VST CONNECT 4

steinberg

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Preface

Welcome to VST Connect! We are very proud to present this exciting new version of VST Connect, which features an all new user interface and mixer, significantly simplified setup for the engineer, and many more new features and improvements.

VST Connect has been used by skilled and professional producers all over the world to record artists from all over the world conveniently and with highest audio quality standards using the affordable PRO version. And hobbyists and serious amateurs have recorded friends and colleagues with the SE version coming for free with the latest Cubase and Nuendo versions.

With VST Connect an engineer can connect to a remote artist and create a situation, which is entirely similar to recording somebody next door, including video to see each other through the virtual Control Room window. The artist does not have to do anything but perform, just like in a professional studio. All that is required on his or her end is a decent microphone, headphones, and audio interface. The artist doesn't need any DAW, but simply downloads and installs the freely available "VST Connect Performer" application from the Steinberg website, available for Apple OSX, Windows, and iOS (iPad). Once installed, it is sufficient to start this application and connect to the studio; everything else, even including setup of the audio and video devices and connections, can be remote-controlled by the connected studio engineer. This allows for artists and talents to concentrate on their job and use this new technology even when they are not technically skilled.

With this third iteration of VST Connect also comes an incredibly simplified setup procedure for the studio engineer. From Cubase 8 and Nuendo 7 on, there is a menu allowing to incorporate the entire setup for VST Connect in one single step, either from an empty project, or an already elaborated production. It also utilizes the built-in Cue Mix and Control Room features of Cubase / Nuendo in exactly the same way as they are being used in the room-to-room studio! Using the PRO version, high resolution ("HD") and glitch-free audio files recorded on the Performer end can be transferred after the job. So now, the recording situation is entirely transparent, whether the artist is located next room, or on the other side of our precious planet.

We have been working on connecting musicians and talents over the

Internet for more than 10 years now. Having come a long way from the early 80s, when *Internet* wasn't yet a word and we just started to send our first e-mails to those "chosen few" who even knew that remote communication was applicable, it is truly exciting for me to see how far it has come, and I'm particularly amazed to be part of this process.

There are too many colleagues at Steinberg and elsewhere to mention, who have helped to make this dream come true, so I hope they don't mind if I express my gratitude to all of them here. In particular, I would like to thank Michael Spork who has provided at least as much of the programming work as myself, and my very long term friend and partner Manfred Rï¿½rup, with whom I am happy to still share the experience of these amazing developments of our brave new world.

October 2014

1 Overview

1.1 Quick Guide

VST Connect is used by two people, the artist or talent performing vocals or other instrument, and an engineer in a studio using Cubase / Nuendo along with the VST Connect components. The artist downloads and installs the VST Connect Performer application or app. The Apple OSX and Microsoft Windows versions are freely downloadable from the Steinberg website, the iPad IOS version is very affordable. Everything else that is required on the artist side is a microphone, headphone, and audio interface along with a suitable driver. For a test, even the built-in hardware can be used, but for reasonable quality recordings, a good audio interface like the Steinberg UR22 is recommended..

For a quick start, and also for explaining some of the new features of this version, we will start by describing the steps necessary on the Cubase / Nuendo end, assuming the artist is ready to go and has installed and launched the VST Connect Performer application (or app).

For the impatient, and those already familiar with previous versions of VST Connect, here is a super-quick rundown how to start remote recording instantly:

PROCEDURE

1. Create a new Cubase / Nuendo project or use an existing one.

2. Access the VST Cloud menu and choose "Create VST Connect".

3. If not already present, create a Talkback channel using "Add Talkback" in the same menu.

4. If the VST Connect Editor is not already visible, choose "Open VST Connect Editor".

5. Enter your MySteinberg name and password in the according fields at the top right and click the "Login" button (see Connection). Open the Net view by clicking the bottom leftmost icon to find and invite friends. Have the Performer open the Performer app or application and find and accept you (with your VST Cloud name). Now either side can connect by double-clicking in the friend view, provided the friend is online (blue light).

RESULT

You can see, hear, and immediately record the artist now, just like you would record yourself or somebody else next door!

1.2 Cubase / Nuendo Setup

With version 4 of VST Connect comes an all new menu in Cubase / Nuendo. It is called VST Cloud. To begin with, let's assume that you start from scratch, so the first step is to launch Cubase / Nuendo and

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PROCEDURE

1. Create a new empty project, using either the "Empty", "Default", or your preferred default project template. To set up a VST Connect session, all you have to do is to

2. Select "Create VST Connect" from the VST Cloud menu. Depending on whether you are using the built-in VST Connect SE, or have purchased the VST Connect PRO version, you will find this in the accordingly labeled menu. This will create an Input channel with the VST Connect plug-in, possibly (if not existing already) create a Cue Mix Channel in the Control Room Mixer, install the VST Connect Cue plug-in in that channel, install the VST Connect Monitor plugin after the main output, and create an audio track in the arrangement, which is readily set up to record and chat with a remote artist.

3. You can create more such audio tracks from the VST Connect menu ("Create Performer Track"), or right click and choose "Duplicate Track" if you need several recording tracks like for double-tracking, two-part guitars, choir, or various versions etc. This is similar to creating a new Audio Track and select "VST Connect" as its input audio source.
   The only thing that is left to do, if you haven't already done so is to create a Talkback setup. You have to do this only once. For convenience, there is an entry in the VST Connect menu labeled "Create Talkback" which you should select now.

4. Then make sure that the Talkback channel of the Control Room is assigned an audio input with your Talkback (abbreviated: TB) microphone attached. This is done in the "Devices" menu of Cubase / Nuendo

5. Select "VST Connections" (not to be confused with "VST Connect") in the "Devices" menu and then, access the rightmost tab labeled "Studio". You should see the "Talkback" row; assign the according audio port to which your TB microphone is connected (you may have to click the "+" plus icon to open up the connec-

tions row). This is the same procedure as assigning audio ports in the "Inputs" tab of the VST Connections panel. It is a good idea to save the Studio (Control Room) settings once all works as desired.

Note

If you have never recorded an artist or yourself in your studio using the Control Room, you might consider having look around the Control Room and its settings in the "Studio" tab and/or refer to the Control Room section of the Cubase / Nuendo manual. There are many useful functions available there that relate to professional studio recording and monitoring.
To access the Control Room Mixer, use the "Devices" menu and there choose "Control Room Mixer". You can also use the top left control in the MixConsole window to show the Control Room mixer on the right hand side of Cubase / Nuendos' mixer window. For more details on this, again refer to the related sections in the Cubase / Nuendo manual.

2 VST Connect

2.1 User Interface Overview

- On the top left, Talkback can be controlled. These controls are linked to the according controls in the Cubase / Nuendo Control Room Mixer. See Talkback how to use this.

- The top middle section shows status information, none of these can be changed, they are for informational purpose only. See Event Monitor.

- The top right section is where you connect to the artist. See Connection for further details

- To the middle left, usually the Performer video is displayed, but depending on other settings, also the large mixer view or settings pages can be seen. See Setup Tabs section for more information on this.

- To the right, the Monitor Mixer is shown. See Mixer section for details.

2.2 Connection

Now you are ready to record the remote artist. You should see the VST Connect plug-in user interface; if that window has been closed accidentally, you can re-open it by selecting Open Editor in the Cubase / Nuendo "Project/VST Connect" menu.
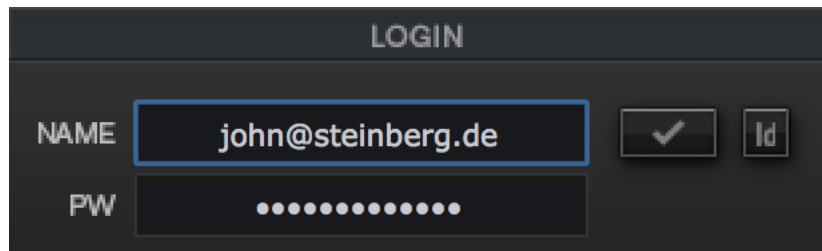
The connection procedure has changed since version 4. With the new connection procedure, both the Studio and the Performer can initiate a connection and it is no longer required to exchange a key number. To be able to use VST Connect, you need a MySteinberg account. Both Performer and Studio need to be registered with MySteinberg.

Use the "Id" button to toggle between the MySteinberg and the classic "Key" connection page.

If you run VST Connect PRO, you can also connect locally. Note this only works if the PRO version is started in Cubase / Nuendo.

All three available connection methods are described in the following sections.

2.2.1 MySteinberg

PROCEDURE

1. On the top right of the VST Connect and Performer user interface you will find the login section.

2. Fill in your credentials (MySteinberg email address and password) and

3. Click the "Login" button.

4. If you do this for the first time and you have not yet provided a VST Cloud user name (for instance with VST Transit), you will have to do so now. Choose a name that can be easily recognised, because this is the name that your friends may be searching for, using the search function described below. You will need to do this only once. Note that a VST Cloud user name can not be changed later.

5. After successful login, the Network page opens automatically on the Friends tab.

Note

If you don't have an account, please go to the MySteinberg Website to create an account free of charge.

2.2.2 Key

PROCEDURE

1. If you haven't done so yet, type your name in the "Name" field in the top right "Network login" section. This can be your real name, or a nickname that the artist will see.

2. Click on the "Login" button right to the name field. A two-part number ("Key") will appear in the second field below the name, provided you are connected to the Internet. Communicate this number to the artist, for instance via SMS, email, or phone.

3. Ask the artist to start the Performer application and enter a name in the "Name" field in top right section, also labeled "Network Login", and to enter the "Key" number into the according field. Make sure that there is a blank (space) between the two groups of numbers.

4. Ask the artist to click the "Connect" button.

2.2.3 LAN

If the Performer should be connected in your Local Area Network (LAN), and provided that you are running the PRO version of VST Connect, the LAN button in the Performer application is lit. The artist can then click this to see and select your computer to connect as is described

in the Performer documentation. You should now see the artist in the VST Connect plug-in window, provided he or she has a webcam connected and installed, and hear his or her voice provided he or she has connected a microphone via an audio interface to the computer. It is not necessary or even recommended that the Performer Track in Cubase / Nuendo is in Monitor mode (the yellow speaker icon should not be lit) to be able to hear the artist's microphone signal, because you can hear the Performer at any time thru the VST Connect Monitor plugin which is inserted after the Main Output ("Monitor") in the Control Room. Otherwise you may experience undesired delays. If this is the first time, you may have to help the artist assigning the correct video and/or audio device and connections:

PROCEDURE

1. Click the "gearwheel" item on the lower right of the VST Connect editor window and select the "Performer" tab. In the "Audio Device" item, choose an audio device of the Performer's computer from the list.

2. If you cannot hear the artist yet, click the toolbox icon again to close the settings page, and choose his or her microphone's port on top of the "Mic" channel in the VST Connect mixer.

3. For the artist to hear his or her monitoring (headphone) signals, you may also have to choose the correct output ports above the "MASTER" channel found in the Monitor mixer all to the left.

RESULT

You are now ready to record the artist just like with any other recording you are used to! You will probably want to import some playback audio file for the artist etc. Just use Cubase / Nuendo the same way you would if you were recording yourself or somebody else.

2.3 Network

After successful login, the Network page opens automatically on the Friends tab. You can also access the Network page at any time by clicking the network icon on the bottom of the toolbox item. The Network page features two tabs: "Find User" and "Friends" Tab.

2.3.1 Find User Tab
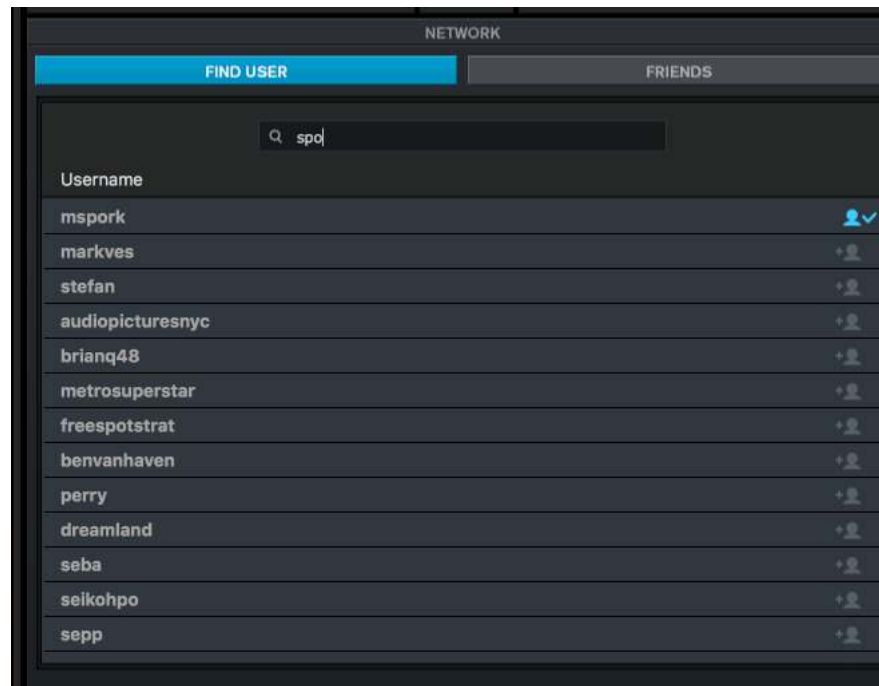
This network tab allows you to search the VST Cloud for your partner. Type his or her VST Cloud name to find it in the list. To send a friendship, select the user and double press the ![icon] request button. You also can send a request if you start the context menu with a right click to the user. The selected user receives the request and needs to confirm ![icon].
The ![icon] symbol shows you that the user is your friend.

2.3.2 Friends Tab
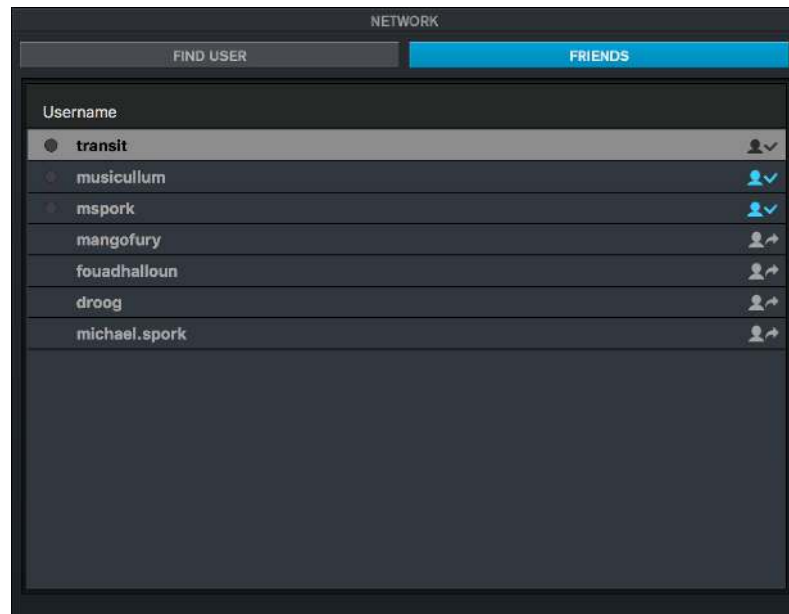
This network tab shows all friends. It also shows all users with a friend-ship request ![icon] or waiting to be confirmed ![icon] as a friend. To accept a friendship double-click to the accept button.

> **Note**
>
> To connect to a friend select the friend and double click to the connect button. The friend needs to be online.

2.3.3 Icons

![icon] Send user a friendship request.

![icon] A friendship request has been sent to an user.

![icon] The user is a friend.

![icon] Accept a friendship request.

![icon] An friend is offline

![icon] An friend is online

2.4 Control Room

The artist will hear whatever you send via the Control Room Cue Mix channel. Playback and review channels (tracks on which you already recorded a performance of the artist) are sent to the Performer application via the VST Connect Cue Channel. Each channel in the Cubase / Nuendo MixConsole has a "CUES" mix level control (use "Racks" on the mixer header and enable "Cue Sends", should it not show up), which

determines how much of that channel is audible on the artist side. This can be set pre or post fader like other channel sends, and also features a pan control.

> **Note**
>
> You may find further details about Cue Sends in the Cubase / Nuendo manual.

Make sure Control Room settings are visible so you can control what the artist hears ("Devices/Control Room"):

The Control Room VST Connect Cue Channel allows you to control precisely what the artist should hear on his/her headphones:

• Choose between main mix ("Mix") and "Cues" mix for the artist to hear. If you have configured external inputs such as CD player in the "Devices/Vst Connections/Studio" tab, you can also choose to have the artist listen to that as desired.

- Use the "Talkback" button to switch TB on and off. You can also for instance assign a key (like "t") on the computer keyboard to instantly switch TB in the "File/Keyboard Shortcuts" menu ("Control Room" section). The TB button is linked to the top left button in the VST Connect Window.

- Adjust TB level (this is also linked to the matching control in the VST Connect editor window).

- Adjust "Dim" to adjust dimming the artist cue mix while TB is active.

- Switch and adjust the metronome click and its level.

> **Note**
>
> There is more to explore when you use the Control Room mixer. See the according sections in the Cubase / Nuendo manual. The great news is that all those professional features that have been used by numerous engineers and performers for decades now can be used entirely transparently when recording a remote artist!

2.5 Talkback

The Talkback (TB) controls of the VST Connect plug-in are linked to the according Cubase / Nuendo Control Room controls where applicable. This section features

- a Talkback enable button. This switches TB on or off and is linked to the Talkback button in the "Main" section of the Cubase / Nuendo Control Room mixer. Note that this button is automatically disabled as soon as playback or recording is started in Cubase / Nuendo. While transport is running, you may override this by clicking it again, but your signal will be delayed on the Performer end during playback or recording. It is also possible to assign a keyboard shortcut to the Cubase / Nuendo Talkback function ("File/Key Commands/Control Room") which then also switches this as desired.

- a "rehearse" button. When this is activated, TB continues to be active even when playback or recording are running. You can use this to talk to the artist while playback is running so to coach him or her or discuss other aspects of the production. When recording, you must not enable the Rehearsal function, as your microphone signal may confuse the artist and also the Performer signal is no more in sync.
  The basic idea is that the Studio side (producer) can sing along to the playback for the artist to hear, but the Performer signal will be delayed in respect to what the studio side hears. VST Connect is not designed for jamming (playing together in realtime), if talkback or rehearsal are engaged during playback, one side will hear the other with a delay. However the studio can record its own signal along with and in perfect sync to the artist, only the artist can (and should) not hear the studio during playback/recording to avoid confusing delays.

- a Talkback level rotary control. This is linked to the Control Room VST Connect Cue mix channel's Level control, so you can operate either one to adjust the overall TB level.

- a DIM control. This is linked to the Control Room VST Connect "Talk Dim" control.

> **Note**
>
> Note that when you engage Talkback during playback or recording, the Control Room also features a "Dim" function in the "Main" section that you can use to control how much the playback is "dimmed" (lowered) so to not have it obscure the TB microphone signal.

2.6 Mixer

Once connected, the VST Connect mixer will show up in the VST Connect editor window. The upper part is used to set up the stereo mix that you (the engineer) hear and record. This upper part (with the "RECORDING" header) is not visible in the Performer application.

2.6.1 Performer Monitor (Headphone) Mix

The lower part (with the "MONITOR" header) merely controls the headphone monitor mix that the artist hears in his or her Performer application. This is simply remote-controlling the Performer mixer which can also be operated by the artist; the idea is, that the engineer can operate it so that the artist stays hands-free and also does not have to have a deeper technical understanding as the engineer does - so it's all like in the professional recording studio where the artist can concentrate on his or her performance. In particular this also means that nothing that

the engineer does in this area has any influence on the sound that he receives and records from the artist. Because these controls affect the Performer application, the details are described in the VST Connect Performer chapter, in the Mixer section.

> **Note**
>
> Note the plus and minus buttons which are available only with the VST Connect PRO version. With this, you can add up to 16 channels for recording, for instance a drum set with individual full quality tracks for each instrument!

2.6.2 Recording Mix

The top row of the VST Connect mixer (with the "RECORDING" header) is only visible and accessible to the engineer in Cubase / Nuendo. If you don't see the mixer, you are possibly currently accessing the setup pages; click the gearwheel icon on the lower right corner again so to get back to the mixer panel. This row of controls determines what is audible and recorded on the stereo recording track(s) which have VST Connect as their source ("Performer Track", as can be created using the Cubase / Nuendo "Project/VST Connect/Create Performer Track" menu). The "MASTER" and "STUDIO" channels don't feature these, as they are only controlling the artist monitoring signal.

: **Level**

> This rotary knob sets the level of the signal of this channel that is added to the overall recording mix

: **Meter**

> Shows the the individual channel's recorded signal level

: **Pan**

> Determines where in the stereo panorama this channel's signal is placed in the record mix

: **Record Button**

There is also a record button per channel with the PRO version of VST Connect. With this, each channel can be recorded individually by the Performer application on the artist's computer, and later transfered in full resolution for single or multi-track recordings. The stereo mix can also be recorded in HD by enabling the according record enable button in the MASTER channel. Individual tracks can only be recorded with the PRO version. More on this, and how full resolution ("HD") files can be transfered from the artist's computer, can be found in the MANAGER section.

: **FX button**

The buttons controls if the signal will be recorded wet or dry. If the Performer has inserted plugins in a channel to be recorded, this switch determines if the recorded signal includes those inserts or not. The Performer will hear the insert effects in any case.

RESULT
So as an example, you could record a singer/songwriter by assigning his Mic and guitar signals as mentioned in an earlier example, using the pan and level controls for a nice stereo image that you use for recording. Using the PRO version, you could get the individual full resolution audio files on separate tracks in Cubase / Nuendo.

2.7 VST Cloud Menu

In the Cubase / Nuendo "VST Cloud" Menu you will find the "VST Connect" Sub-Menu. If you have purchased the VST Connect PRO version, you will find two sub-menus labeled "SE" and "PRO", each of which features the following entries:

: **Create VST Connect**

This will create an Input channel with the VST Connect plug-in, possibly (if not existing already) create a Cue Channel in the Control Room Mixer, install the VST Connect Cue plug-in in that channel, and create an audio track in the arrangement which is readily set up to record a remote artist

: **Remove VST Connect**

Removes the Input channel with the VST Connect SE or VST Connect PRO plug-in and removes the Control Room Cue Mix channel with the VST Connect Cue plug-in.

: **Open VST Connect Editor**

Opens the editor of the VST Connect SE or PRO plug-in. This is the same as accessing it in the Cubase / Nuendo MixConsole, where the Input channel with the VST Connect SE or PRO plug-in is located in the insert slot, which you can double-click to open its editor window.

: **Add Talkback Channel**
Adds a TB channel to the Control Room ("Studio" tab in Cubase / Nuendo "Devices/VST Connections" menu). You may have to assign an audio input in the aforementioned VST Connections "Studio" entry where your TB microphone is connected.

: **Open Performer Video**
Opens a window with the performer video feed (if applicable). This is the same signal as in the VST Connect plug-in window, but can be sized or moved to another monitor or projector etc. Once everything is set up for recording, you may not need to have the VST Connect editor window open, but still want to see the artist's video feed (i.e. webcam). The same function can be accessed via the "Performer Video" icon in the VST Connect editor window.

: **Create Performer Track**
Creates an audio track in Cubase / Nuendo with the VST Connect Input channel as its source, and sets it to record and monitor to have it ready for immediate recording and chatting. You can of course create several such tracks.
Note that when you set any Performer Track to monitor mode, its cue send will be disabled automatically. Otherwise, the artist would experience an annoying echo effect, as his own delayed signal would be fed back to his headphone monitor.

: **Check and Repair Configuration**
Checks if an Input channel with the VST Connect SE or PRO plug-in is present and installs one if not, and checks if a Control Room Cue Channel is available with the VST Connect Cue mix plug-in and installs one if not. Possibly creates a Performer Track (see above) if none is present as well. So basically it's the same as "Create VST Connect" and useful should you have accidentally removed one or the other component.

2.8   Event Monitor

The event monitor section is located on the top middle of the VST Con-

nect plug-in. It displays several LEDs which indicate the connection quality for the studio and the performer side. The two rightmost LEDs should always be green to indicate that data is received, sent, and that both sides of the connection are in sync. It is normal, however, for the sync indicators to light up red during transport operations like start, stop, and locate.

The two bar graphs show how well the two partners are synchronized during playback and recording. You can see how much audio data is available per half second on either end. If either of these meters show too small a value or drain entirely, dropouts in audio are to be expected. In this case you are advised to increase the "Remote Latency" setting and/or audio and video upstream settings as described in the CONFIGURATION section.
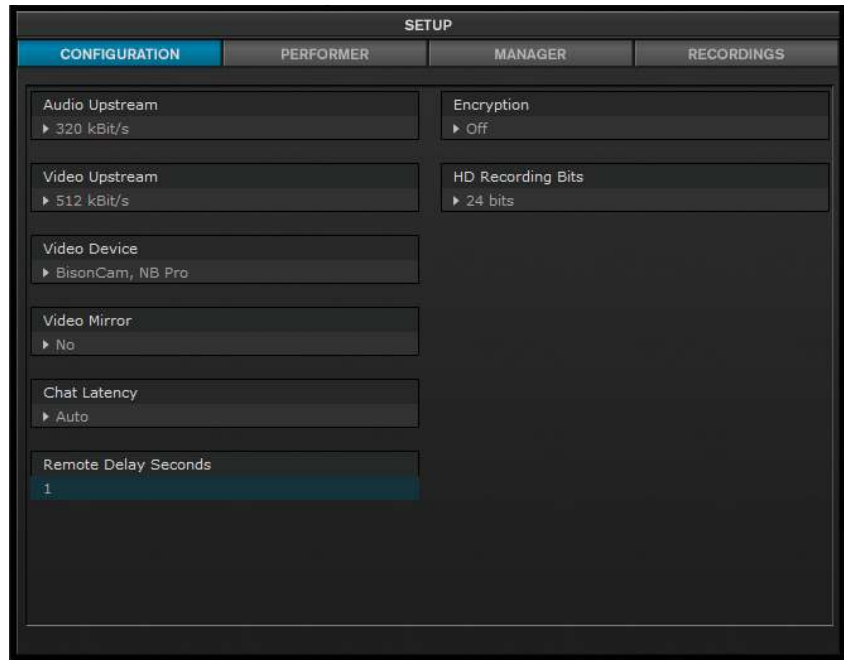
> **Note**
>
> The MIDI indicators show MIDI activity on either side.

2.9   Setup Tabs

You access the Setup Tabs by clicking the gearwheel icon on the lower right of the VST Connect edit window.

2.9.1   Configuration

This tab controls settings for the VST Connect plug-in on the Cubase / Nuendo engineer side:

: **Audio Upstream**

   Open this pop-up menu and select the audio upstream rate for the signal sent to the performer (shown in kilobits per second). The higher the rate, the better the audio quality for the playback that is being sent to the artist, but of course there has to be sufficient bandwidth within the connection to provide the goods. Usually lower rates are sufficient here, as this setting has no influence on the recorded audio.

: **Video Upstream**

   Open this pop-up menu and select the video upstream rate for the signal sent to the performer. The same rules apply.

: **Video Mirror**

   Sometimes it is useful to mirror the incoming video display. This option allows for a horizontally mirrored Performer video display.

: **Chat Latency**

   Allows you to determine the latency (delay) of the Talkback signal while neither playback nor recording are active. In Auto mode, the ideal latency is processed. This latency is dynamic. However, you can select a fixed latency here, but this may fail to enable chatting altogether, so if there is no need or you don't quite understand this setting, you are advised to keep the default "Auto" setting.

: **Remote Delay Seconds**

   When the transport in Cubase / Nuendo is started, VST Connect delays playback by the time you specify here. During this delay, playback is started internally, and the cue mix is transferred to the

performer via the Control Room VST Connect Cue Mix channel. The performer performs in sync to this playback and the result is sent back to Cubase / Nuendo so that when playback actually starts to become audible there, the artist's audio signal has arrived for listening and recording in perfect sync to the project timeline. You can enter a value between 0.5 and 5 seconds. Usable delay times should be between 0.75 and about 1.5 seconds. The more time VST Connect is given to manage the data, the more reliably the system works. This greatly depends on the quality of the Internet connection. If the sync LED in the diagnostics section lights up during playback often, consider increasing this delay time.

: **Encryption**

This is only available with the PRO version of VST Connect. Allows you to encrypt the transmission of audio and video data in both directions.

: **HD Recording Bits**

This is only available with the PRO version of VST Connect. Set the audio quality (16 or 24 bits) of HD files recorded by the Performer application when HD recording is enabled.

2.9.2 Performer

These settings do not have any influence on the Cubase / Nuendo VST Connect plug-ins but merely remote control configuration settings in the Performer application. Of course, you have to be connected; then, you can help the artist to set up his system via this panel. These controls can also be accessed by the artist in the Performer application at any time; this is why the detailed explanation of these items is to be found in the Performer section.

2.9.3 Manager
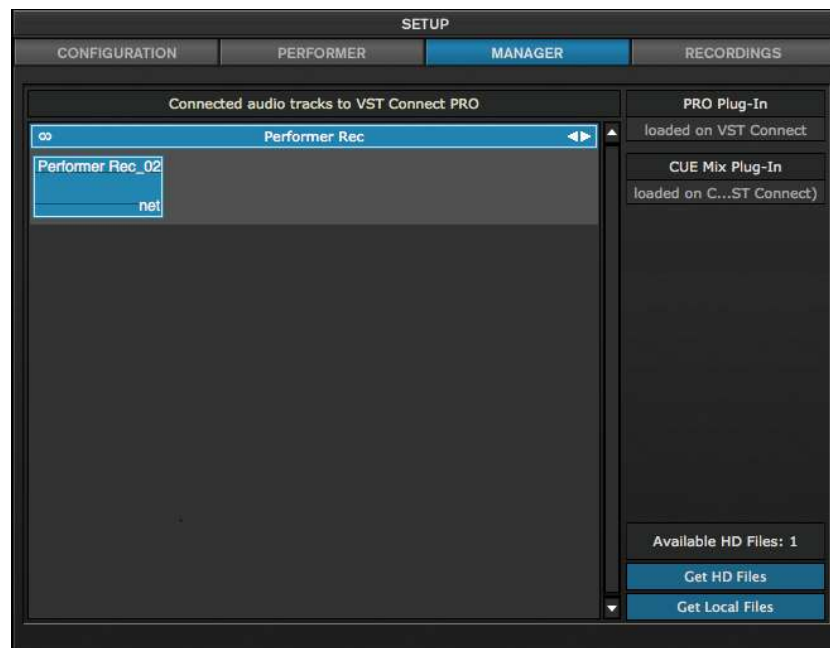
Here, you organize and manage availability of HD recordings that have been recorded on the Performers' computer, and are informed about correct placement of VST Connect components in Cubase / Nuendo. If for instance the VST Connect cue mix plug-in is missing in the Control Room mixer, the Manager informs about that. The VST Connect menu then offers a way to solve this.

The main task of the Manager however is to manage and organize available recordings. As soon as an audio track in Cubase / Nuendo is connected to the VST Connect Input bus, this is visualized in the Manager. So you can see for instance whether it is a Mono or Stereo track, whether it is record enabled, and its name.

But it also offers some additional information: as soon as a recording has taken place with the artist, the Manager tags this recording as a remote recording ("net"). This recording can then be converted to HD quality, provided the according channels in the VST Connect Mixer had been set to record enable. In that case, VST Connect Performer stores these recordings locally with a resolution as set in the VST Connect PRO plug-in settings (16 or 24 bits).

As soon as an HD file is being requested and transfer begins, a progress bar is being displayed on the bottom of both the VST Connect PRO plug-

in window and the VST Connect Performer application window. When transfer is finished, those files are automatically replaced in the Cubase / Nuendo arrangement, and tagged with "HD" in the Manager. Also, the recording title in Cubase / Nuendo is changed accordingly.

Often several takes were recorded. In this case, the engineer is offered the option to replace specific recordings by their HD equivalent. This is accomplished by right-clicking the file on its display in the Manager. "Get HD Files", in contrast, will fetch all recordings and replace if necessary.

Transfer of several files may take quite a while, and Studio and Performer need to stay connected during this period. That's why the Manager also offers to transfer files from a local directory ("Get Local Files"). So the files can be transferred from the Performer's computer to yours by any preferred method and offline (FTP, Dropbox or the like). On the artist's computer, where the Performer application works, these files are stored in the following folder:

OSX : /Users/YourUserName/Documents/VSTConnectPerformer
Windows: C:/Users/YourUserName/Documents/VSTConnectPerformer

Where "user" is to be replaced with the Performer's name on his computer, and with Windows, the system drive is assumed to be C:
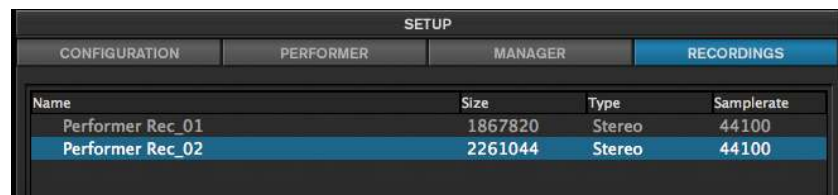
With "Get Local Files", you are asked for the location of these files for local transfer. Information about HD recordings is stored on both machines. Of course that also means that only existing files can be transferred and converted.

In the VSTConnectPerformer folder, there may exists several project files. You may want to look for the date of the audio files (in the "audio" folder) in order to transfer only those that are required for a particular project.

> **Note**
>
> This section is only available with the PRO version of VST Connect.

2.9.4 Recordings

It allows you to manage all audio files recorded on the computer of the artist using the VST Connect Performer application. To display single files of which the take consists, click on the take's name. For example, you can easily delete any file you do not need anymore easily. If you have recorded in HD, but decide to only transmit the stereo mix, you can delete the HD files for single tracks that are saved on the Performer side.

> **Note**
>
> This section is also only available with the PRO version of VST Connect.

2.10 Toolbox Items

On the bottom of the VST Connect plug-in, you will find five small icons which provide the following functions:

: **Network**

Lets you access the Network pages to find, manage and connect to other VST Connect users. You only can use this page when have logged in with your MySteinberg account.

: **Large Mixer**

Opens a larger view of the VST Connect mixer. This is mostly useful with the PRO version of VST Connect, where you can have up to 16 channels for recording and get a full overview and access to all channels at once. The channel controls are the same as with

the smaller default mixer view; the effects sections get a larger display and effects can all be seen at once, as opposed to the smaller view where you have to select which controls are visible. The controls work the same way as in the smaller version as well.

: **Video Window**

This feature allows you to open the video sent from the artists' Performer application in a separate window. It shows the same content as with the video display in the VST Connect editor window. It can be arbitrarily sized or set to full screen. This is very useful when you don't need the VST Connect plug-in editor window anymore as all is set up already for recording, and when you want to see the artist in a separate window, monitor, or even projector.

: **Toolbox**

Lets you access the Setup Tabs outlined before.

: **Help**

Opens the Help Document.

2.11   Status and File Transfer

The status text field to the lower left displays useful information about the current status of VST Connect.

Below the status text, a file transfer progress bar is shown once an HD file transfer is started. This is only available with the PRO version of VST Connect. It shows the progress of currently transfered HD files as described with the Manager Tab before.

3   VST Connect Monitor

When you configure VST Connect using the Cubase / Nuendo Project
/ VST Connect Menu item "Create VST Connect", not only will an Input
Channel be created with the VST Connect plug-in, and a Control Room
Cuemix channel with the VST Connect Cuemix plug-in, but also the VST
Connect Monitor plug-in will be added to the main Control Room Output.
This allows you to listen to the Performer signal while chatting and during
recording or playback. The delay compensation system in Cubase /
Nuendo will apply a delay when you set a VST Connect Performer Track
to input monitor, which is confusing, so you are advised to avoid that.
The VST Connect Monitor plug-in allows you to listen to the Performer
at any time, thus making it unnecessary to switch any Performer Track
to input monitor. You may want to open "File/Prefences" and set the
"Auto Monitoring" in the VSTsection to "Manual" so to avoid automatic
switching of Performer Input Monitor.

4 VST Connect Performer

VST Connect Performer is available as an application for Windows and Mac OSX, as well as an app for the iPad (iOS). The desktop version can be freely downloaded from the Steinberg website, the affordable iPad version is available in the Apple appstore. The artist does not have to own any DAW (Digital Audio Workstation) software, and should not start any. In fact you are advised to close all applications that connect to the Internet, use audio or video hardware, or are heavy on the CPU.

4.1 User Interface Overview

- On the top left you can select a VST Instrument. See Using a VST Instrument on how to use this.

- The top middle section shows connection status, and transport status, as well as the Bars and Beats Position and the Tempo as set by the studio when you are connected. None of these can be changed, they are for informational purpose only.

- The top right section is where you connect to the studio. See Connection for further details.

- To the middle left, usually the studio video is displayed, but depending on other settings, also the large mixer view or settings pages may be seen. See Toolbox tems for more information on this.

- To the right, the Monitor Mixer is shown. See Performer Monitor (Headphone) Mix section for details.

4.2 Connection

Of course, you must be connected to the Internet. A good and reliable Internet connection is vital to the quality of both sound and video; WiFi connections may work, but it is always a good idea to connect to the router with a solid Ethernet network cable.

There are three ways to establish a connection: LAN, mySteinberg, or key exchange.
If the connection is to be established in a local network, the "LAN" button will light up whenever one or more computers in the local network are running Cubase / Nuendo with the VST Connect PRO plug-in installed. Note that this is only possible with the PRO version of VST Connect (the Performer application or app runs against both of the SE and PRO versions). Click the lit LAN button to obtain a list of computers that you can connect to, and choose the desired name and local IP address entry.

4.2.1 MySteinberg

PROCEDURE

1. On the top right of the VST Connect and Performer user interface you will find the login section.

2. Fill in your credentials (MySteinberg email address and password) and

3. click the "Login" button.

4. If you do this for the first time and you have not yet provided a VST Cloud user name (for instance with VST Transit), you will

have to do so now. Choose a name that can be easily recognised, because this is the name that your friends may be searching for, using the search function described below. You will need to do this only once. Note that a VST Cloud user name can not be changed later.

5. After successful login, the Network page opens automatically on the Friends tab.

> **Note**
>
> If you don't have an account, please go to the MySteinberg Website to create an account free of charge.

4.2.2 Key

On the top right, enter your name or a nickname; this is what the engineer will see when the connection is established. You will then have to get the key number from the studio engineer who uses VST Connect in Cubase / Nuendo and enter it into the "Key" field. Note that this number always consists of two groups of numbers separated by a blank (space). Then, click the connect button on the top right.

4.3   Performer Monitor (Headphone) Mix

The Performer Mixer controls the monitor mix for the artist. This part is visible and accessible in both the Performer application or app, and the VST Connect plug-in in Cubase / Nuendo. It means the engineer too can remote control the artists' headphone mix, namely:

- The "MASTR" (Master) channel, which controls the overall listening level for the artist. On top of this channel, select which outputs of the Performer audio interface should provide the entire monitor (headphone) mix.

- The "STDIO" (Studio) channel, where the Cubase / Nuendo Control Room Cue Mix (including Talkback) signal appears.

- The "VST I" channel, which controls the VST Instrument settings. A VST Instrument can be set up by the artist in the Performer's top left corner.

- The "Mic" and "Instr" (Instrument) channels, as well as other audio channels that can be created when the engineer uses the PRO version of VST Connect. These channels control signals from audio sources which can be selected on top of the according channel. So you could

for instance use the "Mic" channel for the artist to chat and sing, and the "Instr" channel to record a guitar signal fed into another audio input of the artists' audio interface at the same time.

Each of these channels features

: **Volume**

A slider to control its individual level.

: **Signal**

A Signal meter.

: **Mute**

A button to disable audio of this channel altogether.

: **Pan/Balance**

A setting to determine where the signal appears between the left and right output channels.

: **Insert**

A button to bypass any installed inserts.

: **Send**

A level to send part of the channel signal to the built-in Reverb described below (not available on the MASTER and STUDIO channels).

: **EQ (Equalizer)**

As described below.

: **Compressor**

Also described below.

: **Input Bus**

An menu to select the audio input for this channel where applicable (mic, instrument, and audio channels). For the Master channel, select the stereo (headphone) output for your mix here.

Note

Again, don't forget that nothing of this affects what the engineer hears or records, it is merely controlling the artist's listening signal. The reason for the built-in eq (equalizer) and fx (effects) is that there is a significant delay between the studio and the artist during playback and recording; so if the engineer was to use effects on the artists' signals at the studio, and provide that back to the artist, there would be a large and confusing echo effect along with it.

4.4 Effects

As explained before, the Performer application features built-in effects for the artists' monitoring. These can be recorded in Cubase / Nuendo, or, when fx record is off, are only audible by the artist. As with all other Monitor mixer controls, they can be accessed by both the artist and the engineer remotely. If the artist knows how to deal with the mixer, he or she can of course set up their own listening experience, but the good news is that this task can also be left to the engineer like in a professional recording room-to-room situation.

4.4.1 Reverb

The Reverb is fed by the send controls of each channel in the Performer Monitor mixer. Those sends are not useful, and thus not available for the MASTER and STUDIO channels. Reverb is the only effect global to all channels, other fx are available per channel.

  : **On/Off**
    Sets the Reverb active or inactive.

  : **Reverb**
    Sets the Reverb volume (the "wet" portion of the reverberation signal).

  : **Size**
    Sets the size of the reverberation room, and thus the length (duration) of reverberation.

  : **Damp**
    Sets how fast the reverb signal is loosing high frequency content during its lifetime (how fast it is becoming "dull").

  : **Width**
    Sets the stereo width of the reverberation signal. Higher values increase the stereo with.

4.4.2 EQ

  : **On/Off**
    Sets the EQ active or inactive.

  : **Bass**
    Sets the amount of low frequency (80 Hz) increase (rotary knob right to 12 o'clock position) or decrease (rotary knob left to 12 o'clock position).

  : **Mid**
    Sets the amount of mid frequency (as set by "Mid Freq") increase or decrease.

: **Mid Freq**

Sets the center frequency (250 Hz to 5 kHz) for "Mid".

: **High**

Sets the amount of high frequency (6 kHz) increase or decrease.

4.4.3 Compressor

The Compressor of each channel smoothes out dynamic changes of the signal so to make it more consistent (simplified, lower signals become louder, while louder signals become lower). A compressor is a somewhat complex device, we don't give advice here how to operate it. Access one of the numerous sources in the internet to learn compressors, or look at descriptions of the similar effect available in Cubase / Nuendo. Compressors are often used for vocals so to get them more "in the face".

: **On/Off**

Sets the Compressor active or inactive.

: **Thresh (Threshold)**

Sets the signal level at which compression starts. Set to lower values (left to 12 o'clock) for more compression.

: **Att (Attack)**

Sets the amount of time that the compressor waits after a signal has crossed the threshold level until it starts compression.

: **Rel (Release)**

Sets the amount of time where the compressor gradually reduces compression when the signal falls below the threshold level.

: **Gain**

A compressor actually only ever decreases the level of the incoming signal. To compensate for the overall signal loss, this gain control can be used to increase the resulting level after compression (also called "makeup gain"). Thus, this also controls the overall level of the channel.

: **GR (Gain Reduction) meter**

Shows how much the compressor reduces the gain due to compression action. The more this meter shows activity (from right to left, as opposed to meters you are otherwise used to), the more the compressor reduces the gain of the channels' signal.

4.4.4 Inserts

Each Performer Monitor channel features a set of four Insert slots that can be used to apply VST2 and/or VST3 plug-ins to that channel. There are countless VST plug-in effects on the market that can be applied here.

Plug ins to be used must of course be installed on the artists' computer
or device where the VST Connect Performer application or app runs.

: **On/Off**
  Sets all four insert plug-ins active or inactive

: **Slots 1-4**

  - On/Off - Activate or deactivate this slots Insert effect

  - e - Show or hide the editor of the Insert effect.

  - Menu - Select an Insert plugging here, or remove an installed
    one via the "Remove Insert" entry

4.5 Toolbox Items

To the bottom of the Performer application or app, you will find five small
icons which provide the following functions:

: **Network**
  Lets you access the network pages to find and connect to other
  VST Connect users. You only can use this page when have logged
  in with your MySteinberg account.

: **Large Mixer**
  Opens a larger view of the VST Connect mixer. This is mostly use-
  ful when connected to the PRO version of VST Connect, where you
  can have up to 16 channels for recording and get a full overview
  and access to all channels at once. The channel controls are the
  same as with the smaller default mixer view; the effects sections
  get a larger display and effects can all be seen at once, as opposed
  to the smaller view where you have to select which controls are vis-
  ible. The controls work the same way as in the smaller version as
  well.

: **Video Window**
  This feature allows you to open the video sent from the studio in
  a separate window. It shows the same content as with the video
  display in the VST Performer window. It can be arbitrarily sized or
  set to full screen.

: **Toolbox**
 Lets you access the Setup Tabs outlined before.

: **Help**

Opens the Help Document.

4.6 Status and File Transfer

The status text field to the lower left displays useful information about the current status of VST Connect.

Below the status text, a file transfer progress bar is shown once an HD file transfer is started. This is only available when connected to the PRO version of VST Connect. It shows the progress of currently transfered HD files as described with the Manager Tab before.

4.7 Settings
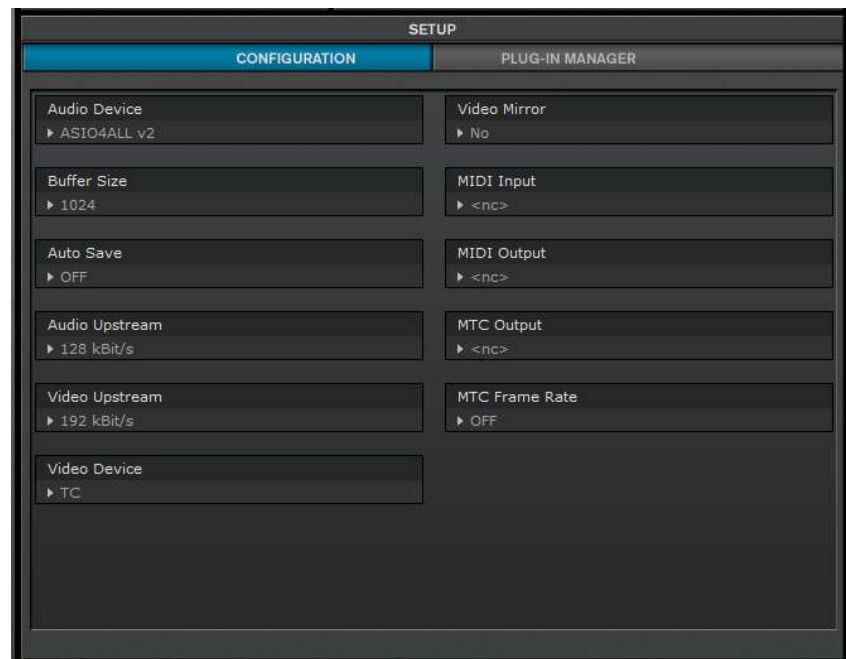
These settings are also accessible by the VST Connect plug-in in Cubase / Nuendo when a connection has been established. Ask the engineer to set this up for you if you are less experienced or interested in dealing with these technical details.

: **Audio Device**

Open this pop-up menu to select the driver for the audio hardware that is installed on the performer's computer. For Microsoft Windows systems, the free ASIO4ALL driver or the Generic Low Latency driver from Steinberg has proven to work well with most standard audio hardware. If your device features a dedicated ASIO driver, you should use that instead.

: **Buffer Size (Mac only)**

Sets the size of the audio buffers. The lower the buffer size, the lower the latency, but the higher the CPU load and risk of dropouts.

: **Audio Upstream**

Open this pop-up menu and select the audio upstream rate for the signal sent to the studio (shown in kilobits per second). The higher the rate, the better the audio quality for the signal that is being sent to the studio, but of course there has to be sufficient bandwidth within the connection to provide the goods. This setting determines quality of the recorded realtime audio in the studio, but has no influence on HD recordings (only applicable when connected to the PRO version).

: **Video Upstream**

Open this pop-up menu and select the video upstream rate for the signal sent to Cubase / Nuendo. The same rules apply.

: **Video Device**

Open this pop-up menu and select the video device to use for communication with the engineer. You can send any video signal that is provided by the operating system.

: **MIDI Input**

Allows you to select the hardware MIDI input device and port.

: **MIDI Output**

Allows you to select the hardware MIDI output device and port.

: **MTC Output**

The Performer application can send MIDI Time Code (MTC) via a MIDI output port selected here. For MTC to be active, the MTC Frame Rate must be set as well.

: **MTC Frame Rate**

Defines the frame rate for MTC (MIDI Time Code) to be sent, or switches MTC output off. A MIDI port for MTC must also be set with the MTC Output setting for MTC to work.

: **Auto save**

Set the time for the new auto-save feature. When connected, the mixer and recorded HD audio files information is always stored along with the Cubase / Nuendo project on the other side. You can also transfer the Performer project along with the HD audio files as you like (Dropbox, FTP, mail etc) and import it in Cubase / Nuendo manually when you are off-line. HD recording is only available when the VST Connect PRO plug-in is used. Usually, the project is saved when the connection is closed. Auto-save makes sure that the project is saved regularly so to help should the system crash. When not connected, local settings (like faders, input and output buses etc) are also saved on the artists' computer such that they

can be restored the next time the Performer application is opened.

4.8 Plug-In Manager

This section provides an overview of VST Instruments and VST effects plug-ins which are installed on the Performer's system. The Plug-in Manager supports VST 2 and VST 3 plug-ins, but it does not support so called "Bridging". You can only use either 64 bit plug-ins.

Plug-in support is initially switched off and can be individually activated for VST 2 and/or VST 3. To activate VST 2 support, the Plugging Manager requires a path to the directory, where VST 2 plug-ins are installed. For VST 3, this path is standardized and does not need to be set explicitly.

If a plugging type is activated, an additional window showing information about validation of the plug-ins is displayed. After validation, that window is automatically closed and all supported plug-ins are being listed. The list shows Name, Category, and Type of plug-in (type being either VST 2 or VST 3). All listed plug-ins can immediately be used within VST Connect Performer.

The Manager also features to possibly exclude plug-ins from the popup-menu lists in VST Connect Performer. This can be useful should there be many plug-ins, but only some are to be used. Each column features a check box to indicate plug-ins that appear in the lists.

4.9 Using a VST Instrument

A VST Instrument plug-in can be loaded in the according slot to the top left of the VST Connect Performer application. When you click here, a list of available VST Instruments is displayed, one of which you can select to use it. Availability of VST Instruments is configured in the Plug-in Manager described before.

When an Instrument is loaded, its editor window is opened automatically. This window can be opened again clicking the "Edit" button next to the VST Instrument slot.

> **Note**
>
> Furthermore, there is a MIDI activity LED in this section.

5 Troubleshooting

5.1 Connection

There is usually no need for so called port forwarding, but it may help to improve connection quality. If you know how to do so, you may instruct your router and firewall to open (forward) UDP ports 51111 through 51113. If you think it is required to do this but don't know how, please refer to various games sites where you can find instructions of how to configure your router and/or firewall. Unfortunately these settings are very different for the numerous router devices on the market, but the games people often run servers for collaborating on games and are quite experienced in this. But again, VST Connect uses very advanced server technology which in almost all cases allows connections without such action. Within restricted networks such as company networks, ask the network administrator to open the aforementioned ports should you encounter connection issues.

It cannot be stressed enough that a reliable Internet connection is essential. A cable is much more likely to provide good results than any form of wireless connection. A wireless connection may work, but dropouts or long delays may occur at any time. We recommend to always use hardware cable connections directly to routers and modems.

There are many factors outside Cubase / Nuendo and VST Connect that determine the quality of the connection. You can improve it by making sure that your internal network is not used by other people and by closing all network-intensive applications, such as browsers. This applies to both partners.

5.2 Server Not Responding

When engineer or performer get the message "Server not responding", there are two likely causes: either there is no connection to the Internet at all, or the local firewall settings are too restrictive.

First of all, try to access the Internet via a browser. Next, check your firewall settings. Configure your router/firewall to allow incoming information for UDP ports 51111 through 51113, or ask your administrator to do it for you.

5.3 Avoid Audio Dropouts

If the values set for Audio Upstream and Video Upstream in the configuration settings for the performer and/or engineer exceed approx. 80 % of what the respective Internet Provider (IP) delivers as upstream rate, dropouts will occur. For example, if your provider guarantees only 384 kBit/s upstream, you should set both the audio upstream and video upstream parameters to 128 kBit/s. This gives you sufficient headroom for reliable network operation without dropouts.

You may also consider setting the video upstream value to a lower value, and the audio upstream correspondingly to a higher value, since the video image quality is not as important as the transmitted audio quality.

5.4 Avoid Feedback

The connection between engineer and performer can cause feedback loops between the engineer's microphone and speakers on one side and the performer's microphone and speakers on the other. To avoid damage to your equipment, the performer should use headphones instead of speakers. This is generally advisable, as otherwise the artist's speaker signal will be audible with recordings.

5.5 More ...

If you run into problems, please also try to make sure that you have applied the following settings:

1. Constrain Latency compensation (top left of Arrangement Window) must be switched off

2. Devices/Device Setup/VST Audio System/ASIO Guard may cause problems, try to switch it off

3. Devices/Device Setup/VST Audio System/Direct monitoring should be off

4. Devices/Device Setup/VST Audio System/Record Shift should be 0 (zero)

5. Devices/Device Setup/VST Audio System/Adjust for record Latency should be on (activated, ticked)

6. Make sure that Cycle (Loop) is off in the Transport Panel

7. Count in doesn't work with VST Connect, it will be out of sync

8. Don't start from position zero or negative positions, we always need a bit of head for sync.