PSPNG Development - Docker Integration Tests

This is a copy of PSPNG's docker-tests README file:
https://github.com/Internet2/grouper/blob/master/grouper-misc/grouper-pspng/pspng-docker-tests/README

This is PSPNG's integration-test harness which runs a 3-container
docker-compose environment (GrouperDaemon, Ldap Server, Mysql DB), executes a
series of gsh commands and tests PSPNG's corresponding provisioning of that Ldap Server.

At a high level, there are three steps to running these tests:
  1) docker-compose/build-images - Compiles PSPNG & creates docker images
  2) ./create-data-templates   - Creates LDAP & MySql data containers
  3) RUN_TESTS   - Runs actual tests

This directory has the following components:
  - docker-compose/ - The Dockerfiles, etc for building the test environment.
    docker-compose/build-images compiles Grouper from local source and installs
    those .class files atop the TIER Grouper Docker Image

  - test-config* - Configuration-builders and other utilities for each type of pspng
    configuration being tested. For instance, test-config-posix-groups sets up
    grouper-loader.properties for posix-group provisioning as well as has utilities
    to validate that provisioning.

  - test*.sh - Individual tests that exercise a type of pspng activity. These
    can be run individually with some that work against specific test-config setups
    and others that can run against several of them.

  - RUN_TESTS - A harness that runs multiple tests against their compatible test-config
    setups. This collects results & logs.

  - scripts/ - A bunch of shell scripts that are used within the docker containers as
    well as within scripts run on the developer's workstation

Environment variables used by the harness:
  DAEMON_BUILD_DIR: What Dockerfile should be used to build the grouper-daemon image to test
    There are three sources of grouper-daemon containers to test:
      -(default) The local version of pspng: DAEMON_BUILD_DIR=grouper-pspng-devel
      -A fully patched (including test patches) tier grouper image: DAEMON_BUILD_DIR=grouper-pspng-patched
      -The latest tier grouper image: DAEMON_BUILD_DIR=grouper-pspng-testing-config (untested)

  KEEP_VM={yes,no,on-failure}. Default: on-failure
    Should the docker containers continue to run after the test is finished
    (RUN_TESTS sets KEEP_VM=no)

  STOP_JAVA={yes,no}. Default: no
    Should the grouper-daemon jvm be killed after the test?

  GROUPER_LOADER_DEBUG_PORT, Default: none
    Configure the grouper-daemon jvm to listen on a jdb port, and wait for that port to be connected
    before continuing with the rest of the test

  KEEP_VOLUMES={yes,no}. Default:no, RUN_TESTS sets this to yes
    Should the volumes used by the ldap and mysql servers be kept after the containers are stopped

  TEST_HISTORY_DIR, Default:none
    Keep a file about every test, describing the hash of the config, its volume suffix and its result
    This is used when tests depend on other tests

  KEEP_TEMP={yes,no}. Default: no
    Should temporary files be kept

  Configuration of test groups and subjects:
    TEST_FOLDER_TOP (default: parentFolder): Root directory where groups are manipulated
    TEST_FOLDER (default: ${TEST_FOLDER_TOP}:provisionedFolder): Folder that is labeled for provisioning
    GROUP1_NAME (default: ${TEST_FOLDER}:group1)
    GROUP2_NAME (default: ${TEST_FOLDER}:group2)
    UNPROVISIONED_GROUP_NAME (default: ${TEST_FOLDER_TOP}:unprovisioned-group) - A group that is not labeled for
provisioning
    PROVISIONER1_NAME (default: pspng1)

  SQL_DEBUGGING={yes,no}. Default: no
     Add extra sql logging to log4j config