

## ISOC : Backup ISOC User Guide

This page last changed on Jan 20, 2010 by [rac](#).

### Overview

The Backup-ISOC system is a small cluster of servers and workstations installed in the Physics and Astrophysics Building (PAB) at Stanford University. This system supports a limited subset of ISOC functions in the event of some extended outage of the main ISOC systems hosted at SLAC. The system implements the following functions:

- Receipt and display of real-time telemetry from the MOC.
- FASTCopy file exchange with other FGST ground elements.
- Ingest and archive of Ops Data Products ICD files.
- FASTCopy Monitoring, Telemetry Trending, Mission Plan Viewer, and Logging web applications.
- Event decoding and FastMon processing of prescaled (factor of 100) event data.
- Non-Event data reporting.

### Configuration

The automated processing and supporting infrastructure are hosted on three Dell 1850/2850 servers mounted in a dedicated rack installed in Peter Michelson's GLAST lab (room B3) on the first basement level of PAB. The rack has its own large-capacity UPS, and is in addition powered from a generator-backed high-availability circuit. For on-site monitoring, three Dell Precision workstations are installed in rooms 244 and 245 in the FGST office area on the second floor of PAB. These workstations are configured as kisoks with essentially the same automated login and desktop as the isoc-opsXX kisoks in the MSR at SLAC. Note that the Dell workstations are on UPS, but are not on emergency power like the rack in lab B3. The backup functionality is distributed as follows:

Node	Hardware	Software	Location	Notes
lat-backup01	PowerEdge 1850	FASTCopy, Oracle, FMX/MOOT MySQL slaves	PAB/B3 Rack	Externally visible as isoc-backup.stanford.edu
lat-backup02	PowerEdge 1850	Tux web server, Tomcat+ISOC webapps, Trending Ingest, Event Decoding, NonEvent Reporting	PAB/B3 Rack	Aliased as "glast-ground" and "glast-ground.slac.stanford.edu".
lat-backup03	PowerEdge 2850	Event merging, FastMon processing	PAB/B3 Rack	
lat-backup11	Precision 670	FOS environment	PAB/246	"kiosk" configuration with "isocops" user account
lat-backup12	Precision 690	FOS environment	PAB/245	"kiosk" configuration with "isocops" user account
lat-backup13	Precision 690	FOS environment	PAB/245	"kiosk" configuration with "isocops" user account

## Physical Access

All three rooms are locked at all times; a Stanford-issued key is required. After 5:00 PM and on weekends or holidays, the exterior doors of PAB are locked and require an electronic proximity card (Stanford ID or dedicated prox card) for access. Note that the PAB elevator also requires a proximity card to operate outside of duty hours. The following ISOC personnel have keys and 24x7 card access to the Backup-ISOC:

Name	Function	Contact Info
Rob Cameron	ISOC Manager	650-898-7620 (w, c, h)
Jana Thayer	Flight Software	
Gregg Thayer	Flight Operations	
Gary Godfrey	Mission Planning	
Shantha Condamoor	Mission Planning	
Jim Panetta	FlightOps Software	
Steve Tether	FlightOps Software	
Bryson Lee	FlightOps Software	x2866(w), 408-718-8205(c)

## Moving Operations from SLAC ISOC to Backup ISOC

Realtime telemetry from the MOC should be continuously delivered by the **RedactRT** process to the backup ISOC. There should be no need to do anything special to view realtime engineering telemetry on the backup ISOC workstations.

For FastCopy delivery of Level0 data files, ask (by email and/or phone call) the MOC to change their system to FastCopy the files to "isoc-backup.stanford.edu". Receipt, ingest and processing of the delivered data files can be followed/monitored by the operators on the realtime Log Watcher screen on the ISOC workstations.

## Moving Operations from Backup ISOC to SLAC ISOC

For FastCopy delivery of Level0 data files, ask (by email and/or phone call) the MOC to change their system to FastCopy the files to the normal ISOC server at SLAC (generally glastlnx11). We can also ask the MOC to resend the earlier files, that had been sent to the backup ISOC, to the main ISOC. Also, we can ask the Fermi Science Support Center to send the backlog of tarball files output from RedactL0 during the SLAC ISOC's downtime.

## Remote Access

Remote access to the Backup-ISOC is via SSH to the system's external interface known as "isoc-backup.stanford.edu". The system accepts incoming SSH connections from any SLAC public host, as well as hosts in the "pod" and "vine" public Linux clusters at Stanford. Individuals with accounts on the system can be set up for direct access from their home networks provided that they have a static IP address from the ISP.

Login shells are automatically set up with a FOS environment, and all FOS graphical and command-line tools are available. To use the Web-based resources, launch a Firefox browser on the backup-ISOC system and configure it as follows:

- Select the Edit->Preferences menu item.
- Select the "Main" (slider panel) icon and set the Home page to "http://glast-ground/".

- Select the "Advanced" (sprocket) icon and choose the "Network" tab.
- Click on the "Settings..." button to bring up the "Connection settings" dialog.
- Select the "Automatic proxy configuration URL:" radiobutton.
- Enter "file:///afs/slac/g/glast/isoc/flightOps/isoc-backup/proxy/proxy.pac" in the text field.
- Click on "Ok" to dismiss the dialog.
- Click on "Close" to dismiss the preferences dialog.

## Caveats and Notes

1. Since lat-backup02 is aliased as "glast-ground.slac.stanford.edu" (necessary due to compiled-in information in some webapps), it is not possible to browse the "real" glast-ground website using that name from the backup-ISOC systems. Instead one must use the alias "fermi-ground.slac.stanford.edu".
1. The system has 1.3TB of shared storage for incoming data, and is limited by Oracle 10g Express Edition to 4GB of storage in the database. The following retention policies are used to manage storage occupancy:

Data Type	Retention	Applied
Oracle Telemetry Trending	2 days	hourly
Central Log messages	2 days	hourly
Raw Packet Archives	7 days	daily
FastMon Results	7 days	daily
NonEventReporting Results	7 days	daily
Transfer Packages	30 days	daily

1. Every night new security update RPMs are fetched by the cron job `/etc/cron.d/backup-root-rsync-updates` from `/afs/slac/package/RedHat/RHEL4/security/i386/`. The job runs as user `root` and uses `ssh` to `glastops@glastlnx06`; the `authorized_keys2` file in `glastlnx06:/var/lib/flightops/.ssh` has an entry that allows this. The RPMs are put in a yum repository at `/gnfs/RedHat/RHEL4/security/i386/`; then each machine's daily yum cron job uses the repository to install the updates. Kernel updates are installed but don't become active until someone edits `/boot/grub/grub.conf` to make the new kernel the default and then reboots the machine.