

# TB169 (Rev1) - Using Centroid Linux

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## Overview

This document covers some of the differences between Linux and DOS. It also has a list of Linux commands and Hot-keys and how to use them.

### Differences between Linux & DOS commands:

- \* **Forward Slash** - Linux paths use a forward slash '/' to separate directories instead of a backslash ''.
- \* **No drive letters** - Linux does NOT use drive letters (i.e. 'c:'). Drive letters are emulated within CNC10. ('c:' and 'a:' in CNC10 refer to Linux directories '/cncroot/c' and '/cncroot/a').
- \* **CASE SENSITIVE** - Linux is case sensitive whereas DOS is case insensitive. Most Linux commands are lowercase. For instance, typing 'LS' instead of 'ls' at the prompt in Linux will generate an error.
- \* **Poweroff** - Like Windows, Linux should be properly shutdown before turning off the power. Turning off the power before the operating system has properly shutdown can potentially create errors on the harddrive. To properly shutdown Linux, type the command "poweroff" from the command line. CNC10 can also properly shutdown Linux from the F10 Shutdown menu in the main menu.

### Important CNC Linux commands:

- ls - List directory
- cd - Change current working directory
- cp - Copy file(s)
- mv - Move file(s)
- rm - Remove file(s)
- mkdir - Create directory
- rmdir - Remove empty directory
- rm -r - Remove directory and it's contents
- less - Display a text file
- pwd - Print current working directory
- cnc10m4 - Start CNC10 mill
- cnc10t4 - Start CNC10 lathe
- cncedit - Edit a text file
- statplc - Display status of plc executor
- version - Display CNC Linux version number
- cnc10update - Install update from floppy disk outside of CNC10
- install-cnc10 - Install CNC10, Utilities and Config files
- install-config - Only install CNC7 or CNC10 config files
- 7to10 - Convert CNC7 config files to CNC10 config files
- exit - Close the command window (xterm)
- help - Displays CNC Linux help information
- screenresolution - Displays commands for changing screen resolution (version 1.15)
- chattr - Assigning file attributes to files. (version 1.15)
- addmouse/removemouse - add or remove mouse drivers (version 1.10)

- netgo - Re-initializing control network configuration. (version 1.20)
- install-floppy/uninstall-floppy --Allows use to activate a floppy drive in v1.51 or deactivate (version 1.51)

## **CNC Linux hot keys**

- \* Alt-F6 - Launch a command window (xterm)
- \* Alt-Tab - Switch between applications
- \* Tab - Autocompletes file names at the command line
- \* Up/Down Arrow keys - Browses command history

## **List directory contents - ls**

### **ls [OPTIONS] [PATH]**

- \* Type 'ls -l' to display file attributes, file modification time and file size.
- \* Lists contents of current directory if a path is not given.

Examples:

```
> ls
```

List all files in current directory

```
> ls -l
```

Display file attributes for all files in current directory

```
> ls /cncroot/a
```

List all files on floppy disk

```
> ls /cncroot/a/ncfiles/*.cnc
```

List all \*.cnc files in ncfiles directory on floppy disk

## **Change current working directory -- cd**

### **cd [PATH]**

- \* If PATH is not specified, changes to cnc10 directory

Examples:

```
> cd
```

Change to cnc10 or cnc10t directory

```
> cd ..
```

Move to the parent directory

```
> cd /
```

Move to the root directory

```
> cd /cncroot/a
```

Move to the floppy disk

## **Copy File(s) -- cp**

### **cp [OPTIONS] FILE(S) DESTINATION**

\* DESTINATION must be specified.

\* Option '-f' overwrites destination files without prompting.

\* If destination is current directory use '.' as destination.

Examples:

```
> cp file1.txt file2.txt
```

Copy file1.txt to file2.txt

```
> cp file1.txt
```

ERROR: Must specify a destination

```
> cp tmp/cnc10.cfg .
```

Copy cnc10.cfg from tmp subdirectory to current directory

```
> cp cnc10.cfg cnc10.prm cnc10.plc
```

ERROR: When copying multiple files, last argument must be a directory

```
> cp cnc10.* ../
```

Copy all cnc10.\* files in current directory to parent directory

```
> cp /cncroot/a/ncfiles/*.cnc .
```

Copy all \*.cnc files from ncfiles dir on floppy disk to current dir

Copy subdirectories and files from ncfiles to USB device

```
> cp -a /cncroot/c/cnc10/ncfiles/* /cncroot/a
```

## **Move File(s) -- mv**

### **mv [OPTIONS] FILE(S) DESTINATION**

- \* DESTINATION must be specified.
- \* Option '-f' overwrites destination files without prompting.
- \* If destination is current directory use '.' as destination.

Examples:

```
> mv CNC7.PRM cnc10.prm
```

Rename CNC7.PRM to cnc10.prm

```
> mv cnc10.prm
```

ERROR: Must specify a destination

```
> mv cnc10.* ../
```

Move all cnc10.\* files to parent directory

```
> mv cnc10.* mydir
```

Move all cnc10.\* files to the subdirectory mydir

```
> mv *.cnc /cncroot/a/ncfiles
```

Move all \*.cnc files to ncfiles directory on floppy disk

```
> mv /cncroot/a/cnc10.* .
```

Move all cnc10.\* files from floppy disk to current directory

## **Remove File(s) -- rm**

### **rm [OPTIONS] FILE(S)**

- \* Option '-f' deletes files without prompting.
- \* Option '-R' deletes all files and subdirectories in the specified directory.

Examples:

```
> rm file1.txt
```

Delete file1.txt

```
> rm -Rf tmp
```

Recursively delete all files & subdirectories in directory tmp and delete tmp directory

```
> rm cnc7.*
```

Delete all cnc7.\* files in current directory

```
> rm /cncroot/a/cnc10.*
```

Remove all cnc10.\* files on floppy disk

### **Create directory -- mkdir**

#### **mkdir DIRECTORY**

Examples:

```
> mkdir tmp
```

Create the subdirectory tmp

```
> mkdir /cncroot/a/ncfiles
```

Create ncfiles directory on floppy disk

### **Remove directory -- rmdir**

#### **rmdir DIRECTORY**

\* DIRECTORY cannot contain any files.

Examples:

```
> rmdir tmp
```

Delete the subdirectory tmp if it is empty

```
> rmdir /cncroot/a/ncfiles
```

Delete the empty directory ncfiles from floppy disk

### **Remove directory -- rm -r**

#### **rm -r DIRECTORY**

\* DIRECTORY can contain files or subdirectories.

Examples:

```
> rm -r tmp
```

Delete the subdirectory tmp and all its contents

```
> rm -r /cncroot/a/ncfiles
```

Delete the directory ncfiles from floppy disk

### **Displaying text files -- less**

#### **less FILE**

\* While viewing a file in less, PageUp, PageDown, Up and Down Arrow keys may be used to navigate up and down in the file.

\* Pressing 'q' will exit less.

\* Type 'less --help' for more information on less command.

Examples:

```
> less report.txt
```

View the file report.txt

```
> ls | less
```

Take the output of the ls command and display it using less

### **Print current working directory -- pwd**

\* Display the current working directory

### **Start CNC10 mill -- cnc10m4**

### **Start CNC10 lathe -- cnc10t4**

### **Edit a text file -- cncedit**

**cncedit [file]**

### **Display plc executor status - statplc**

### **Display CNC Linux version number -- version**

\* Displays contents of /etc/linux-version file

### **Install update from floppy disk outside of CNC10 -- cnc10update**

\* Must insert update disk in drive before executing command.

\* Useful for installing updates when CNC10 is not executing.

\* Use 'install-cnc10' instead if CNC10 is not installed.

### **Install CNC10, Utilities and Config files -- install-cnc10**

\* Prompts for CNC10 update disk, Utility update disk and disk containing CNC7 or CNC10 config files.

### **Install CNC7 or CNC10 config files -- install-config**

**install-config [--mill] [--lathe]**

\* '--mill' will install config files in cnc10 directory

\* '--lathe' will install config files in cnc10t directory

\* Converts CNC7 config files to CNC10 config files

\* Use 'cnc10update' instead if installing CNC10 config files from a disk containing a report.zip file.

### **Convert CNC7 config files to CNC10 config files -- 7to10**

\* Converts all files in current directory to lowercase and renames all cnc7\*.\* files to cnc10\*.\*

### **Close command window (xterm) -- exit**

### **Display help for CNC Linux -- help**

#### **help [HELP-TOPIC]**

\* If HELP-TOPIC is not specified, display main help page with list of help topics.

\* Help topics include all of the important CNC Linux commands.

### **Change screen resolution - screenresolution**

- setdisplayhigh - changes screen resolution to 1024x768 and can be used on any control with a 15" LCD.
- setdisplaylow - changes screen resolution to 640x480 and must be used on 10.4/9.4" LCD's and older monitors.
- Note: control must be power cycled after executing one of these commands.

### **Assigning file attributes - chatr**

- help chatr -displays all available commands for chatr.
- chatr +i -this will apply read only attributes to a file. (i.e. chatr +i test.cnc)
- chatr -i - this will remove read-only attributes from the specified file. (i.e. chatr -i test.cnc)

### **Adding or removing mouse drivers - addmouse/removemouse**

- Type addmouse, poweroff control, and plug in mouse. Upon power-up the control will allow you to use a mouse for selecting options.

### **Adding or removing Floppy drive- install-floppy/uninstall-floppy**

- Type install-floppy, control will mount the floppy drive and you can start using right away. Typing uninstall-floppy unmounts floppy drive so /cncroot/a is available for USB.

### **Re-initializing network configuration - netgo**

\* After the cnc10.net file is configured, typing netgo re-initializes the network settings or you don't have to power cycle after configuring.

### **Launch a command window (xterm) -- Alt-F6**

\* Pressing Alt-F6 in any application (unless the application uses Alt-F6) will start a new command window (i.e. xterm).

## **Switch between applications -- Alt-Tab**

## **Autocomplete file names at command line -- Tab**

\* Pressing Tab after typing the first few characters or a file or directory name will fill in the rest of the file or directory name.

## **Browsing the command line history -- Up/Down Arrows**

\* Pressing the Up arrow key once at the command line will display the last entered command. Pressing Up arrow again will display the command entered before this one. After pressing the Up arrow at least once, the Down arrow may be used forward through the command history.

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## **Document History**

Rev1 Created on **2004-08-02**