

VT, 32770, and 5250 Emulation Troubleshooting



Connect, Inc.
1701 Quincy Avenue, Suites 5 & 6, Naperville, IL 60540
Ph: (630) 717-7200 Fax: (630) 717-7243
www.connectrf.com

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AS400 Keyboard Sequences for VT100/VT220 for PowerNet Twin Client

The following describes how to emulate a VT100/VT220 session to the AS400.

Keyboard sequences for VT100/VT220 for PowerNet TN to the AS400 are at:

<http://www.connectrf.com/Documents/as400vtkeys.html>

The configuration file for Symbol 6840 terminals with Connect's 5250 overlay running VT220 emulation to an AS400 is at: <http://www.connectrf.com/Documents/fol.cf>

The keyboard map file for a 5250 overlay in VT220 emulation is at:

<http://www.connectrf.com/Documents/FOL.cfk>

The keyboard macro file for a 5250 overlay in VT220 emulation is at:

<http://www.connectrf.com/Documents/FOL.kbm>

Testing a Printer in an IX Telnet VT100/VT220 Environment

Introduction

The following describes how to test a printer in an IX Telnet environment.

Resolution

In order to print from an IX environment to a serially attached printer, you are required to use escape sequences that are standard for the emulation.

Download this file, <http://www.connectrf.com/Documents/sampprt.tar>, that contains the escape sequences for starting the printer, a referenced sample print commands file (**you will need to create for your specific printer called print.txt**), the escape stop sequence and a shell file, called printit, which when made executable on your system will send the print data to the printer. This file is a zipped tar archive that should be unzipped and un-tarred on the host system. If you do this under windows, it will add a carriage return to each line causing the test file to fail.

On a Linux system, the commands to do this are:

```
tar xvf sampprt  
chmod 755 printit
```

Create the file print.txt and then run ./printit from the RF device with the printer attached.

Product Specifications for VTerm and 3270

The VTerm product specification is at: http://www.connectrf.com/Documents/Pnet_tcp.pdf

The 3270 product specification is at: http://www.connectrf.com/Documents/Pnet_327.pdf

AS400 Work Station ID, LuNames for TN3270E, New Environment

Introduction

The following is information on AS400 Work Station ID, LuNames for TN3270E, and New Environment.

Background

This information is for the purpose of securely managing Telnet sessions and resources on an AS400 or IBM 3270.

Currently, we do not have examples of 3270 setups.

The default for the 3270 handler, tn3270e, is on. You also may disable this option if the host does not support it and run in 3278-2 mode. This is done by specifying "-3270e" on the custom options on the controller.

Below is an example for an AS400 setup.

AS400 Setup Devices Values

If your AS400 does not automatically configure your 5291 mod 1 devices you can use the CRTDEV DSP command to do so.

Create Device Desc (Display) (CRTDEV DSP)

Type choices, press Enter.

```
Device description . . . . . 5291MOD1__ Name
Device class . . . . . *VRT_ *LCL, *RMT, *VRT, *SNPT
Device type . . . . . 5291_ 3101, 3151, 3161, 3162...
Device model . . . . . 1_____ 0, 1, 2, 3, 4, 5, 12, 23...
```

Bottom

F3=Exit F4=Prompt F5=Refresh F10=Additional parameters F12=Cancel
F13=How to use this display F24=More keys

Using the AS400 command WRKDEV D, select a 5291 device and use the Rename option:

Work with Device Descriptions

System: POWERNET

Position to _____ Starting characters

Type options, press Enter.

2=Change 3=Copy 4=Delete 5=Display 6=Print **7=Rename**
8=Work with status 9=Retrieve source

```
Opt Device Type Text
7 5291MOD1 5291 Device created for POWERNET.
_ QPADEV00BK 5291 Device created for POWERNET.
_ QPADEV00BL 5291 Device created for POWERNET.
```

```
_ QPADEV00BM 5291 Device created for POWERNET.  
_ QPADEV00BN 5291 Device created for POWERNET.  
_ QPADEV00BP 5291 Device created for POWERNET.  
_ QPADEV00BQ 5291 Device created for POWERNET.  
_ QPADEV00BR 5291 Device created for POWERNET.  
_ QPADEV00BS 5291 Device created for POWERNET.
```

More...

Parameters or command

===>

F3=Exit F4=Prompt F5=Refresh F6=Create F9=Retrieve F12=Cancel
F14=Work with status

The Following Screen appears enter the new LUNAME: 5291MOD1

Rename Object (RNMOBJ)

Type choices, press Enter.

```
Object ..... > 5291MOD1 Name  
Library ..... *LIBL Name, *LIBL, *CURLIB  
Object type ..... > *DEVD *ALRTBL, *AUTL, *BNDDIR...  
New object ..... RF5291.001 Name
```

Bottom

F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display
F24=More keys

After entering the information you will need to make it available:

Work with Device Descriptions

System: POWERNET

Position to Starting characters

Type options, press Enter.

2=Change 3=Copy 4=Delete 5=Display 6=Print 7=Rename
8=Work with status 9=Retrieve source

```
Opt Device Type Text  
_ QPADEV0098 5291 Device created for POWERNET.  
_ QPADEV0099 5291 Device created for POWERNET.  
_ QQAHOST *APPC  
_ QTIDA *APPC  
_ QTIDA2 *APPC  
_ Q1PDEV *APPC PM400 device  
_ Q1SHARE400 *APPC AS/400 FORUM ACCESS DEVICE  
8 RF5291.001 5291 Device created for POWERNET.  
_ SPANISH 3179 Device created for POWERNET.
```

More...

Parameters or command

===>

F3=Exit F4=Prompt F5=Refresh F6=Create F9=Retrieve F12=Cancel
F14=Work with status

Select Make Available and you are all set:

Work with Devices

System: POWERNET

Type options below, then press Enter.

1=Make available 2=Make unavailable 5=Display details
7=Display message 8=Work with controller and line 9=Rename
13=Change description

Opt Device Type Status

1_ RF5291.001 5291 Unavailable (use Opt 1)

Bottom

F1=Help F3=Exit F5=Refresh F9=Command line F11=Display descriptions
F12=Cancel F17=Top F18=Bottom F21=Select assistance level

After made available:

Work with Devices

System: POWERNET

Type options below, then press Enter.

1=Make available 2=Make unavailable 5=Display details
7=Display message 8=Work with controller and line 9=Rename
13=Change description

Opt Device Type Status

__ RF5291.001 5291 **Available to use**

Bottom

F1=Help F3=Exit F5=Refresh F9=Command line F11=Display descriptions
F12=Cancel F17=Top F18=Bottom F21=Select assistance level

RF5291.001 made available.

Now follow the process for either Twin Client or PowerNet controller for setting LU names to match the AS400.

The PowerNet Controller setup is at: <http://www.connectrf.com/Documents/NewEnv.doc>

VT100 Extended Commands VT (Shells) and AS400 (Display file) Program to Disable the Scanner from within the Application

Introduction

The following is a VT100 shell script and AS400 display file program to disable the scanner from within the application.

Resolution

To verify the extended commands work, you may access Connect's AS400 over the WEB (reference Tech Note T1149). After logging in, you will be asked which test to run. Select number 96. This is used to verify printing and also extended commands.

Or, you may compile the following display file on the customer's AS400. Create a CLP program to write and read these screens. You do not have to place this information in these specific columns, but you must maintain the same delimiters across the host application. (/cmd,/cmde)

```
0038.30 A      R ASCIIICMD
0038.50 A      F37      5A B 1 2CHECK(ER)
0038.60 A              2 2'ASCII Command Seq 1  '
0038.70 A              3 2'/cmd!1;3z/cmde  '
0038.80 A              4 2'KEY'
0038.90 A              4 6'ONLY'
0039.00 A              5 2'No'
0039.10 A              5 5'Scanner'
0039.20 A      R ASCIIICMD2
0039.40 A      F37      5A B 1 2CHECK(ER)
0039.50 A              2 2'ASCII Command Seq 2  '
0039.60 A              3 2'/cmd!1;0z/cmde  '
0039.70 A              4 2'SCAN'
0039.80 A              4 7'OR'
0039.90 A              4 10'KEY'
0040.00 A      R SINGLEFLD
```

You must also set up the Host list entry or Twin Client under the misc tab. You must set the Extended command Start to "/cmd" and the End to "/cmde".

VT100 shell scripts for IX boxes. Download and unzip the files. FTP to the Host server and make them executable. Log in with a terminal running Vterm and run ./vtesc.

<http://www.connectrf.com/Documents/vtesc.zip>

Refer to the PowerNet manuals for information on configuring the terminals for the extended commands option.

Scanning Across Multiple Fields in 3270 Emulation

Introduction

The following are requirements for scanning across multiple fields in 3270 emulation.

Resolution

In the host list setup or Twin Client set up, ensure that: "Auto Send" key is set to Tab truncation, length check is Off (not checked) and that Field warp is On.

AS400 3270 Keyboard Sequences for PowerNet Twin Client

Introduction

The following describes how to emulate a 3270 session to the AS400.

Background

Below are keyboard sequences for 3270 for PowerNet TN to the AS400 and help for 3270 keyboard mapping.

<u>3270 Key Sequence</u>	<u>Function</u>	<u>3270 Key Sequence</u>	<u>Function</u>
PF1	5250 help text	PF13	F13
PF2	3270 help text	PF14	F14
PF3	Clear display	PF15	F15
PF4	Print display	PF16	F16
PF5	Display attributes	PF17	F17
PF6	Test request	PF18	F18
PF7	Page up (Roll down)	PF19	F19
PF8	Page down (Roll up)	PF20	F20
PF9	Attention	PF21	F21
PF10	Error reset	PF22	F22
PF11	System request	PF23	F23
PF12	Record backspace	PF24	F24
PA1 PF1	F1	PA2 PF1	F13
PA1 PF2	F2	PA2 PF2	F14
PA1 PF3	F3	PA2 PF3	F15
PA1 PF4	F4	PA2 PF4	F16
PA1 PF5	F5	PA2 PF5	F17
PA1 PF6	F6	PA2 PF6	F18
PA1 PF7	F7	PA2 PF7	F19
PA1 PF8	F8	PA2 PF8	F20
PA1 PF9	F9	PA2 PF9	F21
PA1 PF10	F10	PA2 PF10	F22
PA1 PF11	F11	PA2 PF11	F23
PA1 PF12	F12	PA2 PF12	F24

<u>Function</u>	<u>3270 Key Sequence</u>	<u>5250 Key Sequence</u>
Erase all input fields	Not supported	Erase Input
Field plus	Not supported	Field+
Field minus	Not supported	Field-
Erase end-of-field and exit field	Erase EOF,-->	Field Exit

To use the attention function (ATTN), do one of the following:

- Press Test Request, then press PA1 if using a 3277 display attached to an SNA 3274 controller.
- Press ATTN if using a 3278 or 3279 display attached to an SNA 3274 controller.
- Press the 3270 key sequence set by the user if using a distributed host command facility, network routing facility, or SNA Primary LU2 Support device.

Display attributes = display imbedded attributes

Settings Required on a 3270 Host for the Logmode Table

Introduction

The following describes the settings required on a 3270 host for the logmode table for Twin Client TN3270 terminal emulation.

Background

For future reference, below is the entry that we commented out in our logmode table.

```
*****
* ENTRY FOR NON-SNA MODEL 2 TERMINALS *
* NO ALTERNATE SCREEN DEFINED. *
*****
*D4B32782 MODEENT LOGMODE=D4B32782
*      FMPROF=X'02',
*      TSPROF=X'02',
*      PRIPROT=X'71',
*      SECPROT=X'40',
*      COMPROT=X'2000',
*      RUSIZES=X'0000',
*      PSERVIC=X'000000000000185000007E00',
*      APPNCOS=#CONNECT
```

This was replaced with:

```
M32782 MODEENT LOGMODE=M32782, *
      FMPROF=X'03', *
      TSPROF=X'03', *
      PRIPROT=X'B1', *
      SECPROT=X'90', *
      COMPROT=X'3080', *
      RUSIZES=X'87C7', *
      PSERVIC=X'020000000000185000007E00'
```

Twin Client 3270 Screen Capture Keys

Introduction

The following describes issues with the 3270 screen capture product.

Background

While running the 3270 Screen capture program, there is not a pull down window for the special AID keys required for the emulation.

Resolution

The new code for Twin Client 3270 is at: <http://www.connectrf.com/Documents/lu2gtne.exe>

Keys and their sequence:

Clear	Ctrl F6
PA1	Ctrl F1
PA2	Ctrl F2
PA3	Ctrl F3
Sysreq	Ctrl F5
EOF	Esc

Supported Display Attributes for 3270 and 5250

Introduction

The following are supported display attributes for the Connect PowerNet emulations of 3270 and 5250.

Resolution

Connect Supported Display Attributes IBM-5291-1 Terminal Type

Connect Supported MONOCHROME display attributes:

Attribute	Supported	Reason
Column separator	NO	Note 1
Blink field	Possibly	Note 2
Underscore field	NO	Note 1
Intensity	NO	Note 1
Reverse image	Possibly	Note 2

Note 1: Requires graphics capabilities in the specific display hardware for the manufactured terminal.

Note 2: Depends on the specific display hardware for the manufactured terminal.

Contact the terminal manufacturer for further information.

Definition of the emulation found at:

<http://publib.boulder.ibm.com/cgi-bin/bookmgr/BOOKS/co2e2001/CONTENTS#15.6.12.3>

Specifically monochrome display 24x80:

15.6.12.3 Field Attributes

The field attributes control the image produced on the workstation screen. Each attribute occupies one character position in the workstation regeneration buffer and is displayed as a blank. The effect produced by an attribute begins at its location in the regeneration buffer and continues until the next attribute appears.

The attributes for non-color and color displays are shown in the table below.

Table 51. Field Attributes in the SF	
The attributes for a non-color display are specified as follows:	
Bit 0-2	0 0 1 = Attribute identification flag
Bit 3	0 = Column separator off 1 = Column separator on
Bit 4	0 = Do not blink field 1 = Blink field
Bit 5	0 = Do not underscore field 1 = Underscore field
Bit 6	0 = Low intensity 1 = High intensity
Bit 7	0 = Normal image 1 = Reverse image
Note: Multiple functions can be selected. If bits 5, 6, and 7 all = 1, displaying of field will be inhibited.	

IBM-3278-2 Terminal Type

Connect Supported MONOCHROME Display Attributes:

Attribute	Supported	Reason
Protected	Yes	
Alpha/Numeric	Yes	
Auto Skip	NO	
Light Pen	Yes	Note 2
Intensity	NO	Note 1
Modified Data Tag	Yes	
Non Display	Yes	

Note 1: Requires graphics capabilities in the specific display hardware for the manufactured terminal.

Note 2: Can be configured for alarms depending on terminal support for audible tones/vibrate modes.

Contact the terminal manufacturer for further information.

Definition of the emulation found at:

http://publibz.boulder.ibm.com/cgi-bin/bookmgr_OS390/BOOKS/CN7P4000/1.4.1

Specifically monochrome display 24x80:

1.4.1 Field Attributes

The field attribute defines the start of a field and the characteristics of the field.

A field can wrap from the end of one row to the beginning of the next row on the screen. A field can also wrap from the last location on the screen to the first location. In any case, the field is terminated by the next field attribute. There is no limit to the number of fields that can be defined, other than that imposed by the screen size.

Field attribute defines the following field characteristics:

° Protected or unprotected. A protected field cannot be modified by the operator. The operator can enter data or modify the contents of an unprotected field. Unprotected fields are classified as input fields.

° Alphanumeric or numeric. Unprotected alphanumeric fields are fields into which an operator enters data normally, using the shift keys (uppercase/lowercase or numeric/alphabetic) as required.

Fields defined as numeric accept all uppercase symbols and numerics from a data entry keyboard. On a typewriter keyboard, numeric has no meaning and all entries are accepted.

° Autoskip. The cursor skips over fields that are defined as protected and numeric.

° Nondisplay or display/intensified display. The selected characteristics apply to the entire field. Nondisplay means that any characters entered from the keyboard are placed in the buffer for possible subsequent transmission to the application program, but they are not displayed. Intensified display means the intensified characters appear on the screen brighter than the nonintensified characters. Some devices cannot intensify characters on the screen and highlight characters in a different manner.

° Detectable or nondetectable. A field defined as detectable can be detected by the selector pen or the cursor select key, subject to the use of a designator character.

About This Document

This document is based on the following Technical Documents in our Lotus Notes database that have been made obsolete: A1041, T1121, T1123, T1140, T1142, T1152, T1170, T1179, T1203, and T1216.

Please let us know about any errors in this document at:

<http://207.241.78.223/isoxpert/calltrak.nsf/WebTracking?OpenForm>.