DIVISIMATE

Compose. Orchestrate. Perform.

User Manual 1.1

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INTRODUCTION

The idea of Divisimate started with two composers simply needing a solution for a common problem. Some of the most expressive and playable virtual instruments out there are monophonic – meaning they regularly can only play one note at a time.

Using these instruments for chords or creating detailed orchestrations within an ensemble meant either playing every part in one at a time or performing an ensemble patch and separating the notes afterwards.

But we wanted to be able to play and record a well voiced woodwind choir, a full brass section or essentially any orchestration. Immediately, without additional steps, in real time.

This could be achieved by splitting a chord into its individual voices and assigning each voice to an instrument. So the highest note could be sent to the first trumpet, the second highest to the second trumpet, and so on. Doing that before the chord even gets to the DAW was the core idea.

When we met Bene, we decided to develop this concept and see if it goes anywhere.

Let's say that this endeavor escalated a little bit and the software turned out to be extremely useful. So we decided that this was something that could be helpful for many other composers and performers out there.

So here we are - us writing this manual, and you reading it.

We are a small team of essentially three people, so development is moving slowly, but steady. We have lots of ideas how to improve Divisimate and will tackle them one by one with regular updates.

If you have any feature requests, workflow ideas or constructive criticism, feel free to shoot us a message at support@divisimate.com

So long, we hope you enjoy working with Divisimate!

All the best,

Steffen Peter Benedikt

1. HOW IT WORKS

Divisimate is a standalone software that runs independently from your DAW. When Divisimate is open it will create 32 virtual MIDI ports, which will appear in your sequencer as separate midi devices. In Divisimate, live input is split up into individual voices which you can modify and route to any of the output ports.

In most DAWs* you can select a distinct midi device for every single track, so it is possible to have every Divisimate output port assigned to a different instrument. Every combination of routings in Divisimate will now correspond to a specific instrumentation and voicing in your template.

Now you can edit and build presets to fit your personal template and workflow. Do you need Divisimate only for the Brass, and prefer to program the rest normally? Do you want to perform the full orchestra? Or a Big Band? Or even experimental synth sounds? In the studio? On stage? It's up to you.

We built Divisimate, so you can build your own personal workflow!

**The setup is very different between the DAWs. Cubase, Nuendo, Samplitude, Reaper and Studio One are pretty easy going. But we advise especially Logic Users to look at our respective "Quick Start" document before purchasing.*

2. INSTALLATION

When you have downloaded the install package, unpack it first to a folder of your choice. If needed, use an archive software like 7-Zip or WinRar.

There are distinct installers for Mac and PC – select the installer fitting your operating system and open it. The install wizard will now guide you through the installation.

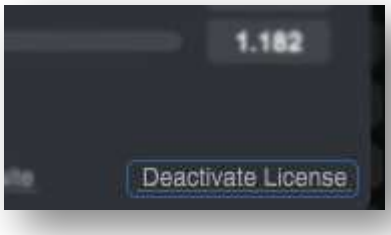
If you are on Windows, the installation will create the 32 virtual midi devices named “Divisimate_Port01” and the like permanently. You can remove them using the uninstaller in the installation folder.

If you are on Mac, Divisimate will create and open the 32 virtual midi ports every time you open Divisimate. They will vanish again, once you close Divisimate.

3. ACTIVATION

As you open up Divisimate for the first time, it will show an activation window asking you to put in your license key.

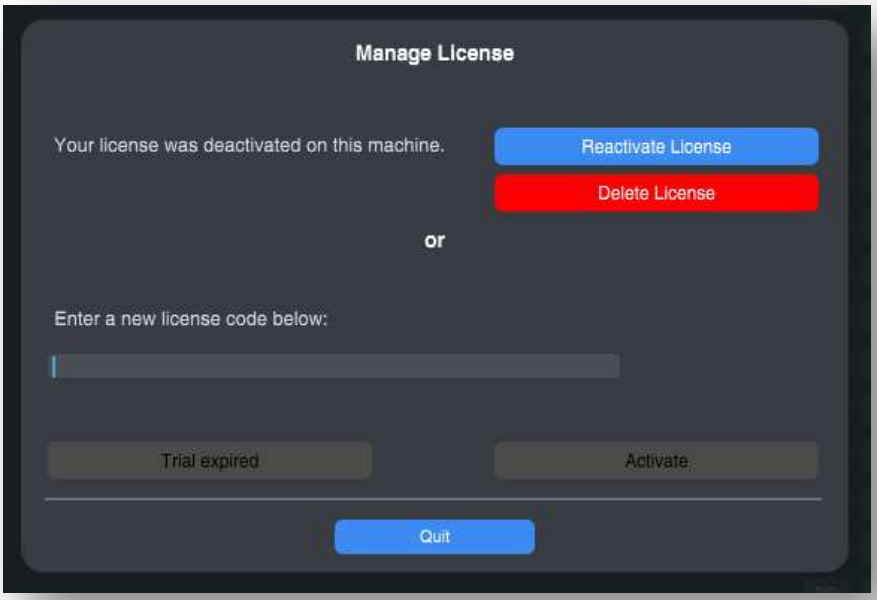
Copy your personal license key from the e-mail you received upon purchase and click “activate”. *You need to be connected to the internet for the activation to work.*



Your license can only be active on two machines at a time. To work with different machines over time, you can deactivate your license on one device by clicking on “Deactivate License” at the settings page and activate it on a different machine.

Once deactivated, Divisimate will still remember your license key so you can quickly reactivate your license without putting in your key again. To delete the key from this machine, click “delete license” on the activation screen, or put in a different key directly.

All this can be done an unlimited number of times so you can switch between different workplaces easily.



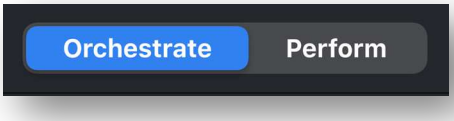
4. OVERVIEW

4.1 ORCHESTRATE/PERFORM

Now that your copy of Divisimate is activated, you can start using the software.

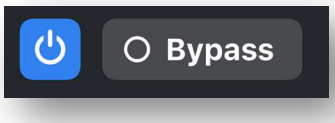
There are two main views – Orchestrate and Perform. The Orchestrate view serves to build an orchestration, distribute voices across parts and add plugins. The Perform page allows you to organize and recall your favorite orchestrations quickly.

You can switch between the two main views using the button centered at the top.



4.2 POWER AND BYPASS

On the upper left there are two buttons that will appear in both views.



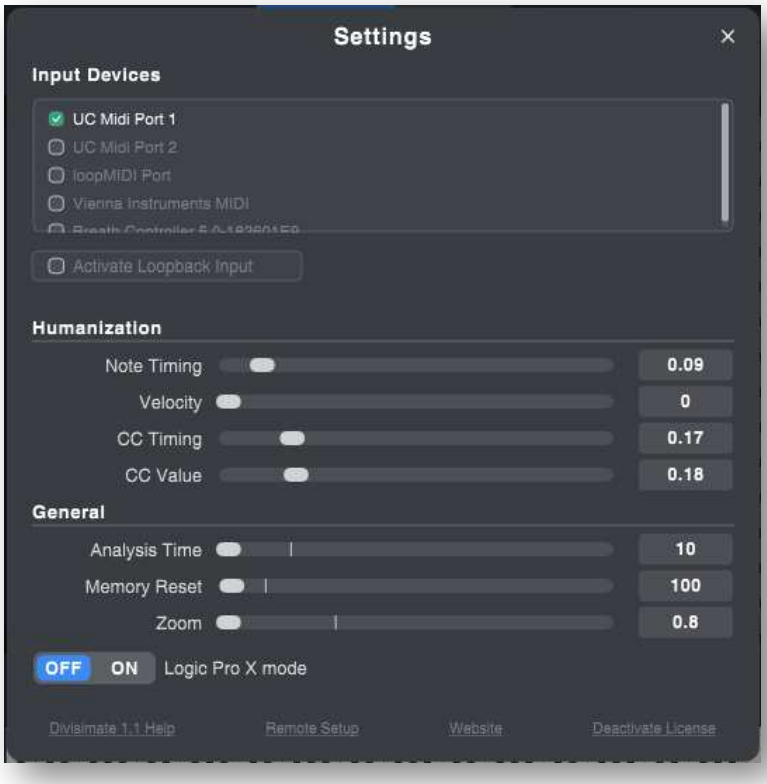
Power On/Off: The power button can turn off all notes and controller data that would have been sent to the outputs. If this one is set to off all ports will be silent, all caches will be cleared and any active notes will be stopped. *It also works as a panic button, should you ever need it.*

Bypass: The Bypass Button will deactivate basically all functionality of Divisimate - Divisi Engine, Routing Matrix and Modifier Plugins - and simply pass through all incoming notes and controllers to each and every output port. *This allows you to return to a conventional working method for individual tracks without having to change the routing in the template.*

4.3 SETTINGS

The Settings button at the top right will bring you to the settings Menu, which presents you with a couple of options.

Most of them will be explained in more detail later.



4.3.1 INPUT DEVICES

The first thing you should do is check the **"Input Devices"** window. Here you can select which MIDI Devices should serve as input for Divisimate.

On Windows some devices can only be used by one application at a time. To use these in Divisimate, they have to be deactivated in the DAW. That doesn't have to impact your original workflow at all, you can just use Divisimate as a kind of Midi-Merger and pass through the data unmodified using the bypass-button.

4.3.2 ZOOM

The user interface of Divisimate is fully scalable to accommodate everyone from visually impaired composers to people with very large monitors. The first time you open Divisimate the scaling will be automatically set depending on your monitor size. You can rescale the window freely without changing the proportions of the orchestrate page to display more ports.

On the settings page however there is a "Zoom" slider. If you turn it up, everything on the Orchestrate-Page will get larger, while retaining the core ratios of the interface.

Feel free to adjust this value to your liking. Your changes will be saved when you close Divisimate and open up again.

4.3.3 LOOPBACK INPUT

The Loopback Input appears as an individual MIDI Device with the name "Divisimate Loopback Port" in your system. This way it is possible to route MIDI from other software, for example a MIDI track with prerecorded MIDI data in your DAW, to Divisimate.

When using this feature be especially careful, that you have a good overview of the signal flow, as it is possible to build a feedback loop using this Input.

4.3.4 LOGIC MODE

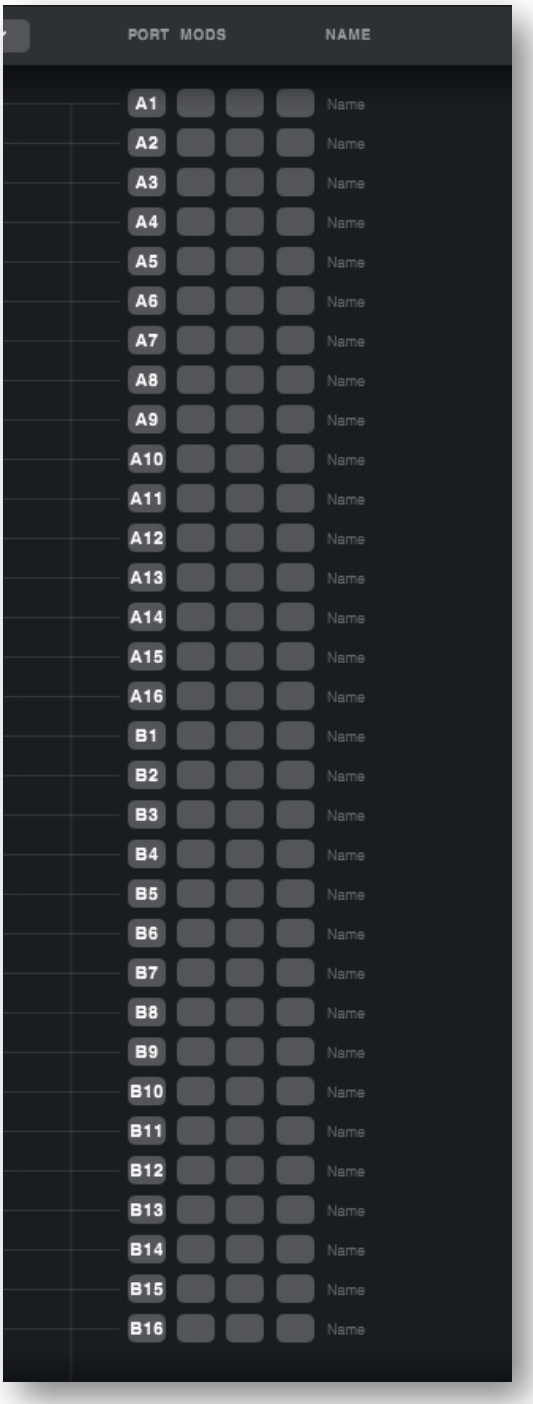
To accomodate the specific behaviour of the popular DAW Logic Pro X, starting at version 1.1 there is now a switch on the settings page to turn on the “Logic Mode”.

This changes the behavior and display of ports and channels. All routings and other settings on the orchestrate page stay the same, but Port 1-16 are displayed as A-1 to A-16, and Port 17-32 are displayed as B-1 to B-16.

A-1 to A-16 will be sent to Divisimate Port 01 across the MIDI Channels 1-16.

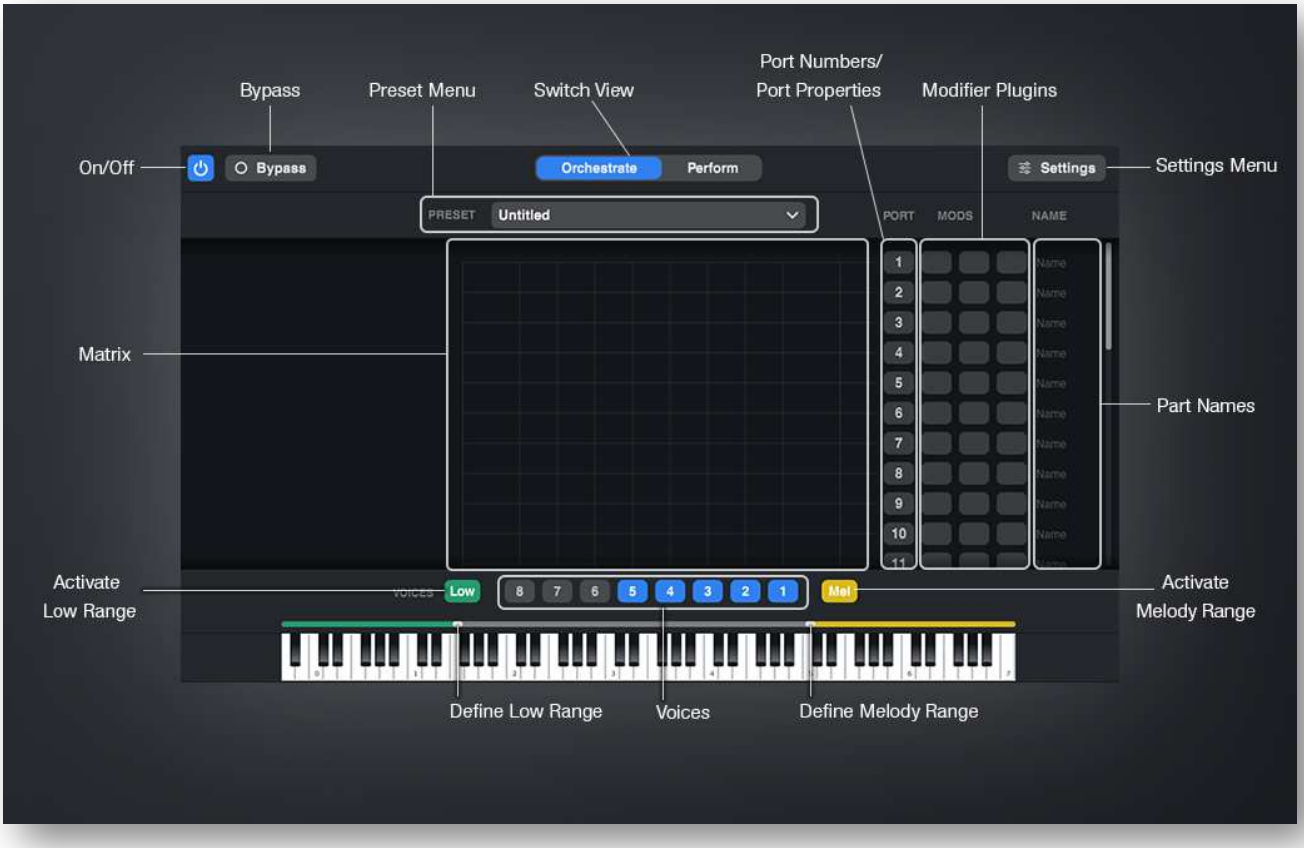
B-1 to B-16 will be sent to Divisimate Port 02 across the MIDI Channels 1-16.

This allows you to just connect Divisimate Port 01 to your Sequencer Input in Logic and access the 16 Outputs in the channel selection of your instrument tracks. All other functionality of Divisimate remains untouched by the Logic Mode.



5. ORCHESTRATE VIEW

The Orchestrate View allows you to control all aspects of your Orchestration – Divisi Voices and Ranges, Routing and Modifier Plugins. Here you can create and save orchestrations and adjust voicings, doublings and routings.



5.1 DIVISI ENGINE, VOICES AND RANGES

5.1.1 VOICES

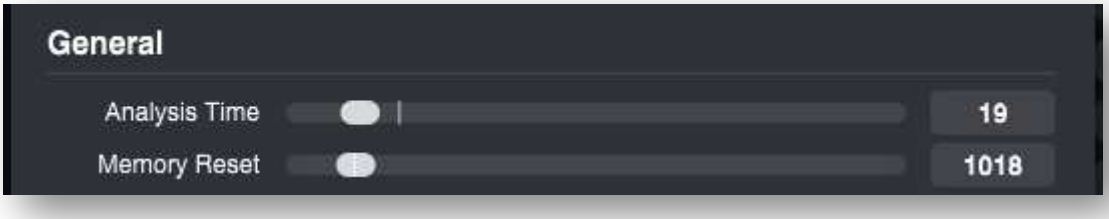
The heart of Divisimate is the Divisi Engine. This is the algorithm which splits up your live input into separate voices. For the engine to work correctly, you should select the number of voices you want to play. If you want to perform simple triads, you select 3, if you want to play 4 part voicings, you select 4, and so on. The engine can split up to 8 voices at a time.

If you play more notes than selected, the engine will make a decision which of the notes will fit the best with a close voice leading and drop the other one. If all active voices are playing and an additional note is received, the engine will wait for another note to end before rearranging the chord.

5.1.2 MEMORY RESET

The engine will remember the last complete voicing for a certain amount of time. If you play less notes than selected, the engine will make a decision based on that, which voice will receive the notes and which will remain silent. Again, it's about keeping the voice leading as intact as possible.

You can set the time in ms the last full voicing is held in memory with the **Memory Reset** slider on the **Settings Page**.



5.1.3 ANALYSIS TIME

The engine reacts directly to your playing and can't look into the future. If you play nonsense, the engine will turn out nonsense. To compensate for small timing issues, the engine will wait a set amount of time before splitting up the chord and distributing the notes.

You can adjust that waiting time, essentially a latency for analysis, with the **Analysis Time slider** on the **Settings Page**.

Analysis Time and Memory Reset are global controls, meaning they will not change when you switch presets. They will be saved as your preference when you close Divisimate.

5.1.4 LOW & MELODY RANGES

On the left and right side of the voice buttons you can activate the Low and Melody ranges by clicking on the respective buttons. When they are activated, colored sliders will appear above the keyboard. By dragging the slider you can set the boundaries of each range.

Everything happening outside of those ranges will be split up into the set number of voices. But all notes within the Melody and Low range will not be affected or analyzed by the Divisi Engine. They will simply be sent through to wherever they are routed. All modifier plugins and humanization will still apply.

This is useful for a number of uses, especially for Chord + Melody or Bass + Chord kind of arrangements. We also like to use the low range for keyswitches sometimes.

5.2 MATRIX

The Routing Matrix allows you to distribute the voices and ranges across the output ports and modify the notes and controllers that are coming through.

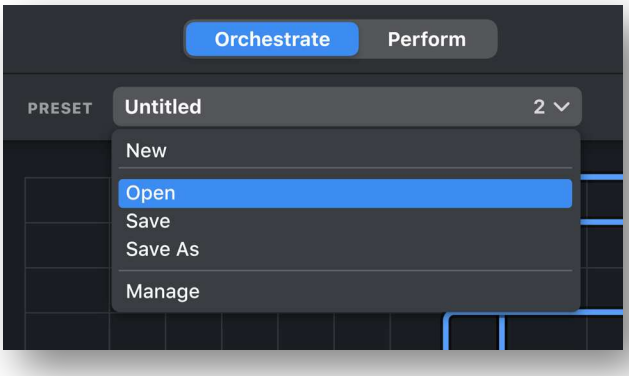
In the grid every vertical line corresponds to one of the voices and ranges, while every horizontal line points to an output port number. By clicking on an intersection you can set a connection and send all notes from that voice or range to the respective output port.

Every voice and range can be routed an unlimited number of times, and a single port can receive any number of routings. Basically every kind of routing is possible, giving you every freedom for creating your own orchestrations.

On the right edge of the window next to the modifier plugins you have the option to write in a part name. This will not change the device name of the port (this will stay Divisimate Port XY), but helps you remember which track receives data from this port.

5.3 PRESETS

All orchestrations, everything that is going on in the Orchestrate View, can be saved into presets. This is pretty straight forward. Presets are saved as individual .xml files into a personal user folder. This makes it super easy to organize your presets into sub-folders and easily share them between machines.



The options here are pretty straight forward.

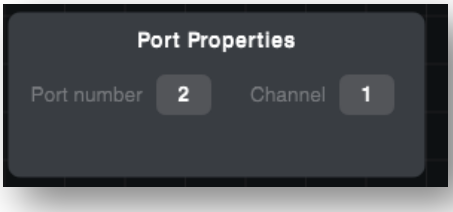
Save will re-save the current preset, **Save As** will save the current orchestration as a new preset, and **Open** let's you select a preset to recall.

Manage opens the parent folder of your presets, so you can easily organize your presets in the explorer/finder.

Clicking **New** will create a completely empty orchestration and discard any changes you have made.

And that's pretty much it. Why reinvent the wheel? We'll get back to the presets when we talk about the Perform View!

5.4 PORT PROPERTIES



By clicking on a port number in a Matrix Row, you can access the port properties. Here you can adjust the ouput MIDI Channel for notes and controllers on this row, and also even change the port number associated with that row. This can be helpful, if you want to send different voices to different channels of the same port.

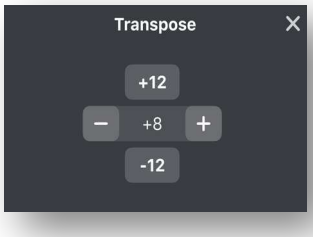
6. MODIFIER PLUGINS

Next to the Port number in the Orchestrate view there are three slots where modifier plugins can be inserted.

All MIDI Data routed to this port will be affected by these plugins depending on the kind of plugin. Right now there are three different plugins.

Plugins can be moved between slots by clicking and dragging them to another port. You can copy a plugin by holding the alt key and dragging it to another slot.

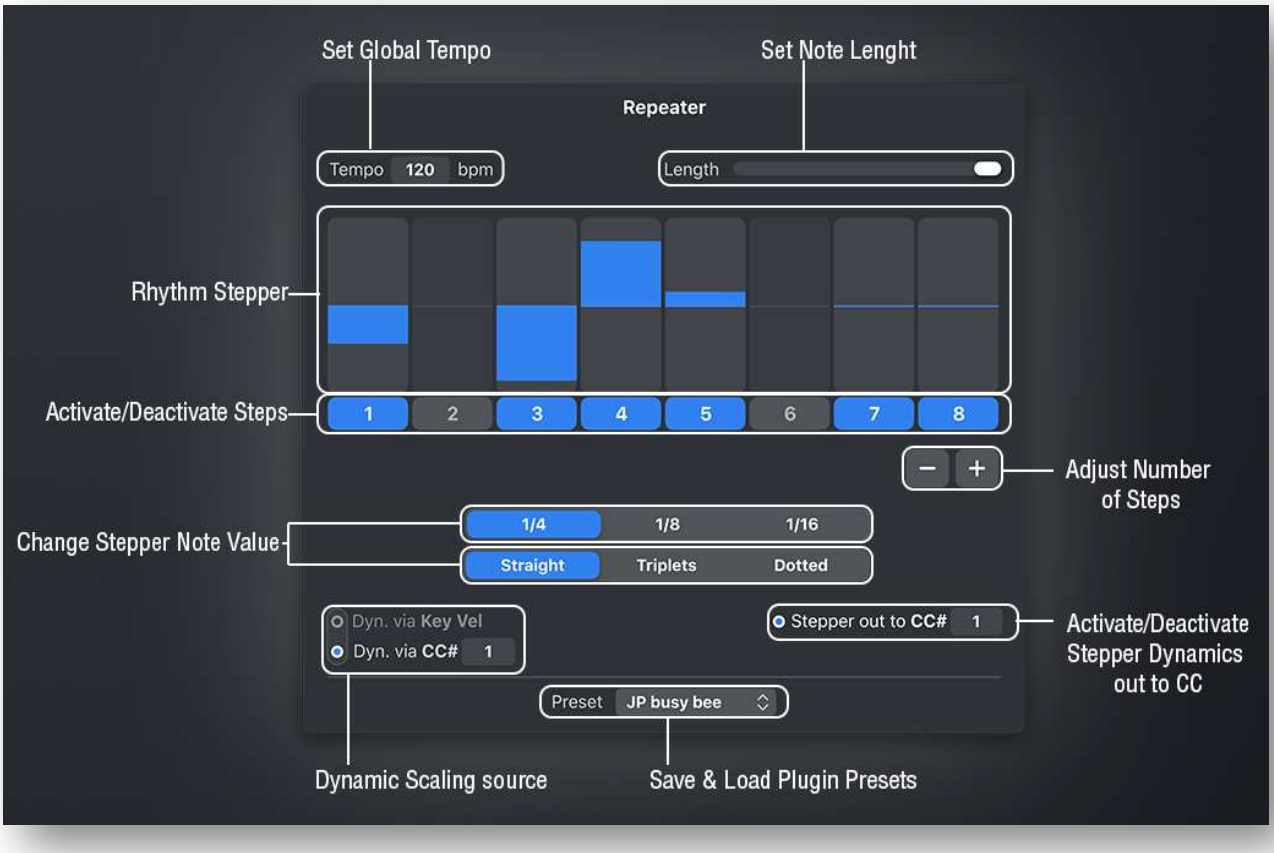
6.1 TRANSPOSER



The Transposer does exactly what you might expect. This one will transpose all notes a set number of steps up or down. Since the most common use of this plugin is to transpose in octaves, we included buttons for quick octave transposition.

6.2 REPEATER

The Repeater was built to add rhythm to static chords. Any notes routed to this port will be repeated in a set pattern and tempo which can be adjusted in a number of ways. Anyone who is familiar with arpeggiators will recognize some similarities.



6.2.1 RHYTHM STEPPER

The most important part of the Repeater is the **Rhythm Stepper**. With the numbered buttons below you can activate or deactivate single steps by clicking on the buttons. The amount of steps and the note value of each step can be set below the stepper.

For every active step, the Repeater will play the incoming note once with a certain note velocity depending on the dynamic scaling source. The slider on the top right adjusts the length of the generated notes – set all the way to the right, the notes will sound over the full duration of the step, the further to the left, the shorter and more precise the notes get.

6.2.2 DYNAMIC SCALING AND STEPPER OUT

If the scaling source is set to **Dyn. via Key Vel**, the stepper will display values between -64 and 64, centered around 0. The value you set in the stepper will be added or subtracted from the originally performed note velocity of the note to calculate the final velocity of that step.

If you switch to **Dyn. Via CC#**, the stepper will change and now display values from 0 to 127. The original note velocity will now have no impact on the stepper dynamics. Instead you can set absolute values within the stepper, which will then be scaled by the MIDI Controller of your choice. Depending on the state of your controller, the resulting velocity values will be between 0% and 127% of the stepper values.

Not every instrument reacts to key velocity though. To accommodate these instruments, we included the option to mirror the generated velocity values to a CC of your choice. For example if the dynamics of your instrument are controlled by Expression, you can activate the **Stepper out to CC** option and put in CC number 11.

6.2.3 TEMPO

The one global control within the Repeater is the tempo. On the top left of the window you can change the tempo for all Repeater instances within the orchestration at the same time. We reckoned, hardly anyone would want to have different tempos for different repeaters, so this should be a nice shortcut.

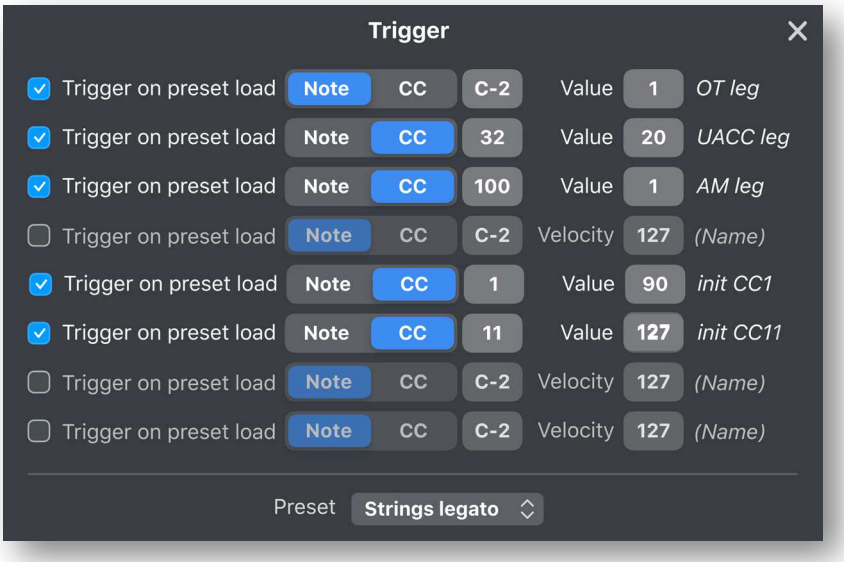
6.2.4 PRESETS

It is possible to save and load presets for the Repeater. The preset system works essentially the same as the main orchestration presets. Only here the presets are shown within a dropdown menu, as opposed to a separate window. These presets can be extremely useful to transfer the same rhythm to multiple instances of the repeater.

6.3 TRIGGER

Different than the other two plugins, this one does not modify any part of the input. The Trigger generates new notes and controller values, whenever the plugin is initialized or "triggered".

Every time a preset containing a Trigger plugin is loaded, the trigger will generate and send up to 8 different MIDI-Messages to the respective port simultaneously.



You can choose whether that message should be a note or a controller, select the CC number or specific note, and also set a Velocity or Value. To remember what it is supposed to do, you can write in a name on each line.

This plugin is designed for quickly changing articulations, mutes, ensemble sizes or anything else within the assigned instrument. By firing keyswitches or controllers you can switch articulations at the same time you are switching the orchestration in Divisimate. This opens up countless new possibilities within your template!

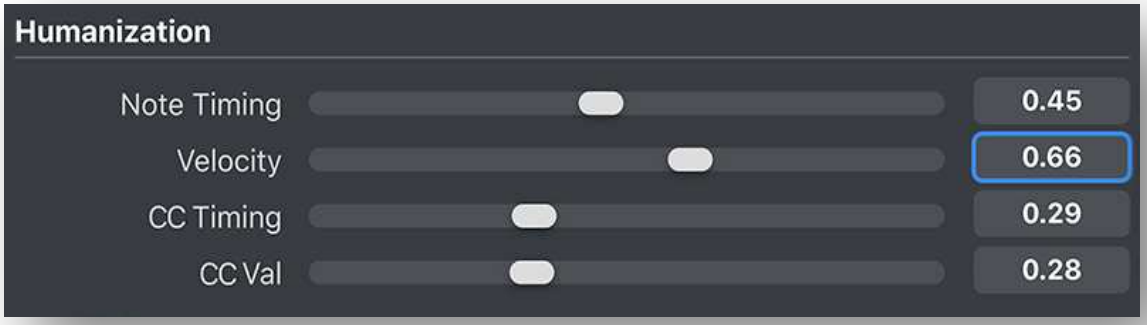
You can also save presets for the Trigger, which works exactly the same as the Repeater presets.

7. HUMANISATION

In an ensemble of multiple musicians, no one will play the same note at the exact same moment. Human inaccuracy is essential to creating a realistic and musical arrangement.

Divisimate contains a Humanization Engine which make sure that no two parts are exactly the same.

On the Settings Page you will find four sliders:



Note Timing: The Humanization Engine will randomly delay different notes on different ports. This slider controls the amount of that randomization in percent.

Velocity: Every note velocity is added or subtracted a random number. This slider controls the amount of that randomization in percent.

CC Timing: Every port receives a quasi-random static value by which all controller data on this port will be delayed. This slider scales these random values in percent. CC64 (Sustain Pedal) and UAC (CC32) are by default exempt from this randomization.

CC Val.: Every port receives a quasi-random static value which will subtracted or added to any controller data on sent to this port. This slider scales these values in percent. CC64 (Sustain Pedal) and UAC (CC32) are by default exempt from this randomization.

The Humanization values are global controls, meaning they will not change when you switch presets. They will be saved as your preference when you close Divisimate.

8. PERFORM VIEW

The Perform View is much less complex than the Orchestrate View. Instead of the Matrix it features 4x5 panels, to which you can assign presets to access them quickly. There are five pages you can fill with your favorite presets and flip through them by dragging the panels to the sides or clicking the points at the bottom of the page.

Right click on a panel to edit its content. Here you can **Assign an existing Preset**, **Create a New Preset** to assign to this slot, or clear the contents of this particular slot with **Clear Slot**. The latter will not delete the preset, only remove it from this particular slot.

You can also open your presets folder (cmd/ctrl+M) and drag&drop preset files onto the perform page to quickly organize your presets.

Once you have assigned your favorite presets, you can quickly switch between them by clicking on the slots and perform different orchestrations back-to-back.

If you try to switch presets while you are playing, Divisimate will preload the preset and wait for you to release all notes and the sustain pedal before it makes the change to prevent hanging notes.

9. APP

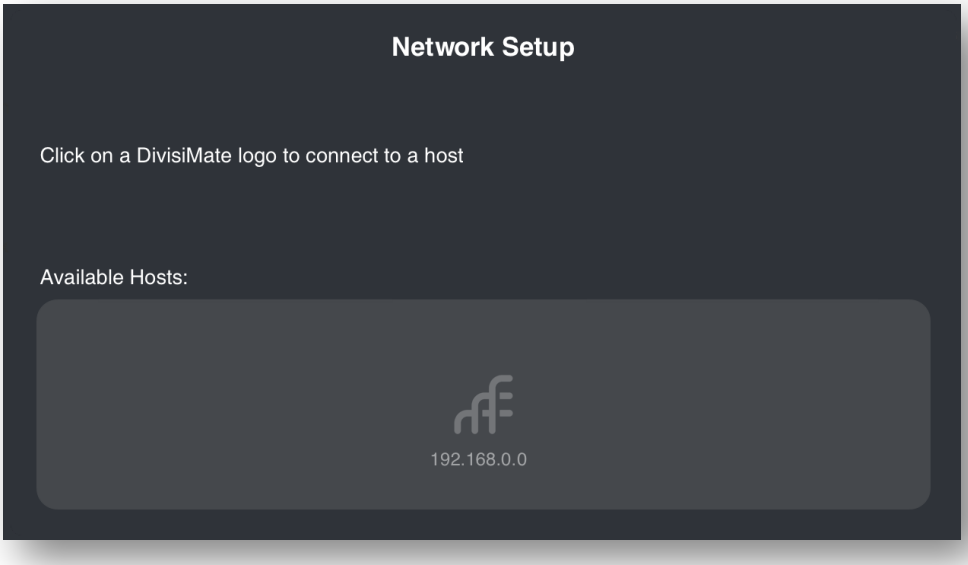
This Perform View is of course only useful if you have Divisimate in the foreground on your computer – and moving the mouse and clicking on a preset mid-performance is not very intuitive.

That's why we created a remote control app for iOS and Android which can control the Perform View, Power and Bypass Buttons to make it easier to work with Divisimate.

The app can be downloaded for free in the App Store and on Google Play.

The app connects to the host Divisimate via WIFI. This means, that your device and your instance of Divisimate have to be connected to the same network in order to connect with each other.

When you open the app, it will show the Network Setup window. If there is an compatible instance of Divisimate in the same network, the app will show the respective IP address with a symbol.



By tapping that symbol, the app will connect to the host and show all corresponding presets and pages. If you are unsure if you are connecting to the correct address, you can open the "Remote Setup" tab on the settings page of the main app to display all ip addresses belonging to your host machine.

We know that some people already use other apps to help them optimize their workflow in other ways. If you want to control the Perform View using MIDI-Commands from another app you can. It will be some work to set it up though. When Divisimate receives CC31 or Program Change from any input device, it will load a preset corresponding to the CC and Program Change value. The values 1-100 will trigger any of the 100 pads on the 5 pages of the perform view, left to right, top to bottom. This may be less comfortable than our native app, but maybe still useful to those people needing their iPad for more universal apps.

10. KEYBOARD SHORTCUTS

Aktion	Win	Mac
Save as	Strg+Shift+S	Cmd+Shift+S
Save Preset	Strg+S	Cmd+S
New Preset	Strg+N	Cmd+N
Load/Open Preset	Strg+O	Cmd+O
Manage Preset	Strg+M	Cmd+M
Bypass on/off	B	B
Power on/off	Esc	Esc
Set number of voices	Number Row 1-8	Number Row 1-8
Switch to Perform Page	Tab	Tab
Close Window	Esc	Esc

Nextmidi - Peter Gromer, Steffen Brinkmann GbR

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