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Network Startup Resource Center

PacNOG 7: Pango Pango, American Samoa

Terminal and Console Access

Contents

- Virtual terminals
- Mouse daemon buffer (if available)
- Copy/paste between terminals
- OOB and serial console access
- Server/Switch console access using minicom.

(Virtual) Consoles

- Usually you have 6:
 - `tty[1-6]`
- `tty7` takes you back to X
- Access them using `ALT-CTRL-F [1-7]`
- Virtual terminals are *very useful*. If you run without a GUI, then they are your friend.
- Some Unix/Linux versions have optional mouse daemons in text mode, such as FreeBSD.

(Virtual) Consoles

Depending on Unix/Linux version these are defined in:

- `/etc/default/console-setup` (Upstart)
- `/etc/init/tty[1-6].conf` (Upstart)
- `/etc/inittab`
- `/etc/ttys`
- `/boot/grub/menu.lst` (*OOB* trick)
- `/etc/init.d/console-setup`
- `/etc/init.d/console-screen.sh`

Copy/Paste Between Consoles

If you boot without a GUI (no gnome, KDE, etc.) *and* you have a mouse-daemon, then for example you can:

- Highlight text in `tty1`
- Press `ALT-CTRL-2` to access `tty2`
- Place mouse in another file
- Press middle-mouse button to paste text from `tty1`

OOB and Serial Console Access

OOB or “Out Of Band” access:

- *Critical* for remote management of servers.
- How do you access a machine's BIOS remotely?
- How do you access RAID BIOS remotely?

In Linux tell the boot loader to pass options to the kernel. The kernel can send output to `ttys0`.

Why is this useful?...

OOB and Serial Console Access

- Use serial to ethernet converter.
- With an OOB solution connect to separate IP to view your machine's console.
- During boot you can see your machine's console using terminal software connecting to a separate IP (*user* and *password* almost always required as well).
- Set Kernel load options (for instance) in `/boot/grub/menu.lst`

OOB and Serial Console Access

Sample `/boot/grub/menu.lst` file entry:

```
title          Ubuntu 8.04.2, kernel 2.6.24-23-server
root          (hd0,0)
kernel        /vmlinuz-2.6.24-23-server root=UUID=96e73009-3bf7-421e
              -a4bc-6de1d21eaa97 ro console=ttyS0,38400n8 console=tty0
              quiet splash
initrd        /initrd.img-2.6.24-23-server
quiet
```

What does this mean?

Key option for OOB serial console access is:

```
console=ttyS0,38400n8 console=tty0
```

We'll look at an example now...

<http://128.223.157.30>