Structural and Functional Description of HiCat

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What is HiCat?

- Database Server
  - MySQL

- Associated HiRISE Filesystem

- Supporting Software

Table Structure

Data Dictionary

- Single key location for database changes

- master is in XML
  - under version control
  - HTML can be generated
  - SQL CREATE statements can be generated

- HTML Data Dictionary acts as a "live" document to facilitate coordination

Security

- MySQL server will be on HiROC-only machine

- Enable & require SSL-encrypted connections

- Privileges within the MySQL system are closely monitored by database specialist

Performance

- Expect to use one master and many slave replicants

- Load-balancing will be done by system routing software or hardware

Data Integrity

- Currently data disks are being backed up by nightly system backups

- Plan to test a backup system which dumps table contents to files

- Replicants will also serve as backups when they are brought online

- Integrity checking programs will be run on the database

Reliability

- Hardware

- Server Software

- Structure

User Scenarios

- Represent a single interaction with HiCat

- Act as specific stand alone tests

- Facilitate communication within the team

- Important tool to support future database changes

Current Status

- Database is functional, and supporting current GDS activities

- Table structure continues to evolve
  - XML Data Dictionary implemented & functional
  - User Scenarios mechanism is being developed

- Security is currently weak
  - Improvements will be implemented before launch

- Performance is adequate for GDS development
  - Not ready for general public load

- Data Integrity is currently minimal
  - Plans for expansion

- Reliability is good, will also continue to evolve