Clouds and the Earth's Radiant Energy System (CERES)

Data Management System

CATALYST Operator's Console
Test Plan
Version 1

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1.0 Introduction

CERES is a key component of EOS and NPP. The first CERES instrument (PFM) flew on TRMM, four instruments are currently operating on the EOS Terra (FM1 and FM2) and Aqua (FM3 and FM4) platforms, and NPP (FM5) platform. CERES measures radiances in three broadband channels: a shortwave channel (0.3 - 5 μm), a total channel (0.3 - 200 μm), and an infrared window channel (8 - 12 μm). The last data processed from the PFM instrument aboard TRMM was March 2000; no additional data are expected. Until June 2005, one instrument on each EOS platform operated in a fixed azimuth scanning mode and the other operated in a rotating azimuth scanning mode; now all are typically operating in the fixed azimuth scanning mode. The NPP platform carries the FM5 instrument, which operates in the fixed azimuth scanning mode though it has the capability to operate in a rotating azimuth scanning mode.

CERES climate data records involve an unprecedented level of data fusion: CERES measurements are combined with imager data (e.g., MODIS on Terra and Aqua, VIIRS on NPP), 4-D weather assimilation data, microwave sea-ice observations, and measurements from five geostationary satellites to produce climate-quality radiative fluxes at the top-of-atmosphere, within the atmosphere and at the surface, together with the associated cloud and aerosol properties.

The CERES project management and implementation responsibility is at NASA Langley. The CERES Science Team is responsible for the instrument design and the derivation and validation of the scientific algorithms used to produce the data products distributed to the atmospheric sciences community. The CERES DMT is responsible for the development and maintenance of the software that implements the science team's algorithms in the production environment to produce CERES data products. The Langley ASDC is responsible for the production environment, data ingest, and the processing, archival, and distribution of the CERES data products.

1.1 Document Overview

This document, Operator's Console Test Plan, is part of the Operator's Console delivery package provided to the Langley DAAC. It provides procedures for installing and testing the Operator's Console software. A list of acronyms and abbreviations is provided in Appendix A.

This document is organized as follows:

Section 1.0 - Introduction
Section 2.0 - Software Installation Procedures
Section 3.0 - Test and Evaluation Procedures
Appendix A - Acronyms and Abbreviations

1.2 Operator's Console Overview

The Operator's Console is a Java client side application that displays information from the CATALYST Server (Refer to the CATALYST Server Operator's Manual for more information about the CATALYST Server) and provides the ability to control and monitor the execution of individual PRs. The Operator's Console will show which PRs are active within CATALYST, PGE instances and their status, and AMI cluster node availability. Depending on the assigned privileges a user can pause, resume, rerun, and flag PGE instances not to run, check PGE computer resource use, and monitor, as well as start and stop multiple server processes. Each operator will run the console on their local workstation.

2.0 Software Installation Procedures

Follow the procedures in sections 1.4, 1.5, and 1.6 of the CATALYST Operator's Console Operator's Manual to download, install, and run the Operator's Console, and to login to the CATALYST server.

3.0 Test and Evaluation Procedures

This section provides instructions for executing the Operator's Console test suite.

3.1 Executing the CATALYST Test Suite

In order to execute the CATALYST Test Suite, a CATALYST server must be running in order to connect to it with the Operator's Console. PRs with jobs must also be running in the CATALYST server. Follow the instructions in the CATALYST Server Operator's Manual for more information on using the CATALYST Server. Suggested SCCRs that contain sufficient test PRs to use in the PPE environment are SCCRs 1155 and 1101. Follow the necessary parts of the test plan for the SCCR chosen for instructions on submitting the PRs for that SCCR in the PPE environment. Once a CATALYST Server is up and running and contains running PRs, you can begin the Operator's Console test plan.

3.2 Preliminary Test Cases

3.2.1 JIRA Ticket CER-286

3.2.1.1 Ticket Description

More and more when you click on a PR in CATALYST, it does not display the requested PR. It remains on the last displayed. It is not associated with any particular PR, it is an intermittent issue. SIT as well as the CATALYST team have observed this.

3.2.1.2 Test Procedures

Navigate through various PRs with the Operating Console, making sure to drill down to the job level. Click different PRs and navigate through each, occasionally hitting the refresh button. Make sure that the "bread crumbs" label at the top of the job view shows the correct date path and PR while navigating. Keep navigating for about 5 minutes, making sure the label shows the correct PR throughout the whole process.

3.2.2 JIRA Ticket CER-288

3.2.2.1 Ticket Description

JAVA 7 has a bug that causes code to crash when run on a Mac OSX El Capitan operating system. Since this bug is not fixed in the official JAVA distribution until JAVA 8 (not all users may have JAVA 8 on their systems yet), provide a fix to the Operator's Console that solves the bug and prevents the crash for El Capitan Systems using JAVA 7.

3.2.2.2 Test Procedures

Run the Operator's Console on several different operating systems, preferably on at least one Linux, Mac OSX version before El Capitan, a Mac OSX with El Capitan, and a Windows machine if possible. Run the Operator's Console with JAVA 7, and JAVA 8 on each of these systems if possible. Once the Operator's Console is running, from the menu choose Help→About. Aside from a possible preference save file warning ("[WARN]> (PreferencesHandler.load+335) Failed to load preferences configuration file") on first launch of the Operator's Console, no error messages should appear in the log or crashes should occur. If there are, make note of which operating system and JAVA version it happened on and send the

client.log file (found in the current working directory) to the CATALYST development team. If it is not possible to test both JAVA versions and all operating systems, just test what is available.

3.2.3 JIRA Ticket CER-290

3.2.3.1 Ticket Description

This is a small fix to cover proper row colors in the Operator's Console for when non-standard exit codes are returned by PGE's such as the recent 202 error from a CER7.3.1P3 job. The bug does not hinder the console but generates an error into its log and doesn't display the row color correctly.

3.2.3.2 Test Procedures

After some jobs finish running in the CATALYST server, make sure that the row colors still show up correctly after drilling down to the job level. If a job happens to exit with a non-standard exit code, make sure the row colors are correct for this case as well.

3.2.4 JIRA Ticket CER-291

3.2.4.1 Ticket Description

This change is to make the job details window more compact, making it less tedious to find information when scrolling down. This is a visual change only to how the information is displayed in the Operator's Console.

3.2.4.2 Test Procedures

Double click on one of the jobs in CATALYST after drilling down in a PR in order to open the Job Details window. Note that the details window should have the addition of scrollbars for individual sections that are longer in length, for instance the Job Environment section.

3.2.5 JIRA Ticket CER-292

3.2.5.1 Ticket Description

This change is to rename the field names in the job attempt table of the job details window in the Operator's Console. Currently the names are not as clear as they should be. This is a visual change only for the Operator's Console.

3.2.5.2 Test Procedures

Open up the job details of a job that has completed in the Operator’s Console and make sure the “run attempt” fields match the expected name changes below:

Run Attempt Creation Time
SGE Qsub Time
SGE Processing Start Time
SGE Job Finish Time
Science Job Finish Time
Epilog Finish Time
SGE Hostname
SGE Job ID

SGE Job Exit Code
Epilog Exit Code

3.2.6 JIRA Ticket CER-293

3.2.6.1 Ticket Description

This is a Console-only change to add the requested additional warnings to the hover text and adding an additional confirmation dialog when using the skip epilog button in the Operator's Console.

3.2.6.2 Test Procedures

Have a user with admin privileges select a job that has not yet run its epilog, or has a failed epilog, and hover over the skip epilog button (right click the desired job and hold the mouse over the skip epilog button). Notice that the extra warnings in the skip epilog hover text. Next, click the skip epilog button. Notice the dialog that appears which has additional warnings and requires entering a confirmation. First type “yes” into the box and observe that it cancels the operation since the word “yes” was not in all capitals. Next, repeat the skip epilog action and type in “YES.” Notice the normal confirmation for job actions appears. Click yes and note that the Epilog Status for the selected job is now “EPILOG_SKIPPED”.

3.2.7 JIRA Ticket CER-294

3.2.7.1 Ticket Description

This change is a Console-only change to display the current epilog in the main job panel table, making it clearer under which PR the epilog is running.

3.2.7.2 Test Procedures

Click the current epilog button either through the menu (CATALYST Server -> Current Epilog) or by clicking the new current epilog in the navigation area of the job view area. Notice that the Operator’s Console automatically navigates to the part of the PR that contains the currently running epilog job if one exists.

Appendix A
Acronyms and Abbreviations

ASDC	Atmospheric Science Data Center
CATALYST	CERES AuTomAted job Loading sYSTem
CERES	Clouds and the Earth's Radiant Energy System
DAAC	Distributed Active Archive Center
NASA	National Aeronautics and Space Administration
PR	Processing Request
TRMM	Tropical Rainfall Measuring Mission