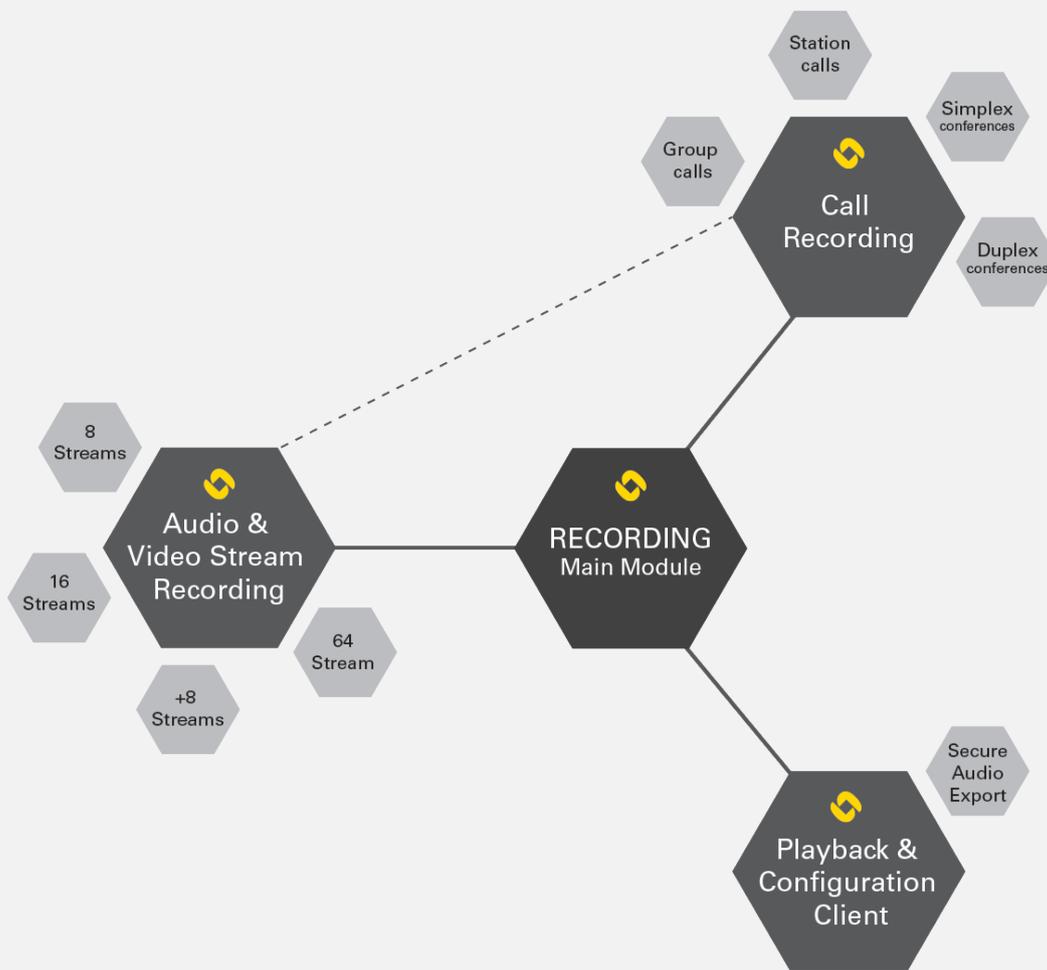




Recorder 2.0 Configuration & Operation Manual



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1 Introduction

1.1 Document Scope

This document describes the installation, configuration and operation of the Vingtor-Stentofon Recorder Software version 2.0.

The information in this document is aimed at System Administrators, System Installers and End Users.

1.2 Publication Log

| Revision | Date | Author | Status |
|----------|------------|----------|--|
| 1.0 | 5.5.2015 | HvD, HKL | Published |
| 1.1 | 27.12.2016 | HvD | Use of playback timers Start recording through HTTP Appendix A7: Problem solving |
| 1.2 | 11.12.2017 | HvD | Removal of analytics Added description to restart the service automatically on failure |
| 1.3 | 15.1.2018 | HvD | Possibility to assign Playback rights to operators independent of 'Live monitoring' rights |
| 1.4 | 19.2.2021 | HvD | Ordering and licensing information updated |
| 1.5 | 22.7.2021 | HvD, HKL | Prerequisites paragraph update, Zenitel logo replaces VS logo. |
| 1.6 | 3.1.2022 | HvD | Enterprise server removed |

2 Vingtor-Stentofon Recorder 2.0

2.1 General Description

Vingtor-Stentofon Recorder 2.0 provides the following functionalities:

- AlphaCom XE Call Recording
 - All terminal types: IP intercom, analog intercom, IP phones, analog phones
 - All call types: calls, group calls, conferences
- Video Recording
- Vingtor-Stentofon IP station audio stream recording
- Scheduled Recording
- Event Recording
- Event Recording on audio streams with pre-event recording

2.2 Server Specifications

Depending on the size of the total system, the hardware requirements for the recorder server can vary widely. The table below uses the formula **AvailableFrequency=NrOfCores * CoreClockSpeed** to give some measure of processing power.

| | |
|--|---|
| Operating System | Windows 7 or later, Windows Server 2008 or later |
| Processing Power * | The required processing power depends on the overall system configuration. For calculating the required number of processor cores and frequency, the following can be taken as a guideline: <ul style="list-style-type: none"> - Video – 150 MHz per stream - Audio – 75 MHz per stream |
| Memory | The minimum amount of available memory must be 4 GBytes |
| Maximum number of AlphaCom recording modules | 10 |
| Maximum number of simultaneously recorded AlphaCom calls | 64 |
| Maximum number of simultaneous audio/video streams | 64 |

**) Required minimum processing power is an indication only. Multiple clients each viewing different video streams requires more processing power than when all clients view the same streams. The table takes this into account to a certain degree only.*

3 Installation

The Vingtor-Stentofon Recorder 2.0 consists of 2 packages: the Recorder Server and the Recorder Client. Server and client can be installed on the same PC, but can also be installed on different PCs connected to a LAN. Both packages depend on the presence of 3rd party software.

3.1 Prerequisites

3.1.1 Server

The server requires the software as detailed in the following sections to operate correctly.

3.1.1.1 .NET

- Download and install **.NET 4.5.1** or later from the Microsoft website (<http://www.microsoft.com/en-us/download/details.aspx?id=42642>).

Note that this link is correct at the time of writing but that updated versions may have a new link.

3.1.1.2 SQLExpress

Make certain that Microsoft SQL Server (2008R2 or newer) or Microsoft SQL Express (2008R2 or newer) is installed.

3.1.1.3 VC++ 2010 SP1 redistributable

Download and install the VC++ 2010 SP1 redistributable from the Microsoft website (<http://www.microsoft.com/en-us/download/details.aspx?id=8328>).

3.1.1.4 VC++ 2012 Update 4 redistributable

Visit <http://www.microsoft.com/en-us/download/details.aspx?id=30679>

- Click **Download**
- Select **VSU_4\vc redistrib_x86.exe**
- Click **Next**

3.1.1.5 SQL Server 2012 Feature Pack (optional)

Elements from the feature pack only need to be installed when the SQL instance is not on the same PC as the recorder server. The feature pack must be installed on the PC on which the recorder server will be installed. Note that the SQL Server 2012 Feature Pack also covers SQL Server 2008 as described in section 3.1.1.2.

- Visit <http://www.microsoft.com/en-us/download/confirmation.aspx?id=29065>
- Click **Install Instructions**
- Scroll down the page to the heading **Microsoft® SQL Server® 2012 Native Client**
- Download and install the package **X86 Package (sqlIncli.msi)**
- Scroll down further to the heading **Microsoft® SQL Server® 2012 Command Line Utilities**

- Download and install the package **X86 Package(SqlCmdLnUtils.msi)**

3.1.1.6 Windows update

After installation of the above:

- Click the **Start** icon and select **Windows Update**

3.1.2 Playback & Configuration Client

The Playback Client needs the software as detailed in the following sections to operate properly. Most of the prerequisite software is available on the AlphaWiki download page. Windows Media Player and DirectX must be downloaded from the Microsoft website.

3.1.2.1 .NET

- Download and install .NET 4.5.1 or later from the Microsoft website (<http://www.microsoft.com/en-us/download/details.aspx?id=42642>).

Note that this link is correct at the time of writing but that updated versions may have a new link.

3.1.2.2 Windows Media Player

Windows Media Player is normally part of the Windows operating system. In case Windows Media Player is not installed, go to the Microsoft website (www.microsoft.com) and search for Windows Media Player. You will be directed to the page where the Windows Media Player relevant to your operating system can be downloaded and installed.

3.1.2.3 DirectX V9C or later

DirectX is normally part of the Windows operating system. To find out which version is installed on your PC:

- Click the **Start** icon and type **dxdiag** in the search box and start the application.
- Click the **System** tab to check the version information.

If the version is lower than DirectX V9C follow the instructions on the Microsoft web page. Go to www.microsoft.com and search for DirectX.

3.1.2.4 ffdshow

Visit <http://sourceforge.net/projects/ffdshow-tryout/files/latest/download?source=files> to download and install the latest files.

3.1.2.5 Windows update

After installation of the above:

- Click the **Start** icon and select **Windows Update**.

3.2 Server Installation

The Server installation file **VSRecorder2Setup.msi** is available from the AlphaWiki download page.

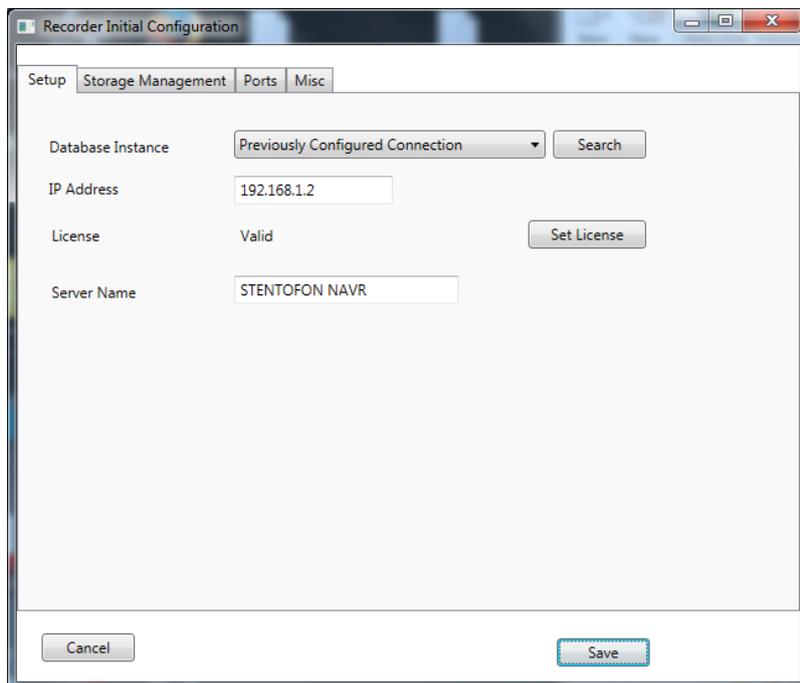
- Download the software and double-click the file to start the installation.

Please read the EULA carefully and accept if you agree. The installation wizard suggests an installation directory, but it is possible to set a different directory.

3.2.1 Server Configuration

Towards the end of the installation process a configuration dialog-box will be displayed.

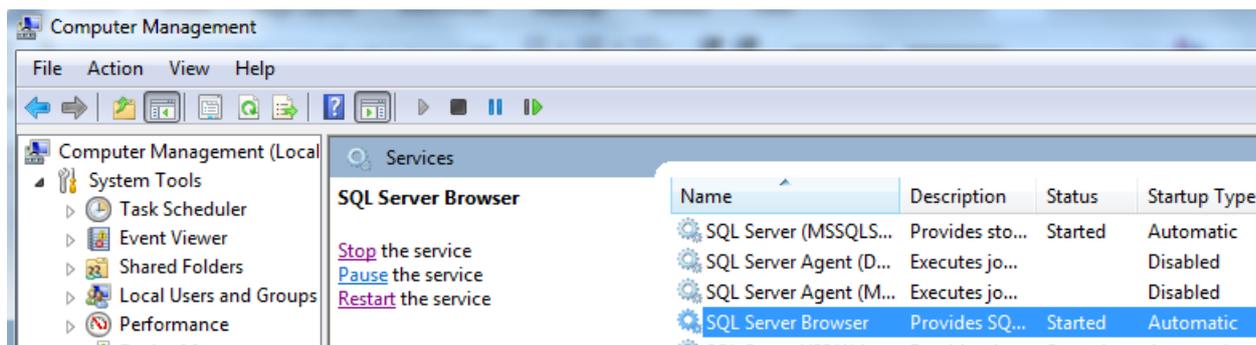
- The configuration can also be run after installation by selecting **Configure Savvault** after clicking **Start > VINGTOR-STENTOFON > VINGTOR-STENTOFON Recorder**.



If no database instance is selected automatically:

- Click **Search** to fill in the dropdown list with SQL servers that can be reached.
- Then select the instance which is to be used by the recorder server.

If no instance is listed, then please make certain that the service **SQL Server Browser Startup Type** is set to **Automatic** and that the service is running.



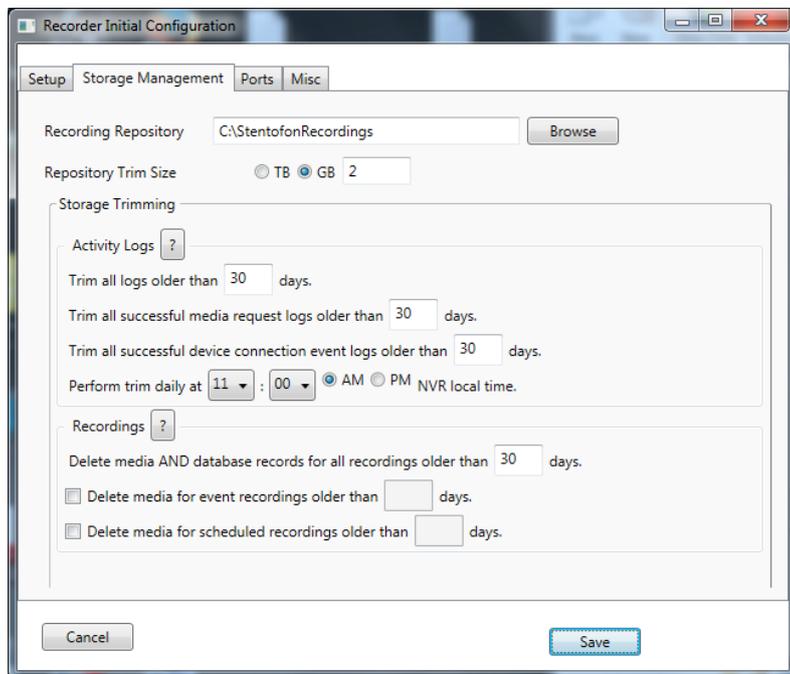
- If you have already received a license file, navigate to that file and click the button **Set License** to open a file browse window.

The Recorder service will operate with equipment connected to any of the server's networks. However, some equipment does require that one network is named. This can be done by filling in the appropriate server IP address in the **IP Address** field.

- Define a unique name for the recorder server.

Uniqueness of the name is very important when there are several Vingtor-Stentofon recorders in a system and the same playback client has to be used to contact them.

Under the **Storage Management** tab it is possible to define where media files must be stored and how long logs and media files of recordings should be kept. When information under this tab is not filled in correctly an error message will appear when the **Save** button is clicked on any tab in the dialog-box.



The **Recording Repository** path can be set to any directory on any machine which can be reached. Make certain that the directory does exist, as otherwise the recorder server will stop immediately with an error message after being started. To prevent typing errors and thus mismatches it is advisable to use the **Browse** button; within that dialog-box it is also possible to create a directory.

Make certain that the **Repository Trim Size** is set to less than 90% of the disk space you want to use for recordings such that new recordings can be added before old recordings are deleted. Logs and media files can also be deleted when they are older than a certain number of days.

Under the **Ports** tab it is possible to change the port numbers for some of the services. Normally this can be left with the default settings. Only when other software is already occupying a port, or specific firewall rules require another port to be used is there any need to alter any of these settings.

The **Misc** tab provides some miscellaneous setting possibilities. **SIPvault** is not a system which will be used in this recorder setup, and the selected codec is therefore of no consequence. The other check boxes can be set as required. Note that by default the recorder will try to connect to defined media sources. This can be set to **Stream-On-Demand**. In the current Vingtor-Stentofon Recorder setup this is only relevant for video cameras. Setting to Stream-On-Demand uses less network bandwidth, as the recorder only connects when a camera is selected for viewing or recording. The drawback is that the video is unavailable for the time it takes to connect to the camera.

RTP Playback Timer (introduced in version 2.1.3.11) gives the possibility to select specific timer options to be used during audio playback. With setting **Auto-Default**, the server selects the timer which it thinks is the most appropriate. Select **Windows Multimedia Timer** or **Alternative Timer**

manually if the playback sounds choppy. Choppy audio may also occur when the server and playback client computers have a significantly different date/time setting, it is therefore advisable to synchronize the time to an NTP-server. Especially systems where the server is running on a VM can be prone to timing issues.

- When all settings have been done click the **Save** button
- The service can now be started
 - Go to **Computer Management** and open the **Services** dialog-box
 - Select the service **NVR2 Service** and start the service

As stated above, the configuration can also be done or changed at a later stage. The server service must be stopped before any configuration can be done. After that the service can be started again.

There can be unforeseen reasons why the service stops. It is advisable to set service to automatically start again.

- Go to **Computer Management** and open the **Services** dialog-box
- Select the service **NVR2 Service**, right click and select **Properties**
- Select the TAB **Recovery**
- Set **First failure**, **Second failure** and **Subsequent failures** all to **Restart the Service**

3.3 Playback & Configuration Client Installation

The installation file **VSRecorder2ClientSetup.msi** is available from the AlphaWiki download page.

- Download the software file and double-click the file to start the installation.

Please read the EULA carefully and accept if you agree. The installation wizard suggests an installation directory, but it is possible to set a different directory.

3.4 Licensing

3.4.1 General

The Vingtor-Stentofon Recorder 2.0 software is available for free from AlphaWiki, but without a license, the server service will stop immediately after it has been started.

3.4.2 Licenses and Item Numbers

| Item number | Description | Comment |
|-------------|--|--|
| 1190110100 | Vingtor-Stentofon Recorder - Base Module | Basic software, includes a connection license for 1 Client |

| | | |
|------------|---|---|
| 1190110110 | Vingtor-Stentofon Recorder - Playback/Configuration Client | License for additional clients – only a connected client consumes a license |
| 1190110120 | Vingtor-Stentofon Recorder - AlphaCom Recording Module | License for AlphaCom call recording; each connected AlphaCom requires its own license; Each license includes 2x 1190110138 |
| 1190110121 | Vingtor-Stentofon Recorder - AlphaCom Recording Module, AddOn | As 1190110120, but excluding the stream licenses. 1190110120 must be present in the system before this license can be purchased |
| 1190110131 | Vingtor-Stentofon Recorder - Stream Recording Module, 1 stream | License for 1 audio or video device – only in combination with 1190110120 or 1190110138 |
| 1190110138 | Vingtor-Stentofon Recorder - Stream Recording Module, 8 streams | License for 8 audio or video devices |
| 1190110180 | Vingtor-Stentofon Recorder - Secure Audio Export | License to export an audio recording, including a stand-alone playback client |

3.4.3 Demo Licenses

A free demo license is available on AlphaWiki. The demo license provides a full functional system:

- A Playback and Configuration Client
- Connection for 1 AlphaCom
- 8 streams/devices for intercom call recording, camera connection and/or permanent audio streams
- Secure audio export

With the demo license the software runs for 5 hours. After this time, the software will delete all log and media files and the service will stop. It is possible to restart the service again manually.

3.4.4 Obtaining a License

The procedure to obtain and activate a license is as follows:

- Download **LicenseRequestUtility.exe** from AlphaWiki to your PC
- Double-click the downloaded file to run the utility and fill in the form shown below
 - Red fields are mandatory
- Click **Generate Request File**
- Save the resulting file - the default file name is related to the information entered in the form
- Send the file together with the purchase order to cs@zenitel.com.

The support information is obtained directly from your PC. If you feel uncomfortable providing this information, it is possible to delete it, but for future support it is highly recommended to supply this information.

License Request Utility

Customer Information:

Company Name:

Address 1:

Address 2:

City:

State (if applicable):

Zip/Postal Code:

Country:

Phone Number:

Email Addr:

Contact Name:

Support Information (OPTIONAL):

Processor:

OS:

RAM:

Installing Dealer Information:

Company Name:

Address 1:

Address 2:

City:

State (if applicable):

Zip/Postal Code:

Country:

Phone Number:

Email Addr:

Contact Name:

Display Adapter:

Total HD Space:

Machine Name:

This utility must be run on the machine that the software will be licensed to.

You will normally receive a license file within 2 business days.

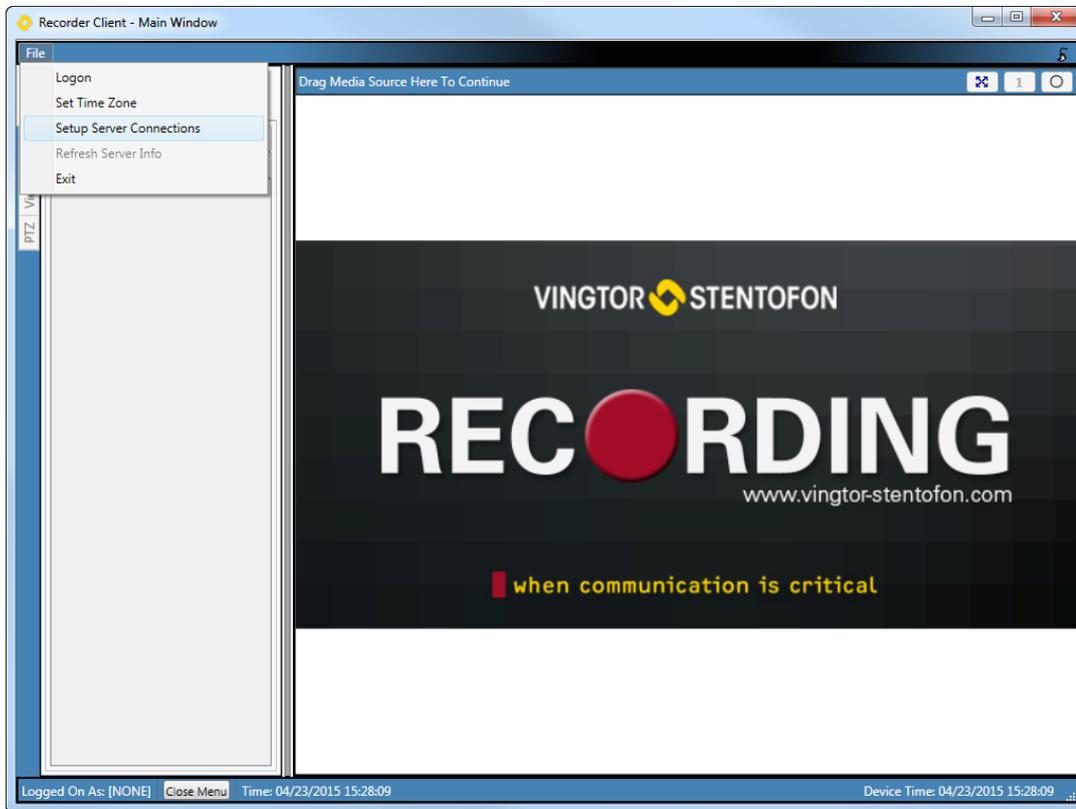
The file has file extension **.lic**. Refer to section 3.2 for information on how to install the license.

NOTE: Licenses can be replaced once in case of failure of the hardware of the computer on which the software is running up to a period of 3 years after initial purchase.

4 Configuration

Configuration of the system is done via the Playback & Configuration Client.

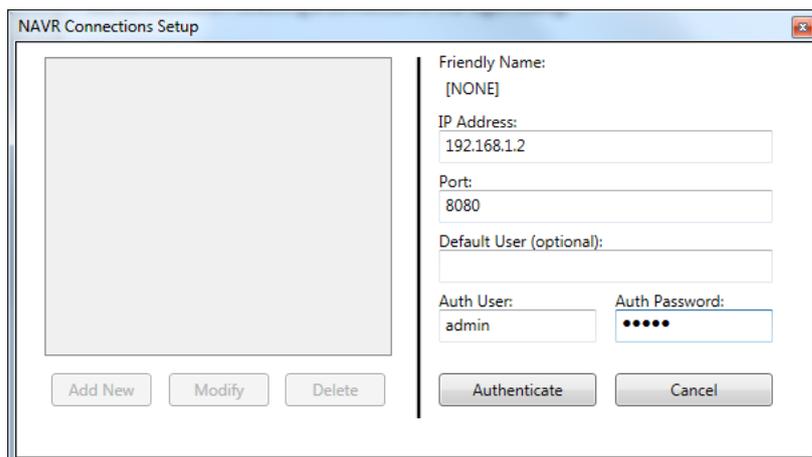
4.1 Connection to the Server



On startup of the client, a login dialog-box will be displayed. When starting the client for the first time on a particular machine, cancel the dialog-box.

To connect to the server:

- Select **File > Setup Server Connections** from the top menu
- Click **Add New** in the new dialog-box
- Enter the **IP Address** of the server machine and the Connection **Port** (default is 8080, see section 3.2)
- The **Default User** is optional - this is used on client startup to enter the user name beforehand
- Enter values for **Auth User** and **Auth Password** (necessary for the client to connect to the server)
 - Default user/password: **admin/12345**

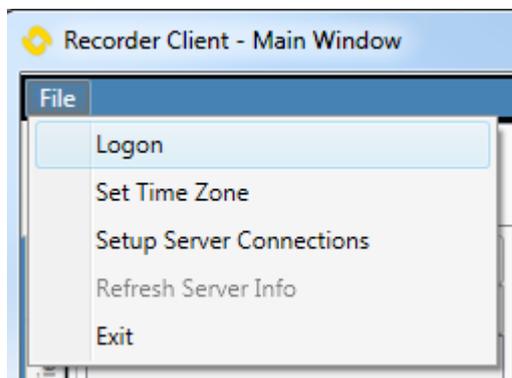


- Click **Authenticate**
- If the server can be reached, the **Friendly Name** will be filled in automatically
 - this is the name given to the server during the installation process (see section 3.2)
 - A new button **Commit Changes** will then be displayed:
- Click **Commit Changes** to store the connection details

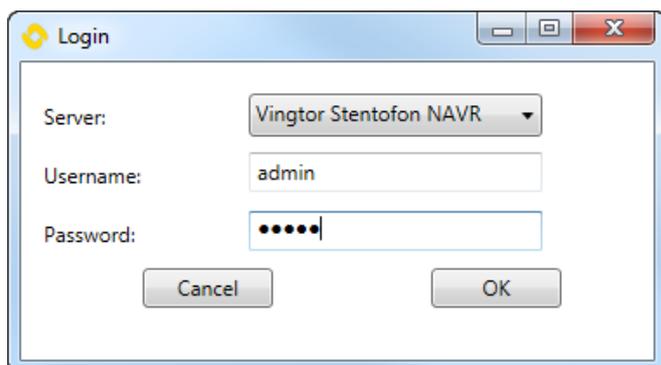
The same client can connect to several servers, so it is possible to define multiple connections.

4.2 Logging On

To log on to the server:



- Select **File > Logon**



- Select the **Server** to connect to
- Enter the **Username** – default: **admin**
- Enter the **Password** – default: **12345**

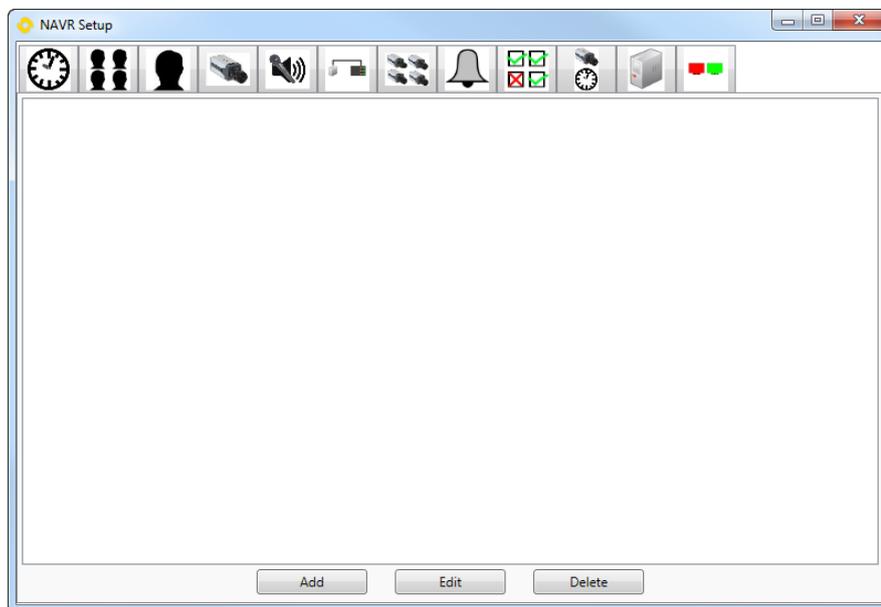
After logging in, the top menu will display new options: **Actions, Setup, Reports, New Window.**



4.3 Setup Menu

The Setup menu item is only available to users with the appropriate user rights. The default user **admin** with password **12345** does have these rights.

- Click **Setup** on the top menu



The various setup options are now accessible as icons on the top menu.

- Click **Add** to create a new setup option
- Click **Edit** to change an existing setup option
- Click **Delete** to remove a setup option

4.3.1 Schedule Setup



- Click the **Schedule Setup** icon on the top menu

Schedule Setup allows an administrator to create, modify and delete schedules on the Recorder Service. These schedules are used to define server-based scheduled recording times and determine the validity of permission groups. Schedules can be added, edited or deleted.

A schedule on the Recorder Service is defined by one or more schedule elements. Each schedule element comprises a single day of the week and a specific time range, up to and including an entire day. Multiple schedule elements can be defined for a specific day of the week, to represent several segments of a particular day (i.e. 8:30AM to 9:30AM, and 4:30PM to 5:30PM, to specify a one-hour period around 9:00AM and 5:00PM.) All schedules are defined in the local time zone, which by default is the time zone of the recorder server machine.

- Click **Add New Schedule Element** to define a new schedule.
- Click **Save** to save the newly defined schedule.

4.3.2 Group Setup



- Click the **Group Setup** icon on the top menu

Permission Groups Setup allows an administrator to add, modify and delete permission groups. A permission group is a name associated with a validity schedule and the admin flag. Device permissions can be associated with a group once it has been created. None or several permission groups can be assigned to a user.

A permission group is identified by a name, which is set in the **Group Name** field.

The **Schedule** indicates the time period in which this Permission Group will be valid. If the current period is outside the schedule for a given permission group, then that permission group is not active.

If this permission group needs access to the setup functions of this Recorder Service, then the **Administrator Permissions** box should be checked. Please note that if the permission group has administrator permissions, then it is valid at all times, regardless of any schedule. Thus the Schedule drop-down box and the **Valid At All Times** checkboxes will be disabled.

If this permission group needs access to all devices on the system, then the **All Device Permissions** can be used in lieu of setting each permission individually on each device.

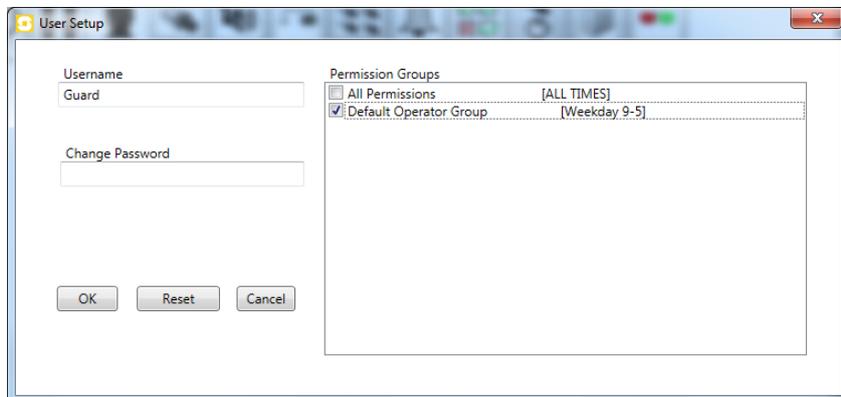
4.3.3 User Setup



- Click the **User Setup** icon on the top menu

User Setup allows an administrator to add, edit and delete authorized user accounts from the Recorder Service. These user accounts are used by authorized operators to log on to a Recorder Service and operate a Recorder Client.

A user on the Recorder Service is identified by a unique username. The **Username** field should be filled in by the individual who is granted the permissions specified by this user account.



The **Change Password** field is used to reset a password in the event that a user forgets or loses the password to this account. To change the password, fill in the **Change Password** field and click **OK**.

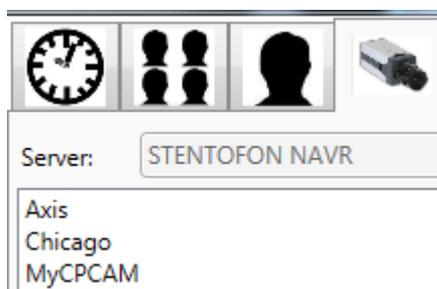
NOTE: When creating a user for the first time, the change password field MUST be filled in.

IMPORTANT: When changing the password of the user who is currently logged in, that user must log out and log back in with the (new) proper credentials. This applies even in cases where a user changes his/her own password.

The permission groups that have been configured on the Recorder Service are listed with checkboxes. To allow a user access to a specific permission group, check the box next to the appropriate permission group. If multiple permission groups are specified, their permissions are merged when permission checks are performed. If a user attempts an action which is permitted by one of their permission group memberships, but that permission group is outside of its assigned schedule and not an administrator group, then that action will be denied.

The **admin** user cannot be modified or deleted, with the exception that a password change is allowed - this is highly recommended if the password is still the default.

4.3.4 Video Device Setup



- Click the **Video Device Setup** icon on the top menu

In the **Video Camera Device Setup** dialog-box there are several options available for helping to get the proper configuration and layout for a particular camera.

After setting these options, click the **Save** button to commit any changes made, or to write the new camera settings to the Recorder Service.

The **Reset** button will refill the original values specified for the currently edited camera, overwriting any changes made since this window was opened. The **Cancel** button will discard all changes, or stop the setup of a new camera.

The screenshot shows a 'Device Setup' window with the following fields and options:

- Name:** Axis
- Device Type:** AxisV2
- IP/Hostname:** 192.168.1.151
- Media Type:** MJPG
- Username:** root
- Password:** root

Device Specific Options:

- Multi-Channel Encoder
- Maximum FPS:** [Dropdown]
- Supports Physical PTZ Force PTZ Speed **Speed:** [Dropdown]
- Stream-On-Demand:** Use Server Default
- Set Media Transport Type:** UDP (default, recommended)
- Live View Resolution:** 800x600 4:3
- Replay Resolution:** 800x600 4:3

Buttons at the bottom: **Reset**, **Cancel**, **Save**

The **Name** field contains the text that will identify the camera to users, and will be displayed at the top of each video tile when this camera is viewed. The **IP/Hostname** field should be set to the network address of the camera.

The **Device Type** is one of the camera types listed in the drop-down menu. Please refer to Appendix A.1 for a list of supported cameras. Note that by selecting **Generic** it will most likely be possible to also connect to cameras which are not in the list. In general, a complete path, including parameters, must then be entered in the field **IP/Hostname**.

The **Media Type** will depend on the media type that the camera supports.

NOTE: Bandwidth is one of the primary considerations when selecting a media type. The media type(s) a camera supports and the bandwidth considerations that need to be addressed should determine which media type is used.

- **MJPEG:** Has the highest bandwidth requirement. Each frame is completely self-contained, ensuring that each frame is a complete image.
- **MPEG4:** Lower bandwidth usage than MJPG, but in some cases worse bandwidth usage than H.264. Generally has lower processing overhead than H.264.
- **H.264:** Has the lowest bandwidth usage given comparable quality and frame rate when compared to MJPG and MPEG4. This codec has the highest processing overhead.

The **Username** and **Password** fields are optional, and only need to be filled in if a camera requires a username and password to perform basic operations with the camera, such as to view or perform PTZ operations.

In the **Device Specific Options** section, any atypical settings or preferences can be specified. For normal usage, most of these settings are not required, with the notable exception of the **Maximum FPS** option.

The **Multi-Channel Encoder** option allows an administrator to specify which channel a camera operates on. This is used when a multi-channel network-enabled encoder is used to connect several analog cameras to the system.

The **Maximum FPS** option specifies the maximum frames per second (FPS) a camera will operate at. Note that not all cameras support this capability, but where possible, it will be used.

The **Supports Physical PTZ** option specifies whether pan-tilt-zoom commands are accepted by the camera. This support can come either from a connected PTZ unit or as a built-in feature of the camera. The **Force PTZ Speed** option overrides the server default speed for PTZ (if any), and prohibits the user from manually changing the PTZ speed.

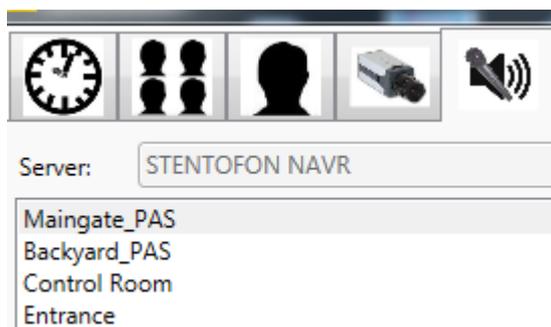
With the **Stream-On-Demand** option, it is possible to override the default setting for stream-on-demand in the general setup.

The **Set Media Transport Type** option specifies which transport protocol is used to send and receive media between the camera and the Recorder Service. This setting can be used to tweak communication reliability and performance, and should not be used unless a specific network-related issue has been identified that can only be resolved by adjusting this value.

*NOTE: By default, **UDP** is selected.*

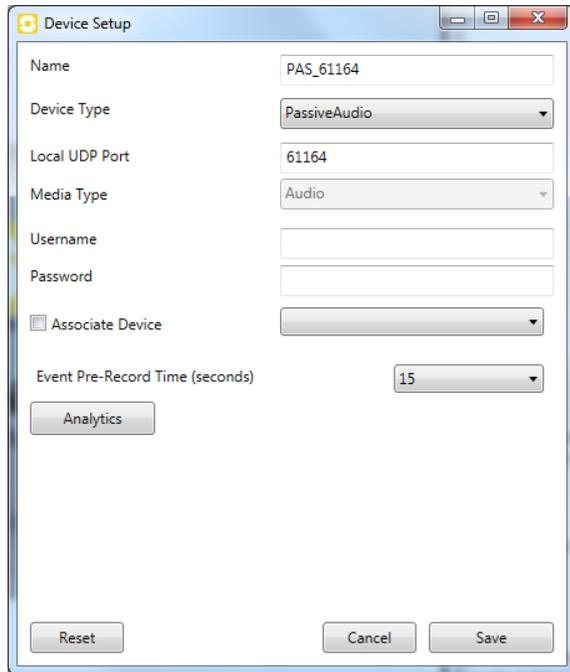
- **UDP:** Most efficient transport protocol, but skips missed/omitted packets; this can lead to occasional smearing/streaking in images when using H.264 or MPEG4 if network reliability is degraded for a brief period of time.
- **TCP:** Slightly less efficient than UDP, but missing/omitted packets are re-requested - routable via NAT.
- **HTTP:** Roughly the same efficiency as TCP - routable via NAT and through firewalls that allow traffic over TCP port 80.

4.3.5 Audio Device Setup



- Click the **Audio Device Setup** icon on the top menu

There are 4 **Device Types** that can be selected. For the Vingtor-Stentofon Recorder, only device types **AlphaCom** and **PassiveAudio** are currently relevant. AlphaCom refers to AlphaCom call recording, while PassiveAudio refers to the Permanent Audio Stream from IP stations.



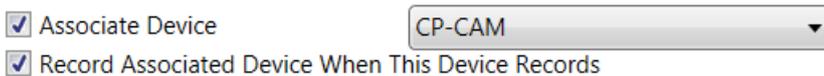
In the Audio Device Setup dialog-box there are several options available for making the proper configuration and layout for a particular device.

After setting these options, click the **Save** button to commit any changes made, or to write the new device settings to the Recorder Service. The **Reset** button will re-fill the original values specified for the currently edited device, overwriting any changes made since this window was opened.

The **Cancel** button will discard all changes, or stop the setup of the device.

The **Associate Device** checkbox and drop-down box allows the user to associate another device with an audio device, such that when the audio device is called to a media tile for live view (either via manual call or an alert, etc.) the associated device will be called to the same tile as well. If the associated device is an audio device, it will simply add to the list. If the associated device is a video device, it will replace any existing video in that tile. To associate a device, simply indicate that association is desired by checking the box and then selecting the device to associate from the drop-down box.

When **Associate Device** has been selected a further option becomes available: **Record Associated Device When This Device Records.**



In case the associated device is associated to an AlphaCom intercom station, this recording of the associated device will only be carried out when the device is the A-subscriber in the call.

The **Event Pre-Record Time** drop-down box allows the user to select a time-constrained buffer for media on this device. If a device has an Event Pre-Record Time configured to a value greater than zero, the contents of this buffer will be placed into any event recordings made on that device.

Event recordings are all recordings started by alerts, or user-activated recordings. The pre-record buffer is contained within application memory; hence, performance may be affected when large recording buffers are utilized on too many devices.

4.3.5.1 AlphaCom Devices

It is possible to auto-define AlphaCom devices (please see section 4.3.6).

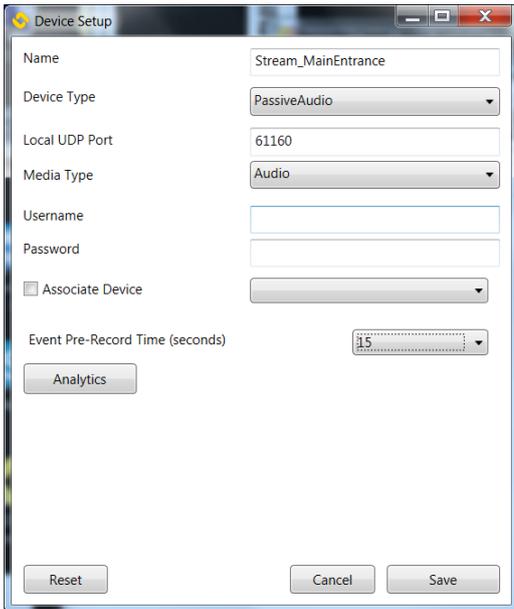
How the intercom stations are defined depends on the recording requirement and the number of AlphaCom exchanges in the system.

- Normally, any intercom station that needs to be recorded requires its own license: 1190110131 or 1190110138. But in systems where there are many substations and few master stations, it is possible to only define the master stations. Only conversations which involve a defined master station will be recorded. This is also true when substations are connected to exchanges other than that of the master stations.
- In the field **URI/Address**, enter 'the directory number @ the IP-address of its AlphaCom'. Make certain that in an AlphaNet only a global numbering scheme is used.
- If all AlphaCom exchanges in an AlphaNet are connected to the same recorder, in 'Net Routing' make a choice to record on 'Incoming' or 'Outgoing' AlphaNet calls, but do not select both.
However, in the case where all master stations are connected to only 1 of the exchanges, both the 'Incoming' and 'Outgoing' flag must be selected, as all recording is done from the single exchange. In such a case, only 1 license, 1190110120, Vingtor-Stentofon Recorder - AlphaCom Recording Module, is required, which will then connect to the exchange with the master stations.
- The **Username** is the recorder name as defined in AlphaPro. Username 'recorder' is preferred.

4.3.5.2 Passive Audio Devices

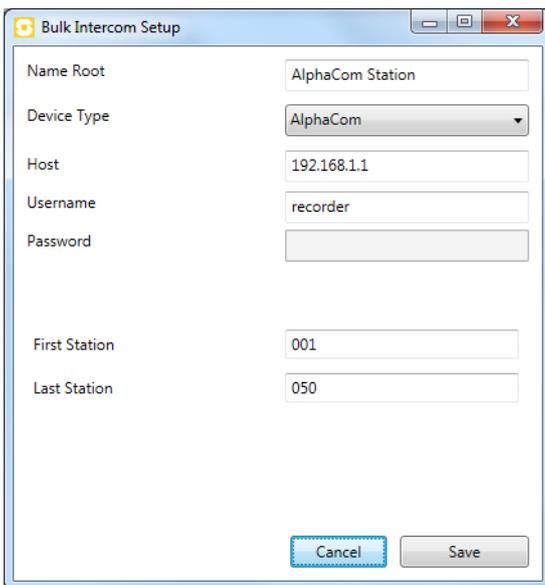
Device Type PassiveAudio concern audio streams from a Vingtor-Stentofon Turbine station. Such a station can be enabled to stream audio to a specific UDP port. Enter the UDP port number in the field **Local UDP Port**. Note that each stream must have its own UDP port. Convention is to

only use even numbered ports. The fields **Username** and **Password** have no relevance for **Passive Audio** stream devices.



4.3.5.3 Bulk Intercom Setup

- Click **Add Bulk** to configure bulk intercom



The **Bulk Intercom Setup** dialog-box is used to add a range of devices which are located on AlphaCom intercom systems to the Recorder Server. This can speed deployment significantly. The use of this dialog-box is closely-related to that of the single device setup dialog-box. Instead of a name, there is a **Name Root**. In the above example, this name root is **AlphaCom Station**. This means that every device that is created with this bulk setup dialog-box will have a name of the form **AlphaCom Station ###** where **###** is the station number.

The **Device Type** drop-down box has the types **SIPvault** and **AlphaCom** available, and is used to select which device types are being created. Note that SIPVault is not used.

The next field is labelled according to the necessity of the system being connected to. For more information, see *Appendix A.5* on the AlphaCom system as applies to the type of devices that are being created. As a brief example however, the field should contain the 'common' portion of the device's URI. If a single AlphaCom device's URI is '1005@192.168.1.1', then the value entered here would be simply '192.168.1.1'.

The **Username** and **Password** fields are to be filled out as appropriate for the service/exchange being connected to. For details, see *Appendix A.5* on the AlphaCom system as applies to the type of devices that are being created.

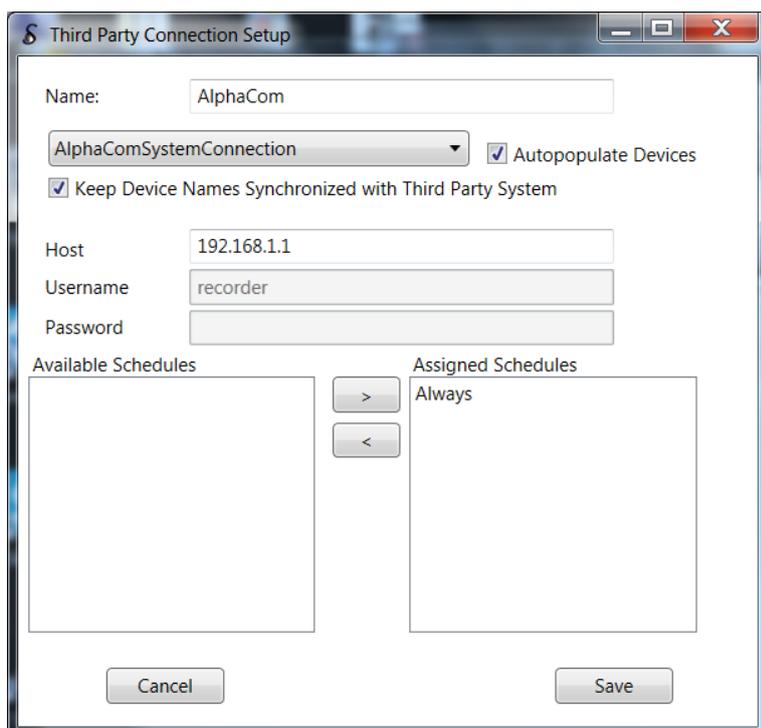
The **First Station** and **Last Station** fields are used to define the format and range of the device identifiers. They must have the same length, and the first station value must be less than that of the last station. In the above example, 50 stations will be created, with station numbers 001, 002, 003... 048, 049, and 050.

4.3.6 Third Party Connection Setup



- Click the **Third Party System Connection Setup** icon on the top menu

Third Party System Connections are used to communicate with external systems that are not (in and of themselves) a media source. Currently only 'AlphaComSystemConnection' is used.



It is not a requirement for the correct operation of the recorder to define an (or several) AlphaCom exchange(s). The connection will only be used to define AlphaCom intercom stations automatically.

Provide a meaningful name for the connection.

When the box **Autopopulate Devices** is checked, any device which is not known to the recorder will automatically be added when there is a recorded call to/from that station. Note that this first call will not be recorded - at this time the station will only be added to the system. Subsequent calls will be recorded.

Normally the station name will be set to the one in the AlphaPro defined display text. This name will only be set once and will not follow changes in AlphaPro unless the box **Keep Device Names Synchronized with Third Party System** is checked.

- Enter the IP address of the AlphaCom server in the field **Host**

The recorder assumes that the **Username** of the recorder is defined as 'recorder' in AlphaPro. This can currently not be changed.

Select the relevant recording schedules. These will be used as a template. See section 4.3.10 if some of the automatically defined recording schedules need to be altered.

Note that this method of adding intercom stations to the recorder does not take into account that substations may not need to be defined. If such a substation is added inadvertently it can be deleted using **Audio Device Setup**.

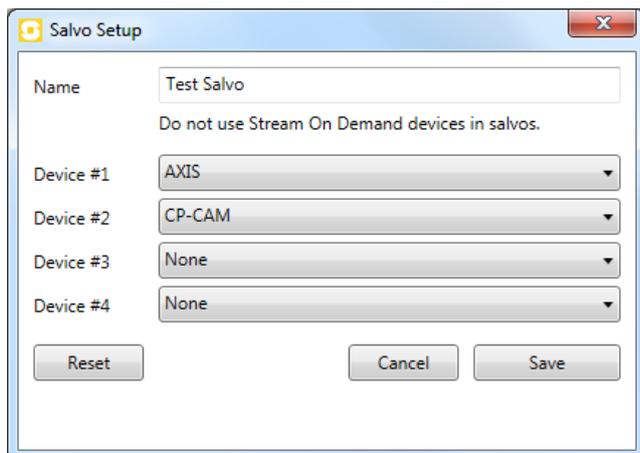
In an AlphaNet, it may happen that the intercom station gets defined with the wrong AlphaCom IP address. This is due to the fact that AlphaCom reports all stations that are to be recorded as if they are connected to it. The fact that the IP address appears to be wrong does not affect correct operation of the recorder as it uses the directory number as the main identifier. By making certain that during the definition phase only calls are made within a single exchange, this IP address mis-definition can be circumvented.

4.3.7 Salvo Setup



- Click the **Salvo Setup** icon on the top menu

Salvo Setup allows an administrator to create, modify and remove salvos from the Recorder installation. Salvos are used to perform a device call on multiple devices using a single operation. Salvos can be called by a user with sufficient permissions ('live monitor' permission). Salvos can also be called by the linking system, which is available on configuration options such as triggers.



The image shows a 'Salvo Setup' dialog box with the following fields and options:

- Name:** Text input field containing 'Test Salvo'.
- Instruction:** 'Do not use Stream On Demand devices in salvos.'
- Device #1:** Dropdown menu with 'AXIS' selected.
- Device #2:** Dropdown menu with 'CP-CAM' selected.
- Device #3:** Dropdown menu with 'None' selected.
- Device #4:** Dropdown menu with 'None' selected.
- Buttons:** 'Reset', 'Cancel', and 'Save' buttons are located at the bottom.

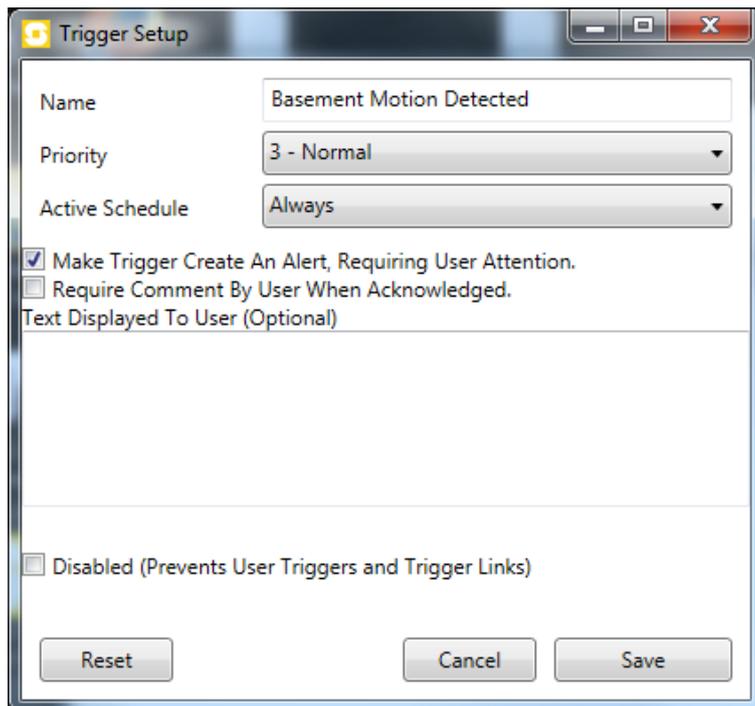
The first field is the **Name** to display to the user. The next series of options are a selection of **Devices** that should be displayed to the user. The first device entered in this list will be displayed in the first alert tile on the Recorder Client. As many devices as possible will be displayed to the user, based on the number of alert tiles available for display on a particular Recorder Client. If an insufficient number of alert tiles are available for display, this list will be truncated as needed to display the maximum number of devices to satisfy the salvo call.

4.3.8 Trigger Setup



- Click the **Trigger Setup** icon on the top menu

Triggers allow an external system which is connected via the Vingtor-Stentofon Recorder API to create alerts, which are distinct notifications that are sent to a Recorder Client to be displayed and acknowledged by a user.



The **Name** field is the distinct name that this trigger will have. If this trigger will eventually generate alerts, then this name will be used as the name for the alert as well.

The **Priority** field determines where alerts created by this trigger will fall in the list of alerts on the Recorder Client. A higher number indicates a more pressing need for action by a user. The higher the number, the more reddish the color that will be displayed. The lowest priority is green, followed by a yellow-green combination, then yellow for the middle priority, then orange for an elevated priority, and lastly, bright red for the highest priority.

Active Schedule indicates when this trigger can be activated. The times defined in the schedule are the times when this schedule will be active. Any times not specified will cause this trigger to not be activated when signaled via the API. A trigger that is not currently active will also not generate an alert on the Recorder Client whenever it is signaled via the API.

If this trigger should also notify users when it is activated, check the box **Make Trigger Create An Alert, Requiring User Attention**.

If this trigger should also require a comment (minimum length: 5 characters) prior to being acknowledged by a Recorder Client user, check the box **Require Comment by User When Acknowledged**.

Text Displayed To User (Optional) is a block of text that will be displayed to the user when the user looks at an alert generated by this trigger. This text can be used to deliver timely information related to this trigger, such as a phone number to call, person to notify, and action to perform, etc.

If this trigger should not be deleted, but instead should be disabled for now, check the **Disabled (Prevents User Triggers and Trigger Links)** box. This should be used when a deletion is not warranted, or during a pre-configuration phase of the setup when a trigger shouldn't be active, but should be created for future use.

When configuration of this trigger is complete, click the **Save** button to continue. If, when modifying a trigger, a mistake is made or the original settings are desired, click the **Reset** button. If no changes are needed, click the **Cancel** button to return to the setup screen.

To modify links in the trigger configuration:

- Click **Modify Links**

The screenshot shows the 'Link Setup' dialog box. The 'Target Name' is 'Basement Motion Detected'. The 'Link Name' is 'Salvo Call'. The 'Link Type' is 'Trigger'. The 'Active During Schedule' is 'Weekday 9-5'. The 'Condition' is 'When Activated'. The 'Resulting Action' is 'Call Salvo To Workstations'. The 'Salvo Name' is 'Test Salvo'. The dialog also contains buttons for 'Add Link', 'Modify Link', 'Remove Link', 'Cancel', and 'Save'.

Any trigger can have zero or more links associated with it at a time.

- To add a new link, click the **Add Link** button.
- To modify an existing link, click the link in the list, then click the **Modify Link** button.
- To remove an existing link, click the link in the list, then click the **Remove Link** button. When adding or modifying a link, the left-hand pane will be disabled.

Link Name is not typically displayed to a user, so writing a descriptive name indicating what this link will do is encouraged.

Link Type will be displayed, but cannot be modified. This link type is automatically filled in based on the type of device being linked.

Links, like triggers, are scheduled activities that are activated under the **Active During Schedule** option. A link will not be used if a schedule does not indicate that the link should be active at the time the trigger is signaled via the API.

Condition defines what needs to occur for this link to be activated. This specifically relates to the condition that is met by the linked device, so in the example above, the trigger needs to meet the condition specified in order for this link to be activated.

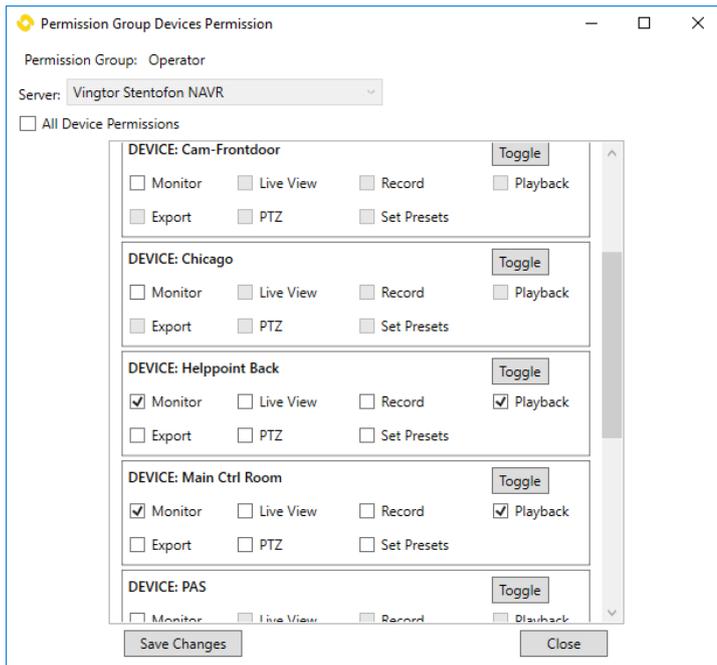
Resulting Action is the type of action to perform when the condition is met. Things such as calling a device to workstations, activating another trigger or calling a salvo to workstations are available, and are configured on a per-action basis.

When all required information has been provided, click the **Save** button. If no changes need to be made, or if no new link is to be created, click the **Cancel** button.

4.3.9 Group Permissions Setup



- Click the **Group Permissions Setup** icon on the top menu



At the top of the window is the name of the **Permission Group** that is currently being edited. Below that is a **Server** drop-down box defining which server the permissions for this group are being adjusted on.

If the permission group has admin permissions, then members of the group have all permissions to all devices, and therefore the adjustment options will be disabled with the exception of the **Close** button at the lower-right corner of the window.

If the permission group does not have admin permissions, then for each device configured on the Recorder Service an entry will be listed, alphabetically, in the device list. To set the permission level for a specific device, scroll until the device to be modified is visible in the list. The **Toggle** button will alternatively check and uncheck all of the permissions for that device for convenience when installing/configuring the software.

All permissions to all devices on this particular server can be granted to a group by checking the **All Device Permissions** box in the upper-left corner of the window. This will disable the individual device permissions list.

As a minimum, a user must have permission to monitor before setting any other permissions, so check the **Monitor** box to enable additional permissions. Monitor will only allow the device and its state to be listed in the device list.

The **Live View** permission allows the user to view a live stream from a camera or listen to an audio device/conversation live.

The **Record** permission allows the user to create user/event recordings on-the-fly by performing a record operation as described in section 5 User Manual.

The **Playback** permission allows the user to play back recordings (scheduled and user/event recordings.)

The **PTZ** permission allows the user to modify the pan, tilt and zoom of a camera.

The **Set Presets** permission allows the user to set a numeric pan, tilt and zoom preset for the camera.

The **Export** permission allows the user to export audio or video clips.

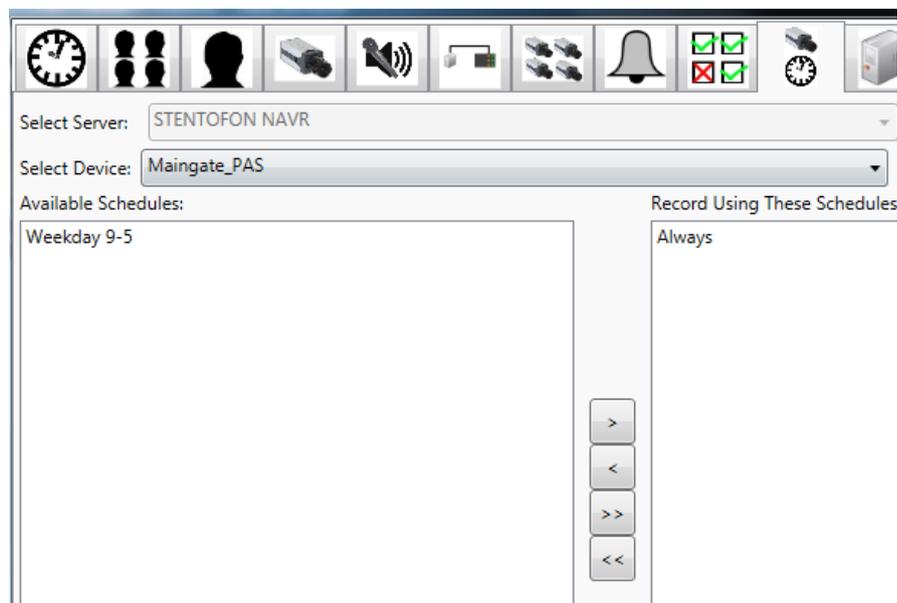
To save the changes to device permissions for a given server, click the **Save Changes** button at the bottom of the window.

- When done, click the **Close** button.

4.3.10 Device Schedule Recording Setup

Recordings Setup allows an administrator to associate one or more schedules with a particular device. These schedules define when a particular device will be recorded (scheduled recording). This setup dialog-box defines the automated scheduled recording process on the Recorder Service.

- Click the **Device Schedule Recording Setup** icon on the top menu



- To configure the scheduled recordings for a particular device, first select the device in the **Select Device** drop-down menu at the top of the dialog-box. The available and selected schedules will be displayed on-screen for this device representing the current recording configuration for the selected device.

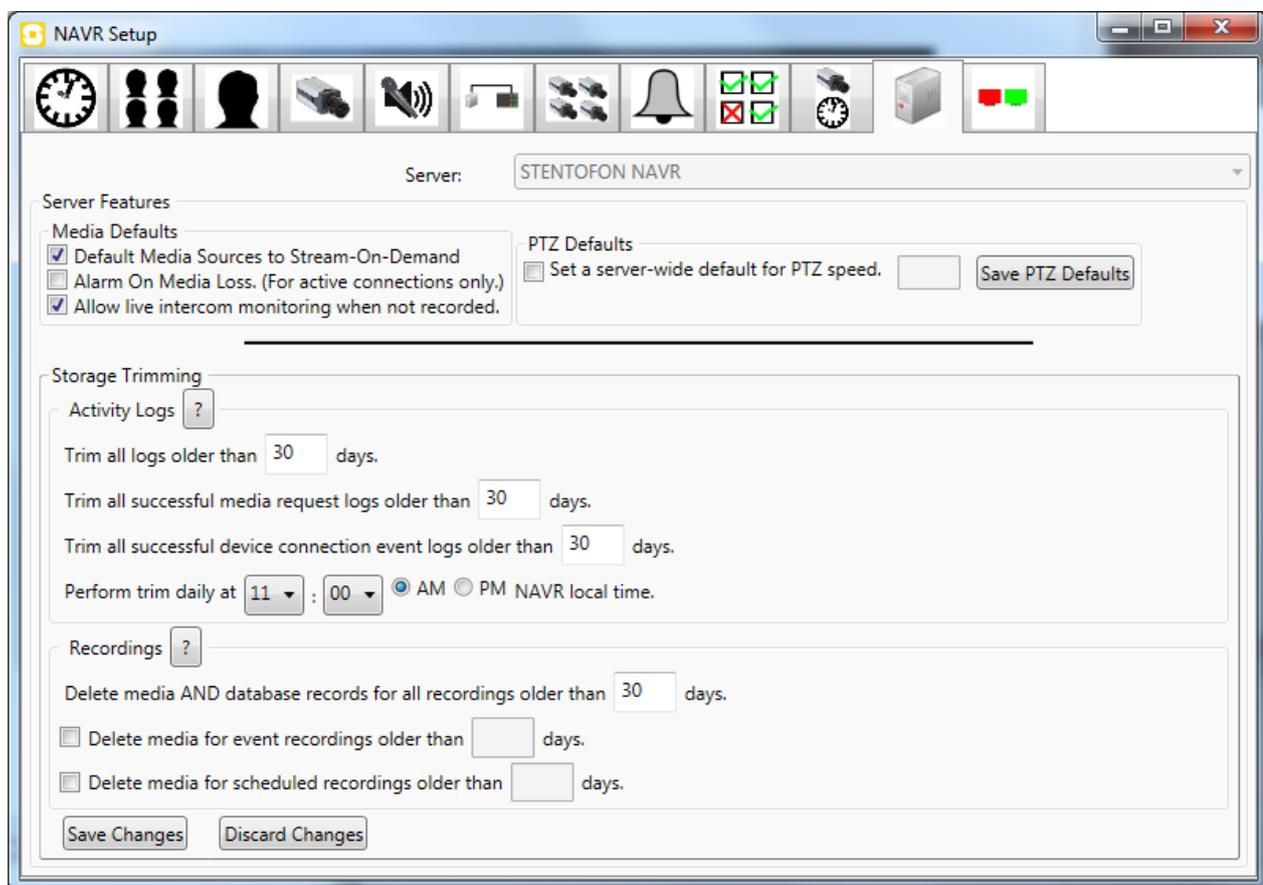
- To add a schedule to the list of schedules used to determine when this device will be recorded, click a schedule in the left pane to select it, then click the > button.
- To remove a schedule from the list of schedules used to determine when this device will be recorded, click a schedule in the right pane to select it, then press the < button.

The >> and << buttons can be used to move all schedules between the **Available** and **Scheduled** lists.

When a schedule is added or removed from the list of schedules used to determine when this device will be recorded, this information is immediately updated on the Recorder Service.

4.3.11 System Setup

- Click the **System Setup** icon on the top menu



System Setup allows the administrator to configure system-wide settings in one location.

The **Default Media Sources to Stream-On-Demand** setting defines whether stream-on-demand is enabled for this Recorder Service. This setting is enabled immediately when the checkbox is selected or deselected.

The **Alarm On Media Loss** setting defines whether the Recorder should produce an alarm to indicate media loss when the connection between the NAVR and the device is broken. This is only for active connections, either those which are being streamed at all times, or those which are stream-on-demand, but which break during a period of demand.

The **Allow live intercom monitoring when not recorded** setting defines whether users who have permission to monitor an intercom endpoint can monitor that endpoint when it is not configured to be recorded. This is due to special privileges in some jurisdictions regarding voice communications. By default, a user cannot listen to an intercom conversation live that would not be recorded and available for review. If it is desirable that a user with Live Monitor permission for a given intercom be allowed to listen to that intercom even if the intercom is not configured for recording, then this box should be checked. Otherwise, the given device will appear to remain inactive on the user's device list unless it is both active, and being recorded.

The **PTZ Defaults** setting is used to create a server-wide default speed multiplier for PTZ cameras between the values of 0.1 and 3.0. When this setting is specified, PTZ speed cannot be modified during runtime. The PTZ default setting may not show on the client until the camera in question has been closed and re-called.

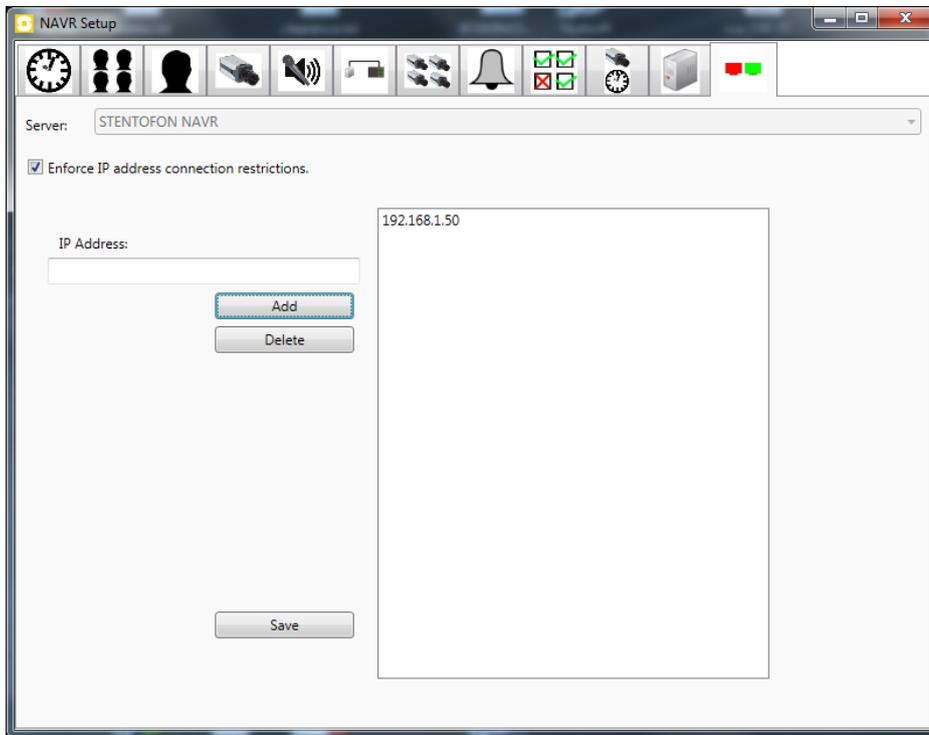
The **Storage Trimming** section comprises two subsections: **Activity Logs** and **Recordings**.

The **Activity Logs** section designates how long logs of activities on the server, such as video calls from a client, connections to IP devices, user login and logout, and configuration changes by users are retained on the NAVR. By default, all of these logs are trimmed when more than 30 days old. Successful media requests and device connections can occur quite often depending on operator, network, and recording schedule activities. Therefore, these are trimmed from the log after 2 weeks by default. This log trim is performed daily, at or just after the specified time. It is best to perform this trim at a time when system activity is expected to be low.

The **Recordings** section designates how long recordings are retained on the NAVR. The first option is to delete media AND database records older than a given number of days. This is used to prevent the NAVR media repository and database from filling up. The next two options allow the administrator to decide to delete the media (but not the database entry) associated with event recordings and/or scheduled recordings older than a given number of days. Database entries will indicate that the recording has been deleted, but will remain to describe the recording.

4.3.12 Connection Restriction Setup

- Click the **Connection Restriction Setup** icon on the top menu



The **Connection Restriction Setup** tab can be used to prevent API and video connections to the NAVR from other-than-allowed IP addresses.

The function is enabled by checking the **Enforce IP address connection restrictions** box.

Note that all IP addresses from which you expect legal connection requests must be added.

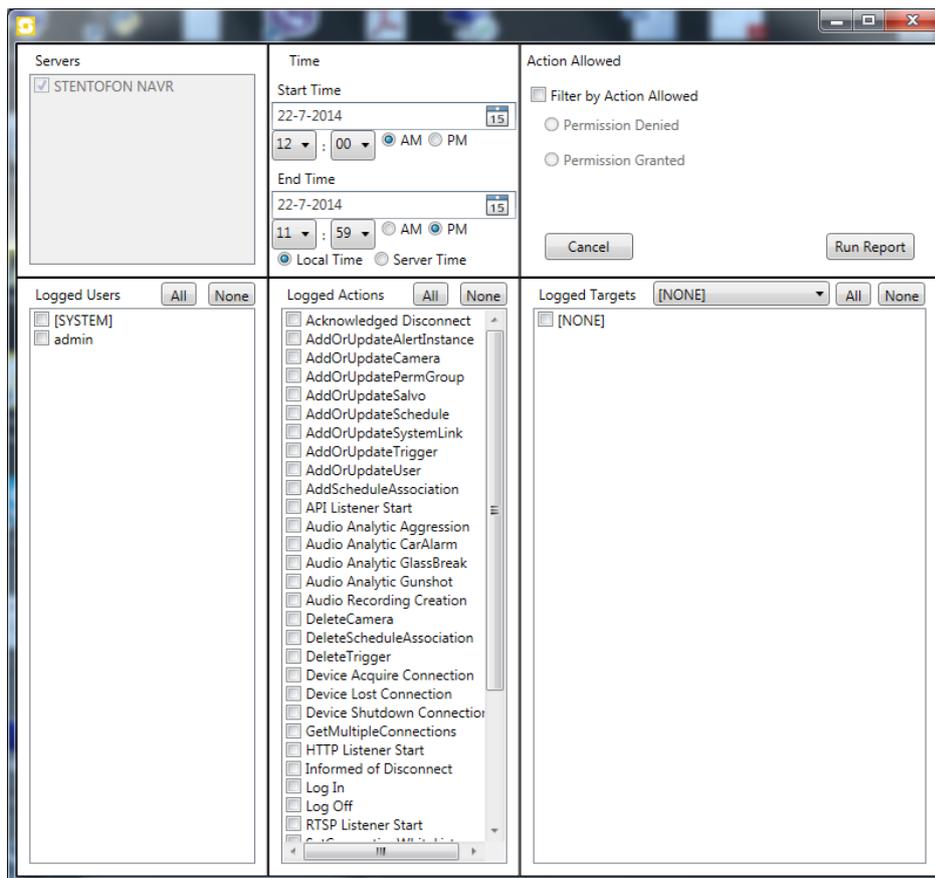
4.4 Reports Menu

The Reports menu option is only visible to users who are members of the administrator group.

The time can be selected in the local time or the server time, which can be useful if the server is in a different time zone.

Only users who have logged actions are displayed in the **Logged Users** list. It is possible to filter on granted or denied permissions.

- Click **Reports** on the top menu



4.5 Direct recording

It is possible to use an HTTP-command to start recording Video cameras and Passive Audio Streams. It is not possible to start the recording of conversations inside the AlphaCom in this way.

http://RecorderServer/IPAddress: MJPEG_HTTPport/STARTREC?dev=CamOrStream&duration=xx

- The MJPEG_HTTPport default number is 8084, but can be changed in the recorder5r setup dialog.
- CamOrStream is the device name given when the camera or audio stream was defined in the recorder.
- Duration is the to be recorded timespan in seconds

The recorder uses basic authentication. With Google Chrome it is possible to pre-empt authentication and use a format as following:

<http://admin:12345@127.0.0.1:8084/STARTREC?dev=MyCam&duration=60>

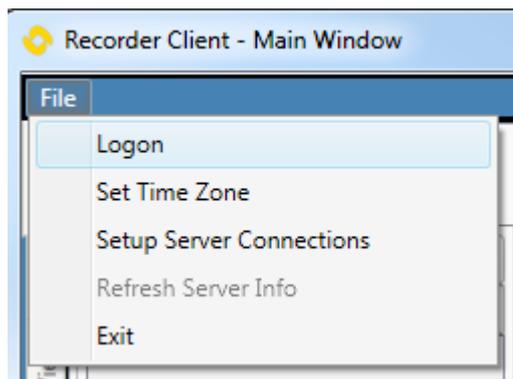
5 Operating Procedures

- Start the Playback and Configuration Client.

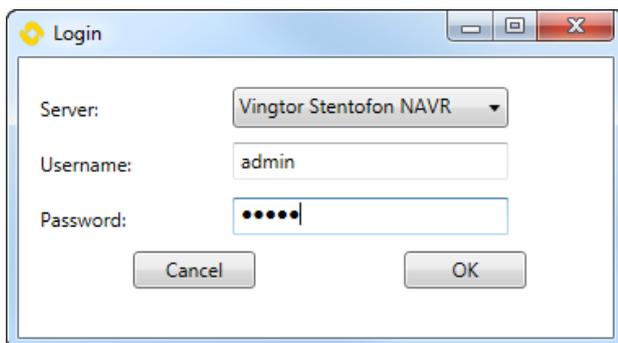
5.1 File Menu

5.1.1 Logging On

In order to log on:



- Select **File > Logon**



- Select the **Server** to connect to
- Enter the **Username** – default: **admin**
- Enter the **Password** – default: **12345**

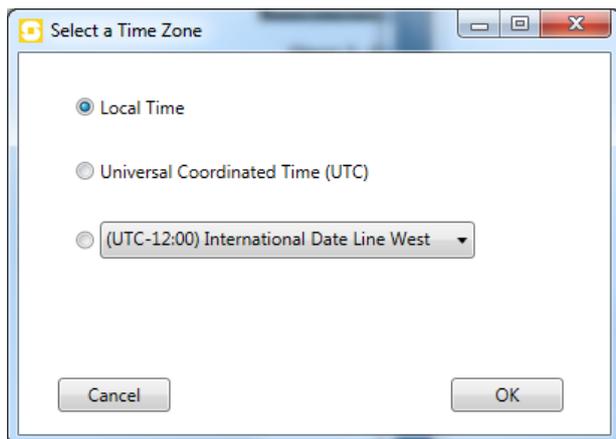
When there is a change of operators, the currently logged-in operator can use **File > Logoff** to log out, after which the new operator can log in.

The Playback client may be configured with details of multiple servers. If this is the case, first select the server to connect to.

5.1.2 Set Time Zone

- Select **File > Set Time Zone**

The time zone selection dialog-box will be displayed.

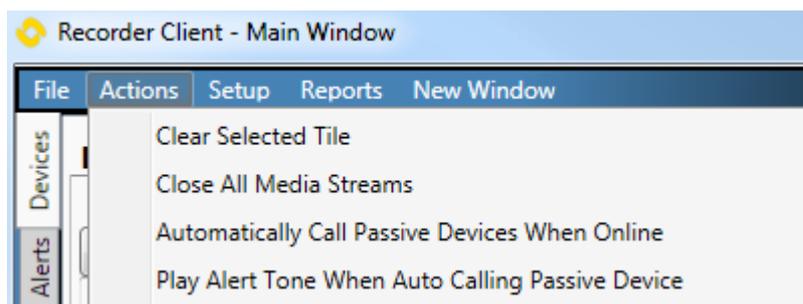


This determines which time zone is used when displaying times to the user for purposes of current time, search, and playback. The options include the client's **Local Time**, **Universal Coordinated Time (UTC)**, and an option to use an arbitrary time zone. The current time in the selected time zone will be displayed in the lower-right corner of the NAVR Client. Hovering the mouse cursor over this time will cause a tool tip to be displayed with the name of the currently selected time zone.

After logging in, the top menu will display new options: **Actions**, **Setup**, **Reports**, **New Window**.



5.2 Actions Menu



5.2.1 Clear Selected Tile

This option will remove the video from the selected video tile. This option only works for the selected camera on the main window - new windows that are created do not support this feature.

5.2.2 Close All Media Streams

This option will remove the video from all video tiles on all windows. This option does not send any information or commands to the Recorder Service, and its only function is to clear all windows of any video with a single command.

5.2.3 Automatically Call Passive Devices When Online

A Passive Video Device may start streaming video at any time. Enabling this option will ensure that when such a device does so, the video from it will be automatically called into Alarm Tile 1. If another device is associated with the passive device, then it too will be automatically called into Alarm Tile 1.

5.2.4 Play Alert Tone When Auto Calling Passive Device

This option will alert the operator when a passive video device is automatically called to Alarm Tile 1.

5.3 Setup menu

The Setup menu is only available when the user has logged in as an administrator. Most of the settings are described in section 4.3.

5.4 Reports menu

The **Reports** menu is only available when the user has logged in as an administrator. See the description in section 4.4 for details.

5.5 New Window menu

The New Window menu item has two options: **Live** and **Recordings**

Live creates a new window that is nearly identical to the main NAVR Client window. Once created, this new window can be relocated, maximized, restored and can display all content that's displayable on the main NAVR Client window.

NOTE: A new window has some specific features and restrictions, as noted below:

- A new window cannot access any of the menu options at the top of the screen.
- A new window cannot see the status bar at the bottom of the screen.
- The media tiles on a new window will not have the **New Window** icon available.
- Devices can be dragged-and-dropped between any window and any video tile.
- When the user logs out, all new windows will be closed as well.

Recordings creates a new window used to monitor recordings only, and which does not have access to live view devices and salvos, or alert devices and triggers.

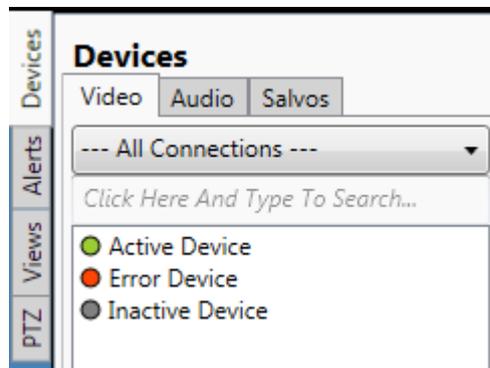
5.6 User Interface

The main user interface of the Playback Client consists of a left-most section that contains **Devices**, **Alerts**, **Views**, and **PTZ** control and interface tabs.

The left-most section containing the tabs can be accessed by moving the mouse cursor over one of the tabs. The tabs will expand to extend the visibility of the highlighted tab so that additional content can be displayed. Click the **Close Menu** button at the bottom of the window to contract the tabs and thus create more space for the video tiles.

5.6.1 Devices Tab

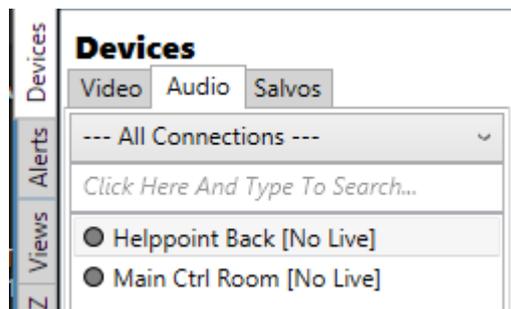
The **Devices** tab in the upper-left corner of the main user interface contains a device list. It is a list of all devices configured on the connected Recorder Service for which the current operator has some rights. The tab allows several ways to reference devices and view them.



If the colored indicator next to a device is **green** it means the device is active, is currently providing media to the NAVR, and is available for live monitoring.

If the colored indicator next to a device is **red**, it means the device should be providing media to the NAVR, but is not. This indicates an error state.

If the colored indicator next to a device is **gray**, it means the device is inactive and will not be providing media at this time.



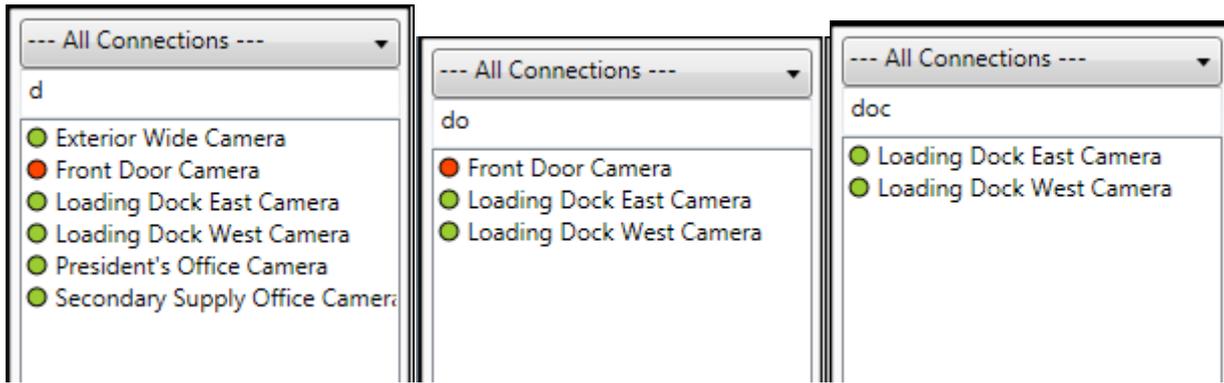
A device for which the operator has **Monitor** but not **Live View** rights is indicated by the addition **[No Live]** behind the device name.

NOTE: If a device, or the system, is configured to use the "stream-on-demand" feature, then any devices set using this feature will display as the inactive/gray-colored state. This is normal and expected as a connection to the device is only made when a request to view video is made by a NAVR Client, or a scheduled recording occurs as configured for the Recorder Service. When this connection is made, the icon for that device will turn green, as it is then known that the device is active.

AlphaCom devices will display as unknown/gray regardless of stream-on-demand setting, unless actively recording audio, in which case they will display as active/green to indicate the ability to monitor live media.

A user can filter the devices displayed in this list to just those devices that are part of a specific connection. To do this, click on the drop-down box and select the connection to view. The top option, **--- All Connections ---** stops any filtering.

A user can filter the devices displayed in this list to just those devices that contain a specific text grouping. To do this click in the text area above the device list and begin typing. The device list will dynamically update with only those devices that contain the search criteria.



Each entry in the device list represents an interactive item on the Recorder.

5.6.1.1 Video and Audio Tabs

To view a video or audio device, one or more of these actions can be performed:

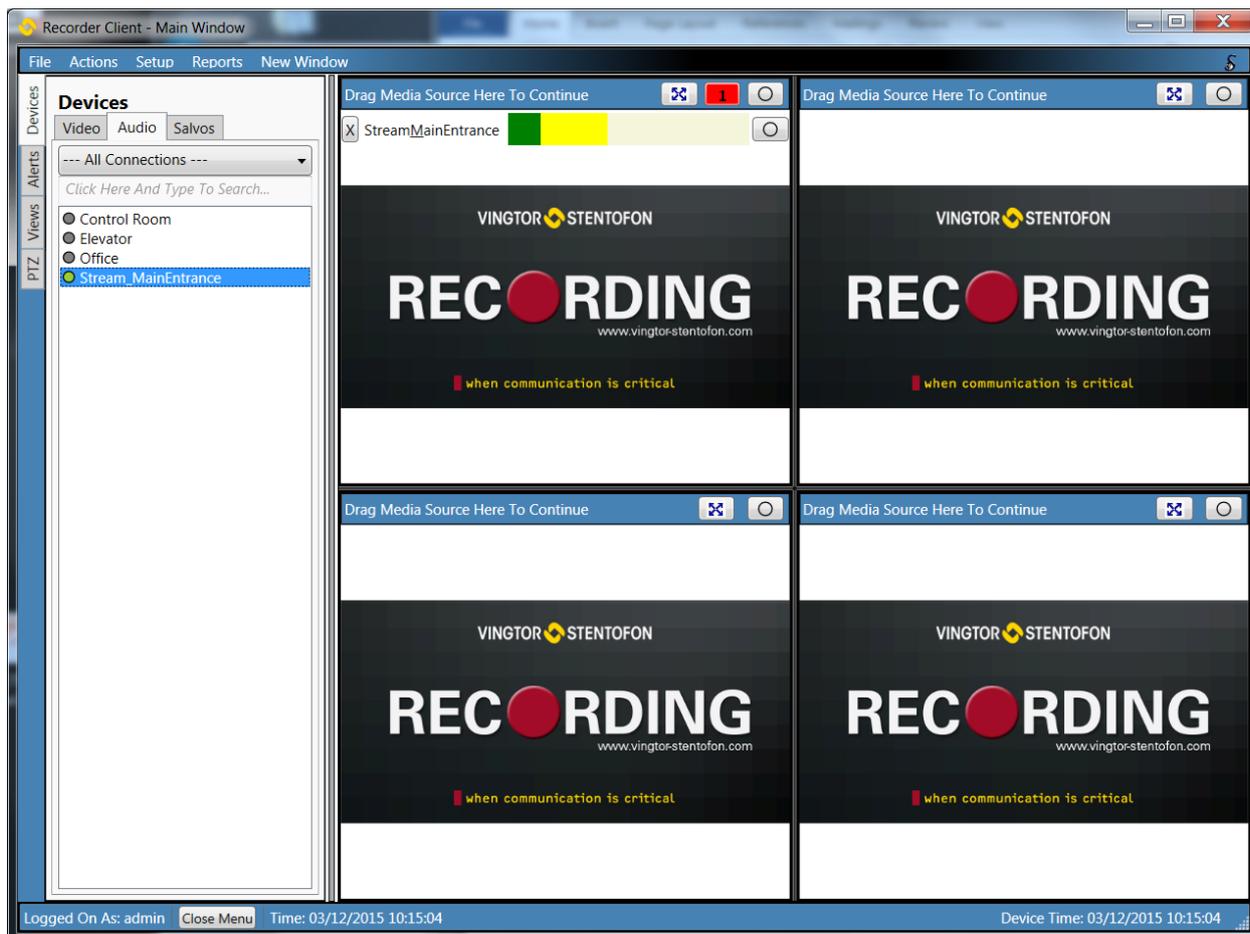
- Press-and-hold the left mouse button on a video or audio device entry, drag the cursor to a media tile, then let go of the left mouse button.
- Double-click a video or audio device entry. If there is a media tile that is unfilled on the window, the media device will be called to that media tile. If all media tiles are filled, then if a tile is selected (which is identified on-screen by a colored, highlighted border) the media device will be called to the selected tile.

Calling a video device to a media tile that is already displaying a media device will replace the existing displayed video device with a new one.

Use of Audio devices is similar to that for video devices. To perform live monitoring, drag-and-drop the device onto a media tile. A live audio playback tile will display the following: a close button to close that particular audio monitor, the name of the device, and a power meter for current audio. The purpose of this power meter is to help a user distinguish the correct audio source when hearing a sound while multiple live audio sessions are simultaneously active.

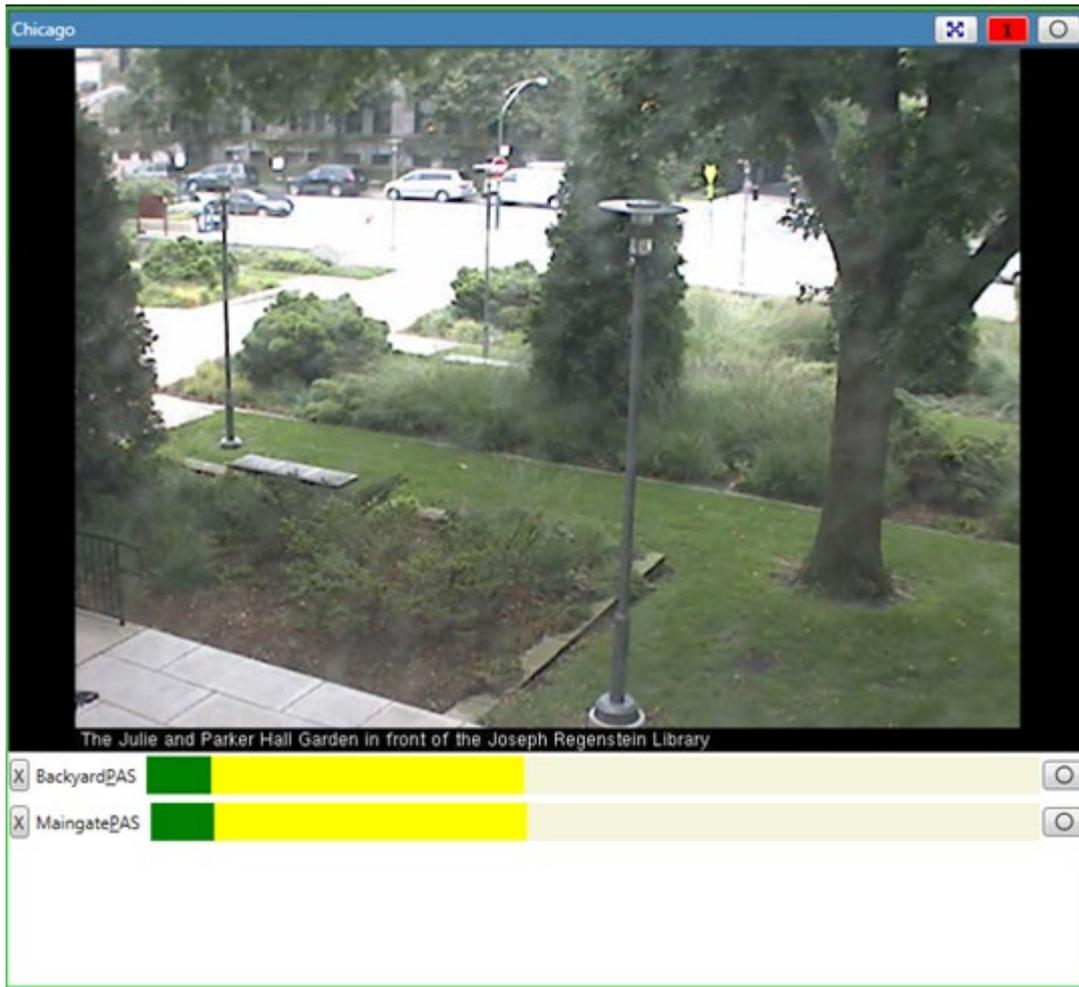
Multiple audio sources may be put into the same media tile. Clicking the close button next to a live audio source will stop the monitoring. Putting a live audio source into a tile that already contains an identical source will shut down the original and start up the replacement.

Audio devices may have another device associated with them. If they do, then any method which calls an audio device into a tile, will also call the associated device (be it video or audio) to that same tile.



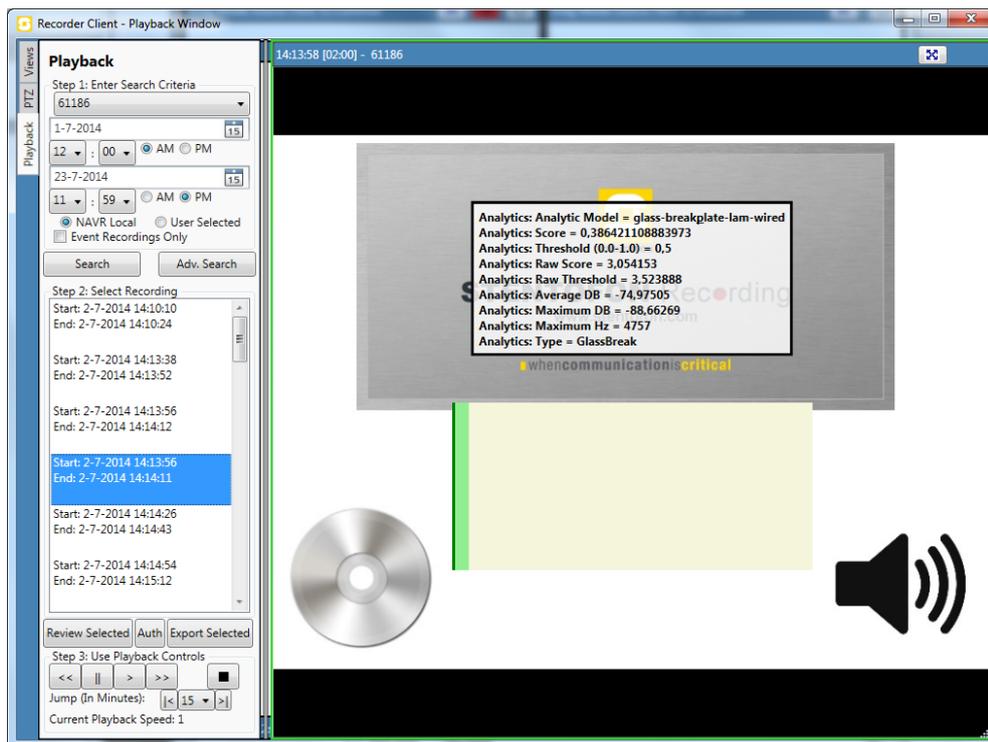
The Recorder allows every media tile to contain none or one live video stream and none to unlimited live audio streams. If a tile contains only video or audio, then it will display only video or audio. If both are being utilized, then the tile will show video in the top $\frac{3}{4}$ and a list of audio devices in the bottom $\frac{1}{4}$. A scroll-bar will appear if the list of audio devices becomes too large to be displayed.

Dragging media from one control panel with more than one device in it into another will cause all devices in the first tile to be called to the second tile as well. This will cause a replacement of video, and the addition (but not replacement) of audio devices in the new tile.



Playback works the same as live media while the following should be noted:

- If two recordings have different codecs, attempting to concatenate them for playback by selecting both and then clicking the **Review Selected** button may generate poor audio playback quality or 'junk' audio.
- Only a single media recording can be played back at a time.
- Recordings that are very short, and have an error associated with them will not be logged or retained by the Recorder. This may occur when the media source is set to record, but does not provide data to be recorded.



5.6.1.2 Salvos Tab

A salvo is a logical item that, when activated, will display one or more cameras in separate tiles through a single activation. The operation of the **Salvos** tab is nearly identical to that of the **Devices** tab, with the exception that salvo devices will only be called into tiles that can accept an alert device call.

5.6.2 Alerts Tab

Alerts notify a user that a significant event has been generated by the Recorder, and also provides a simple interface for basic comments and alert acknowledgment. Alerts are generated through use of the Trigger system (see section 4.3.8).

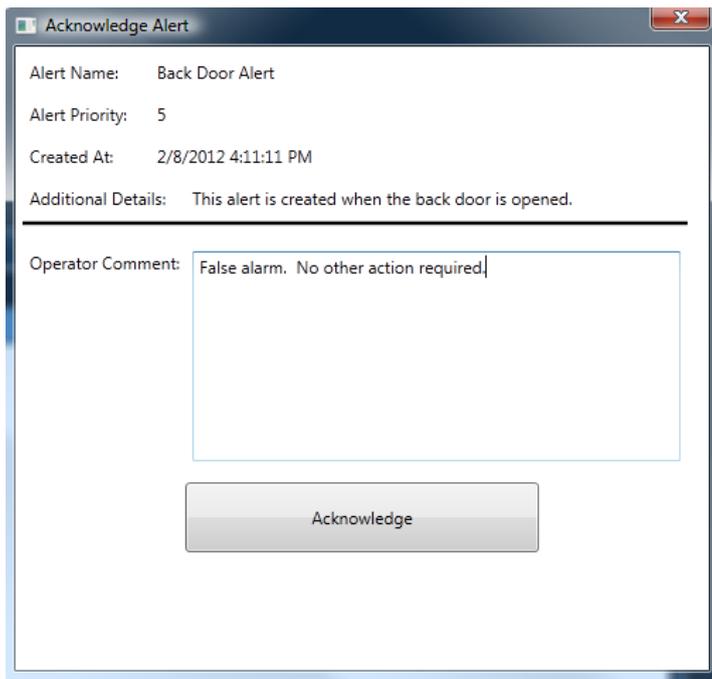
5.6.2.1 Active Tab

This tab will display zero or more active alerts which have not yet been acknowledged.

Alerts will be listed in order of priority, with level-5 priority being the highest (red) and level-1 priority being the lowest (green.)

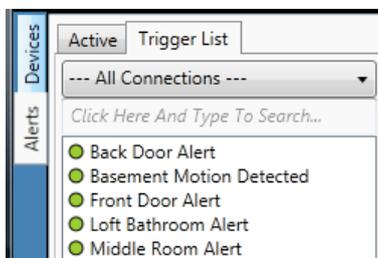
To acknowledge an alert, double-click anywhere on the alert text. A window will be displayed indicating any additional actions the administrator deems necessary. If required (or if prudent) type in a short comment describing any actions performed. After the alert is no longer needed, it can be acknowledged by clicking the **Acknowledge** button. This will also remove the alert from the list on all Playback Client workstations.



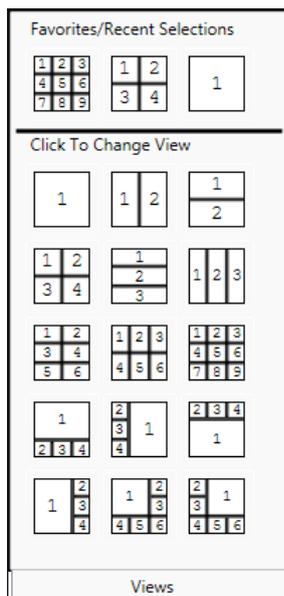


5.6.2.2 Trigger List Tab

This tab will display all triggers configured on a particular recorder. The main features of this list are the ability to filter by name and/or connection, and the ability to see which triggers are currently not disabled on the system. A user cannot interact with the triggers listed, so this tab is primarily for reference only.



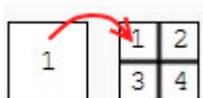
At the bottom of this tab is a drop-down box indicating the number of alert tiles that can be displayed. If this number is greater than or equal to the number of tiles on-screen, then all tiles will be capable of handling alert call-ups when an incoming alert is received and the optional device call-up link exists. If this number is less than the number of tiles on-screen, then only the selected number of tiles will indicate they are capable of handling alert call-ups.



5.6.3 Views Tab

The views tab allows the user to switch between views, allowing for additional flexibility both in the number and configuration of tiles presented. The **Favorites** list at the top contains the last 3 views selected by the user.

To change the view of the tile grid displayed in the window click any view in the list. Media tiles are identified by the numeric reference listed in the selected view. When switching views, the devices that were on display in the previous view will be automatically repopulated in the new view, relative to the numeric reference from the previous view.

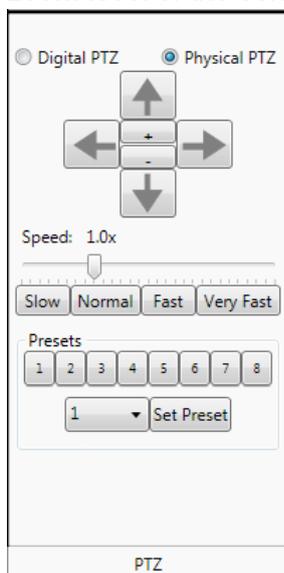


5.6.4 PTZ Tab

The **PTZ** tab allows a permissions-enabled user to pan, tilt, zoom and call presets on a selected camera. A camera must be selected for the PTZ control to be enabled and displayed. If a specific camera view is selected to review video, the PTZ control will not be displayed, and instead, will be replaced with the Playback Tab.

The top row of selections is to decide whether PTZ should occur digitally or physically. **Physical PTZ** uses motors or other capabilities supported by the camera to adjust the camera or its lens as directed. **Digital PTZ** performs on-screen adjustment of the existing image to produce the desired result where possible. Digital PTZ cannot exceed the boundaries of the image, and as the zoom level is increased the detail of the image may become grainy or fuzzy.

To adjust the pan or tilt of the selected camera, click the up, down, left or right arrow. To adjust the zoom level of the selected camera, click the plus (+) or minus (-) button. The speed modifier is a



slider that allows the user to increase or decrease the amount of adjustment that occurs during PTZ operations. The four preset buttons (Slow, Normal, Fast and Very Fast) are mapped to this slider for quick access to popular speeds. To use one of the speed preset buttons, click the desired button: the slider will move to the appropriate location on the slider bar. To manually adjust the speed for greater fidelity, click and hold the slider icon, then drag the slider icon to the left or right. A speed of 1.0x is considered regular speed.

NOTE: When performing PTZ operations it is recommended that these operations be tested to see how much lag there is between when the button is clicked and when a visible action occurs with the camera. Due to external influences such as network connectivity, input lag, and camera speed, it is possible that a command could take several seconds to execute.

In the **Presets** box, there are a series of numbered buttons which allow a user to quickly call a particular preset. A preset is specific to whether the Digital PTZ or Physical PTZ radio button is selected, so ensure that the proper radio button is selected prior to performing a PTZ action. To set a particular preset, first use the controls described above to adjust the camera position. Once a proper location and zoom level has been determined, click the drop-down box containing camera numbers and select the preset number to assign. Click the **Set Preset** button to send this new preset position to the Recorder Service, which will commit the change. Note that not all cameras can support this option.

5.6.4.1 Joystick Support

If a standard joystick or other game controller conforming to the USB joystick standard is connected to the Playback Client machine, that joystick may be used to interact with the Recorder. Specifically, the first two buttons on the controller will move the 'selected tile' between all on-screen tiles and will function as 'next' and 'previous' buttons respectively.

On a selected tile, the joystick may be used to perform physical or digital PTZ operations for pan, tilt, and zoom. Buttons on the controller starting at 3 may be used to call presets on the camera in the selected pane, starting at preset 1.

- Pan is set by the X or RotationX value of the controller.
- Tilt is set by the Y or RotationY value of the controller.
- Zoom is set by the Z or RotationZ value of the controller.
- Select Next Frame is triggered by pressing Button 1 on the controller.
- Select Previous Frame is triggered by pressing Button 2 on the controller.
- Call Preset 1 is triggered by pressing Button 3 on the controller (Preset 2 with Button 4, and so on).

5.6.5 Playback Tab

The **Playback** tab is only displayed in a Playback window. To bring up a playback window:

- Select **New Window > Recordings** from the main menu

When in a Playback Window, live cameras and alarms cannot be accessed, only Playback, Views, and (digital) PTZ are accessible.

Search

To start a search:

- Select a device from the **Enter Search Criteria** drop-down box
- Select a date from the calendar and time from the time box

The radio buttons **NAVR Local** and **User Selected** designate the time zone on which the date to search is based. NAVR Local is the local time zone of the Recorder which is being searched for recordings. User Selected is the time zone which was configured for this client.

The **Event Recordings Only** checkbox allows the user to better scope the search by indicating that only event-based recordings (as opposed to scheduled recordings) should be searched. To perform the search:

- Click the **Search** button

Adv. Search

If an advanced search is desired (more filtering):

- Click the **Adv. Search** button for advanced search form

The left side of the advanced search dialog-box is identical to the search dialog-box displayed in the main playback tab. However, after the **Search** button is clicked, the **Found Recordings** quantity will update to display how many recordings were found given those search constraints. On the right side, options for filtering by caller and participants can be enabled, depending on whether

those options are applicable to the recordings resulting from the search. As filters are applied, the number designated by **Filtered Recordings** will be updated in real time. To use the recordings that resulted from the search with no filtering, simply click the **Use All Recordings** button. To use only those recordings that match filters designated on the right side of the form, click the **Use Filtered Recordings** button. This will close the dialog-box and list the recordings as the Search button on the main playback tab would have done.

After a moment, a list of recordings will be displayed. This list will indicate the start time, the end time and whether the recording has been deleted due to the purging routine on the Recorder Service.

Review

To review a timeframe, select the recording and click **Review** or double-click the recording. If a tile is currently selected, the replay media will display in that tile, with information regarding participating intercoms or other notes as applicable to this recording. If no media tile is selected, but one of the tiles is empty, the replay media will be displayed in that tile. If these conditions are not met, a notification will be displayed informing the user as to why media is not being displayed.

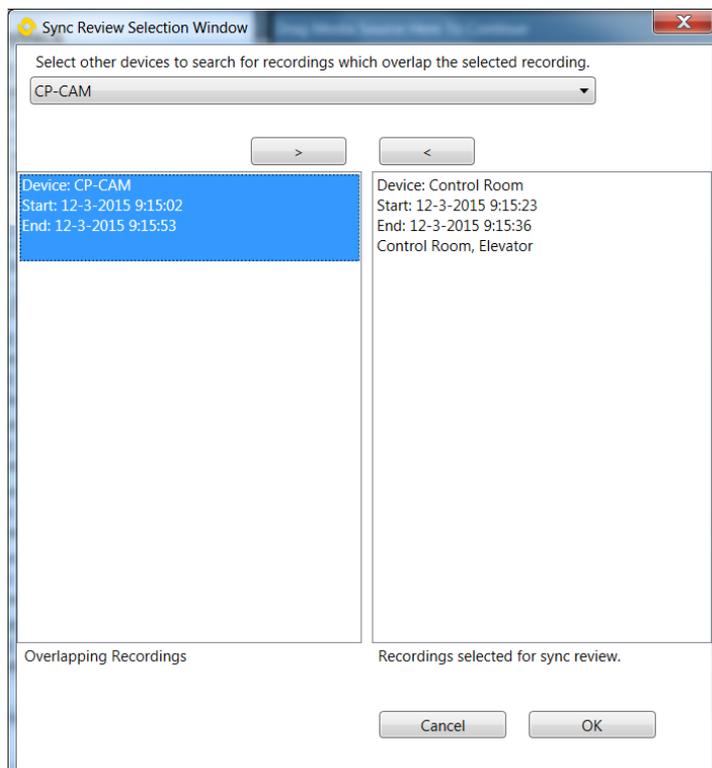
Sync. Review

Sync. Review provides the possibility to play back up to 4 streams at the same time, synchronized on the time that they were recorded. Due to possible differences in coding and transmission delays of video and audio this is not a guaranteed exact lip-synchronized playback.

First select the main recording of interest for playback and click **Sync. Review**. A new dialog-box will open where a new recording source can be selected. Upon selection, all recordings of that source which at any point overlap the recording time of the first selection will be listed.

- Select the required recording and click the > button recording.

Repeat this if required.



Auth

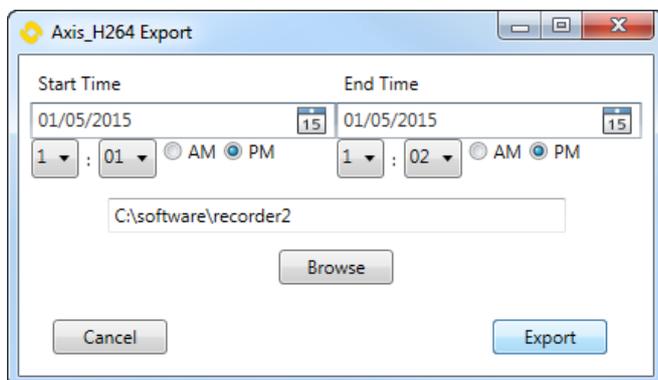
Clicking the **Auth** button will request that the server authenticate the digital signature on this recording to ensure that it has not been tampered with during storage. One of three answers will be returned:

- **authentic** (the digital signature indicates that the file has not been tampered with),
- **inauthentic** (the digital signature indicates that either the file or the digital signature has been modified)
- **not able to be authenticated.**

MJPEG recordings and those recordings that are currently being made cannot be authenticated, and will therefore return the third result. This is NOT an indication that they have been tampered with, merely a statement that their authenticity cannot be verified.

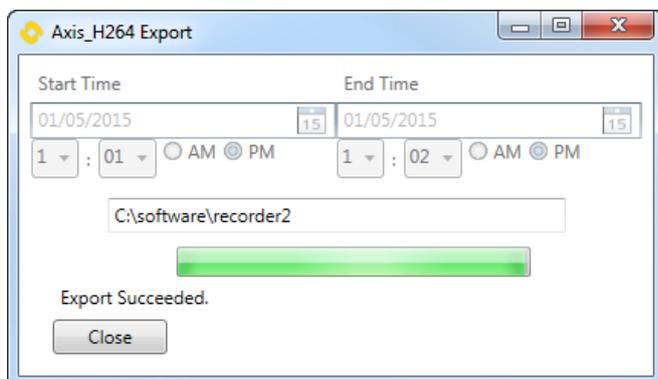
Export

Clicking on the **Export** button while one or more **video recordings** are selected will cause an AVI formatted video file to be exported in the following manner:

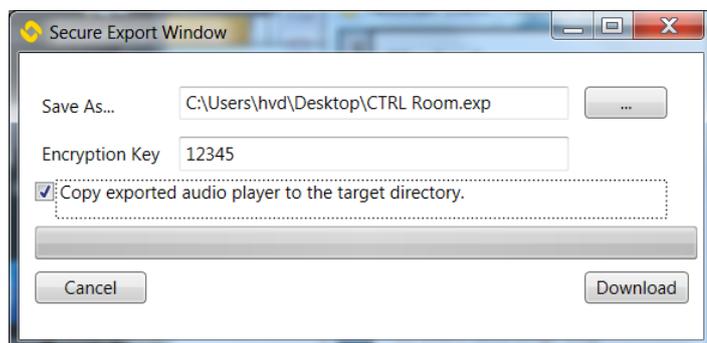


The user can then select a sub-portion (if desired) of the total recording duration, and then select a location for the file to be exported to. This location defaults to the user's PC desktop. To change this setting, utilize the **Browse** button. Once this value has been changed, the new location will be used as the default path until it is changed again.

The file name for the export will consist of the device name in question, as well as the start and end times of the clip. Clicking the **Export** button will start the export process. After a brief pause, a progress bar will indicate the status of the current export. If an error occurs at any time, this will be displayed to the user, and the export terminated. The export may be cancelled at any time during export, which is performed in real time.



If a single **audio recording** is selected, then clicking the **Export Selected** button will display a different media export option. In this case, the entire recording will be exported, and encrypted along with a digital signature to verify authenticity as follows:



Select a location and name to save the exported file to, using the browse ... button next to the **Save As...** text field.

The Encryption Key is used to encrypt and decrypt the recording file. The key is case sensitive, and is necessary to play back this exported recording. All recordings are encrypted with AES256, using a FIPS 140-2 certified implementation of that algorithm.

Checking the box **Copy exported audio player to the target directory** will cause the software necessary to play back this recording to be copied to the same directory as the recording when the export is complete. For information on how to use that playback, please see section 5.7.

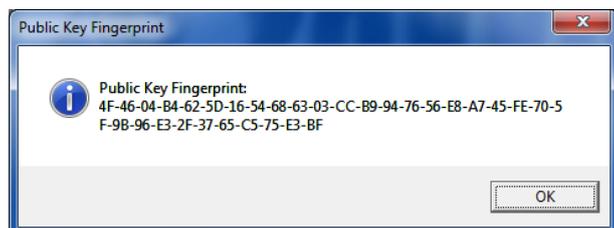
When the **Download** button is clicked, the client will download the encrypted audio export from the Recorder. After the download is complete, the public key fingerprint of the Recorder will be displayed to the user. The reason for this is that the user, when playing back the exported audio at another location, can check that the fingerprint of the public key which is used to verify the recording at that time matches the **Public Key Fingerprint** supplied by the server during export. This confirms that the signature on the exported recording is not only valid (indicating that it has not been tampered with), it was also validly signed by the server that it originated from, and not replaced with a validly signed audio export from another source.

Playback Controls

The buttons at the bottom of the Playback tab allow for control over the playback of the selected media tile. The << (Rewind) button will set the playback speed to negative, allowing for reverse playback. The || (Pause) button will stop playback on the current frame. The > (Play) button will set the playback speed to 1 and begin or resume playback. The >> (Fast Forward) button will increase the forward playback speed. The drop-down box with values **1**, **5**, and **15** is used to set how many minutes the **skip** buttons will skip the recording playback, either forward or backward.

5.6.6 Media Tiles

A media tile is the primary video host control for the Playback Client. Each video tile is capable of displaying both live video and replay/recorded video.



Once a media tile is displaying live media, the buttons in the upper-right corner of the video tile become accessible. To activate any of the icons, double-click the appropriate icon.



- Clicking the **icon with four arrows** pointing outwards will open a new window and pre-populate the new window with the media in the selected tile.
- Double-clicking the **icon with a simple circle** begins or ends a user-initiated recording session (also known as an event recording), which lasts for a maximum of 1 hour. All devices that are currently in the media tile will begin recording, and the circle will **turn red** for the duration of the recording, so long as any device in the tile is still recording.

If the circle is red, then double-clicking on it will stop recording any device on the tile that is currently being user-recorded by that tile. Removing a device from the tile will stop the user-recording for that device.

AlphaCom can be set up such that the RTP streams of conversations between IP stations are recorded separately. During playback it is then possible to mute one side of the conversation by clicking the relevant button.



Recordings which involve an analog station, conferences or group calls always result in a single (mixed) RTP stream from AlphaCom.



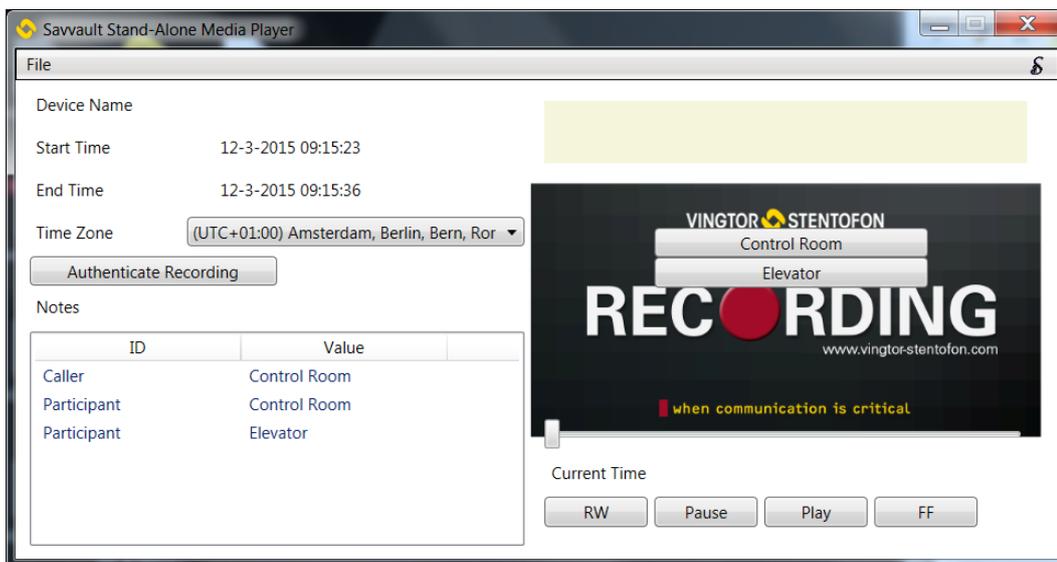
5.7 Standalone Playback Client

The Standalone Playback Client is used to play back secure audio exports from the Playback Client Secure Audio Export functionality. The Standalone Playback Client executable is **Nvr2StandalonePlabyackClient.exe**, and can be found in the Vingtor-Stentofon Recorder Client installation directory, or also in any location where it has been placed during the secure export process.

To load a recording, go to the **File** menu, and select **Load Recording**. Select the recording file, and click the **Open** button. Enter the decryption key when prompted. This must match the input used for encryption when the export was performed.

Note that the device name from the NAVR that generated this recording is listed, as is the start and end times of the recording. These times are given in the time zone specified by the **Time Zone** drop-down box. This will default to the local time.

The **Notes** field will display any information accompanying the recording.



The **Authenticate Recording** button will check the digital signature of the recording against the public key that was exported with it. This will result in a determination of **Authentic**, **NOT Authentic**, or **Unable to be authenticated**. A result of **NOT Authentic** indicates that the digital signature is not authenticated with the current recording, indicating possible tampering. A result of **Unable to be authenticated** indicates that there was an issue authenticating the recording, indicating only that authenticity cannot be determined. If authentic, the fingerprint of the public key used to authenticate the recording will be displayed. The purpose of this is to confirm that the public key fingerprint displayed matches that which was displayed during the export process. Making a match confirms the source of the recording.

Once a recording is loaded, simply click the **Play** button to start playback. The current time and playback rate will be indicated along with a power meter showing the average and maximum loudness of the current audio. Progress of the recording will also be indicated by the slider control above the **Current Time** text.

A Audio and Video Sources

A.1 Supported Cameras

NOTE: The following hardware has been tested. This list is not exhaustive of all camera hardware that is capable of working with these settings, but represents a subset of similar camera hardware that is usable with the Recorder platform.

| Camera type | Note |
|-------------|---|
| AlertWerks | SCA201-NTSC connected to a ServSensor V4E |
| Arecont | AV2100M |
| Axis - V2 | In general this includes models with three numbers in the model description (i.e. 213, 215) |
| Axis - V3 | In general this includes models with four numbers in the model description (i.e. M1054, Q1775, and M3204) |
| Generic | See Appendix A.2 for details and description – this selection should be made for the Vingtor-Stentofon CP-CAM |
| Panasonic | Tested with WV-NP502, WV-NS202. Vingtor-Stentofon Recorder should work for all Panasonic cameras capable of RTSP media transmission |
| Passive | See Appendix A.3 for details and description |
| Samsung | Tested with model SNV-608RN. Only supports RTSP (H264 and MPEG4) media |
| SiquaFixed | Tested with model FD820M1. Supports MJPEG, H264, and MPEG4 streams from fixed (non-PTZ) Siqua cameras. |

A.2 Generic Cameras

The generic camera type is used to support cameras, encoders, and other video sources that may not be specifically supported by the Recorder. A generic source requires a name, as with any other source. The major difference between specific Camera Types and the Generic type is that the generic type must be supplied with a full media URI. This URI will generally be supplied in the documentation for a capable camera or encoder.

If the selected media type is H.264 or MPEG4, the URI should be the path to be accessed to the RTSP process. This information should be contained in the manual for the camera in question. If the media transport type is UDP, then RTSP will occur over TCP port 554 and the media will flow over a negotiated random UDP port. If the media transport type is TCP, then RTSP will occur over TCP port 554 and media will flow over that same connection. If the media transport type is HTTP,

then RTSP and the media will both be tunneled over a series of HTTP connections over TCP port 80.

If the selected media type is MJPG, the URI should be the path of the JPEG image or MJPEG stream on the video source. The Recorder will assume that the source is an MJPEG stream, and if this fails, it will attempt to use the URI as a JPEG with repeated HTTP requests at the interval specified by the **Maximum FPS** value. In the case of MJPEG, the Maximum FPS argument in the camera setup will be ignored, and video will be displayed at whatever rate the camera is capable of. Some cameras allow this to be set with arguments in the URI.

A.3 Passive Camera

The Passive camera type is for use in situations where the Vingtor-Stentofon Recorder cannot 'pull' video from a camera, particularly when the camera is behind a NAT device, the connection is unreliable (cellular/radio), and it is desirable for the camera to 'push' video.

In particular, this system comprises two portions: the Recorder portion, which is a configured Camera of the Passive type, and the Bridge application which can be used to turn an RTSP video source such as a camera or media server into a 'pushing' video source.

The current incarnation of the Bridge is a command-line or GUI application the invocation of which takes the following form:

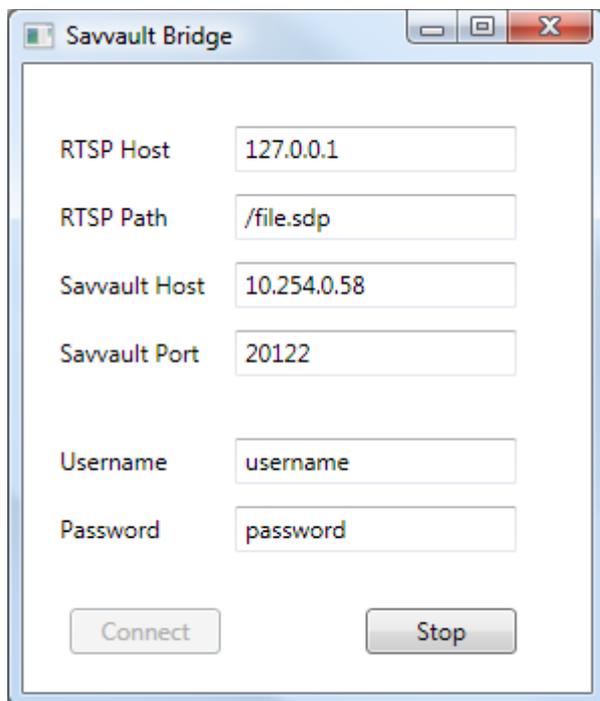
```
BridgeApplication <rtspHost> <rtspPath> < RecorderHost> < RecorderRtpPort> <username> <password>
```

<rtspHost> The host which will be serving RTSP to the Bridge.

<rtspPath> The path to the RTSP service on the RTSP Host.

< RecorderHost> The host which runs the Recorder.

- < RecorderRtpPort> The UDP port on which the Recorder will be listening for this bridge.
- <username> The username used to authenticate this source to the Recorder.
- <password> The password used to authenticate this source to the Recorder.



The bridge will connect to the RTSP host and negotiate a media stream with that host over UDP. The bridge will then authenticate itself and describe this media stream to the RecorderHost via the configured RecorderRtpPort. The media will then be transmitted on this same port, with more control data being passed on the UDP port one greater than the RecorderRtpPort. Thus, if a passive camera is configured to send to UDP port 20122, the media and media description will be sent to 20122, and control data will be sent to port 20123. The UTC time on the bridge host must be within 5 minutes of the time on the Recorder for authentication to function.

When the bridge is shut down, it will send a TEARDOWN message to the RTSP host. If the RTSP host continues to send media after this message, it may be necessary to shut down and restart that RTSP host so as to ensure that the next time the bridge is run, it does not receive 2 copies of the media.

Setting up a device for this passive source on the Recorder is similar to setting up other devices on the Recorder.

The screenshot shows a 'Camera Setup' dialog box with the following fields and options:

- Name: Car Camera (Passive)
- URI/Address: 20122
- Camera Type: Passive
- Media Type: H264
- Username: username
- Password: password
- Camera-Specific Options:
 - Multi-Channel Encoder?
 - Maximum FPS: [dropdown]
 - Supports Real/Physical PTZ
 - Camera Stream-On-Demand: Force Stream Always
 - Set Media Transport Type: UDP (default, recommended)
- Buttons: Reset, Cancel, Save

In contrast to other camera types, the URI/Address provided for this type defines the UDP port on which the Recorder will listen for data from this source. As described above, this port and the one immediately above it will be used for data and media transmission.

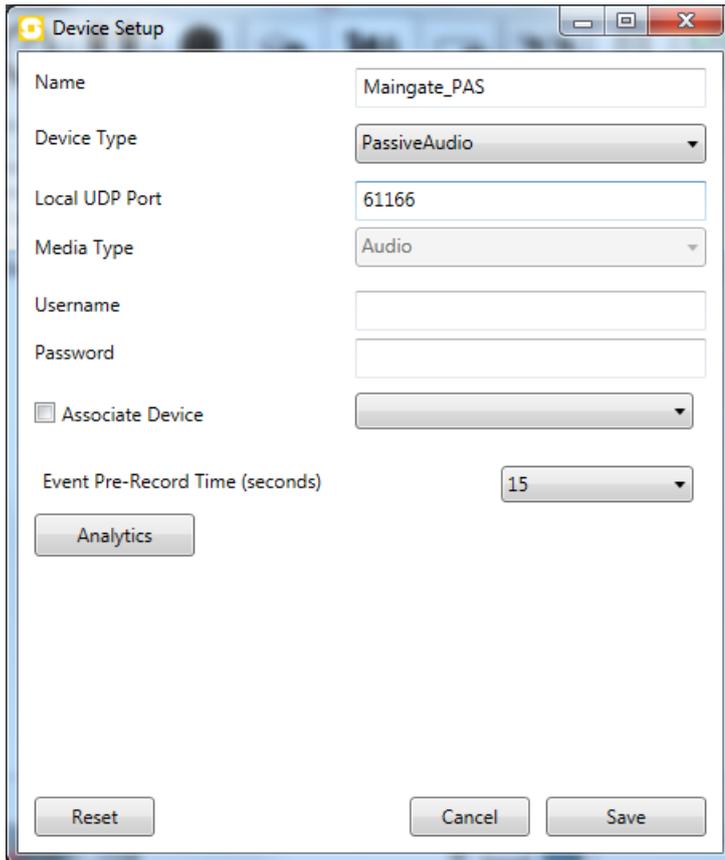
Thus:

- This port and the one above it may not be used for any other Passive source.
- Wherever the bridge application is running, it must be able to send UDP to those two ports. This may require firewall, NAT traversal, port forwarding, and/or other network changes depending upon the network infrastructure present.

MJPEG is not a valid media type for Passive video sources. The Media Transport Type setting is disregarded for this Camera Type. In addition, because Passive Cameras become active when the Bridge runs, rather than when someone uses the Recorder, they must be configured to **Force Stream Always** so as to be always ready for a connection from the Bridge.

A.4 Passive Audio

Passive audio sources are those that send RTP audio to a given UDP port on the Recorder Server permanently. Vingtor-Stentofon IP stations can be set in this mode.



The screenshot shows a 'Device Setup' window with the following configuration:

- Name: Maingate_PAS
- Device Type: PassiveAudio
- Local UDP Port: 61166
- Media Type: Audio
- Username: (empty)
- Password: (empty)
- Associate Device: (unchecked checkbox, empty dropdown)
- Event Pre-Record Time (seconds): 15

Buttons: Analytics, Reset, Cancel, Save

Name: A user-friendly identifier for this device.

Device Type: **PassiveAudio.**

Local UDP Port: This port number must match the port number as set in the Turbine station. Note that it is not allowed to have multiple stations streaming audio to the same port number.

Media Type: **Audio** (this is pre-selected when the Device Type is set to PassiveAudio)

A.5 AlphaCom

A.5.1 AlphaCom XE Licenses

Active recording is a license-based feature of the AlphaCom XE audio server. In AlphaPro it is possible to enable recording for as many specific intercom stations as the number of licenses purchased. To record both sides of a conversation, only 1 of the 2 stations in the conversation needs the appropriate flag set.

This means that in an installation with many substations and only a few guard stations, where the substations are not able to call each other, only as many licenses are required as there are guard stations.

When the recording interface is enabled (the license key has been inserted) it is also possible to record conferences and group calls.

To insert the license key for the AlphaCom, start AlphaWeb from a web browser by entering the IP address of the AlphaCom server and log in.

- Default username: **admin**
- Default password: **alphaadmin**

To insert the license key:

- Select **System Configuration > Licensing**
- Click **Insert new License Key**
- Enter the license key into the input field and click **Insert Key**
- Accept the Terms and Conditions by clicking **Yes**

The license key is now inserted but not yet activated.

To activate the license key:

- Click **Yes** to the question **Do you want to reset the AMC system now?**

A.5.2 AlphaPro Programming – Recorder Interface

Programming of the Recorder Interface is done via the tab **Recording** in the dialog-box where all system-wide information is programmed:

- Start AlphaPro
- Click the icon **Exchange & System**
- In the dialog-box displayed, click the button **System**
- In the dialog-box displayed, click the tab **Recording**

Note that after sending the changes to the AlphaCom audio server, the audio server needs to be reset in order to activate the changes which are made as described in this section.

Update Records...

General | Calls and Options | Logs and Errors | Timers | Fire Alarm | VoIP | **Recording**

| | Primary Recorder | Secondary Recorder |
|-------------|------------------|--------------------|
| Username: | recorder | |
| IP Address: | | |

Force Mono Recording:

Recording on demand:

Codecs

| | |
|--------|-------------------------------------|
| All | <input checked="" type="checkbox"/> |
| G.711u | <input checked="" type="checkbox"/> |
| G.711a | <input checked="" type="checkbox"/> |
| G.722 | <input checked="" type="checkbox"/> |

A.5.3 Recorder Registration

The Recorder Software registers with the AlphaCom as a SIP device. If only one recorder is used, enter its registration name as Username for the Primary Recorder. If there is a redundant recorder as well, enter its registration name as Username for the Secondary Recorder. AlphaCom will first attempt to record a conversation on the Primary Recorder, but if that recorder is not available the Secondary Recorder will be used. Note that the fields **IP address** are not relevant for this application and should be left empty.

The Recorder Software uses the default SIP Port: 5060

A.5.4 Audio Streams

The RTP audio stream characteristics should be set as follows:

- Uncheck **Force Mono Recording** box
- Check **All** box for **Codecs**

The Recorder Software is able to capture multiple RTP streams for a conversation. It is therefore not necessary to force AlphaCom to mix those streams into a single stream.

The Recorder Software supports all codecs that are also supported by AlphaCom. It is therefore not necessary to force a transcoding to a specific codec.

A.5.5 Recording on Demand

This section is added for future reference. At the time of writing, this feature is not yet available in the AlphaCom software. Before using this feature, please check whether AlphaCom supports it.

By default all conversations of recording-enabled stations are recorded.

When the **Recording on demand** box is checked, all conversations are only recorded after a specific data protocol command is sent to the AlphaCom. Note that this command can only be sent from the AlphaCom event handler. An example of commands are:

- \$REC L101 U1 - Start recording of conversation currently active on station L101
- \$REC L101 U0 - Stop ongoing recording active on station L101
- \$REC L8201 U1 - Start recording of conference 8201

A.5.6 AlphaPro Programming – Stations

In the dialog-box which opens after clicking the icon **Users & Stations** there are 2 checkboxes for each station:

- Recording – Incoming
- Recording – Outgoing

| | |
|----------------------|--|
| Directory Number: | <input type="text" value="103"/> |
| Display Text: | <input type="text" value="Station 3"/> |
| Station Type: | <input type="text" value="Master Station"/> |
| Group Access Level: | <input type="text" value="Medium"/> |
| Call Setup Priority: | <input type="text" value="Normal"/> |
| Volume (dB) | <input type="text" value="0"/> |
| Class Of Service: | <input type="text" value="Default"/> |
| Recording: | <input checked="" type="checkbox"/> Incoming <input checked="" type="checkbox"/> Outgoing <input type="button" value="Apply to All"/> |

Checking these boxes will determine whether only incoming or outgoing calls should be recorded, or both. Note that only as many stations should be selected for recording as recording licenses have been purchased to avoid calls not being recorded.

By default the Recording boxes are unchecked. In a system where most stations need recording it is possible to click the button **Apply to All**. The recording flag for all 552 users will be set just the same as for the user where the **Apply to All** button is selected.

Conversations within the same AlphaCom will only be recorded once, even if for both stations in the conversation, both Recording boxes are checked.

If one of the stations has the appropriate Recording box checked, the conversation will be recorded independent of whether any Recording boxes are checked for the other participant in the conversation.

A.5.7 AlphaPro Programming – Group Calls

When a recording license is present, all local and global group calls are recorded by default, independent of whether stations have a Recording box checked or not. Recording of specific local and global group calls can be disabled by unchecking the Recording box for the group call.

In AlphaPro, click the icon **Groups** and select the local or global group. Check or uncheck the Recording box as required.

| | |
|----------------------|---|
| Group Number: | <input type="text" value="2"/> |
| Descriptive Name: | <input type="text" value="Station Group 2"/> |
| Directory Number: | <input type="text" value="85"/> |
| Display Text: | <input type="text" value="GroupCall 2"/> |
| Group Access Level: | <input type="text" value="Medium"/> |
| Setup Priority: | <input type="text" value="Normal"/> |
| Gong Type: | <input type="text" value="Ding Dong"/> |
| Max Missing Members: | <input type="text" value="0"/> Answer <input checked="" type="checkbox"/> |
| Recording | <input checked="" type="checkbox"/> |

A.5.8 AlphaPro Programming – Conferences

When a recording license is present, all simplex and duplex conferences are recorded by default, independent of whether stations have a Recording box checked or not. Recording of specific conferences can be disabled by unchecking the Recording box for the conference.

In AlphaPro, click the icons **Simplex Conferences** or **Open Duplex Conferences** and select the appropriate conference. Check or uncheck the Recording box as required.

Simplex Conference:

| | |
|--|-------------------------------------|
| Conference Number: | 1 |
| Description: | Conference 1 |
| Default Member: | No Physical Number |
| Default Member is Default Speaker | <input type="checkbox"/> |
| Minimum Talk Priority | Low |
| Conference over Conversation/AlphaNet Setup Priority | <input type="checkbox"/> |
| Alphanet Global Conference | <input type="checkbox"/> |
| Recording | <input checked="" type="checkbox"/> |

Duplex Conference:

| | |
|--------------------|-------------------------------------|
| Conference Number: | 1 |
| Description: | OpenConf 1 |
| Master: | No Physical Number |
| Setup Priority: | Normal |
| Recording | <input checked="" type="checkbox"/> |

A.5.9 AlphaNet

Similar to stations, each AlphaNet link also has 2 recording flags associated with it, for incoming and outgoing calls. By default both these flags are set.

For recording of AlphaNet calls the rule is:

- Record incoming call if both the **Incoming** box for the station AND the **Incoming** box for the source node are checked
- Record incoming call if both the **Outgoing** box for the station AND the **Outgoing** box for the destination node are checked

This makes it possible to select the side on which to record an AlphaNet call or to have the option to record the call at both ends.

The AlphaNet recording checkboxes are part of the AlphaNet Routing dialog-box:

| Destination | |
|---|--|
| Destination: | Test exchange AlphaCom E |
| Description: | |
| IP Addr.\Hostname: | 10.5.112.41 \ 0.0.0.0 |
| General Settings Advanced Settings | |
| Preferred codec: | Best Available ▼ |
| RTP Packet Size: | 20 (ms) |
| Billing Node: | N/A ▼ |
| Recording: | <input checked="" type="checkbox"/> Incoming <input checked="" type="checkbox"/> Outgoing |

The Recording Software is able to register with many AlphaCom XE audio servers simultaneously, depending on the AlphaCom connection licenses that are available for the recorder, so even in a large AlphaNet it is possible to only use a single recorder. However in geographically dispersed systems it may be advisable to have recorders at different locations.

Note that every AlphaCom XE audio server in an AlphaNet requires its own recording licenses.

If a single recorder is used, make certain that conversations are only recorded from one AlphaCom – do not check both **Incoming** and **Outgoing** boxes on all AlphaCom servers in the network

A.6 Turbine Stations & Permanent Audio Streaming

To stream audio as a Passive Audio device, a Turbine station needs to be put in **Permanent Audio Stream** mode. This mode is a licensed feature - the item number for this license is:

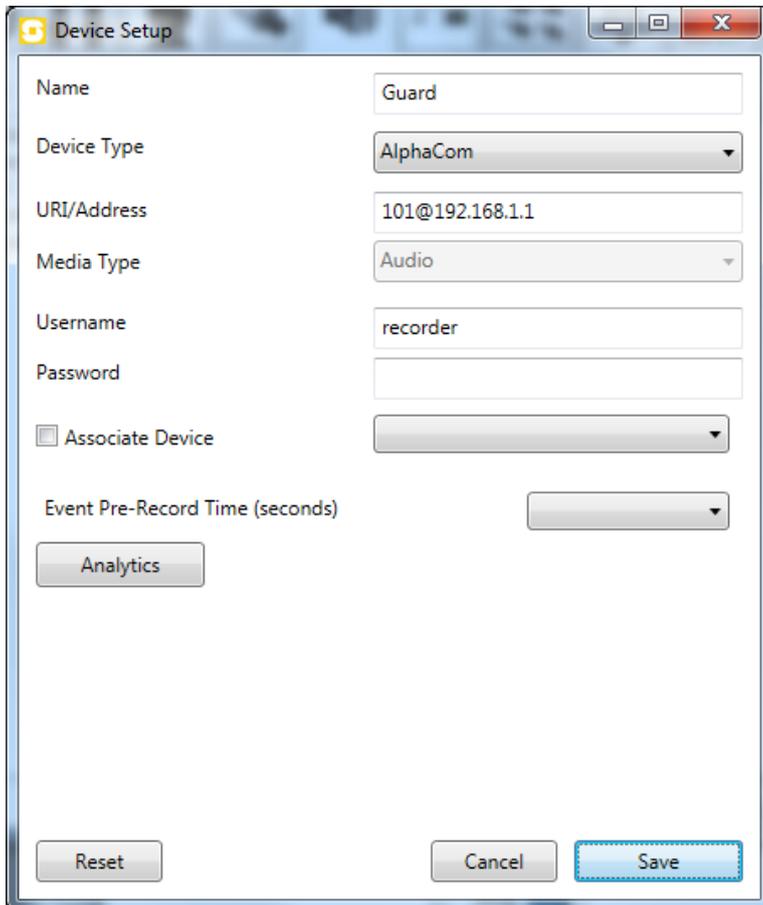
- 1009296998 – IP Station Audio Surveillance

Once the license key has been entered in the station web interface, a new page becomes available under **Advanced Network > Audio Surveillance**.

| Permanent Audio Stream settings | |
|--|-------------------------------------|
| Enable Audio Stream: | <input checked="" type="checkbox"/> |
| Remote Domain: | 192.168.1.2 |
| Remote Port: | 61164 |
| Remote Domain 2: | |
| Remote Port 2: | |
| Codec: | g722 ▼ |
| <input type="button" value="Save Stream configuration"/> | |

- Check the **Enable Audio Stream** box
- Enter the IP address of the recorder server in the **Remote Domain** field

- Enter the port number to which this Turbine station will be streaming in the **Remote Port** field.
Note that each station must stream to a unique port number.
- Set the **Codec** to **g722**
- Click **Save Stream configuration**



The screenshot shows the 'Device Setup' dialog box with the following configuration:

- Name: Guard
- Device Type: AlphaCom
- URI/Address: 101@192.168.1.1
- Media Type: Audio
- Username: recorder
- Password: (empty)
- Associate Device: (checkbox unchecked, dropdown menu empty)
- Event Pre-Record Time (seconds): (dropdown menu empty)

Buttons: Analytics, Reset, Cancel, Save

A.7 Problem solving

Choppy Audio on playback: see paragraph 3.2.1, the description for **RTP Playback Timer**.

License file is not accepted: Unfortunately, some e-mail software causes a corruption of the license file during encoding. If the file is corrupted the recorder configuration application will respond with the message that either the license is not valid, or has expired. If this happens, please ask your distributor to contact Zenitel and ask whether the license file can be sent to you directly from Zenitel.

www.zenitel.com

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