Hacking Your Portable Linux Server

Federico Lucifredi
DISCLAIMER

WHILE THE FOLLOWING WAS CONSCIENTIOUSLY RESEARCHED AND VERIFIED, NEITHER LINUX JOURNAL NOR THE AUTHOR WILL ACCEPT ANY LIABILITY IF YOU RENDER YOUR DEVICE INOPERABLE AS A RESULT OF THESE INSTRUCTIONS.

PROCEED AT YOUR OWN RISK.
ORIGINS
COMMUNITY
PROCUREMENT
THE HARDWARE
...MORSE CODE

FEDERICO LUCIFREDDI MMIX
INSIDE
(EXT-III ? USB?)
OXFORD NAS

FEDERICO LUCIFREDI MMIX
OXFORD NAS

Oxford semiconductor OXE800
ARM 926EJ-S core

VIA Cyclada Simpliphy vt6122
Gigabit Ethernet

Hynix 32Mbit DDR SDRAM

USB, SATA

FEDERICO LUCIFREDI MMIX
MICRO

Oxford semiconductor OXE800
ARM 926EJ-S core

E: DSP enhancements
J: Java extension (Jazelle)

200 MHZ, 98 bogoMIPS

serials, USB, ethernet and more
ETHERNET

FEDERICO LUCIFREDI MMIX
ETHERNET

VIA Cyclada Simpliphy vt6122
Gigabit Ethernet

“Our internal testing shows that the MyBook World’s will transfer at 24-40Mbps (3-5 MBps) on a local network. The drive does not move data quicker because that is the maximum throughput that the enclosure’s CPU can handle”--WD Support
AND THESE?
FIRST PACKETS
SETUP

BOOT WOW PARTITION
...OR CATCH DHCP ON THE FLY
...OR READ DHCP TABLES
...OR MDNS FOR _HTTP._TCP

PASSWORD SETUP

LOG IN TO WEB UI
WD SHARED STORAGE MANAGER
WEB UI

WD SHARED STORAGE MANAGER

FEDERICO LUCIFREDI MMIX
CHOOSE

RAID MODE?
DEFAULT 0 (STRIPING)
OPTION 1 (MIRRORING)

CHANGE TRIGGERS REBUILD

SYSTEM PARTITIONS MIRRORED
DON'T
VOIDING WARRANTIES
BREAKING IN

HEAD TO MARTIN HINNER’S SITE COMPOSE UPDATE URL

http://martin.hinner.info/mybook/sshaccess.php

TRIGGER Firmware UPDATE

(http://martin.hinner.info/mybook/files/latestfw.sh)
PITFALLS

MANY ROADS TO FALSE #FAIL
UPDATE WILL FAIL
UPDATE WILL SAY NOTHING

ATTEMPT SSH LOGIN
YOUR USERNAME IS UPPERCASE!

WHEN SSHD RESPONDING, SUCCESS!

FEDERICO LUCIFREDI MMIX
CONSOLE

MAKE IT PERMANENT
SU -
/ETC/INITTAB
::SYSYNIT:/UR/SBIN/SSHD

CLEANUP AND HOUSEKEEPING
/ETC/PASSWD, SHADOW, ETC
CHECK /ETC/SSHD_CONFIG
DISABLE MIONET CLEANLY
SOFTWARE
DMESG
GRAND TOUR

kernel 2.6.17.14

Samba, NFS

udhcpc, crond, syslogd, klogd, mDNSResponderPosix

SSHD, lighttpd, ntpd, (telnetd), (tftpd)
GRAND TOUR

No man pages

Busybox
ps, top, free, ifconfig, ...

wget, rsync, tload, chroot, smartctl, nhfsstone,

telnet, ssh, scp
GRAND TOUR

gcc, g++, gmake

awk

Java ME

Perl
DISCOVERY
DISCOVERY

I. BROADCAST

USE MDNS
LIMITED TO LOCAL LINK
REQUIRES NO EXTERNAL SUPPORT

HOWTO: http://primates.ximiam.com/~flucifredi/mybook_mDNS.html
DISCOVERY

II. ANNOUNCE

IM DIRECT MESSAGE
MOST VERSATILE OPTION
REQUIRES ROUTE TO SERVER

HOWTO: full writeup in Linux Journal, issue of July

FEDERICO LUCIFREDI MMIX
DISCOVERY

III. DO IT RIGHT

USE DNS UPDATE
RFC MMCXXXVI
FULL FLEDGED INTERNET NODE REQUIRES CONTROL OF YOUR DOMAIN

You now have a very portable Linux system

A very flexible, low-cost platform

Discovery problem solved in all modes

Cross compiling an option (where Perl not enough by itself :)}
CONCLUSIONS

A wondrous Hacking Platform

WD very wise in designing, later opening the system for custom use (sells more!)

Many services already HOWTO’d

Join us in finding new great uses for it!
RESOURCES

Linux Journal, July 2009

Resources section of said article!

Wikidot (http://mybookworld.wikidot.com)