

Department _____

Subject _____

Name _____

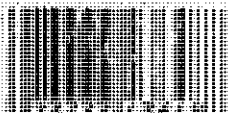
Address _____

National Brand

Computation Notebook

11 1/2" x 9 1/4", 4 x 4 Quad, 75 Gr. Lb.

43-648



73333-43648



ALERT
TO RECYCLE

Office Products
Chicago, IL 60622

evo
yes
emergency
nly
415-5280
your phone
1 bevo-pager@colorado.edu
keep it short

ATI - 530-4977

128.117.78.33

adam.atd.ucar.edu

code in /home/cuff/src/adam

Trailer
(919) 932-1415

Gordo have
499-5981

- 1) analog rate
- 2) mem leak
- 3) sonic sample drop
- 4) small packets sent to socket
better network efficiency

TIP term interface

to shut down urquell:

- 1) login (command line prompt) as root
- 2) ~~shutdown~~ ~~galt~~ ~~i~~

shutdown -galt -i
 ↓
 0

state 0 → you'll be kicking off the power
6 → reboot

/cdsi/hosts 128.117.80,83 (urquell address in FLI 2137)
78.133 (trailer)

sudo find . -name plus -print
search for "plus" from this directory
on down

Karl 801-750-9514
CSI

Karna Schafer
karna@acpub.duke.edu

Ram Oren's student
using Grant system

Duck passwords Delta18 cuff
Delta13 root

to shut the DUCK up:

shutdown -h now

russter.atd.ucar.edu
128.117.78.87

urquell as of 7/1/98
is at 128.117.80.83

/etc/vfstab - copy from urquell

9/28
OK

1/30/97

To start adam running on duck:

- 1) login to root on duck (can do this directly at from urquell)
Duck is at 128.117.78.33
- 2) cd /home/cuff/src/adam
- 3) ps ^{of these} kill any processes that are running or hung:
adam, analog, heart, rserial, src)
- 3) adam -h urquell &
Should respond with a "socket port number"

To verify data is being archived:

- 1) login to urquell (can do from DUCK rlogin -l bowling urquell)
- 2) cd /cuff/aster
source cuffenv.csh
set_project (to Possum 97)
- 3) cd /raw_data/all
- 4) use data_stats < filename to check start/end times, freq
b) could also just verify the most current data file is getting larger
- 5) cshow adam 200
shows data coming in on channel 200

If things screw up:

- 1) on urquell go to /log and look at the
files asterlog and filesaver.log

6/30/97

Problems with DUCK:

Seems to be dropping some data: data_stats < in on various data files gives same frequency near 9.8 Hz but it varies quite a bit on large data files.

Although the analog channel should be sampled at 10 Hz, it is consistently 6.25 Hz (10 Hz is specified in `lops1/channel-config`).

Duck will produce a "Wacko sample time" message in `/log/asterlog`, then disconnect. This has happened repeatedly (see next page).

Note that the asterlog file contains times in GMT and also local time. (GMT + 6 hrs)

During ~~the~~ 6/24 or so thru 6/30 and beyond we've had our servo connected, and have been reading the floating voltage on analog1.

Note the servo is serial connector #1 on the DUCK, and is channel 200 to ~~the~~ `urquell`. Subsequent channels will be 201, 202, etc.

`m urquell` → `/cuff/aster/projects/POSSUM97/scripts`

are `adam.up` (a shell script that runs when adam starts up - this starts data archiving by calling `archive-adam`).

[illegible]

This happened also on earlier days

6/30/97 10:15 - 10:25 am

Disconnected sonic & deal with analog connection box - changed sonic output from 1 to 3 analog channels

6/30/97 12:45 or so

Turned off sonic to move it - maybe 2 mins

7/1/97 8:18 am

Duck hosed at 7:50 am due to Wacko sample time, archiving stopped

at 8:18 I shut down adam from upwell and restarted

note 6.249 Hz analog } in mar 970701.000000 Still funky
9.366 Hz sonic }

7/2/97 7:47 am

Duck hosed at 7:35 (I think GMT which was 1:35 am here) again Wacko sample time

Restarted (logged in to DUCK, killed -HUP adam, sio, analog, heart, rserial, then adam-hupwell &)

new data file mar 970702.134751
seems to be running ok

7/2/97 4:15 pm - shut off the sonic for 2 seconds to move it

7/12/97

Data-stats results (freqs)

Analog

Serial

| | | | | | |
|---------|---------|-----|----|-------|------------------|
| sssf | 24568 | Jun | 18 | 16:51 | mar970618.224453 |
| sssf | 18870 | Jun | 18 | 16:54 | mar970618.225158 |
| sssf | 6478 | Jun | 18 | 16:56 | mar970618.225513 |
| sssf | 618286 | Jun | 18 | 18:00 | mar970618.225716 |
| sssf | 4645846 | Jun | 19 | 02:00 | mar970619.000000 |
| sssf | 8 | Jun | 19 | 02:00 | mar970619.080000 |
| sssf | 1107744 | Jun | 19 | 04:10 | mar970619.080001 |
| sssf | 11872 | Jun | 20 | 09:36 | mar970620.153338 |
| sssf | 4880 | Jun | 20 | 09:38 | mar970620.153718 |
| sssf | 6048 | Jun | 20 | 09:48 | mar970620.154639 |
| sssf | 298168 | Jun | 20 | 11:49 | mar970620.163253 |
| sssf | 2136 | Jun | 24 | 09:59 | mar970624.140553 |
| sssf | 2648 | Jun | 24 | 10:00 | mar970624.155919 |
| sssf | 88456 | Jun | 24 | 10:23 | mar970624.160000 |
| sssf | 11648 | Jun | 24 | 10:26 | mar970624.162353 |
| sssf | 21968 | Jun | 24 | 10:33 | mar970624.162731 |
| sssf | 506 | Jun | 24 | 10:33 | mar970624.163337 |
| sssf | 6408182 | Jun | 24 | 18:00 | mar970624.163411 |
| sssf | 6268772 | Jun | 25 | 01:25 | mar970625.000000 |
| sssf | 66398 | Jun | 27 | 13:58 | mar970627.195021 |
| visitor | 820 | Jun | 27 | 16:36 | mar970627.223615 |
| visitor | 1164304 | Jun | 27 | 18:00 | mar970627.223655 |
| visitor | 5626214 | Jun | 28 | 00:40 | mar970628.000000 |
| visitor | 5512484 | Jun | 29 | 18:00 | mar970629.174614 |
| visitor | 6800796 | Jun | 30 | 02:00 | mar970630.000000 |
| visitor | 18 | Jun | 30 | 02:00 | mar970630.080000 |
| visitor | 986304 | Jun | 30 | 03:10 | mar970630.080001 |
| visitor | 1847456 | Jun | 30 | 10:00 | mar970630.134636 |
| visitor | 6489990 | Jun | 30 | 18:00 | mar970630.160000 |
| visitor | 6615498 | Jul | 1 | 01:50 | mar970701.000000 |
| visitor | 1471724 | Jul | 1 | 10:00 | mar970701.141832 |
| visitor | 6752632 | Jul | 1 | 18:00 | mar970701.160000 |
| visitor | 6402012 | Jul | 2 | 01:35 | mar970702.000000 |
| visitor | 1944766 | Jul | 2 | 10:00 | mar970702.134751 |
| visitor | 6755252 | Jul | 2 | 18:00 | mar970702.160000 |
| visitor | 188416 | Jul | 2 | 18:13 | mar970703.000000 |

6.250

9.952

6.235

9.398

6.250

9.365

6.247

8.966

← see last page at top

6.249

9.366

6.250

9.769

6.247

9.363

6.249

9.367

6.250

9.960

6.248

9.367

GMT

7/13/97 7:52 MDT started things up again

Duck lost at 7:40 GMT, worked sample time

7/17/97 8:15 MDT same old
restarted

7/18/97 again - restarted at 7:45

7
7/9/97

Looking into serial sample dropout:

data file mar 970708.160001, w. test data

| time | 16:30 - 16:40 | 23:30 - 23:40 | |
|---------------|------------------|---------------|----------------------|
| range | .08599 to .21099 | same | |
| length | 5599 | 5632 | (# of points) |
| length > 0.11 | 826 | 807 | (# of points > 0.11) |
| % | 14.7% | 14.3% | |

Get this data from:

> fun.plot.prep()
 select a time and variable using menu
 select the browser from the second menu

in browser:

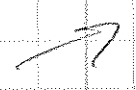
dt ← ats(diff(predata\$time), predata\$time[-1]) ← this is an ats object
 plot dt
 d ← diff(predata\$time)
 range(d)
 length(d)
 length(d[d > 0.11])
 histogram(d, nnt = 100)

predata\$time gives time that has been selected
 data data

diff gives the Δt in seconds

This means ~14% of data samples have $\Delta t > 0.11$, both near the start and near the end of the data file (ie, not related to memory leak)

7/16 20:49 - 21:56



7/9/97

This morning I called Steve Osborn at ATI to discuss these problems: 530-4977

- 1) memory leak: the adam process seems to allocate memory without freeing it up
ps -auxm shows the memory adam is using, and it continually increases until the system crashes
- 2) some samples are dropped (see last page) - this happens at roughly the same rate regardless of memory condition
- 3) analog data is sampled at 6.25 Hz and not 10 Hz
- 4) ^{small} data packets are sent across the net by the DUCK -
- Gordon would like these to be larger to increase network efficiency (43 bytes to 1024 or 4096)
DUCK other faster
this could be causing the sample dropout

He's looking into it

7/9/97 Disconnected some at 7:55 pm.
Added a new connector
Reconnected at 8:45 pm

7/10/97 Disconnected again 10:11 am } Start Lant modem installed
Back on at 11:55 or so

7/10/97 Gordon suggests to improve efficiency:

- look at tail of linked list 1st rather than head
- avoid looking at all 16 serial channels every time

7/11/97 Late in day
- rebooted (cycled power) and started everything up

7/12/97 12:26 pm - adam running, memory increasing, cshow from
 unwell looked fine but nothing was being archived
 - I ran adam.up and it's ok
 - this is not the Wacko sample time/memory leak error

7/16/97

Copied /home/cuff/src/adam to /home/cuff/src/oldadam

prior to making changes to DUCIC code

Worked with Gordon - turning off the analog PIPE (in adamserver_client.c)
 using #ifdef DO_ANALOG seems to help sample dropout tremendously and also channel coding on unwell

- there will still be a problem at midnight - the comparison
 between current time and Head→Data time just prior to
 the data write will fail

new data file reflecting above changes → mar 970716.195453

35 mins of data so far gives 7992 kg for some
 - Gordon switched this process to the background, and
 the # of allocations dropped from 56 to 6
 - I saved this as memlog 2, and restarted

new data file: Mar 970716.204904

checked at 5 till midnight GONT - things were ok,
 right at 56 allocations as expected

no obvious problems in memlog as the day changed

- data collection stopped 18 mins after midnight GONT
 at 7:55 am MDT on 7/17, the only process running
 was rserial - adam was somehow dropped

7/17/97 saved the above as memlog 3

Started things up at 3pm MDT

~~7/17/97~~

7/18/97

Checked at 8:30 am MDT

Things are running, made it past midnight just fine
data-stats looks great (9.992 Hz) since 3pm yesterday

The memory shows 111 allocations, which suggests some sample
dropping

~~not a problem~~

This occurred exactly at midnight, and new allocations
were made for 5 sec or so - some data must
be lost at midnight

About 5pm ^{MDT} or so, I disconnected the sensor from the
DUCK for some VEA tests

data file affected: mar 970719.110000

data stats gives 9.7 something here for some

7/19/97

Bugs to fix

- ~~midnight memory problems~~
- ~~linked list tail instead of head~~ ✓
- ~~only look at serial ports in use~~
- ~~other references?~~
- ~~read all available bytes~~
- ~~increased socket buffer size~~
- ~~Residual code~~
- ~~VEA ^{fine} - DUCK sync~~

Other

- serial analog inputs in serial stream
- change data file name?
- move the Sun?
- make sure the Sun operates off line
 - all mgmt, archival, SPIUS routines
- TIP
- keyboard must be attached for LINUX - Santiago
- cockpit

7/19/97

cockpit - see adam.up, uncomment the line for automatic cockpit

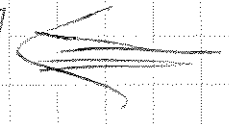
or run the script /etc/cockpit.adam

- click right button on a variable window, then run xstrip

- left button clears window (removes etchasketch background)

- time of adam is synched to urwell each time adam code is started up via GetHostDate()

adam> timeupdate -h urwell -t 3600 &



will run the time update every hour

In /home/cott/src/adam

start-adam is a csh script that:

- 1) starts up adam
- 2) does the above time command
- 3) sets up a file with adam-related process ids so the whole shebang can be killed easily

↓ done in stop-adam

stop-adam is a csh script that kills all the processes

cockpit display permissions user "aster" } Remind Gordon ?? no

adam.up → will start cover - uncomment the line need to deal with cover.config

to backup?

/home/cott/src/

In adam > tar cf adam.tar jul 19 adam } whole adam directory is stored in adam.

backed up to ^{urwell} /etc/aster/adam

~~then tar~~

7/19/97

by
DB and GM
but mostly
the fact man

Many changes made to adam code: these include:

- 1) analog process is never started - it was causing serial sample irregularity - ATI needs to fix this
- 2) new samples are inserted by first examining the linked list tail instead of the head
- 3) when data is read from a serial port, all available bytes are read, not just the first
- 4) 5 seconds of data just before midnight was never written to network - tried to fix this using `xtdiff()` but there's still a bug
- 5) Only those serial ports that are in use are examined when looking for serial data
- 6) Network packets are now closer to 4096 bytes^{or larger}, or represent 10 seconds of data if data is slow

~~Also see~~

These new
code backed up
on urquell

7) `/home/cuff/src/adam / start-adam`
`stop-adam`

Two new shell scripts - to start up the adam code, use the 1st one - it also runs `timeupdate` which syncs urquell to the adam to urquell's clock on the hour

`Stop-adam` kills all adam processes (ie, adam, sio, rserial, etc) except analog, which we're not using

Non-code changes

- 1) `serial_possession.c` was created (`/calibs`) to deal with serial analog inputs
- 2) data file name changes to pos YYYYMMDD time in archive - early

7/21/97

- checked the memlog file - 5 second problem seems to still be occurring at midnight
- I re made (Made) the code, rebooted the DUCK, changed the old memlog to memlog1

CSI
code

/cuff/aster/config - sio - converters - conversion formats to interpret serial data
sio - msg - formats

In channel config, last line specifies message format and sio converter,

in /cuff/aster/config (there is a null (aster/config) just a single spec as they have similar names)

new sio-converter → camp-2lx-8
sio-msg-formats ← camp-2lx-lr-br-7 } also changed - channel-config prepending

Serial ports A and B on Sun back

/etc tip hardware - hostname comes from /etc/remote

Shift ~~to~~ (~.) to get out

or try tip cuab (port b) } default to 9600
cuua (port a)

or tip → 9600 cuab

7/22/97

Got 2lx datalogger up
Also short haul connections

Restarted about 7:45 pm - Things should be jammed

Asked Santiago about keyboard problem - he says we should be able to fix it

for linux doc, check <http://sunsite.unc.edu/mdw/linux.html>

/usr/doc/HOWTO or the web page

8/15/93

12:35 MDT - Stopped Duck and restarted from an urquell window
to make sure things are cool

8/13/95

Spilus on URQUELL (UNRAE BOWLING)

DIDN'T RECOGNIZE BOWLING AS A USER & COULD NOT FIND PATH ??

→ FIT ABOUT 5:00 PM - COCKPIT CRASHED ⇒ NO REASON
(WAS STILL ARCHIVING DATA AT THE TIME)

SAID IT DID NOT KNOW WHERE THE WORKING DIRECTORY WAS

- LOGGED OUT AS BOWLING -

- WOULD NOT LET ME LOG BACK IN (AS ATUENP) !!

(*) FIT MAN SAYS IT IS HIS FAULT. HE & FORREST CHANGED
SOME OF NETWORKING LAST NIGHT.
SYSTEM NEEDS REBOOTING

TO REBOOT - LOG IN AS: ROOT
INIT 6

REBOOTED SYSTEM AT ABOUT 5:15 PM (HAD TO LEAVE AFTERWARD)

8/14/97

STOP & RESTARTED ADAM

→ SEEMS TO BE ARCHIVING DATA NORMALLY

(NOTE - IT GUILT ARCHIVING WHEN I REBOOTED YESTERDAY)

→ COCKPIT ALSO SEEMS TO BE WORKING FINE.

(*) Spilus (FUN.PLOT.PRIPPL) ISN'T ACCESS THE DATA - LOOKS IN
THE RIGHT FILE BUT THEN GIVES
A DIM ATTRIBUTE ERROR ⇒ ASK GORDON

8/17/97

Stopped / restarted at 8:35 am

Made some changes to ZIX rule and restarted -
order of analog data in prep has changed

old: (st), ut, dt, co₂, t, p, (h₂O)
new: (H₂O), ut, dt, co₂, t, p, (st, Plsh rel, samp rel)

note that old data will probably be read incorrectly
(sample flow and H_2O are reversed)

Aug 16 22:41 - 12 sample
22:43 - 48 12:50 - 47:00 flush
97:00

19 14:20 - 14:21

19 21:30 - 14:26:30

8/20/97

9:30 am - After changing ~~camp~~ ~~sid-msg~~ formats to deal with 8 instead of 9 data fields, I tried (as su) to use stop-adam. It didn't work, responded with a message indicating it was killing processes, but didn't list any. I killed them myself, then noticed a ton of timeupdate processes running. Left em to show Gordo, and restarted

Gordo thought this was because:

8/21/97

~ 1 pm

- 1) timeupdate doesn't do much and gets swapped out from RAM to disk
- 2) ps -ef (used in stop-adam) gives a set of parentheses for processes that are swapped out - ~~it's~~
- 3) hence stop-adam was not killing the time update processes and they stuck around each time we thought we were killing them
- 4) ps -ef was then changed to ps -e to deal with this

Stopped / restarted - no reboot

help(surf) ← reads cccar (retcdf) data

ncdump fn.nc | more

9/3/97

DUCK problems:actually
unrelated

→ Gordon changed some boot code and now
during fsck:

/dev/hda1 contains a file system with errors, check forced
Block 32895 of inode 10049 is in the inode table of group 4
... more

get a login prompt, which times out, more fsck errors,

then timeupdate: command not found,

then the alarm code starts (nbytes = ..., binary = ...)

Script to backup DUCK source code:

urgwell → Gordon did it

Ran fsck /dev/hda1 and went with the defaults -
many errors were found and fixed

boot continued

Now we'll try to get a working dump and backup the disk

Note - this occurred immediately following a DUCK crash
which happened when I turned on the CO₂ problem.
Gordo thinks there was a disk write in progress
when the crash occurred which locked the disk

/var/log/syslog huge file

2 errors

- disk errors

- network client - gordo disabled

this error - apparently it
was looking for an unnecessary
file

This file is 20MB
and shows read/write
errors that occurred
since late July -
apparently this is
a long-term problem

9/8/97

I took the DUCK to ATJ - they will replace the hard disk and install the newest version of Red Hat Linux. I told them of our deadline for the DUKE forest trip.

Gordon made a backup of /home/cuff/src/adam
(i.e., Steve Osborn's code with Gordon's fixes)
just prior to running fsck
this is in

/home/stout/mocean/cuff.tar
+f

can see the contents with > tar -tf cuff.tar

When we get the DUCK back we need to ~~include~~ restore these files

(last prior backup was 7/28/97 in /home/jurgell/caster/adam
/cuff (used to be)

9/18/97 GORDON & STEVE OSBORNE GOT THE DUCK BACK UP & RUNNING
SEEMS TO BE OPERATING FINE

9/19/97 STOPPED & RESTARTED ADAM
(MOSTLY JUST TO MAKE SURE IT WAS WORKING - EVERYTHING
SEEMS OK!)

EVERYTHING IS STILL SET UP FOR WHAT WE NEED AT DUKE

to talk to serial sensors thru DUCK: login to duck then

/usr/local/bin/kermit -l /dev/ttyR3 -b 9600 -c

to bail out

^ \ C
together

↑
depends
on serial
connection

↑
connect

9/29

Backing up the DUCK hard drive:

~~/home/cuff/backup~~ } as su on DUCK
~~/usr/local/backup~~ }
~~./backup~~

tape in urquell's drive

in /home/cuff/adm/backup
 type . /backup as su

writes a log file (same directory backup.date.log)

Backup of entire Duck ^(system too) hard drive made today
 "DUCK backup 9/29/97"

Gordo set up an urquell system backup utility
 which backs up

these directories & disks:

/, /usr, /opt, /home/urquell

TAPE IN URQUELL DRIVE

in: /home/urquell/local/adm/backup

SCRIPT CALLED: BACKUP
 TO EXECUTE: . /backup

PRINTERS:

/home/urquell/local/adm/PRINTERS

FILES
~~AD~~ IN 0
 TO BACK UP
 PRINTER -

↳ CREATES A "GHOSTSCRIPT" ⇒ WHICH CHANGE POSTSCRIPT
 FORMAT TO laserjet

TO PRINT:
lp -d *lj* filename

PRINT POSTSCRIPT file from Spws (OR AN ASCII FILE)

ps -xc => GOOD WAY TO LOOK AT WHAT'S GOING ON

GORDO ALSO FIXED MAILX SYSTEM ON URQUELL

=> DIVORCE SHOULD NOW BE COMPLETE !!

4:43 PM 9/29/97

AFTER REBOOT - ~~STOPPED~~ STOPPED & RESTARTED ADAM
& COCKPIT

SEEMS TO BE WORKING OK!!

NOTE - ONLY SONIC RUNNING IN TRAILER

- GORDO STILL WORKING ON HOW TO PARSE THE SAMPLES
COMING IN OVER IN TERSEMORE!!

to change time^{zone} on urqueell

login as root
cd /etc
vi TIMEZONE

change (TZ = US/Eastern)

works on
reboot

> date 0930/10/13 < to set date to Sep 30 16:13pm

STNPLOT()

TO SELECT SONIC BEFORE GOING INTO STNPLOT()

USE dPAR(SONIC=" ") (OLD SONIC)
"NEW" (NEW SONIC)
NULL (BOTH SONICS)

10/1/97

Gordo finished making urvell a non-networked stand alone system. I made a new backup

"Urvell backup 10/1/97 stand alone"

Restore from this disk if things crash

10/4/97

— DUKE 97 —

- could not get V axis of old sensor to calibrate
 - rec pulse is funky
 - swapping boards left the problem on V - bad X drivers?
- New sensor is ok

2:45 pm Duck started up - new sensor in place and level, connected

6:00 pm Campbell 21X5 started up - EC box turned on, then off
~~Profiler box on~~

LH, T, Rn, P not connected yet

10/5/97

9:25 am EC box connected and running
 - calibration is off as no cal gases are available yet

Profiler running but not at correct heights - pump off

9:55 am Profiler connected and running

| | |
|---------|-----------------|
| Level 1 | 1m |
| 2 | 2m |
| 3 | 4m |
| 4 | 8m |
| 5 | 16m |
| 6 | - not connected |

zero/spm
 lines are just
 sucking ambient

1/24/98

Serial channels on Duck dead -

Campbell power was off, batteries dead - Duck ok

- Charged Area code a bit, started both ^{23X up again} up again

21x seems to be spewing already

1/27/98

Setting up ruster

added some IP addresses to /etc/hosts

urquell, stout, ruster's

shutdown was trying to use

/usr/ucb/shutdown (over net or installed?)

instead of /usr/sbin/shutdown

used this one and rebooted to get networking up

upon reboot:

checking of filesystems

/dev/rdisk/c0t2dos2 → problems can't check file system
unexpected consistency, run fsck manually

| | |
|---------------------|---|
| /dev/rdisk/c0t3dos4 | } unable to repair one or more of the following filesystems |
| c0t1dos2 | |
| c0t2dos2 | |
| c0t3dos6 | |

fsck /dev/rdisk/c0t3dos0 (root)

FILE SYSTEM STATE IN SUPERBLOCK IS WRONG - FIX?

Partition Info taped to computer

NIXOPS AT CU
JOHN BEVILAGUA
492-4590
(bevo)

no @refuge.colorado.edu

russter:/dev/dsk/c0t2d0

SUN4.2G

cyl=3880+2,hd=16,sec=135

external

russter:/dev/dsk/c0t1d0

SUN2.1G

cyl=2733+2,hd=19,sec=80

there

left side from
front

russter:/dev/dsk/c0t3d0

SUN2.1G

cyl=2733+2,hd=19,sec=80

s0: / 0:41

s1: swap 41:270

s3: /var 311:203

s4: /opt 514:203

s5: /usr 717:674

s6: /usr/local 1391:1342

right
side

~~root~~ /etc/netmask sets up correct network address

newfs

128.117.80.83 → URQUELL

↑
Class A network

B
fewer hosts

.83
fewest

RUSSTER, 128.117.78.89 JP ADDRESS

825

/etc/defaultrouter

129.117.78.251

↑ top for routers

/etc/resolv.conf

changed to resolv.conf.cn (backup)

↑ changed

/etc/nsswitch.conf

defines where to go (re, thru a nameserver) to do various tasks

To add the tape drive

init 0

SCSI address 4

boot -r (boots with reconfigure)

need to move compilers over from p1tn.clarada.edu

1/27/98

Duke analog is a zombie 8:38 am

stopped / restarted adam

1/30/98

Installed Splus ver 3.4 in /usr/local/splus3.4

Ran HOSTINFO

code for server master is 4485 5858 8753 47

Splus Δ LICENSE Δ LICENSE Δ users

re. local

Splus Δ LICENSE Δ server Δ stat Δ 8

1/30/98

Rebooted the Ruster to change network box ~ 10 am

This involved screwing up the DUCK ethernet connection for ~ 1 min

Afterward, the analog process zombied

jes980130.080000 is fine
 .160000 seems ok for data rates but
 is much larger than standard
 data file size ???

Stopped, started adam ~ 10:30 seems ok

2/7/98

The /home partition on the duck is full, because
 adam.log is so big (processes all kinda hung, data lost
 - no data after 14:01 GMT)

I removed it, but had to reboot

Note - it boots DOS! You must tell it to boot Linux!

Lilo boot: Linux ← type Linux when prompted

[Adam code will start up fine, but sio immediately zombies
 - adam.log responds with PortName: no such device

Serial drivers need to be started.

~~cd /etc~~

cd /etc/rc.d
 source rc.rackit

then

/home/cuff/src/adam/start_adam

} as su

License Key for SPLUS ON RUSTER :

0527 2233 7670 7294 142

RAYMOND CHURCHFIELD (MATHSOFT)

1-800-569-0623 x274

rec3@statsci.com

NOTE IF WE CHANGE
 HOSTNAME OR IP address
 HOSTNAME MAY CHANGE
 & HOSE OUR LICENSE
 KEY !!

1/11/98 8am
Duck is dead, all serial and analog channels, apparently since 1:19 am
MST

adam.log has the message:

SIO: Signal Handler sig=13

sio process is not running - not even a zombie

stopped / restarted adam - seems ok

12:30 Shutdown DUCK, tried to
use fdisk to change
Linux to the bootable partition
didn't work
restarted

1/18/98 8 am dead duck

Nothing in adam.log

hard disk is not full

stopped, restarted, looks ok

2/23/98 Made backups of usqueell and duck

CU Distribution
2000 Central Ave
Boulder CO 80301

phone
on ID - address, insurance
contact at OR
Bob Rockes

Roadway collect ship back

Lee Jones - has not heard from Purchasing yet
- he'll be on vacation next week

Jim Wolfe - same # 286-8405 will cover for him

Sun April 19 - Tues am 21st

3/2

MC.ROCKET MOVED TO /etc/mcd/mc3.6/590ROCKET
SHOULD BOOT SERIAL ~~NEED~~ DRIVERS NOW!

~~STUCK~~

Russter

/usr/local/adm/backup

run ./backup

Made backups

3/2

Duck

same

of russter & duck

duck didn't work

4/30/98

5:20 pm MDT
- 5:30

shutdown duck to move to UPS

5/14/98

Backed up russter

/usr/local/adm/backup

./backup

~~7/18/98~~

7/2/98 Backup up russter parking lot data

3/5/98 - 6/2/98

Deleted 3/5 thru 4/14

17/98

Another backup 5/25/98 ~~6/2/98~~ - 6/17/98

includes all J tube tests J1 - J130

deleted ~~6/2/98~~ ~~6/17/98~~

4/14 - 5/24

12/22/98

8:30 am - dead duck

data-stats says it died 6/20 at 10:21

nothing in adam.log

adam processes not running - stopped, restarted

check-aster looks ok

back up 8:40 am

/home/russter/aster/log/aster.log

per trant info

6/22/98

```

Jun 20 04:00:11 russter archive[897]: Opened: ./all/iso980620.080000
Jun 20 06:26:20 russter ingest[878]: duck Polling timeout. No activity
Jun 20 06:31:20 russter ingest[878]: duck Polling timeout. No activity
Jun 20 06:41:20 russter ingest[878]: duck Polling timeout. No activity
Jun 20 06:56:20 russter ingest[878]: duck Polling timeout. No activity
Jun 20 07:16:20 russter ingest[878]: duck Polling timeout. No activity
Jun 20 07:41:20 russter ingest[878]: duck Polling timeout. No activity
Jun 20 08:11:20 russter ingest[878]: duck Polling timeout. No activity
Jun 20 08:46:20 russter ingest[878]: duck Polling timeout. No activity
Jun 20 09:26:20 russter ingest[878]: duck Polling timeout. No activity
Jun 20 10:11:20 russter ingest[878]: duck Polling timeout. No activity
Jun 20 11:01:19 russter ingest[878]: duck Polling timeout. No activity
Jun 20 11:56:19 russter ingest[878]: duck Polling timeout. No activity
Jun 20 11:56:19 russter ingest[878]: duck Ending connection
Jun 20 11:56:19 russter archive[897]: EOF received on input from duck@russter
Jun 20 11:56:19 russter archive[897]: archiving stopped for duck
Jun 20 11:56:20 russter ingest[324]: ingest [878] has exited/stopped, exit value 1
Jun 20 11:56:21 russter covar[902]: Closed nc_server connection, Id=0
Jun 22 10:40:21 russter ingest[17151]: duck Beginning connection on port 1047
Jun 22 10:40:43 russter ingest[17151]: duck STREAM socket connected to russter:4
Jun 22 10:40:43 russter archive[17163]: archiving started for duck@russter
Jun 22 10:40:43 russter covar[17168]: Opened nc_server connection, Id=0
Jun 22 10:40:44 russter ingest[17151]: duck STREAM socket connected to russter:4
Jun 22 10:40:50 russter archive[17163]: Opened: ./all/iso980622.144030
Jun 22 10:46:22 russter ingest[17151]: duck STREAM socket connected to russter:4
Jun 22 10:46:31 russter ingest[17151]: duck disconnect request from russter.4327
Jun 22 10:46:38 russter ingest[17151]: duck Disconnect from unknown caller: russ
Jun 22 10:46:48 russter ingest[17151]: duck Disconnect from unknown caller: russ
Jun 22 10:46:56 russter ingest[17151]: duck DGRAM socket connected to russter:58
Jun 22 10:47:16 russter ingest[17151]: duck DGRAM socket connected to russter:58

```

6/29/98 Dead duck, died on Sat am as before

kata-stat3 < iso 980627.0800

goes from 080000 - 11:49:32 am then dies

same stuff in aster.log

stopped/restarted adam processes

Seems to be running ok

7/1/98 Backed up urqvell using
~~thru~~ /urqvell/local/adm/backup
 this backs up /, /usr, /opt, /urqvell

To move the tape drive from russter to urqvell, remove from russter, reboot urqvell (not other power off)

1/10/98 in Oak Ridge - Splus was hosed

"System termination License feature 00"

to fix, as superuser run

~~/usr/local/splus~~

/usr/local/bin/Splus LICENSE install

enter the license key on pg 59 of this book

then check

/usr/local/splus3.4/adm/lic/keys/00.lic

this file should include license info in it

to use make or netcope on urqvell:

urqvell > xhost +stout

stout > setenv DISPLAY urqvell:0.0

2/98 Sun Warranty info (Urquell CPU fan)

1-800-USA4SUN (872-4786)

Urquell serial # is 647F05FE

Jeff Fox UnixOps 2-3874

We should have a hardware maintenance contract thru ITS

jufox@colorado.edu

machine name, serial number, problem, contact (me)

Orey Gartner UnixOps 2-4532

will set up networking

One-time support is 75⁰⁰/hr

can get full support for 125⁰⁰/mo which includes security

become superuser
su -

shut down printing system
cd /etc/rc2.d
./S80lp stop

start it back up
./S80lp start

delete color3
lpadmin -x color3

reinstall color3 -u
lpadmin -p color3 ~~to~~ printserver -I any

enable it for printing
accept color3
enable color3

/usr/ucb/lprm -P color3 username } ~~specifies~~ dequeues any jobs in printer by this user

lpstat -t

use
cancel
not
lprm

8/10/98 Gordon just revamped russter with a new aster tree
He first backup up the old tree (with important
Walker Branch files)

in /home/russter/aster.980806.tar.gz

It's compressed, so first unzip -

gunzip -c aster.980806.tar.gz | tar tf -

to look at the names in the file

Then to extract:

~~gunzip -c aster.980806.tar.gz | tar xf -~~

within
directory you
want to
put the
files

{ gunzip -c /home/russter/aster.980806.tar.gz |
tar xf - aster/apps/sfun/ISOTOPE98 }

This creates the same directory hierarchy
below your current location which is a problem
but extracts exactly what's necessary

I restored all the splus files that had been in

aster/apps/sfun/ISOTOPE98/*.*

to the new sfun directory:

/home/russter/aster/isft/src/sfun/ISOTOPE98

FULL TAPE BACKUP FOR RUSSTER

67

with new aster tree

8/10/98

On Russter:

/usr/local/adm/backup/backup run as supervisor

backs up

/, /usr, /var, /opt, /usr/local, /home

but not /data

See pg 58 for info on how to connect tape drive to russter.

New aster tree changed, so to get cd ease:

in .cshrc, change

set cdpath = (\$cdpath \$ASTER \$ASTER/apps)

— — — (to — — — — — /isff/src)

This allows cd sfm to be shorthand for the longer one

Old makefiles (ie, in sfm/ISOIMAGE) need to be updated as well

Add the lines:

PROJECTROOT = \$(ASTER)

DATA DIR = \$(PROJECTROOT)/isff/.Data/\$(PROJECT)

← this is actually a mod to an existing line in Makefile

To add a new project to master (new tree)

1) 3 ~~data~~ directories need to be created

~~/usr/local/~~
~~/home/master/~~ /usr/projects/NEWPROJECT

/isff/src/sfn/~~DATA~~ NEWPROJECT

/isff/Data/NEWPROJECT

also
 /data/NEWPROJECT /raw_data/all
 /results/cover
 /data/projects/NEWPROJECT /raw_data/all
 /results/cover

2) subdirectories for ~~each~~ 1st one

/projects/NEWPROJECT / cpl
 / doc

/ scripts

~~/ raw_data/all~~ raw data
~~/ results/cover~~

3) in /cpl, copy
 prep.config
 channel.config
 covar.config
 archive.config

from another project

and set them up as you need

4) in /sfn/NEWPROJECT

copy a Makefile and appropriate *.g files to use in
 SPlus

the makefile will need to be edited

5) change .cshrc default projects, cdpath, etc
 for users who want it

6) ask Gordo how to set up ingester and archiver
 and get them running

Inside Out Networks RS232 DB9 Diagnostics Loop-back plug for Edgeport/2,4,8.

RTS to CTS,RI (Pin 7,8,9)
DTR to DSR,CD (Pin 1,4,6)
TXD to RXD (Pin 2,3)

RS232 DB9 Connector

| DB-9M | Function | Abbreviation |
|--------|---------------------|-----------------|
| Pin #1 | Data Carrier Detect | CD |
| Pin #2 | Receive Data | RD or RX or RXD |
| Pin #3 | Transmitted Data | TD or TX or TXD |
| Pin #4 | Data Terminal Ready | DTR |
| Pin #5 | Signal Ground | GND |
| Pin #6 | Data Set Ready | DSR |
| Pin #7 | Request To Send | RTS |
| Pin #8 | Clear To Send | CTS |
| Pin #9 | Ring Indicator | RI |

Inside Out Networks RS422 DB9 Diagnostics Loop-back plug for Edgeport/2i,4i,8i.

T+ to R+ (Pin 7,4)
T- to R- (Pin 3,8)

Too add users

- 1) become su
- 2) run admin tool

sshd secure shell nqwell

ps -ef | grep sshd is it running

other variables - if they work, maybe calibration routine is
needed

calib

/nqwell/aster/projects/ISOTOPE98/raw-data/all

/data/projects/ISOTOPE98/raw-data/all

/dev/ist2

/dev/nrmto0 mica

/dev/nrmto

aster free 1 G16

/data

gnuc, Sun^C compiler, C++, SPlus
egcs
new one

TCP wrappers } security stuff
ssh

backup files

docs.sun.com } sysadmin stuff (answer book)

198.11.18.n

MRS network

dcomm@spot

1/27/98

Rosster and urquell have been revamped as
CO systems

Both are under full support with UnixOps

John Bevilacqua 492-4590

and this costs \$12500/mo for each machine

This will be charged to 1533377 until we ask them
to stop.

Urquell is at 128.138.220.165

We retain root access to russter - password is upyawns

We don't have root access to urgrell but I am in the sudo file.

Russter needs a 2nd ethernet card to safeguard the DUCK.
Bevo will get one.

From Karin.Berglund@Colorado.EDU Thu Aug 27 10:29:59 1998
Date: Fri, 21 Aug 1998 11:50:40 -0600 (MDT)
From: Karin Berglund <Karin.Berglund@Colorado.EDU>
To: BOWLING DAVID R <bowling@rintintin.Colorado.EDU>
Subject: Re: Splus renewal notification

Just got word from Denise that you can edit a file named SERIAL in your top level splus directory. So set it to SP06637 on russter so both your machines have the same serial number. Cost has gone down to \$425 per machine by the way.

Once you have done this could you send me a mail message with the following for both of your machines? I know some I have but this will but it all in one email. I will ask the other license owners also and then request the new license keys once the PO has been sent in.

hostname
Splus SERIAL
HOSTINFO

Thanks.

HOSTINFO:
russter code for server 9485 5858 8753 47
hostid 808e60e1 (for system)
splus serial SP05212

old

to boot russter
sys-unconfig

Power up disk/peripherals first

Plug into

Prompt for hostname russter

IP address

Name service - other

Yes - part of a subnet

Netmask 255.255.255.0
firewall, etc

time \pm a few mins is ok

Root password

9/2/98 Urquell installed spls in /usr/local/spls3.4

Code for server urquell is 6414 5855 609081

Russter same

code for Russter 9485 5858 8753 47

I used the same license key as before (pg 59)

Serial # is SP06637

Changing Aster stuff:

Currently 3 processes adamsver
 ingest
 ncsrvr

run on ncsrvr and probably urquell upon startup, ~~under~~ user aturnip.
 The 1st 2 are needed to collect data (ie, urquell doesn't need em).
 The 3rd makes netcdf files which are owned by aturnip.

aturnip's .login file is sourced upon starting the aster software to
 set PATH, PROJECT, and ASTER environment variables.

The ingest process is owned by user root upon startup briefly
 to set real time priority

We should 1) make this happen under user aster instead
 2) move aster tree to /usr/local
 3) make an aster group

use ssh instead of rlogin
 scp instead of rcp (remote copy similar to ftp)

Finally got SPlus keys for both machines, installed with 9/8/98
 CU serial #s

| host | urquell | ncsrvr |
|--------------|-------------------|-------------------|
| hostid | 8080d5a8 | 808e60e1 |
| SPlus SERIAL | SP06637 | SP06637 |
| HOSTINFO | 6414 5855 6090 81 | 9485 5858 8753 47 |
| expires | Oct 31 98 | Oct 31 98 |

license key
 (from shotsci)

8522 2084 3670 7294 142

see pg 59 for ncsrvr's key

gate

[Handwritten signature]

2-0580

quacker

~~duck~~

10.0.0.2

russter-gw

10.00.1

7 small net
duck - russter

Coax (the net) is primary ethernet interface (1e1)

Duck is now called quacker

[illegible]

network

↑ eth0 name of ethernet device

To get IP address on Duck to work until we can change it for good

as
out on
command
line

```
[ ifconfig eth0 10.0.0.2 netmask 255.0.0.0 broadcast 10.255.255.255  
- trailers up
```

This will save until next reboot

netstat -rn shows the routing table currently in use

to
add
default
router

```
route add -net 10.0.0.0 gw 10.0.0.2
route add default gw 10.0.0.1
netstat -rn
```

last line of routing table should be

0.0.0.0 10.0.0.1 0.0.0.0, 16 1500 0 0 eth0
(default)

L1 A

ok → sync

L1 A

ok → boot -s (single user mode) no networking

root password

remove ~~/etc/hostname.leo~~ ← one line, router-gw

reboot

Duck ethernet card

3Com EtherLink III
SN = 6BZ27FAP1

1994

3C509B-C

no jumpers obvious on the card

route a.

inethd

in.routed
rdrsc

sudo in.routed

sudo route add ^{net} default 198.11.18.1 Δ1 ← gets it up

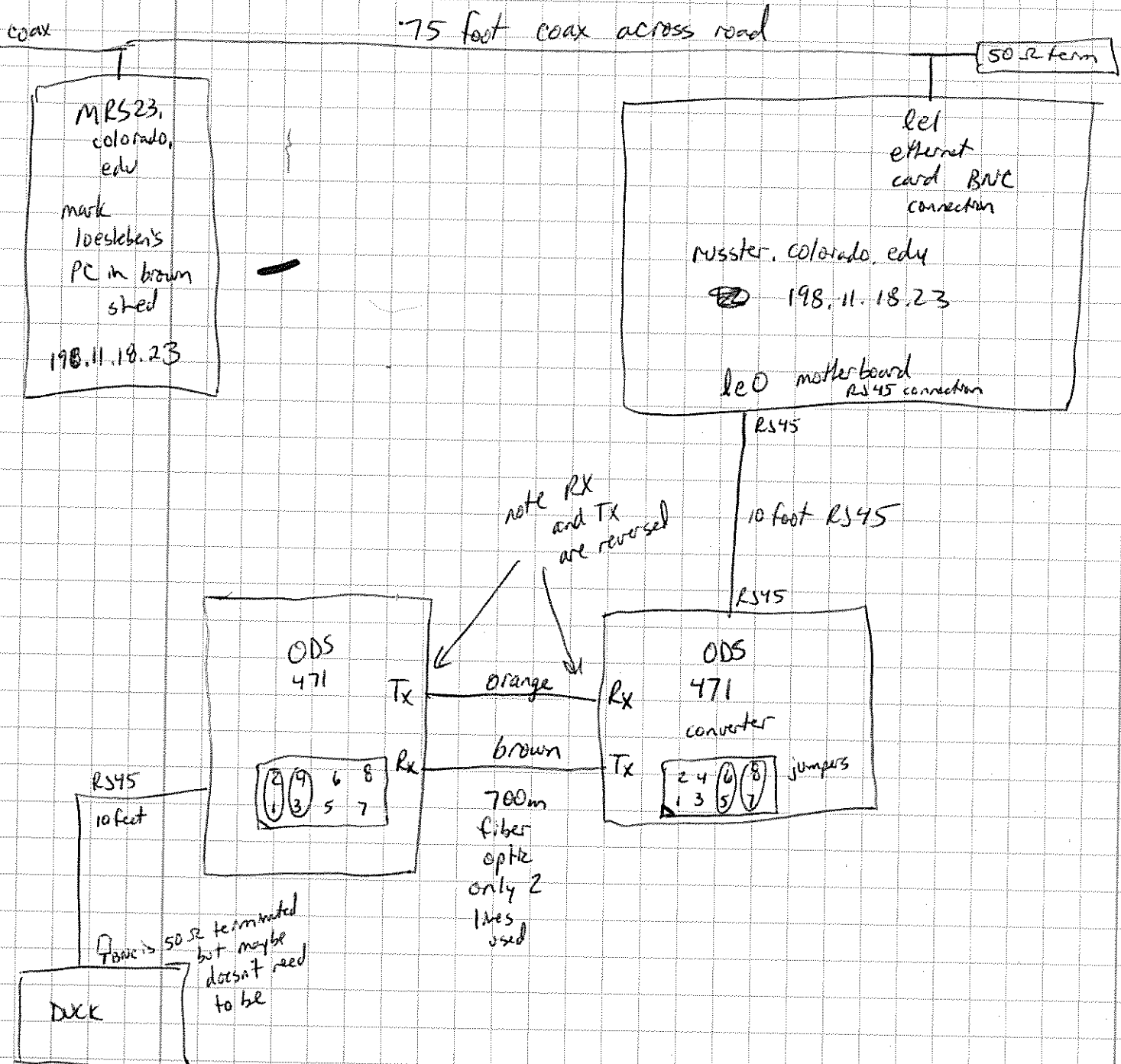
make a file called /etc/defaultrouter

contents 198.11.18.1

9/10/98

Installed russter at the site

Got fiber optic connection to DUCK working



Things I had to fix/change to get DUCK networked correctly

- 1) Original changes with bevo such as `/etc/hosts`
`/etc/sysconfig/network`
`/network-scripts/ifcfg-eth0`
- 2) Correct jumpers in fiber optic boxes (at left)
- 3) Software configured the 3Com ethernet card to use RS45 port
- 4) Deleted old version of `ifcfg-eth0.old` which I'd saved just in case

11/13/98 DUCK HAS BEEN SHOT DOWN SEVERAL TIMES OVER THE PAST TWO & 1/2 WEEKS. LOOKS LIKE POWER OUTAGES OR GLITCHES AS OF 2:30 PM ON 11/12 BOTH THE DUCK & THE EC 6262 ARE RUNNING OFF SEPARATE UPSs.

Nov. 1999
(*) FROM 11/13 → JAN. 20: DUCK WENT DOWN 2 OR 3 TIMES. ALL OF THESE WERE DUE TO POWER OUTAGES. THE DUCK HAS ALWAYS REBOOTED ITSELF!
I HAVE ALSO BEEN ABLE TO RESTART DATA FROM BOULDER

1/99 NEW MACHINE: SPARC5 → SPECIALK

FEW OTHER COMMANDS

`suoc adduser` (ON URQUELL)
(XUSER)

Bevo SET UP A BACKUP SYSTEM FOR US.

→ FROM MUSBTER - DATA FILES & COVARS DATA ARE MIRRORED EACH NIGHT DOWN TO URQUELL

SCRIPT (ON MUSBTER) `/usr/local/etc/dailydlist`

⇒ ONCE A WEEK, DUMPS DATA TO TAPE

TO DUMP A DIRECTORY: `tar cv all` (TO CREATE TAPE)

`xv` (TO EXTRACT)

11/10/99 \Rightarrow UNIXOPS INADVERTENTLY CHANGED ROOT PASSWORD ON MUSTER
 \Rightarrow I HAVE NOW CHANGED IT AGAIN.

NEW ~~ROOT~~ PASSWORD FOR MUSTER: buttflux

DUCK PASSWORD - STILL YAKIN-99
 DUCK CURE ACCOUNT IS buttflux

12/12/99 - DUCK QUIT LOGGING DATA AT 11:53

12/13/99 - QUACKER IS ALIVE BUT IT REFUSES CONNECTION
 (NO PASSWORD PROMPT)

TOOK MONITOR HOOKED DIRECTLY TO DUCK
 - LIST OF ERRORS -

hda: STATUS ERROR: ERROR=0x10 {sector ID NOT FOUND}
 LBA SECT=154757, SECTOR=49860

hda: DRIVE NOT READY FOR COMMAND

hda: read_intr: STATUS=0xd1 {BUSY}

ide0: RESET: SUCCESS

hda (same message)

end-request I/O error, dev 03:03, sector 49860

hda: STATUS ERROR STATUS 0x59 {DRIVE Ready Seek Complete
 DATA Request Error}

hda: STATUS ERROR: ERROR=0x10 {sector ID NOT FOUND}

LBA SECT=154755, SECTOR=49860

hda: DRIVE NOT READY FOR COMMAND

end-request: I/O error, dev 03:03, sector 49860

hda: UNEXPECTED - intr: STATUS=0x59 {DRIVE Ready
 Seek Complete DATA REQUEST ERROR}

"

"

"

error=0x10 (sector ID NOT FOUND)

LBA SECT=154757

WOULD NOT GIVE ME A LOGIN PROMPT!

→ CYCLED POWER & DUCK REBOOTED OK

LOGGED IN AS BOTH CURE & ROOT
SHUTDOWN THE DUCK NICELY & RESTARTED AGAIN

→ RESTARTED THE DATA COLLECTION ~12:17 PM

⊗ EVERYTHING LOOKS OK W/ DUCK + MUSSTER.

TURNED OFF FAN IN DUCK (TOO COLD??)

⊗ SHOULD E-MAIL GORDO - SEE IF HE HAS
ANY SUGGESTIONS!

→ NO - PROBABLY AN ERROR READING THE HARD DRIVE.

1/4/00

CHECKED DATA AT ~ 6:20 PM -

LOGGED ONTO MUSSTER - THEN TO QUACKER.

~~SEEN~~ DATA WAS RUNNING FINE - STOPPED DATA (TO START AGAIN)
& SCREEN LOCKED UP -

COULD PING MUSSTER BUT COULD NOT LOG IN

1/5/00 AT CI ⇒ MUSSTER WAS NOT GIVING ME A LOGIN SCREEN
RECYCLED POWER & REBOOTED MUSSTER.

SEEMED TO BOOT OK; ONCE REBOOTED - LOGGED INTO
QUACKER - THE QUACKER HAD NO PROBLEMS ⇒ APPARENTLY
MUSSTER LOCKED UP = NOT THE QUACKER!!

1/5-1/6/00
⇒

DISCOVERED PREP QUIRK ON UNCLELL

PREP WASN'T WORKING FOR DEC. DATA (BOTH IN MY FUNCTIONS & FUN.PLOT.PREP,
EVEN THOUGH IT HAD WORKED BEFORE XMAS. BY DUMB LUCK I
DISCOVERED THAT IF I REMOVED THE DEC. 31ST DATA FROM THE
DIRECTORY - PREP WORKED FINE. (???)

⇒ ALSO NO SIMILAR PROBLEM ON MUSSTER !! ⇒ CALL GORDO

1/10/00 Prep HAS some problems w/ Y2K on urquell
 - Gordon put on new updated ASTER software

⊗ THIS NEEDS UPDATED C++ COMPILERS (GNU)
 Gordon got these on as well - CONTACTED UNIKOPS
 & HAD ~~urquell~~ + MUSTER TAKEN OFF THE NIGHTLY
 DISTRIBUTION LIST FOR THE ENTIRE GNU PACKAGE
 (TOOK A NIGHT OR SO TO GET IT RIGHT)

⊗ OLD ASTER CODE IS IN /usr/local/aster.OLD

- STILL CONTINUING IN NINET project

→ IF CU DISTRIBS UPDATES THEIR COMPILERS - NEED TO
 BE PUT BACK ON DISTRIBUTION LIST!

1/26/00 LEVEL 0 BACKUP OF URQUELL

⊗ BACKUP SCRIPT IS:
 /usr/local/adm/backup/backup

RUN AS "SUDO"

⊗ SHOULD DO THIS FOR MUSTER ONCE WE SWITCH
 TO NEW ASTER ON MUSTER!

2/15/00

MAKING UP A SPARE hard drive for guacker

USE DISK DRUID FOR PARTITIONING

| | NAME | SIZE | USED | SPACE |
|-------------------|------------|--------|-----------------|-------|
| hda1 | / | 60 MB | 20 MB | |
| hda 6 | /home | 100 MB | 5 MB | |
| hda 11 | /tmp | 15 MB | — | |
| hda 5 | /usr | 200 MB | 131 MB | |
| hda 7 | /usr/local | 50 MB | — | |
| hda 10 | /usr/src | 20 MB | — | |
| (from fdisk) hda8 | SWAP | 24 MB | | |
| hda9 | dos | 20 MB | | |
| hda11 | | | | |
| hda11 | | | | |
| hda2 | EXTENDED | 467 | (TOTAL SPACE??) | |

fdisk -l => gives disk PARTITIONS

1K BLOCKS df -k (BLOCKS LISTED IN KB)

(X) COULD NOT CONFIGURE NETWORKING SINCE I DO NOT HAVE A NETWORK/ETHERNET CARD FOR THIS PC.

=> NO HOSTNAME AT PRESENT

net: passwd: butterfly

cure: passwd: atunnip

3/6/00

RUSSTEROLD ASTER - cd /... - ASTER/000306

MARCH 06

NEW aster software put on russter by gordon

2/12/01 Backing up rustler to urquell's tape drive

command:

sudo /etc/rdump/ Of urquell's/dev/rmt/0n
 /usr => 2:00
 / => 3:00
 /var => 3:03
 /opt => 3:08
 /usr/local => 3:15
 /home => 9:48 (next day on 2/13/01)

partition
↓
To Back up

2/26/01 Overnight ingest quit RUNNING - Not sure why

aster-log reports ~

FEB 25, 21:47:32 APCUCLUX-102-2-2-71 [8413] Unable to
 determine arlats number, ingest terminating

⊗ Although logs like Data continued several
 hours after this.

Last file updated at Feb 26 5:11

Stopped/Restarted guster & archiving started again
 (took longer than usual to restart - I think)
 Connections - look normal

To find: aster-log & mc-servers.log

cd /var/log/local/ and rustler

Note - cd log is a defunct shortcut.

2/28/01 New Drive in Trgwell - Replaced 2GB internal drive
w/ 36Gig drive
was: /usr/local
now /usr/local (4Gig)
/data2 (30Gig)
seems to be working fine

7/3/02 DUCK DIED AT 5:30 AM

Has quit unexpected a few other times as well => was always able
to restart over network

However this time - was off network

- Hooked up monitor => system was locked up
Restarted & found errors on hard drive => would only boot up
in root for troubleshooting

Brought hard drive down to campus & hooked up in old Pentium
same errors -
w/ Gordon

To find hard drive "map" => more /etc/fstab
(File system table)

| | | | |
|------------|-------------|-----------|------|
| /dev/hda3 | / | 29% full | |
| /dev/hda6 | /home | 100% full | 313K |
| /dev/hda7 | /tmp | 0% | |
| /dev/hda5 | /usr | 28% full | 127K |
| /dev/hda9 | /usr/local | 0% | |
| /dev/hda8 | /usr/src | 0% | |
| /dev/hda2 | swap | | |
| /dev/fd0 | /mnt/floppy | | |
| /dev/cdrom | /mnt/cdrom | | |
| none | /proc | | |

Ran fsck on /dev/hda6 → + the rest
found ~4 errors on /dev/hda6 (which becomes /home)

Rest were clean - ⇒ mounted manually
THEN BOOTED UP FINE -
mount /dev/hda#
or
"umount" to UNMOUNT

- Put back in quacker -

Still no data ⇒

look at /var/log/messages

⇒ previously it gave hda read errors

⇒ THIS TIME IN gave error in Rocketport cards
couldn't find

Rocketport controller #0

(usually has 3 lines of commands in messages)

usual [Rocketport device driver module, version 1.2
" controller #0 found at 0x180, 1 AIOPS
" " #1 " " 0x100, 1 AIOPS

now ⇒ leaves out controller #0

controller #0 ⇒ runs serial input channels 1-78
" #1 ⇒ " " " " 9-16

Retightened boards & cables, ^{etc.} on Rocketports
(of course - lost ethernet connection)

↳ had to reboot & reattach ethernet

OTHER logs to
check

/home/cuff/sec/adam/adam.log THEN DUCK started up OK

OTHER hda errors ⇒ June 28 11:42
July 2 4:21, 14:11

7/12/02

Duck quit archiving again - but still on network

when stopping data - gave a "can't write to disk" error
no hda errors in /var/log/messages
only eth0 timed out messages
(should check ruster for error messages)

Also noted THAT /home on Duck was 100% full

Files to ditch: /home/cuff/adam.tar (backup file)
 backup_cuff.tar.gz → made w/
 Gordon on Jan 31
 2002

Also adam.log is huge!
 → Deleted

④ NOTE @vacker backup file is in my home directory
~~/home/staff/~~ or /usr
 /home/staff/aturnip/backup_cuff.tar.gz
 (also a copy w/ .gz)

Had to reboot Duck before it recognized
 THAT /home was not full

→

stop-adam
 write error
 No space left on device

For Duck replacement -

www.ionetworks.com

Edgeport serial converters

Edgeport/8

USB → RS-232

Part #
 301-1002-08

Have Linux drivers
 (& windows)

~~1/3/02~~

~~1/3/02~~ Duck quit logging data - ~5:00 AM
 /var/log/messages showed several
 - eth0 timed out -
 looks like it lost network connection
 adam processes still running (killed using
 -/stop-adam)

Already
 written

Stopped & restarted data remotely -

gave => can't write to file error
using df-k => /home was 100% full

7/15/02 Duck still chugging along

=> However in late afternoon - could ping guacker
but could not log in - looks ominous

7/16/02 - Data stopped at ~ 3:00 AM
OFF network -

At Tower - gave messages to screen
lots of eth0 timed out
(Again - loss of network??)

=> lead to hard boot - while power was
off - replaced ADS transceiver
AND reconnected RJ45 connector - tried to
make sure ethernet card was in tight.
THEN rebooted

- Everything booted up OK - DATA started
~~Notes~~ NO errors w/ Rocketport cards etc.

- Note => df-k shows /home
only 1% full
~~#~~ / & /usr are the same as before

However - all the files seem to be there.

Re. IF I remember right /home should be
pretty empty - but not at 1%!!

If locked up: x11 \Rightarrow ctrl-alt-F1 $\xrightarrow{\text{get to}}$ ALT-F1 \Rightarrow Text window

Hold DOWN \uparrow Sys Rq / Print Screen

ALT - Sys-Rq - 5

4

B

\Rightarrow sync of the disks

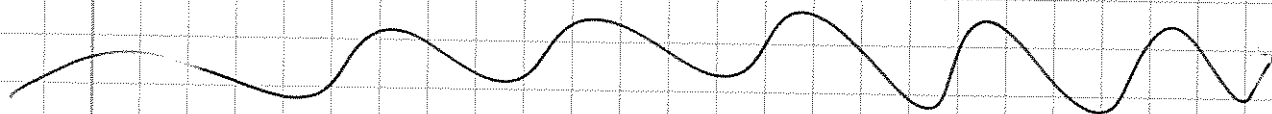
\Rightarrow unmounts disk

\Rightarrow Boots

\ll Disconnect some short hauls \Rightarrow Running 1 channel

\ll Rebuild the kernel \Rightarrow

Boom } RENCIA



Set up - channel 200 // ^{new is 2 (Port 1)} USB tty0 \Rightarrow Serial port on laptop
channel 201 // USB tty1
Port 2

Voltages - RS232 \rightarrow +7 VDC

on guacker

vi -sio-c

look for port name (NUMPORTS
char

tty 50

USB0

\downarrow
7

need to change tty USB0 \Rightarrow to tty 50

comment /*

compile
THEN
make - stop/start

timeupdate.c

THE saga of switching over to the new quacker

Starting between July 31 - Aug. 3

New quacker: ATD Panasonic laptop
 Running Red Hat Linux 7.0
 adam code is in : /usr/local/cupE/src/adam
 User: pam
 Password: bearbait
 Root Pd: BearBait

Serial Inputs: 50 \Rightarrow Back of laptop
 USB0 \rightarrow USB7 \Rightarrow Edgeport/8 (IONetworks)
 (*) Note - Driver is built into latest Linux !!
USB \rightarrow 8 serial port hub

ON 8/5/02 \Rightarrow Had new quacker running w/
 channels 200 \rightarrow 206
 channel 200 \Rightarrow coming in at 9.3 Hz \Rightarrow seems to
 be missing some samples

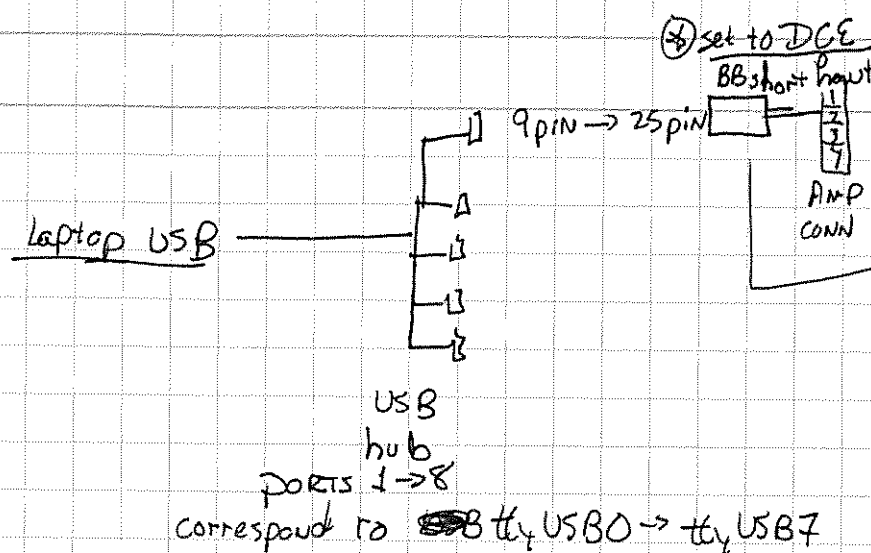
Gordon has rserial working
 from ruster: rserial quacker 200 (ch.#)
 can see real time output from channel (either
 Ascii or hex)

~~8/20/02~~ DATA lines ARE still thru short haul modems
 (Black box)

Important 25 \rightarrow 9 pin connectors must have
 following conversions to work

| 25pin | | 9pin |
|-------|---------------|------|
| 2 | \rightarrow | 3 |
| 3 | \rightarrow | 2 |
| 7 | \rightarrow | 5 |
| 20 | \rightarrow | 1 |

short hauls ARE getting powered via hub via
 laptop



IP address of quacker 10.0.0.1

8/5/02 - 8/20/02 New quacker ran fine

8/20/02 Hooked up Jeiluns Temp. array (CR23x logger) to channel 207
only ran at ~ 0.9 Hz (not 1 Hz)

rserial showed it "missing" some bits within a line of data.
Results - gives big spikes in data; messes up all data after a bit is missed. & T12 has a lot more spikes than T1 (gets progressively worse)
- Also screws up covers averages

⊗ Note - This logger doesn't use short haul modems
 ~ 40 ft serial cable is used.

8/22/02 Channel 204 suddenly starting missing data bits
(just like channel 207)

8/28/02 - Found channel 204 had a bad short haul modem
(by switching lines w/ channel 206)
- Also - switched out ATI sonic w/ Alex's - that channel began operating at 10 Hz.

8/28-9/3 3 quirks: (1) cockpit keeps giving black screen of death (??)
(2) channel 206 kept going in & out/ran fine when operating
(3) Jeilun's logger still missing samples

9/3/02 To try & fix cockpit - 1) rebooted russter
2) rebooted quacker (over net)

⇒ quacker never came back up !!

9/4/02 quacker was locked up
- had to hard boot - came up w/ file errors
- When rebooted - missing data on all channels !!

9/4 → 9/6 Tried several reboots & combinations of data

⇒ Turned out that you could run channel into laptop serial port & it worked fine.
Would miss data going through USB hub

⚡ Could also use wave form scope to see irregular pulses. However short hauls seemed to be getting proper power.

on 9/6 ⇒ left only 2 channels running
channel 201 ⇒ flux data
through serial port
channel 203 ⇒ profiler
THRU USB hub

To change serial ports ⇒ Edit `sl0.c`
tty USB0 → 7 USB hub
tty 50 serial port
⇒ Note: remember to Recompile (Make)
& THEN restart data

9/9 Working on it again - Changing short hauls & channels etc.
No real effect
Left w/ 3 channels running
201 (serial port), 203 & 205

Also - found. timeupdate had not been working in August. Clocks not synchronized - probably ~ 2 min. off by end of August

9/12 w/ Gordon
hooked up new self-powered short haul
on channel 204 // turned off ATI sonic, channel 200

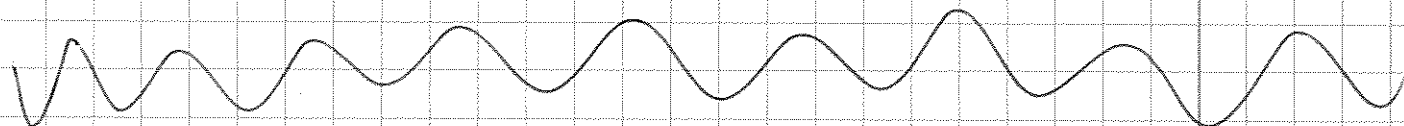
Suddenly everything seemed to work
except channel 207 (channel w/ no short hauls)

Think maybe - USB hub just not getting quite enough power??

9/19 In attempt to switch some channels around,
quacker shut down when data was stopped
(???)

when rebooted - missing data on most channels
again. Chan. 204 (w/ powered short haul) is the
worst. 1 Hz channels running at ~0.97 Hz.

→ Channel 207 running cleanly for 1st time - Go figure!?!?



DATA LOG for Aug. - Sept. - when things were on/off or running weird.

| DATE | Channels | 200 | 201 | 202 | 203 | 204 | 205 | 206 | 207 |
|-----------|---------------------------------------|-----------|-----|-----|-----|------|-----|------------------------|---------|
| Aug 1 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | off |
| Aug 2 | | 9.1 Hz | ✓ | off | ✓ | off | ✓ | off | off |
| Aug 5 | | 9.5 Hz | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | off |
| Aug 15 | Time sign. = 1 min off (10:01 file) | | | | | | | | |
| Aug 20 | | 9.2 Hz | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 0.94 Hz |
| Aug 22 | 160000 file | 9.2 Hz | ✓ | ✓ | ✓ | 9 Hz | ✓ | ✓ | 0.94 Hz |
| Aug 26 | 221013 file | 9.2 Hz | ✓ | ✓ | ✓ | 9 Hz | ✓ | ✓ | off |
| Aug 27 | 220846 file | 9.1 | ✓ | ✓ | ✓ | 8 Hz | ✓ | ✓ | 0.992 |
| Aug 28 | Switching around channels on this day | | | | | | | | |
| Aug 29 | 222710 file | ✓ (w/ATI) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 0.97 |
| Aug 29 | Time sign. = 2 min off (21:01 file) | | | | | | | | |
| Aug 29-31 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | INTERMITTENT on/off | 0.92 Hz |

September (continued from last page)

| DATE | CHANNEL | 200 | 201 | 202 | 203 | 204 | 205 | 206 | 207 |
|--------------------------|--|------|------------------|----------------|-------|-----|------|-----------|---------|
| Sept. 3 (Shutdown 14:11) | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | off | 0.93 Hz |
| Sept. 4 | 10:12 | ✓ | 7.4 Hz | 0.94 | 0.96 | 9.5 | 0.96 | 9.6 | 0.91 |
| | 12:45 | 8.9 | 9.3 | 0.96 | 0.98 | 9.5 | 0.82 | off | off |
| | 14:30 | ✓ | 8.97 | 0.97 | off | off | 0.97 | off | off |
| | 18:02 | 9.66 | 8.18 | 0.94 | 0.91 | off | 0.81 | off | off |
| THRU Sept. 5 | | | ✓ | | | | | | |
| Sept. 6 (13:21) | | 9.4 | 12:10 | off | 0.987 | off | off | off | off |
| | ↳ crazy till 16:03 | | ✓ | | ✓ | | | | |
| | off | | ✓ | off | ✓ | off | off | off | off |
| | ↓ | | | | | | | | |
| | Till Sept. 9, 16:00 ⇒ screwing around from 12:15 → 15:45 | | | | | | | | |
| | off | | ✓ | off | 0.94 | 8.9 | ✓ | no longer | off |
| Sept. 12 | 12-14:10 | off | ✓ | ✓ | ✓ | ✓ | ✓ | — | off |
| | | off | ✓ | ✓ | ✓ | ✓ | ✓ | — | 0.93 |
| Sept. 19 | 13:49-14:17 | off | ✓ | 0.96 | 0.98 | 9.2 | 0.92 | — | 1.00 |

data1

more

data2/Dorman Raw archive/CR23x/2002/x.c/
d/

For incorrectly sampled data - must do 2 things

- ① No longer trust covers data
- ② Apply filter to data to get rid of spikes

For ① => wrote 2 new functions

`find.loggers` => Replaces `find.data`
`find.profile`
`find.wind.profile`
`rawmet.data` => Replaces `met.data`

`find.loggers` just finds if logger is giving data - no crude filters
`rawmet.data` - uses raw & Hz data to get met parameters

⊛ Also updated `read.func.g` to use the met data generated by either `met.data` or `rawmet.data`

For ②

② Wrote a Filtering Function - (subroutine)

- a) First decides if signal should have a zero or max & cuts out all pts not within $0 \rightarrow \text{MAX}$
- b) Has broad cutoff around the median
- c) Has 2nd cutoff based on std deviation
~~usually~~ defined as $\text{MULT} \times \sigma$
- d) ~~firstly~~ ~~reps~~ At each step - spikes are turned into NA. At end NAs are replaced w/ previous non-NA value

Status lines turn out to be a bit special

⊛ Wrote separate subroutine function

⊛

Profiler: Divides status by 1000

IF `as.integer(status) = status` => Keep the data

IF status should equal 5000 - tends to give -2144 (don't know why)
 ↳ convert these to 5000 first!

EC system - same thing except divide by 500

500 gets reported as -2300 (why??)
 must convert these.

Each variable our loggers have Different parameters
Describing the Filter \Rightarrow summarized in Table below

| channel | DiD | FILTER | CUT | MULTI | ZERO | MAX | max allowed |
|---------|--------------|-------------------------------|---------------|-------|--------------|-----|----------------|
| 202 | Udir26 | N | 500 | 4 | Y | Y | 360 |
| | Udir16 | Y | 500 | 4 | Y | Y | 360 |
| | Udir9 | Y | 500 | 4 | Y | Y | 360 |
| | U25 | Y | 15 | 4 | Y | N | |
| | U16 | Y | 15 | 4 | Y | N | |
| | U9 | Y | 10 | 4 | Y | N | |
| | RH1.3m | Y | 1000 | 4 | Y | Y | 1200 |
| | RH2.8m | Y | 1000 | 4 | Y | Y | 1200 |
| | RH3.18m | Y | 1000 | 4 | Y | Y | 1200 |
| | Prot | Y | 400 | 5 | Y | N | |
| | Status.Ec | Y \Rightarrow status filter | | | | | |
| 203 | CO2 | N | — | — | — | — | — |
| | t. prof | Y | 500 | 4 | N | N | |
| | p. prof | Y | 100 | 4 | N | N | |
| | OB.slow | Y | 300 | 4 | N | N | |
| | wetness | Y | NO HCPE | | | | |
| | T1.3m | Y | 15 | 4 | N | N | |
| | T2.8m | Y | 15 | 4 | N | N | |
| | T3.18m | Y | 15 | 4 | N | N | |
| | status. prof | Y | status filter | | | | |
| | Precip | Y | 20 | No | Y | Y | 1 |
| 204 | U 2m | N | — | — | — | — | — |
| | V 2m | Y | 5 | 4 | N | N | |
| | W 2m | Y | 3 | 4 | N | N | |
| | # 2m | Y | 7°E | 4 | N | N | |
| | U 4m | Y | 5 | 4 | N | N | |
| | V 4m | Y | 5 | 4 | N | N | |
| | W 4m | Y | 3 | 4 | N | N | |
| | T 4m | Y | 7 | 4 | N | N | |
| | Udir6m | Y | 500 | 4 | Y | Y | 360 |
| | U 6m | Y | 5 | 4 | Y | N | |
| | CO2 3m | Y | 300 | 4 | N | N | |
| | g 3m | Y | 700 | 4 | N | N | |

| Channel | DiD | CU | MULT | ZERO | MAX | Max Allowed | FILTER |
|---------|--------|-----|------|------|-----|-------------|--------|
| 205 | sd.1 | 1 | — | — | — | — | N |
| | sd.2 | 500 | 4 | N | N | | Y |
| | T.COR | 10 | 4 | N | N | | Y |
| | Lw.1 | 300 | 4 | N | N | | Y |
| | Lw.2 | 300 | 4 | N | N | | Y |
| | Pos BP | 10 | 4 | N | N | | Y |
| | Pos DN | 10 | 4 | N | N | | Y |
| | Pos 22 | 10 | 4 | N | N | | Y |

Channel 201

u.
 ✓
 W
 Tc
 O₃ stat
 CO₂
 T.ec
 p.ec
 h₂O.kr
 h₂O.ec
 Flow.ec
 Fast.O₃
 O₃ Flow
 CO₂-1:75
 P-1:75
 H₂O-1:75

Note = (1) Didn't bother w/ A11 sonic => it was screwing up anyway & wasn't running in Sept. 2002.

(2) Channel 201 was clean most of the time - currently letting it filter w/ my old despiking routine (6#0)
 But may need to update -

Times for Intersystem Comparisons

4 cylinders ~ A B C D (1)
~ 350, 376, 390, 415 ppm

| <u>II</u> | <u>DATE</u> | <u>CYLINDER</u> | <u>TIME</u> | |
|-----------|-------------|-----------------|--------------|------------------------|
| 1 | 9/5/02 | A | (16) 4:03:40 | |
| | | B | (16) 4:08:10 | |
| | | C | (16) 4:11:45 | |
| | | D | (16) 4:15:45 | |
| 2 | 9/16/02 | A | 16:47:45 | } ~5 min, Fast |
| | | B | 16:51:05 | |
| | | C | 16:54:05 | |
| | | D | 16:17:01:40 | |
| | 9/19/02 | A | 15:02:35 | |
| | | B | 15:05:00 | |
| | | C | 15:07:30 | |
| | | D | 15:11:00 | |
| ✓ | 9/26/02 | A | 16:12:00 | } system cal. at 16000 |
| | | B | 16:16:00 | |
| | | C | 16:20:00 | |
| | | D | 16:24:00 | |
| | | D | 16:25:23 | |
| | | A | 16:28:00 | |
| | | B | 16:30:00 | |
| | | C | 16:32:00 | 16.37 - off |
| | | | 16 | |

Problems on profiles -

On Aug. 28 => changed classant; suddenly had huge offset when zeroing

Don't know why - Lasted thru early Sept. (at least)

| offset | S-coeff | LCC ₇ measured |
|--|---|--|
| 0 } 1316 (+) 0 } Number 0 } 0 } | 0.85947 (?) 0.97070 0.98659 | 397.02 (125pts) 386.85 (175pts) 369.24 (200pts) 415.60 (100pts) |
| -10.7 | 0.97165 | 417.27 300pts |
| -10.7 | 0.97165 | 390.68 125pts |
| 10.7 | 0.97165 | 373.24 130 (± 0.08) |
| 10.7 | 0.97165 | 357.39 150 |
| 18.5/180 18.5/180 | 0.89522 // 0.97070 ...12 | 381.99 (85pts) 370.40 (125pts) 356.75 (200pts) 411.92 (175pts) |
| -8.6 | 0.97486 | 415.54 (80pts) 390.05 (190pts) 370.75 (170pts) 354.76 (190pts) 418.13 (175pts) 388.60 45pts 370.90 70pts 354.66 80pts |

Looks like
I more standard
421.31 (125pts)

30 min 7

1/16/03 New backup of Duck & russter
 ⇒ Duck tar file ⇒ newduck03.tar
 in /home/staff/aturnip/newduck/

Afterwards - backed up russter partitions tape: (see pg 82 for command)

/home ✓
 /usr ✓
 / ✓
 /usr/local ○
 /var ✓
 /opt ✓

ufsrestore -

/usr/bin/shin/ufsrestore

interactive

table of contents

t

i

r

↳ whole system

x ⇒ extract filenames

- level 0 dump - whole file system -

v = verbose

1/23/03 - SHUTDOWN urquell & specialk
 urquell "Never came back up"
 "DATA Access Error"

⇒ Unixops came out - appears to be bad
 hard drive controller

1/24/03

⇒ Brought over "borrowed" Ultra1

- Bottom line - looks like both hard drive controller
 + the 2ND internal drive are bad.

⇒ lost /usr/local + /data2

For temporary use - put in old 2GB /usr/local drive
 (probably a year + 1/2 old)

Got urquell up & running, but lots of stuff
 aren't working

Late - that night - urquell crashed again

1/27/03 - Sean found urquell crashed -
Robert Weber (Unixops) fixed problem & rebooted)

Some problems -

- ① Doesn't recognize license code for Splas
Tried to reinstall code - tells me my
New code is invalid
- ② Probably some of aster stuff isn't working
/ops is old (for sure)
- ③ Also need to restore my Scode from
the past year $\frac{1}{2}$.

There's probably more -
contacted Unixops on how to restore from tape backup
made on Jan. 3, 2003,
(may also need to contact Gordon and/or Karin Berglund)

Unixops help *26096

3/25/03 russter root password c0ldwind