Minicom (Linux Serial Remote Console)

Minicom Quick Commands
From Linux Terminal

$minicom -s	Start minicom setup
$minicom -s -c on	Start minicom setup in color
$minicom	Start minicom and enter Serial Console

From Minicom Serial Console

Ctrl+A, then x	exit

Example setup in the lab for Serial Console Connection:

1. Set the Serial connection settings:

```
─────[configuration]─────
 Filenames and paths
 File transfer protocols
 Serial port setup
 Modem and dialing
 Screen and keyboard
 Save setup as dfl
 Save setup as..
 Exit
 Exit from Minicom
```

```
  A -    Serial Device      : /dev/ttyS0
  B - Lockfile Location      : /var/lock
  C -    Callin Program      :
  D -   Callout Program      :
  E -     Bps/Par/Bits       : 19200 8N1
  F - Hardware Flow Control : No
  G - Software Flow Control : No

     Change which setting? ▮
```

2. Modem and dialing settings:

```
─────[configuration]─────
 Filenames and paths
 File transfer protocols
 Serial port setup
 Modem and dialing
 Screen and keyboard
 Save setup as dfl
 Save setup as..
 Exit
 Exit from Minicom
```

```
───────[Modem and dialing parameter setup]───────

 A - Init string .........
 B - Reset string ........
 C - Dialing prefix #1.... ATDT
 D - Dialing suffix #1.... ^M
 E - Dialing prefix #2.... ATDP
 F - Dialing suffix #2.... ^M
 G - Dialing prefix #3.... ATX1DT
 H - Dialing suffix #3.... ;X4D^M
 I - Connect string ...... CONNECT
 J - No connect strings .. NO CARRIER            BUSY
                           NO DIALTONE           VOICE
 K - Hang-up string ......
 L - Dial cancel string .. ^M▮

 M - Dial time ........... 45      Q - Auto bps detect ..... No
 N - Delay before redial . 2       R - Modem has DCD line .. Yes
 O - Number of tries ..... 10      S - Status line shows ... DTE speed
 P - DTR drop time (0=no). 1       T - Multi-line untag .... No

 Change which setting? ▮     (Return or Esc to exit)
```

3. Save setup:

```
┌───[configuration]───┐
│ Filenames and paths │
│ File transfer protocols │
│ Serial port setup   │
│ Modem and dialing   │
│ Screen and keyboard │
│ Save setup as dfl   │
│ Save setup as..     │
│ Exit                │
│ Exit from Minicom   │
└─────────────────────┘
```

4. "Exit" to go directly into Serial Console

```
┌───[configuration]───┐
│ Filenames and paths │
│ File transfer protocols │
│ Serial port setup   │
│ Modem and dialing   │
│ Screen and keyboard │
│ Save setup as dfl   │
│ Save setup as..     │
│ Exit                │
│ Exit from Minicom   │
└─────────────────────┘
```

OR

```
┌───[configuration]───┐
│ Filenames and paths │
│ File transfer protocols │
│ Serial port setup   │
│ Modem and dialing   │
│ Screen and keyboard │
│ Save setup as dfl   │
│ Save setup as..     │
│ Exit                │
│ Exit from Minicom   │
└─────────────────────┘
```

"Exit from Minicom" to go into linux termial.
To start a Serial Console session from Linux Terminal, type:
$minicom

5. To escape out of serial and back into Linux terminal, press Ctrl+A, then x

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Linux / UNIX minicom Serial Communication Program
by VIVEK GITE *on* FEBRUARY 5, 2008 · 31 COMMENTS

Linux comes with many serial text and gui based serial communication programs. My favorite is minicom - friendly menu driven serial communication program.

If you are addicted to DOS / Windows TELIX (a telecommunications program originally written for DOS and was released in 1986), minicom is for you under Linux / UNIX.

minicom Common features / usage
=> Setting up a **remote serial console**
=> Access a **computer / server if the LAN is down**
=> Connect to **embedded Linux / BSD device** via null modem cable

=> Connect to **Cisco routers for configuration**
=> Connect to **dump device** i.e. device w/o keyboard and mouse
=> **Dialing directory** with auto-redial
=> Support for UUCP-style lock files on serial devices
=> Separate script language interpreter
=> **Capture to** file
=> Multiple users with individual configurations

Let us see how to configure minicom for my Soekris net4801 Single Board Computer / embedded Linux device.

Install minicom

Use apt-get under Debian / Ubuntu Linux, enter:
`$ sudo apt-get install minicom`

If you are using Red hat Linux (RHEL) / CentOS / Fedora Linux, enter:
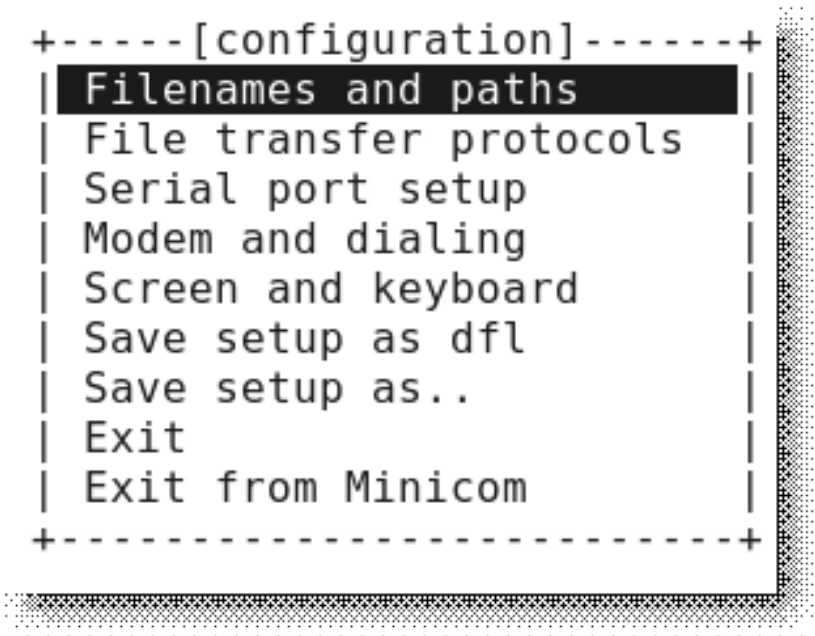`# yum install minicom`

How do I use minicom?
First, make sure Linux has detected serial ports. Use [setserial command to set and/or report the configuration](#) information associated with a serial port.

Setup minicom
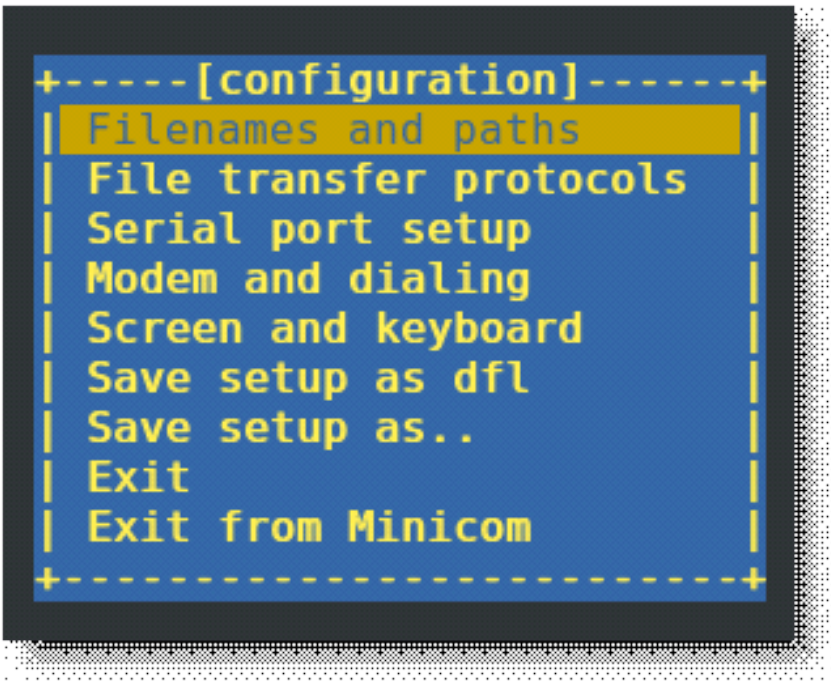The -s option use to setup minicom. Type the following command at shell prompt:
`$ minicom -s`

```
+------[configuration]------+
| Filenames and paths       |
| File transfer protocols   |
| Serial port setup         |
| Modem and dialing         |
| Screen and keyboard       |
| Save setup as dfl         |
| Save setup as..           |
| Exit                      |
| Exit from Minicom         |
+---------------------------+
```

(Fig. 01: minicom in configuration mode)
Some terminals such as the Linux console support color with the standard ANSI escape sequences. Type the following command start minicom with colours:
`$ minicom -s -c on`

(Fig: 02: minicom in configuration mode with color console)

When minicom starts, it first searches the MINICOM environment variable for command-line arguments, which can be over-ridden on the command line. Thus, if you have done:

```
$ export MINICOM="-m -c on"
```

Start minicom

```
$ minicom
```

minicom will assume that your terminal has a Meta or key and that color is supported. You can add MINICOM variable to your shell startup script such as ~/.bash_profile.
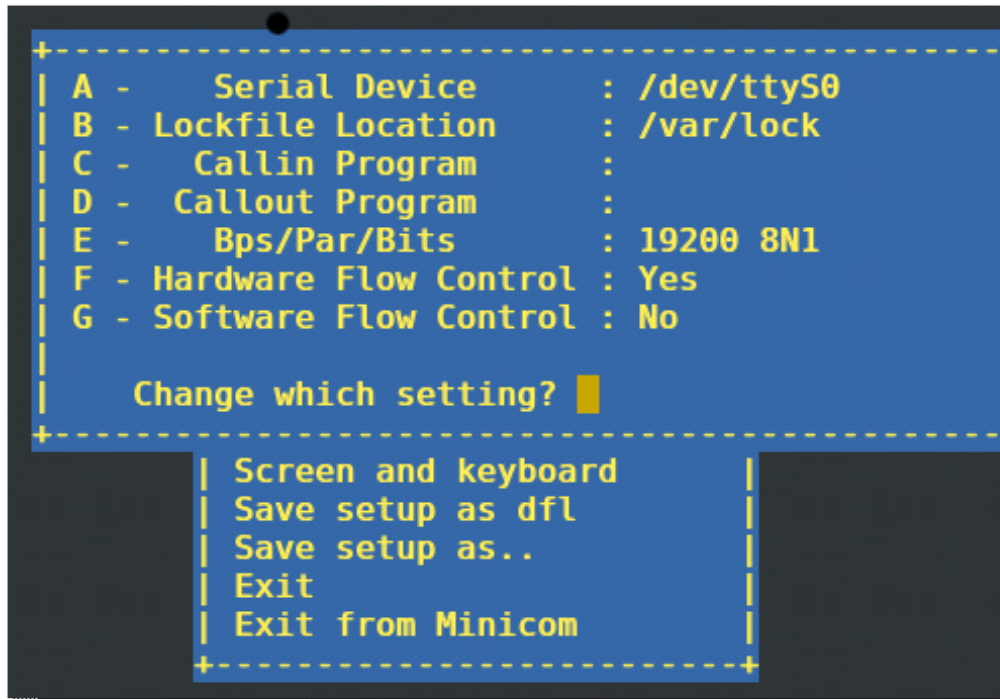
minicom keyboard short cut keys

Use the following keys:

6. **UP** arrow-up or k
7. **DOWN** arrow-down or j
8. **LEFT** arrow-left or h
9. **RIGHT** arrow-right or l
10. **CHOOSE (select menu)** Enter
11. **CANCEL** ESCape

Configure serial port

You need to configure serial port. Use up and down arrows to select menus. Press down and select **Serial port setup**:
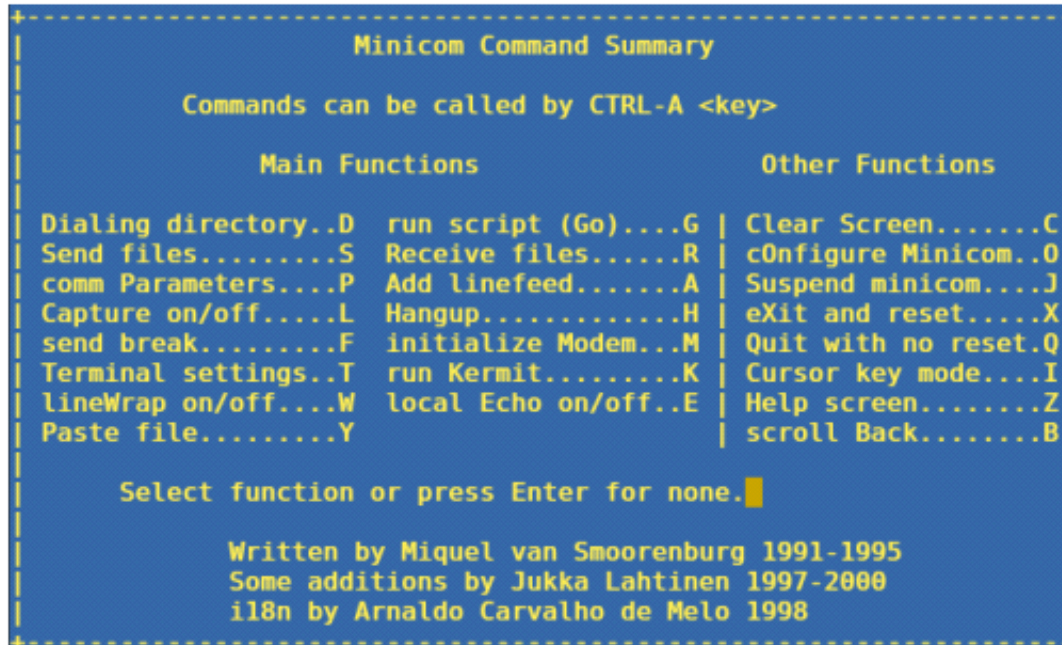
```
+-----------------------------------------------------------
| A -      Serial Device        : /dev/ttyS0
| B -  Lockfile Location        : /var/lock
| C -      Callin Program       :
| D -    Callout Program        :
| E -        Bps/Par/Bits       : 19200 8N1
| F - Hardware Flow Control  : Yes
| G - Software Flow Control  : No
|
|      Change which setting? █
+-----------------------------------------------------------
             | Screen and keyboard   |
             | Save setup as dfl     |
             | Save setup as..       |
             | Exit                  |
             | Exit from Minicom     |
             +------------------------+
```

(Fig. 03: Configure serial port with minicom)

- Press A to setup serial device name such as /dev/ttyS1
- Press E to setup Bps/Par/Bits
- Press [ESC] to exit
- Save setup as DFL
- Exit

More on shortcut keys
To activate help menu press [CTRL+A] followed by [Z] for help on special keys:
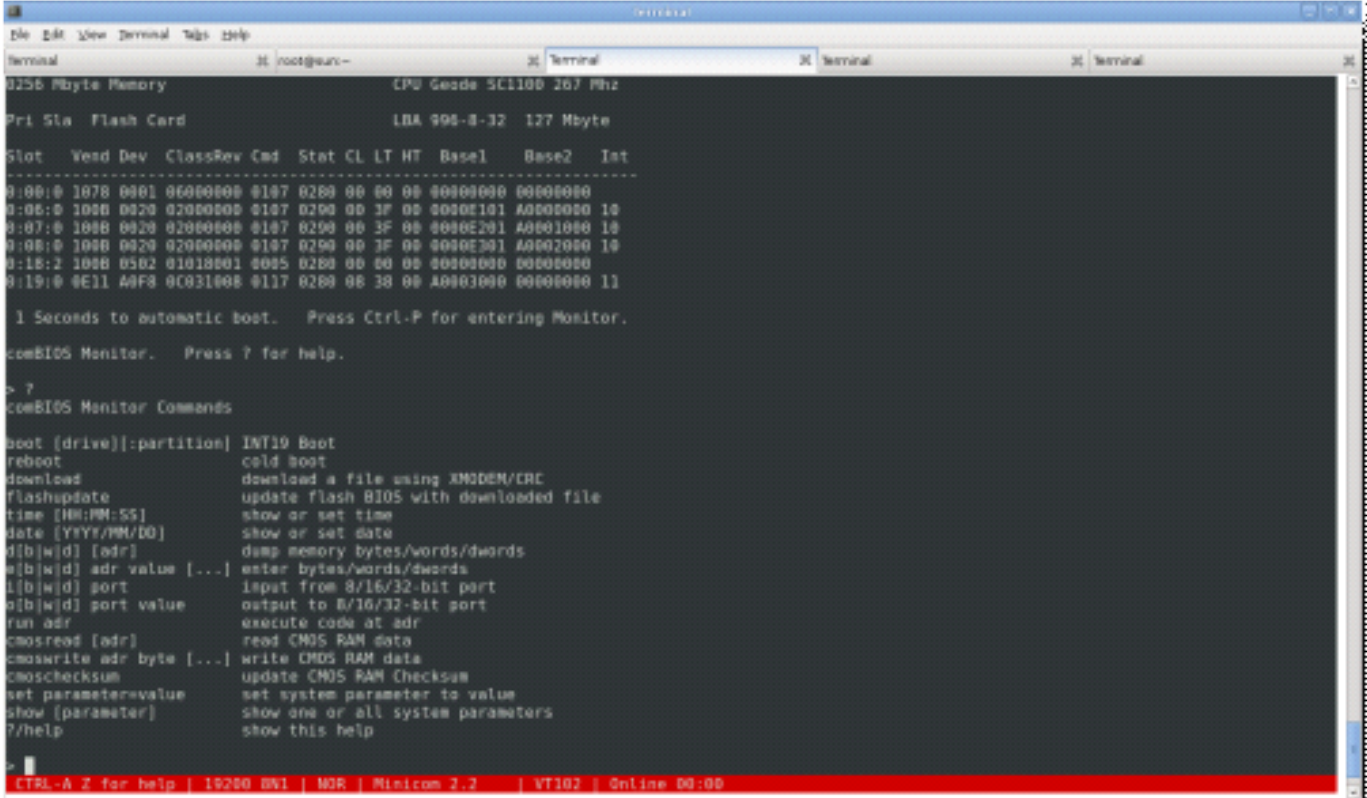
```
+-----------------------------------------------------------
|              Minicom Command Summary
|
|          Commands can be called by CTRL-A <key>
|
|            Main Functions              Other Functions
|
| Dialing directory..D  run script (Go)....G | Clear Screen.......C
| Send files.........S  Receive files......R | cOnfigure Minicom..O
| comm Parameters....P  Add linefeed.......A | Suspend minicom....J
| Capture on/off.....L  Hangup.............H | eXit and reset.....X
| send break........F   initialize Modem...M | Quit with no reset.Q
| Terminal settings..T  run Kermit.........K | Cursor key mode....I
| lineWrap on/off....W  local Echo on/off..E | Help screen........Z
| Paste file.........Y                       | scroll Back........B
|
|      Select function or press Enter for none.█
|
|          Written by Miquel van Smoorenburg 1991-1995
|          Some additions by Jukka Lahtinen 1997-2000
|          i18n by Arnaldo Carvalho de Melo 1998
+-----------------------------------------------------------
```

(Fig: 04: minicom command help summary)

minicom in action

You need to connect your serial device such as router or modem using modem cable. Once connected power on device and type minicom command without -s option:

```
$ minicom -c on
```


(Fig: 05: minicom connected to one of my embedded Linux device via null modem cable [click to enlarge image])

The soekris embedded Linux / BSD board with AMD 266 Mhz CPU + 256M RAM. This device connected to my computer using DB9 null modem cable. During the development you need to use minicom to install Linux kernel, format filesystem and configure device.