# Contributing to ConEmu

Want to contribute to ConEmu? Awesome, appreciated!

But please, be sure you are following some easy rules described below.

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## Reporting issues

Appreciated, without proper users' feedback authors can't know about software problem. But if you want to be helpful, if you want the problem to be fixed, you have to supply authors with proper information.

Please read the [article on the official site](https://conemu.github.io/en/BadIssue.html) how to report issues properly. Brief excerpts below.

### \*\*Verify issue really originates from ConEmu!\*\*

If you catch a bug in the Adobe Reader you would not report it on Microsoft Connect because you run Reader in Windows, would you?

A lot of users say ‘It works in cygwin’ or ‘It works in git bash’, but since both of them uses the mintty terminal, it can exhibit different behavior. Read more in [Do not compare with Cygwin or Git Bash](#donotcompare).

##### TLDR;

\*Run the exact same console application and arguments as in your ConEmu task to reproduce outside ConEmu. If you are able to reproduce, then the problem is NOT with ConEmu.\*

##### Understand how ConEmu works

ConEmu is just a [terminal](https://conemu.github.io/en/TerminalVsShell.html) (also called console window) that runs console apps. Often these are CLI apps, such as CMD, Powershell, and Git Bash, but it can be any standard Windows console application.

ConEmu shows the output of console applications and passes keyboard/mouse events to the app. That is more or less it.

##### Do not compare with Cygwin or Git Bash

A frequent misunderstanding is seeing buggy behavior running Git Bash in ConEmu, then comparing that with either Cygwin or running Git Bash outside ConEmu. This is not the same thing!

Both are just a software packages, and you run console utilities (bash, vim, git) in the POSIX compatible terminal mintty, but mintty is not compatible with Windows console API.

So, each Cygwin or msys (git-bash) console application has two branches of code, and obviously, they behaves differently when they were started from mintty and from standard Windows console.

Of course, if the branch of code, which utilizes Windows console API, has bugs, they would not be observed in mintty. So, \*\*run your console tool from Win+R directly, without mintty wrapper.\*\*

Read more information in the article: [third-party software](https://conemu.github.io/en/ThirdPartyProblems.html).

##### Example: #618 VI/VIM very unresponsive after upgrading to Git 2.8.0.windows.1

\* `vim` was unresponsive in ConEmu's Git Bash

\* `vim` worked just fine when running `Git Bash` shortcut, so the user reasoned the bug must be related to ConEmu

\* The user was convinced to \*\*run the exact same command\*\* as ConEmu does, to \*\*avoid\* running with the \*\*mintty\*\* wrapper.

\* In {Bash::Git bash} task: `"%ConEmuDir%\..\Git\git-cmd.exe" --no-cd --command=usr/bin/bash.exe -l -i`, which typically equals `"C:\Program Files\Git\git-cmd.exe" --no-cd --command=usr/bin/bash.exe -l -i`

\* User then ran this in `Win + R` and then ran `vim` from there, and saw the same behavior - outside of ConEmu

##### Processes as seen in \*\*task manager\*\*:

To illustrate how running the Git Bash shortcut differs from running Git Bash inside ConEmu, take a look at the output from task manager. As you can see, mintty.exe is used for the shortcuts, while git-cmd.exe is used by ConEmu, skipping the mintty wrapper.

What|Name|Description|Command line

------------|------------|-------------|-------------

Git Bash shortcut|mintty.exe |Terminal|`usr\bin\mintty.exe -o AppID=GitForWindows.Bash -o RelaunchCommand="C:\Program Files\Git\git-bash.exe" -o RelaunchDisplayName="Git Bash" -i /mingw64/share/git/git-for-windows.ico /usr/bin/bash --login -i`

{Git Bash} in ConEmu|git-cmd.exe|Git for Windows|`"C:\Program Files\ConEmu\..\Git\git-cmd.exe" --no-cd --command=usr/bin/bash.exe -l -i`

Git CMD shortcut|git-cmd.exe |Git for Windows|`"C:\Program Files\Git\git-cmd.exe" --cd-to-home`

{cmd} in ConEmu|git-cmd.exe|Git for Windows|`"C:\Program Files\ConEmu\..\Git\git-cmd.exe" --no-cd --command=usr/bin/bash.exe -l -i`

##### Read more:

\* https://conemu.github.io/en/ThirdPartyProblems.html

\* https://conemu.github.io/en/ConsoleApplication.html

\* https://conemu.github.io/en/TerminalVsShell.html

### Be verbose

\* Attach [descriptive screenshots](https://conemu.github.io/en/BadIssue.html#Screenshot)

demonstating all steps you are doing. And it would be better, if you comment or highlight

points of problems on screenshots.

\* Share your [Settings](https://conemu.github.io/en/Settings.html).

ConEmu has huge amount of options and, obviously, there are thousands of possible

combinations! We can't guess, what you have configured to arise the problem!

\* Also, additional infomation may be requsted from you \*\*later\*\*,

such as [LogFiles](https://conemu.github.io/en/LogFiles.html)

or [MemoryDumps](https://conemu.github.io/en/MemoryDump.html).

### Crash reports

If you are reporting a crash, ConEmu shows you a thorough message

with information where [CrashDump](https://conemu.github.io/en/CrashDump.html)

was saved. Please, zip the file and upload it to

[DropBox](https://conemu.github.io/en/DropBox.html) or any other hosting.

### Issue attachments

GitHub accepts only screenshots as direct attachments.

Please, don't try to cheat GitHub by changing file extensions,

or posting huge log files via comments body.

Zip your files, upload them to

[DropBox](https://conemu.github.io/en/DropBox.html)

or any other hosting (even to gist.github.com),

and post link in the issue.

### Issue template

Don't omit required information! Versions are significant information!

~~~

### Versions

ConEmu build: ?????? x32/x64

OS version: Windows ??? x32/x64

Used shell version (Far Manager, git-bash, cmd, powershell, cygwin, whatever): ???

### Problem description

### Steps to reproduce

1.

2.

3.

### Actual results

### Expected results

### Additional files

Settings, screenshots, logs, etc.

~~~

## Requesting features

\* Update your installation first!

[https://conemu.github.io/en/BadIssue.html#Update\_your\_installation]

Don't waste your time, the feature may be already implemented!

\* Search through [docs](https://conemu.github.io) and

[Settings](https://conemu.github.io/en/Settings.html).

You may overlook existing option.

\* Still absent? Please, describe your suggestion in details.

There are a lot of caricatures about software design.

It would be a disappointment, if after implementation you would

realize that it was not the feature you was waiting for.

## Contributing with code

You may read article [Source](https://conemu.github.io/en/Source.html)

in the ConEmu documentation. It contains latest actual information!

Also, before hacking on ConEmu you have to be sure you are using \*\*newest\*\* ConEmu build!

You problem or suggestion may be already fixed or implemented, so

[update your installation](https://conemu.github.io/en/BadIssue.html#Update\_your\_installation).

#### Use latest branch

Please, do not try to submit patches for old branches!

Patches for versions, which were obsolete months ago,

have absolutely no sense.

So, before hacking on ConEmu you have to be sure you are using

at least [master](https://github.com/ConEmu/tree/master)

or, even better, [daily](https://github.com/ConEmu/tree/daily)

branch.

Either clone ConEmu sources to new repository:

~~~

git clone --recursive https://github.com/Maximus5/ConEmu.git

~~~

Or pull/fetch latest commits from the

[official repository](https://conemu.github.io/en/Source.html).

~~~

git checkout master

git pull origin master

~~~

#### Use separate commits

Please, use separate commits for separate features or bugfixes!

Do not merge all your changes in one large commit, split them

in smaller chunks when possible!

Look at proper example below.

~~~

\* f326d76 fix warning: there is possible null pointer dereference: pszNewTarget.

\* 0408700 fix warning: there is possible null pointer dereference: pszValue.

~~~

#### Use descriptive commit messages

Please do not submit series of patches with same commit messages!

Describe either purpose of patch, or add affected file name at least.

It's hard to review list of identical commits!

Look at proper example below.

~~~

\* 33d1973 Use helper functions and CEStr (ConsoleMain.cpp)

\* 6ce49af Use helper functions and CEStr (TabBar.cpp)

\* f326d76 fix warning: there is possible null pointer dereference: pszNewTarget.

\* 0408700 fix warning: there is possible null pointer dereference: pszValue.

~~~

#### Don't use C++11 and C++14 features

ConEmu is supposed to be easily compiled with Visual Studio 2008,

to support OS Windows 2000 and ‘legacy’ computers.