



**MusicLab MIDloverLAN CP MIDI Driver  
(MolCp III MIDI Driver)  
for Windows 2K, XP, Vista, 7, 8 and 10,  
Mac OS X 10.5-10.11 and macOS 10.12 Sierra**

**Version 3.3 build 922**

# **User's Manual**

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## Conventions

This document uses the following abbreviations and notational conventions:

MolCp3	This identifies MusicLab MolCp III MIDI Driver Version 3 (general product's name).
Network port	This identifies dedicated in/out MIDI device provided by MolCp3; transfers any kind of MIDI messages via all 16 MIDI channels over local network.
Local pipe	Dedicated out->in virtual MIDI wire provided by MolCp3; transfers any kind of MIDI messages via all 16 MIDI channels between several independent applications on standalone computer.
SE	This identifies Standard Edition of the product (up to 16 network ports).
SEn	This identifies Standard Edition license for maximum <b>n</b> computers with MolCp3 installed.
PE	This identifies Platinum Edition of the product (up to 64 network ports; octal port numbering).
PEn	This identifies Platinum Edition license for maximum <b>n</b> computers with MolCp3 installed.
GE	This identifies Golden Edition of the product (up to 128 network ports; octal port numbering).
GEN	This identifies Golden Edition license for maximum <b>n</b> computers with MolCp3 installed.
<WindowsDirectory>	This identifies Windows Directory (usually " <b>C:Windows</b> ").
<WinSysVol>	This identifies Windows System Volume (usually " <b>C:</b> ").

**16**

This identifies text that is relevant with respect to Standard Edition of the product.

**64**

This identifies text that is relevant with respect to Platinum Edition of the product.

**128**

This identifies text that is relevant with respect to Golden Edition of the product.



This identifies text that is relevant with respect to PC, MS Windows (2k/XP/Vista/7/8) users.



This identifies text that is relevant with respect to MS Windows 7 only users.



This identifies text that is relevant with respect to MS Windows 8 only users.



This identifies text that is relevant with respect to Apple Mac (OSX 10.5+) users.



This indicates additional information.



This indicates either warning text or additional important information.

## **Introduction**

This document describes **MusicLab MoICp III Driver (MoICp3)**, which allows to perform MIDI communications between several computers over Local Area Network (LAN). The driver provides a set of MIDI devices decorated as **MoICp3Port 1...16(SE)**, **11...88 (PE, octal numbering)** and **111...288 (GE, octal numbering)**.

A pair of MIDI devices (appropriate IN and OUT Network ports) can be independently configured as Local pipe (**MoICp3Pipe N**).

MoICp3 presents new generation of previous **MIDIoverLAN+**, **MIDIoverLAN CP** products.



**MoICp3** is implemented as native MS™ DirectMusic™ WDM driver.



**MoICp3** is implemented as CoreMIDI ver 1.3 MIDI driver.

**MoICp3** provides Network Ports allowing to use several computers connected together via LAN. In other words, it can receive/transmit MIDI events from/to remote computers via LAN. Using MoICp3 you can easily:

- 1) synchronize sequencers on several computers;
- 2) play music using your sound devices located on different computers (i.e. run GigaStudio on dedicated computer and connect it to your sequencer without annoying necessity of using traditional MIDI interfaces);
- 3) play jam sessions on several computers;
- 4) record music playing from remote computers;

In any cases listed above you could setup your studio connections without traditional MIDI cables wherever possible!

Why do you need **MoICp3**? You need it because **MoICp3** is all-in-one solution for communication between MIDI applications and computers via LAN with multi-client device access to their own MIDI devices.



**MoICp3** uses **non-routable** low level Ethernet\_II frame based protocol. So it will work within LAN only. Internetworking is NOT SUPPORTED.

## Product history

<b>Date</b>	<b>Version.Build</b>	<b>Description</b>
Dec 26, 2016	3.3.922	Support for macOS X 10.12 Sierra (Mac)
Sep 27, 2015	3.3.921	Support for Mac OS X 10.11 El Capitan (Mac) and Windows 10 (PC). "One click" registration feature.
Dec 07, 2014	3.3.920	Support for Mac OS X 10.10 Yosemite (Mac). 128-port mode (Golden Edition) is added. Tooltips in Monitor window.
Mar 02, 2014	3.3.919	Kernel driver signing and installation fix for Mac OS X 10.9 Mavericks (Mac).
Dec 25, 2013	3.3.918	Fix for detection of network interfaces for Mac OS X 10.9 Mavericks (Mac).
Dec 01, 2013	3.3.917	Support for Mac OS X 10.9 Mavericks (Mac). Improvements for communication and browsing (Mac, PC).
Jun 02, 2013	3.3.916	Support for Windows 8 (PC).
Nov 18, 2012	3.3.915	Fixes for auto positioning and size of GUI controls (PC).
Oct 06, 2012	3.3.914	The driver initialization procedure is improved (Mac). Logging is improved (Mac/PC).
Sep 30, 2012	3.3.913	Fix for installation procedure related to signatures of kernel drivers (PC). Signing of installation package is fixed (Mac). "Remove 'Target computer list' cache" feature is fixed (Mac).
Sep 23, 2012	3.3.912	MIDI events delivery improvement 64-bit arch (PC). Support for Mac OS X Lion, Mountain Lion (Mac).
Mar 06, 2011	3.3.901	"MIDI monitor consumes 50% CPU" bug fixed (PC).
Sep 12, 2010	3.3.900	"MIDI monitor doesn't remember LED group selection after computer restart" bug fixed (PC). "Buffer overflow" bug in MIDI driver component fixed (PC).
Jul 31, 2010	3.3.800	Broadcast mode support for Windows 7 based computers. Connectivity improved. Uninstall script fixed (Mac).

## System requirements



### **MINIMUM:**

MS Windows 2000 SP4, 256 MB RAM. Network 100Mbps Ethernet compatible interface(s).  
MS Internet Explorer 6.0, MS DirectX 9.0.

### **RECOMMENDED:**

MS Windows XP SP2, 512 MB RAM. Network Gigabit Ethernet compatible interface(s).  
MS Internet Explorer 6.0+, MS DirectX 9.0c.



### **MINIMUM:**

PowerPC G4 or Intel Core Solo based Mac computer, Mac OS X 10.5, 256 MB RAM.  
Network 100Mbps Ethernet compatible interface.

### **RECOMMENDED:**

Intel Core Duo based Mac computer, Mac OSX 10.6+, 512 MB RAM.  
Network Gigabit Ethernet compatible interface(s).



**MolCp3** can **support** all network ethernet compatible interfaces installed (it was really tested with up to 8 interfaces). On how to configure WiFi, AirPort wireless interfaces please refer to appropriate documentation. **However there can be wireless network packet losses while hard traffic via WiFi/AirPort particularly resulting in lost/hung notes.**



**MolCp3** can **distinguish** up to 4 ethernet compatible interfaces installed into the same remote computer.



**If at least one of your receiving (slave) computers is running Windows 7 or 8 with this MolCp3 version installed, your sending (master) computer should have MolCp3 version and build number not older than 3.3.521 installed. MolCp3 versions installed on your other slave computers running Mac OS X up to 10.6 Snow Leopard, Windows 2000, XP or Vista may not be upgraded unless it is specifically required. If MolCp3 is installed on your other slave computers running Mac OS X 10.7 Lion, 10.8 Mountain Lion or 10.9 Mavericks it is highly recommended to update MolCp3 version up to at least 3.3.917.**



**MusicLab** doesn't support **MolCp3** installed on so called "**Hacintosh**" systems.

## Installation

If you already have previous version of MolCp3 first of all uninstall previous installation (please refer to [Uninstallation details](#)).



- 1) Make sure you're logged on as system admin (you should have administrative privileges).
- 2) If you have previous version of MolCp3 installed please uninstall it (see [Uninstallation](#)).
- 3) Invoke molcp3\_3.3.922\_setup.exe and follow onscreen instructions.
- 4) On each possible warning screen that driver "...has not passed Windows Logo testing..." (if any) click "Continue anyway" button.
- 5) Open Configuration Panel (Start->Programs->MusicLab->MolCp III Driver->Configuration Panel) to make/change settings.



- 1) Make sure you're logged on as system admin (you should have administrative privileges).
- 2) If you have previous version of MolCp3 installed please uninstall it (see [Uninstallation](#)).
- 3) Invoke MolCp3Installer (MolCp3Installer9 for Mac OS X 10.9+) package, follow onscreen instructions and restart system when prompted.
- 4) Open MolCp3CtrlPanel (/Applications/MusicLab/MolCp3/MolCp3CtrlPanel) to make/change settings.

On how to configure MolCp3 please refer to [Configuring the driver](#) article.

## Trial period limitations

MolCp3 (until registered) expires in TWO WEEKS after initial installation. During this period MolCp3 is fully functional and allows to try it on TWO HOSTS ONLY (mac + mac, mac + pc, pc + pc).

16  
64  
128

Initially **MolCp3** (until registered) has built-in trial license SE2. At any time during trial period you may turn MolCp3 to PE or GE mode “registering” MolCp3 with PE2/GE2 license. You can find both **demo\_pe.license** and **demo\_ge.license** files containing trial PE2 and GE2 licenses in MolCp3 home folder upon completion installation process.

MolCp3 home folder is at:



“<WinSysVol>\Program files\MusicLab\MolCp III” (by default).



“/Applications/MusicLab/MolCp3”

## MolCp3 license protection



MolCp3 (trial and later registered copy) WILL NOTIFY AND IMMEDIATELY STOP TO WORK if more than 2 SE2/PE2/GE2 trial copies (if registered - more than max number that certain license permits) on active hosts connected to the same network are detected. To get MolCp3 working after "License violation" detected you should deactivate extra MolCp3 trial copy (either shutdown extra host or uninstall its MolCp3 driver) and make system restart on all (two in this case) other MolCp3 hosts affected by extra MolCp3 trial copy activation.

## Registering and upgrading MolCp3

Having purchased MolCp3 you should register software on each host with license .key file attached to purchase confirmation email (see also [Product Registration](#)). Later you could upgrade MolCp3 configuration additionally purchasing any kind of extra MolCp3 license. Then you should install MolCp3 on new computers and register software with new license. You can also reregister MolCp3 software to change its property (SE to PE and vice versa) with any license kind you have (see also [MolCp3 license protection](#)).

## Uninstallation

If your current installed version of MolCp3 is 3.3.0 or higher you could save current settings before uninstallation in order to restore current settings after installation of newer MolCp3 version (please refer to [Save/Load configuration](#)). **Note: MolCp3 version 3.3.0+ uninstaller will remove all MolCp3 settings including registration information (licence).**



Just run uninstall engine (Start->Programs->MusicLab->MolCp III Driver->Uninstall).



1. Make sure you're logged on as system admin (you should have administrative privileges).
2. Open "/Applications/MusicLab" folder.
3. Invoke "Terminal" utility ("/Applications/Utils/Terminal").
4. Drag "/Applications/MusicLab/uninstMolCp3.sh" script file into Terminal window and press "Enter".
5. On "Password:" prompt enter your password and press "Enter" once again.

If there are no any error messages it's assumed MolCp3 software was successfully uninstalled. Note, if you try to invoke uninstall script not having administrative privileges or having entered wrong password MolCp3 software COULD NOT be completely removed from your system.

## Configuring the driver



Before start configuring the driver please read this article first.

### **MolCp3 Network port addressing.**

MolCp3 transfers MIDI events from OUT Network port of source computer to IN Network port of target computer. Basically target (IN) Network port can be addressed by both Network port number and computer name. An IN Network port has a source filter allowing accepting of MIDI events from certain source computer and/or certain source (another OUT) Network port.



MolCp3 provides computer names for addressing purposes which don't differ from regular computer names in most cases (for example "my-g4", "Jones-xp", etc). However MolCp3 can find 2 and more remote network interfaces installed into the same computer. For example, if computer with "Jones-xp" name has two ethernet cards installed (built-in and additionally installed) and MolCp3 copy of "my-g4" computer can find both, it will generate extended computer names. Thus, computer names for "Jones-xp" interfaces being potential sources/targets will be extended with MAC address enclosed in brackets to allow MolCp3 user at "my-g4" distinguish them. In this case computer names will look like "Jones-xp[XXXXXXXXXXXXX]" and "Jones-xp[YYYYYYYYYYYYY]".

Port number mapping between different driver modes

MolCp3 Platinum/Golden Edition modes use special port numbering in octal manner, whereas Standard Edition uses serial decimal "one" based numbering. The following table shows port numbering mapping:

<b>Golden Edition</b>	<b>Platinum Edition</b>	<b>Standard Edition</b>
MolCp3Port 111 ... 118	MolCp3Port 11 ... 18	MolCp3Port 1 ... 8
MolCp3Port 121 ... 128	MolCp3Port 21 ... 28	MolCp3Port 9 ... 16
MolCp3Port 131 ... 188	MolCp3Port 31 ... 88	not available
MolCp3Port 211 ... 288	not available	not available

### **Driver's Configuration Panel.**

To start configuring MolCp3, invoke:



Start -> Programs -> MusicLab -> MolCp III Driver -> Configuration Panel



/Applications/MusicLab/MolCp3/MolCp3CtrlPanel



Prior to begin configuring several MolCp3 computers you should invoke all their configuration panels to browse network for MolCp3 computers.

The following figures (see below) show MolCp3 SE configuration panel pictures for different platforms. As you can see on figures below various implementations of MolCp3 Configuration Panel differ slightly (Optionally PE configuration panel pictures are not shown here).

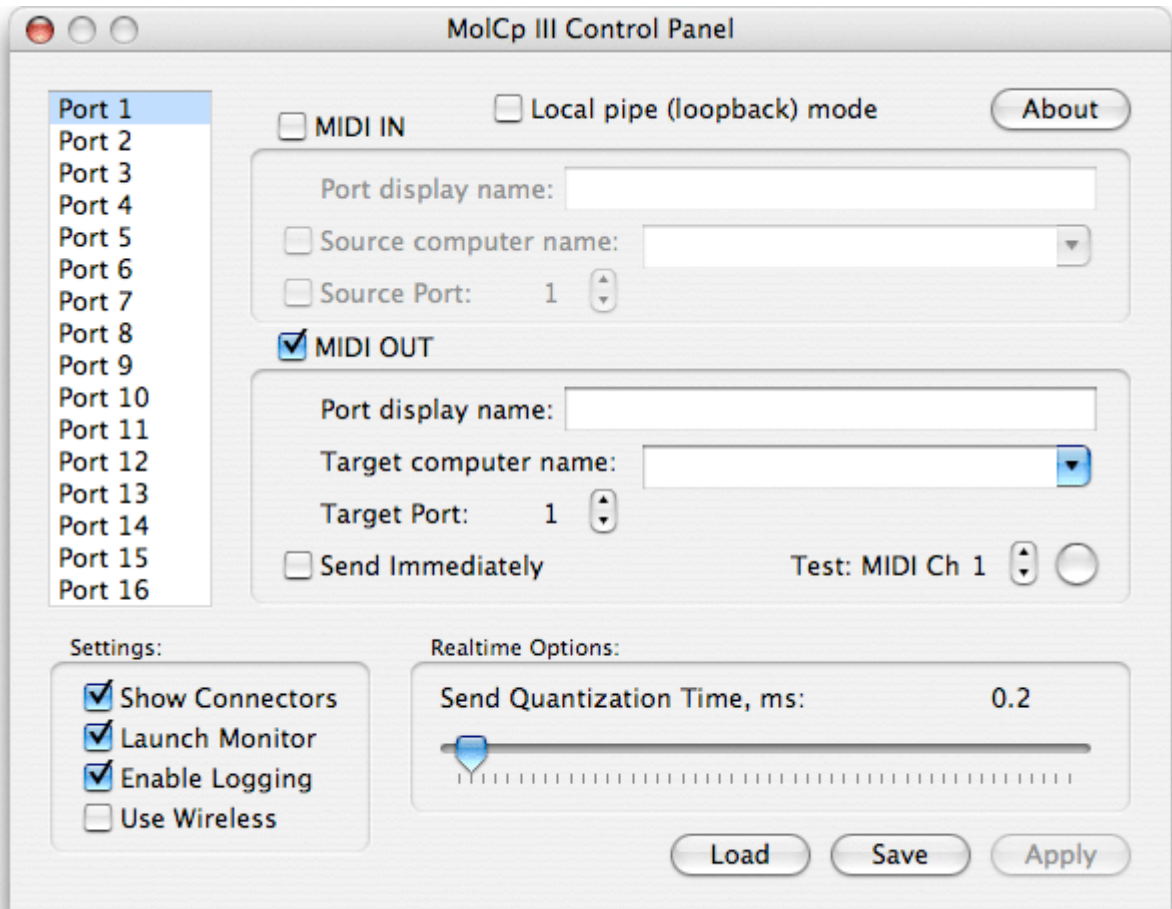
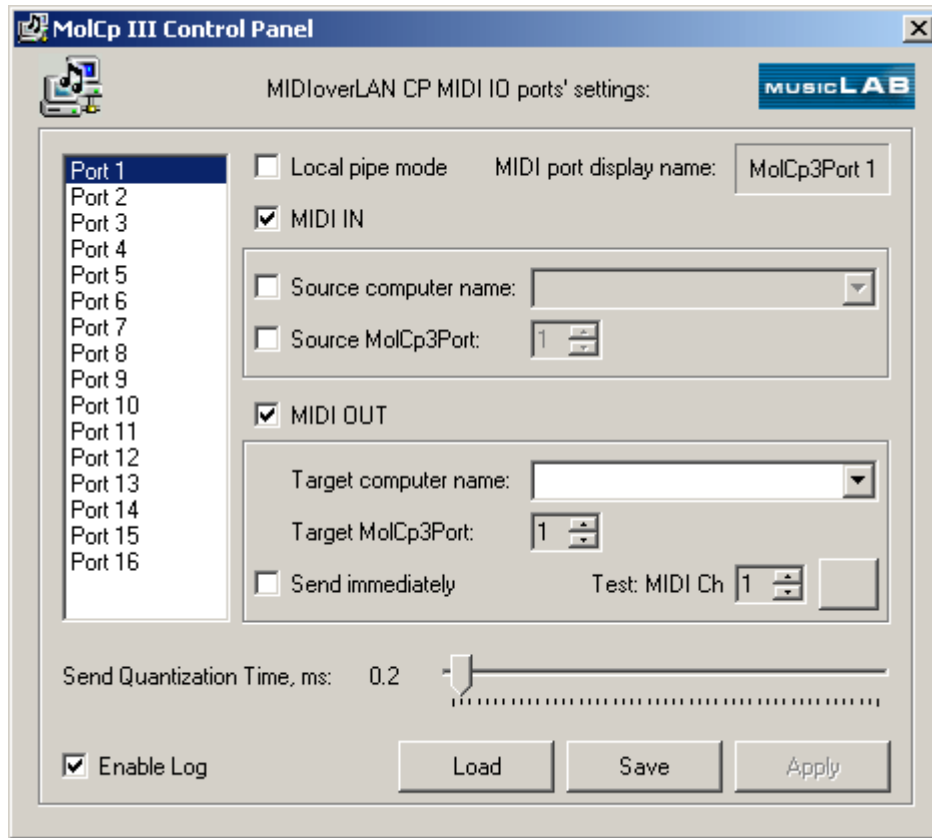
To Enable/Disable driver ports just check/uncheck <MIDI IN> and/or <MIDI OUT> check boxes. Note, both (IN and OUT) driver ports can be enabled/disabled independently.

To switch any Network port to Local pipe mode check the <Local pipe> box. So the Port OUT device will be disconnected from network and connected directly to its IN device. In this mode both IN and OUT are always enabled.



You can also customize Network port display name. Fields <Port display name> are intended for this purpose. So you could assign any name you like for the port you're currently configuring. Leaving this field empty lets the driver use the default port name ("MolCp3Port N").





### IN Network port configuration (if enabled)

If check boxes of the "MIDI IN" rectangle are both disabled (unchecked), IN Network Port will receive MIDI events from ANY MolCp3 computers (with ANY computer name) and from ANY OUT Network port numbers. In this case so called IN Network port filter is completely inactive.

If check box <Source computer name> is enabled (checked), using combo box on the right you can select one of MolCp3 computer names you wish to accept MIDI events from.



You can also either leave combo box empty or remove any content. If combo box <Source computer name> stays empty, MIDI events are accepted from ANY computers regardless of its check box state.



You can also fill out combo box with any name manually. However note, if you manually fill out combo box with incorrect (unknown or non-existent) computer name and check box <Source computer name> is enabled (checked), NONE of incoming MIDI events will be accepted.

Note MolCp3 computer names are case sensitive.

If check box <Source Port> is enabled (checked), IN Network port filter will additionally filter incoming MIDI events by source port number. For example, if <Source port> is set to "2", ONLY MIDI events with source port "2" will be accepted.



By default <Source Port> number equals IN Network port number.

You can use any variations of the settings described above.

### OUT Network port configuration (if enabled)

In the <Target computer name> combo box you can select one of MolCp3 computer names you wish to send MIDI events to.



You can also either leave combo box empty or remove any content. If combo box <Target computer name> stays empty, OUT Network port will send MIDI events in **broadcast** mode (to all MOL computers).



You can also fill out combo box with any name manually. However note that if you manually fill out combo box with incorrect (unknown or non-existent) computer name, OUT Network port will send MIDI events in **broadcast** mode.

Note, MolCp3 computer names are case sensitive.

In the <Target Port> up-down box you can also specify target Network port number you want to transmit MIDI events to.



By default <Target Port> number equals to OUT Network port number.

Primarily after installation MolCp3 appears as 16-port featured. On how to turn it to either 64-port or 128-port mode, please refer to [Trial period limitations](#) article.



Note that OUT Network port CANNOT be configured to send MIDI events to ANY Target Port number.

On how to use <Send immediately> option please refer to [Send Quantization](#) article.

## Using OUT Network port test feature

Configuring MolCp3 OUT Network port you can test it without necessity to apply settings. You can find test button in bottom right corner of MIDI OUT group rectangle. Choosing MIDI channel you wish and pressing the button on the right you can easily playback built-in chord sequence.



If MIDI Channel and test buttons are disabled (inaccessible) even when OUT Network port is enabled, it means that MolCp3 doesn't work or works incorrectly.

## Send Quantization

Likely <Send Quantization Time> parameter is the strangest one in MolCp3. Let's try to understand what Send Quantization mechanism is for and how it affects MIDI event stream timing.

Imagine you're haulier and have infinite number of trucks. Your trucks are intended to carry some goods (household refrigerators for example) from several warehouses.

Primary scenario of household refrigerators transportation may be as follows:

*An autoloader picks up one refrigerator (assume it cannot pick up more than one at a time) out of warehouse and loads it into a truck. Upon completion loading of one refrigerator a truck driver immediately turns ignition on, starts engine and drives one refrigerator to some other location (an intermediate storage area). While first truck is on its way, the autoloader picks up next refrigerator and loads it into another truck, which immediately starting its way too and so on...*

*Let's complicate scenario (assume it's scenario 1). Now trucks will carry 3 kinds of home devices: refrigerators, laundry washers and dryers from warehouses to several towns (optionally A, B and C). Home devices are loaded into trucks one by one and immediately delivered (each by individual truck) to towns A, B or C. Results of your business are: very high expenditures, very low transportation efficiency, BUT IMMEDIATE DELIVERY.*

*How to increase delivery efficiency keeping possible minimum delivery delay, if your trucks cannot wait until completely loaded as long as you actually don't know whether it's enough items in stock to completely load each truck?*

*Let's order trucks to be under loading not more than 20 minutes (for example) since the first item is loaded into each one. (Moreover you would prefer to upgrade autoloader but you're not its owner and you may not do that, however you expect (hope) some other factories have advanced autoloaders.) Now delivery efficiency will depend on how many additional items an autoloader can really load into a truck within 20 min interval since first item is loaded. Assume this is scenario 2.*

Now let's go back to MolCp3, however we will revolve our scenario examples. In this case a warehouse from example is some sequencer application producing MIDI events, home devices are MIDI events, trucks - network packets, and towns – other computers.

While <Send Quantization Time> parameter is 0, MolCp3 sends MIDI events as your company delivers home devices by scenario 1, i.e. immediate delivery. But we have increased CPU utilization and network resource costs because of "one by one" MIDI events processing scenario (1).

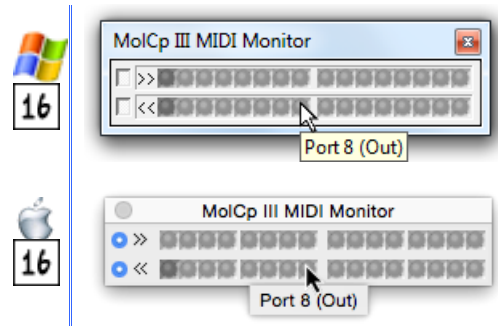
To force MolCp3 to work by scenario 2 let's set <Send Quantization Time> parameter to little non-zero value, for example 0,1 ms (minimum non-zero value). Now having 0,1 ms delay MolCp3 is allowed to cache several "one by one" but tightly produced MIDI events, pack them into network packets and then, upon expiration of 0,1 ms timer, send completed packets. Moreover MolCp3 can pack MIDI events from any Network ports to one network packet if all the MIDI events are for the same remote computer.

<Send Quantization Time> parameter is common and affects all OUT Network port send timing. However in some cases it is necessary to send MIDI event(s) immediately (MIDI synchronization for example). So you can enable <Send immediately> OUT Network port option for a certain port to bypass Send Quantization mechanism and send MIDI events as soon as possible.

## Using MIDI monitor

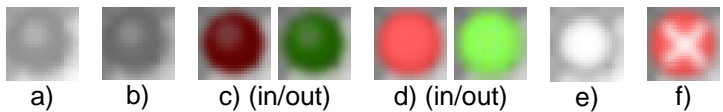
MolCp3 provides MIDI monitor component which communicates with low level network driver component and visualizes state of Network ports and MIDI events activity at a network level.

The upper row of LEDs presents IN Network ports by number in ascending order left to right, whereas the lower row – OUT Network ports in the same order. Using buttons on the left you can easily show/hide certain octet of IN/OUT LEDs and thus optimize monitor window size.



(Optionally PE/GE monitor window pictures are not shown here.)

Light grey LEDs (a) reflect Network ports which are currently disabled (inaccessible), whereas dark grey (b) – enabled ones. Whenever some Network port is being opened, appropriate LED becomes dark red/green (c).



At a time when a MIDI event is being transferred through OUT Network port, the appropriate LED will blink with light green (d). The same refers to IN Network port LED. It will blink but with light red when any incoming MIDI event is being accepted by IN Network port source filter.

However MIDI monitor can reflect incoming MIDI events even for disabled and not opened IN Network ports. In this case appropriate LED will show activity staying grey (e). It is useful in configuring the driver.

Configuring the driver you can figure that MIDI monitor IN Network port LEDs blinks but there's no input events from appropriate MIDI input in a MIDI sequencer. In most cases it means that incoming events are being filtered and dropped because of IN Network port settings. In this case appropriate input LED will show activity (as d) but with white cross sign above (f).



MIDI monitor doesn't reflect and show MIDI activity in "Local pipe" port mode.



On PC when system is loaded MIDI monitor will appear as icon in the System Notification Area (System Tray). To get monitor's window visible just double-click on the icon. MIDI monitor window will appear on the screen as top most window. None of other windows can override MIDI monitor window except for the context menus. If MIDI monitor window hinders you can just close it by clicking "X", however MIDI monitor will not be unloaded, but stay in memory. To completely unload (terminate) MIDI monitor point to monitor's System Tray icon, press right mouse button and choose <Exit> context menu item.



On Mac MIDI monitor is not loaded at startup, but will be invoked automatically (by default) by MolCp3 MIDI driver component as soon as some Network port becomes opened. MIDI monitor window will appear on the screen as top most window. None of other windows can override MIDI monitor window except for the context menus. If MIDI monitor window hinders you can just close it clicking "X", however MIDI monitor will not be unloaded, but just hides. To completely unload (terminate MIDI monitor manually) point to monitor's Dash Board icon, press right mouse button and choose <Quit> context menu item.

You can also invoke MIDI monitor manually any time you like (/Applications/MusicLab/MolCp3/MolCp3Monitor). It will show MolCp3 network activity even if none of Network ports is currently active. You can even terminate it when MolCp3 MIDI driver is active. That will not affect MolCp3 functionality.



It is highly recommended to invoke/open MIDI monitor window while configuring MolCp3 using Configuration Panel. MIDI monitor will dynamically reflect Network ports' state and activity.

## Applying new settings

Since you have finished configuring MolCp3 driver you should apply changes by clicking <Apply> button. If the button stays greyed (inaccessible) it means that you didn't change (either at all or finally) settings.



Once you've clicked the <Apply> button system "Arrow" cursor becomes "HourGlass" for several seconds and the button <Apply> becomes greyed again. During this time MolCp3 MIDI driver is being reloaded to accept the changes.

(Basically in MS Windows any MIDI miniport driver once being installed becomes a part of OS core; later, every time you turn computer on, it reads its settings and starts along with OS long before anyone could logon. So the only way to apply changes without restarting computer is to dynamically restart the driver. Fortunately MS Windows 2k/XP allows doing that.)



Once you've clicked the <Apply> button all changes are saved in MolCp3 preferences file. MolCp3 MIDI driver applies them as soon as it will be accessed by CoreMIDI Server system component the next time. (Basically in Mac OSX any CoreMIDI driver is loaded on demand.)



However the only MolCp3 parameter <Send Quantization Time> is immediately applied as soon as changed regardless of MIDI driver component current state. This parameter directly controls MolCp3 low level network component which stays loaded all the time your computer is on. So note if you have changed <Send Quantization Time> and then abandoned to apply, this parameter stays changed until either computer is restarted or you change it manually once again.

**Once again note that configuring MolCp3 is not recommended while at least one MIDI application is active, otherwise you won't be able to apply changes because of:**



MolCp3 DirectMusic MIDI driver component stays locked and cannot be dynamically reloaded. Clicking <Apply> button you will immediately get "Restart required" system notification. Even if you later unload all active MIDI applications, you will have to restart system anyway.



MolCp3 CoreMIDI driver component will be able to accept changes being loaded the next time. Thus by clicking <Apply> button you will change settings in MolCp3 driver preferences ONLY.

## Load/Save configuration

Using <Load>/<Save> buttons you can either restore from or backup to file MolCp3 configuration.

## Target computer list cache

To improve MolCp3 to MolCp3 connectivity and avoid often "white crosses" issue occurrence MolCp3 driver caches target computer name list every time Configuration (Control) Panel application is invoked. As soon as you update HW and/or rename your computers target computer name list will grow and eventually it may contain computer names that no longer exist. At some moment target computer name list will have to be refreshed. To accomplish that you need to **remove target computer name list cache**. To perform cache removal simply do the following:



Press and hold <Ctrl> key and click on MusicLab Logo on the right top corner of CtrlPanel window





Press and hold <Cmd> key and click <About> button

and then follow onscreen instructions.

## Product registration

Using <About> button on main window of MolCp3 configuration/control application (see [Configuring the driver](#) article) you can register product and thus remove trial time limitation.

-  You can also use even easier way to initiate registration process not having to run MolCp3 configuration application. Just double click on appropriate MolCp3 license file (\*.license or \*.mllicense) and you will be prompted to complete new registration.
-  If you register SE MolCp3 copy with PE or GE license file (demo\_pe.license or demo\_ge.license correspondingly) to turn MolCp3 into PE/GE mode, you should restart computer upon completion registration, otherwise MolCp3 will work incorrectly.

## Troubleshooting

### Installation problems



While you invoke setup executable not having uninstalled previous version before, Installation Wizard will suggest you uninstall current installation first. After uninstallation is completed, please invoke setup executable once again (see also: [Installation](#)).



MolCp3Installer package won't be able to install MolCp3 if any version of the product is currently installed. You should uninstall currently installed MolCp3 first (see also: [Uninstallation](#)).



If Installation Wizard was not completed successfully, please open <WindowsDirectory>, pick up **molcp3.log** and attach it to newly created email. Fill email subject with "**MolCp3 installation problem**" then send your report to [supportbox@musiclab.com](mailto:supportbox@musiclab.com). We'll try to help you to solve installation problems.

### Visibility of MolCp3 ports



If you use Digital Performer 4.5+, you cannot access driver ports within DP while "Show connectors" option is enabled and nothing really connected to its connectors in Audio MIDI Setup (AMS) configuration. Just disable the option and DP will allow to access MolCp3 ports. Otherwise, using AMS you should create some virtual device (like external instrument) and make connections between MolCp3 and this virtual device connectors.

Also, to be allowed to select certain MolCp port as MIDI track input you should enable multi record mode using menu item "Studio->Multi Record".

### Malfunction issues

If you experience some problems using MolCp3, notice that MolCp3 works incorrectly or some components don't work, please create report email with subject like "MolCp3 driver malfunction", and attach the following files:



<WindowsDirectory>\molcp3.log



/Library/Logs/molcp3.log  
10.5 (Leopard), 10.8 (Mountain Lion), 10.9 (Mavericks) and 10.10 (Yosemite): /var/log/system.log  
10.6 (Snow Leopard), 10.7 (Lion): /var/log/kernel.log

Note, to locate "**system.log**" or "**kernel.log**" don't try to use Finder's Find action. It won't look through system folders (such as "**/var**"). Instead use "**Go -> Go to Folder**" Finder's menu item.

Then describe the details of your issue and send to [supportbox@musiclab.com](mailto:supportbox@musiclab.com).

**Note:** if you've got "Blue Screen of Death" (PC) or "Black Screen of Death" (Mac), please additionally attach to the report email the following file:



<WindowsDirectory>\Minidump\Mini<MMDDYY>-XX.dmp,  
where <MMDDYY> - current date, XX – serial number of dump file within current date.  
Anyway, you need to pick up the latest (by date-time) .dmp file.



10.5, 10.6: /Library/Logs/PanicReporter/YYYY-MM-DD-XXXXXX.panic  
10.7 - 10.10: /Library/Logs/DiagnosticReports/\*

### Boot variables



Due to Darwin network design specifics MolCp3 network portion of kernel driver needs to preallocate some number of buffers for sending MIDI data (allocating buffers during runtime the driver may be forced to wait in MIDIServer context what will indirectly result in kernel panic). MolCp3 uses two types of such buffers: short (up to ~170 bytes for MIDI data) and long (up to ~1480 bytes) ones. Short buffers are used for infodata exchange between MolCp3 computers and also for sending MIDI messages when overall MIDI data size at a time doesn't exceed 170 bytes (may include MIDI events coming from any ports to be sent to same target MolCp3 computer). Long buffers will be used when overall MIDI data size exceeds 170 bytes.

Utilization of short buffers inversely depends on "Send quantization time" and using of "Send immediately" port mode. Consumption of long buffers in this case will be negligible. And vice versa.

When a flow of outgoing MIDI events is high number of preallocated short/long buffers (buffer pool size) may be insufficient (flow rate may exceed the rate of buffers return) causing another kernel panic. In this case the obvious solution is to preallocate as many buffers as possible.



However, taking in account that MolCp3 borrows buffers from system buffer pool, preallocating too many buffers will affect Mac OS X networking functionality what is unacceptable.

MolCp3 allows to customize number of preallocated buffers specifying the following variables using "boot-args" NVRAM variable:

Variable name	Description	Value range
<b>molcp3-int-bufs</b>	Sets number of <b>short</b> buffers for sending MIDI events (up to about 170 bytes).	128 ... 2048; default - 256
<b>molcp3-ext-bufs</b>	Sets number of <b>long</b> buffers for sending MIDI events (up to about 1480 bytes).	64 ... 1024; default - 128

By default MolCp3 will preallocate 256 short and 128 long buffers. When default number of buffers is not enough, you can increase number of buffers specifying desired value. This may be accomplished in several following steps (example):

- 1) open "Terminal" and print current "boot-args" variable content with the following command:

```
$ nvrnm boot-args <Enter>
boot-args      -v arch=x86_64
```

- 2) update "boot-args" variable with new content:

```
$ sudo nvrnm boot-args="-v arch=x86_64 molcp3-int-bufs=500"
<Enter>
```

- 3) restart your Mac computer.

Since "molcp3-int-buffers=500" is added to "boot-args" MolCp3 will allocate 500 short buffers.



## Using wireless network adapters



If you tried to use wireless network adapters (particularly AirPort) and set (enabled) appropriate option, it may cause system crash as soon as you invoke MolCp3CtrlPanel. If it is your case you cannot use AirPort adapters and option "Use Wireless" will be automatically disabled after the system restart.

## Wake up capabilities



Primarily Mac computers stop to respond on network events while they enter stand-by mode. This is usually a cause when certain computer cannot be shown (included) in drop-down list of source/target MolCp3 computers while configuring ports on another computer (also refer to [Configuring the driver](#)). In this case you should either wake up source/target computer or turn stand-by mode off or set its ethernet adapters wake up capabilities.

## MolCp3 and Firewalls, Microsoft Remote Desktop



MolCp3 uses sufficiently low level network protocol to be beyond the scope of Windows Firewall (**MS Windows XP SP2, Vista, Windows 7, 8 and 10**) interests. In other words Windows Firewall doesn't affect MolCp3 network functionality.



Note: there may be other Firewall specific software which will affect MolCp3 network functionality. MolCp3 doesn't support Microsoft Remote Desktop.

## Contacting MusicLab

Web site: <http://www.musiclab.com>

Technical support: <mailto:supportbox@musiclab.com>