Sierra Automated Systems
Broadcast & Communications

ENGINEERING NOTE for
SAS 32KD BACKUP and SAVES RECOMMENDATIONS

Rev 5 12/18/2014

INTRODUCTION:

This engineering note will help you to ensure that your SAS 32KD system databases are adequately backed up. As we have helped customers upgrade the Router Configuration Computer from older windows XP to Windows 7 or 8 we have found that many facilities do not have the necessary backups and saves. Backups and File saves will help establish a "RESTORE POINT" or "RETURN to LAST" in the event a programming/configuration change is not correct or any other configuration event that might interfere with previous or existing programming. SAS recommends you perform the following backup procedure PRIOR to any changes AND AFTER programming changes are made. It is recommended that backup file names are created with the Facility name, Frame Number (F1,F2 etc) and Date (e.g. 07022014) to store a complete history of each backup, DO NOT OVERWRITE previous saves. After you have familiarized yourself with this document and procedures, make a complete set of backups immediately to have a benchmark starting point!

The 'default' **Database** files are saved by the SAS Router Control Software (RCS) in the C:\Program Files\SASRCS directory as you update your system. See below for a complete description. We'll also tell you how to save/backup this information. Note that for Microsoft Windows 7 and above these files may be located in a 'virtual store' folder found at C:\Users\ComputerName\AppData\Local\VirtualStore\ProgramFiles(x86)\SASRCS\

System Configuration Data is not saved to the router control computer by default. The configuration data for channel numbers and control port information (e.g. console config) are saved in non-volatile memory inside the 32KD Mainframe hardware modules: the MCU-32E stores complete data, while the RIOlink chassis and DRC-16E may store subsets of this data. You can save/backup this information to the computer.

If you are using **SAS PC Automation** you should also backup the automation database before and after edits. The automation database is located in the C:\Program Files\SASAutomation directory. Note that non-time-based Automation is typically programmed in the mainframe MCU-32E modules and this programming is saved in the database saves described in this document.

SAS recommends you make file saves to a sub-directory under the SASRCS directory. Using a separate directory will make it easier to copy these files to a thumb drive or other computer. Dropbox or other cloud based storage works well for off-site storage backup. You can also contact SAS Engineering for help in creating the Saves. We're also happy to store copies of your backups on our SAS Server. When you copy the backups it's a great idea to copy the SASRCS.ini and progcfg.mdb to the off computer location – these are SAS Router Control Software configuration files that define folder options and other initialization.

VERSION INFO

SAS 32KD Operating Systems are divided into two groups:
- Earlier systems, **OS1 or 'Little Switch'**, support up to 4 mainframes and audio channel counts to 2048 X 2048.
- More recent systems, **OS2 or 'Big Switch'**, support up to 12 mainframes and up to 7,680 audio channel numbers.

If you are unsure which operating system you have, open your SAS Router Control Software (SASRCS) and navigate to Help>About. Earlier 'Little Switch' systems use a two number version (e.g. 3.12) and recent 'Big Switch' versions use a triplet version number (e.g. 02.01.0013).

Crosspoint Connections

The crosspoint connections can be quite dynamic in a 32KD System – they are changed with bus button presses, automation and other controllers. However, there are some connections that are relatively static (e.g. Cue Mix Bus to Cue Speaker), and it can be very useful to have a record of these connections to help you re-make them if they are ever changed (by unintentional actions or by hardware failure). It is possible to save a text based record of the crosspoint map at any moment in time. You can read this to easily see the connections at the time the save was created. If there are multiple connections to any one output they will be listed – one line per connection.

- Navigate to a Crosspoint Map (e.g. Full Map on Frame 1)
- Navigate to FILE>Export Crosspoint List by Output
- Create a filename. Include the date to make it easy to refer back to (e.g. Crosspoint List By Output DDMMYY.txt)

Note that this Crosspoint List will include all I/O in the system (all frames).

DATABASES

'Little Switch' Systems

The default database is:

1. **Switcher.mdb** database contains all data for MCU Automation Events, Display Lists, Button Programming, Salvos, Show Control and Button Templates. This database contains all Source Channel Configuration & Alphas; Destination Channel Configuration & Alphas; Relay, Opto, Location & Console Alphas; and Inhibits. In 'little switch' systems this file contains the data for the complete SAS 32KD System including all mainframes. All data is common to all mainframes. This file is located in the SAS Router Control Software directory.

2. **SASAutomation.mdb** database contains all data for SAS PC Automation events. This file is located in the SAS Automation directory.

The **backups** you will make are below. Please make the name for these saves unique to your facility, such as adding call letters or company name and city (KLMN below). You can also embed the date and time. SAS recommends that you do not erase or overwrite older saves – they may be useful as reference. The exact naming convention is not important, but a consistent naming convention will help you to sort through the saves you make.

1. KLMNddmmyyhhmm**Switcher.swt** This file is a complete copy of the Switcher.mdb (described above).

2. KLMNddmmyyhhmm**SwitcherConfigF#.bak** This data file contains Slot Channel Assignments, RS-485 Control Port Programming (for SAS Consoles and Controllers), Relay & Opto States, In and Out DSP and Trim Gains. Note that F# refers to 32KD System Frame Number, and you must save one configuration file for each mainframe in your system. This configuration data is unique for each mainframe and only stored in the mainframe, so important to back up outside of the mainframe.

3. KLMNddmmyyhhmm**SASAutomation.aut** This data file contains a binary save of the automation events in SASAutomation.mdb (described above).

'Big Switch' Systems

The default databases are:

1. **SASSystem.mdb** database contains all Source Channel Configuration & Alphas; Destination Channel Configuration & Alphas; Relay, Opto, Location & Console Alphas; and Inhibits. This file contains the data for the complete SAS 32KD System. This data is common to all mainframes. This file is located in the SAS Router Control Software directory.

2. **SwitcherF#.mdb** database contains all data for MCU Automation Events, Display Lists, Button Programming, Salvos, Show Control, Button Template and Group Alphas. Note that F# refers to 32KD System Frame Number, and there is one file for each mainframe in the system. This data is unique for each mainframe.

3. **SASAutomation.mdb** database contains all data for SAS PC Automation events. This file is located in the SAS Automation directory.

The backups you will make are below. Please make the name for these saves unique to your facility, such as adding call letters or company name and city (KLMN below). You can also embed the date and time. SAS recommends that you do not erase or overwrite older saves – they may be useful as reference. The exact naming convention is not important, but a consistent naming convention will help you to sort through the saves you make.

1. KLMNddmmyyhhmm**System.sys** This file is a complete copy of the SASSystem.mdb (described above)

2. KLMNddmmyyhhmm**SwitcherF#.swt** This file is a complete copy of the SwitcherF#.mdb (described above)

3. KLMNddmmyyhhmm**SwitcherConfigF#.bak** This data file contains Slot Channel Assignments, RS-485 Control Port Programming (for SAS Consoles and Controllers), Relay & Opto States, In and Out DSP and Trim Gains. Note that F# refers to 32KD System Frame Number, and you must save one configuration file for each mainframe in your system. This configuration data is unique for each mainframe and only stored in the mainframe, so important to back up outside of the mainframe.

4. KLMNddmmyyhhmm**SASAutomation.aut** This data file contains a binary save of the automation events in SASAutomation.mdb (described above).
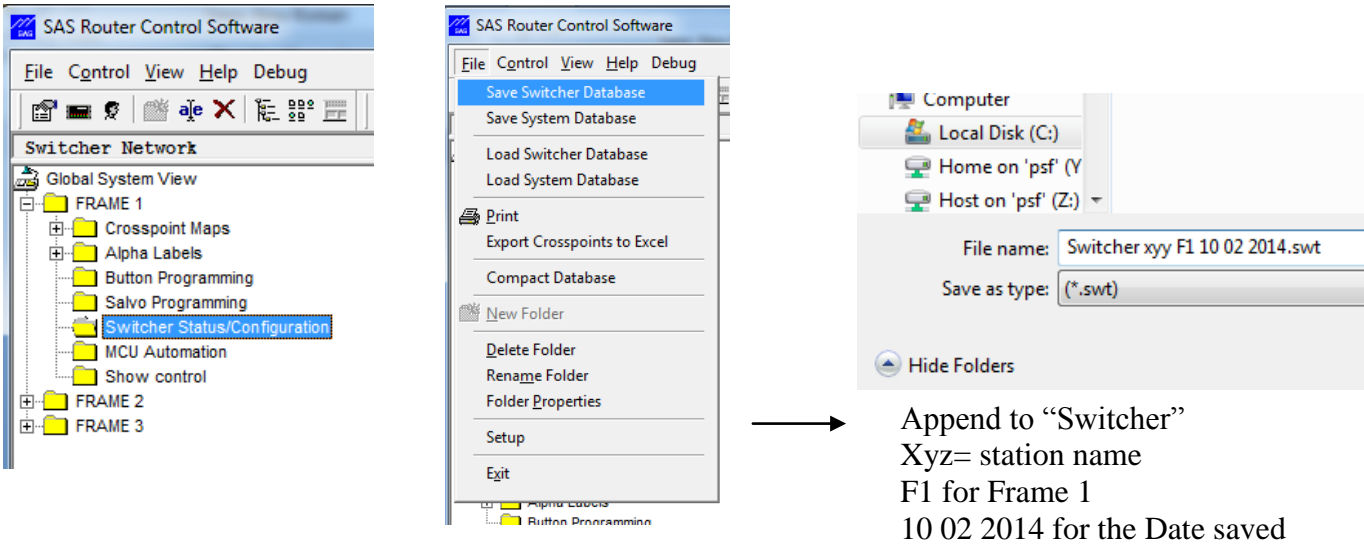
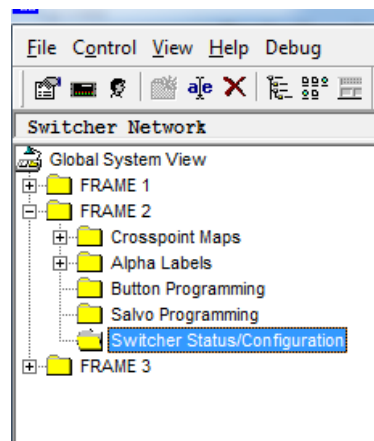**BIG SWITCH NEWER VERSION FILE SAVES**

1. SWITCHER DATA BASE

The Switcher Data base must be saved for EACH FRAME. From the file folder directory tree select SWITCHER STATUS/CONFIG, starting with Frame 1 -→.

With the **SWITCHER STATUS CONFIG** Folder highlighted, for FRAME 1, Select FILE--→:

⟶ Select Save Switcher Database

Append to "Switcher"
Xyz= station name
F1 for Frame 1
10 02 2014 for the Date saved

Repeat for Frame 2, 3 etc.

BIG SWITCH NEWER VERSION FILE SAVES

2. SYSTEM DATA BASE

The System.sys data base only needs to be saved from SWITCHER STATUS/CONFIG Frame 1. From the file folder directory select SWITCHER STATUS/CONFIG for Frame 1 -→
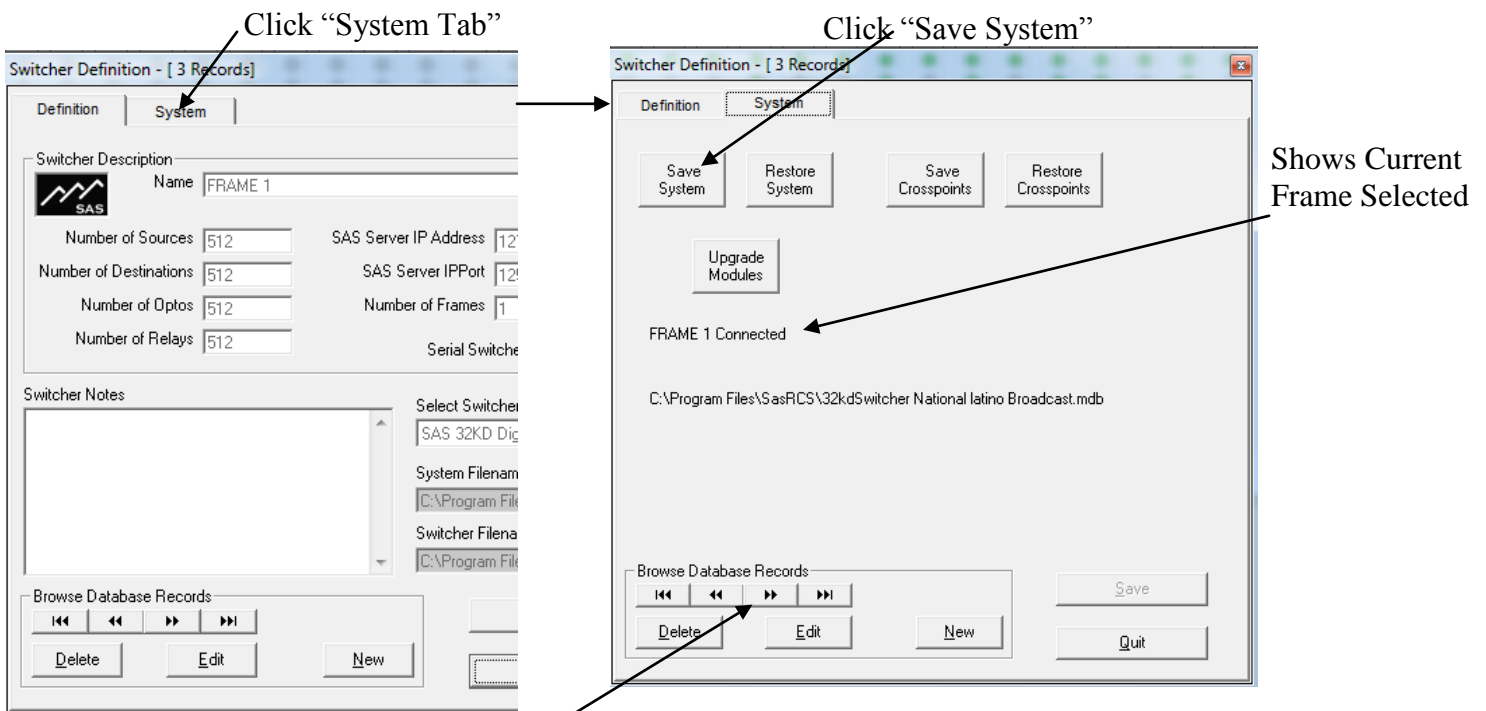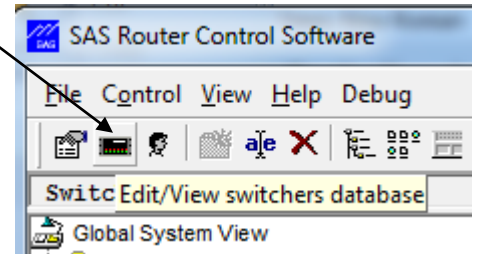
With the **SWITCHER STATUS CONFIG** Folder highlighted, for FRAME 1, Select FILE--→:

Select Save System Database

Append to "System"
Xyz= station name
10 02 2014 for the Date saved
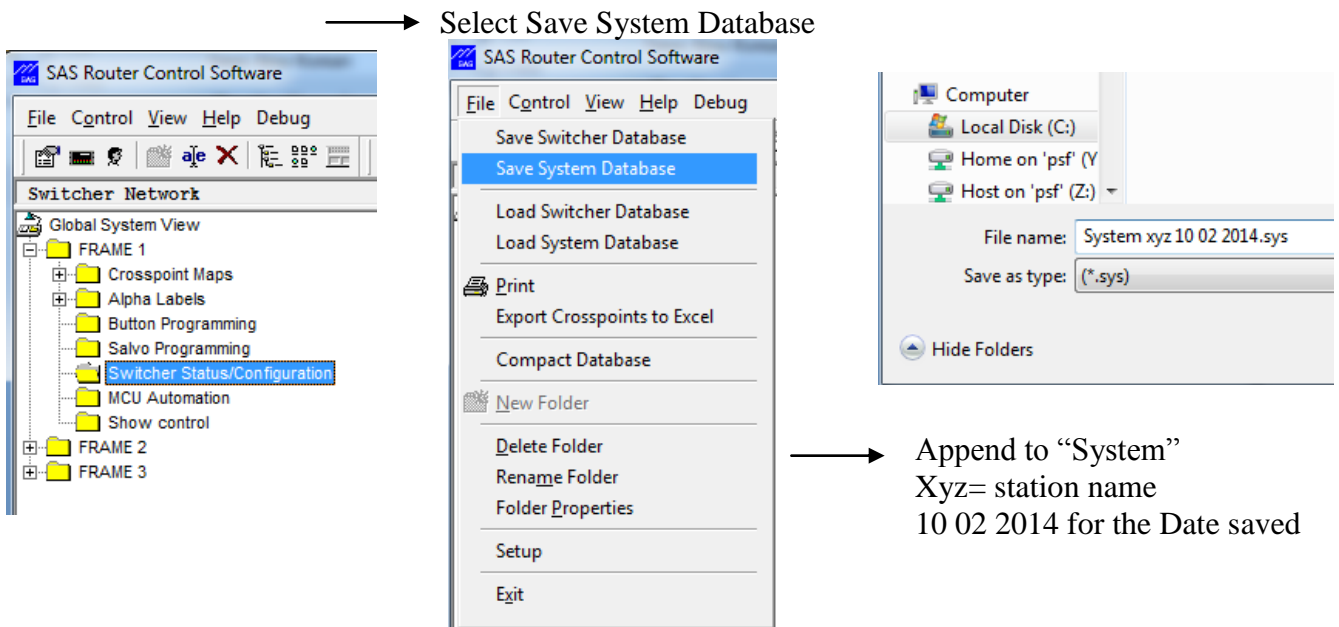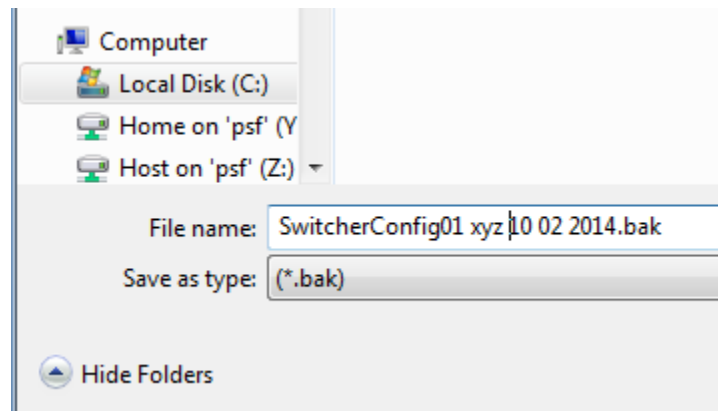
BIG SWITCH NEWER VERSION FILE SAVES

3. SAVE SYSTEM.BAK

The SAVE SYSTEM.BAK data base needs to be saved for EACH FRAME. This saves all of the Port Configuration and Programming for Consoles and Controllers. Click the SWITCHER ICON→

Click "System Tab"   Click "Save System"

Shows Current
Frame Selected

Use Arrows to Select Frame (Record #)

Append to "SwitchConfig01 (will be 02 for
frame 2, record 2 etc)
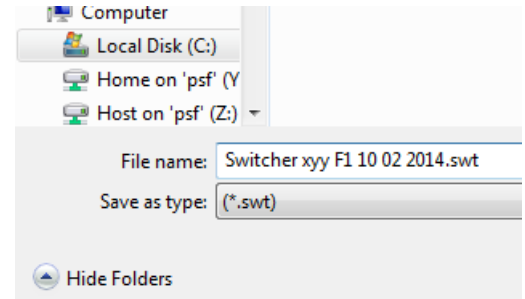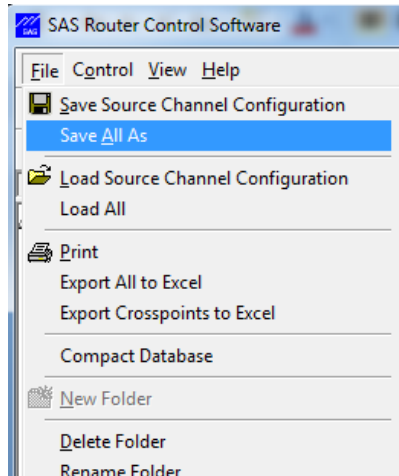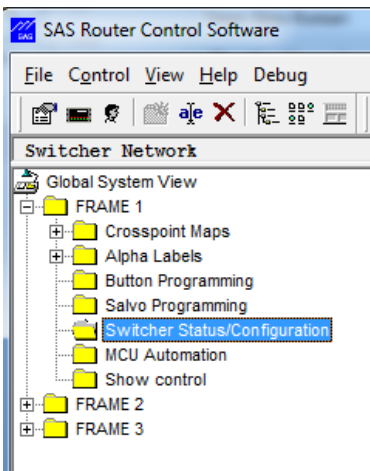Xyz = Station Name
10 02 2014 for Date

Repeat for each Frame

LITTLE SWITCH-- VERSION FILE SAVES

1. SWITCHER DATA BASE.

The Switcher Data base must be saved for EACH FRAME. From the file folder directory tree select SWITCHER STATUS/CONFIG, starting with Frame 1 -→.
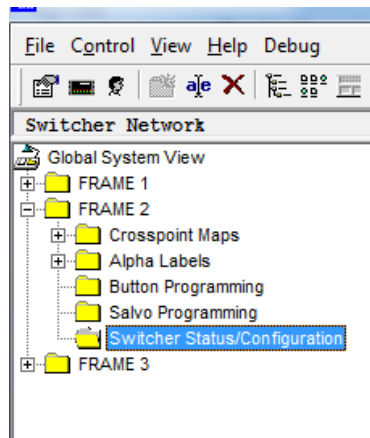
With the **SWITCHER STATUS CONFIG** Folder highlighted, for FRAME 1, Select FILE--→:

Select "Save All As"

Append to "Switcher"
Xyz= station name
F1 for Frame 1
10 02 2014 for the Date saved
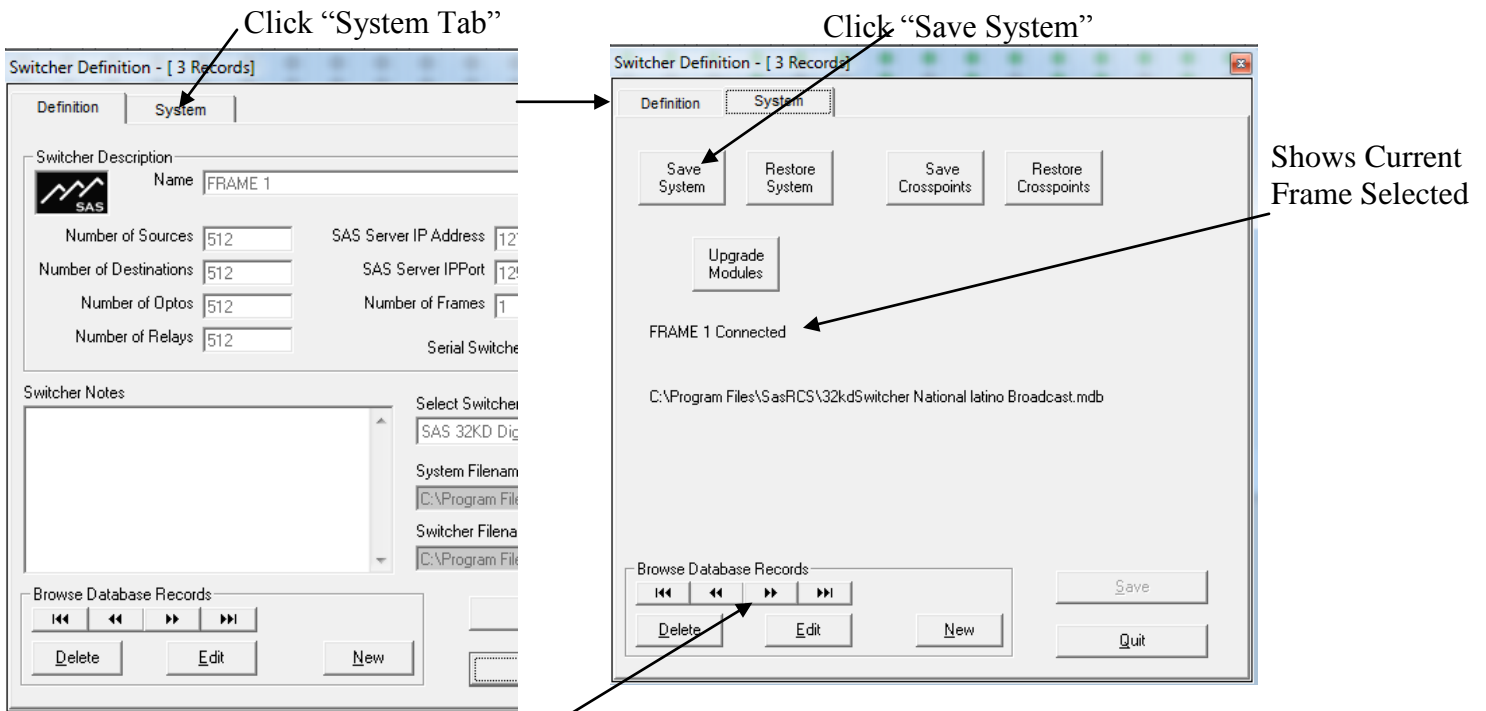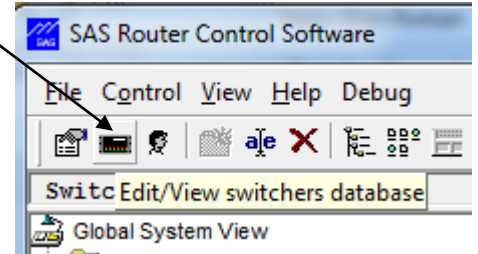
Repeat for Frame 2, 3 etc.

LITTLE SWITCH-- VERSION FILE SAVES

2. SAVE SYSTEM.BAK

The SAVE SYSTEM.BAK data base needs to be saved for EACH FRAME. This saves all of the Port Configuration and Programming for Consoles and Controllers. Click the SWITCHER ICON→

Click "System Tab"

Click "Save System"

Shows Current Frame Selected

Use Arrows to Select Frame (Record #)

Append to "SwitchConfig01 (will be 02 for frame 2, record 2 etc)
Xyz = Station Name
10 02 2014 for Date

File name: SwitcherConfig01 xyz 10 02 2014.bak

Save as type: (*.bak)
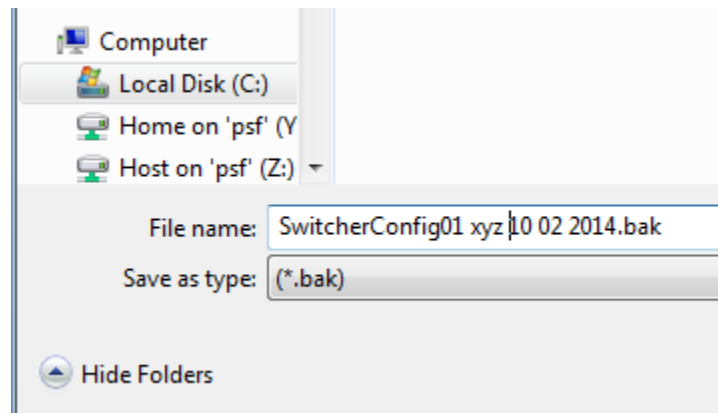
Repeat for each Frame

SYSTEM RESTORES

'Little Switch' Systems

To **restore** the **Switcher database to the RCS**: (When changing to a new computer or to revert data to a previous save)
  With the Switcher Status/Configuration folder highlighted for Frame 1, select File - Load All As:
  Navigate to and select the saved .swt file to be restored and press Open.
  Confirm your intent.
  When reverting to an old save any data set that was previously sent to the system with incorrect
    data will need to be resent. Go to the appropriate folder and click the send button.
  In the case of a replacement computer, no data needs to be sent from the RCS to the system.

To **restore** the **Switcher configuration to each 32KD mainframe**:
  Note: this restore does not include the crosspoint map.
  Make sure the proper database is present in the RCS. Load from a switcher database save if
    necessary. (see above).
  Click the Switcher icon or select File - View Switcher Database.
  Navigate to the frame to be restored and select the System Tab.
  Click the Restore System button.
  Navigate to and select the saved .bak file to be restored and press Open
  Confirm your intent.
  The restore will take several minutes.
  Once all data has been restored the frame should repowered if possible for synchronization of all
    data.
  Repeat for each mainframe, carefully selecting the save you made for each frame.

To **restore** the **PC Automation database to the PC Automation engine**: (When changing to a new computer or to revert data to a previous save)
  With the PC Automation folder highlighted, select File - Load Automation Events:
  Navigate to and select the saved .aut file to be restored and press Open.
  Confirm your intent.
  Once loaded the PC Automation engine will automatically read the events.

'Big Switch' Systems

To **restore** the **System database to the RCS**: (When changing to a new computer or to revert data to a previous save)
    With the Switcher Status/Configuration folder highlighted for Frame 1, select File - Load System Database.
    Navigate to and select the saved .sys file to be restored and press Open.
    Confirm your intent.
    When reverting to an old save any data set that was previously sent to the system with incorrect data will need to be resent. Go to the appropriate folder and click the send button.
    In the case of a replacement computer, no data needs to be sent from the RCS to the system.

To **restore** the **Switcher database to the RCS**: (When changing to a new computer or to revert data to a previous save)
    With the Switcher Status/Configuration folder highlighted for Frame 1, select File - Load Switcher Database:
    Navigate to and select the saved .swt file to be restored and press Open.
    Confirm your intent.
    When reverting to an old save any data set that was previously sent to the system with incorrect data will need to be resent. Go to the appropriate folder and click the send button.
    In the case of a replacement computer, no data needs to be sent from the RCS to the system.
    Repeat for each frame in the system

To **restore** the **Switcher configuration to each 32KD mainframe**:
    Note: this restore does not include the crosspoint map.
    Make sure the proper databases are present in the RCS. Load from a Switcher database save if necessary. (see above).
    Click the Switcher icon or select File - View Switcher Database.
    Navigate to the frame to be restored and select the System Tab.
    Click the Restore System button.
    Navigate to and select the saved .bak file to be restored and press Open
    Confirm your intent.
    The restore will take several minutes.
   Once all data has been restored the frame should repowered if possible for synchronization of all data.
    Repeat for each mainframe, carefully selecting the save you made for each frame.

To **restore** the **PC Automation database to the PC Automation engine**: (In case of a computer crash or upgrade or to revert data to a previous save)
    With the PC Automation folder highlighted, select File - Load Automation Events:
    Navigate to and select the saved .aut file to be restored and press Open.
    Confirm your intent.
    Once loaded the PC Automation engine will automatically read the events.