

Vfyruninfo Editor User's Manual

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1.0 Overview

The Vfyrinfo Editor is a GUI designed for managing the contents of the vfyrinfo table, which is a table used by the IVP software to determine what verification locations can be included in pairing and statistics computations. This table is complex and should only be edited via this GUI tool.

1.1 Using This Manual

Section 7.0 provides instructions on how to use this software to generate verification graphics. Sections 8.0 and 9.0 provide information on the two windows of the Vfyrinfo Editor. It is recommended that the user follow the instructions in Section 7.0 when first using this software, and, as the user interacts with the IVP, refer to the Section pertaining to a window if he or she has a question about it (see the Table of Contents for the page number).

2.0 Notation

The following notational conventions are used in this document:

- A GUI component, including a window, panel, text field, menu, menu item, or button, is displayed in **bold**.
- A menu item within a menu is displayed as **[menu name] >> [menu item name]**. For example, **Actions >> Close** is the **Close** menu item within the **Actions** menu.
- Terms to remember and *NOTES* will be denoted in *italics*.
- <key> indicates a keyboard key. For example <shift> means the shift key.
- Text to be entered at a command line is displayed in `this font`.
- Directories and file names are in `this font`.
- A directory corresponding to an apps-defaults token is denoted `$(token)`.

3.0 Execution

To execute the Vfyrinfo Editor, enter:

```
cd $(get_apps_defaults vsys_scripts)
ivpruninfo
```

The **IVP Vfyrinfo Table Editor** will pop up.

4.0 Apps-defaults Tokens

The following apps-defaults tokens are used by the IVP:

- adb_name : <depends upon RFC>
- util_rls : \$(util_dir)/bin/RELEASE
- verify_dir : /rfc_arc/verify
- vsys_dir : \$(verify_dir)
- rax_pghost : ax <optional; if not present, it uses the PGHOST environment variable>

- `pguser` : `pguser` <optional; if not present, it uses the PGUSER environment variable>
- `pgport` : `5432` <optional; if not present, it uses the PGPORT environment variable>

Each of the above directories must exist for the IVP to run properly.

5.0 Files and Directory Structure

All of the directories corresponding to apps-defaults tokens in Section 4.0 must exist. In addition, the following files must be in place for the IVP to execute properly:

```
$(util_ribs)/rfc.ohd.jar
$(util_ribs)/ChartDirector_s.jar
/usr/share/java/pg74.215.jdbc3.jar
$(vsys_dir)/scripts/ivpruninfo
```

6.0 Terminology

The following terms are used within this document and are important to understand:

- *verification location*: A location id and SHEF code that defines one forecast point and data type that is to be verified.

Additional terms are defined within the manual as needed, and will be denoted in *italics*.

7.0 Instructions

The following steps can be used to setup the vfyrinfo table the first time:

1. Determine for which locations verification will be done.
2. For each location, determine for which physical elements (pe), durations (dur), extremums, and forecast type sources (fcst ts) verification will be done.
3. For each location, pe, dur, extremum, and fcst ts, do the following:
 - a. Identify whether or not an entry exists in the ingestfilter table for the location.
 - b. Decide on a sensor preference list for ranking competing observed data values. If you do not care about ranking observed values by type source, then skip this step.
 - c. Decide on a response time for the location. If you do not specify a response time or you specify an unrecognized response time, then "NONE" is assumed.
 - d. Identify if the location is now active.
 - e. Decide on if the location is to be part of the national verification program.
4. Open up the **Vfyrinfo Editor** and do the following:
 - a. Select all of the locations for which an entry exists in the ingestfilter table from the upper table and click on **Choose**.
 - b. For each location (or set of locations), edit the sensor preference list, response time, active state, and national flag, by clicking on the **Sensor Prefs**, **Response**, **Active**, and **National** buttons, respectively.
 - c. For all of the locations not in the ingestfilter table, click on the **Create** button and use the **Vfyrinfo Record Editor** to create the locations. Click on **OK** to accept the new locations.

- Set the sensor preferences and response time within the **Vfyrinfo Record Editor** window prior to clicking **OK**.
- d. For the created locations, set the active state and national flag by clicking on the **Active** and **National** buttons, respectively.
 - e. Click on **Save** to save the table.

8.0 IVP Vfyrinfo Table Editor

The **IVP Vfyrinfo Table Editor** (Figure 1) provides tools to manage the rows of the vfyrinfo table, each of which corresponds to a verification location. A verification location is uniquely identified by a location id (lid from the IHFS and archive databases) and the SHEF code components: physical element, duration, extremum, and forecast type source. A verification location also has a response time, an active flag (specifying if the location is active), a national flag (specifying if it is part of the national program), an observation type (specifying the type of tables accessed to acquire pairs for verification), various critical stages and flows found in the rivercrit table of the archive data, and categories for both the observed and forecast value.

There are three components of the **IVP Vfyrinfo Table Editor**:

- **Filter Panel**
- **Ingest Filter Contents Table**
- **Vfyrinfo Contents Table**

Each of these components is described below.

8.1 Terminology

These terms must be defined in order to describe the **Verification Location Manager**:

- *selected location*: a selected location is a verification location that is currently selected from the table by clicking on the location's row. Selected locations are highlighted in blue.
- *chosen location*: A chosen location is a verification location that is made available to verification by being part of the vfyrinfo table. A location is chosen by first selecting the row from the **Ingest Filter Contents Table** and then clicking on **Choose**, or creating a new row by clicking on **Create**. Chosen locations are displayed in the **Vfyrinfo Contents Table**.

8.2 The Ingest Filter Contents Table

The **Ingest Filter Contents Table**, the upper table in the window, provides candidate verification locations, based on the contents of the ingestfilter table of the archive database. By default, this table is limited to only those rows of the ingestfilter table for which the type (column 't') is 'F'. However, this can be overridden by a user via the system settings file (see Appendix A). The background colors for this table are as follows:

- gray/light gray/white: If the location is currently part of the ingestfilter table and has not been chosen to become part of the vfyrinfo info.
- Red/light red/pink: If the location is currently part of the vfyrinfo table, but is to be removed once the user clicks on **Save**. This is true for both valid and invalid vfyrinfo table rows (see the **Vfyrinfo Table Contents Table**, below).

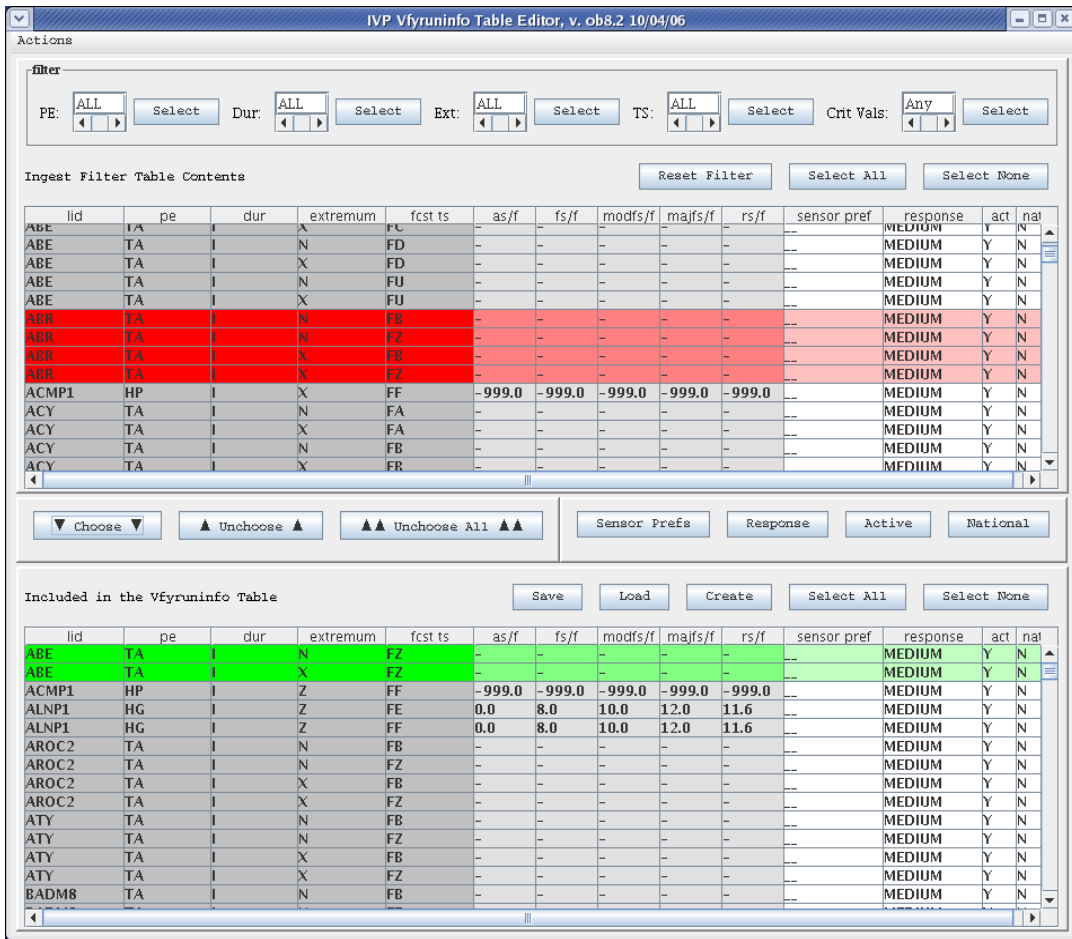


Figure 1: Screenshot of the IVP Vfyrinfo Table Editor window.

These colors can be overridden via the system settings file. The columns for this table are as follows:

- location: The 8-character (maximum) identifier for a location. Often called the lid in the IHFS and archive databases.
- pe: The 2-character SHEF physical element code.
- dur: The 1-character SHEF duration code.
- ext: The 1-character SHEF extremum code.
- fcst ts: The 2-character SHEF forecast type source code.
- as/f: The action stage (for height data) or flow (for discharge data) critical value, defined for this location in the rivercrit table. If the data type is stage or discharge but this critical value is not defined, it will be -999.0. If the data type is neither stage nor discharge, then it will be "--".
- fs/f: The flood stage (for height data) or flow (for discharge data) critical value, defined for this location in the rivercrit table. See "as/f".
- modfs/f: The moderate flood stage (for height data) or flow (for discharge data) critical value, defined for this location in the rivercrit table. See "as/f".
- majfs/f: The major flood stage (for height data) or flow (for discharge data) critical value, defined for this location in the rivercrit table. See "as/f".
- rs/f: The record stage (for height data) or flow (for discharge data) critical value, defined for this location in the rivercrit table. See "as/f".

- **sensor pref:** The sensor preferences for the location. This is a comma delimited list of observation type sources, providing a preference order used in deciding what observation to pair with a forecast. This is edited by clicking on **Sensor Prefs**.
- **Response:** The response time for the location, edited by clicking on **Response**. If you do not plan to use the response time, or the data type is not stage or flow, then this column will be unused and any value is valid.
- **Act:** The active status ('Y'es or 'N'o) for the location, edited by clicking on **Active**. This allows for locations to be specified as inactive if historical pairs are to be constructed, but the point is not actively forecasted.
- **Natl:** The national flag ('Y'es or 'N'o) for the location, edited by clicking on **National**. This allows for the locations that are part of the national verification program to be specified within the vfyruninfo table.

Within the table, locations are selected by clicking on the corresponding row. Multiple locations can be selected by clicking and dragging, or by using the <ctrl> and <shift> buttons while clicking. A selected location can be deselected by pressing <ctrl> while clicking on its corresponding row.

8.3 *Filter Panel*

The **Filter Panel** is located above the **Ingest Filter Contents Table** and provides tools for removing locations from that table based on the pe, dur, ext, and ts columns, and based on if the critical values for a row are missing (-999.0 or "-"). There are five text fields in the panel: **PE**, **Dur**, **Ext**, **TS**, and **Critical Values**. Rows are filtered out from the table by doing one of the following:

- Enter text into the text field and press <Enter>. No rows will be removed until <Enter> is pressed. The text fields must be comma delimited list of acceptable values.
- Click on the corresponding **Select** button, which spawns a window similar to the **Select FCST_TS Window** of the IVP (see the *Interactive Verification Program User's Manual*, Section 12.0), selecting items from the list, and clicking **OK**.

Whenever either method above is used to change the text field values for any of the four text fields, only those rows matching the conditions set in *all* of the text fields will be included in the display.

*NOTE: The **Filter Panel** only applies to the **Ingest Filter Contents Table**.*

8.4 *The Vfyruninfo Contents Table*

The **Vfyruninfo Contents Table**, the lower table in the window, displays the verification locations for which verification is to be allowed. The background colors for this table are as follows:

- gray/light gray/white: If the location is currently part of the vfyruninfo table.
- green/light green/lighter green: If the location is not currently part of the vfyruninfo table, but is to be added once the user clicks on **Save**.
- Red/light red/pink: The location is currently part of the vfyruninfo table, but is an invalid row, meaning that one of the required fields (lid, pe, dur, ext, and fcst ts) is empty.

These colors can be overridden via the system settings file (see Appendix A). Each row of the table lists the same attributes of a verification location as are listed in the **Ingest Filter Contents Table**.

8.5 *Sorting the Rows*

To sort the rows of a table by a given column, just click on the header for that column. For example, to sort alphabetically by location id, click on the “lid” column header. The first time the table is sorted by a particular column, the sort will be in ascending order. The second time, it will be in descending order. After that, the sort order will continue to alternate between ascending and descending.

8.6 *Buttons*

- **PE Edit** button: Opens up a **Select PE Window** to allow selecting acceptable values for the pe column of the table. Clicking on **OK** within the window will result the corresponding text field being updated and rows being selected based on the **Filter Panel**.
- **Dur Edit** button: Opens up a **Select DUR Window** to allow selecting acceptable values for the dur column of the table. Clicking on **OK** within the window will result the corresponding text field being updated and rows being selected based on the **Filter Panel**.
- **Ext Edit** button: Opens up a **Select EXTREMUM Window** to allow selecting acceptable values for the ext column of the table. Clicking on **OK** within the window will result the corresponding text field being updated and rows being selected based on the **Filter Panel**.
- **TS Edit** button: Opens up a **Select FCST_TS Window** to allow selecting acceptable values for the ts column of the table. Clicking on **OK** within the window will result the corresponding text field being updated and rows being selected based on the **Filter Panel**.
- **Critical Values Edit** button: Opens up a **Select Missing Window** to allow selecting whether to include only rows with non-missing critical values. Clicking on **OK** within the window will result the corresponding text field being updated and rows being selected based on the **Filter Panel**.
- **Reset Filter** button: Reset the components of the **Filter Panel** to include all rows of the vfyruninfo table.
- **Select All** buttons: Selects all rows in the corresponding table.
- **Select None** buttons: Deselects all rows in the corresponding table.
- **Sensor Prefs** button: Opens up a **Set Sensor Preferences** window to allow for manual entry of the sensor preferences for all selected locations. Click on **OK** to accept the changes and close the window, or **Cancel** to close the window without accepting the changes.
- **Response** button: Opens up a **Set Response Time** window to allow for entry of the response time for all selected locations. Click on **OK** to accept the changes and close the window, or **Cancel** to close the window without accepting the changes.
- **Active** button: Opens up a **Set Active State** window to allow for entry of the active status for all selected locations. Click on **OK** to accept the changes and close the window, or **Cancel** to close the window without accepting the changes.
- **National** button: Opens up a **Set National Flag** window to allow for entry of the national flag for all selected locations. Click on **OK** to accept the changes and close the window, or **Cancel** to close the window without accepting the changes.
- **Choose** button: Chooses all currently selected locations in the **Ingest Filter Contents Table** for inclusion in the vfyruninfo table. After clicking, the selected rows will be removed from that table and inserted into the **Vfyruninfo Contents Table** with a green/light green/lighter green background. All rows will be deselected.
- **Unchoose** button: Unchooses all currently selected rows in the **Vfyruninfo Contents Table**. After clicking, the selected rows will be removed from that table and inserted into the **Ingest Filter Contents Table** with a red/light red/pink background. All rows will be deselected.

- **Unchoose All** button: Unchooses all rows in the **Vfyruninfo Contents Table**. After clicking, the rows will be removed from that table and inserted into the **Ingest Filter Contents Table** with a red/light red/pink background. All rows will be deselected.
- **Save** button: Save the current changes to the vfyruninfo table of the archive database. All rows in the **Ingest Filter Contents Table** with a red/light red/pink background will be deleted from the vfyruninfo table. All rows in the **Vfyruninfo Contents Table** with a green/light green/lighter green background will be inserted into the vfyruninfo table. All rows in both tables will be given a gray/light gray/white background color. All rows will be deselected.
- **Load** button: Loads the contents of the vfyruninfo table, so that both tables reflect the current contents of the vfyruninfo table, and all rows have a gray/light gray/white background. All rows will be deselected.
- **Create** button: Opens up the **Vfyruninfo Record Editor** window. Upon clicking **OK** in that window, new rows will be added to the **Vfyruninfo Contents Table** with a green/light green/lighter green background. All rows will be deselected.

8.7 *Menu Items*

- **Actions >> Exit** menu item: Exits the Vfyruninfo Editor. It will spawn a confirmation window prior to exiting in order to make certain the user wants to exit.
- **Help >> About** menu item: Opens up a dialog summarizing version information.

9.0 *Vfyruninfo Record Editor*

The **Vfyruninfo Record Editor** (Figure 2) provides a means to add a new location to the vfyruninfo table for which no corresponding record exists within the ingest filter table. It contains seven text fields that the user can fill out to specify the row(s) to add. Upon clicking **OK**, rows are added to the **Vfyruninfo Contents Table** within the **IVP Vfyruninfo Table Editor** window. The new rows will have green/light green/lighter green backgrounds, until the user clicks on **Save** or **Load**.

9.1 *The Text Fields*

All of the text fields within the **Vfyruninfo Record Editor** are comma delimited list of strings, except for the response time, which must be a single string. The text fields are as follows:

- **Location Text Field:** List of location ids (lids). Each lid is an 8-character (maximum) identifier for a location. Often called the lid in the IHFS and archive databases.
- **PE Text Field:** List of 2-character SHEF physical element code.
- **Duration Text Field:** List of 1-character SHEF duration codes.
- **Extremum Text Field:** List of 1-character SHEF extremum codes.
- **Forecast TS Text Field:** List of 2-character SHEF forecast type source codes.
- **Sensor Pref List Text Field:** Ordered list of 2-character SHEF observed type source codes.
- **Response Time Text Field:** Either "SLOW", "MEDIUM", or "FAST".

Upon clicking **OK**, one row is created in the **Vfyruninfo Contents Table** within the **IVP Vfyruninfo Table Editor** window for each combination of location id, pe, duration, extremum, and forecast ts that can be created from the comma delimited lists. The sensor preferences and response times for all rows will be set according to the corresponding text field.

9.2 Buttons

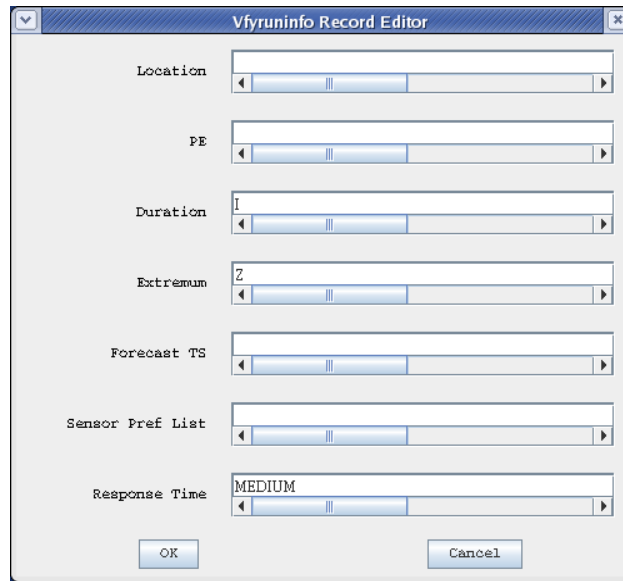


Figure 2: Screenshot of the Vfyrinfo Record Editor window.

- **OK** button: Close the window and insert new corresponding locations into the **Vfyrinfo Contents Table** within the **IVP Vfyrinfo Table Editor** window. The new locations will have an active status (act column) of 'Y' and national flag (natl column) of 'N'. The background colors for the row will be green/light green/lighter green.
- **Cancel** button: Close the window and discard the changes.

Appendix A: System Settings File

A.1 Overview

The format of the Vfyruninfo Editor windows look different on different operating systems. A system settings file allows the user to change the appearance of the windows. This appendix describes that file.

A.2 Location

The following apps-defaults token must be set in order for the system settings file to be found:

`vsys_dir`

The file is assumed to exist in the directory `$(vsys_dir)/app-defaults` with the name "IVPRUNINFO_SYSTEM_FILE.txt".

A.3 System Settings File

The system settings file uses the same file format as an IVP Batch Program batch file. However, rather than being read in sequentially, it is processed and stored at run-time so that each GUI component can extract the settings that pertain to it. If a command is given more than once within the system settings file, the last instance will over-ride the earlier instances.

A.3.1 Commands

Commands, indicated in **bold**, set parameter values that control the appearance of Vfyruninfo Editor. The `<value>` on the line of the batch input file that contains the command is usually restricted, depending on that command. Acceptable Values are listed for each command. The default value shown is the value assumed if the system settings command is not found.

The following are Vfyruninfo Editor system settings commands:

BorderFont = ``

Description: Controls the font used border labels.

Acceptable Values: Any font string (see Section A.4)

Default Value: "Serif:bold;10"

ButtonFont = ``

Description: Controls the font used on button labels in the main window.

Acceptable Values: Any font string (see Section A.4)

Default Value: "Courier;plain;12"

EditorIngestFilterRestriction<code> = "`<string1>, ..., <string N>`"

Description: Restricts the rows visible in the **Ingest Filter Contents Table** based on the SHEF pedtsep code. The `<code>` component must be 'P', 'E', 'D', 'T', 'S', or 'Ext', and correspond to fields pe1, pe2, dur, t, s, and e in the ingestfilter table, respectively. For a record of the ingestfilter table to be considered as a candidate within the **Ingest Filter Contents Table**, each SHEF pedtsep component (except the probability, i.e. last 'p') must be in the corresponding user specified list.

Acceptable Values: List of possible 1-character values, or nothing, "", to accept all values. Do NOT include any quotes, single or double, within the list.

Default Value: "" for all, except for `EditorIngestFilterRestrictT`, which has a default value of "F".

EditorWindowHeight = <number>

Description: Controls the pixel height of the **IVP Vfyruninfo Table Editor** window.

Acceptable Values: positive integer value.

Default Value: 500

EditorWindowWidth = <number>

Description: Controls the pixel width of the **IVP Vfyruninfo Table Editor** window.

Acceptable Values: positive integer value.

Default Value: 800

**LabelFont = **

Description: Controls the font used on labels (not including buttons or text fields) in the main window.

Acceptable Values: Any font string (see Section A.4)

RecEditorWindowHeight = <number>

Description: Controls the pixel height of the **Vfyruninfo Record Editor** window (Figure 2).

Acceptable Values: positive integer value.

Default Value: 400

RecEditorWindowWidth = <number>

Description: Controls the pixel width of the **Vfyruninfo Record Editor** window (Figure 2).

Acceptable Values: positive integer value.

Default Value: 500

Default Value: "Courier;plain;12"

**TableFont = **

Description: Controls the font used in the table in the **IVP Vfyruninfo Table Editor**.

Acceptable Values: Any font string (see Section A.4)

Default Value: "Courier;plain;10"

**TextFieldFont = **

Description: Controls the font used in the text fields of the **Vfyruninfo Record Editor** window.

Acceptable Values: Any font string (see Section A.4)

Default Value: "Courier;plain;12"

VfyEditorMgrColumnName<#> = <string>

Description: Sets the name of the <#>-th column of the tables within the **IVP Vfyruninfo Table Editor** to be the specified string.

Acceptable Values: a string, which must be in quotes if spaces are included

Default Value: depends upon <#>; see the default display of the **IVP Vfyruninfo Table Editor**.

VfyEditorMgrColumnWidth<#> = <number>

Description: Sets the width of the <#>-th column of the tables within the **IVP Vfyruninfo Table Editor** to be the specified number.

Acceptable Values: positive integer value

Default Value: depends upon <#>: {88,77,77,78,78,55,55,55,55,55,88,88,30,30}.

VfyEditorNoChangeColor = <color>

Description: Controls the background color of the sensor pref, response, act, and natl columns of both tables for rows that are unchanged.

Acceptable Values: a color (see Section A.5)

Default Value: "WHITE"

VfyEditorNoChangeKeyColor = <color>

Description: Controls the background color of the lid, pe, dur, ext, and fest ts columns of both tables for rows that are unchanged.

Acceptable Values: a color (see Section A.5)

Default Value: "192,192,192"

VfyEditorNoChangeStageColor = <color>

Description: Controls the background color of the as/f, fs/f, mods/f, majfs/f, and rs/f columns of the **Vfyruninfo Contents Table** for rows that are to be inserted into the vfyruninfo table when **Save** is clicked.

Acceptable Values: a color (see Section A.5)

Default Value: "224,224,224"

VfyEditorToBeDeletedColor = <color>

Description: Controls the background color of the sensor pref, response, act, and natl columns of the **Ingest Filter Contents Table** for rows that are currently part of the vfyruninfo table but are to be deleted when **Save** is clicked.

Acceptable Values: a color (see Section A.5)

Default Value: "255,192,192"

VfyEditorToBeDeletedKeyColor = <color>

Description: Controls the background color of the lid, pe, dur, ext, and fest ts columns of the **Ingest Filter Contents Table** for rows that are currently part of the vfyruninfo table but are to be deleted when **Save** is clicked.

Acceptable Values: a color (see Section A.5)

Default Value: "RED"

VfyEditorToBeDeletedStageColor = <color>

Description: Controls the background color of the as/f, fs/f, mods/f, majfs/f, and rs/f columns of the **Ingest Filter Contents Table** for rows that are currently part of the vfyruninfo table but are to be deleted when **Save** is clicked.

Acceptable Values: a color (see Section A.5)

Default Value: "255,128,128"

VfyEditorToBeInsertedColor = <color>

Description: Controls the background color of the sensor pref, response, act, and natl columns of the **Vfyruninfo Contents Table** for rows that are to be inserted into the vfyruninfo table when **Save** is clicked.

Acceptable Values: a color (see Section A.5)

Default Value: "192,255,192"

VfyEditorToBeInsertedKeyColor = <color>

Description: Controls the background color of the lid, pe, dur, ext, and fest ts columns of the **Ingest Vfyruninfo Contents Table** for rows that are to be inserted into the vfyruninfo table when **Save** is clicked.

Acceptable Values: a color (see Section A.5)

Default Value: "GREEN"

VfyEditorToBeInsertedStageColor = <color>

Description: Controls the background color of the as/f, fs/f, modfs/f, majfs/f, and rs/f columns of both tables for rows that are unchanged.

Acceptable Values: a color (see Section A.5)

Default Value: "128,255,128"

A.4 Generic Font Format

All font settings for the Vfyruninfo Editor must be entered in the system settings file with the following value format:

```
<font name>;<font style>;<font size>
```

where each component can have the following values:

```
<font name>: "Serif", "SanSerif", "TimesRoman" or "Courier"
```

```
<font style>: "plain", "bold", "italics" or "bold-italics"
```

```
<font size>: any integer representing a valid size for that font
```

If an invalid size is specified, the system will use the default value, which varies based on the font.

A.4 Generic Color Format

All color settings for the IVP must be entered in the system settings file with the following value format:

```
<color> -or- <red> , <green> , <blue>
```

where each component can have the following values:

```
<color>: black, blue, cyan, dark_gray, gray, green, light_gray, magenta,  
orange, pink, red, white, yellow.
```

```
<red> , <green> , <blue>: The red, blue, and green numerical specifiers for a color. Each  
component must be an integer.
```

If an invalid size is specified, the system will use the default value, which varies based on the font.