HOW TO Use the Screen Command and PuTTY with JNOS

This document describes how to configure PuTTY for compatibility with Linux and to protect from JNOS PANICs. Then it explains how to use the Linux "screen" command to manage the JNOS console session from multiple locations.

Contents

Overview

The screen command provides a way to detach from a session at one terminal and reattach to the same session at a different terminal. This is extremely useful in the case where JNOS is running in a server room or other location that is not easily accessible. JNOS can be started in a screen session in detached mode. The sysop can then attach to the JNOS console window from another location on the network.

This paper describes how to set up PuTTY to start up JNOS in a detached screen session, how to configure PuTTY to access the screen session, and the main screen command options to use to manage the screen session.

IMPORTANT WARNING: It is extremely important to understand that JNOS does not behave well if the screen is resized or otherwise changed. Typically JNOS will PANIC and restart if the window it is running in is altered. When JNOS restarts, experience has shown that it may not work properly, even though it appears to be functioning. Therefore, it is EXTREMELY important that all sysops carefully read and follow these instructions. Experimentation should never be performed with the production nodes.

PuTTY Configuration and Usage

At this time, PuTTY is the only tested and approved remote console tool. You may experiment with other tools on test nodes, but never on a production node. In order to avoid a JNOS PANIC, always use the tested and approved tool, configured in the standard and tested way.

Creating a PuTTY Configuration for the JNOS Console

Configure and Save a new PuTTY Configuration specifically for use as the JNOS console. Note that you will likely prefer other settings for general access to the Linux host. In particular, you may prefer a screen size that is longer and/or wider when editing files. But the following settings MUST be used for the JNOS console window.

Step 1: Begin with the "Default Settings

- Session
    - o Load, save or delete a store session
        - ▪ Select "Default Settings"
        - ▪ Press Load

Step 2: Customize for use with JNOS

- Terminal
    - o Set various terminal options
        - ▪ Answerback to ^E = xterm
- Terminal > Keyboard
    - o Change the sequences sent by:
        - ▪ The backspace key = Control-? (127)
        - ▪ The Home and End keys = Standard
        - ▪ The Function keys and keypad = Xterm R6
- Terminal > Features
    - o Disable application cursor keys mode = unchecked
    - o Disable application keypad mode = checked
- Window
    - o Columns = 80
    - o Rows = 24
    - o When window is resized = Forbid resizing completely

Step 3: Save the new settings

- Session
    - o Saved Sessions: enter "JNOS Console Settings"
    - o Press Save

Using PuTTY

1. Launch PuTTY
2. At the Session window, select "JNOS Console Settings"
3. Press Load
4. Enter the IP address of the Linux host on which the JNOS BBS is running.
   a. Note: You will not be connecting directly to the JNOS IP address. You will connect to the Linux host.
5. Select the Connection type and Port.
   a. Note: SSH is recommended. Telnet should be avoided because it sends password in the clear.
6. Click on Open
7. The configuration screen will be replaced with a terminal screen and you should see the Linux login prompt "login as:"

Start Up JNOS in Detached Mode

JNOS is typically started by a script at boot time. The startup script should include the removal of stale lock files and other housekeeping tasks before starting up JNOS.

The following lines can be used in the startup script to start JNOS in a detached screen session:

```
#
# [pre-startup housekeeping items]
#
#################################################
## Start Up JNOS in a detached screen session
#################################################
cd /jnos
export #TERM=xterm
#
# Start JNOS in a detached screen session
#
# options -d -m will start screen in detached mode.
# This creates a session but doesn't attach to it.
#
# option -S assigns the session name
# This makes it easy to spot the proper session with screen -ls
#
# The rest of the line is the command used to start JNOS
# Note that stderr is redirected to a log file in case it needs
# to be examined later.
#
screen -d -m -S jnos-console ./jnos.exe -d /jnos 2> ./logs/jnos.stderr
#
# [post-startup housekeeping items]
#
```

Managing the JNOS Console Screen

List the currently running screens

Use "screen –ls" or "screen –list" at the Linux prompt to list the currently running screen sessions.
Example:

```
root@michael-laptop:/jnos# screen -ls
There is a screen on:
        3282.jnos-console    (01/21/2010 10:52:38 AM)    (Detached)
1 Socket in /var/run/screen/S-root.

root@michael-laptop:/jnos#
```

The above information tells us that there is a screen session running with PID (process ID) of 3282 and session name "jnos-console" and that the session is currently detached.

Attach to the JNOS Console Screen Session

Use "screen –r <pid>.<session-name>" at the Linux prompt to reattach to the specified session. Example:

```
root@michael-laptop:/jnos# screen -r 3282.jnos-console
```

If the JNOS console session is the only screen session listed, you can reattach without entering the <pid>.<session-name>. For example, in the above "screen –ls" output, we see that there is only one screen session. So using "screen –r" is sufficient. Example:

```
root@michael-laptop:/jnos# screen -r
```

After pressing Enter, the JNOS console window will be displayed.

Detach from the JNOS Console Screen Session

The screen command has many options for controlling a large number of sessions. We will use very, very few of these options.

[CTRL]a (hold down the CTRL key while pressing the "a" key, then release both keys) is the screen command escape character. Use [CTRL]a followed by "d" to detach from a current session.

For example, while in the JNOS console window, use [CTRL]a d (press and hold CTRL while pressing the "a" key, then release both keys, then press the "d" key). The JNOS console window will be replaced with the terminal window as it was before attaching to the JNOS console screen session. The message "[detached]" will appear, followed by the normal terminal prompt. Example:

```
[detached]
root@michael-laptop:/jnos#
```

Reattach to a Currently Attached Screen Session

If you attempt to attach to a screen session which is current attached somewhere else, you will receive an error. This situation can occur if you forgot to detach when you finished working on JNOS. Example:

```
root@michael-laptop:/jnos# screen -ls
There is a screen on:
        3282.jnos-console    (01/21/2010 10:52:38 AM)     (Attached)
1 Socket in /var/run/screen/S-root.

root@michael-laptop:/jnos# screen -r 3282.jnos-console
There is a screen on:
        3282.jnos-console    (01/21/2010 10:52:37 AM)     (Attached)
There is no screen to be resumed matching 3282.jnos-console.
root@michael-laptop:/jnos#
```

In the above example, the "screen –ls" command was used to list the available screen sessions. We see that the jnos-console session is currently "Attached" somewhere. Attempting to attach to that session gives us an error that there is "no screen to be resumed …" because it is already attached elsewhere. To override, we must cause the remote session to be detached before we can reattach. This can all be done in one command.   Example:

```
root@michael-laptop:/jnos# screen -d -r 3282.jnos-console
```

The "-d" option tells screen to detach remotely, if necessary, before reattaching. There will be a very slight delay as screen detaches the remote session and then reattaches on this terminal. Then the normal JNOS console will appear. The remote user will see the JNOS console window return to a regular terminal window, and the message "[remote detached]" will appear, followed by the normal window prompt.