Hopefully the use of these different colors will make the source of each parameter more clear.

Overview

The On-The-Fly Re-processing (OTFR) system evolved from the On-The-Fly Calibration (OTFC) system, and like OTFC, it was constructed using the OPUS pipeline architecture. There are a number of online documents and a FAQ (start from the FAQ) describing the OPUS architecture which contain valuable information for the operator of the OTFR pipeline. That information will not be duplicated here.

The OTFR system consists of a single OTFR pipeline, which in the middle bridges off to an HST science pipeline (see figure 1). The OTFR pipeline consists of a set of stages (processes) that will accept OTFR requests from DADS and return OTFR responses. An OTFR request is a simple text file which includes the name of the dataset that is to be re-processed, and the directory location in DADS to which the resulting output products produced by OTFR will be returned. An OTFR response consists of a response file (again a simple text file, almost exactly matching the request file except for a status return message) along with calibrated and raw datasets and products, produced by the stages of the OTFR and HST science pipelines.

Each stage in the OTFR and HST science pipelines performs a part of the processing necessary to re-process observations. The processing is split up to allow multiple copies of pipeline stages to be running. This can improve the throughput of processing by keeping the CPU and I/O systems loaded. It also can improve the robustness in the event of hardware problems, by having different copies of processes running on different machines. If one machine goes down with a hardware failure, it is possible that other machines in the cluster could continue to process data.

Currently only STIS and WFPC-2 data will be processed in the OTFR system. Eventually other instruments will be added (NICMOS, ACS, etc).

Environment / Dependencies

The OTFR Pipeline system will operate on a UNIX-based set of workstations. Currently the Compaq Tru64 systems are supported.

The OTFR machines will need to put and get files to and from the existing DADS VMS-based distribution workstations. File transfers via FTP will occur between the VMS and UNIX workstations in several different pipeline stages, so network connectivity disruptions will likely cause problems in the pipeline processing.

Currently all pipeline stages are implemented as either UNIX shell scripts or Perl scripts. These scripts use a combination of system commands, Perl utilities, OPUS programs and STSDAS programs to perform the necessary processing, so software installations and updates to any of these software systems can cause changes in the pipeline behavior.

Database access to both OPUS and DADS databases occurs in many locations in the OTFR and HST science pipelines. The particular databases and tables are described in the details that follow. Disruptions in database connectivity will obviously cause problems in the pipeline processing.