

Cygwin Cheatsheet

A comprehensive cheat sheet for using Cygwin, a Unix-like environment and command-line interface for Windows. This guide covers installation, basic commands, package management, and configuration tips to help you leverage the power of Cygwin efficiently.



Installation and Setup

Installing Cygwin	Basic Configuration	
 Download the Cygwin installer: Visit the official Cygwin website (<u>https://www.cygwin.com/</u>) and download setup-x86_64.exe for 64-bit systems or setup-x86.exe for 32-bit systems. 	~/.bashrc	Configuration file for bash shell. Customize your shell environment, aliases, and functions here. This is executed for interactive non-login shells.
Run the installer: • Execute the downloaded file. • Choose 'Install from Internet'. • Select an installation directory (e.g., C: \cygwin64). • Choose a local package directory. Select packages: • This is a crucial step. Search and select essential packages such as: • gcc-core : C compiler • make : Build automation tool • gdb : GNU Debugger • vim or nano : Text editors • openssh : Secure Shell • cur1 or wget : Web download utilities • git : Version control system • Click 'Next' to resolve dependencies and install the selected packages.	~/.bash_profile	Executed for login shells. It is commonly used to set environment variables and execute programs that should only be run once at login.
	~/.inputrc	Configuration file for readline, the library used for command-line input. Customize key bindings and other input-related settings.
	Set the default editor. Example: export EDITOR=/usr/bin/vim in ~/.bashrc . Ensure necessary directories are in your PATH. Example: export PATH=\$PATH:/opt/my_tools/b in	

Create desktop icon:

• The installer can create a desktop and start menu icon for Cygwin.

Add Cygwin to the Windows PATH:

• Add the Cygwin bin directory (e.g., C:\cygwin64\bin) to your Windows PATH environment variable. This allows you to run Cygwin commands from the Windows command prompt or PowerShell.

Essential Cygwin Commands

Basic Navigation

pwd	Print working directory.
1 s	List directory contents. Use <u>ls -1</u> for detailed listing, <u>ls -a</u> to show hidden files.
cd directo ry	Change directory. Use cd to go up one level, cd ~ to go to the home directory.
mkdir directo ry	Create a new directory.
rmdir directo ry	Remove an empty directory.

File Operations

touch file	Create an empty file or update the timestamp of an existing file.
cp source destinat ion	Copy a file or directory.
mv source destinat ion	Move or rename a file or directory.
rm file	Remove a file. Use rm -r directory to remove a directory and its contents recursively.
cat file	Display the contents of a file.
less file	View file contents one page at a time. Use space to scroll, q to quit.

System Information

uname -a	Display system information.
df -h	Show disk space usage.
free - m	Display memory usage in megabytes.
ps	List running processes.
top	Display dynamic real-time view of running processes.

Package Management with `apt-cyg`

Installing `apt-cyg`

(apt-cyg) is a command-line package manager for Cygwin. It simplifies package installation and removal.

Installation:

download apt-cyg from: http://apt-cyg.github.io/

```
# install it (as administrator!)
```

install apt-cyg /bin

Note: You may need to adjust permissions to allow execution. Also, ensure wget is installed before attempting to download apt-cyg.

Advanced Usage and Tips

Working with Windows Paths

Cygwin uses a Unix-like file system structure, while Windows uses drive letters (e.g., C:). Cygwin automatically mounts Windows drives under /cygdrive/.

- C:\ in Windows is equivalent to /cygdrive/c/ in Cygwin.
- You can navigate to Windows directories using Cygwin paths.

Example:

cd /cygdrive/c/Users/YourName/Documents

Running Windows Executables

You can run Windows executables directly from the Cygwin terminal.

Examples:

/cygdrive/c/Windows/System32/notepad.exe
#Runs notepad

notepad.exe #if C:\Windows\System32 is
in your PATH

Mounting Network Drives

You can mount network drives in Cygwin using the mount command.

Example:

mount -f //network/share
/mnt/network_share

Replace *//network/share* with the actual network path.

Basic `apt-cyg` Commands

apt-cyg update	Update the package list.
apt-cyg install package_name	Install a package.
apt-cyg remove package_name	Remove a package.
apt-cyg search package_name	Search for a package.
apt-cyg show package_name	Show information about a package.
apt-cyg upgrade	Upgrade all installed packages.

Troubleshooting

Permissions Issues:

- Cygwin may have issues with file permissions, especially when accessing files created by Windows.
- Use chmod and chown to adjust permissions if necessary.

Path Issues:

- Ensure that the Cygwin **bin** directory is correctly added to the Windows **PATH**.
- Verify that the necessary environment variables are set in ~/.bashrc or ~/.bash_profile.