

BBS Games VT 100 and ANSI Graphics

Knox Game Design

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Modems

- Modulator / Demodulator
- Speeds - 14.4K, 28.8K, 33.6K, 56K
- PPP - point to point protocol
- File transfer - X Modem, Z Modem, Kermit
- SLiRP - Internet connection
- Tied up a phone line. Picking up a phone frequently resulted in disconnection
- NO CARRIER

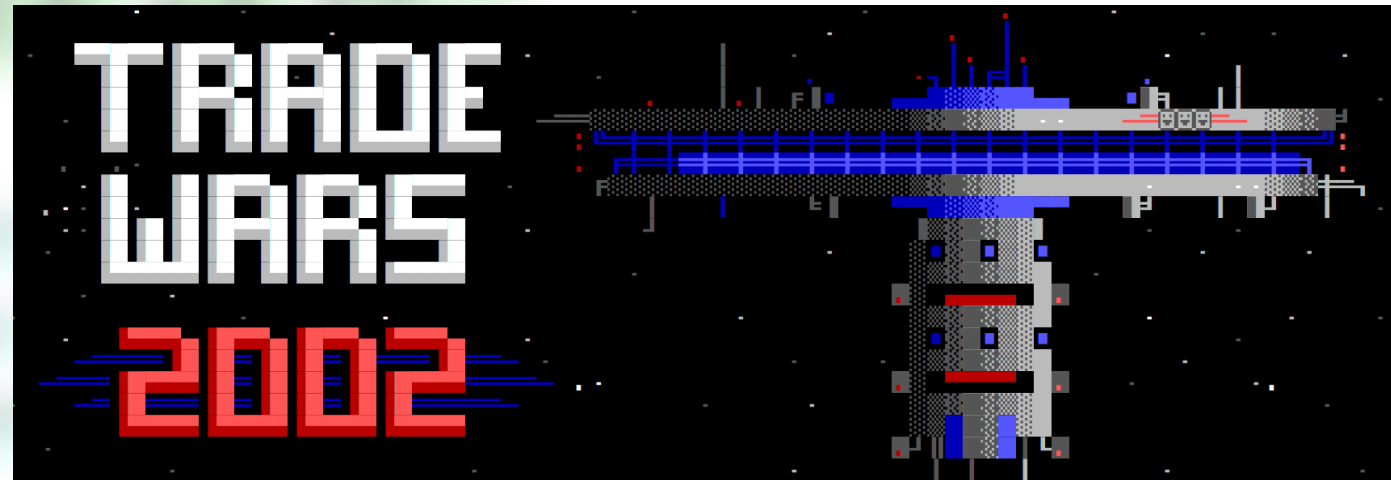
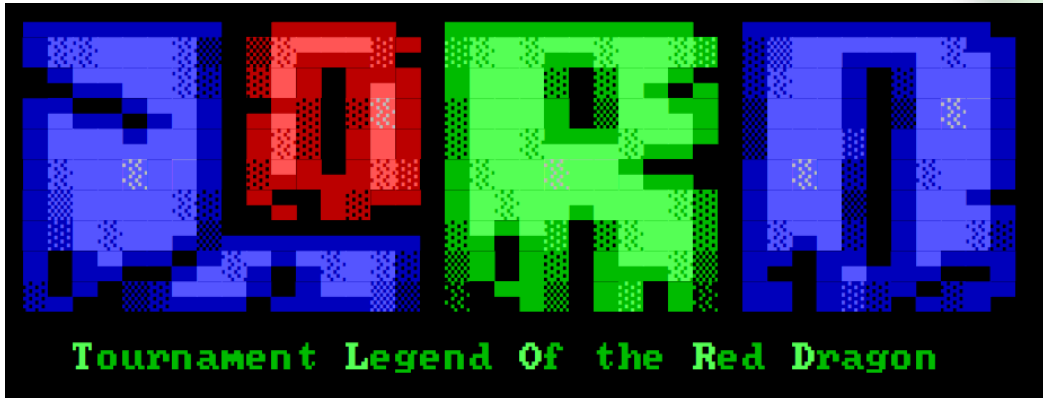
BBS Games

- BBS (bulletin board system) were originally dial-up systems, but now accessible through telnet
 - Connect with PuTTY
- "DOOR" games popular in the 90s
- Text based with ANSI graphics
- Limited number of turns per day
- Precursor to networked MMO games

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BBS Game Examples

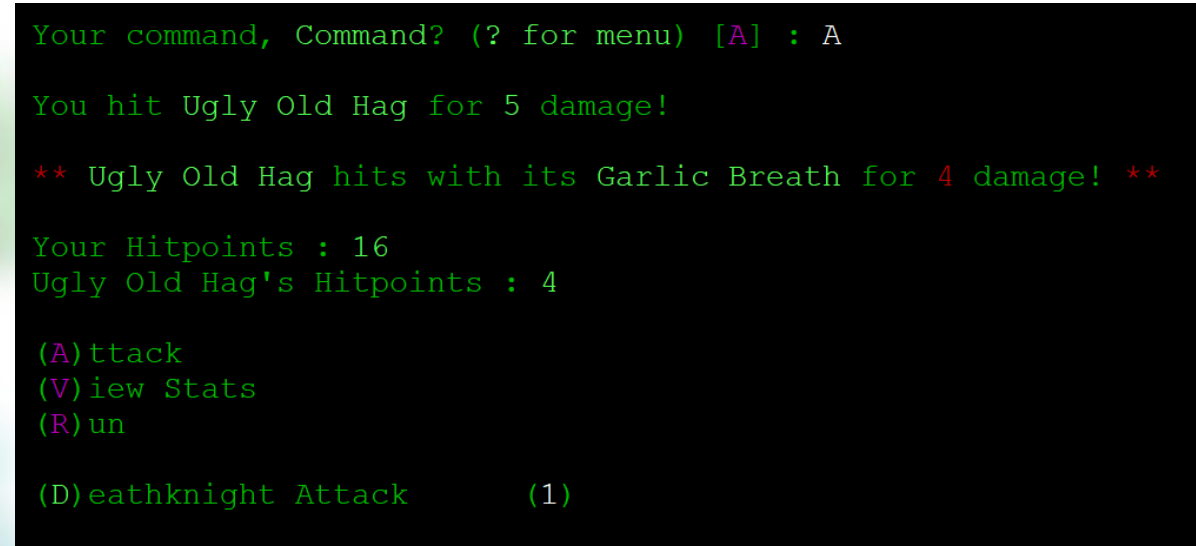
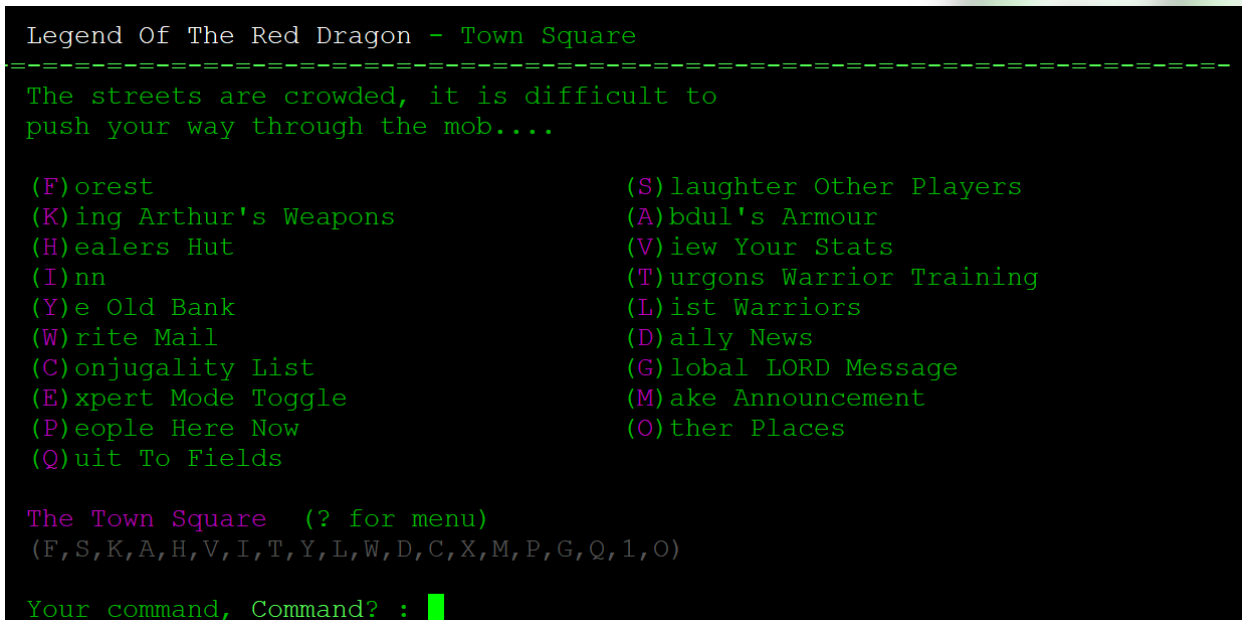
- LORD - Legend of the Red Dragon
 - Additional IGM (inner game module) mini games
- Trade Wars 2002



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Legend of the Red Dragon

- Limited Number of monster fights each day
- Could attack other players
- Leveling system, fight trainer to level up
- Three classes
- Buy new weapons and armor



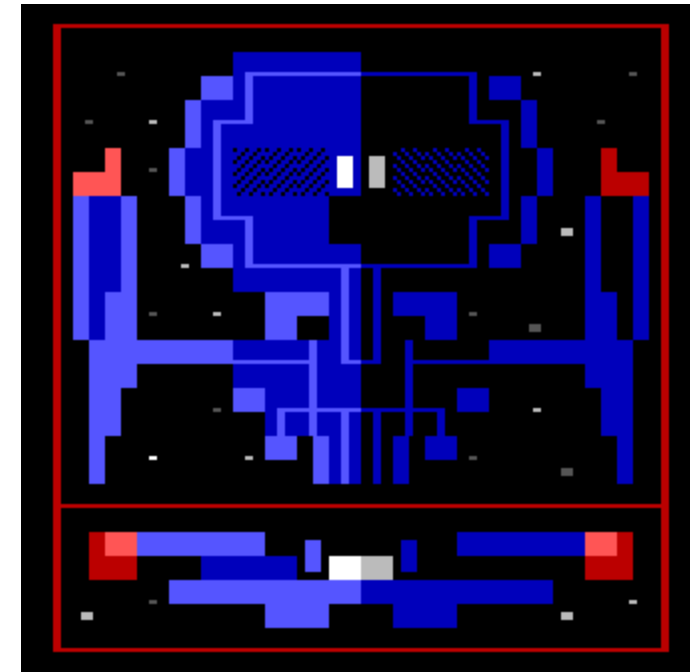
Trade Wars 2002

- Sector graph
- Trade at ports
 - Find "port pairs"
- Build resources on planets
- Starport to buy new ships

```
Planet #3 in sector 3237: My Planet
Class L, Mountainous
Created by: <UNKNOWN>
Claimed by: Command

  Item      Colonists  Colonists  Daily  Planet  Ship  Planet
  -----  -  Build 1  Product Amount  Amount Maximum
Fuel Ore      69         2        34         0         0    200,000
Organics      64         5        12         0         0    200,000
Equipment     34        20         1         0         0    100,000
Fighters      N/A        55         3         0        30   1,000,000

You have 20 free cargo holds.
Planet command <?=help> [D] █
```



```
Sector : 3237 in uncharted space (unexplored).
Planets : <(L)> My Planet
Warps to Sector(s) : <(567)> - <(774)> - <(1152)> - <(1196)> - <(3492)>

Command [TL=00:00:00]:[3237] <?=Help>? : 5767
<Move>
Warping to Sector 5767
Illegal number.

Command [TL=00:00:00]:[3237] <?=Help>? : 567
<Move>
Warping to Sector 567

Sector : 567 in uncharted space (unexplored).
Warps to Sector(s) : <(2086)> - <(3202)> - 3237 - <(3825)>

Command [TL=00:00:00]:[567] <?=Help>? : 2086
<Move>
Warping to Sector 2086

Sector : 2086 in uncharted space (unexplored).
Warps to Sector(s) : 567 - <(688)> - <(2779)> - <(4406)> - <(4609)>

Command [TL=00:00:00]:[2086] <?=Help>? : 688
```

```
Sector : 3616 in uncharted space (unexplored).
Ports : Coaita Outpost, Class 2 (BSB)
Warps to Sector(s) : <(735)> - <(767)> - <(1361)> - 1574 - <(2900)> - <(3303)>

Command [TL=00:00:00]:[3616] <?=Help>? : P

<A> Attack this Port
<I> Trade at this Port
<Q> Quit, nevermind

Enter your choice [I] ? I
<Port>

Docking...

Commerce report for Coaita Outpost: 07:46:47 PM Sat Aug 14, 2032

----- Docking Log -----
No current ship docking log on file.
For finding this unused port you receive 1 experience point(s).

  Items      Status  Trading % of max OnBoard
  -----  -  -  -  -
Fuel Ore    Buying    2870    100%     0
Organics    Selling    2550    100%     0
Equipment   Buying    1360    100%     0

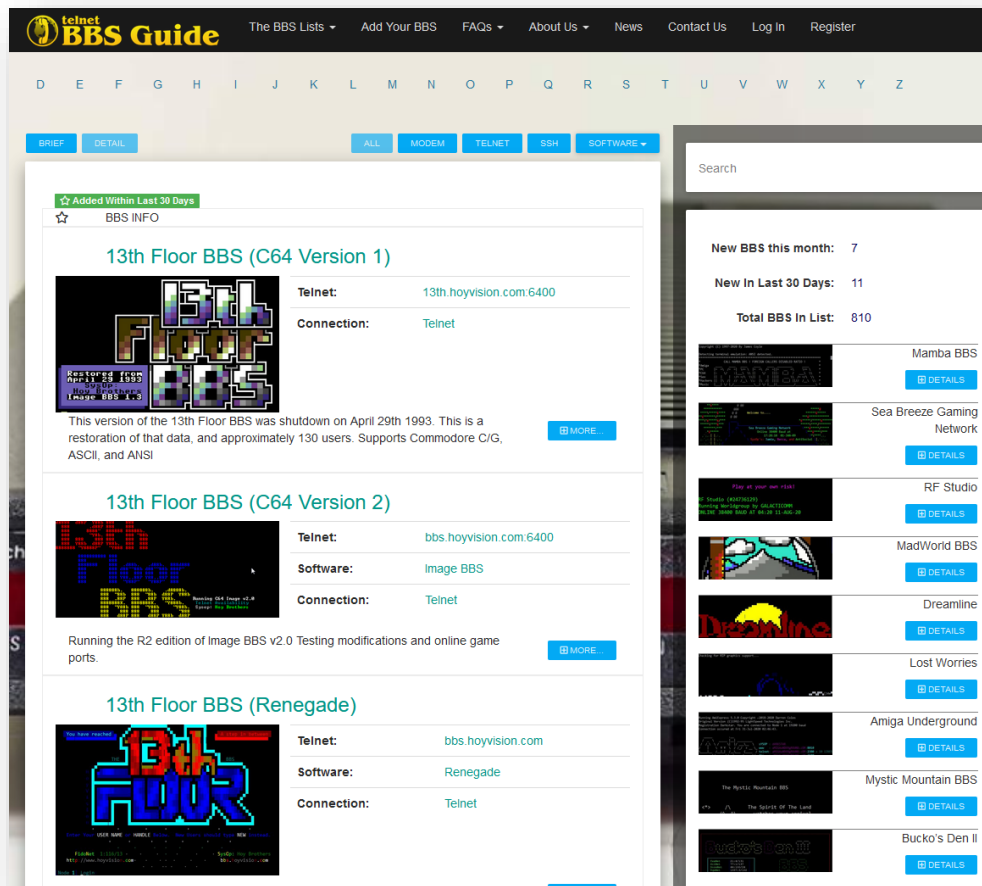
You have 300 credits and 20 empty cargo holds.

We are selling up to 2550. You have 0 in your holds.
How many holds of Organics do you want to buy [18]? █
```

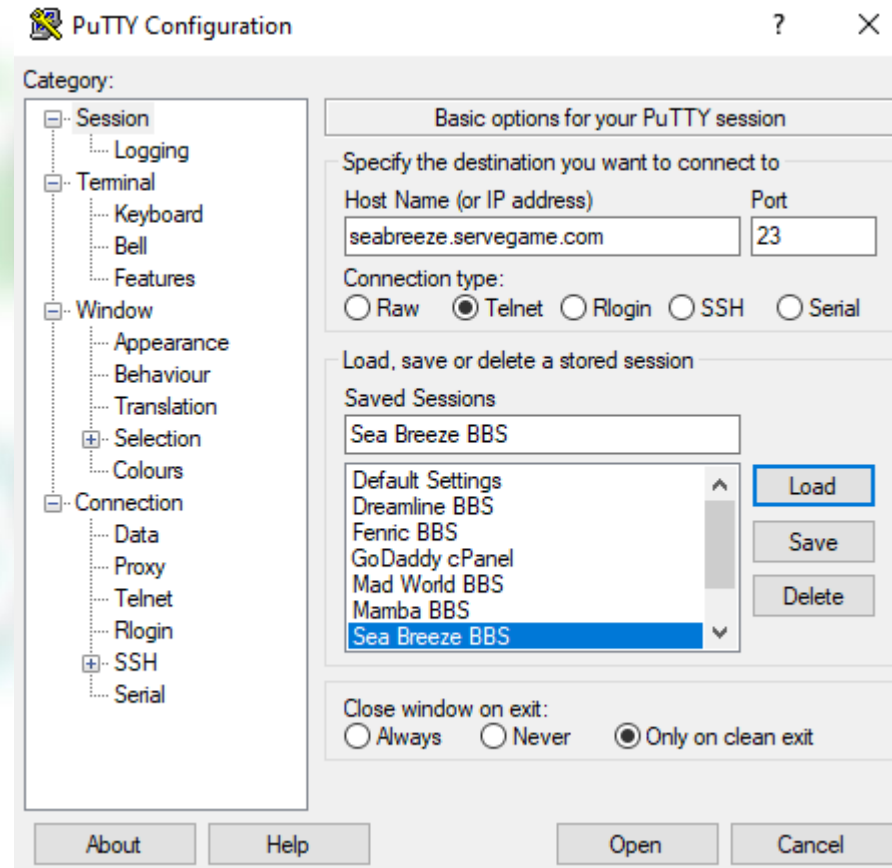
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BBS Lists

- Telnet BBS Guide - <https://www.telnetbbsguide.com/>



The screenshot shows the 'telnet BBS Guide' website. The header includes navigation links like 'The BBS Lists', 'Add Your BBS', 'FAQs', 'About Us', 'News', 'Contact Us', 'Log In', and 'Register'. Below the header is a search bar and a list of BBSes categorized by letter (D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z). The main content area displays a list of BBSes, with the first one being '13th Floor BBS (C64 Version 1)'. This entry includes a thumbnail image, the telnet address '13th.hoyvision.com:6400', and a brief description. Other entries include '13th Floor BBS (C64 Version 2)' and '13th Floor BBS (Renegade)'. A sidebar on the right shows statistics like 'New BBS this month: 7' and 'Total BBS in List: 810'.

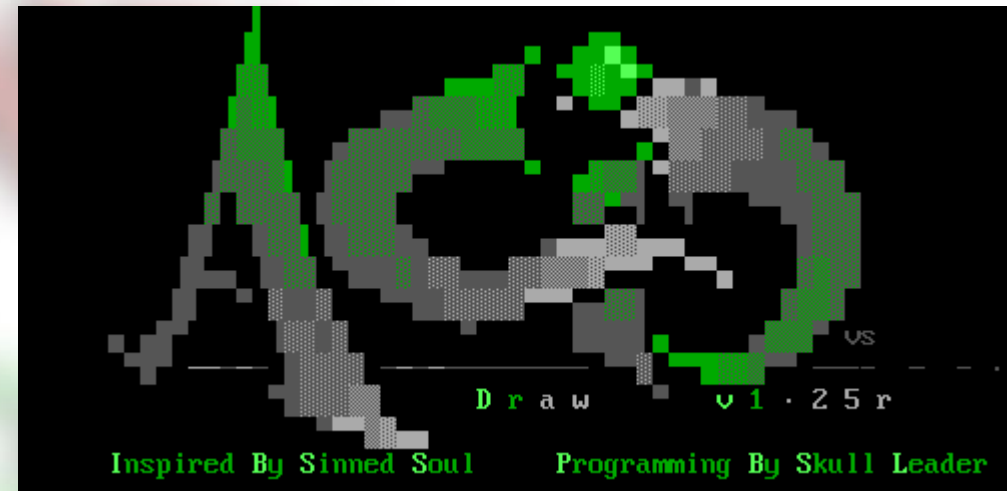
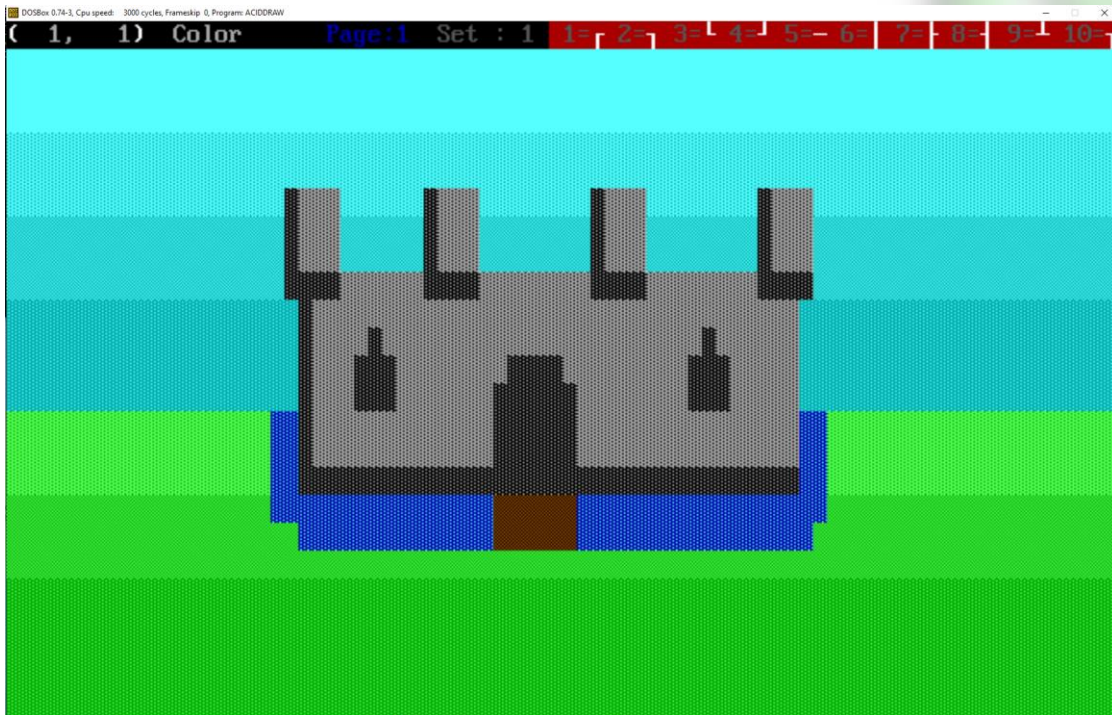


The screenshot shows the 'PuTTY Configuration' window. The 'Category' list on the left includes 'Session', 'Terminal', 'Window', 'Connection', and 'SSH'. The 'Session' category is selected, and the 'Basic options for your PuTTY session' are displayed. The 'Host Name (or IP address)' field is set to 'seabreeze.servage.com', and the 'Port' is '23'. The 'Connection type' is set to 'Telnet'. The 'Load, save or delete a stored session' section shows a list of saved sessions, with 'Sea Breeze BBS' selected. The 'Close window on exit' options are 'Always', 'Never', and 'Only on clean exit', with 'Only on clean exit' selected. The 'About' and 'Help' buttons are at the bottom left, and the 'Open' and 'Cancel' buttons are at the bottom right.

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ANSI graphics

- Text based graphics
- IBM extended ASCII characters
- ACiDDraw



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VT 100 codes


- Set color code
 - `^[<bright_toggle>;<foreground_color>;<background_color>m`
- Move cursor
 - `^[<spaces_to_up>A`
 - `^[<spaces_to_down>B`
 - `^[<spaces_to_right>C`
 - `^[<spaces_to_left>D`
- Turn off / reset color code
 - `^[0m`
- The Escape Character is `^` (27 decimal)

References

- <http://ascii-table.com/ansi-escape-sequences-vt-100.php>
- http://www.climagic.org/mirrors/VT100_Escape_Codes.html
- https://en.wikipedia.org/wiki/ANSI_escape_code#CSI_sequences

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VT100 colors

	
Foreground Color	30 34 32 36 31 35 33 37 30 34 32 36 31 35 33 37
Brightness	0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1
Background Color	40 44 42 46 41 45 43 47

Note - Brightness only applies to foreground color

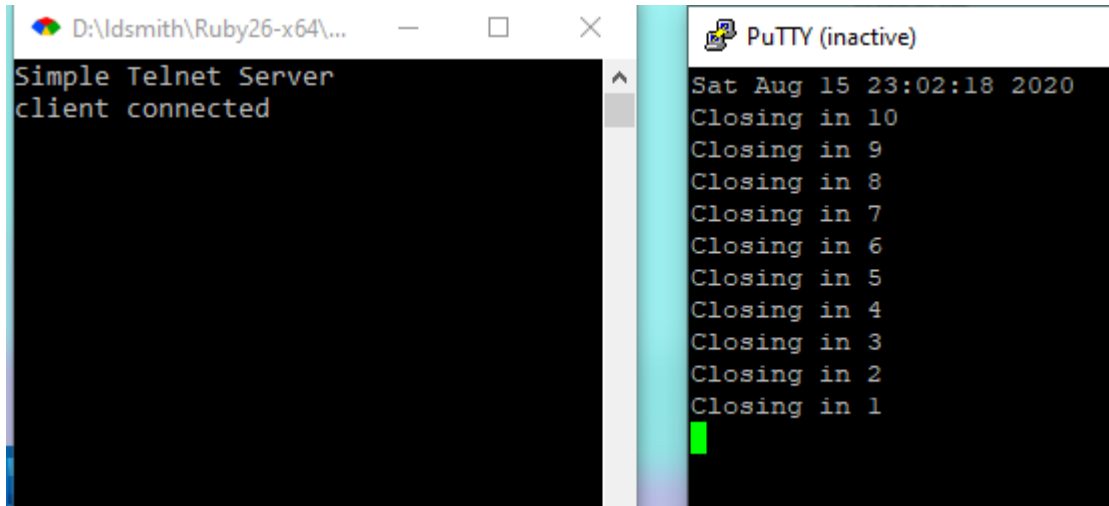


```
ESC[0mESC[34;41mBlue on RedESC[37;40m
ESC[32;45mGreen on MagentaESC[37;40m
ESC[36;43mCyan on BrownESC[37;40m
ESC[31;47mRed on GrayESC[37;40m
ESC[1;32;42mBright Green on GreenESC[0m
ESC[1;33mYellow on BlackESC[0m
ESC[0mSUB
```

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A Simple Telnet Server

- Use socket library
- Keep looping until the connection is closed
- Be sure to send "\r" to move cursor back to first column on line feed



The image shows two terminal windows. The left window, titled 'D:\ldsmith\Ruby26-x64\...', displays the output of a Ruby script: 'Simple Telnet Server' followed by 'client connected'. The right window, titled 'PuTTY (inactive)', shows a sequence of messages: 'Sat Aug 15 23:02:18 2020', followed by 'Closing in 10' through 'Closing in 1', and a green cursor at the bottom.

Ruby example

```
#2020 Levi D. Smith - levidsmith.com
require 'socket'

puts "Simple Telnet Server"
iPort = 23

server = TCPServer.open(iPort)
keepLooping = true
while (keepLooping)
  client = server.accept
  puts "client connected"
  client.puts(Time.now.ctime + "\r")

  iCount = 10
  while (iCount > 0)
    client.puts("Closing in #{iCount}\r")
    iCount -= 1
    sleep(1)
  end

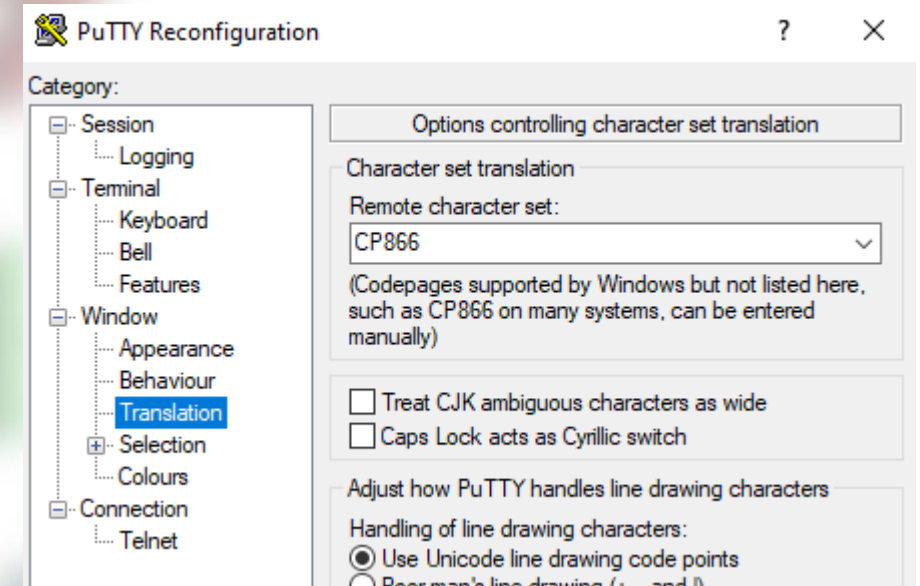
  client.puts "Closing the connection\r"
  client.close
end
```

Not threaded, so only one client allowed to connect at a time

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Tips

- In PuTTY, set translation to CP866 to display extended ASCII characters for ANSI art
- Download a font with extended ASCII characters
 - I use *Ac437 IBM BIOS* from Old School Font PC Resource - <https://int10h.org/oldschool-pc-fonts/download/>



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See also

- BBS list - <https://www.telnetbbsguide.com/bbs/list/brief/>
- Telnet Protocol specification - <https://tools.ietf.org/html/rfc854>
- ACiD Productions - <http://www.acid.org/>