

# Working with the WFS System at TU-Berlin

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This document is a guideline for starting and using the Wave Field Synthesis System at the TU Berlin Studio. Follow all instructions in the given order!

## 1 Starting the System

This section includes the steps needed in a perfect startup with no complications. For troubleshooting follow the links in the responding parts.

### 1.1 Power On !

**Step 1:** Turn on the studio power by setting the key switch in the studio to “T”- position.



**Step 2:** Switch on the two Mac-Computers *Matrix 325* and *Taunus* in the server room **E-N 326**.



**Step 3:**

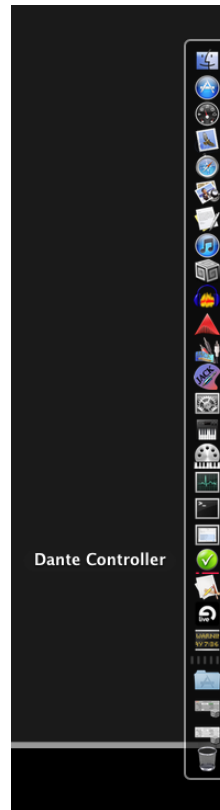
Start the panels by switching on the 12 fuses in the fuse box:



## 1.2 Start Software

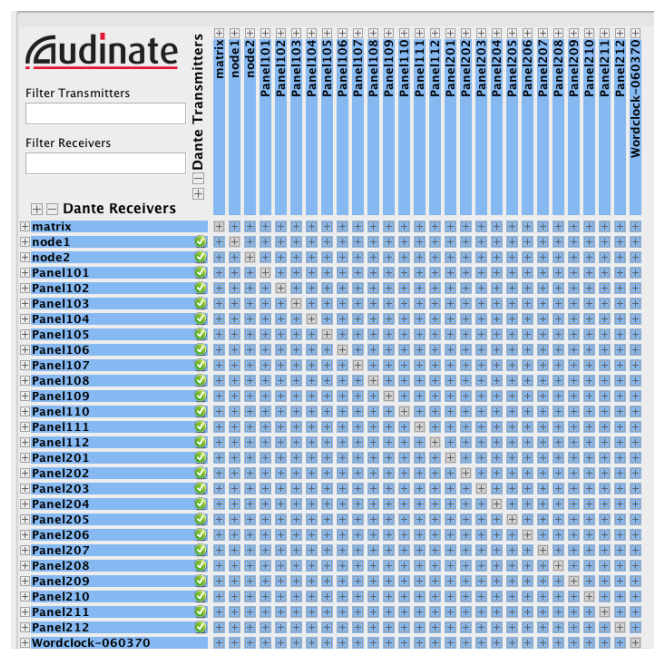
**Step 1:** On the **Matrix** Mac (left hand screen and keyboard/mouse):

Start the **Dante Controller** application in the dock on the right side of the desktop.



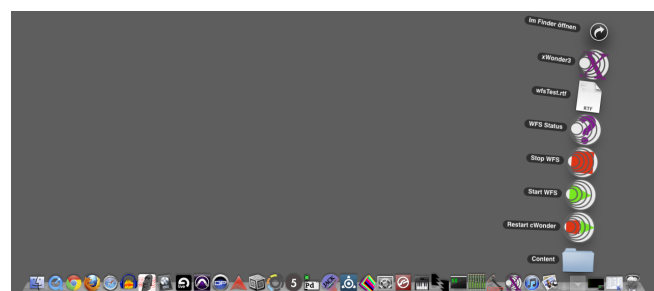
**Step 2:** This program shows the online status and the routing of the audio network clients. You should see the same representation as shown here.

- Matrix
- node1
- node2
- 24 Panels (101-112, 201-212)
- Wordclock



**Step 3:**

On the **Taunus** Mac (middle and right hand screen): expand the folder **WFS** in the dock and execute **Start WFS**. This starting script will take some time.



#### Step 4:

Run the application **WFS Status** in the **WFS** folder of the dock for monitoring the progress of the starting script. You can actualize the feedback by pressing the **Refresh**-Button.

When the startup process is finished - without errors - the GUI will give the following report:



```
JACK settings on nodes
samplerate = 44100
blocksize = 1024

wfs
|-cwonder3---{cwonder3}
|-scoreplayer3---2*[{scoreplayer3}]

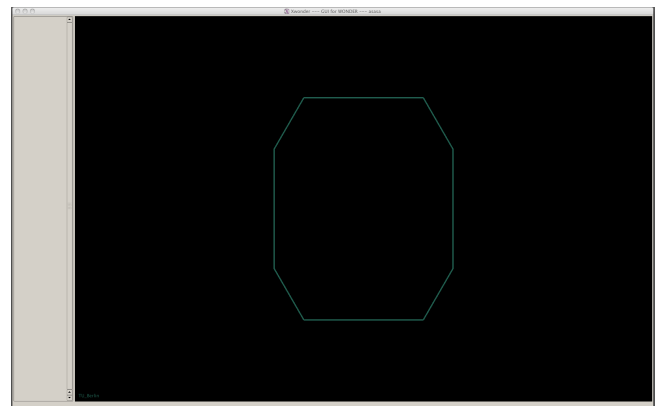
n101
|-jackd---3*[{jackd}]
|-6*[twonder3---4*[{twonder3}]]

n102
|-jackd---3*[{jackd}]
|-6*[twonder3---4*[{twonder3}]]
```

Refresh Exit

#### Step 5:

Start the **xWonder** application in the WFS Dock. It should show the alignment of the speakers in top view, as shown here.



The system is ready to be configured for your audio needs, now.

## 2 Testing Audio

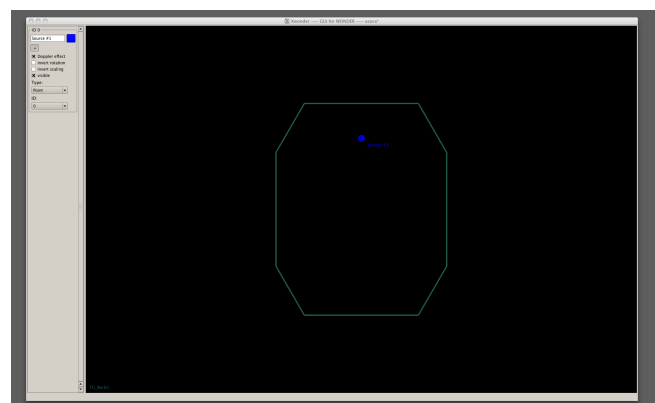
For using the WFS system, the user needs to control the audio stream as well as the source management for the positioning of the WFS sources. This section will first show you how to create a single sound source.

#### Step 1:

Each source (you might also think of it as a WFS-channel) first needs to be known by the WFS-renderer. The interface for controlling the renderer is the **xWonder** software, which is already running.

In **xWonder**, create a new project by pressing “cmd + n” and name it. Once you have an open project, you can add a source by pressing “a”.

Now you have a single WFS-source and your *xWonder* GUI should look like this.



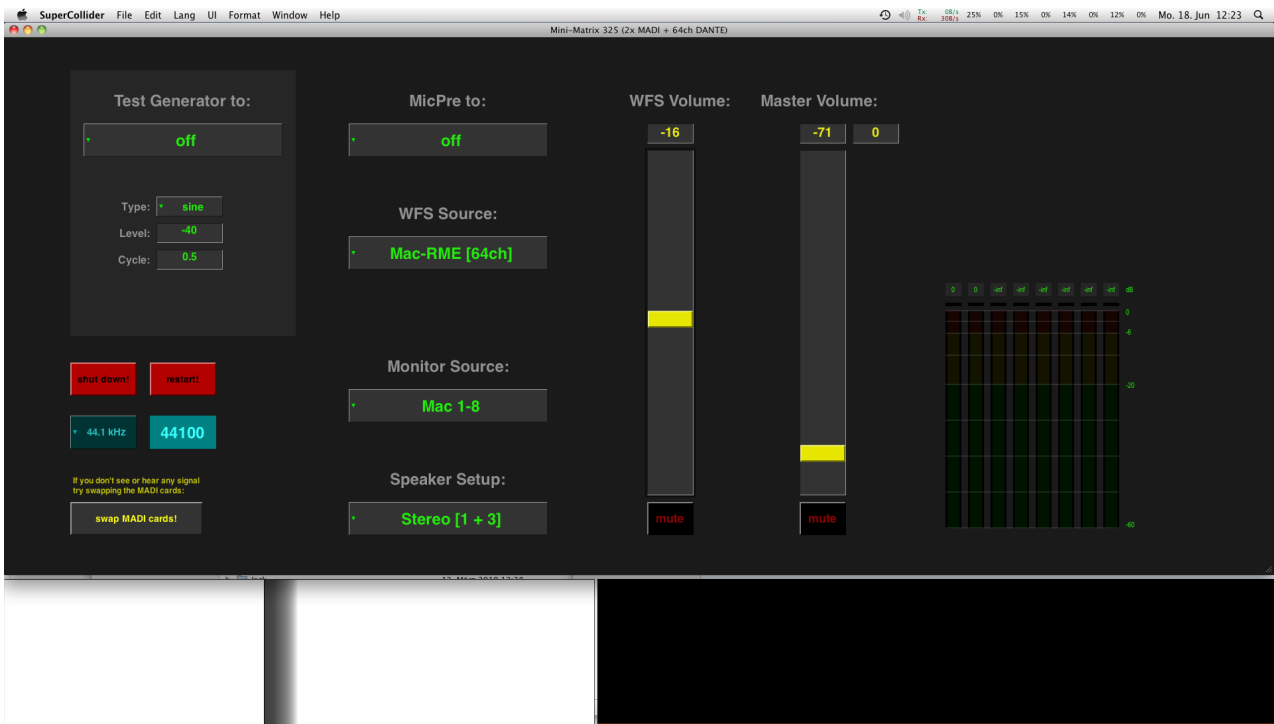


Figure 1: MiniMatrix Settings for using the Taunus Mac as sound source

## 2.1 Using the Studio Mac (Taunus)

**Step 2:** Different audio sources can be chosen. The routing is managed by the **Matrix** Mac. In this section we will use the **Taunus**-Mac as source for the test Signal. The settings for this are shown in Figure 1 and include the following steps:

1. Set Matrix Sample-Rate to 44.1 kHz
2. Chose “Mac-RME [64ch]” as WFS Source
3. Set WFS Volume to -16
4. OPTIONAL: Set Monitor Source to “Mac 1-8” and chose an arbitrary speaker setup - this enables you to see on the meter of the MiniMatrix, whether sound reaches the Matrix Mac.

## 2.2 Using the MOTU FireWire Interface

to be continued ...

## 2.3 Using your own Interface

to be continued ...

## 3 Controlling Sources

The dynamic positioning of sources is an important thing when working with WFS.

### **3.1 Sending OSC Messages (from anywhere!)**

### **3.2 Using the Plugin in ProTools**

The plugin is currently running as beta version, so there is no warranty for a smooth performance.

## **4 Troubleshooting**

### **4.1 Panels + Dante Controller**

#### **4.1.1 Missing Dante Audio Devices**

In some cases you might miss some of the devices in the **Dante Controller**:

#### **4.1.2 Missing Panels**

#### **4.1.3 Missing Node Computers**

#### **4.1.4 No Devices at All**