the same zone network. Please **remember** to perform the same action every time after driver update.



4.0 Events Programming

Bluesound drivers support event programming.

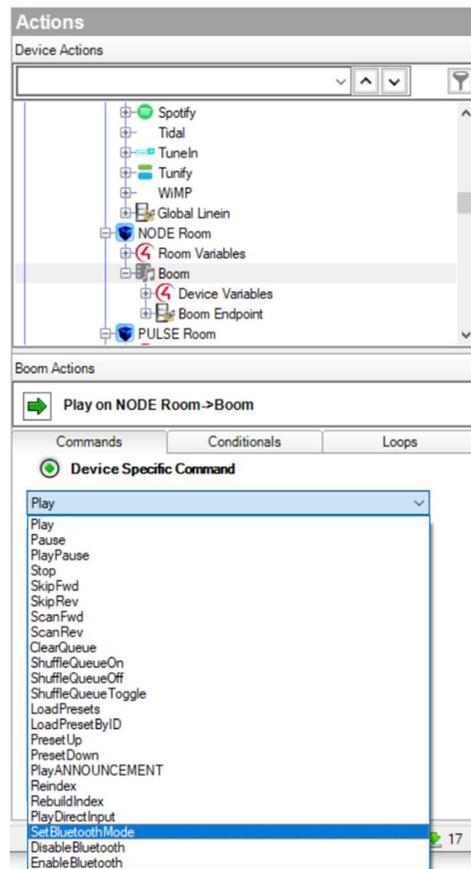
4.1 Zone Network and Player Events

Bluesound Zone Network driver output has “Input Changed” events, and Bluesound Player driver endpoint output supports “Input Changed”, “Volume Level Changed”, “Mute State Changed”, and “Any Audio Settings Changed”. **However**, due to a known Control4 director bug, these events are not working. To program zone network events or player events, please use Room Variables or Device Variables instead.

4.2 Device Specific Commands in Player Driver

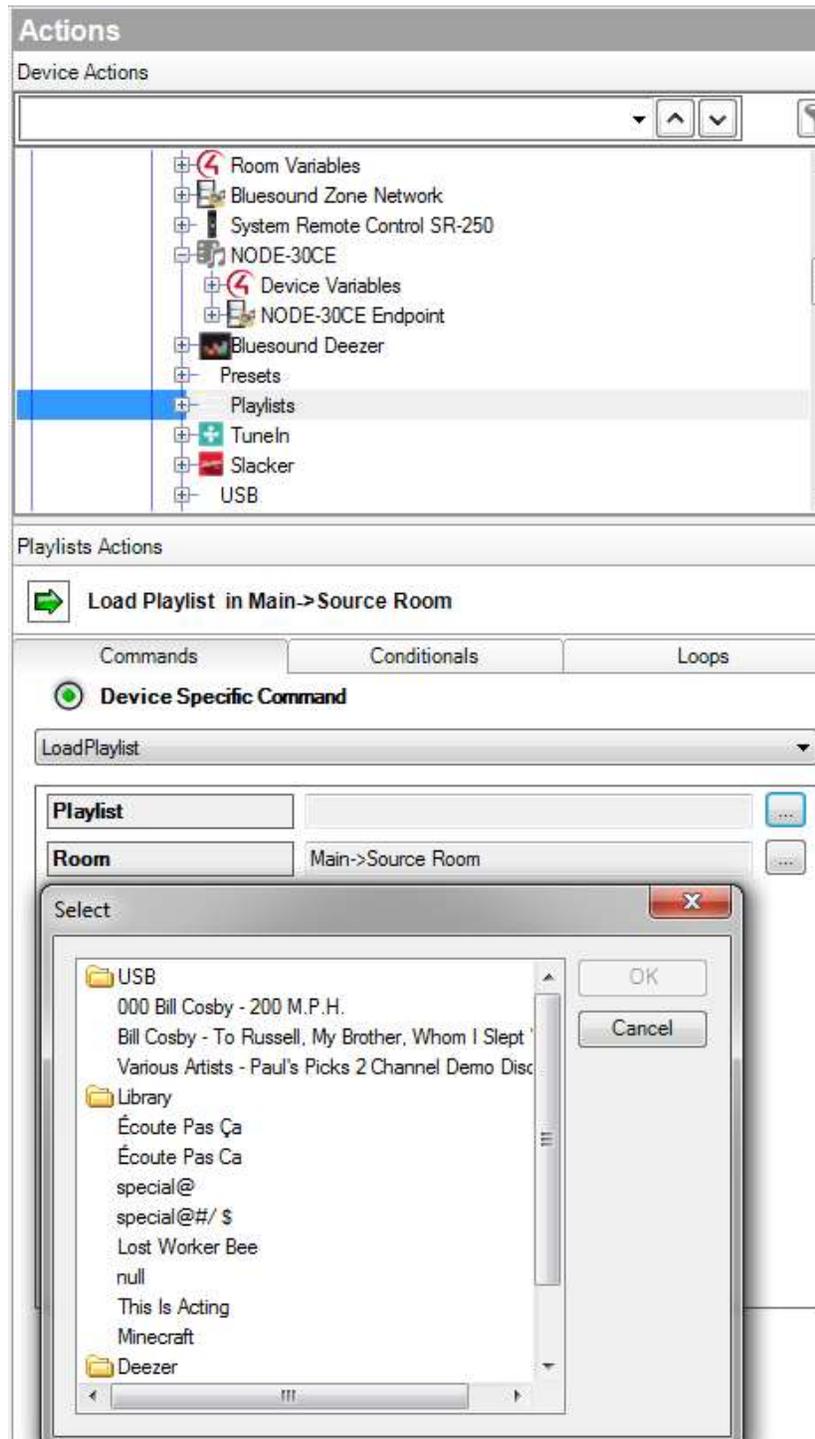
Bluesound Player driver provides few basic device specific commands for event programming. They are Play, Pause, PlayPause, Stop, SkipFwd, SkipRev, ScanFwd, ScanRev, ClearQueue, ShuffleQueueOn, ShuffleQueueOff, ShuffleQueueToggle, LoadPresets, LoadPresetsByID, PresetUp, PresetDown, PlayANNOUNCEMENT, Reindex, RebuildIndex, PlayDirectInput, SetBluetoothMode, DisableBluetooth, and EnableBluetooth.

Note: for PlayANNOUNCEMENT command, “Announcement File” is the announcement file name including the extension (no path).



4.3 Device Specific Commands in My Playlists Driver

Bluesound My Playlists driver provides Load Playlist command for event programming. Choose a playlist and room to load the playlist.



4.4 Keypad Events

Bluesound Player driver only supports **Single Click** of C4 keypad. When programming C4 keypad in Composer, please make sure to check "Single Click" for button command.

The screenshot displays the 'Actions' panel in a software interface. The top section is titled 'Actions' and contains a sub-section 'Device Actions'. Below this is a tree view of device actions, including 'My Music', 'My Movies', 'Stations', 'Channels', 'Portable 7" Touch Screen V2', 'Device Variables', 'Intercom', 'Keypad', 'Source Room', 'Room Variables', 'Bluesound Zone Network', and 'System Remote Control SR-250'. The 'Keypad' action is selected and highlighted.

Below the tree view is the 'Keypad Actions' section, which contains a green arrow icon and the text 'Click the Button 1 button on the Controller Room->Keypad'. Below this are two tabs: 'Commands' and 'Conditionals'. The 'Commands' tab is active and shows three sections:

- LED Commands:** A dropdown menu, a text input field, and radio buttons for 'Use On Color', 'Use Off Color', 'Set LED On', 'Set All LED On', 'Set LED Off', 'Set All LED Off', 'Set LED Current', and 'Set All LED Current'.
- Button Commands:** A dropdown menu set to 'Button 1', and radio buttons for 'Single Click' (selected), 'Press', 'Double Click', 'Release', and 'Triple Click'.
- Misc. Commands:** A radio button for 'Set Backlight Color' and a text input field.

4.5 Player State Variables

Bluesound **Player** driver has four customized variables for event programming, three Boolean variables “PLAYING”, “PAUSED”, and “STOPPED”, and one string variable “PLAY_STATUS” (three states: PLAYING, PAUSED, STOPPED).

The screenshot displays the Bluesound software interface, divided into two main panels: **Programming** and **Script**.

Programming Panel:

- Device Events:** A tree view showing various rooms and their associated variables. The **PLAYING** variable under **NODE 2i Room** is highlighted in blue.
- PLAYING Events:** A list of events, with **When PLAYING changes** selected.
- System Design, Connections, Media, Agents, Programming:** A sidebar menu at the bottom with **Programming** selected.

Script Panel:

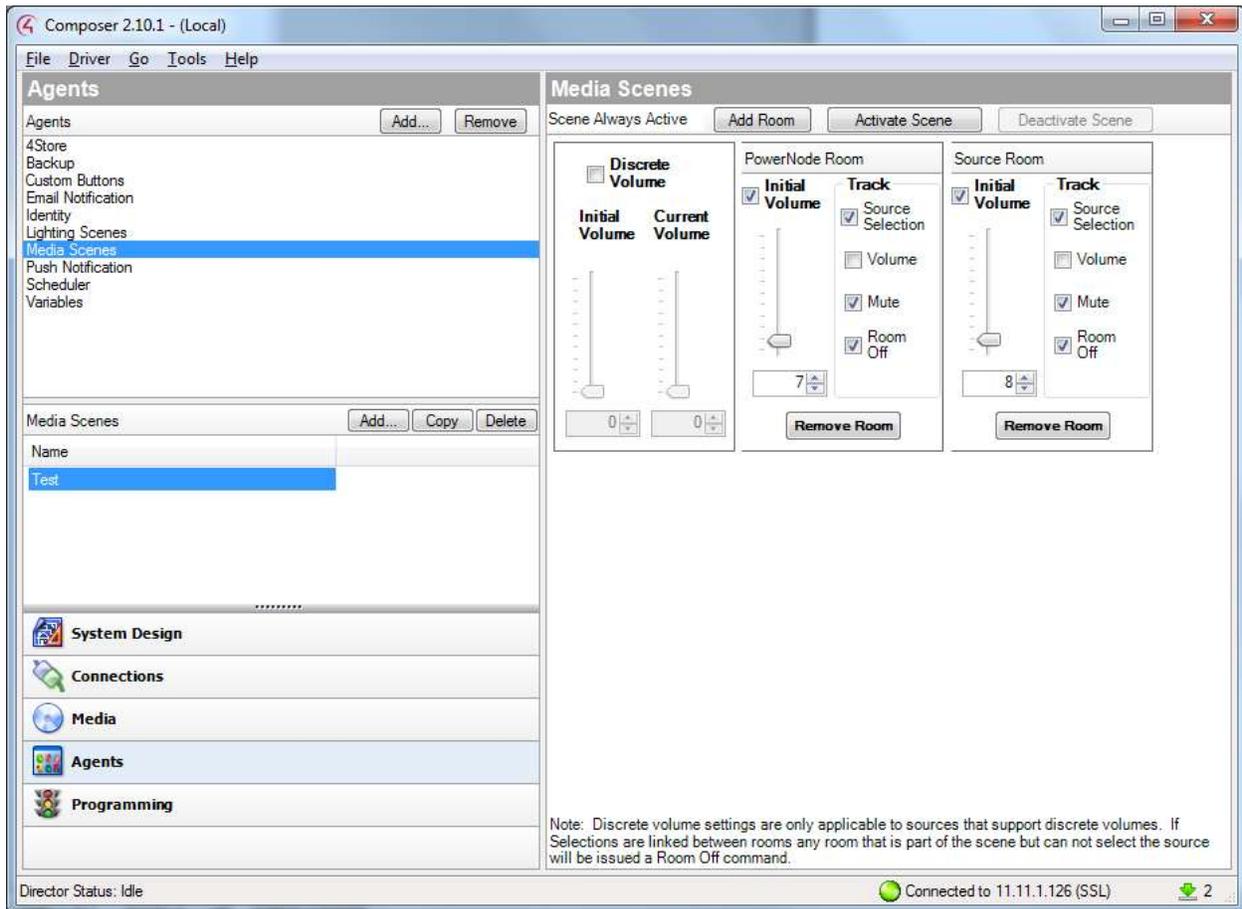
- Script:** A text area containing the event trigger: **When the variable NODE 2i Room->NODE 2i - 301A->PLAYING changes**.
- Programming Controls:** A row of buttons for **Else**, **And**, **Or**, **Break**, **Stop**, and **Delay** (set to 5 seconds).
- Comment:** A text input field for adding a comment.
- Script Actions:** A large empty area for defining actions to be performed when the event occurs.

5.0 Media Scenes

Bluesound drivers support Media Scenes. The Media Scenes in Control4 is an agent-based implementation. When a media scene is activated, all the rooms participating in the scene will have the same source and driver considers the zones grouped.

5.1 Media Scene Agent

A Media Scene agent can be created like below. The media scene below means PowerNode Room and Source Room will have the same source when it is activated.

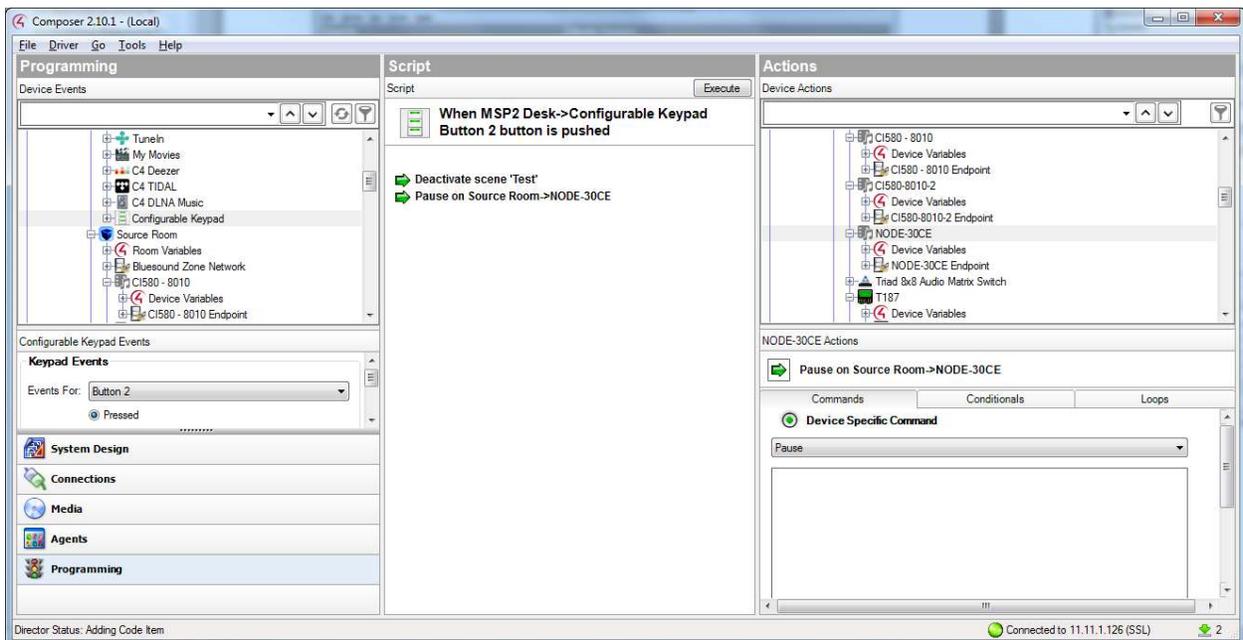
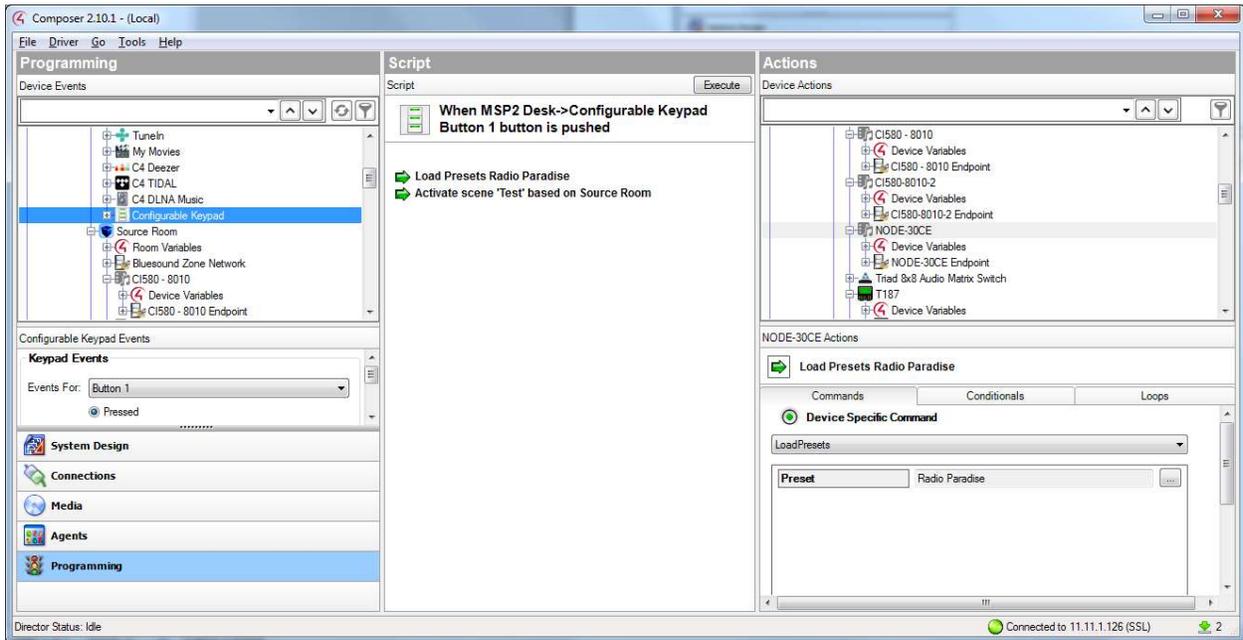


5.2 Event Programming To Control Media Scenes

A Media Scene can be controlled by keypad event programming or others. It's up to integrators how to control media scene. An example below shows:

Keypad button 1 press to load preset “Radio Paradise” of Source Room and then deactivate the media scene – the result of this action would load preset “Radio Paradise” of Source Room player NODE-30CE and group PowerNode Room player to Source Room player.

Keypad button 2 press to deactivate the media scene, and stop playing – the result of this action would deactivate the media scene and stop the play on both rooms. Grouping of the two rooms stays grouped. It is up to integrators what to do after the media scene is deactivated.

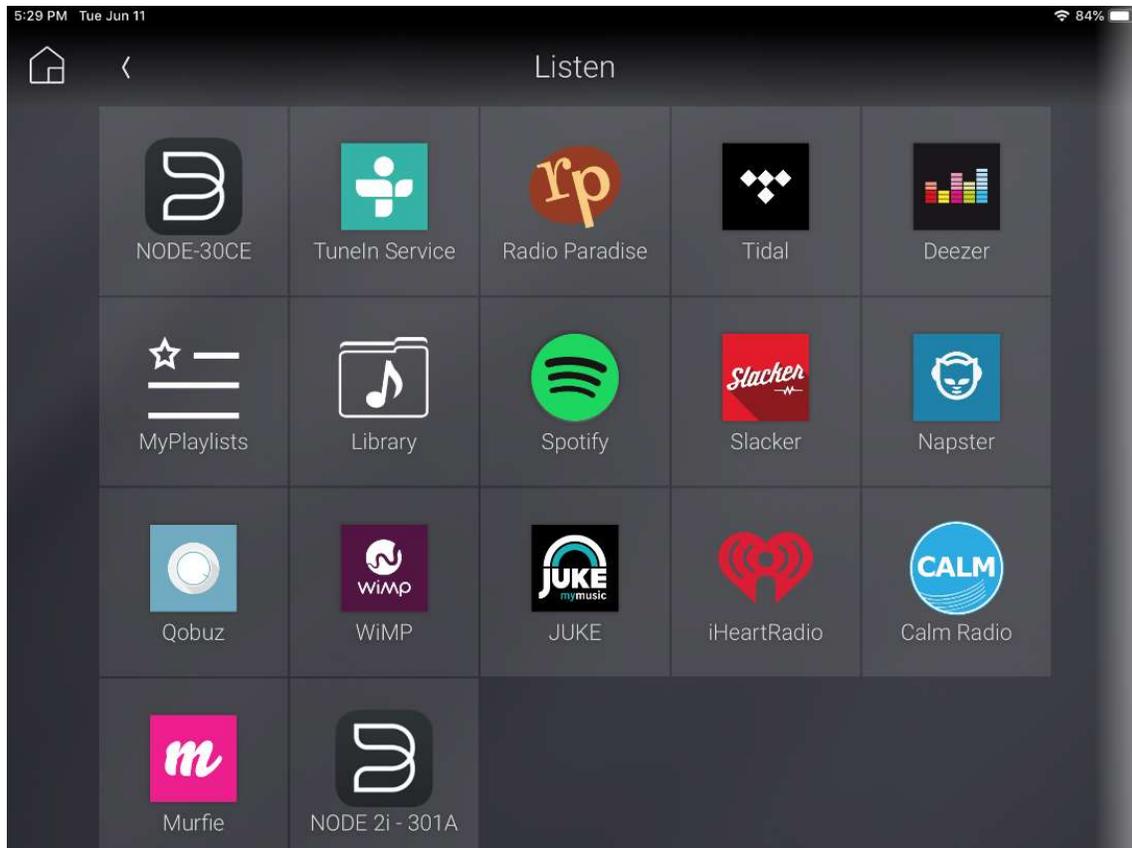


6.0 Using Bluesound

Bluesound players and individual services are available through the Control4 Navigators.

6.1 Launching Bluesound

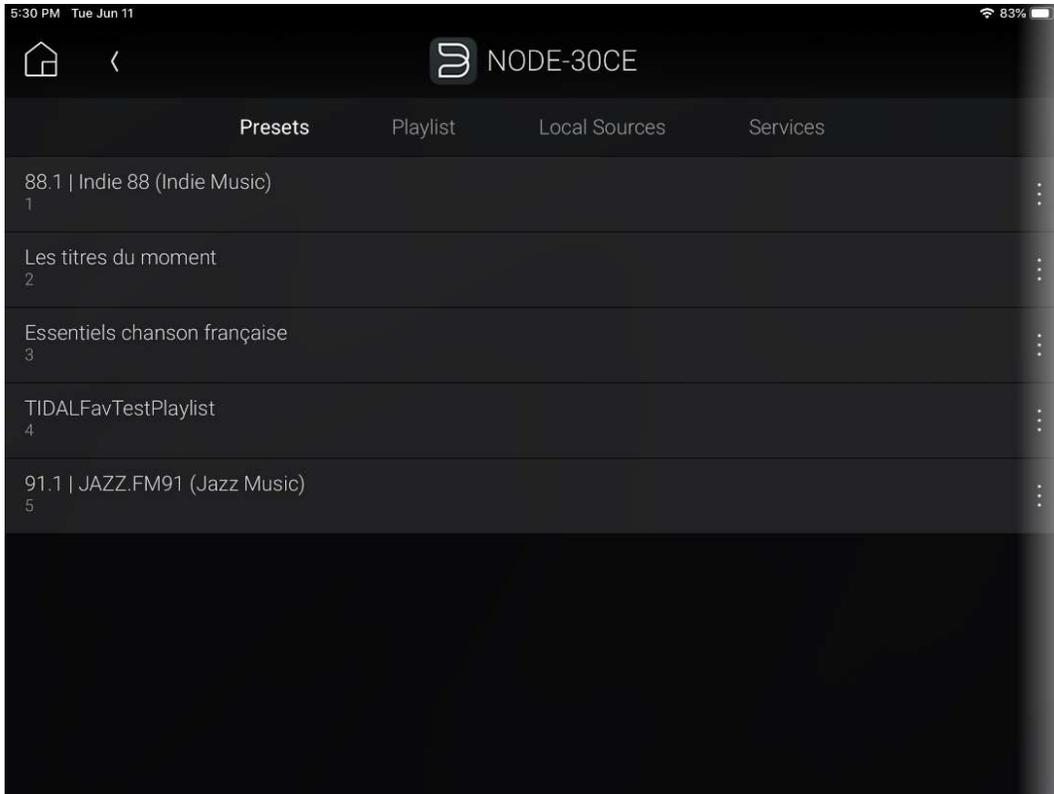
Choose a room with Bluesound player in and locate the player (e.g. NODE-30CE) or the service (i.e. Bluesound Deezer) from the “Listen” menu. Click on “NODE-30CE” to launch the driver for all music services or on “Bluesound Deezer” for Deezer.



6.2 Presets

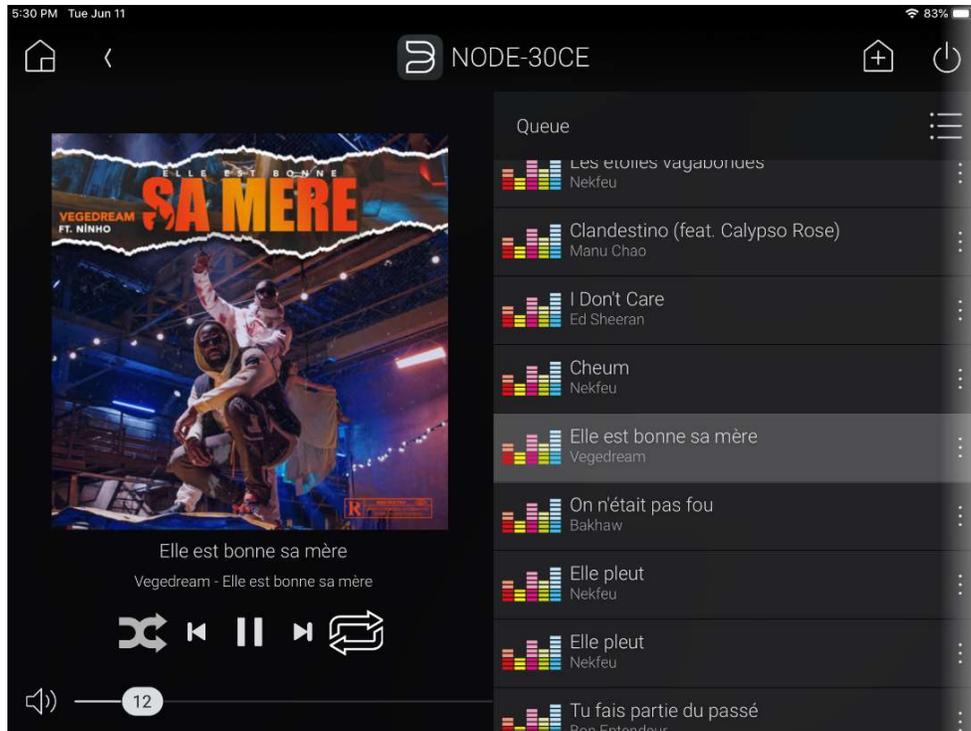
The “Presets” tab displays a list of the presets created for the device. If a C4 keypad is connected to the driver, you may press any preset key to load the preset directly.

The preset may be a radio service or a playlist. Click on any preset will pop up the options to Load Preset and Delete Preset.

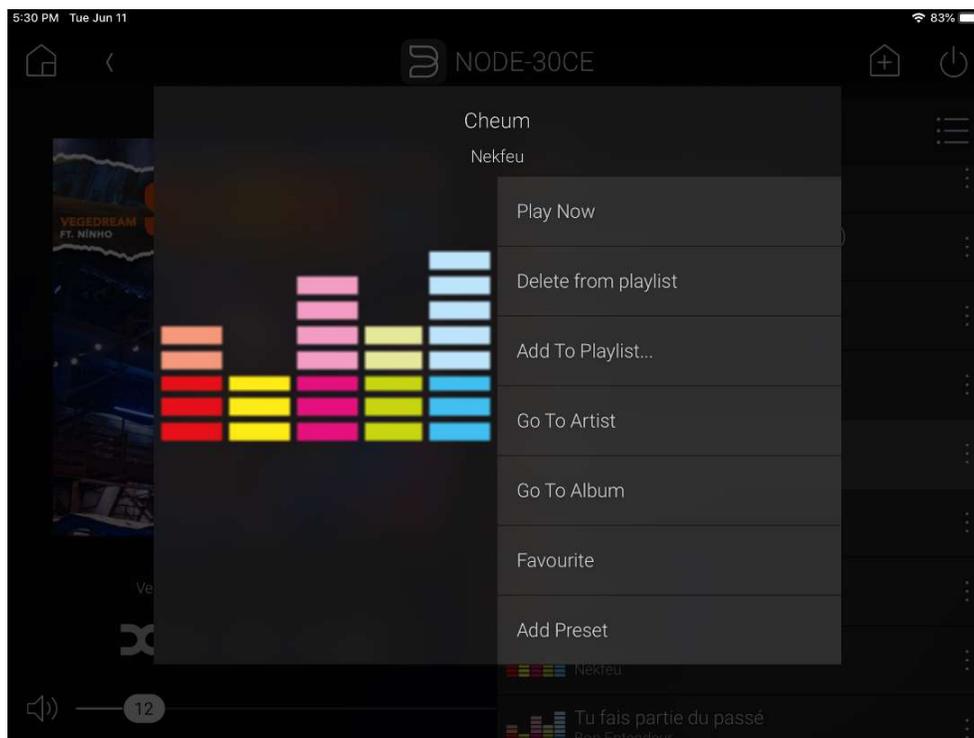


6.3 Now Playing

The Now Playing screen is shown below. Volume and mute controls are at the bottom left.

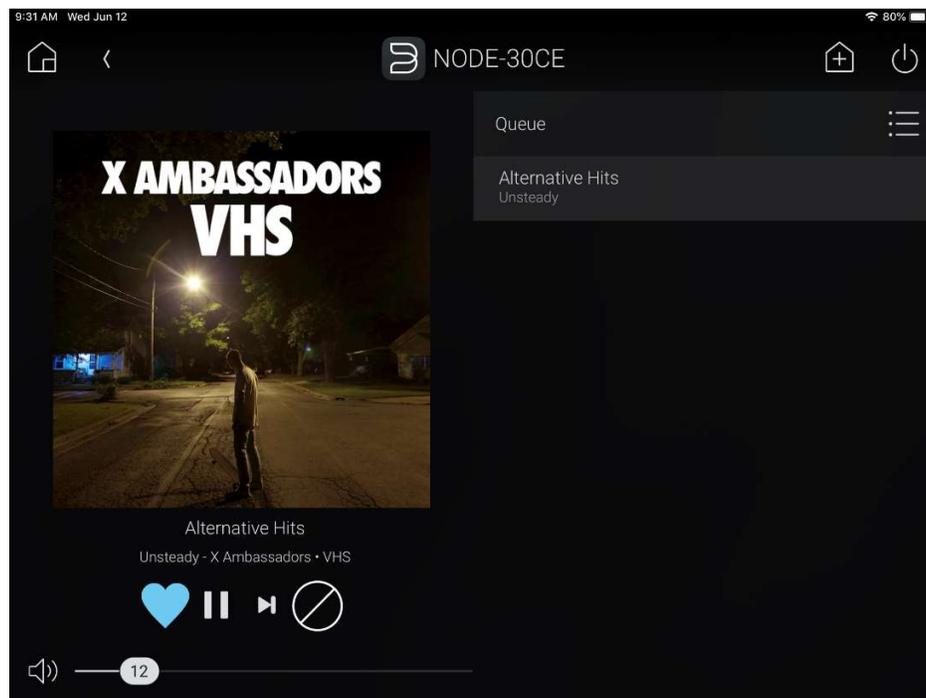
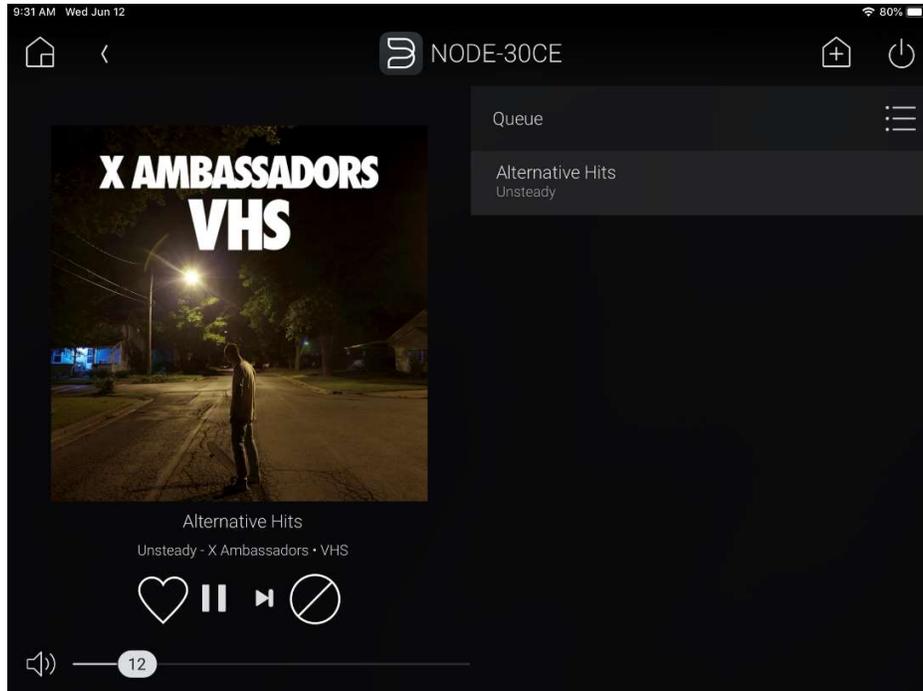


- Clicking on any of the tracks on the Now Playing screen will pop up a list of actions.



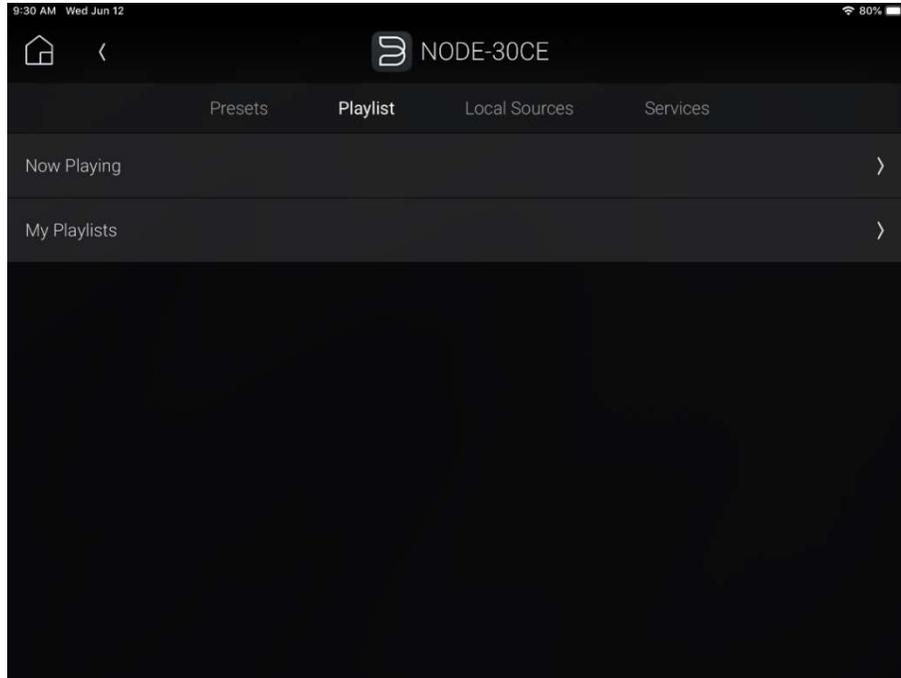
- Some music services provide “Shuffle” and “Repeat” capabilities. Clicking on the “Shuffle” or “Repeat” icons can shuffle the playlist tracks, and repeat the playlist, cancel repeat, or repeat the current track.

- Some streaming services such as “Slacker” has “ban” and “love” capabilities. Clicking on the “heart” icon under cover art can mark the current track as a favorite track; or clicking on the “ban” icon to block the current track. Note: if the track is marked as favorite it can’t be banned (the “Ban” icon will be greyed out). If “ban” is clicked, the current track will be skipped and next available track will start.

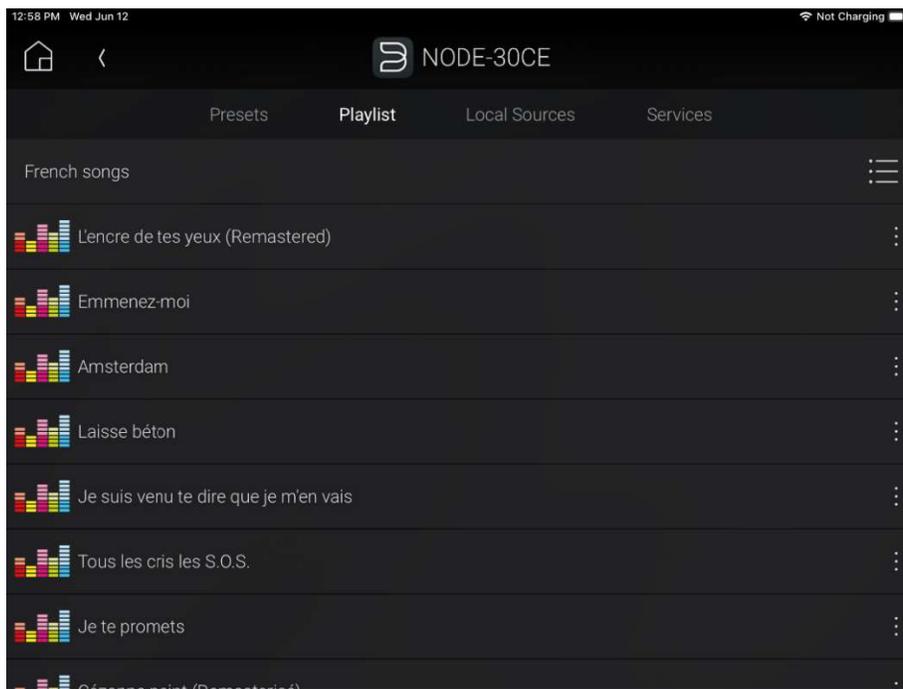


6.4 Playlist

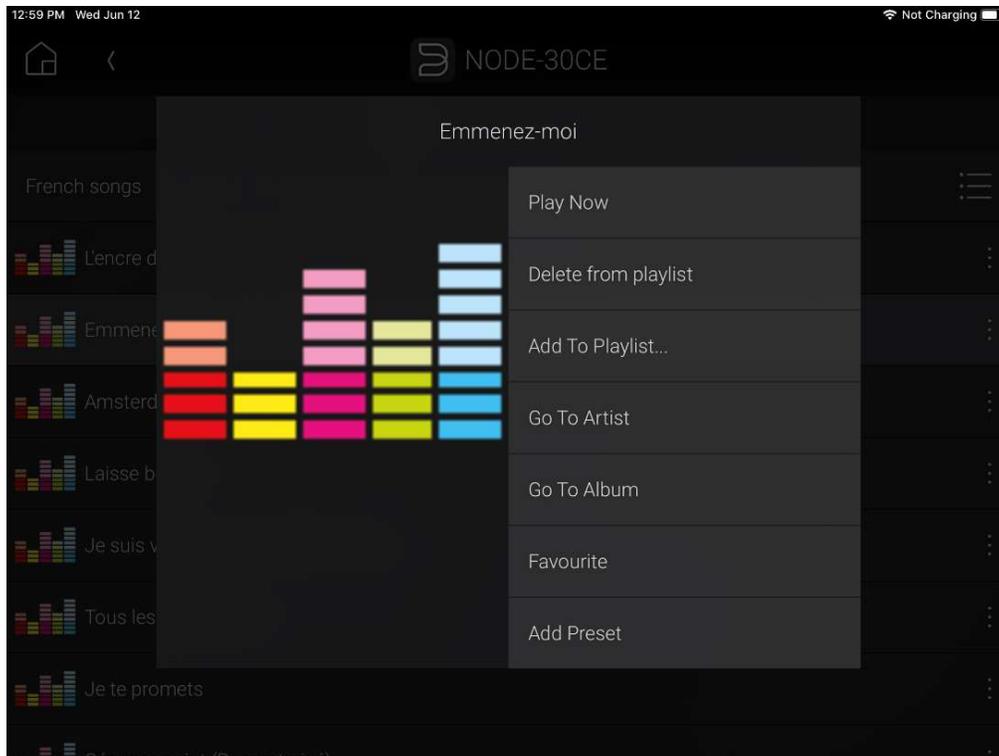
“Playlist” tab lists the current playlist and playlist and the actions available for them. Selecting the “Playlist” will show items of current playlist (“Now Playing”) and all playlists (“My Playlists”) in the library.



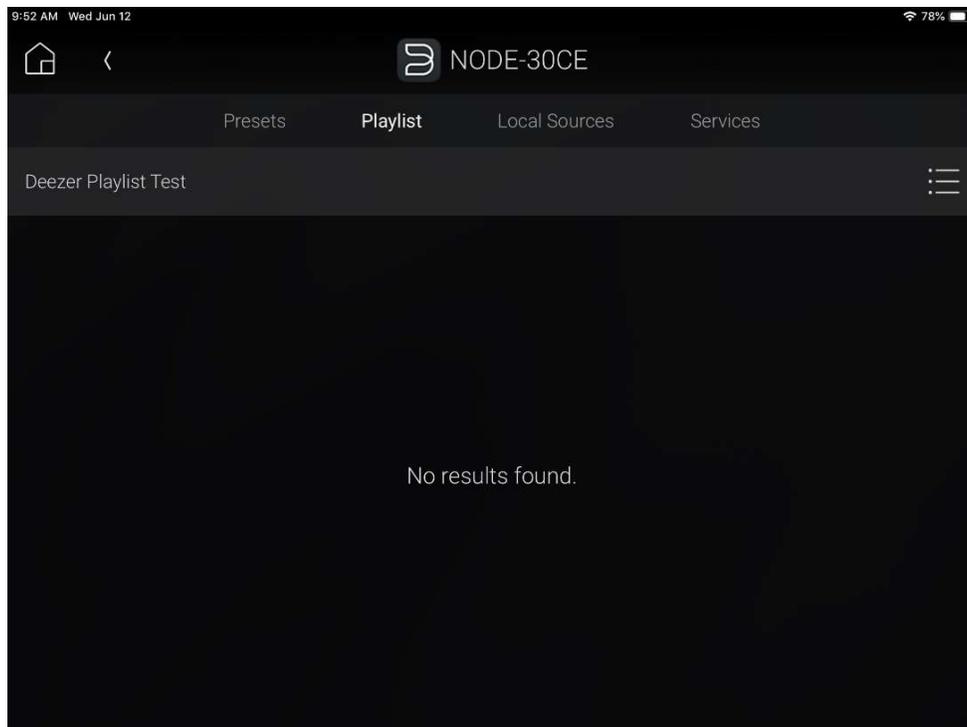
- Click on “Now Playing” to bring up all tracks of the current playlist.



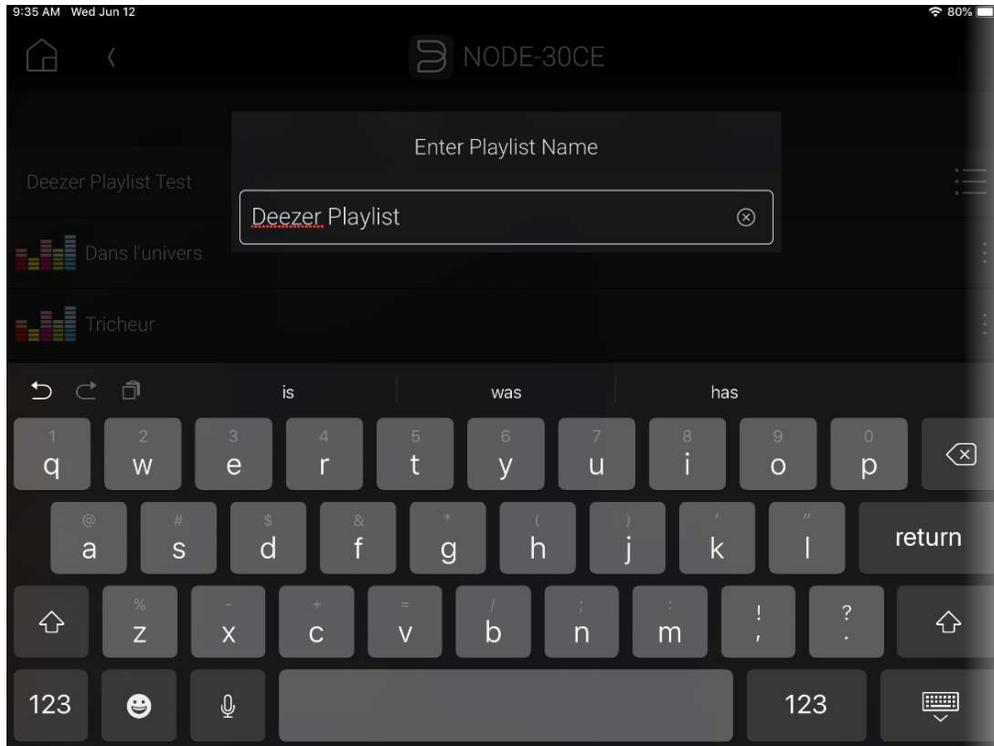
- Click on any track of the playlist and a list of the actions for the track will appear.



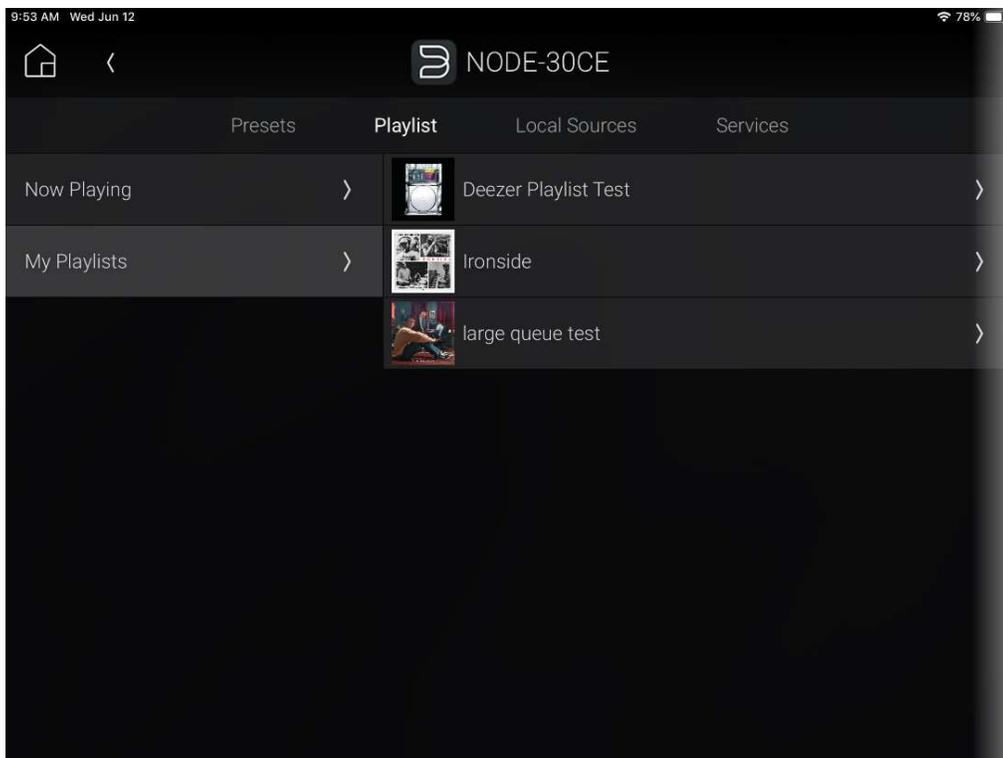
- Click on the list icon on top right will pop up two options for current queue "Save Queue" and "Clear Queue". Click on "Clear Queue" to clear the tracks from the current queue.



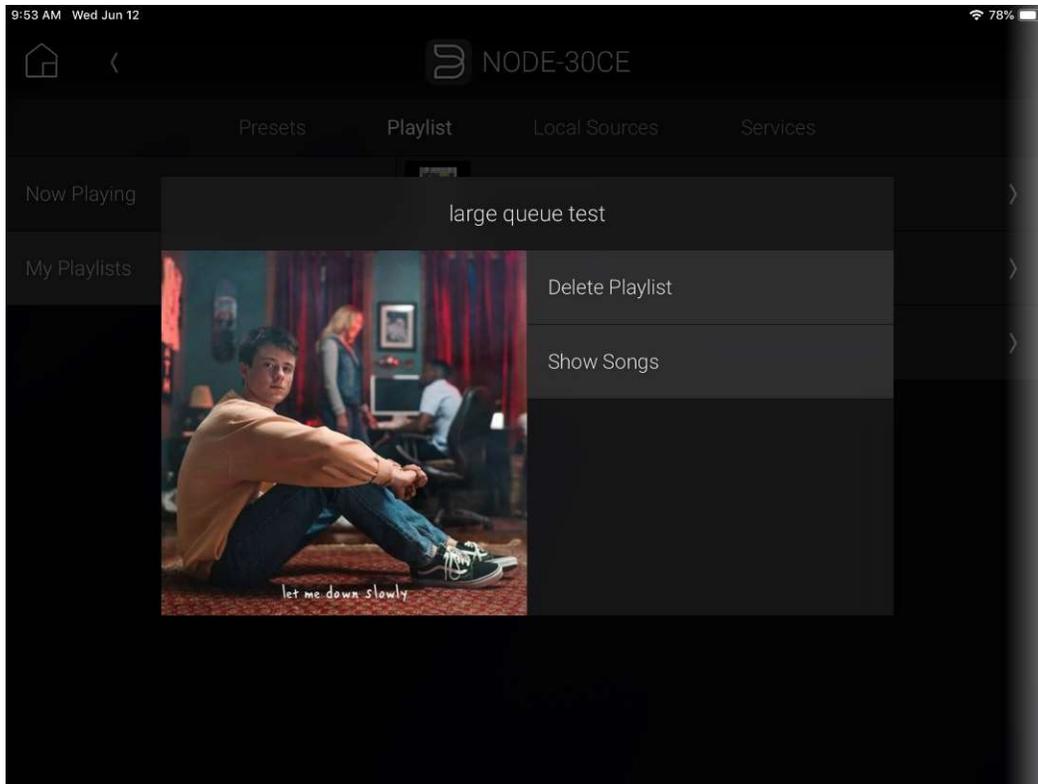
- Click on the "save" icon to save/rename the current playlist



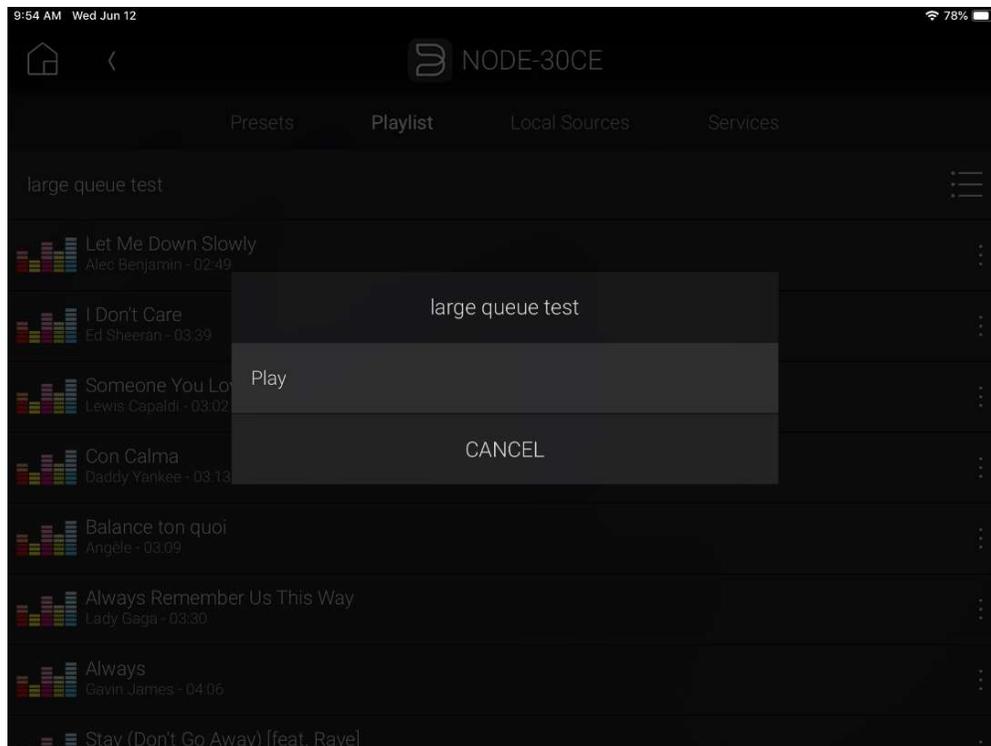
- Click on “My Playlists” under the Playlist tab to list all the Bluesound playlists. Bluesound playlists are stored locally on your Bluesound players, and can be made up of local library content and streaming service content.



- Click on any playlist to delete or display (show the tracks) or load (play) the playlist

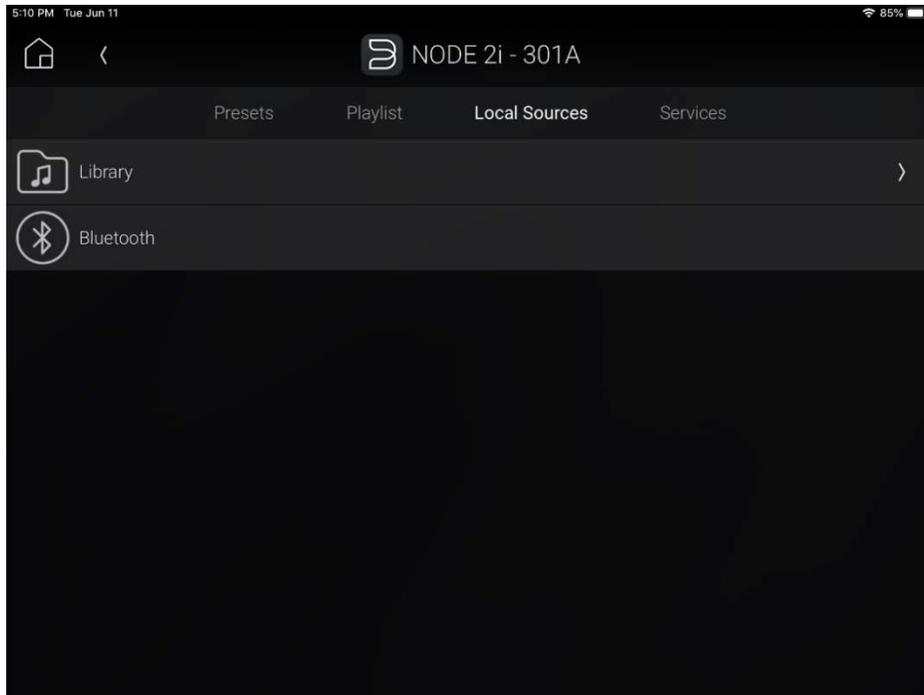


- When a playlist is showing a list of tracks, click on the top right list icon to load and play the whole playlist.



6.5 Local Sources

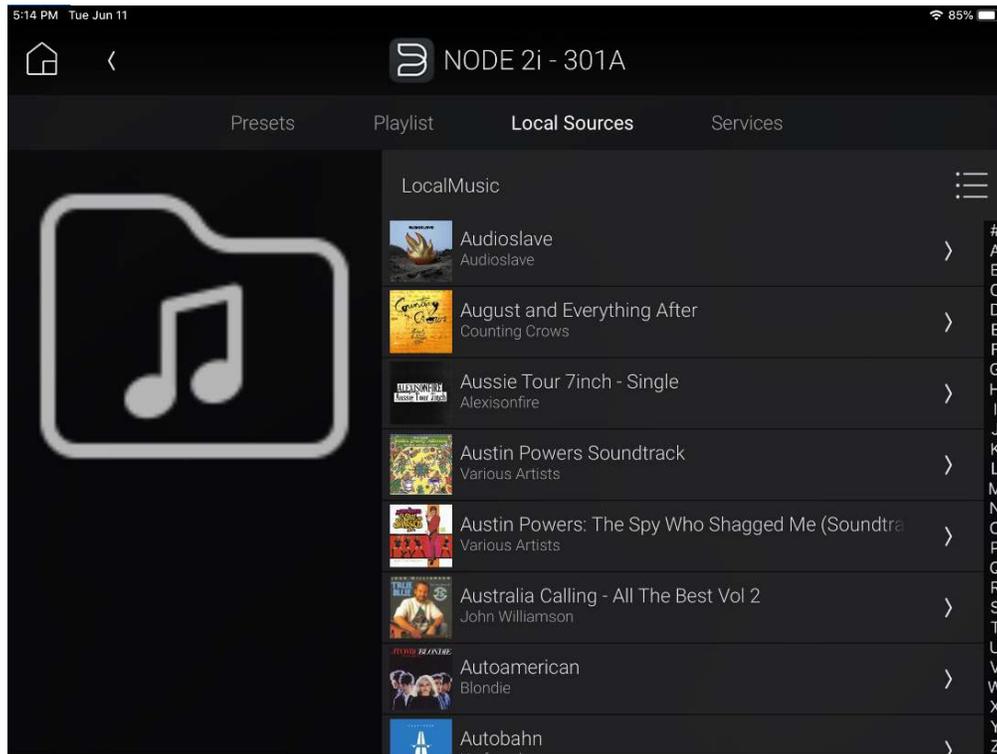
“Local Sources” provides music sources of local library, external USB, or “Optical Input” (Pulse only). Click on the tab “Local Sources” to browse music sources on the Bluesound player.



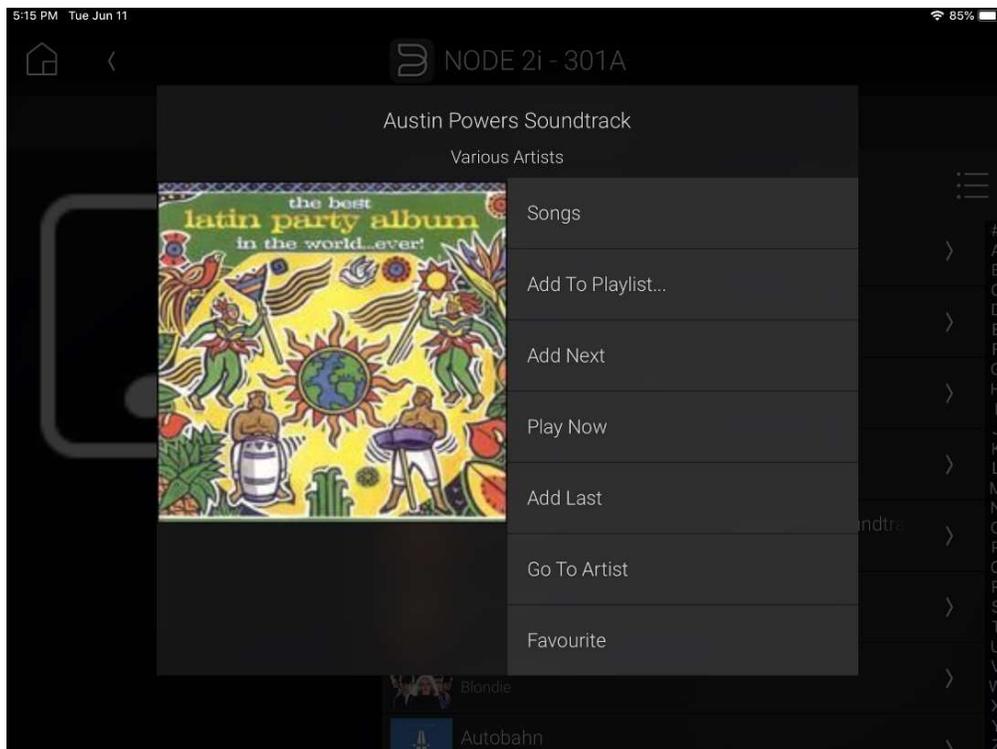
- Click on “Library” to browse local content. This will show a list of the categories.



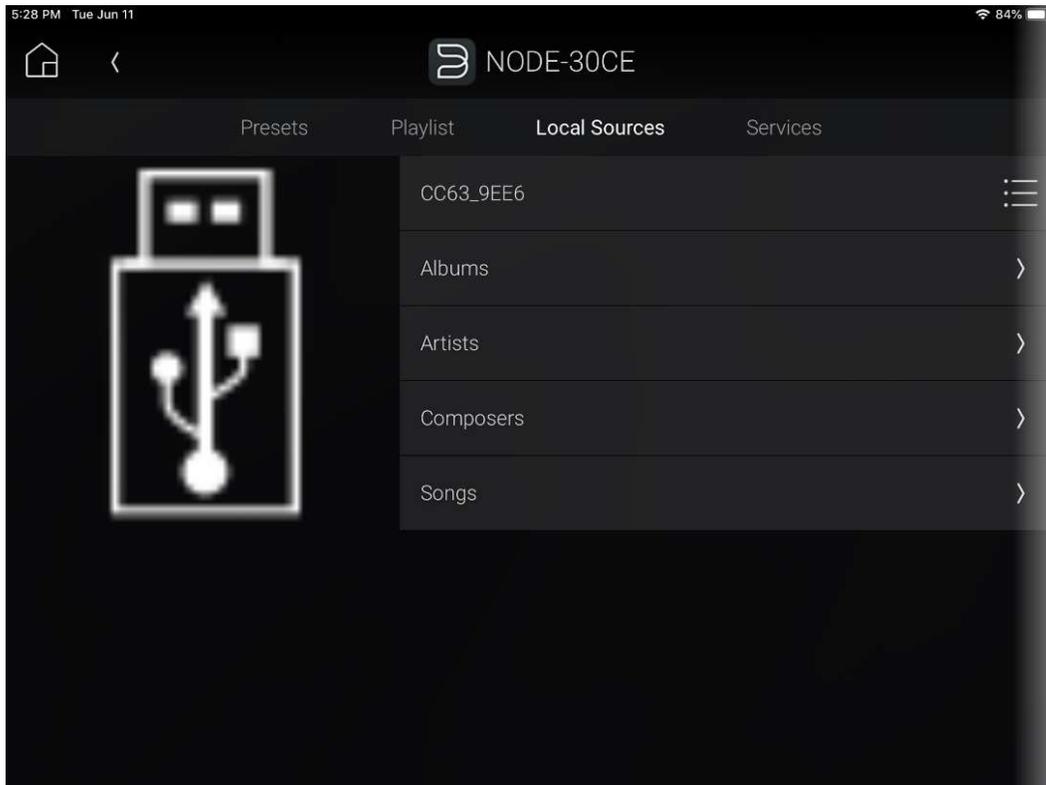
- Click on any sub-category to browse further.



- Clicking on any item will pop up a list of actions for the item. Here is an example of actions for a song.



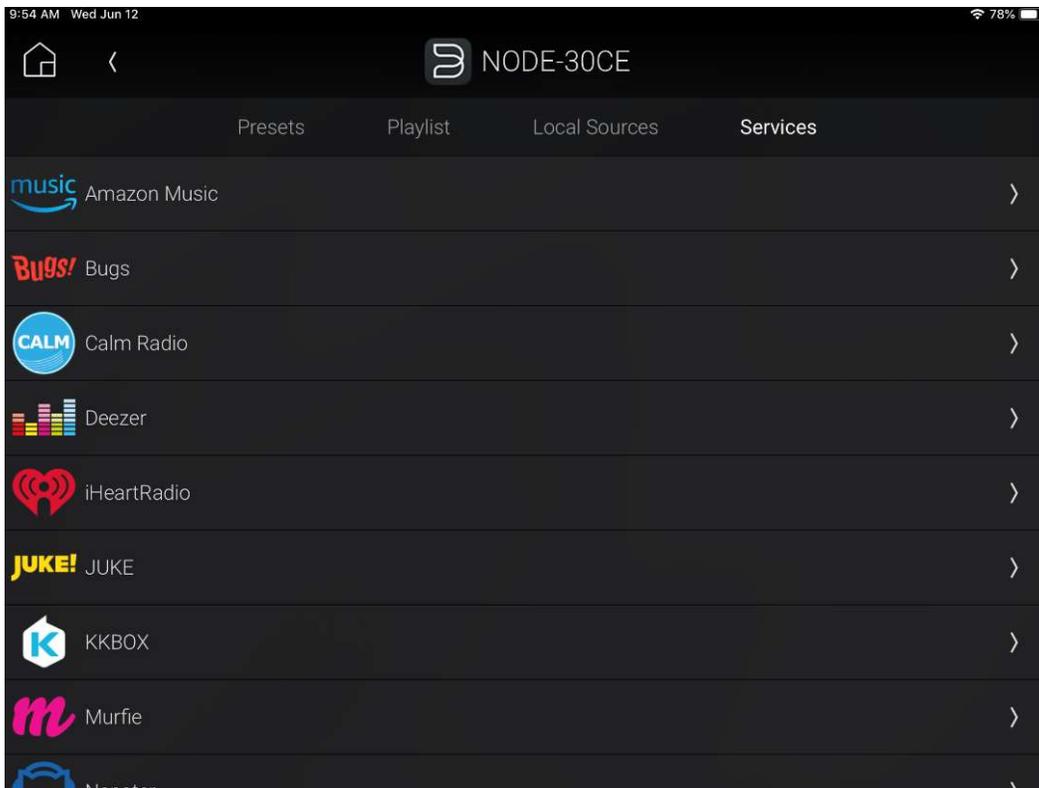
- Click on the top right list icon to pop up “Search Service” option. Then enter keyword to search in the pop-up keyboard. The search result will be sorted as categories Songs, Artists, Albums, and/or Playlists. Clicking on any category will show the search result for that category.



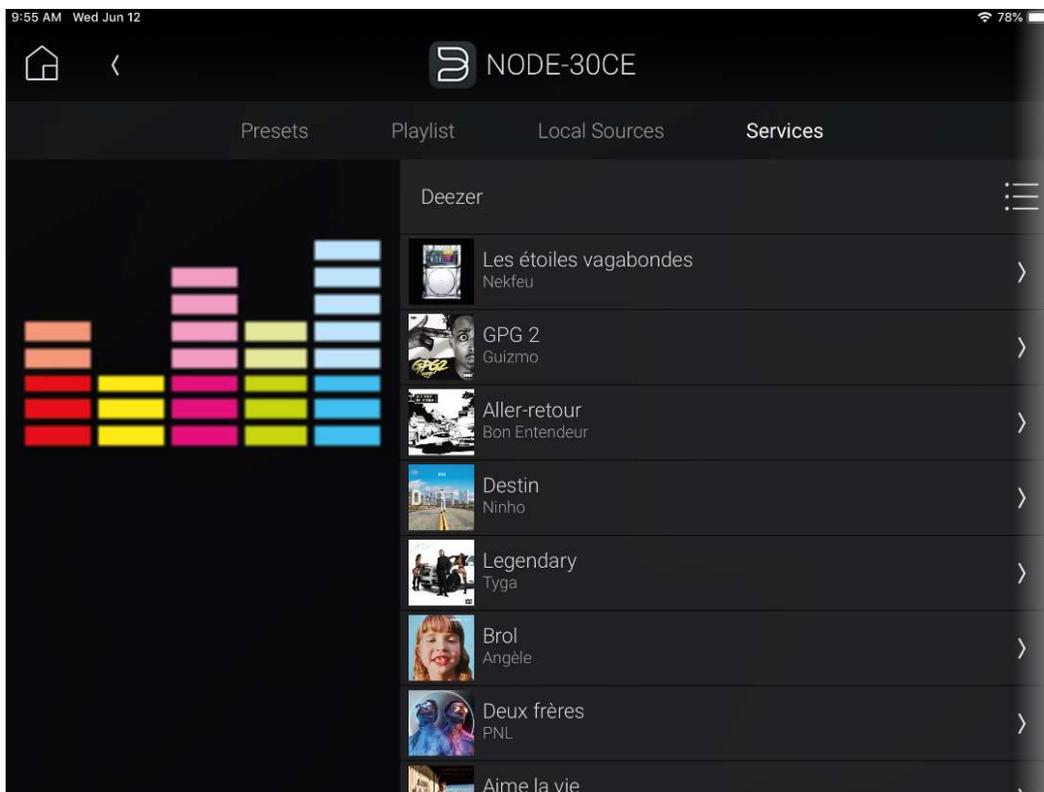
6.6 Music Services Within Player Driver

Bluesound Player driver provides all music services users registered for the player. Clicking on the tab “Services” will load all available music services on the player.

- Browse any service by clicking the service and its categories.



- Click on any service and its categories. Choose any category (e.g. Deezer => What's Hot => Popular Playlists).

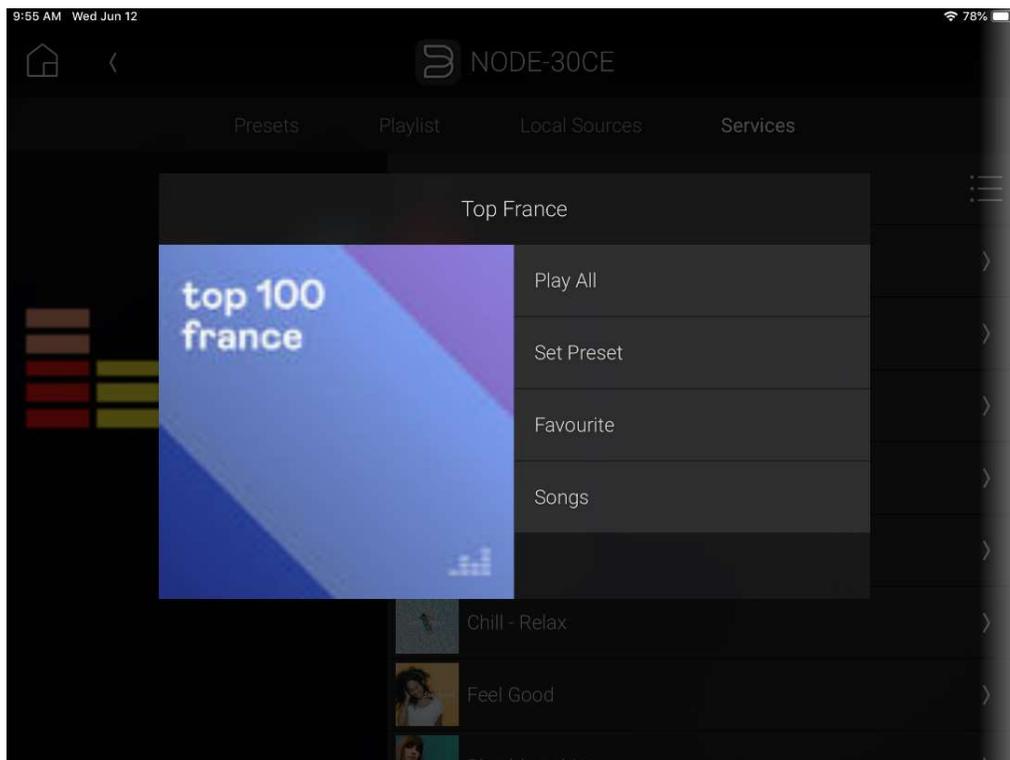


- Click on any item (e.g. album) pops up a list of the tracks of the album.
- Press and Hold any item pops up a list of actions of the item.

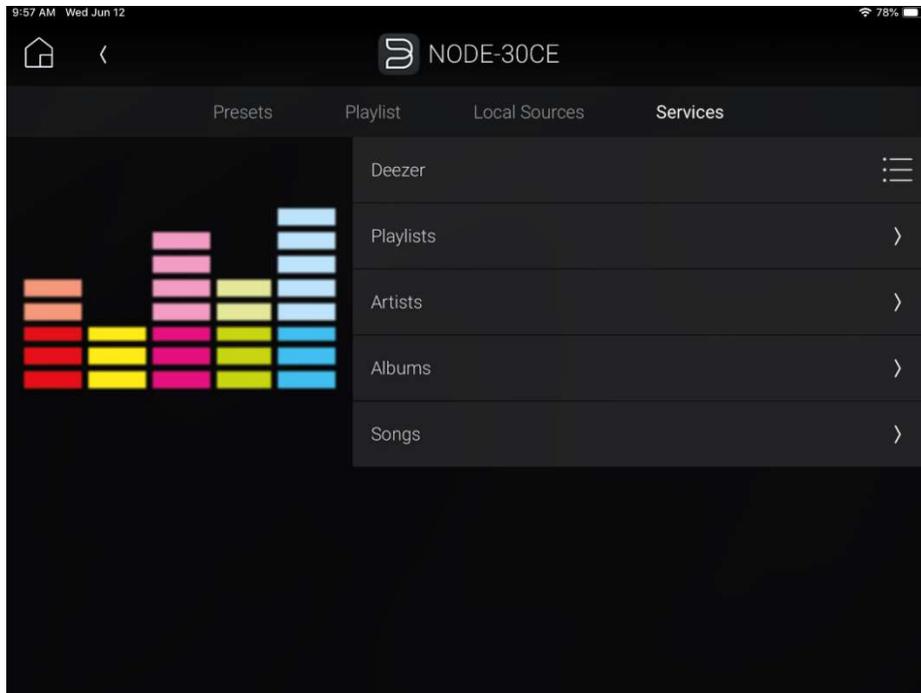
Note 1) : Actions may differ among different services. Supported actions are defined by the specific service. Every effort has been done to maintain compatibility across all content sources.

Note 2) : If the current playlist is empty, action “Play” or “Play All” adds the track/tracks to current playlist and starts to play from the beginning of the list; if the current playlist is not empty, action “Play” or “Play All” only appends the track/tracks to the current playlist cursor.

Note 3) : “Play All” of a **playlist** replaces the current playlist with the selected playlist and starts to play the first track of the playlist, regardless of whether the now playing was a stream or non-stream. Action “Play All” of an album has same behavior has action “Play” in note 2).

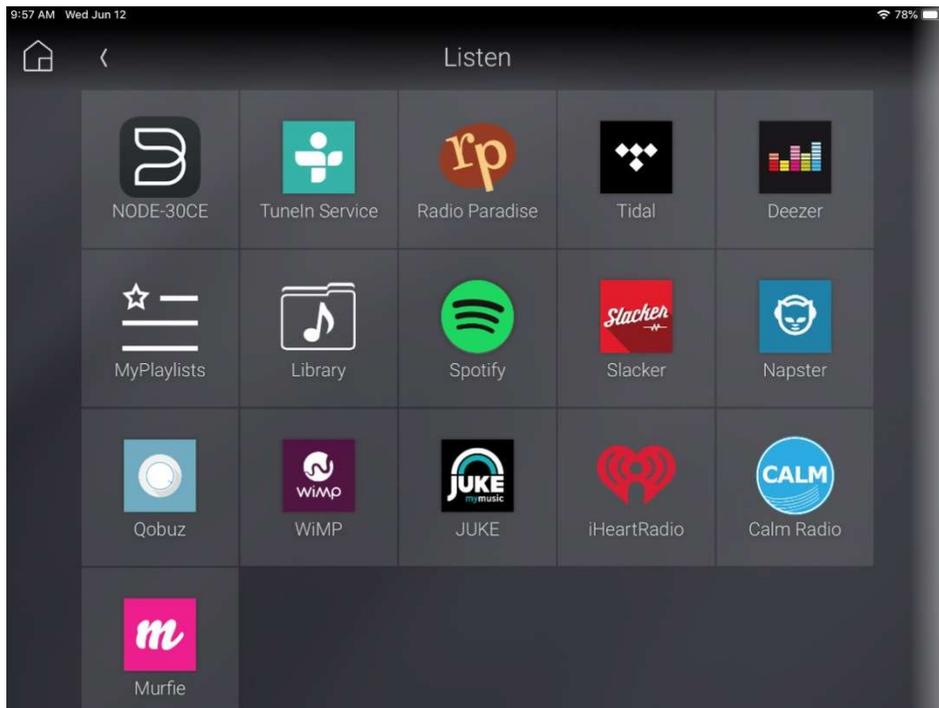


- Click on the list icon on top right brings up “Search Service” option, type in the keyword for search, and click on “Submit” button on the keyboard. The search result appears on the screen under categories Songs, Playlists, Artists, and/or Albums (e.g. search for “Ariana Grande”). Click on any category will show the detailed search result for that category.



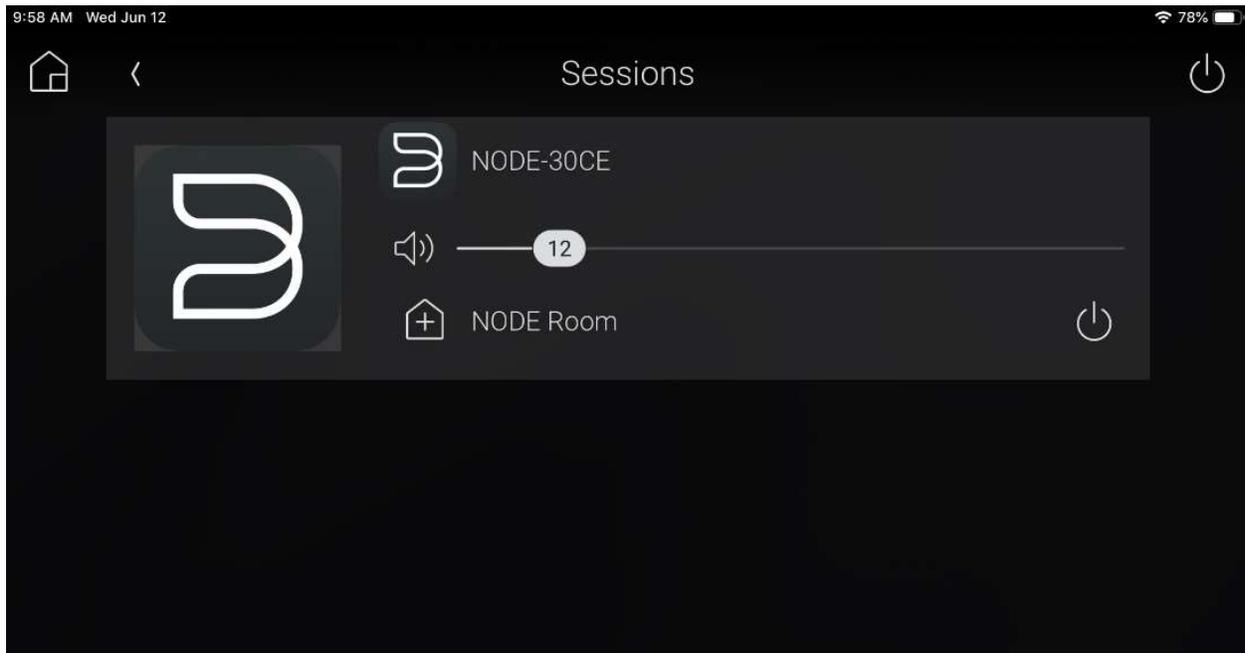
6.7 Direct Accessed Music Services

With mini drivers available, accessing music service is more direct and easy. As long as its mini driver is installed, the music service can be accessed directly under "Listen" page.

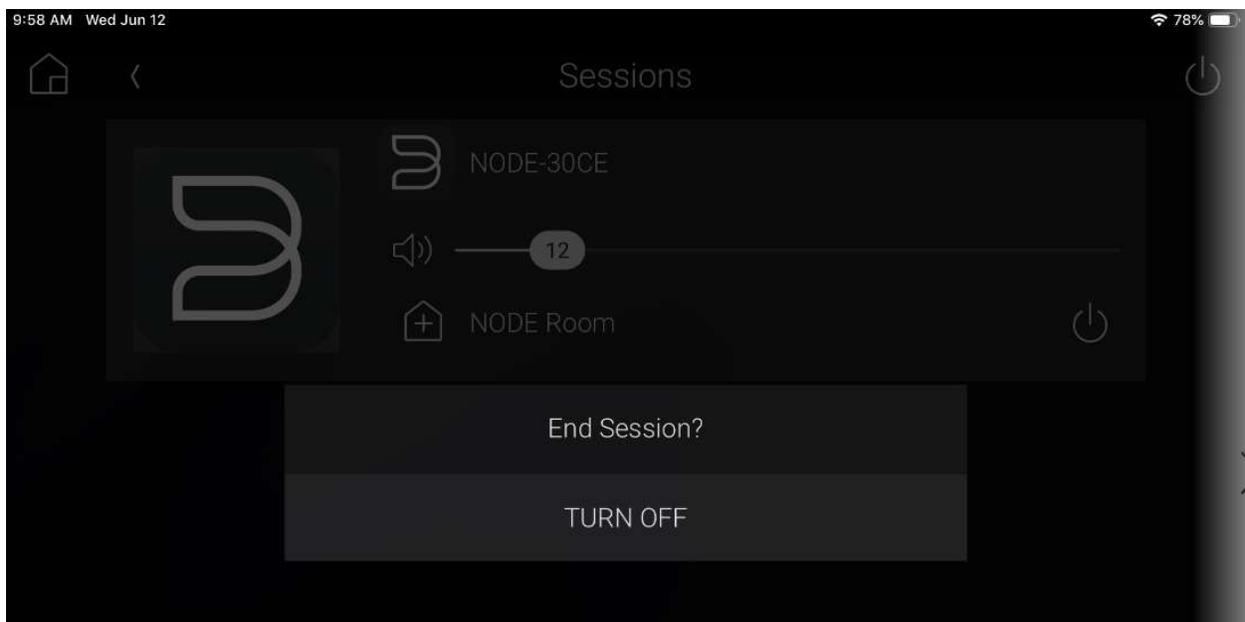


6.8 Media Zones and Multi-zone Grouping

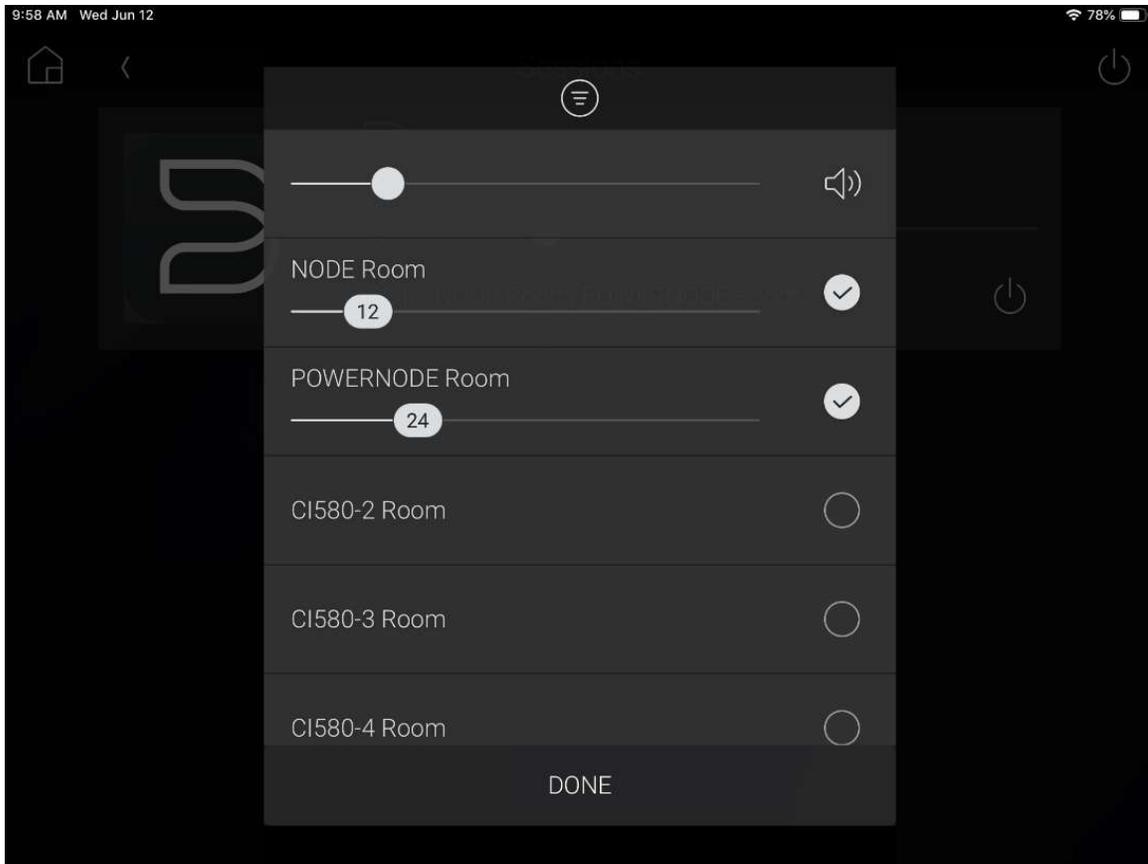
On top right of the Home page, click on the house icon can enter Media Zone. In Media Zones users can control the zone/room volume, turn off zone / room, and group / ungroup players in different rooms.



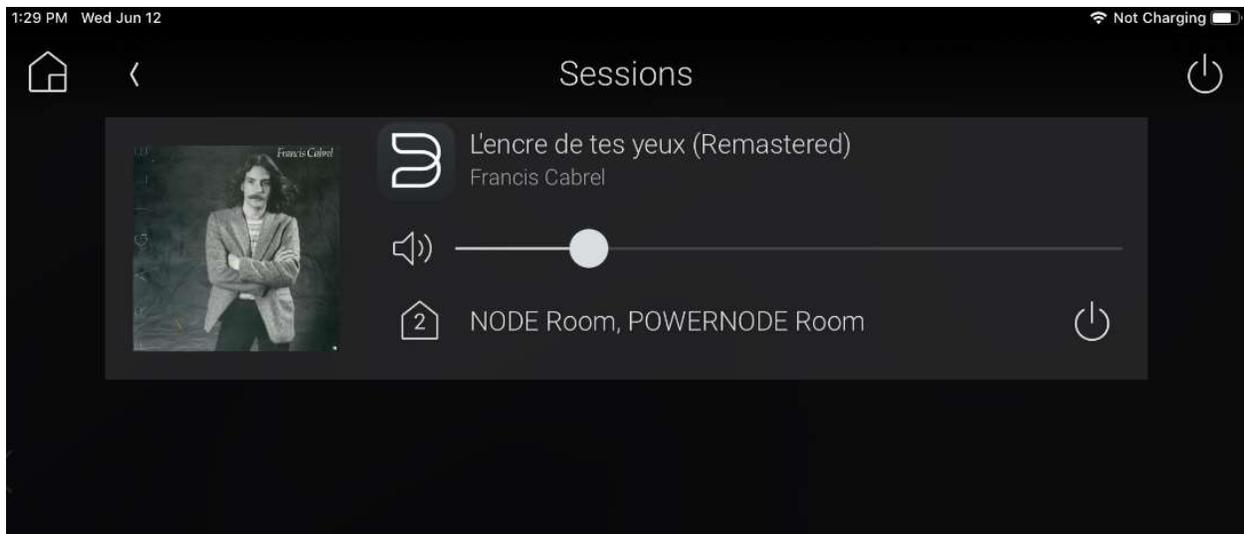
- Click on the “power” button for the room or zone will turn off a room.



- Click Add icon to add a slave player(s) to be grouped with by checking the rooms the player(s) is located in.



- Here is the result after players grouping. Clicking on “Add Rooms” to uncheck the room where a player is in will ungroup the player.



- Multi-zone grouping

The driver supports regular temporary grouping and ungrouping.

The driver does NOT support permanent grouping. A permanent group (i.e. fixed group) is treated as a single player. Ungrouping a permanent group from C4 UI does not do anything. Users have to create and delete a permanent group from BluOS native apps.

If a group has more than two players, ungrouping the primary player or turning off the main zone will turn off the main zone and ungroup all players in the group. This is required by C4 certification.

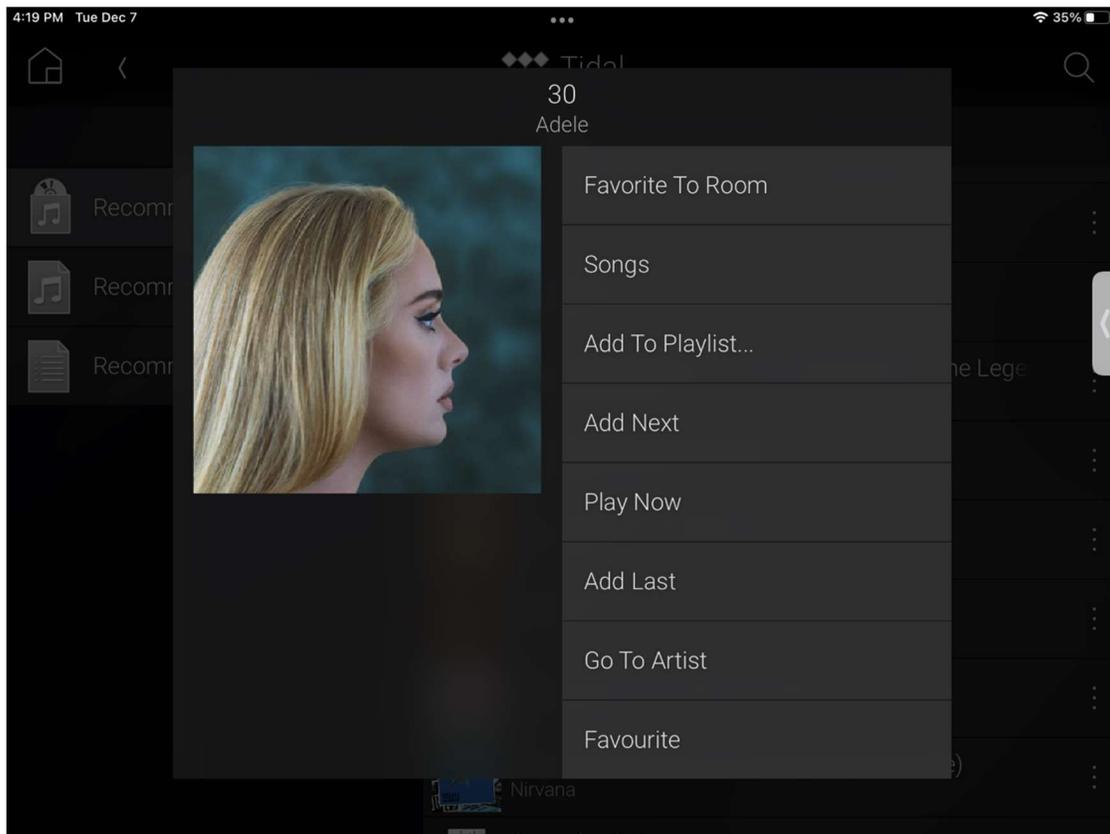
If a player does not have “Auto Power Rooms” set up, its zone grouping will not work properly!

Note: Grouping multiple devices on an audio switch with stand-alone amplified device is not supported.

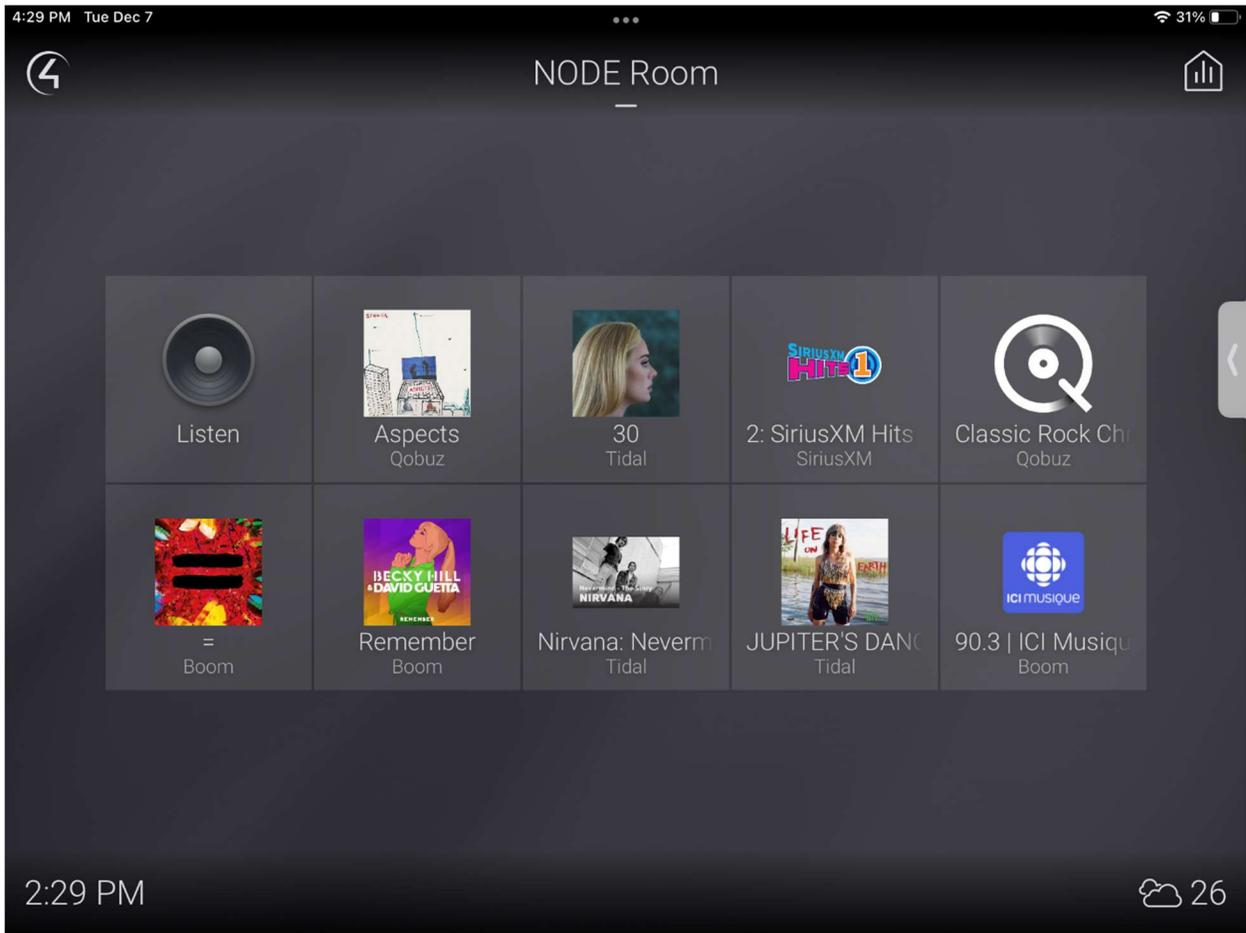
6.9 Favoriting Media To Room

Player driver and mini drivers provides “Favorite To Room” feature for playlists, albums, stations, and tracks.

For example, when browsing Tidal “Recommended Albums”, press & hold or tap the 3 dots of album “30”. It brings up a list of options for the album. The top option is “Favorite To Room”. Tap it will add the album to the current room.



From the room, tap the favored album “30” will go to Now Playing screen and starts to play the album.



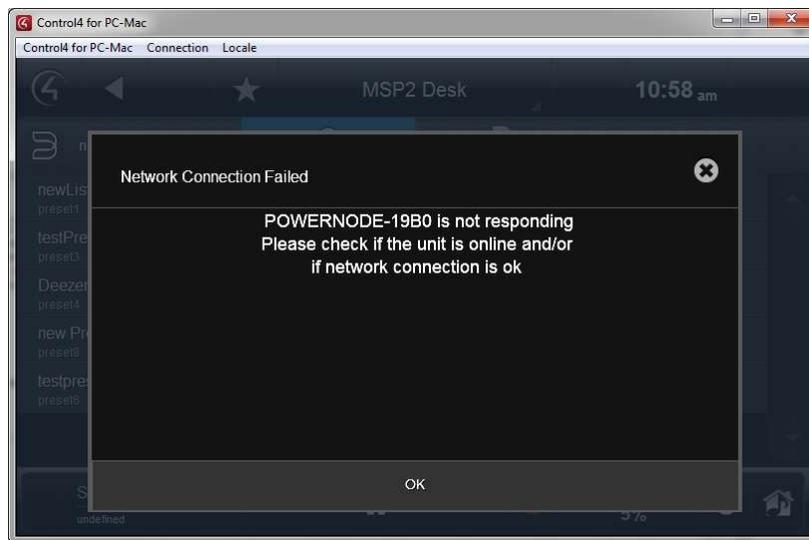
7.0 Troubleshooting

7.1 Notifications

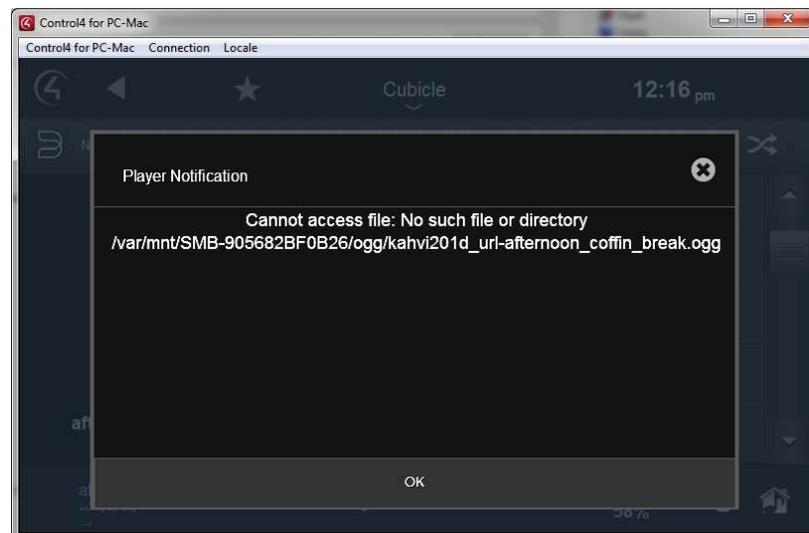
The driver supports notifications from the player. These are helpful for troubleshooting issues.

Note that many notifications are delivered by the streaming music services.

- The driver uses long polling mechanism. When there is no response from Bluesound device for more than 200 seconds, it's considered disconnected from Control4 system, and a failure notification window will pop up in the user interface. Click "OK" button to close the notification.



- When there is any player notification such as player upgrade or source unavailable, a screen pops up to show the notification.



8.0 Support

For technical support issues, contact Bluesound technical support at <http://support.bluesound.com> or email support@bluesound.com.

9.0 Known Issues

The following issues are known to exist.

Driver Version	Issue	Workaround
All	Not all Spotify functions are available (e.g. browse, search). This is because Spotify only supports the Spotify Connect connectivity model.	You must use the Spotify app for browsing and searching.
All	Available events in Zone Network Driver and Player Endpoint output do not work.	None. It's a known bug of C4 director.