

IRIS 8.11.7 Release Notes (3 Mar 2008)

These notes cover changes made in IRIS since release 8.11.6 of 4 Jan 2008. If you are upgrading from an earlier release, please read those notes also. Revised to svn [19727].

Installation Changes

1. Release 8.11.7 debuts changes to our release disk. We no longer ship releases built for RHEL3. Instead we ship releases built for RHEL4 and RHEL5. We also have removed the kickstart feature of the release disk. We now supply separate disks containing kickstart scripts to install the Linux OS. We have separate disks for RHEL4, RHEL4.3, and RHEL5. This allows separating the version of the OS from the version of the IRIS. These install disk ISO files are available on our ftp site in the outgoing/releases/install directory. This IRIS/RDA release disks no longer have the “sigmet” directory, and the *Software Installation Manual* has been revised to remove this from the paths.
2. The **sigconfig** installation script now required a version command line argument to specify which OS version to install, “-4” for RHEL4, and “-5” for RHEL5.

New Features

1. Many changes made to support full 360 degree RHI antenna scans:

The antenna simulator now works for full 360 degree elevation scans.

We now have a new task type called “RHIFULL”, which means an RHI going a full 360 degrees overhead. The **setup** scan direction question also controls the RHIFULL scan direction, with clockwise meaning going up from 0 towards 90 degrees.

There is a new **setup** question in the setup/Ingest “Scanning Options” section called “EL speed tolerance”. This is how close the elevation speed should be to the requested speed before we begin recording data. This is analogous to the PPIFULL scans.

The Live IRIS generation of RHI products now allows centering the radar for over-the-top RHIs, similar to the options available in the real-time display.
2. IRIS now supports a feature to allow a custom ray header included in our RAW products and our ingest data format, Trac #122. We supply example source code for a shared library which defines this format, and which assembles a format from two ARINC data streams, and other sources. Customers can replace this library with their own, and thus make any header from any source. This example library is supplied as a separate tar file, which needs to be installed on your system. It needs to be installed on the radar systems, and on any system which plans on reading the data using our **rays** utility. Here are the build instructions. The directory mentioned is only a suggestion:

```
$ cd /home/operator/sigmet/custom
$ tar xzf malibu-0.0.1.tar.gz
$ cd malibu-0.0.1
```

```
$ ./configure --libdir=/usr/sigmet/lib
$ make
$ su
# make install
```

You can check if you have built what you need:

```
$ ls /usr/sigmet/lib/exthdr/plugins/
malibu.a malibu.la malibu.so simmalibu.a simmalibu.la simmalibu.so
```

After installing the malibu library, you can monitor the live data from the ARINC cards using the utility called “plugin_test”. You cannot run plugin_test at the same time as you are reading data into other programs, such as the antenna library or IRIS.

To configure for IRIS recording of the extended headers, make 3 setup changes:

#1: In setup/RCP “Interface to RCP section”, find the question “INU Info Insertion Source”. Set this to “Custom Header”. This means that the antenna library will get INU information from the extended headers.

#2: In setup/RCP “Advanced Interface Features”, set the “Extended header format name” to “malibu”. This tells which format library to use.

#3: In setup/Ingest “Signal Processing and Data Storage” section, set the Extended header format to “V2 Custom”. This tell IRIS to record the custom extended headers.

In setup/RCP do not configure the data format to RCP03(Shipboard). In the RCP8 do not configure it as an INU system.

Note that the **rays** program will now print out (when extended headers are recorded) the extended header format number, # of bytes in the extended header, and the format name. If you select “-data:xhdr” it will also print all the custom extended header information using the library plugin.

Once you have the setup/RCP things working, you can then run the **antenna** utility, and press options/“Stable platform params”, and you will see some INU info from the ARINC feed. This INU info will also be sent out the real-time display data stream.

Also once this is configured, you can monitor the full extended header data stream (at the same time as other programs, like IRIS/Ingest) using the enhanced **AntLog** program, with a command such as:

```
$ AntLog -log:term -data:xhdr
```

Bug Repairs

1. The displays of rain gages were broken such that all the gages were displayed in various shades of blue. This bug was introduced in 8.11.4, and we have a patch for this on 8.11.4 on our ftp site. Trac #389.
2. The display of WARN products overlaid with hatched centroid filling was broken since release 8.11.4. Trac #391.

3. The color legend for an overlaid product was blank since release 8.11.4. Trac #392.
4. The default configuration created on an initial installation is changed to remove strange customizations, and is now as follows:
 - IRIS will default to an analysis system with no antenna and DSP.
 - IRIS's output device list will be just 1 output window on the local system.
 - The real-time display transmissions will be just one channel going to 127.0.0.1.
 - The real-time display program will power up with all color scales set to the defaults.
 - **Sigconfig** will configure RDA machines to use the legacy mwm with a blank blue screen, and IRIS remain defaulted to Gnome. This is changed with a simple exit to your `.xinitrc` file.
5. The control of the color scale as an output option to pipes was broken since release 8.11.4. This effected few pipes, but is used by BUFR in 4-bit mode, #397.
6. *RHEL5 platforms only:* The **sigterm** script was broken because it tried to run `/usr/bin/X11/xterm`, it now runs `/usr/bin/xterm`.
7. There was a bug in the network-status menu's remote system status-product timeouts. On a new startup, it decides that a system has timed out if the time since we started is longer than the configurable timeout. Unfortunately, if the startup inventory time is longer than this, it was always faulting. This is fixed by resetting the "start time" after the inventory completes but before forking all processes. Trac #398.
8. If you have a mis-configured IRIS/Radar system with no dsp, startup using **siris** will now fail and print an informative error message. Trac #399.
9. Fixed a bug in IRIS/Web since release 8.11.4. Because of the change to the color scales, the Web-Look Window would fail after displaying the first picture. This is enhanced to now display the gradient colors scales, #400. There is a patch available for release 8.11.6.2 to fix this, and this was also fixed in release 8.11.6.3.
10. Both the transmission and reception of radar altitude in the RTD data stream was broken. Trac #89.
11. The **rtd_echo** program is enhanced to support reading from one port and sending to multiple IP addresses. This is now documented at the end of the Real-Time Display chapter in the *IRIS/RDA Utilities Manual*.

IRIS 8.11.6 Release Notes (4 Jan 2008)

These notes cover changes made in IRIS since release 8.11.5 of 9 Nov 2007. If you are upgrading from an earlier release, please read those notes also. Revised to svn [19402].

Important Upgrade Notes

1. There was a problem using the new graphical login recommended in 8.11.3. If you started IRIS automatically, it would display IRIS windows on top of the login screen, and prevent you from logging in. This is fixed with changes to the *Software Installation Manual* and to the `/etc/profile.d/sigmet.sh` file. If you are doing a new installation, there is no action required. If you are upgrading from an older system, be sure to remove you `/etc/X0.hosts` file, and put the hostnames which were there into your `/etc/profile.d/sigmet.sh` file. Use the format of “xhost +<hostname>”.

New Features

1. **Productx** is enhanced to print out a binary data array for Cartesian products. It prints the internal IRIS number in decimal. It will skip values so as to fix the ASCII printout on a line. You can get the entire array by specifying a sufficiently large line length with the “-width:nnn” option.
2. **Irisnet** is enhanced to raise the maximum number of displayable sites from 29 to 100. Also converted the **irisnet** binary saved config file to ASCII. This conversion from binary to ASCII will be done automatically the first time you run the new **irisnet** utility. The old file name was `IRISNET.DAT`, it is moved to the retired/ directory. The new ASCII config file is called `irisnet.conf`. Trac #157. This is available on our ftp site for older systems, and can be installed separately.
3. We have made improvements to the desktop environment files shipped and installed with IRIS and RDA. After installing the files, your desktop has the following properties:
 - 1) You can use either graphical login or text based login. To switch back and forth, you just edit the `/etc/inittab` file to set the id to either 3 or 5. If you use text based login, it will automatically startx when you log in. The default is graphical login if you install according to our manuals, and on RDA machines installed at the factory, the default is text based login.
 - 2) You can use either `mwm` or `gnome-session` window manager. To switch back and forth, you just edit the `~/.xinitrc` file to comment out the one you do not want. The default is `gnome-session`. In either case, when you log in you get one terminal on the screen. In `mwm`, you get essentially the same state you had with the old `mwm` files from before 8.11.3.

These improved files are on the 8.11.6 release, in the `/usr/sigmet/config_template/LINUX/desktop` directory. You can install them on older IRIS versions, and they are available on our ftp site in the `patches/8.11.5` directory. They will work with any OS version, RHEL3, RHEL4, or RHEL5. If you are manually installing these, be sure to change your default shell to `/bin/bash`. Trac #375.

4. The **antenna** utility program was enhanced to support the new feature allowing elevation to sweep a full 360 degrees. This includes drawing the full circle control rose, and eliminating elevation minimum and maximum limits, trac #376.
5. When you install the Sigmet source code, it is now installed in /usr/sigmet/src/ directory. This keeps it separate from the normal installed files.

Bug Repairs

1. Fixed a bug in the color displays when using a color legend displaying fewer than the full 16 values. The data-to-color mapping was wrong. This bug was introduced with the 256 colors feature in 8.11.4. It is fixed in patch 8.11.4.2, Trac #352. This effects the IRIS product output, as well at the real-time display.
2. Fixed a bug in the IRIS output to graphics formats, like jpeg, png, gif, etc. All graphics output was actually TIFF, bug introduced with the 256 colors feature in 8.11.4. This is fixed in patch 8.11.4.2, Trac #353.
3. The default SIGGEN_CAL.DAT file shipped with the system was overriding the calibration values for -80 and -100 dBm to -80.5 and -100.5, trac #372.
4. In the product configuration menu, if you selected an unnamed projection, it would generate a product using a zero reference longitude for UTM, EDC and Gaussian. This made these products unusable, trac #371.
5. The projection scaling (km/pixel) was set wrong on Mercator and Polar Stereographic projections. We left it wrong on Equidistant cylindrical because that would have broken our legacy geographical underlay files, trac #379.

IRIS 8.11.5 Release Notes (9 Nov 2007)

These notes cover changes made in IRIS since release 8.11.4 of 24 Oct 2007. If you are upgrading from an earlier release, please read those notes also. Revised up to svn 19251.

Important Upgrade Notes

1. We have changed the IRIS manuals system to use the resident **acroread** on your Redhat system (Trac #113). If you do a new install, this will automatically take place. If you are upgrading from an older system, the you need to edit your init scripts. You need to change the line which reads:

```
export IRIS_BIN_ACROBAT="${IRIS_ROOT}/acrobat/bin/"
```

to

```
export IRIS_BIN_ACROBAT="/usr/bin/"
```

On version 8.11.3 and newer systems, this is in the files /etc/profile.d/sigmet.sh and sigmet.csh. On older configured systems, this is in the file /usr/sigmet/config/profile.

Your older system may not have acroread installed. Test this by typing “acroread”. This is shipped on the extras cdrom from Redhat. It is also on our release cdrom in the file:

```
sigmet/RHEL4/extras/RPMS/acroread-7.0.1-1.2.0EL4.i386.rpm
```

There is a similar file for RHEL5. These files are also on our ftp site in the directory outgoing/os_patches/RHEL4.

Data Format Changes

1. We have changed the IRIS menu client/server protocol to add information about the continuous elevation scanning. As a consequence, the IRIS menus will not connect between versions 8.11.5 (or later), and 8.11.4 (or earlier).
2. We have changed the format of the **real-time display** V1 data format. The new format includes altitude, and platform orientation info (roll, pitch, heading) to better support airborne systems. As a consequence, the the real-time display V1 will not transfer between versions 8.11.5 (or later), and 8.11.4 (or earlier). Trac #89.

New Features

1. In support of airborne tail radars, we have added a new scan mode to IRIS called “RHI Full”. This is not operational in this release so please do not try to use it. There is a new **setup** question in the RCP pop-up to enable the full elevation scans, and to disable the elevation limits. This can also show up in the task configuration menu, only if enabled in **setup**.
2. The IRIS network transfer timeout feature was only active for scp and rcp copying. We have added the same timeout for copy scripts, trac #349.

3. Enhancements to the **real-time display** for RHIs: When the antenna was within about 1 degree of horizontal, the last 25 pixels on the screen were not being exposed correctly. Also added the ability to specify the altitude of the bottom of the display, so you can see data below the ground. This is useful for airborne systems where plane banking may make this important to see.

Bug Repairs

1. The CATCH product was broken in 8.11.4. Most catchment areas were including the whole data area. This was fixed in release 8.11.4.1, trac #343.
2. The color displays for 16-bit IRIS data, such as rainfall accumulation, rainrate, and VIL used in RAIN1, RAINN, CATCH, VIL products was broken in 8.11.4 when the data value exceeded the maximum color in the color scale. It displayed as black. This was fixed in release 8.11.4.1, trac #345.
3. The CATCH product was calculating the wrong value for catchment areas which were entirely off the radar coverage area. It was producing the maximum value of 134 meters. This bug goes back to day 1, and was fixed in release 8.11.4.1, trac #346. Previously such areas were displayed as the IRIS background color, which is black by default. Now they are displayed as a darkened version of the IRIS underlay1 color, which is the color used for area-not-scanned in PPI displays.
4. In the Radar Status Menu, the servo power toggle was not desensitized if the feature was not available, trac #225.
5. The IRIS Projection Configuration Menu on a new system was missing default configuration files for most projections: Equidistant Cylindrical, Gaussian, Gnomonic, Lambert Conic, Perspective, Polar Stereographic, and Universal Transverse Mercator. This caused error messages, but the menu was still functional. We have added these files.
6. RHI tasks were crashing if the customer asked for any of the data corrections.

Retired Features

1. We have removed the old **colormap** utility, which was used to monitor the use of the colormap on a 8-bit Pseudo color display. We no longer support such displays.

IRIS 8.11.4 Release Notes (24 Oct 2007)

These notes cover changes made in IRIS since release 8.11.3 of 12 Oct 2007. If you are upgrading from an earlier release, please read those notes also. Revised up to svn 19184.

Important Upgrade Notes

1. We have changed the format and name of the `setup_color.conf` file. After upgrading, please run **makeAsciiSetups**. This will read the old file, convert to the new format saving in the new name `setup_color2.conf`, and place the old file in the retired sub-directory. Note that this will map your old color scales to the nearest approximation, which will not be continuous gradient colors. You may wish to adjust your scales after conversion. We are shipping a new `setup_color2.conf` file in the `config_templates` directory which has the built-in example scales as default for all data types.

New Features

1. The big new feature for this release is that we are now supporting data displays using 256 colors. The 16-colors split into 32 is gone. You now have 16 primary colors, and can chose to have them solid values, or use a continuous gradient to the next color. To implement this, we are supporting only TrueColor displays from now on. This change is visible in the **Quick-Look Window**, the **rtdisp** utility, and the **color_setup** utility.
2. **Color_setup** has significant changes to support the new color gradients. The main *Color Configuration Menu* for each of the data types is essentially the same. However the *Color Set Editor* is significantly changed. Previously, each of the named color set color cells was selected from a limited palette of 32 colors. Now there is no constraint, and each color can be adjusted independently. There is also now a row of buttons next to each color cell. If the button is not pressed, then the color cell is a solid color. If the button is pressed, then the color cell has a continuous gradient from the bottom to the top, and the top value will match the bottom of the cell above. Note that when editing the colors on a gradient cell, you can select either the top half or bottom half of the cell for adjustment, similar to the old *Color Palette Editor*. We have supplied you with pre-selected example color sets for both solid and gradient variants tuned for several common data types.
3. Another significant new feature caused by the 256 colors is that we now have a true data cursor in the QLW. It reads out values from the IRIS raster data product. It can read either 8-bit or 16-bit data, depending on what is there. This is fundamentally different from the old color read-back scheme. We will always get data values from the product. You will not get an overlay line, or a centroid value if it is on top of the data. This is implemented by sending both the color picture, and the data picture to the display. In order to save performance and memory, we do not store the data while playing a movie, so when you stop a movie, the data cursor will not work until you get a new picture.
4. The **UfToIris** pipe can now handle unthresholded reflectivity data. It now has an option in the `UfToIris.conf` file to threshold based on the range normalized calibration reflectivity.

Bug Repairs

1. The **install** program was not correctly creating the config directory on a new install when installing over the network. This bug was introduced in the last 8.11.3 release.

Retired Features

1. We have removed both the **Picture700** pipe program and the **pview** program for testing it. This was to reproduce our old 4-bit per pixel output format which was removed in 1998.

IRIS 8.11.3 Release Notes (12 Oct 2007)

These notes cover changes made in IRIS since release 8.11.1 of 4 April 2007. If you are upgrading from an earlier release, please read those notes also. There was no release 8.11.2. Revised up to svn 19028.

Data Format Changes

1. The **vvp_results** structure was enhanced to support recording the average RhoHV in each cell. See New Features 9.
2. The **task_dsp_info** structure was enhanced to add the name of custom ray header.

Setup Changes

1. In **setup**'s Ingest dialog, *Signal Processing and Data Storage* section you can now select extended header version V2, and type in a custom shared library name.

Installation Changes

1. We stopped using ImageMagic. You no longer need to install those RPMs as discussed in the 8.11.1 release notes. This turned out to be a lot of trouble, and always changing.
2. We have changed the way we configure the Linux login to pick up standard IRIS configuration state. Previously you sourced the file `/usr/sigmet/config/profile` in your home directory `.profile` file. The alternative is to copy files into the `/etc/profile.d` tree. The *Software Installation Manual* is revised to cover this. If you are upgrading IRIS without installing Linux, then after the upgrade do the following steps:

```
# mkdir /etc/sigmet
# cd /usr/sigmet/config_template/LINUX/etc
# cp ./sigmet/* /etc/sigmet
# cp ./profile.d/* /etc/profile.d
```

Next edit your `~/profile` file and remove the line referencing the `/usr/sigmet/config/profile` file. Logout and back in for the changes to take effect.

3. We have changed the recommended shell used by IRIS users from `/bin/ksh` to `/bin/bash`. The *Software Installation Manual* is revised to cover this. If you are upgrading IRIS without installing Linux, to make this change after the upgrade do the following:

As root, type `"# chsh operator -s /bin/bash"`. This will edit the `/etc/passwd` file to change the shell. Then logout and back in for the changes to take effect. Note that bash reads the `.bash_profile` file for configuration, but it will also read the `.profile` file. Our standard configuration has no `.profile` file at all.

4. We have changed the recommended Linux configuration have a graphical login rather than a text based login. The *Software Installation Manual* is revised to cover this. Be

sure to switch to bash shell above (Installation 3.) before doing this. If you are upgrading IRIS without installing Linux, to make this change after the upgrade do the following:

Graphical login is called “run level 5”, whereas text login is called “run level 3”. As root, edit your /etc/inittab file to change the first not commented line to read:

id:5:initdefault:

Whether or not you chose to stay at run level 3 or 5, also edit your ~/.profile file, if any, to remove code to run xinit. This is not standard, and causes problems in some cases. If you stay with run level 3, then after login you can manually start the window environment by typing “startx”.

5. The directory structure on the IRIS/RDA release cdrom is changed. It now has a branch for RHEL version directly beneath the sigmet directory. There are three main subdirectories RHEL3, RHEL4 and RHEL5. We are currently shipping IRIS releases in the RHEL3 directory for installation on rhel3, 4, and 5. We are shipping RDA releases in the RHEL3 and RHEL4 directories (for rhel4&5). There is also an extras directory in each for rpms from other sources.
6. The installation model for how the config and config_template directories are initialized has changed. The config_template tree is always populated with a full set of default configuration files. On a new installation, these files are also copied over to the config tree. There is no longer a need to have a config.tgz file shipped in the release. Please contact us with suggestions on any changes to make in the default configuration, or missing config files. Note that the files shipped with RDA and IRIS can be different.

New Features

1. The most significant new feature for this release is that we are now supporting running IRIS and RDA on RHEL5 platforms. The boot-and-go cdrom procedure will still install only RHEL4, but the *Software Installation Manual* is revised for RHEL5, and the sigconfig script will work on either RHEL4 or 5. Note that we will be dropping support for RHEL3 at the end of 2007.
2. Sigmet provides a new shell utility program called **ProductToRegion** which prints on the standard output projection related number useful for things like displaying on GoogleEarth. It print the following information: PROD_TYPE, PROJ_TYPE, ALTITUDE, CENTER_LAT, CENTER_LON, NORTH,SOUTH, EAST, WEST.
3. The VIL product has been enhanced to be able to produce two possible outputs:
 - 1) The legacy Vertically Integrated Liquid
 - 2) The Layer Average ReflectivityYou chose which by selecting the appropriate data type in the TCF menu. Trac #198.
4. The **iris** menubar now has a maximum connect list of 50 sites. Also changed the config file .iris_serv_setup to a ASCII file called .iris_serv_setup.conf (This is in your home directory).

5. In **IrisToGrib1** pipe, added support for Lambert, Gaussian, and UTM (mapped to Gaussian) projections. Also added BASE, HMAX and VIL products. Fixed circle of high output values where data was thresholded. Trac #200, 197, 242, 253.
6. The **UfToIris** pipe will now repair UF files with multiple sweeps at the same time, Trac #233.
7. The **IrisToMcidas** pipe added BASE, HMAX, MAX, SHEAR, and LAR (Layer Averaged Reflectivity) products, and 16-bit products RAIN1, RAINN, SRI and VIL, and a default .conf file. Add site and product name to the output filenames. Trac #201, 202, 203, 204, 205, 206, 207, 208.
8. The **IrisToBufr** and **BufrToIris** pipes now have updated BUFR tables from OPERA, standard tables version 12, and local tables version 6. **IrisToBufr** can now convert RAW and VIL products. **IrisToBufr** can now support different config file information for different devices. Fixed segmentation fault if the number of BUFR descriptors exceeds 80, no limit now. Trac #195, 251, 258, 260.
9. The **VVP** product is enhanced to optionally record the average RhoHV data for each height, similar to the current average dBZ. This is useful for automatic calculation of the melting level. This included changes to the product configuration menu, the product generator, the display output process, and the output options. We also raised the maximum number of plots in VVP from 3 to 5. Trac #229, 230.
10. We now support custom formatted extended ray headers within IRIS. This is done by setting the extended headers can now be set to version 2. You then specify the name of a shared module which is loaded at runtime.
11. The IRIS RAINN product can now support dwell times of up to 7 days. Previous limit was 3. Dwell time displays with now show days and hours. Trac #266.
12. Sigmet supplied overlay files now will include Inland water, Railroads and Airports as standard. We raised the maximum number of overlay strings from 400 to 5000 to support the increased number of Airports possible. Contact us if you wish to have your overlay regenerated. Example overlays are no longer shipped on the release cdrom, instead they can be found on our ftp site.

Bug Repairs

1. Printing from iris menus or iris QLW was printing the whole screen. It now just prints the menu or window. This has been a recurring type of problem dependant on the window manager.
2. **Show_machine_code** –version now includes the patch version. For example, the last release made was actually 8.11.2.1, but the final “.1” was missing. Also fixed everywhere else: IRIS Error log file, **siris** “startup complete” message, **qiris** “iris is now stopped” message, RVP8 chat mode banner, RVP8 startup banner, RCP8 startup banner, RCP8 “help view”.

3. In the IRIS main menu bar, when selecting Tools->Audio Setup it would also switch the image as if you had selected "Display IRIS Image".
4. Fixed bug in QLW live tool. If a hybrid task name had 2 underscores ("_"), we would replace the wrong character in the task name with the sub task character and it would not generate live products.
5. The maximum number of ingest inventory entries is raised from 1000 to 2000, and the cushion is raised from 20 to 200, trac #220. The cushion allows you to temporarily exceed the limit while the watchdog file deleting catches up. This is needed when a burst of files arrive from the network or archive.
6. In the IRIS product generator, the Max side panels were placed 1 pixel towards the center. Bug introduced in February 1998, release 7.00, Trac #234.
7. Fixed crash bug in TRACK, SLINE and TDWR products. All uses crashed, including product scheduling, inputting and outputting products, and viewing with **productx**. Bug introduced in release 8.11.1, svn version 18263.
8. Bugs fixed in the **zauto** utility: Fixed updating the New Results field in View Cal Summary Menu when the Update push button is pressed on the main zauto menu. Also fixed updating the Dynamic Range when the Fit push button is pressed.
9. The **UfToIris** pipe now supports output into IRIS 2-byte data if so configured, trac #249.
10. The HMAX (Height of Maximum) product is enhanced to now support computing heights of ZDR, ZDRc and KDP data types if Polar Features are configured in **setup**.
11. In the QLM Live Tool, fixed Z smoothing scale in live xsect. It now works when the left mouse button is clicking the scale.
12. The **IrisToArchive2** pipe had a byte swap format bug in the message type. Bug introduces in [18214] version 8.11.0P2. It also can now process and convert single sweep RAW products. Trac #265.
13. Fixed memory leak in SLINE product introduced in [5737] 3/2000 release 7.15 with multiple shearlines.
14. Fixed a bug when trying to make products from hybrid tasks when such tasks were not generated on an IRIS system. This will happen, for example if you use a pipe input from another source. It turns out that IRIS places a "hybrid_count" is used to determine when the full volume has arrived if you specify a * in the hybrid subtask box. This is not available on pipe input, so is not fully fixable. However, for pipe data we have made the following fixes:
 - 1) If you specify e.g. "ABC" it will run after the _A, _B, and _C tasks are done. It was by a mistake running on just the _A for pipe data if you were set to run on incomplete data, else it was not running.
 - 2) If you specify "**", it will run only after the first task of the next volume arrives. That is after _A, _B, _C, and _A are done. It was by mistake running as mentioned above.

In all cases, both native IRIS data, and pipe data, it was supposed to run (or skip based on setup info) on a partial hybrid volume set if part of the next volume arrives. This code was broken, and is now fixed. Trac #269

15. **RainbowToIris** now has the ability to add an offset to the Z. Trac #143.
16. Fixed a bug with **color_setup** getting a segmentation violation startup in RHEL5.
17. IRIS is supposed to keep a selectable number of recent log files on disk. This feature was broken in release 8.11.1, all old files were deleted. This is now fixed, trac #237.

IRIS 8.11.1 Release Notes (4 Apr 2007)

These notes cover changes made in IRIS since release 8.11.0 of 13 December 2006. If you are upgrading from an earlier release, please read those notes also.

Data Format Changes

1. Added a threshold number to the CATCH product, see New Features #6.

Setup Changes

1. The **setup** section for the real-time display in the RVP pop-up is significantly changed as outlined in New Features #3. below. Also a new question to enable messages on the bottom of CATCH products as outlined in New Features #6.

Installation Changes

1. The IRIS/RDA releases posted to our ftp site are reorganized to have the version number first, as in: outgoing/releases/8.11.1/iris/RHEL3. We also are now posting the ISO image file for the release cdrom.
2. The installation script sigconfig should now automatically install the canbus library and kernel module for an RDA installation. If the kernel version is not one we supply, then it will not install, but this only matters for a system with a canbus.

New Features

1. The **UfToIris** pipe program now supports hybrid scan inputs. This required changes to the IRIS input processes to support reading a meta file, so this cannot be installed on older IRIS versions. See changes to the UfToIris.conf file for details. It also now support a default pulse width, as well as supporting computing the PRF from the Nyquist velocity. This is to support reading non-conforming UF files in which these numbers are not filled in.
2. IRIS now includes support for reading in live lightning detection data in UALF format, and formatting the data as an IRIS WARN product. This allows displaying on top of radar data. Note that typically lightning data updates every few seconds, whereas radar data updates every few minutes. This is a separately purchased and licensed feature.
3. There are significant enhancements to the real-time display program **rtdisp**. It now supports display of all the data types potentially produced by IRIS Ingest, specifically: dBt, dBZ, dBZc, V, Vc, W, SQI, Kdp, PhiDP, RhoHB, LDRH, LDRV, PhiH, PhiV, RhoH, RhoV and HClass. The transmit data formats were not changed, so you will hit an internal limit of 10 if the task configuration exceeds that. If you hit this limit, all the single-pol data is transmitted, and only some of the dual-pol. The rtdisp data select

- button includes a preferences option to allow the customer to customize and remove data types which are not found on their radar systems. Setup for the real-time display as also enhanced. It now support up to 16 transmit channels, up from 6. Only those channels in use are displayed on the GUI. The selection of which data types to transmit is now separate for each channel. There are three choices: ZVW, all single pol data, or dual-pol (which means everything). Trac #90.
4. There are significant enhancements to the BUFR support. We now fully support 8-bit formats in both directions in addition to the older 4-bit formats. In some cases, such as the heights in the TOPS product, we need to override the default scale to get good resolution, Trac #1. In cases of IRIS products which are stored in 16 bits, we include an automatic algorithm to reduce the number of bits with minimal degradation to the resolution, Trac #163. **BufrToIris** now will handle non-OPERA conforming files with a missing projection origin. In those cases, it will use the radar location as reference, which is reasonable for azimuthal equidistant projections, for example. We allow linear BUFR data scale in both output and input pipes, Trac #153. Now uses the correct code to encode the height of CAPPIs in **IrisToBufr**, Trac #160. **IrisToBufr** had a bug in which the VVP output was missing the correct velocities, Trac #149. **BufrToIris** now also supports input of wind profiles to convert to a VVP product, Trac #2. Bidirectional support for 3D CAPPIs now working, Trac #4. Also RAIN1 and RAINN products are now converting both ways, though the OPERA format limits the image width to a max of 254 pixels, Trac #5. MAX products also supported, Trac #3.
 5. We have added a new support for McIDAS format area files. There is now a **mcidasview** utility program supplied with IRIS which will print out the contents of a McIDAS file for manual examination. Source code for all our McIDAS software, including **IrisToMcidas**, **McIdasSatToIris** and **mcidasview** is in the `utils/mcidas` directory. The **IrisToMcidas** pipe is now available to convert 8-bit Cartesian IRIS products to McIDAS format.
 6. The IRIS CATCH product was enhanced to add support for generating warning signals in the event of a subcatchment exceeding a threshold. This feature was in the manuals for years but never actually implemented. Changes are far reaching:
 - The `catch_results` structure was modified to store the threshold values in effect for each subcatchment. See `product.h` and the *IRIS Programmer's Manual* for details.
 - The Product generation now checks the thresholds and sets bits for each subcatchment to indicate thresholds exceeded.
 - The product generator will generate a signal causing a pop-up message if a threshold is exceeded.
 - The CATCH product display now shows the pop-up message on the bottom, and shows highlighted boxes around the alerted Subcatchments.
 - **Setup** now has a new question to enable/disable the message on the bottom of the CATCH display.

- **Productx** is enhanced to show the threshold, flag bits, and pop-up message.
7. The IRIS Live product generation now supports products from hybrid scans. This is implemented similar to the product configuration menu with a sub-task text box. Unfortunately there is a bug such that it will not work on task names with two underscores in their name, such as “PPI_VOL_A”.

Bug Repairs

1. The NEXRAD calibration utilities now switch the siggen into CW mode when it is powered up in NEXRAD calibration utilities
2. Fixed a bug in the utility program **antx**. If a customer left antx running on a terminal, and then they logged in remotely and killed it, antx could not be restarted. It would free up if you shut down the antenna library with qant, which requires essentially shutting down all sigmet software.
3. The RDA installation for version 8.11.0 was missing the **dpolapp** utility program, this is fixed. It was in the IRIS installation. 8.11.0 customers can download dpolapp from our patches ftp site. Trac #129.
4. In the IRIS display **setup**, you can now specify a blank string for the display name. This will then cause IRIS to use the default display. This is useful for systems with graphical login, and for which the display name may vary. Trac #133.
5. For our time series recording customers, the **tsview** utility is enhanced to take a “-i/q” option. This will make it display data in the form of I and Q, rather than the default of power and phase.
6. For many years, if you used an IRIS color scale, and you wanted the top color to include all data above, you configured it to label as “>60” for example. Unfortunately the undisplayed upper limit for that color span would cause the color mapping to fail if it was set below the lower limit. This is now fixed. Trac #147.
7. Fixed bugs in **BMPSatToIris** pipe. It was unable to handle odd width size. Also the image was off by one pixel horizontally. Also the maximum image size was raised from a hard coded 1100x1100 to the current MAX_PRODUCT_SIZE of 3100x3100.
8. For RDA developers only: There were several bugs fixed in the new dpolapp directory (which contains the new HydroClass code). The source code for this was entirely missing from the release media. Also the open source stub code did not link with the RVP8 and IRIS correctly. Also the new Makefiles at the top level of the source tree were missing. Trac #150, #151.
9. We have received Archive2 format files with both little endian and big ending byte order. As a consequence **archive2view** was enhanced to support both via a “-byte_order” command line argument.
10. The SRI product error signals were enhanced to print out the site name on surface_height.conf misses.

11. Fixed some problems when computing Zc using beam blockage correction. It was signalling the wrong message if the site was missing from the beam blockage table. Also the setup/Ingest question to enable beam blockage on reingest was labelled wrong. It was changed from “Clutter Correction in ReINGEST” to “Beam Blockage in ReINGEST”. Trac #159.
12. Raised the maximum number of products in the Product Schedule from 800 to 2000. Trac #158.
13. The IRIS Task Configuration Menu had a curious bug in the log scale threshold. It was rounding incorrectly such that any number ending in “.3” would actually save as “.2”, but you will not see it until you reload the menu. Since the fundamental resolution of this number is in 1/16 of a dB, we this by displaying an extra decimal place and always rounding to the nearest 1/16.
14. Fixed a bug in the IRIS live product generation. If you had a system with multiple radars making the same task, then it was getting the sites confused.
15. Another bug in the Task Configuration Menu. When changing threshold control flags for the W data type, it would update the text for ZDR instead. The file was actually being changed correctly.
16. Fixed a bug in the **zauto7** calibration utility. The Xmit loss would not show the current value if Polarization was set to Vertical on a system which transmits H+V.
17. There was a funny bug in **rtdisp** unrelated to the significant enhancements in new features #3. Anytime you loaded a saved configuration from the File/Load button it would erase the beam widening so the display became a series of line, trac #184.
18. See the bug list in the RDA release notes for **HydroClass** related bugs which were fixed.
19. The **HydroClass** configuration name from the .conf file is now stored in the IRIS ingest header when you are producing HydroClass data in IRIS/reingest. The name is intended to summarize the HydroClass configuration state, given that storing all the parameters is impractical. Users are encouraged to modify 'dpolapp.sConfigurationName' to signal their local and/or test changes made in configuration parameter settings, when considered significant w.r.t. their default settings. Trac #102. This does not work when the HydroClass is computed in the RVP8.

IRIS 8.11.0 Release Notes (13 Dec 2006)

These notes cover changes made in IRIS since release 8.10.10 of 28 October 2006. If you are upgrading from an earlier release, please read those notes also.

Data Format Changes

1. We have added a new text field to the **product_configuration** structure to control which subtasks of a hybrid task are to be included in the product: sTaskMinorList[16]. This changes the IRIS menu client/server protocol. As a consequence, the IRIS menus will not connect between versions 8.11.0 (or later), and 8.10.10 (or earlier) for the Product Configuration Menu.
2. The ingest_configuration structure now has a new field in which we store the configuration name from the HydroClass config file dpolapp.conf. This is only implemented for HydroClass on reingest in this release.

Installation Changes

1. The Software Installation Manual has been revised to recommend that customers create a /usr/iris_data/input directory. This will match a standard input device which will be created on a new install. The **sigconfig** script also now creates this.

Bug Repairs

1. If you are using HydroClass, please see Bug Repairs 2. , 3. , 4. , 5. , 6. , 7. , and 8. in the RDA 8.11.0 Release Notes.
2. Lots of improvements to the NEXRAD utilities **nr_velcal** and **nr_noisefig**. New command line options, such as velocity sign reversal. The Siggen is on during nr_velcal test
3. Fixed bugs in the **zauto** output of dynamic range values. The siggen limits will now allow siggen settings above 10 dBm. The NEXRAD buttons are now always set back on exit, and the calibration and siggen times are now correctly updated only for the PW that was calibrated. Also fixed a bug in the View Cal Menu. New Results Horiz was being display in New Results Vert.
4. The antenna library was not transmitting the signal generator level when the signal generator was turned off. As it turns out, in NEXRAD systems this attenuator is used in other cases, so we changed this.
5. Fixed a bug in **bitex** which could cause it to insist that you needed to run **qant** when it should not. This happened if you created a new field in **bitex**, then changed it's type to QBITE.
6. Fixed a bug in the **antenna** utility. If you launched two copies of antenna, then adjusted the siggen setting on one, it was not always automatically tracking on the second. Also the siggen scrollbar increment/decrement was not updating the signal generator.

7. **Zcal** now also prints out the slope for RVP7 and later.
8. **Siris** will now exit with an error if the ant_lib fails to start, Trac #62.
9. **BufrToIris** now better handles 8-bit input data because it will now allow up to 255 data levels.
10. Fixed a time adding bug introduced on 14 Nov 2005, in release 8.09.10. When adding time to times whose DST (Daylight savings time) state did not match the normal default value for the host computer's time zone, it would make errors by 1 hour. Ymds_add_seconds() now preserves the DST flags exactly as input. This could cause many bugs, including skipping the last hour of the day in RAIN1 products.
11. Raised the maximum number of IRIS output windows on one system from 9 to 20. Trac #69.
12. If a customer installed patches to the \${IRIS_BIN} directory using the suggested symbolic link format, it would confuse **sigmet_env** to give the wrong results. **Sigmet_env** is now fixed to perform checking through symbolic links, ticket #72
13. Fixed a bug in the Makefiles which caused some of the messages catalogs to be invalid, and prevented message translations for catalog 105 and 114. This bug was introduced in 8.10.10.
14. The projection configuration menu now has a help button.
15. Some improvements were made to the IRIS projection configuration menu. You can now specify the Earth's Ellipsoid by either typing in the Equatorial radius and reverse flattening (as before), or by typing in both the equatorial and polar radii. We also increased the display resolution to 11 digits of radius, and 10 digits of reverse flattening. This allows you to see the distinguish the new GRS80 ellipse from the old WGS84, since they differ by only 1/10 of a mm in radius.
16. When the product generator is run on a hybrid task, and the "Products from partial ingest scans" setup question is set to "No", then the product generator insists that all the specified hybrid scans must be present to run. Unfortunately, if you use a "*" in the name, this means now maps to all letters A-Z (previously just A-C), which is unlikely to be found. This is repaired by changing the product scheduler to handle the "*" as a special case. If a * is in the hybrid list, then it will run on whatever hybrid inputs are found. If you want to force it to use all 26 inputs, then simply specify the list as "A-Z" rather than "*". It will still require that none of the hybrid inputs was interrupted in the middle. Trac #86
17. Fixed some bugs in the **IrisToBufr** pipe. It was computing the wrong number for the X- and Y- offset, including reversing the sign of the X-offset. Also the north-polar Stereographic projection reference latitude is now set to 90.

New Features

1. To better support customers, we have a new bug tracking system here called “Trac”. You will now see references to Trac number in the release notes. This can help us answer more detailed questions about changes.
2. We have improved the product generator to support hybrid tasks with more than 3 minor tasks. The new limit is 26. A significant part of this change is to allow more explicit control of which sub-tasks of a hybrid task are to be included in the product. The product configuration menu now has a separate text field to enter the letters of minor tasks to use. Three formats are supported: “*” means all minor tasks, “ADE” means use minor tasks _A, _D and _E, and “B–E” means use tasks _B through _E (that is _B, _C, _D, _E). For backwards compatibility, the old suffixes in the task name of “_*”, “_A”, “_B”, “_C”, “_AB”, “_BC”, “_AC”, and “_ABC” still have their old meaning. We have phased out “_X” in the task name.