AUTO_REVIEW VERSION 5.00-3 UPGRADE INSTRUCTIONS

Change History:

2012-07-20 – initial instructions written for version 5.00.
2012-08-14 – updated based on feedback from NWIS 5.0 beta installations. Added steps to check for proper creation/migration of swreview user, to transfer over Auto_Review area from old server to new server, and to start up new cron process on new server if WSC is migrating to a new server as part of the process.
2012-08-28 – Added more specific steps for how to copy over Auto_Review directory from old server to new server based on feedback from Rose McGowan (thank Rose if you see her…).
2012-10-25 – Updated for new version 5.00-3 release. Added missing –'s from tar commands in Preparation steps 2 and 3.

Note: WSC's wishing to initially start up automated swreview retrievals as part of the upgrade process should contact GS-W_OSW_Scripts@usgs.gov for instructions to do so specific to their installation.

Description:

Note: For those that are wishing to initially install Auto_Review for the first time (never installed Auto_Review/swreview for NWIS 4.8 or later), please contact GS-W_OSW_Scripts@usgs.gov for full installation instructions. These instructions are intended only for those that have previously fully installed Auto_Review-1.0-8 or greater (type '**rpm –q Auto_Review**' to see what version you have installed, if any) on the current or a previous NWIS server. All current NWIS servers have had one of these versions previously installed at some point in time and the Auto_Review directories on any old server can be copied over to a new server to fulfill that requirement (Preparation steps 2 & 3).

The primary purpose of this release is to make the Auto_Review software compatible with NWIS 5.0 and the new Oracle database. For those that didn't upgrade to Auto_Review 4.11-3 prior to this release, it will also provide significant enhancements for continuous GW-level records in a new gwreview module and provides a few other minor fixes and enhancements to other modules. For more information on what's included please see the current release notes and documentation at: http://water.usgs.gov/usgs/osw/adaps/swreview.html .

Please take the time to read through all of the steps in these instructions before proceeding. If you have questions, please contact GS-W_OSW_Scripts@usgs.gov. Please also report any errors, omissions, or suggestions for the instructions to the same address.

Estimated upgrade time is 5-10 minutes for WSC's not updating to a new server and 20-40 minutes for those upgrading to a new server.

WSC's not installing a new server should only need to do Preparation Step 1 and Installation Steps 1-5 and 8. WSC's installing a new server can skip Installation Steps 1 and 8.

Preparation:

1. **Install the NWIS 5.0 software:**

Follow all instructions provided at: http://nwis.usgs.gov/IT/NWIS5_0/nwis5_0oraclemigration.html

2. **For WSC's migrating to a new server as part of the update process, copy the /usr/opt/Auto_Review directory from the old server over to the new server.**

   This step will maintain station settings, program settings, and station lists setup in previous versions of the software on the old server (if not done already…).

   As root on **old** server:
   cd /usr/opt/
   tar -cvf AutoReview.tar ./Auto_Review

   This has created a tar file "AutoReview.tar, containing your directory/files. Copy this tar file to your new server and create the same directory on your new server.

   As root on **new** server place the file in /usr/opt
   cd /usr/opt/
   tar -xvf AutoReview.tar

   This has created the directory and associated files on your new server.

3. **Also copy over the swreview output area to the new server and set it up as it was on the old server.**

   If unsure, the directory on the old server can be found by typing:
   grep outdirectory= /usr/opt/Auto_Review/Swreview/Settings/swr_settings

   The same **tar -cvf** and **tar -xvf** commands as seen in step 2 can be used here to tar up the directory on the old server, copy it over to the new server, and then extract it there in the same location as on the old server. Location will vary, so specific commands aren't provided here (contact GS-W_OSW_Scripts@usgs.gov if you need help with this step).

   Permissions on the directory and all output should be reset to allow all users write access and the group sticky bit should be set so content is created with the same group ownership (note the output area is /SWR in the commands below – you may need to substitute in your WSC's output directory):

   as root,
   chown –R nwis:nwuser /SWR
   chmod –R 775 /SWR
   chmod g+s /SWR

   This area is usually setup via SAMBA so it can be mapped as a network drive in Windows to view output via Windows filesystem access, but it may also be setup on a local webserver for web display and access via built-in links within SIMS/RMS. The setup for web display will vary from WSC to WSC and may involve the area residing on another machine that has been mounted to the old server (the area will likely need to be unmounted from the old machine and remounted to the new machine if that's the case).

   The /usr/local/samba/bin/smb.config file (or the /usr/local/samba/lib/smb.conf file) on the old server

should be consulted for the appropriate SAMBA settings for the directory if that file was not also migrated to the new server.

Below is a sample smb.conf entry from Colorado:

```
[SWR]
comment = Auto_Review output area for electronic records
browseable = yes
create mode = 0775
directory mask = 0775
group = nwuser
guest ok = no
path = /SWR
read only = no
valid users = @data (all data folks )
```

Permissions can be tightened/loosened at the WSC's discretion.
Note that if you don't have guest access open on your server, you can set guest ok=yes to allow all WSC users access to the directory and then not have to set the "valid users".

4. **Also verify Xvfb is installed on new servers:**

   To check if Xvfb is installed:
   rpm –q xvfb

   If not installed it can be obtained from: http://unix.usgs.gov/solaris/xvfb.html
   Note that Auto_Review should automatically add an entry to /etc/inittab during installation, so the optional step in the instructions to do that on the xvfb Sun-TAC website can be skipped unless the WSC needs additional entries for other local processes being run. The WSC may wish to check the old server's /etc/inittab file to see if additional entries were added while performing Installation step 4 below.

Installation:

All steps below should be performed as root unless otherwise specified:

1. **(Optional – for WSC's not migrating to a new server and not doing this upgrade as part of the overall NWIS 5.0 upgrade) Notify users of possible interruption of ongoing swreview, gwreview, and wqmreview retrievals at time of upgrade:**

   Any active retrievals occurring at the same time the script is upgraded may be disrupted, causing bad retrievals or causing running Auto_Review processes to hang with various error messages. Hung processes will need to be broken out of and restarted and bad retrievals may need to be redone.

2. **Install the new Auto_Review package:**

   as root,
   rpm -Uvh ftp://nwisftp.er.usgs.gov/pub/NWIS/release/Auto_Review-5.00-3.usparc.rpm

Report any errors to GS-W_OSW_Scripts@usgs.gov .

Note: All executable scripts will be linked to /usr/opt/bin. It's assumed this area will be in all users' search paths.

3. **Check for updated swr_settings file and update settings as necessary.**

   If running a version of Auto_Review prior to Auto_Review-1.0-10, the/usr/opt/Auto_Review/Swreview/Settings/swr_settings file may be replaced during the install, effectively undoing user-modified settings that will now have to be redone. If this is the case, the installer should see the line in green below after the "preparing…" message during the installation (starting with "1:"):

   Preparing... ### [100%]
   1:Auto_Review warning: /usr/opt/Auto_Review/Swreview/Settings/swr_settings saved as usr/opt/Auto_Review/Swreview/Settings/swr_settings.rpmsave

   If this is seen, the installer should compare the swr_settings and swr_settings.rpmsave files in that area (using the diff or tkdiff commands can be helpful here) and adjust the settings in the new swr_settings file as appropriate (swr_settings file contains explanations of all current settings – ignore the version setting as it's no longer used by the program and now just denotes the version of that file). After modifying the file (if necessary), be sure to reset permissions on the file to allow all users read and execute rights on the file (suggested permissions settings below):
   chown nwis:nwuser /usr/opt/Auto_Review/Swreview/Settings/swr_settings
   chmod 750 /usr/opt/Auto_Review/Swreview/Settings/swr_settings

   If the green line isn't seen, then no further action should be required as the file shouldn't have been modified.

4. **IMPORTANT - Make sure that there are not two xvfb entries in /etc/inittab respawning the same display/screen numbers and check for a missing newline in that file.**

   This step is due to an old bug in the initial release of the Auto_Review software package. Bug has been addressed, but the check is included just in case..

   You should only see one entry like the following that contains **":1 -screen 0**":

   fb:234:respawn:/usr/X11R6/bin/Xvfb **:1 -screen 0** 1152x900x8

   Note that you can have multiple Xvfb displays respawning as shown below, as long as you don't have multiple occurrences trying to respawn the same display/screen.

   This is OK:
   fb:234:respawn:/usr/X11R6/bin/Xvfb **:1 -screen 0** 1152x900x8
   fb:234:respawn:/usr/X11R6/bin/Xvfb :2 -screen 1 1280x1024x8
   fb:234:respawn:/usr/X11R6/bin/Xvfb :3 -screen 3 1152x900x8

This is NOT OK:
fb:234:respawn:/usr/X11R6/bin/Xvfb **:1 -screen 0** 1152x900x8
fb:234:respawn:/usr/X11R6/bin/Xvfb **:1 -screen 0** 1280x1024x8

Also check to be sure that the last command entered in the file contains a newline at the end of the command! There should be another line without a command after the last command in the /etc/inittab file. Failure to include a newline after the last command can cause boot problems as init won't completely finish reading inittab.

If you see two or more Xvfb entries like the examples above (that both have **:1 -screen 0**) or notice a missing newline at the end of the inittab file, remove the extra Xvfb entries and/or add a newline to the end of the file and then run the '**/etc/telinit q**' command to force init to re-read the inittab file.

Auto_Review checks for this during the install and should avoid it during the upgrade, but there have been problems with that check in previous packages and it's possible the entry may have been manually entered as part of the installation of other software so it's best to make sure. If the extra entry or missing newline is present, init may start acting very strangely, using almost an entire CPU, and there may be boot problems until those issues are corrected in the inittab file.

5. **Remove any potential swreview.control files from the swreview user's home directory (for WSC's using the swreview user to run automated or batch updates).**

   A bug in previous versions of swreview could cause a swreview.control file to be left in the swreview user's home directory if a batch/automated swreview process was killed. That lingering control file would then be used for automated updates instead of the normal master swreview.control file installed at /usr/opt/Auto_Review/Swreview/Controlfiles/Mastercontrol/, causing confusion after updating the master file. This is fixed in a newer version, but any lingering swreview.control files should be deleted from the swreview users' home directory:

   as swreview or root,
   rm –f /*swreview_user_home_directory*/swreview.control*

   where *swreview_user_home_directory* is the home directory for the swreview user – use "**getent passwd swreview**" to see the swreview user's home area if unsure.

6. **For WSC's migrating to a new server that will have automated updates enabled, verify the swreview user account has transferred to the new server correctly.**

   This should have happened with several steps done as part of the NWIS 5.0 installation/migration, but should be checked prior to starting up any automated updates again. Easiest way to check this is to login as swreview and attempt to run swreview, gwreview, or wqmreview on an appropriate station, watch for error messages, and check that output is produced and isn't blank. Alternatively, the steps below can be taken to ensure the user is setup correctly:

   Note that swreview should be setup with a reserved UNIX number of 31600, should be setup as a normal ADAPS user, and generally should NOT have password aging enforced as an expired password will cause

automated retrievals to fail (similar to nwisweb or other service accounts… unless local administrators want to routinely log on as swreview and change passwords in the requisite time period):

The swreview user should have the following lines appearing in its ~*home*/.kshrc file:

```
. /usr/opt/etc/env.kshrc
#
# Oracle service account user variable
#
export TNS_ADMIN=/usr/local/oracle/product/11.2.0/dbhome_1/network/admin_service_accounts
```

To verify if the user has a UNIX account: **getent passwd swreview**
should return something very similar to this:
swreview:x:31600:31300:SWReview service acct:/home/swreview:/bin/ksh

To verify if the user is in the UNIX nwuser and nwaw groups and has nwuser and nwaw internal NWIS access: **nwgroups swreview**
should return this:

```
USER swreview IS IN NWIS ACCESS TABLES:

nwar    swreview
nwaw    swreview
nwuser  swreview

AND 'nw*' UNIX GROUPS:

nwuser
nwaw
```

To verify the user's Oracle access: **as user oracle or nwis,**
/usr/local/nwis/install/get_userprivs_oracle.ksh swreview
should return something similar to this (as of the beta period when this was written, we're still looking for more information on exactly how the Oracle setup of a normal user should look… please send feedback):

```
GRANTEE       TYPE PRIVILEGE/ROLE/EXTERNAL_NAME
--------------  ----  --------------------------------------------------
SWREVIEW      EXNM
              PRV  CREATE VIEW
                   UNLIMITED TABLESPACE
              ROLE CONNECT
                   NWIS_SELECT
                   NWIS_USER

TABLESPACE MBYTES_USED MAX_MBYTES_QUOTA
----------  ----------  ----------------------------------------
USERS               0            UNLIMITED
```

7. **Restart cron process(es) on new server for WSC's with automated updates enabled.**

   Users should check the old server's crontab listing under the swreview user (**crontab –l**) and restart the cron processes that were running on the old server on the new server. If using the default 15-minute cron:
   As user swreview,
   crontab /usr/opt/Auto_Review/Swreview/Crons/swreview.cron

   If not using the default cron, copy the results of **crontab –l** (as user swreview) on the old server to a text file on the new server and type the crontab command above specifying that filename instead of the swreview.cron file in the command above.

   See the Cron section in the swreview.readme documentation for more information on available cron process options to keep output updated automatically.

8. **For WSC's not migrating to a new server, check for possible hung automated swreview processes (only if cron swreview processes have been enabled in WSC). If found, kill them and remove residual lock files.**

   as swreview or root,
   ps -ju swreview (example output of command below for WSC with cron swreview processes running at time of upgrade):

```
  PID  PGID   SID TTY      TIME CMD
28477 28477 28477 ?    0:00 sh
 9564 28477 28477 ?    0:01 swreview
20324 28477 28477 ?    0:04  tkg2.pl
28490 28477 28477 ?    0:05 swreview
```

   Any swreview or swreview_bat processes running under user swreview are possibly processes that have hung due to the upgrade process and should be stopped so that automated cron processes can continue to run as normal (if you don't see any, you are finished at this point). From the example above, the Process Group ID for the potentially hung group of swreview processes is 28477 (2nd column) – substitute that process group ID from your output to kill all processes related to swreview as shown below for this example:

   kill -9 *28477*

   If you found potentially hung swreview processes and killed them, you will also need to remove any swreview lock files from /tmp so that new processes can be started (this isn't always necessary and could probably be avoided with a softer kill, but it's easy enough to do and ensures all processes are stopped):

   as swreview or root,
   rm -f /tmp/swreview.swr*.lock

   Swreview automated processes should now start up and run normally as scheduled. If a hung automated retrieval was killed, the next cron swreview run should re-pull any station updates that it was in the middle of, so no swreview station updates should have been lost during the upgrade process.

Notes:

Continuous GW-level stations should already be included in WSC's swreview.control files as this step was included in the 4.10 update of the software when initial support for continuous GW-level stations was added. If that step hasn't been performed, option 6 of the auto_control_builder script can be run as a user with write permissions to the /usr/opt/Auto_Review/Swreview/Controlfiles/Mastercontrol/ directory and the swreview.control file contained there to add them as well as stage-only and reservoir stations (and other options can be used to create an initial control file if just starting up automated retrievals or rebuilding a file).

No cron or batch abilities have yet been added to the wqmreview module. Those may or may not be added in the future pending outcome of the Commercial ADAPS Replacement Project (CARP).

END INSTALLATION - See the readme.auto_review, readme.swreview, readme.gwreview, readme.wqmreview, Auto_Review-wqmreview, and Auto_Review-gwreview ppt documents for additional information on the program itself (or contact GS-W_OSW_Scripts@usgs.gov).