

Emacs: Set Environment Variables within Emacs

By Xah Lee. Date: 2009-08-04. Last updated: 2013-07-19.

This page shows you how to set environment variables in emacs, especially if you have problems in Windows emacs of getting aspell or other unix utils to run.

- When you start emacs from a shell, emacs inherits shell's environment variables. (true on Windows, Mac, Linux)
- On Windows, when you start emacs from GUI, emacs also inherit environment variables. (on Windows, perm env var is stored in the Registry. [see [Windows Environment Variables Basic Tutorial](#)]).
- On Windows, you can start GUI emacs from Windows Console (cmd.exe) or [PowerShell](#). You want to execute the `bin/runemacs.exe`.
- On Mac OS X, when you start emacs from GUI, emacs does not inherit environment variables from your shell, but does inherit the system-wide environment variables from `~/Library/Preferences/Emacs/Emacs.plist`.
- On Mac OS X, you can start GUI emacs from shell, like this: `nohup /Applications/Emacs.app/Contents/MacOS/Emacs &`. This way, it'll inherit shell's environment variables.

Setting Environment Variable within Emacs

You can also set environment variables within emacs without setting them in the OS.

You might want to do this if you are using Cywin. You want cygwin's bin paths in emacs, but you don't necessarily want them when running cmd.exe in Windows console, because you might want that to stay pure Windows.

Here's the elisp code to set environment variable within emacs only:

```
;; example of setting env var named "path", by appending a new path to existing path
(setenv "PATH"
  (concat
    "C:/cygwin/usr/local/bin" ";"
    "C:/cygwin/usr/bin" ";"
    "C:/cygwin/bin" ";"
    (getenv "PATH"))
)
```

- You can use slash `/` and you don't have to use backslash `\`.
- Dir path may end with a path separator `/`, or without.
- the builtin variable `path-separator` can be used instead of `;`.

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`(getenv "PATH")`

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(to evaluate elisp code, select it and `Alt+x` `eval-region`. [see [Evaluate Emacs Lisp Code](#)])

Emacs's exec-path

Emacs has a variable named `exec-path`. Its value is a list of dir paths. Emacs uses `exec-path` to find executable binary programs. For example, when spell checking, emacs will try to find `ispell` or `aspell` in `exec-path`. When you press `Z` to compress file in `di-red`, emacs will try to find `gzip` or `gunzip` in `exec-path`. When you call any of emacs commands: `{diff, grep, shell}`, emacs will try to find the program in `exec-path` too.

If emacs complains that it cannot find `ispell`, `aspell`, `ftp`, `gzip`, etc, the problem is probably with your `exec-path`.

By default, emacs copies the value of `(getenv "PATH")` to `exec-path`. So, their values should be identical.

Difference between exec-path and PATH

- The value of environment variable "PATH" is used by emacs when you are running a shell in emacs, similar to when you are using a shell in a terminal.
- The `exec-path` is used by emacs itself to find programs it needs for its features, such as spell checking, file compression, compiling, `grep`, `diff`, etc.

If you did set the `PATH` env var within emacs, you probably also want to adjust your `exec-path`. Here's a example of setting `exec-path`:

```
(when (string-equal system-type "windows-nt")  
  (setq exec-path  
    ' (  
      "C:/Program Files (x86)/Emacs/emacs/bin/"  
      "C:/Program Files (x86)/Emacs/EmacsW32/gnuwin32/bin/"  
      "C:/Windows/system32/"  
      "C:/Windows/"  
      "C:/Windows/System32/Wbem/"  
      "C:/Windows/system32/WindowsPowerShell/v1.0/"  
    )  
  ))
```

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The value of `(getenv "PATH")` and `exec-path` do not need to be the same.

[see [Elisp: Determine OS, Emacs Version, Machine Host Name](#)]

Emacs Lisp Code for Setting PATH and exec-path

Here's emacs lisp code template to set both `PATH` and `exec-path` in sync.

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```
equal system-type "windows-nt")
```

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```
(let (
  (mypaths
    '(
      "C:/Python27"
      ;; "C:/Python32"
      "C:/strawberry/c/bin"
      "C:/strawberry/perl/site/bin"
      "C:/strawberry/perl/bin"

      "C:/Users/h3/AppData/Roaming/npm"
      "C:/Program Files (x86)/nodejs/"

      "C:/cygwin/usr/local/bin"
      "C:/cygwin/usr/bin"
      "C:/cygwin/bin"

      "C:/Program Files (x86)/ErgoEmacs/msys/bin"
      "C:/Program Files (x86)/Mozilla Firefox/"
      "C:/Program Files (x86)/Opera"
      "C:/Program Files (x86)/Safari"
      "C:/Users/h3/AppData/Local/Google/Chrome/Application"
    ) )
  )

  (setenv "PATH" (mapconcat 'identity mypaths ";")) )

  (setq exec-path (append mypaths (list "." exec-directory)) )
) )
```

References

- [REF \(info "\(elisp\) System Environment"\)](#)
- [REF \(info "\(elisp\) Subprocess Creation"\)](#)
- [Source groups.google.com](http://sourcegroups.google.com)

Thanks to [Twitter Steve Purcell](#) for *path-separator*.

See also

- [Windows Environment Variables Basic Tutorial](#)
- [Emacs in Microsoft Windows FAQ](#)
- [Using PowerShell to Manage Environment Variables](#)

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