HK Level Zero Code Debug Guide(version 14 on 1/18/2011)

Item # (priority) =>exec or script name	Module Component/ Subcomponent/ Executable	Error or Warning	Total Message	Problem Described	Solution/ Actions Required
1 (high) **=>dsdf.pl**	->HK Level 0 ->MOC Dayfile Save and decode keywords data for asd dayfile and save keywords to asd HK by APID series(sdo.lev0_asd_0004) ->dsdf.pl cronjob on production@j0.	**Email messages with this subject. JSOC:** **(1)WARNING: Ingesting MOC dayfiles: status:No files loaded today**	JSOC: WARNING: Ingesting MOC dayfiles: status:No files loaded today Warning Message: -->Received count of <0> hkt files and count of <0> xml files from directory </tmp21/jsoc/sdo/mocprods/lzp>. -->When executing script </home/production/cvs/JSOC/proj/lev0/scripts/hk/dsdf.pl> from cron job.	Dayfile were not retrieved by process that retrieves the Level 0 dayfiles from MOC Product server. This should be done by 9PM PDT. Then this process looks for dayfiles. If none are there, an email is sent out to jsoc_ops. This causes other processes to fail because they are looking for dayfiles at 11PM.	(1)Confirm the process that retrieves Dayfiles from MOC is working. Check with Art or Hao. (2-option a)Once this is working the process will pick up dayfiles for lost day(s) and the current day and save dayfiles at 10PM-PDT. (2-option b)If needed we can start save of dayfiles for lost day as soon as we get files retrieved by process that gets files from MOC Product Server. ->login to j0 as production. % cd /home/production/cvs/JSOC/proj/lev0/scripts/hk % dsdf.pl moc -->View log file to confirm saved dayfiles and decode asd dayfile. % view log-df-moc

HK Level Zero Code Debug Guide(version 14 on 1/18/2011)

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2 (low-high) **=>dsdf.pl**	->HK Level 0 ->MOC Dayfile Save and decode keywords data for asd dayfile and save keywords to asd HK by APID series(s do.lev0_ asd_0004) - >dsdf.pl cronjob on producti on@j0.	**Email with subject:** **JSOC:WARN ING:Inges ting MOC dayfiles: status:Po ssible error ingesting dayfile.**	Warning Message: -->Received count of <3> hkt files and count of <3> xml files from directory </home3/carl/cvs /JSOC/proj/lev0/ scripts/hk/pup_d ir>. -->When executing script </home/productio n/cvs/JSOC/proj/ lev0/scripts/hk/ dsdf.pl> from cron job. -->Check if there is problem. The dayfiles to ingest into data series and delete from directory did not match the count of the dayfiles received. -->Possibly a problem ingesting dayfiles in series because of bad setting of SUMSERVER parameter or SUMS could be not available. -->Possibly not an issue which was caused by the dayfiles not being ingested on previous day(s) therefore the file count received today does not match files ingested.	(1)This usually occurs after getting email described in item #1. The next day there are previous days files on the dropoff directory . So the amount we pick up from Art's pickup directory (128) does not equal the amount on the dropoff directory (128+128) . (2)If could not write to SUM/DRMS because it was down.	Action Problem Described(1): Probably not Problem. Confirm all 256 files were ingested by viewing log file(log- df-moc) and view the dayfiles are there in the three dayfile series for that day. Where three series are aia.hk_dayfile, hmi.hk_dayfile, sdo.hk_dayfile. Action for Problem Described(2): Confirm when SUMS/DRMS is working. Then follow similar procedure shown for item #1. The difference here is that, you will sse dayfiles(64 dayfiles + 64 xml files) on the dropoff directory. Since we had files but could not save, so kept files there for manual work around.

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3 (high) =>**gdfrt.pl**	->HK Level 0 ->Real time Decode and save of keywords to asd series using Minute of data in RTMON Dayfile ->On production@j0 cron job to start script. Script at /home /production/cvs/ JSOC/proj/lev0/s cripts/h k. % *gdfrt.pl* apid=129 pkt_size =128 % nohup monitor_df_rtm on.pl apid=129 &	**(1) j0 server down or crashed email from admins** **(2) Email with subject: JSOC:WARN ING:INGES TING REALTIME DAYFILE FOR APID 129:Dayfi le does not exist** **(3)Email with subject: JSOC:WARN ING:INGES TING REALTIME DAYFILE FOR APID 129:Dayfi le is not getting new packets**	(1)j0 server down or crashed. (2)Email message in body :Error Message: -->Dayfile </hmisdp-mon/log/packets/ 0x0081/20100204. 0x0081> is not probably there. -->This monitor script will continue running and resend another email notice if the data file is there and data starts flowing and stops again. -->To restart monitor enter command: /home/ production/cvs/J SOC/proj/lev0/sc ripts/hk/monitor _df_rtmon.pl apid=129 -->To stop monitor run command(user=pro duction):/home/p roduction/cvs/JS OC/proj/lev0/scr ipts/hk/stop_mon itor_df_rmon.pl apid=129	Possible Problems: (1)J0 server goes down because of crash or runs out of memory. (2)The j0 server loses nfs connectio n to /hmisd p-mon/log/p ackets directory or Lockheed is not feeding updates to dayfiles (3)See item above(2). Or could be a short delay when moving to next day at 5pmPDT.	Action Problem Described(1): Solution is to restart gdfrt.pl process with new LOG file marked with time restarted process. Restart monitor_df_rtmon.pl process. a)Login into j0 as production user on terminal window. Execute: % nohup gdfrt.pl apid=129 pkt_size=128 > LOG-RT-APID0x081-2010.05.11.09_10:00:00 & This process decodes minute of dayfile and saves keywords to sdo.lev0_asd_0004 series. b)Log on to j0 on another terminal window and execute: % nohup monitor_df_rtmon.pl apid=129 & This script monitors if dayfile is getting updated every 5 minutes, if not sends email warning. c) View if passing when processing. Note the is one issue shown in the log file as failed when processing more then 1 minute of data at beginning of run. This is really ok. % tail -f <LOG-RT-<whatever> d)View in LookData tool that data records are getting added to sdo.lev0_asd_0004. Action Problem Described(2): -Check j0 can see directory /hmisdp-mon/log/packets. -Contact Rock on why Lockheed not updating data to dayfiles. Action Problem Described(3): -Check j0 can see directory /hmisdp-mon/log/packets. -Contact Rock on why Lockheed not updating data to dayfiles.

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4 (high) **=>gdfrt.pl**	->HK Level 0 ->Real time Decode and save of keywords to asd series using Minute of data in RTMON Dayfile ->On [production@j0](#) cron job to start script. Script at /home /production/cvs/ JSOC/pro j/lev0/s cripts/h k. The cronjob script executio n with argument s: *gdfrt.p l* apid=129 pkt_size =128	**(1)Email with subject: JSOC:ERRO R:HK Level 0 Real Time Processin g failed to decode minute dayfiles.**	(1)ERROR Message: -->Failed to decode dayfiles into keywords and write keywords to hk data series for apid <129>. -->Cause could be that DRMS is down or the drms series does not exist. -->When DRMS comes back up, this script will start to process dayfile were last processed data successfully. -->Minute Day File not decoded is:</tmp22/carl/ lev0/hk_minute_d ayfiles/20100607 .0x0081-0- minute> -->Next Email Alert will be sent in 1 hour if problem persists. -->Here is log from decode_dayfile executable showing error messages:	(1)Possib le problems: (a)drms data base is down for service (b)drms data series does not exist.	Action Problem Described(1a): Check with team if drms database is down for service. If down, then as soon as comes back up the script will begin processing where last successfully processed data. Confirm in log file (/home/production/cvs/JSOC/proj/le v0/scripts/hk/log-gdfrt-apid-129) that the processing is being done successfully. If not successfully processing review log for reason why failing. Sidebar 1: If the drms is down for less than two days and this process continues to run. The script will auto process previous days dayfile before starting processing of current dayfile(0 UTC = 5pmPDT). If greater than two day's of drms down, auto processing will not occur for previous files 2-n days back. Action Problem Described(1b): First check the dataseries in log file is existing in drms by doing show_info <name>. If does not exist, will need to create using jsd files auto created at /home/production/cvs/TBL_JSOC/ lev0/hk_jsd_file/prod using create_series. The script should write to series with no errors. Second check, since the gdfrt.pl calls decode_dayfile. decode_dayfile's series name setup could be incorrect in SOURCE_ENV_FOR_HK_DECODE_DAYFILE which is in directory /home/production/cvs/JSO C/proj/lev0/apps. This name change could occur if the HK config files from Lockheed are updated.

HK Level Zero Code Debug Guide(version 14 on 1/18/2011)

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5 (low) **=>dsdf.pl**	->HK Level 0 ->RTMON Dayfile Save of only ASD Dayfile ->dsdf.pl cronjob on production@j0.	**Email message with this subject: JSOC:WARNING:Ingesting RTMON dayfiles: status:Possible error ingesting dayfile.**	Warning Message: -->Received count of <1> hkt files and count of <1> xml files from directory </hmisdp-mon/log/packets>. -->When executing script </home/production/cvs/JSOC/proj/lev0/scripts/hk/dsdf.pl> from cron job. -->Check if there is problem. The dayfiles to ingest into data series and delete from directory did not match the count of the dayfiles received. -->Possibly a problem ingesting dayfiles in series because of bad setting of SUMSERVER parameter or SUMS could be not available. -->Possibly not an issue which was caused by the dayfiles not being ingested on previous day(s) therefore the file count received today does not match files ingested.	The RT Dayfile was not saved to dayfile series. Possible problems: (1)SUMS/DRMS down so could not save files. (2)Path setup to pickup or drop off dayfile was not correct. (3)No dayfile on /hmisdp-mon server. (4)J0 has no access to hmisdp-mon server.	(Step 1)Verify issue: Check if RT dayfile in sdo.hk_dayfile series where date is day of problem and source=rtmon. Check log file at log-df-rtmon for information on warning. Check for dayfile at drop directory defined in dsdf.pl and pickup directory in ingest_dayfile.pl (Step 2)Manual save RT dayfile that failed last night. Execute the manual command to save asd rtmon dayfile to sdo.hk_dayfile. ssh or login to j0 as production user. Since we are save only asd files(apid in hex use 81) use command with apid=81. Set merged value to 0 which mean save dayfile only. Utilize src=rtmon because file is in rt filename format. The dsnlist is a map to tell script were save dayfile. a)Save dayfile: % cd /home/production/cvs/JSOC/proj/lev0/scripts/hk % ingest_dayfile.pl apid=81 dsnlist=./df_apid_ds_list_for_rtmon src=rtmon merged=0 b)Verify files save by checking LookData tool with sdo.hk_dayfile. c)Clean files: % cd /tmp21/production/lev0/hk_rtmon_dayfile % rm <files saved> % vi DF_DELETE_FILE_LIST_RTMON (Remove files saved already) (Step 3)Fix issue, if needed to, described in list issues in Problem Description column. Verify tomorrow no warning email is send. Verify log has no errors.

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6 (low) **=>dsdf.pl**	->HK Level 0 ->RTMON Dayfile Save of ASD apid 129, apid 17,19,21 ,38,40, and 44 Dayfiles - >dsdf.pl rtmon cronjob on producti on@j0.	**E**mail message with this subject: **JSOC:WARN** **ING:Inges** **ting** **RTMON** **dayfiles:** **status:no** **file** **loaded** **today.**	Similar to item #1 except this is for RTMON or Real time day files. This RTMON refers to HK_SOURCE keyword setting in <aia|hmi| sdo>.hk_dayfile series.	(1)Path setup to pickup or drop off dayfile was not correct. (2)No dayfile on /hmi- sdp server. (3)J0 has no access to hmi- sdp server therefore cannot reach dayfile.	(Step 1) Check with j0 see hmisdp- mon directory. Check if asd dayfile there(apid is 0x81). (Step 2) Follow similar step as item #3

HK Level Zero Code Debug Guide(version 14 on 1/18/2011)

Item # (priority) =>exec or script name	Module Component/ Subcomponent/ Executable	Error or Warning	Total Message	Problem Described	Solution/ Actions Required
8. (low) **=>getdf.pl**	->HK Level 0 ->HSB Dayfile Save >getdf.pl hsb cronjob on production@j0.	Email message with subject: **JSOC:WARN ING:Inges ting HSB dayfiles: status: Found Old HSB Dayfile Not Processed ->Action Required**	Warning Message: --> When checked the HSB Directory found one issue requiring action. --> ISSUE Found: (1)Old Dayfile(s) were found and need to be loaded in dayfile series. --> ACTIONS To Do: (1)Run ingest_dayfile.p l with src=hsb_r to load these old dayfiles. Then confirm loaded in hk_dayfile series and then delete each dayfile(s). --> List of <18> Old Dayfile(s) are: hsb_0478_2010_09 _29_03_20_51_00. hkt hsb_0475_2010_09 _14_00_36_04_00. hkt hsb_0451_2010_09 _14_00_36_59_00. hkt . . .	(1)There was reprocess ing of older telemetry data. The ingest_le v0 executabl e write HK packets to HSB dayfile. The regular process that save HSB dayfiles only saves current days dayfile. It does not save older dated dayfiles.	Action for Problem Described(1): Step(1)(a)Confirm with Jim and Hao that the dayfiles created were from production telemetry data. Now we begin a manual process to save hsb dayfiles. See steps 1b-1e. Step (1)(b) go to production@j0 % ssh -l production j0 % cd /home/production/cvs/JSOC/proj/lev 0/scripts/hk Step(1)(c)Save files in dayfile series using script. For day 9/29 use this. Important to note to use hsb_r. Also do not save or delete current dayfiles being updated, let auto process do this(getdf.pl hsb). ==>Best Way %ingest_dayfile.pl apidlist=./df_apid_list_day_fil e_hsb_r start=20100929 end=20100929 dsnlist=./df_apid_ds_list_for_h sb_r src=hsb_r merged=0 ==>Slower Way % ingest_dayfile.pl apid=478 start=20100929 end=20100929 dsnlist=./df_apid_ds_list_for_h sb_r src=hsb_r merged=0 .... (repeat command with different times and/or apid as needed) Step 1(d) Now, check got loaded using lookdata web tool for <aia | hmi>.hk_dayfile Step 1(e) Clear list of old hsb dayfiles to delete from DF_DELETE_FILE_LIST located in /home/production/cvs/JSOC/pr oj/lev0/scripts/hk. This step needs to be done because the auto script getdf.pl uses DF_DELETE_FILE_LIST file too.

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					Step 1(f) Remove files from tmp22 %rm /tmp22/production/lev0/hk_hsb_dayfile/*_09_29*
(9)(high) =>**dsdf.pl**	Effects RTMON and MOC Dayfiles: ->HK Level 0 ->RTMON Dayfile Save of ASD apid 129, apid 19 and apid 44 Dayfiles ->dsdf.pl rtmon cronjob on [production@j0](). ->HK Level 0 ->MOC Dayfile Save and decode keywords data for asd dayfile and save keywords to asd HK by APID series(sdo.lev0_asd_0004). Also	Missing records for aia.temperature_summary_300s or/and hmi.temperature_summary_300s series causes level 1 processing to stop processing. Usually email from Jim or John Serafin or Rock. There is no automatic email warning yet on this issue.	See Error or Warning column.	There are two possible causes of issue. Issue(1): The dayfile has missing packets so records created from data are also missing. ISSUE(2): The cronjobs did not run last night because either systems down or retrieve of new moc dayfiles not successful.	Solution for ISSUE(1): (1a)Check series for missing records to confirm issue. --For apid 19:check hmi.temperature_summary_300s has 288 records per day. -->For apid 44: Check aia.temperature_summary_300s has 288 records per day. (1b)Check if ran correctly last night by checking log files for rtmon and moc dayfile processing. -->Check rtmon logfile at /home2/production/cvs/JSOC/proj/lev0/scripts/hk/log_df_rtmon -->Check rtmon logfile at /home2/production/cvs/JSOC/proj/lev0/scripts/hk/log_df_moc (1c)Check if dayfile with issue has no errors in xml quality information file paired with each dayfile. ---->Go to datatool and view xml dayfile and check is there is missing data in summary line. (1d)Email Rock and team effected with issue on findings. (1e)Implement fix if there is missing data. -->Request recreate of moc dayfile with new version. Rock or you can do(see ticket ..) -->When Goddard places new file on moc product server the process will work automatically when the dsdf.pl moc is run via Art's script on [jsoc@j0](). (1f)Verify gaps were filled by check series records for that day again. (1g)If not gap filled then get approvals from Rock to run the

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	save dayfile and do average processing of apid 19 and 44 to series. ->Art's cronjob on jsoc@j0.				set_keys command to fill gaps. Here is example of filling gap for time 2010.11.29_20:40:00_UTC: set_keys -c ds=hmi.temperature_summary_300s T_START=2010.11.29_20:40:00_UTC NUMPTS=0