

Procedure to Upgrade Sutron Xpert DCPs Firmware to OS 3.4.0.6

Procedure Number: SOP # 6.3.2.1.7

Created: 9/1/2010

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1. Title

Procedure to Upgrade Sutron Xpert DCPs Firmware to OS 3.4.0.6

2. Purpose

The purpose of this SOP is to provide guidance for CO-OPS field parties, both in-house and contractors, on upgrading Xpert DCPs associated with field measurement systems.

3. Background/History

Sutron Xperts are our main DCP module and require routine firmware upgrades as our measurement systems evolve.

4. Scope/Applicability

This SOP is for all CO-OPS field parties, both in-house and contract field teams. The SOP describes the detailed procedure for applying the 3.4.0.6 upgrade to an Xpert DCP at a CO-OPS measurement Station.

5. Main Processes

Download/Acquire upgrade software package
Backup Original setup Files
Perform Upgrade
Verify Upgrade
Reapply original setup files.

6. Detailed Sub-Processes/Checklists

A new version of XTerm is included with this software upgrade and should be used in place of any older version you may have. **Be careful keeping your versions correct.** Archive versions of Xpert2 and 9210B firmware can be downloaded [here](http://www.sutron.com/downloads/XpertArchive.htm):

<http://www.sutron.com/downloads/XpertArchive.htm>

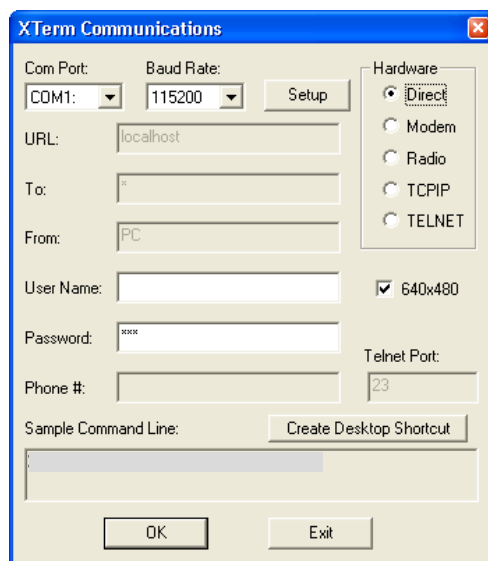
Make sure the XTerm software is current, functional and can talk to an Xpert2 prior to departure.

Before beginning the upgrade, be sure to backup the original station files!

Step 1: Connecting to Xpert

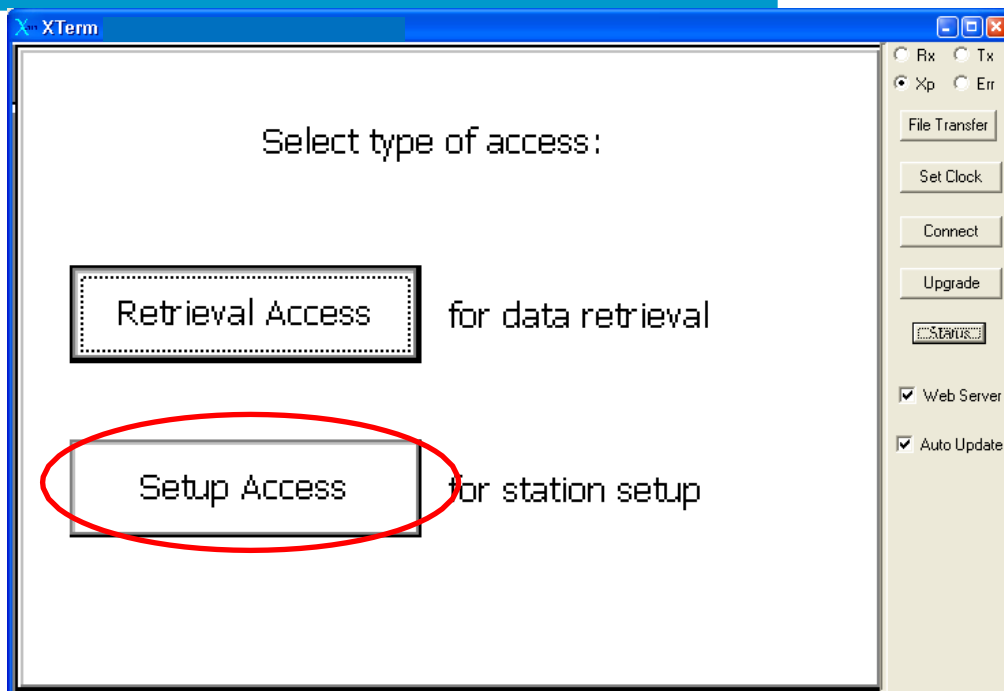
Connect directly via serial cable to com1 (or the bulkhead connector) on the Xpert. Launch XTerm. Select the local com port on your computer that the Xpert is connected to (usually COM1). Select the proper baud rate (usually 115200).

LOGIN:

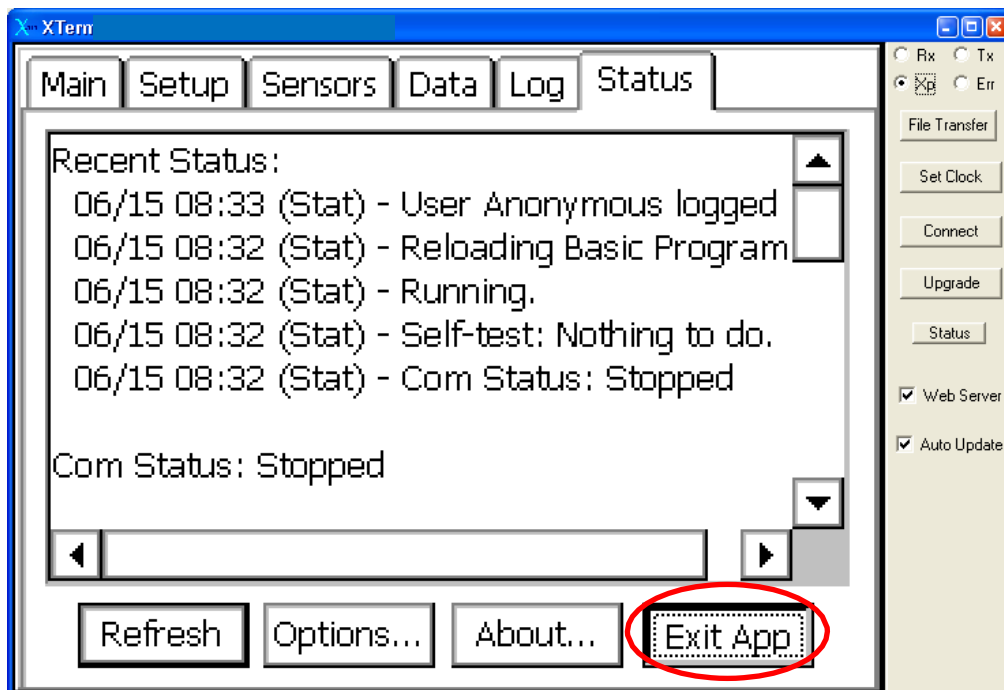


Step 2: Exiting the Application

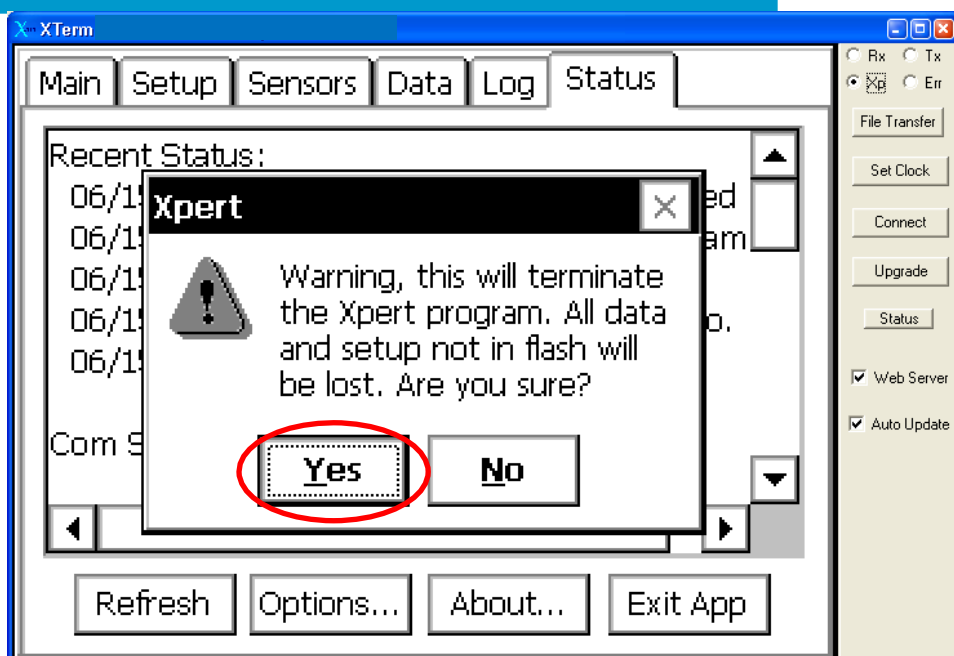
The Main page will open. Click on the "**Status**" tab to open the status page.



Click on **"Exit App"**



Click **Yes** to the recording warning...



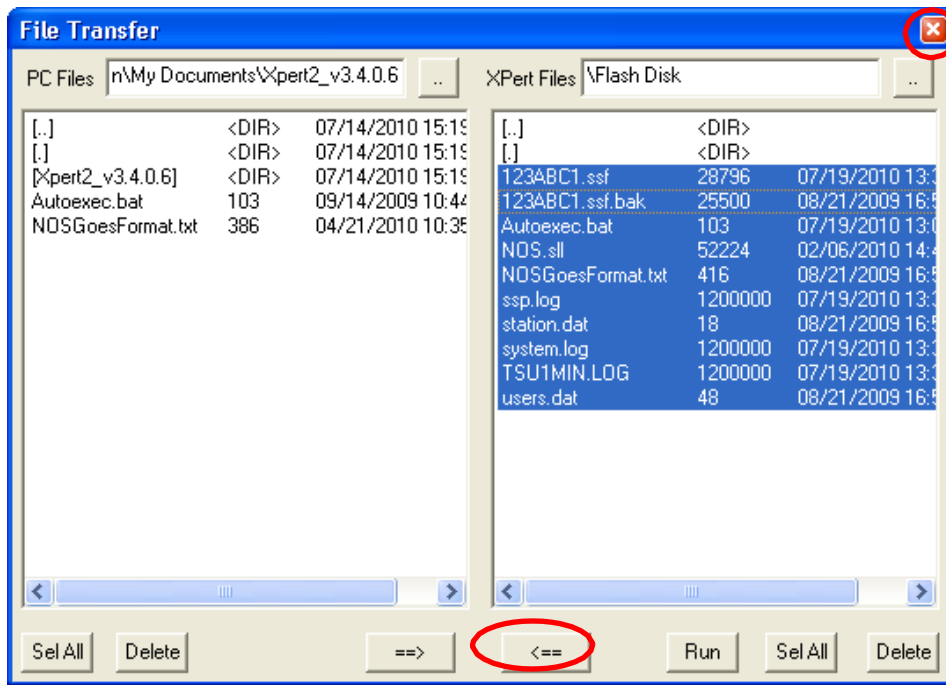
Step 3: Backup original files

Upon connection, click on **File Transfer**.



"File Transfer" screen will open. Make sure the "Xpert Files" location is \Flash Disk on the right side of the screen and select a new directory on your computer in the "PC Files" field on the left side of your screen.

While holding the Ctrl key on your computer Left Click on all the files so they are all highlighted. Press the "<==" button to transfer the files to the new folder on your computer.



This may take a while with large log files, please be patient and try to get all the files.

Exit the File Transfer screen by clicking the X in the upper right corner of the window. You will be returned to the default Sutron screen.

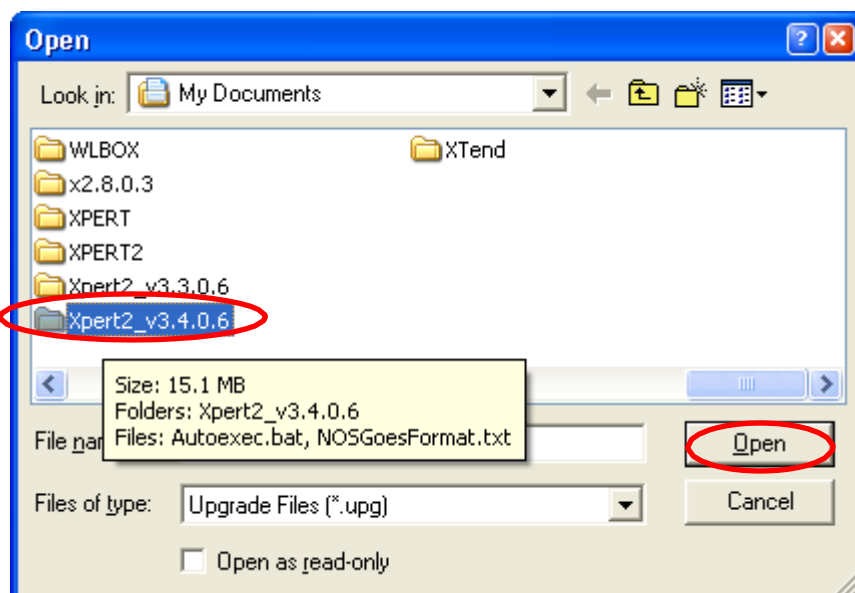
3: Upgrading Xpert2 Software/Firmware

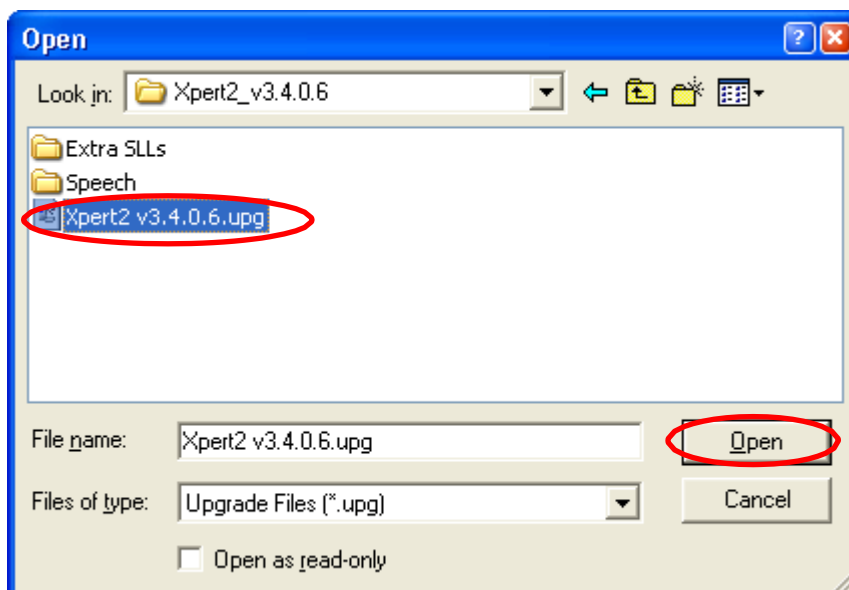
The default Sutron page should be on screen, if at the Access home page, Click on the 'Setup Access' button, and exit application as detailed above.



Click the 'Upgrade' button...

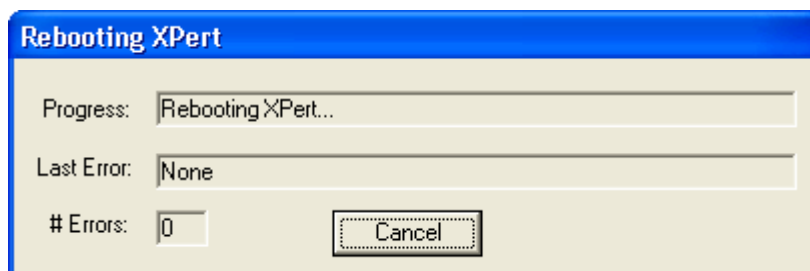
The following Open screen will appear. Navigate to the directory containing your Xpert2 3.4.0.6 upgrade files.





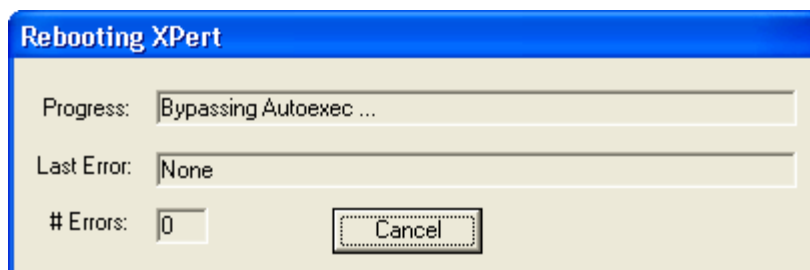
Select the Xpert2_v3.4.0.6.UPG file and click OPEN.

The upgrade process will begin...



NOTE: AT THIS POINT - INTERRUPTING THE PROCESS, LOSING POWER OR CONNECTIVITY CAN DAMAGE THE UNIT.

Some reboots and sounds will occur...



Rebooting XPert

Progress:

Last Error:

Errors:

Some files will be deleted/added...

Deleting file \Flash Disk\Basic.sll

Progress:

Last Error:

Errors:

Sending Basic.sll to XPert

Progress:

Last Error:

Errors:

Sending Deflib.sll to XPert

Progress:

Last Error:

Errors:

A pause and another reboot...

Sleep for 4 seconds (saving registry)

Progress: 1 more seconds

Last Error: None

Errors: 0

Cancel

Firmware Upgrade Xpert2.ker (kernel)

Progress: Checking for Reboot...

Last Error: None

Errors: 0

Cancel

Firmware Upgrade Xpert2.ker (kernel)

Progress: 4681728/10205295 bytes

Last Error: None

Errors: 0

Cancel

Unit will reboot a final time.

Reconnecting to XPert

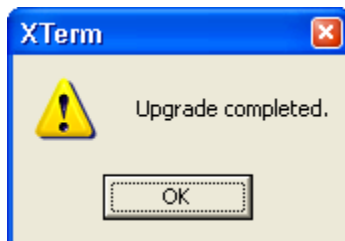
Progress: Reboot: 40% Complete

Last Error: None

Errors: 0

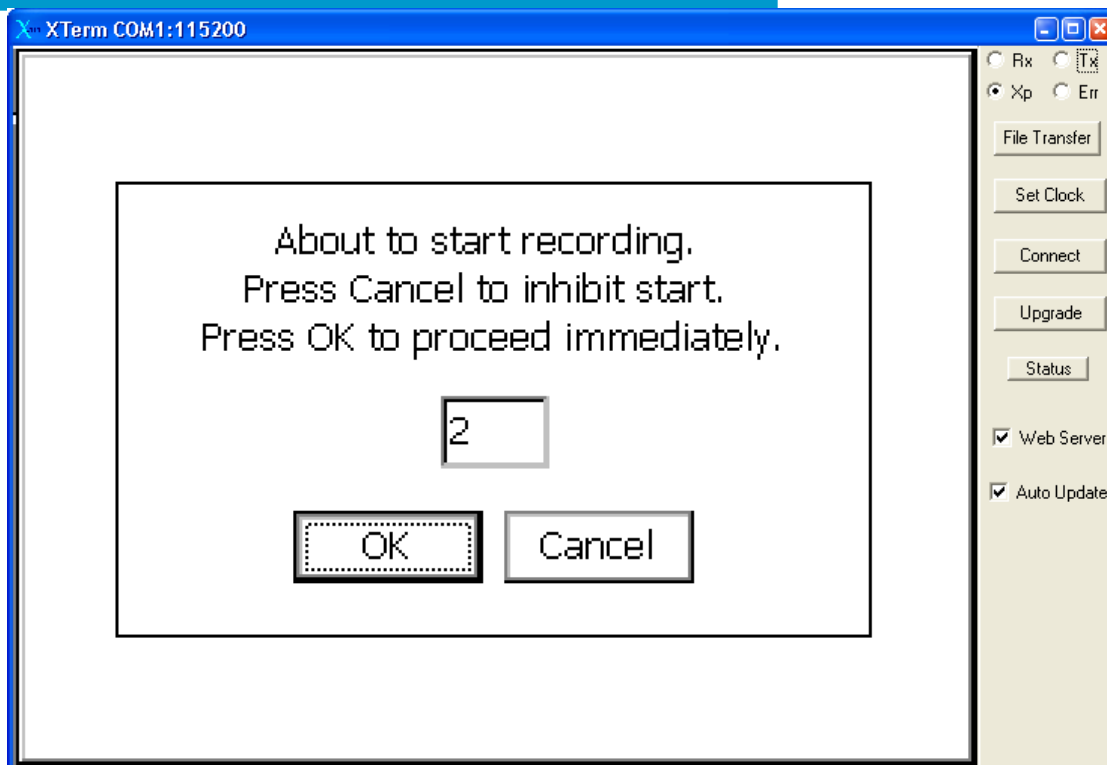
Cancel

The process is complete when the following message appears.



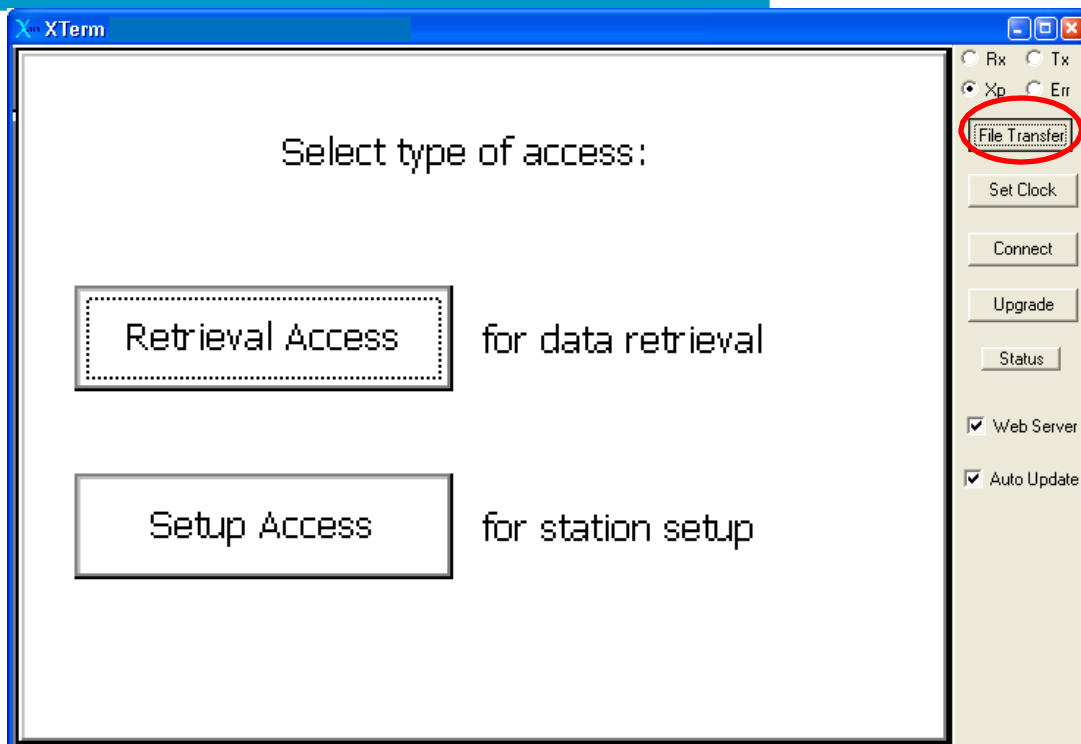
Click 'OK' and the unit will reboot. The new 3.4.0.6 OS will supply a few more informational screens during the boot process.



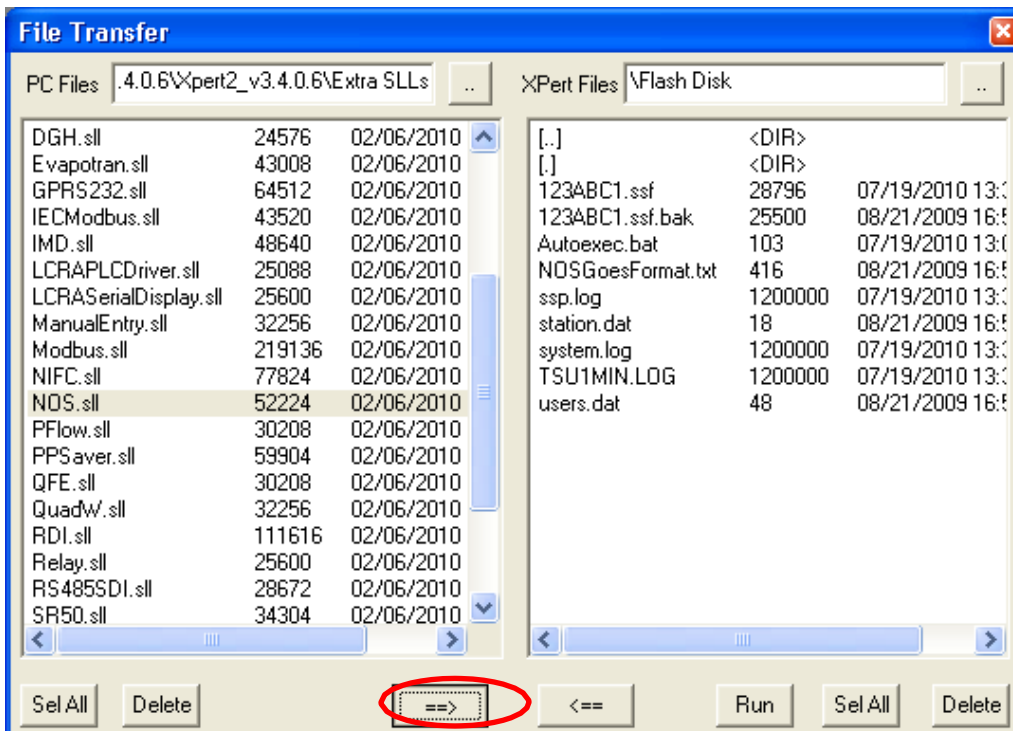
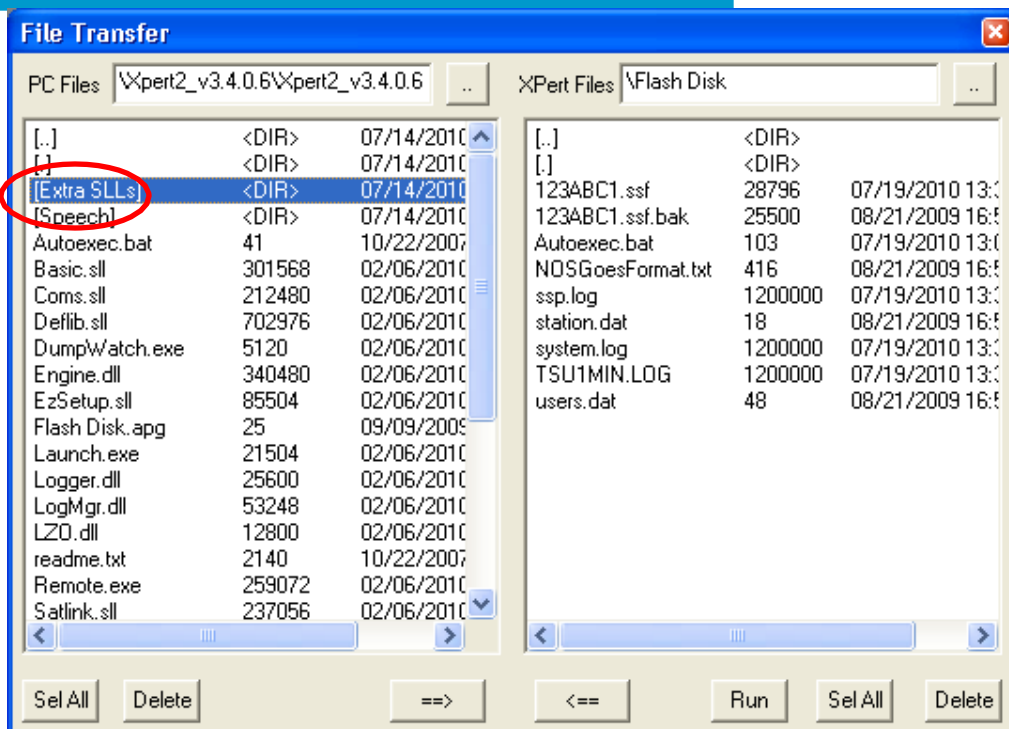


Step 4 – File Uploads-Transfers

Go back to the Main tab and logout. Click on 'File Transfer'



Navigate to the “Extra SLLs” directory on your local hard drive and select NOS.SLL to transfer to the Xpert2. ***(NOTE: Some installations will require the upload of other SLL files as needed, CIL will specify the stations where this is necessary)***



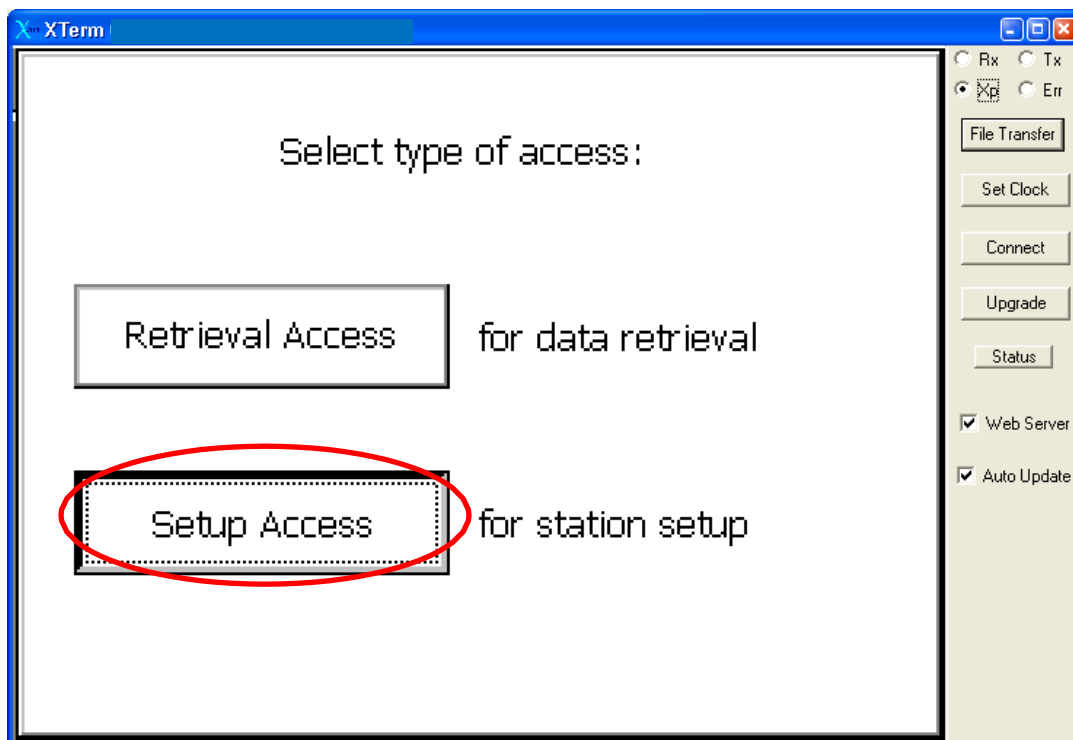
After uploading the SLL file(s) manually **reboot the system.**

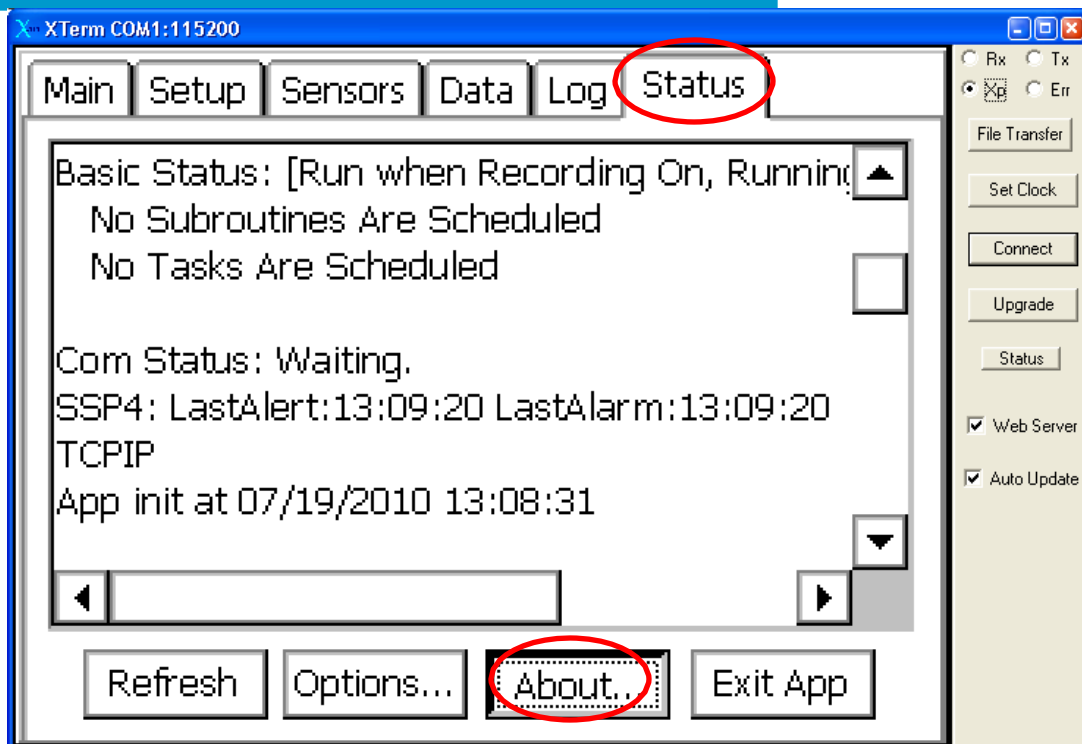
Step 5: Version Check

Upon reboot, the new operating system will load and will contain a bit more information during the boot cycle. After booting completely, proceed to the 'Status' tab.

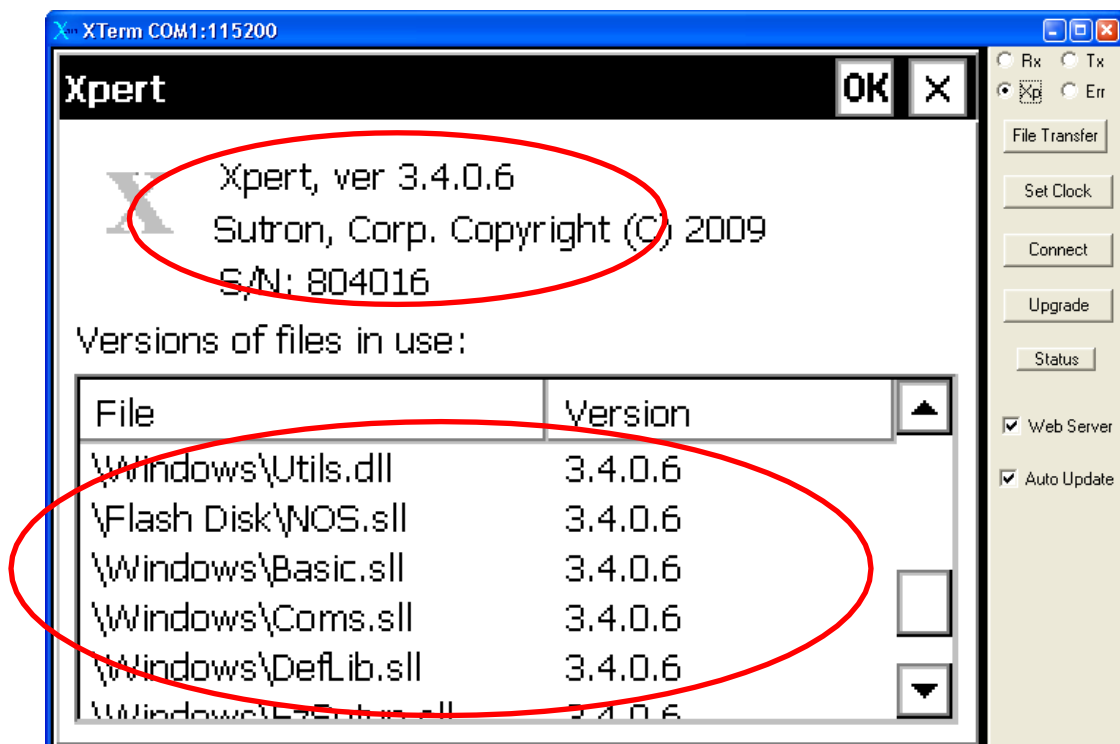


7. Quality Assurance/Control





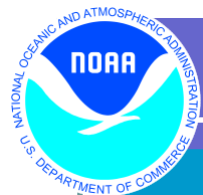
Check to make sure all SLL files are upgraded.



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To verify the upgrade was successful, scroll down and check the versions of all SLL files to ensure they are **all** 3.4.0.6 (especially NOS.sll). *Note: The Kernel, Monitor and Loader version will be different.*

NOTE: For hourly stations, you will need to edit the NOSGOESFormat.txt file. This new OS assumes a "/HEADER=P" 6 minute transmission. The file should be edited to read "/HEADER=N" for hourly stations.

Upgrade complete! The system should now be running properly with the new version. Please make a note of the date and version on the Station Report. Also, double check the Xpert's serial number against the station report.

8. Management/Responsibility

CIL is responsible for maintaining this and future Xpert upgrade SOPs