CHANDRA
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MEMORANDUM

Date:	July 16, 2012
From:	Nancy RA. Wolk
To:	ACIS Operations Team
Subject:	Running ACORN on Dump Data in Real Time
Cc:	Dan Schwartz
File:	`/home/nadams/tex/acorn_dump.tex`
Version:	`1.3`

1   Introduction

There are times that we need to decommutate the spacecraft data in realtime without waiting for the CXCDS. This memo describes the setup of ACORN to do this for us on the dump data stored on the OPS LAN.

2   Required items

You must be on the OPS LAN, perferrably colossus. The user is acisdude. This account is setup for running ACORN.

3   Setup for Running ACORN on Data Dumps

To run ACORN, we need to set up four environment variables and one alias.

- setenv ASCDS_CONFIG_MTA_DATA "/home/acisdude/real-time/back-up/acorn-1.33/groups";

- setenv IPCL_DIR '/home/acisdude/real-time/back-up/acorn-1.33/IPCL/P007';

- setenv MSIDS '/home/acisdude/real-time/back-up/acis/bin/acis-acorn-msid-script'

- setenv DUMP_DIR '/dsops/critical/GOT/input/';

- alias dump_acorn "/home/acisdude/real-time/back-up/acorn-1.33/acorn -noC $MSIDS";

To facilitate this, I have written a script called "acorn_source.init" that is stored in the /home/acisdude directory on the OPS LAN. Type "source acorn_source.init" and the above steps are completed for you.

4 Executing ACORN

To run acorn:

- Create the directory you wish to work in and change to that directory. The tracelog files will be stored in this directoy.

- Then run the following command with the appropriate raw telemetry file in place.

```
gunzip -c $DUMP_DIR/year_startDOY_startime_endDOY_endtime_DUMP_EM_<number>.gz | dump_a
```

That's it. Tests have shown that it takes about 40-60 seconds to run on a single file (this is higher than the old cat because we gunzip the file first). If you need to run multiple files, simply place those files together in the gunzip command. Be sure to include the -c flag.

```
gunzip -c <file1> <file2> <file3> | dump_acorn
```

5 The output tracefiles

The output files are in the directory you are running in. The options used are to not use the standard MTA monitoring groups (-n), to use the OBT in yyyy.decimal day format for the timestamps (-o) and to use the script defined by $MSIDS to determine which values to use (-C $MSIDS). The capital C will not place units in the file. We are using the same MSIDS that we use for the ACIS webpage. This script can be changed to use any MSIDS that we need to trace. The -c flag in the gunzip command keeps the original file intact.

Once you've got your tracelog files in place, fire up an idl session. To run the plotter, simply type:

```
IDL> tlplot,'FILENAME.tl'
```

This will bring up a GUI with some basic controls in a column on the left and the plot shown on the right with the first MSID in the file plotted. To select other MSIDs, click the drop menu and take your pick. If you generate any hardcopies, they will be saved in the directory in which you're working. When you're done, click "quit" and then type "exit" in the IDL window.

Please note

1. it's very important to include the single quotes around the filename

2. be aware of which tracelog file you're feeding into the plotter,some of them are text-based (ie. ENAB/DISA) and will cause problems.