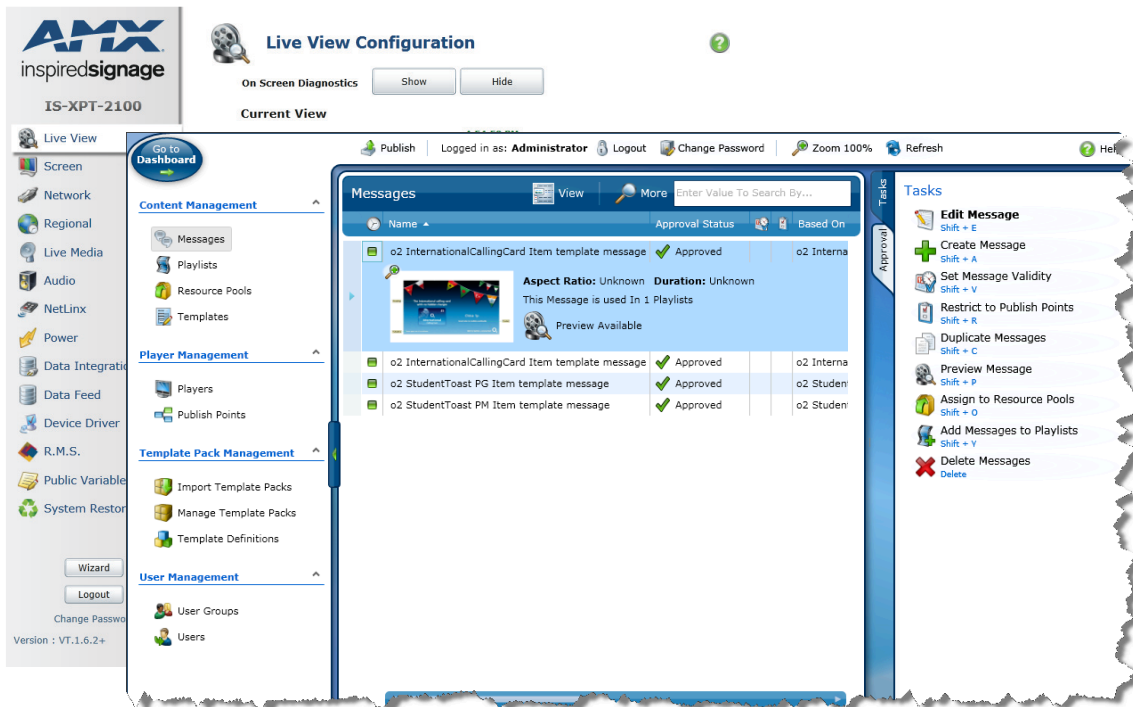




INSTRUCTION MANUAL

INSPIRED XPERT 2100

IS-XPT-2100



IMPORTANT SAFETY INSTRUCTIONS

1. READ these instructions.
2. KEEP these instructions.
3. HEED all warnings.
4. FOLLOW all instructions.
5. DO NOT use this apparatus near water.
6. CLEAN ONLY with dry cloth.
7. DO NOT block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. DO NOT install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. DO NOT defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wider blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. PROTECT the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. ONLY USE attachments/accessories specified by the manufacturer.



12. USE ONLY with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. UNPLUG this apparatus during lightning storms or when unused for long periods of time.
14. REFER all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. DO NOT expose this apparatus to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on the apparatus.
16. To completely disconnect this apparatus from the AC Mains, disconnect the power supply cord plug from the AC receptacle.
17. Where the mains plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.
18. DO NOT overload wall outlets or extension cords beyond their rated capacity as this can cause electric shock or fire.



The exclamation point, within an equilateral triangle, is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.



The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electrical shock to persons.



ESD Warning: The icon to the left indicates text regarding potential danger associated with the discharge of static electricity from an outside source (such as human hands) into an integrated circuit, often resulting in damage to the circuit.

- WARNING:** To reduce the risk of fire or electrical shock, do not expose this apparatus to rain or moisture.
- WARNING:** No naked flame sources - such as candles - should be placed on the product.
- WARNING:** Equipment shall be connected to a MAINS socket outlet with a protective earthing connection.
- WARNING:** To reduce the risk of electric shock, grounding of the center pin of this plug must be maintained.

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AMX WARRANTY AND RETURN POLICY

The AMX Warranty and Return Policy and related documents can be viewed/downloaded at www.amx.com.

ESD WARNING

	<p>To avoid ESD (Electrostatic Discharge) damage to sensitive components, make sure you are properly grounded before touching any internal materials.</p> <p>When working with any equipment manufactured with electronic devices, proper ESD grounding procedures must be followed to make sure people, products, and tools are as free of static charges as possible. Grounding straps, conductive smocks, and conductive work mats are specifically designed for this purpose.</p> <p>Anyone performing field maintenance on AMX equipment should use an appropriate ESD field service kit complete with at least a dissipative work mat with a ground cord and a UL listed adjustable wrist strap with another ground cord</p>
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	<p>WARNING: Do Not Open! Risk of Electrical Shock. Voltages in this equipment are hazardous to life. No user-serviceable parts inside. Refer all servicing to qualified service personnel.</p> <p>Place the equipment near a main power supply outlet and make sure that you can easily access the power breaker switch.</p>
-----------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

WARNING: This product is intended to be operated ONLY from the voltages listed on the back panel or the recommended, or included, power supply of the product. Operation from other voltages other than those indicated may cause irreversible damage to the product and void the products warranty. The use of AC Plug Adapters is cautioned because it can allow the product to be plugged into voltages in which the product was not designed to operate. If the product is equipped with a detachable power cord, use only the type provided with your product or by your local distributor and/or retailer. If you are unsure of the correct operational voltage, please contact your local distributor and/or retailer.

FCC AND CANADA EMC COMPLIANCE INFORMATION:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Approved under the verification provision of FCC Part 15 as a Class B Digital Device.

Caution: Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this device.

CAN ICES-3 (B)/NMB-3(B)

EU COMPLIANCE INFORMATION:

Eligible to bear the CE mark; Conforms to European Union Low Voltage Directive 2006/95/EC; European Union EMC Directive 2004/108/EC; European Union Restriction of Hazardous Substances Recast (RoHS2) Directive 2011/65/EU; European Union WEEE (recast) Directive 2012/19/EU.

You may obtain a free copy of the Declaration of Conformity by visiting <http://www.amx.com/techcenter/certifications.asp>.

WEEE NOTICE:

	<p>This appliance is labeled in accordance with European Directive 2012/19/EU concerning waste of electrical and electronic equipment (WEEE). This label indicates that this product should not be disposed of with household waste. It should be deposited at an appropriate facility to enable recovery and recycling.</p>
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Inspired XPert 2100

Overview

This guide explains how to use the Inspired Signage XPert 2100 package to create a digital Signage display. First we introduce some concepts that you will need to understand to use the system, then we discuss a variety of techniques from beginner to advanced that you can use to create an interesting Signage display.

Those who prefer learning by example may wish to briefly scan the next section and then move on to trying the examples. For more background theory refer to the Theory section of the *Inspired Composer Instruction Manual*. We also introduce more theory in the Advanced section of this guide.

This guide is divided into four main sections, as described below:

Document Sections		
Section	Page	Description
Introduction	1	Basic Concepts
Beginner	4	<ul style="list-style-type: none"> Setting up Composer to display a simple Layout on one or more Players with some basic content Selecting a Landscape Layout for the Player display, plus adding content (Messages) for display in different parts of the Layout Schedule a high priority announcement Message Selecting a Portrait Layout for the Player Display Playing Audio Things to consider when adding Images/Video to Messages
Intermediate	13	<ul style="list-style-type: none"> Displaying Data Feeds such as a News or Weather Feed in one or more Layout Areas Displaying a Video Stream in the main Layout Area RMS Integration - integration with AMX's Resource Management System
Advanced	25	<ul style="list-style-type: none"> Creating Different Secondary Playlists for different groups within your organization and for different uses Setting one set of Players to use one Layout and another set of Players to use a different Layout Scheduling different Layouts at different times or dates Using Composer with Multiple Users (covers User Groups and Resource Pools) External Player Control (Including NetLinx) Filtering, Ordering and Grouping the output of your Data Feeds Serial control over devices attached to Player serial ports

Refer to the *Troubleshooting* section on page 47 for a list of common issues with the IS XPert system along with ways to resolve these issues.

Basic Concepts

Messages

The basic component of AMX Inspired Signage content is the *Message*. There are two main types of Messages:

Standard Messages

These are collections of images, video, text, shapes, and animations used to create announcements, notices, and advertisements.

Special Messages

Special Messages allow you to do more complicated effects, these can be further divided into:

- FeedReel Messages: These Messages are used to display data feeds such as News and Weather
- Layout Messages: These Messages determine the screen layout (split screen, full screen, three way split, etc.)
- LiveMedia Messages: Used to display video streams

When creating a Message, choose a Template to base the Message on and then fill in the undefined elements of the Template. Inspired Signage takes the concept of a Template one step further and provides *Template Definitions* which are used to construct Templates.

NOTE: *Template Definitions are created by AMX and are grouped into Template Packs.*

Playlists

Messages are held in Playlists which are similar to the Playlists you can create for songs on an MP3 player. Playlists determine the order used to display Messages on screen. Signage content displayed on screen is built up from a number of Playlists which control different areas of the screen. Playlists are only displayed when you publish them to one or more Players. Users configure which Players a Playlist is published to. Playlists are set to loop by default to keep playing the same content.

Layout

Player output is divided into a number of different areas such as a side bar, main area, ticker bar, etc.

The size, layout, and number of these areas on screen as well as decorative design features such as logos, color schemes, divider bars, panels, etc are determined by Layout Messages in the Layout Playlist, specifically the currently playing Layout Message.

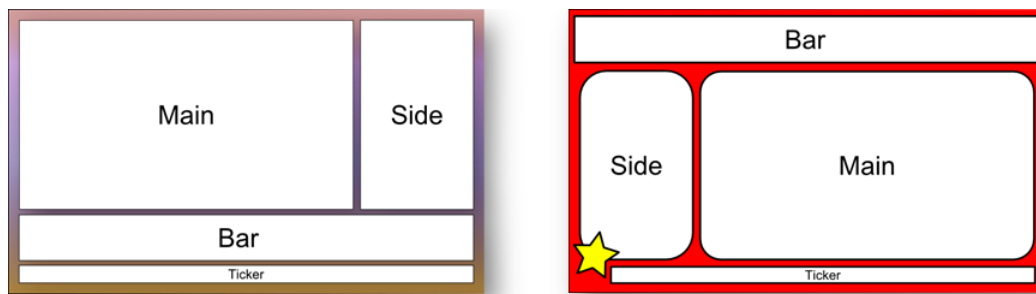


FIG. 1 Example Layout Messages created from different Layout Templates

Each Layout Area is roughly rectangular (contained within a rectangle) and has a width and height. The ratio of width to height is called the Aspect Ratio.

Each Layout area can support two main types of playlist:

- **Content Playlists** - used for displaying user created messages and data feeds
- **LiveMedia Playlist** - used for displaying live video streams (IPTV)

The Layouts provided by default with the IS XPert system are divided into two categories, *Portrait* and *Landscape*.

If you decide to use a Portrait Layout then you will need to mount the screens that will display Portrait Layouts on their side and set the Player display rotation to either 90 degrees or 270, as appropriate, using the *Screen* section of the Player Web Configuration Tool.

Accessing the Configuration Tools

AMX provide two tools to allow you to configure an IS XPert system:

- Composer
- The Player Web Configuration Tool

Composer

Use Composer to create and control the content displayed on your Player(s).

Login to Composer as follows:

- If you have a desktop installation of Composer, click:
Start > All Programs > AMX Inspired Signage > Composer
- If you have a server installation of Composer enter the following URL into the Internet Explorer address bar:
<http://<Composer Server URL>:5143/ComposerWeb/ComposerShell.aspx>

Player Web Configuration Tool

Use the Player Web Configuration Tool to carry out the following tasks amongst others:

- Configure data feeds (news, weather, etc.) for display on the Player.
- Configure video streams for display on the Player.
- Modify Player display settings

There are two ways to access the Player Web Configuration Tool: either manually, or through the *Player* section of Composer:

Accessing the Player Web Configuration Tool - Manual Method

Login to the Player Web Configuration tool as follows:

1. Enter the following URL into your web browser: <http://<Player IP address>>
(for example: <http://192.168.9.1/>).
This will take you to the Player Web Configuration page.
2. Login using the following credentials:
 - Default *Username* = **administrator**
 - Default *Password* = **administrator**

Accessing the Player Web Configuration Tool - via Composer

Assuming that a Player has been configured or imported into Composer, you can login to the Web Configuration Tool for this Player through Composer as follows:

1. Select the *Player Management* section of Composer in the left hand menu pane.
2. Select the *Players* sub-section.
3. The left hand pane shows the list of Players configured within Composer. Beneath the name and IP address of each Player is a screen shot showing the Player display and a link to the Web Configuration Tool for this Player.

4. Click the **Player Web Configuration Tool** link.
5. Login using the following credentials:
 - Default *Username* = **administrator**
 - Default *Password* = **administrator**

The Player Web Configuration Tool has a menu pane on the left hand side of the screen which you can use to access the different sections of this tool.

NOTE: *Each screen has a help icon - click this icon to see information about this particular section of the Player Web Configuration Tool.*

Beginner Section

Setup Composer To Display a Simple Layout on a Player

This sub-section describes how to setup Composer to display a simple layout with content on the IS-XPT-2100 Player(s). You must carry out the operations described below in the correct order to avoid problems.

NOTE: Refer to the *Composer Reference Guide* for more details about using Composer and for the theory behind these steps.

Step 1 - Import or Manually Configure your Player(s)

Importing Players

If all your Players are on the same subnet as the machine running Composer (check with your Network administrator whether this is the case) then you can import the Players automatically as follows:

1. Login to Composer.
2. Close the Composer dashboard.
3. Select the *Player Management* section using the left hand menu.
4. Select the *Players* sub-section.
5. Click **Discover Players** (FIG. 2):

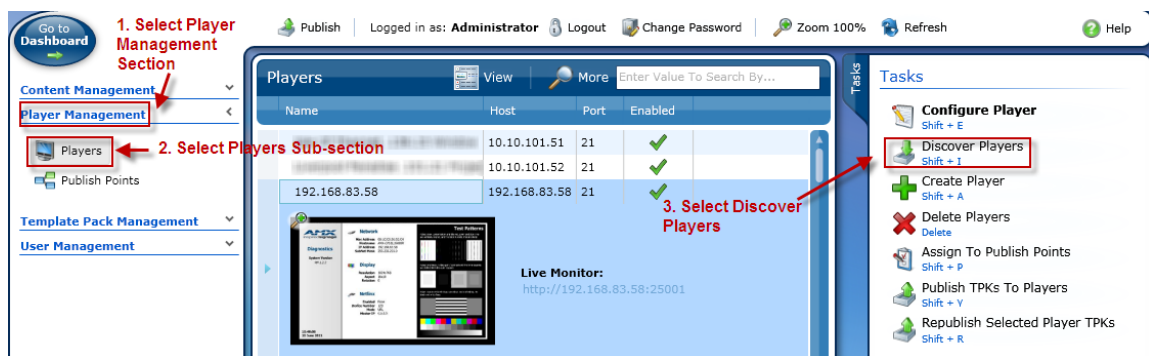


FIG. 2 Discovering Players on the LAN using the Discover Player feature

6. Click **Discover** when the *Discover and Import* window appears

Configure Players Manually

If none or only some of the Players are imported, then your network may not be configured to support Zero Config device discovery. In this case you will have to configure your Player(s) manually as described below.

1. Click **Create Player** in the *Players* sub-section

Create Player

Enter Player Configuration

Player Details

Player Name:

Is Player Enabled

Machine Details

Host Name:

Ftp Port:

Web Port:

Machine FTP Details

User Name:

Password:

FIG. 3 Configuring a Player for use in Composer

2. Enter a name for this IS-XPT-2100 in the **Player Name** text field.
3. Enter this IS-XPT-2100's IP Address in the **Host Name** field.
4. Repeat the process for the rest of your Players.

Step 2 - Add Player(s) to the Publish Point System

NOTE: A "Publish Point System" is a hierarchical collection of Players and Player Sets (groups of Players), similar to files and folders in Windows.

Playlists are published to *Publish Points* for display on the Players attached to that Publish Point. Note that Publish Points can be either individual Players or groups of Players.

To add the newly configured Player(s) to the *Publish Point System*:

1. Select the *Publish Point* sub-section under *Player Management*.
2. Select **All Players Publish Point** (this is the default Publish Point).
3. Click **Add Players**.
4. Click in the table and press Ctrl+A to select all Players.
5. Click **Publish** to add these Players to the selected Publish Point.

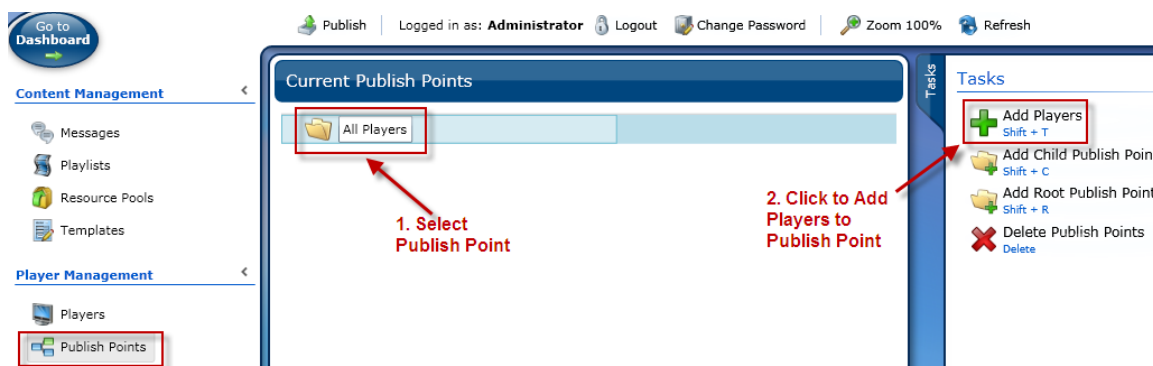


FIG. 4 Setting up a Basic Publish Point System

Step 3 - Download Template Packs From www.amx.com

Download IS-XPert Template Packs from the amx.com website:

<http://www.amx.com/products/IS-XPT-2100.asp>

Step 4 - Import Template Packs

Import Template Packs using the *Import Template Packs* sub-section of **Template Pack Management**:

NOTE: The *Architecture Template Pack* is the most important *Template Pack* as it provides the foundation on which to build your display. If this pack is omitted then nothing will be displayed.

1. Select the following import options:
 - Create All Template Definitions
 - Create A Template for all Imported Template Definitions
 - Create A Message for New Templates
 - Publish the Imported Template Packs to Players
 - Create Default Playlists and Allocate To Players
 - De-select the Publish Points option.
2. Click **Import** to Import the selected Template Packs, this will set up the following Playlists:

• Area Playlists	A number of playlists used to display messages in different areas of the current Layout
• 1 Audio Playlist	Used for background audio
• 1 Layout Playlist	Used to select which Layout is displayed on the Players
• 1 Overlay Playlist	Used to display masked content in front of the current Layout but behind the Override Playlist
• 1 Override Playlist	Used for full screen announcements shown in front of all other content on the Player
• 1 LiveMedia Playlist	To display video in the main (largest) area of the Layout.

Step 5 - Select a Display Layout

The next step is to select a Layout for display. The choices are as follows:

- **Landscape** (simplest)
- **Portrait** (requires more configuration, we discuss this in a later section)

The default Layouts are available in portrait and landscape orientation and in the following formats:

- **Full Screen Layout** - just one area for content filling the whole screen

- **Split Screen** - The screen is divided into a number of different regions called Layout Areas with different aspect ratios.

Selecting a 4-Way Split Screen Landscape Layout

1. Go to the *Content Management* section of Composer.
2. Select the *Messages* sub-section.
3. Click **Create Message**.
4. Type *layout* in the quick search bar to only show layout templates.
5. Click **View** and select **Details All Expanded**.
6. Select **3DBoxes A16x9 AltWidgets ModalLayout**.
7. Click **Next**. This action invokes the *Create Message* dialog.
8. Rename the *Layout Message: 4 Way Split Layout* by changing the **Name** field underneath the *Details* heading.
Notice that each Layout Message has a number of area properties depending on how many areas there are in the Layout (see FIG. 5). The values of these properties determine which Playlists are displayed in the different Layout areas. We will look at this in detail in the *Advanced* section of this guide (see page 25).

The screenshot shows the 'Edit Message' dialog with the following details:

- Edit Message Name or Properties**
- Details**
 - Name: 3DBoxes A16x9 AltWidgets ModalLayout template message
 - Based On: 3DBoxes A16x9 AltWidgets ModalLayout template
- Values**
 - Layout:ID
 - Default Value: 3DBoxes_A16x9_AltWidgets
 - Area(A16x9):ID
 - Default Value: A16x9
 - Area(A3x4):ID
 - Default Value: A3x4
 - Area(A10x1):ID
 - Default Value: A10x1
 - Area(A1x1):ID

A red callout box points to the 'Area(A16x9):ID' field with the text: "The Area Playlists displayed in this area must contain this text as part of their filename e.g. AreaContent_A16x9_Main.pool"

FIG. 5 Layout Area Properties

9. Click **Save** to save the changes to the Message.
This action invokes the *New Message Options* menu which presents some common tasks to carry out with the new Message. We will use this menu to add the newly created Layout Message to the Layout Playlist.

Step 6 - Add the Layout Message to the Layout Playlist

1. In the *New Message Options* menu, click the **Add Messages to Playlists** New Message option.
2. Select the **Layout Playlist**.
3. Click **Save**.
4. Click **Finished** to finish working with the new Message

The screenshot shows the 'Playlists' management page. The table below is a representation of the data shown in the image:

Name	Approval Status	Active Version	Messages	Playlist Type	Play Method
Area Playlist: A10x1 (primary)	Approved	Main	1	Manual	Pooling Playl
Area Playlist: A14x1 (primary)	Approved	Main	0	Manual	Pooling Playl
Area Playlist: A16x9 (live media)	Approved	Main	0	Manual	Pooling Playl
Area Playlist: A16x9 (primary)	Approved	Main	3	Manual	Pooling Playl
Area Playlist: A1x1 (primary)	Approved	Main	1	Manual	Pooling Playl
Area Playlist: A26x1 (primary)	Approved	Main	1	Manual	Pooling Playl
Area Playlist: A3x1 (primary)	Approved	Main	0	Manual	Pooling Playl
Area Playlist: A3x4 (primary)	Approved	Main	1	Manual	Pooling Playl
Area Playlist: A3x5 (primary)	Approved	Main	1	Manual	Pooling Playl
Area Playlist: A4x3 (primary)	Approved	Main	0	Manual	Pooling Playl
Area Playlist: A9x16 (primary)	Approved	Main	2	Manual	Pooling Playl
Audio Playlist	Approved	Main	0	Manual	Pooling Playl
Layout Selector	Approved	Main	1	Manual	Pooling Playl
Overlay Playlist	Approved	Main	0	Manual	Pooling Playl
Override Playlist: (default)	Approved	Main	0	Manual	Pooling Playl

FIG. 6 Playlists Used by the Four Way Split Layout

NOTE: You should ensure that you only have one Layout Message in the Layout Playlist. Adding extra Layout Messages to the Layout Playlist is discussed in the advanced section of this guide.

Step 7 - Add Content to the Playlists Displayed by the Selected Layout

To add content to the four Primary Area Playlists displayed by this Layout as underlined in FIG. 6:

1. Select a *Primary Area Playlist*.
2. Click **Edit Playlist**.
3. Select *Non Feed Reel Messages* from the left hand pane and click **Insert Messages** to add the selected Messages to the Playlist shown in the right hand pane.

Messages contain Text, Videos, Images or Animations for display on screen.

NOTE: Use **Ctrl+A** to select multiple items.

4. Once you have finished modifying the Playlist, click **Save**.

Step 8 - Configure the Publish Points

Now you need to configure the Publish Points that your Playlists are sent to when Published. In this example we will choose the *All Players* Player Set. Proceed as follows:

1. Press Ctrl+A in the *Playlists* window to select all Playlists.
2. Click **Assign to Publish Points** to open the *Pick Publish Points* dialog.

A problem for users on this popup dialog is when selected playlist(s) are assigned to publish points, hidden - root nodes are collapsed by default when the dialog first loads. A blue ball now indicates when parent publish points contain selections. This way users can navigate down to the appropriate path to find the checked selection as shown below:

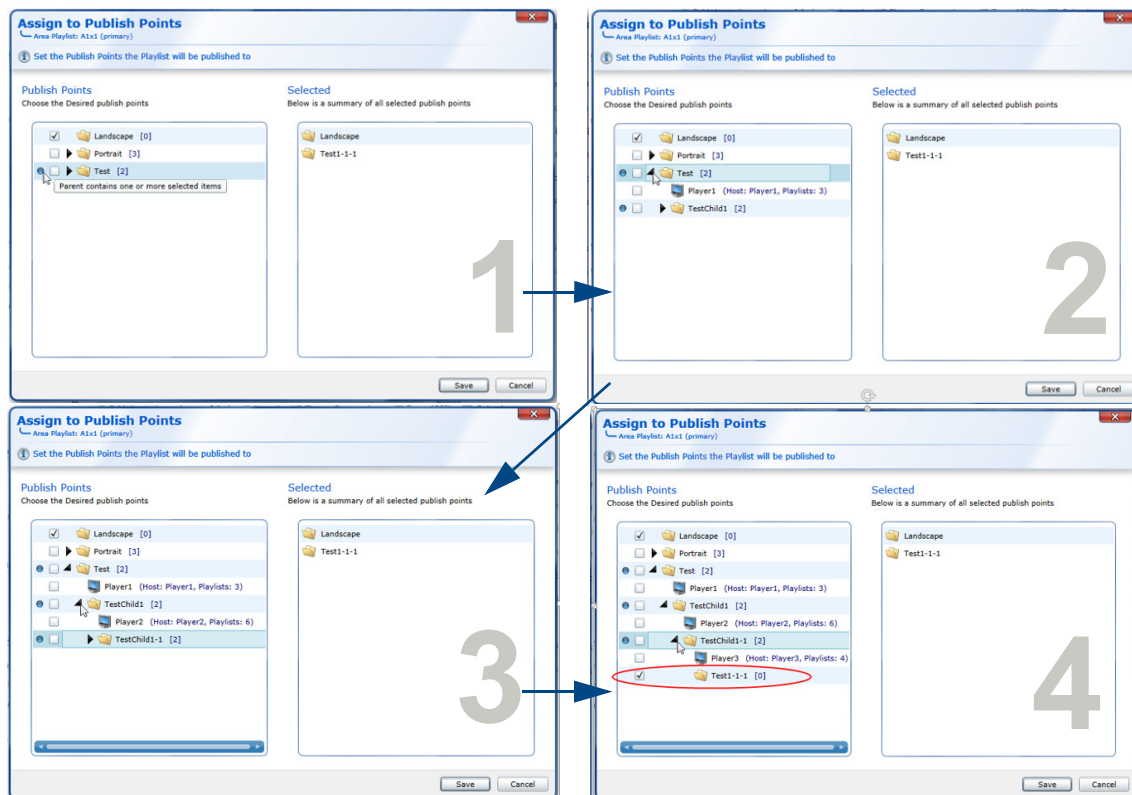


FIG. 7 .Playlist Indicators

3. Set the checkbox to the left of **All Players** in the left hand dialog pane, note you will need to click the checkbox more than once. The right hand pane should show *All Players*.
4. Click **Save** to save these changes.

Step 9 - Publish Playlists to the Player

To publish the newly changed Playlists to your Player or Players:

1. Select the *Publish Menu* in the toolbar.
2. Click **Publish Content Changes**.
3. Wait several seconds for the Player(s) display to update. You should see a display similar to FIG. 8.
The arrows point to the different Layout Areas each controlled by a different Playlist or Playlists.

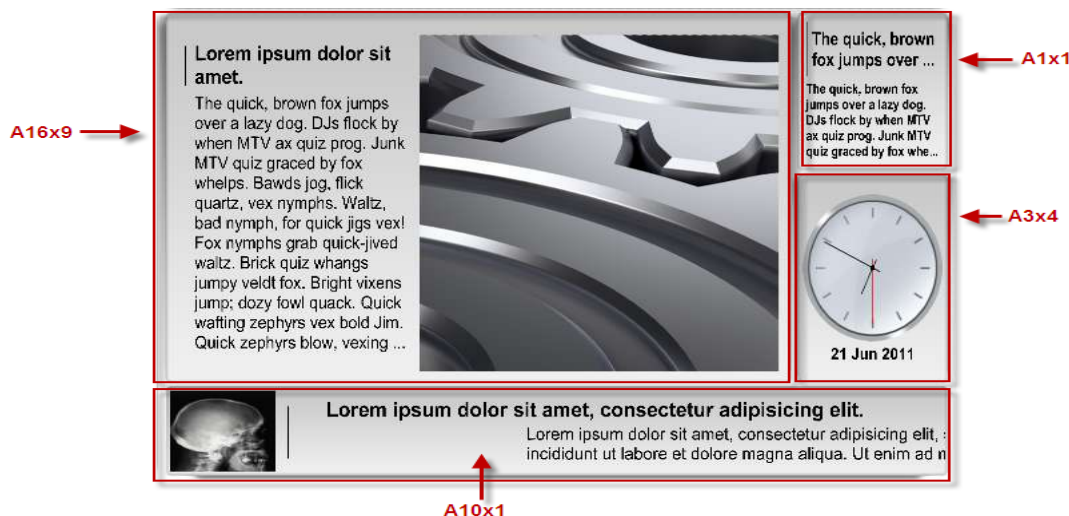


FIG. 8 Example Horizontal Layout Displaying Basic Content and Layout Areas

NOTE: *The Player displays an hourglass if no content is present in the Area Playlists for a particular Layout area.*

Selecting a Different Layout for the Player Display

The layouts provided by default with the IS XPert package are divided into two categories, *Portrait* and *Landscape*.

- Portrait Layouts contain the text **A9x16** as part of their name
- Landscape Layout contain the text **A16x9** as part of their name

Try replacing the current Layout Message in the Layout Playlist with another Landscape Layout. Practice modifying the properties of the Messages in the Playlists.

When changing video or image properties take care to replace the default videos/images with new videos/images with similar aspect ratios. If the aspect ratios are significantly different then the video/image may be stretched, shrunk, or cut to fit.

Displaying a Portrait Layout on the Player(s)

1. Configure the Player display settings to display an aspect ratio of **9x16** and to use a display angle of **90** degrees.
2. Assign a *9x16 (Portrait)* Layout to the Layout Playlist and publish the changed Playlist.
3. Set Playlist Restrictions on the Layout Playlist so that only Portrait Layouts can be added to this Playlist.

These steps are described in detail below.

Step 1 - Configure the Player Display Settings for Portrait Layout

1. Login to the Player Web Configuration Tool on the Player you wish to modify by enter the Player IP into a web browser (for example, <http://192.168.1.1>).
2. Click **Screen** in the Menu pane on the left of the screen.
3. Set the anticlockwise rotation angle to either **90** or **270** degrees as appropriate for the display.
4. Set a *Custom Aspect Ratio* of **9x16** rather than 16x9.

5. A message appears at the top of the screen prompting you to restart the Player.

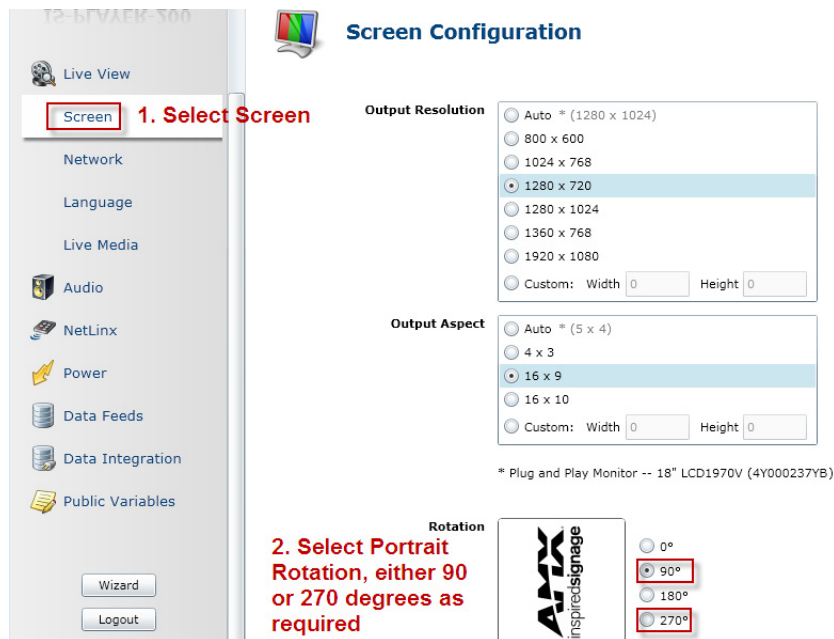


FIG. 9 Set Screen Configuration Settings for Portrait Display

Step 2 - Assign a Portrait Layout Message to the Layout Playlist and Publish Changes

1. Select the *Playlist* sub section of *Content Management*.
2. Select the *Layout Playlist*.
3. Click **Edit Playlist**.
4. Remove the current Layout Message.
5. Click **View** and select **Expand All Details** so you can easily pick out the portrait Layouts.
6. Choose a portrait Layout Message with aspect ratio 9x16 and add this Message to the Playlist.
7. Select the *Publish Menu* from the Toolbar.
8. Click **Publish Content Changes**. The screen should look like FIG. 10:



FIG. 10 Example Portrait Layout - A9x16 Portrait Split Modal Layout

Step 3 (Optional) - Set Playlist Restrictions on the Layout Playlist so that only Portrait Layout Messages can be added to this Playlist

You can optionally set Playlist Restrictions on the Layout Playlists so that only Portrait Layout Messages can be added to this Playlist. This is useful if you have configured your Player(s) to display in Portrait Mode and you want to prevent people accidentally trying to display a Landscape Layout.

To set Playlist Restrictions:

1. Select the *Playlist* sub section
2. Select the *Layout Playlist*.
3. Click **Edit Playlist Restrictions**.

This option is used to restrict the Playlist so that only Messages created from Templates based on select Template Definitions can be added to this Playlist.

This group of Template Definitions is called the *Playlist Restriction List*. Currently all the Layout Templates are in the list so you can add both Portrait and Landscape Layout Messages to this Playlist.

4. To prevent people adding Landscape Layouts to this Playlist, remove all Layout Template Definitions from the Restriction List which do not have the portrait aspect ratio 9x16 (signified by the text *A9x16* in the Template Name).
5. Click **Save**.

Schedule the Display of a Full Screen Announcement

You can add a Message to Playlists and then configure the Message to only display at scheduled times by setting the Message Validity Rules.

NOTE: *This process could be useful for a Message announcing a staff meeting.*

1. Create an announcement Message.
2. Add this Message to the *Override Playlist*.

NOTE: *Messages in the Override Playlist are displayed across the whole screen in front of the other content on the display.*

3. Set Message Validity Rules.
4. Publish the Playlist changes.

These steps are described in detail below:

Steps 1 & 2 - Create an Announcement Message and add it to the Override Playlist

1. Select the *Content Management* section of Composer.
2. Select the *Messages* sub-section.
3. Click **Create Message**.
4. Enter *Important* in the quick search bar to show the *Important Announcement Templates*.
5. Select the **A16x9 Aspect Ratio Important Announcement Template**. This action invokes the *Message Creation* dialog.
6. Change the *FireAlarm* picture to another picture or remove the picture.
7. Add text (such as the meeting title and location for example).
8. Name the message (for example, *Staff Meeting*).
9. Add the newly created Staff Meeting Message to the Override Playlist.

Steps 3 & 4 - Set Message Validity Rules and Publish the Playlist Changes

If the Announcement message is left in the Override Playlist, it will be displayed over the top of all other Messages all the time. The next step is to schedule when the announcement will appear using *Message Validity Rules*.

A Message must be in a Playlist published to the Player and must be valid for display. Using Message Validity Rules you can schedule the dates and times when a Message is Displayed. Search for Validity Rules in the Composer Help for details.

Once you have set Message Validity Rules, select the Publish menu and click **Publish Content Changes**.

Adding Images or Video to Messages

Supported Image Formats

The following image formats are supported by Composer:

- JPG/.JPEG - Note that Progressive JPEGs are not supported.
- BMP (24 bits per pixel only)
- TGA (24/32 bits per pixel only)
- PNG
- GIF
- WMF

NOTE: *CMYK formats are not supported.*

Supported Video Formats

The following video formats are supported by Composer:

Supported Video and Audio Codecs (and Container Formats)				
Container Format	Video Codecs	HD Support	Audio Codec	Max Bitrate
.mp4	h.264	Yes	AAC	15Mbits/sec
.mpg	MPEG-1/MPEG-2	No	MPEG 1 Layer I, Layer II or Layer III	20Mbits/sec
.mov	h.264	Yes	AAC	10Mbits/sec

Adding Images to Messages or Templates

You can add images to Messages or Templates for display on one or more screens. When adding images to Messages or Templates, consider the following factors:

- The aspect ratio of the image and the aspect ratio of the rectangle used to display this image.
The Image Property name in the Template (or Template Definition) contains the aspect ratio of the rectangle that will be used to display the image.
For example: *Meeting Picture4x3* indicates this picture has an aspect ratio of 4x3, so the ratio of width to height is 4 to 3. To get best results you should use images with a similar aspect ratio otherwise the Player will stretch/shrink, or crop the image provided as appropriate.
- Calculate the aspect ratio of your picture by dividing the width by the height, in this case it should be as close as possible to 4/3.
- The resolution of the image. Images should not exceed 1280 pixels in width and 1024 pixels in height.
The Player will scale the images you provided as needed but excessively high resolution images such as those used for printing may effect Player performance and could cause the Player output to jitter.

Adding Video to Messages or Templates

You can add videos to Message or Templates for display on one or more screens. When adding a Video to Messages or Templates that support them, consider the following factors:

- The aspect ratio of the video and the aspect ratio of the rectangle used to display this video in the Template or Message.
Aspect ratio is the ratio of height to length for video and images.
The video property name will describe the aspect ratio of the rectangle used to display the video.
For example, *VideoField16x9* has a 16x9 aspect ratio.
- The resolution of the video. The higher the video resolution the greater the stress on the Player. If the Player is under stress it will run hotter, use more power, and could cause the display to jitter.
- The supported audio codecs. A video will not display at all if it uses an unsupported audio codec even if the video codec is supported. See the *Supported Video Formats* section on page 12 for details.
- The size of the video file must not exceed 2GB

Creating Video for Digital Signage

When creating video for Digital Signage encode from digital source over digital link. Do not use composite at any point in the chain if at all possible as this will severely compromise quality.

You can check what codecs a particular video file uses by analyzing it with the windows freeware program MediaInfo.

Playing Audio

The IS XPert system can be used to play audio continuously or at scheduled times, via the IS XPert *Audio Playlist*.

NOTE: *The Audio Playlist is set to repeat by default.*

Supported Audio File Types

The following audio file types are supported by Composer:

- MP3
- Wav
- AAC
- WMA

The process is as follows:

1. Create an Audio Message from the Audio Template (*AudioFile Item* template) and add an audio file to the Message.
2. Add this Audio Message to the Audio Playlist.

Scheduling Audio Playback

The Audio Playlist is set to repeat by default. To play the audio at set times rather than continually:

Set validity on the Audio Message using the **Content Management > Messages > Set Message Validity** option.

The audio will only play when the Message is valid.

Intermediate Section

Overview

Once you are familiar with selecting Layouts for Players and adding content to the different Layout areas you are ready to look at some more complicated features of the IS XPert system which allow you to create a more interesting display. These features are as follows:

- **Live Media** - Displaying a Video Stream in the main Layout Area
- Displaying **Data Feeds** such as a News or Weather in one or more Layout Areas

You can also configure your Players to integrate with the AMX Resource Management Suite (RMS) so they can be controlled and monitored from within this application, see the RMS Integration section below for more details.

Live Media - Displaying a Video Stream in the Main Layout Area

The IS XPert 2100 can be configured to display network video streams in a part of the screen (an area in the current layout), this is known as *Live Media*.

Step 1 - Configure the Player to Display a Live Video Stream

Login to the Player Web Configuration tool. Once logged in, select **Live Media** in the Web Configuration tool menu:



FIG. 11 Player Web Configuration Tool - Select Live Media

Step 2 - Configure Live Media

To create a network video stream:

1. Enter a Channel name for this Network video stream to identify it.
Make a note of this name, you will need it later when using Composer.
2. Enter an IP address for the Network video stream (contact your network administrator for this information).

NOTE: Currently the Player supports MPEG2 or H264/MPEG4 UDP video streams (only).

3. Enter the UDP port for the Network video stream (contact your network administrator for this information).

Step 3 - Create a Live Media Message

Create a Live Media Message as follows:

1. Select the *Content Management* section of Composer.
2. Select the *Messages* sub-section.
3. Click **Create Message**.
4. Enter *LiveMedia* in the quick search bar.
5. Select the **LiveMedia_Aflex_Item** template.

NOTE: The "LiveMedia_Aflex_ExternalControl_Item" template is used to control which video stream is displayed externally using NetLinx or public variables.

6. Change the **Message** name to *LiveMedia Example*.
7. Enter a **Channel** name. This name must match a channel name in the Player Live Media configuration (see Step 2:1 on page 13).
8. Enter a *Horizontal* and *Vertical Zoom* factor as a percentage of the full width and height of the template. The effect of these parameters is discussed in detail below.
9. Set/Clear the **Mute** checkbox to mute/unmute the video stream audio.
10. Click **Save** to create the Live Media message.

Step 4 - Add the Live Media Message to the LiveMedia Playlist

To add the newly created Live Media Message to the default Live Media Playlist:

NOTE: By default there is one LiveMedia Playlist. Displaying this video stream in a different area of the current Layout would require the creation of another Live Media Playlist.

1. Select the *Playlists* sub-section of the *Content Management* menu.

2. Select the LiveMedia Playlist: A16x9 Playlist.
3. Click **Edit Playlist**.
4. Use the search bar to find the *LiveMedia Example Message*.
5. Select the Live Media Example Message.
6. Click **Insert Messages** to add this Message to the Playlist.

Step 5 - Publish the Updated Playlist

By default the LiveMedia Playlist is published to all Players. Check the Playlist is published to the Player(s) that you have configured to display LiveMedia as follows:

1. Select the Playlists sub-section of the Content Management menu
2. Select the LiveMedia Playlist: A16x9 Playlist
3. Click **Set Playlists Publish Points** to change which Publish Points (Players or groups of Players) this Playlist is published to.
4. Click **Publish** and select **Publish Content Changes** to publish the new changed LiveMedia playlist. After a few seconds the Players will update and display the video stream in the main Layout area.

NOTE: *If the LiveMedia Playlist is published to Players that are not configured to display Live Media then you will not see Live Media on these Players.*

Live Media - Displaying a Video Stream in a Different Layout Area

This section describes how to display a video stream in a Player Layout Area other than the Main Layout Area.

NOTE: *Avoid displaying more than one video stream simultaneously on a Player as this may cause Player performance to suffer resulting in jitter or dropped frames.*

1. Create a new Live Media Playlist, see *Step 1- Create a New Live Media Playlist* below.
2. Follow the same steps taken in the section above: **Live Media - Displaying a Video Stream in the Main Layout Area**
3. You may need to modify the horizontal and vertical zoom factors of the Live Media Message. See the *Effects of Horizontal and Vertical Zoom Factors* section on page 15 for more details.

Step 1 - Create a New Live Media Playlist

For this example we will assume that you wish to display a video stream in the area with Area:ID A3x5. The steps are as follows:

- a. Select the Playlists sub-section of the Content Management menu
- b. Click **Create Playlist** to open the Create Playlist dialog box
- c. Enter the value Playlist LiveMediaA3x5 in the Name field under Playlist details
- d. Enter a Playlist filename. The Playlist filename must follow the convention AreaContent_<Area:ID>_LiveMedia.pool so for this example use AreaContent_A3x5_LiveMedia.pool
- e. Leave all the other settings at their default values and click **Save**.

Step 2 - Configure Live Media

Follow the instructions on page 13.

Step 3 - Create a Live Media Message

Follow the instructions on page 13.

Step 4 - Add the Live Media Message to the LiveMedia Playlist

Follow the instructions on page 13.

Step 5 - Publish the Updated Playlist

Follow the instructions on page 14.

Step 6 - Modify Horizontal and Vertical Zoom Factors (as (needed))

Use the horizontal and vertical zoom factors to remove black borders around video streams and to adjust the aspect ratio of the video stream as described below:

Effects of Horizontal and Vertical Zoom Factors

The following examples illustrate using horizontal and vertical zoom factors:

The first example shows the original video stream from an external DVB-T tuner. The black borders are added by the tuner. The Live Media item is set to 100% zoom both horizontally and vertically

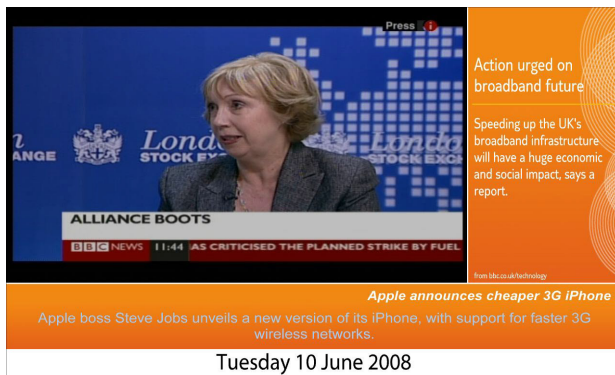


FIG. 12 Live Media Message with unwanted black borders around the video stream

In the second example, horizontal and vertical zoom factors are used to hide borders around a video stream and to show the feed covering the whole main area.

In this case, horizontal zoom = 110 and vertical zoom = 120

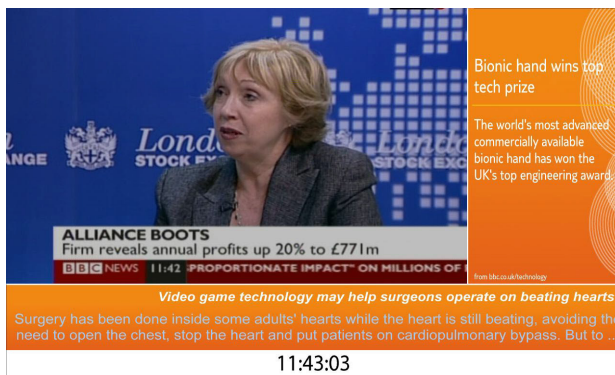


FIG. 13 Live Media Message with zoom settings used to eliminate black borders around the video stream

In the final example, the video stream has a 4x3 aspect ratio. Showing it in the full Layout Area would stretch it horizontally. We can use horizontal and vertical zoom factors to show the feed in such a way that it looks as natural as possible.

Note that the area background is shown in the rest of the main Layout area.



FIG. 14 Live Media Message for a video stream with a different aspect ratio to the Main Layout Area

Data Feeds

Inspired Signage Players can display Data Feeds from the IS XPort feed engine in one or more areas of the screen. Example Data Feeds include RSS news feeds, XML, and Yahoo weather feeds. Data Feeds contain a number of records; for a news feed these records correspond to individual news story items. Each record contains a number of elements such as the news item text, an image for the news item, the date that the news item was published, etc. AMX allow you to select which of these records and elements to display on screen and provides basic formatting capabilities. Players request the feed data from XPort server which in turn requests the data from the feed source.

XPort also offers an framework which can be used by .NET programmers to create their own feed handlers. Refer to the *XPort Feed Engine Operation/Reference* guide for an explanation of how to use XPort Feeds.

Data Feed IDs

Each Data Feed that you create in the Player Web Configuration Tool has a feed identifier: the *Feed:ID*. This is the name you provide when you create the Feed in IS XPort.

You can display a Data Feed on screen by publishing special Messages called *Feed Reel Messages* to your Player(s).

For a Feed Reel Message to be displayed, the Feed:ID property of the FeedReel Message must match the Name of a feed in the XPort Feed Configuration section of the Player Web Configuration tool.

When the Name and Feed:ID match, the contents of the Data Feed are used to populate the other properties of this Message.

NOTE: *If you want to display the same Feed on multiple Players then you need to point each player to the XPort server and select the Use Feed option. Next you need to Publish a Feed Reel Message with the same Feed:ID to all these Players.*

FEED:ID Matching

The Message Feed:ID and Feed name match if they are the same character by character as far as the end of the Message Feed:ID. This allows the Web Config Feed Name to be longer than the Message Feed:ID and still match.

For example, a Message Feed:ID of "Weather" will match with a Web Config name of "Weather" and "WeatherParis" but not with "ParisWeather". This gives you the ability to group feeds but means you have to take a little care when naming Feeds.

- If multiple Data Feeds on the Player are matched then the Player will display one item from each of the Feeds in turn.
- If you want to group Feeds, use a common prefix and use that prefix as your Message Feed:ID.
For example a Message Feed:ID of "FEED" will match Web Config Feed Names such as FEED1, FEED2, FEEDA, FEEDB, etc. Similarly FEED1 will match FEED1 or FEED11.
- If you want to prevent the grouping of Feeds but want to create a series of similarly named Feeds you should ensure that your Feed names do not contain a common prefixes.
For example, you could use Feed name like AFEED, BFEED, CFEED, DFEED, etc.

Supported Internet Feed Mechanisms

The Internet Feed mechanism built into IS XPort Players currently support the following feed type as well as RSS:

- Generic XML
- Google Calendar
- Google Spreadsheets
- Yahoo weather feeds
- Yahoo stock feeds
- Twitter
- Web Photo Albums such as Flickr and Picasa

Creating and Displaying Data Feeds

1. Create a data feed in IS XPort, see the *IS XPort Instruction Manual* for details. Make a note of the name of the feed.
2. Configure all the Players you want to display the feed to use the IS XPort server as a feed source:
 - a. In the *XPort Feed Configuration* tab of the Player Web Configuration Tool, select the **Use Feed** checkbox next to the feed you want to use.
 - b. Repeat for each of the Players that you wish to display this feed.
3. Preview the data feed on one of the Players, and use the *Expressions Builder* section of the Preview screen to select and format the data you want to display.
4. Create a FeedReel Message in Composer:
 - a. Set the Feed:ID field to the name of the feed you created in Step 1.
 - b. Copy the field tags or expressions in Step 3 into the *Message Property* fields.
5. Assign the FeedReel Message to a Playlist which is configured to publish to all the Players (Publish Points) in step 2 above.
6. Publish the updated Playlist to these Players. The data feed will now be displayed on screen.

Example - Displaying a News Feed in a Player Layout Area

The following example describes how to create and display a News Feed in a layout area such as the bottom bar (area A10x1) on the Player. This example assumes that you are using Layout Message with an A10x1 area property set to the value A10x1. Use this process as a guide for displaying other feeds such as Weather Feeds, etc.

NOTE: *How-To guides are available at www.amx.com for all the other data feed handlers.*

Stage 1 - Create a News Feed in XPort

1. Login to your XPort server
2. Click on RSS Feed to expand this option (note you must have installed the RSS Feed handler)
3. Click Create New Feed underneath RSS Feed
4. Enter the Feed name in the Name text box, e.g. BBCBusiness, make a note of this name for use later.
5. Enter a news feed URI in the **Source URL** text box
(for example, http://newsrss.bbc.co.uk/rss/newsonline_uk_edition/business/rss.xml).
News Feed URIs can be found by looking for an RSS icon (FIG. 15) on the web page of the feed you want to display:



FIG. 15 RSS Icon

6. Select a way to order the stories in the news feed using the *Order* drop down menu:
 - Order as published
 - Order oldest to newest
 - Order newest to oldest
 - Random order
7. Enter the number of feed items to publish in the *Number of Items* text box.
For example if you enter five messages and the feed order is set to chronological order, then the Player will only display the five most recently published news items.
8. Click **Create Feed** to save the data feed setup.

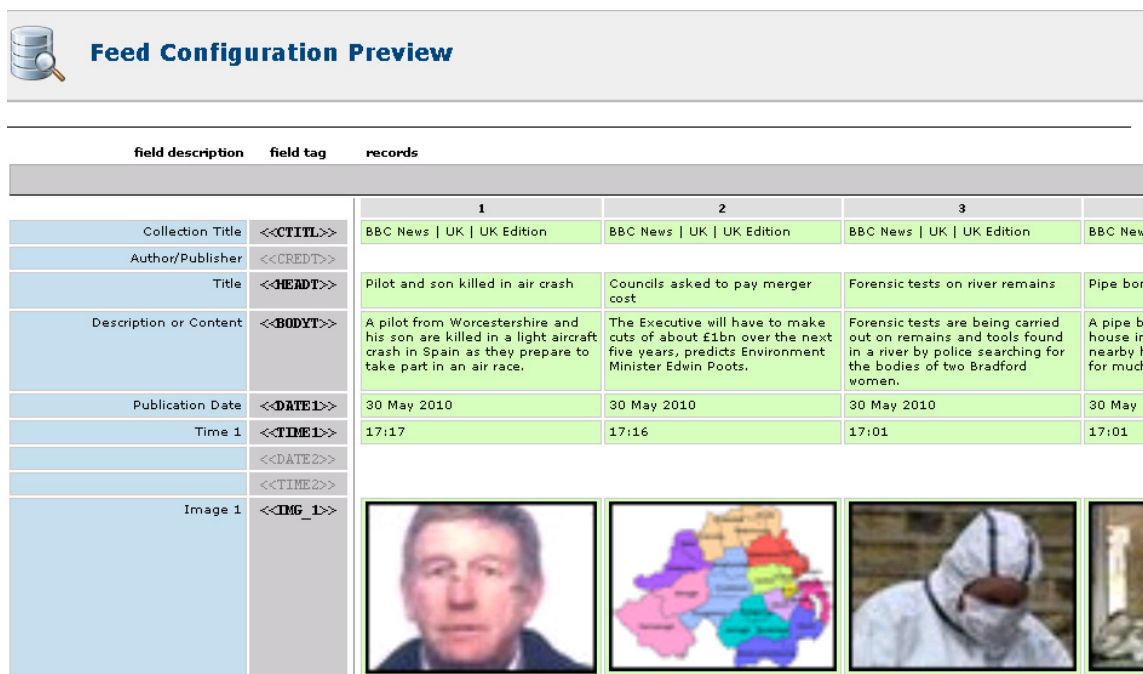
Stage 2 - Configure Players to use the News Feed created in Stage 1

1. Login to the Player Web Configuration tool on the Player you wish to configure using the following credentials:
 - default *Username* - **administrator**
 - default *Password* - **administrator**
2. Click on the *XPort Data Feed* tab.
3. Enter the URL or your XPort server (for example, <http://<my server name>/Xport>) in the **XPort Server Address** text box, and click **Apply Address**.
You should now see a list of the feeds configured on your XPort server.
4. Select the feed you created earlier and set the **Use Feed** check box to make this feed available on this Player.

NOTE: *Changes to the Feed Configuration will take effect the next time the player refreshes feed data, which by default occurs every 20 minutes. In order to trigger an immediate refresh of the feed data, go to the Data Integration tab, disable the timer, manually refresh the data, and re-enable the timer.*

Stage 3 - Preview the News Feed

1. Click the **Preview** button to the right of the *Use Feed* check box to invoke a Feed Configuration Preview screen similar to the one shown in FIG. 16.







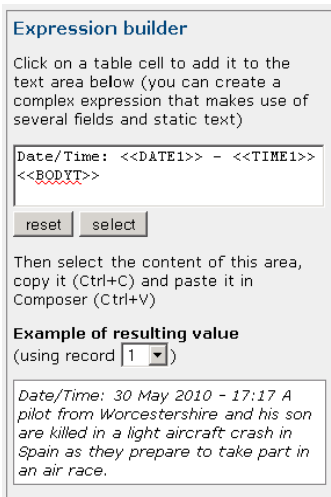
field description	field tag	records			
		1	2	3	
Collection Title	<<CTITL>>	BBC News UK UK Edition	BBC News UK UK Edition	BBC News UK UK Edition	BBC News
Author/Publisher	<<CREDIT>>				
Title	<<HEADT>>	Pilot and son killed in air crash	Councils asked to pay merger cost	Forensic tests on river remains	Pipe bor
Description or Content	<<BODYT>>	A pilot from Worcestershire and his son are killed in a light aircraft crash in Spain as they prepare to take part in an air race.	The Executive will have to make cuts of about £1bn over the next five years, predicts Environment Minister Edwin Poots.	Forensic tests are being carried out on remains and tools found in a river by police searching for the bodies of two Bradford women.	A pipe b house ir nearby f for mud
Publication Date	<<DATE1>>	30 May 2010	30 May 2010	30 May 2010	30 May
Time 1	<<TIME1>>	17:17	17:16	17:01	17:01
	<<DATE2>>				
	<<TIME2>>				
Image 1	<<IMG_1>>				

FIG. 16 News Feed - Data Preview

- This screen shows the data feed output in table format.
 - The table rows correspond to the different fields which make up the data feed.
 - The table columns correspond to different feed records.
2. Make a note of the names of the different fields which make up the items in this feed.
 3. Select which fields to display on the Player and add basic formatting if required:
Click a cell belonging to the row you wish to display. This places the tag name which corresponds to this row in the expression builder. For example, if you click column 1 of the Title row then the Field Tag <<HEADT>> appears in the Expression Builder.

FIG. 17 shows the Expression Builder: the top pane contains the expression, the bottom pane shows the effect of this expression when applied to a selected feed record.



Expression builder

Click on a table cell to add it to the text area below (you can create a complex expression that makes use of several fields and static text)

Date/Time: <<DATE1>> - <<TIME1>>
<<BODYT>>

reset select

Then select the content of this area, copy it (Ctrl+C) and paste it in Composer (Ctrl+V)

Example of resulting value
(using record 1)

Date/Time: 30 May 2010 - 17:17 A pilot from Worcestershire and his son are killed in a light aircraft crash in Spain as they prepare to take part in an air race.

FIG. 17 Expression Builder

You can also make more complicated expressions as follows:

- a. Click on a cell in another row to add this Field Tag to the Expression Builder.
- b. Enter text and spaces to format the data, continue the process until you have achieved the desired result.
- c. Copy the expressions and/or field tag names you want to use into a text editor for use in the next stage.

Stage 4 - Create a FeedReel Message for the News Feed in Composer

1. In the *Content Management* section, select the *Message* sub-section.
2. Click **Create Message**.
3. Enter *FeedReel* in the Search Bar so that only FeedReel Templates are displayed.
4. Choose a Feed Reel Template to use to display the News Feed.

For this example we will use the **Template AMX Midnight A10x1 ImageAndText FeedReel** as the basis of this Message.

Note we are displaying this Message in a Layout Area with an aspect ratio of 10x1 so we need to choose a Template with the same or similar aspect ratio to avoid distortion.

NOTE: Any Feed Reel Template can be used with any Data Feed however some Feed Reel Messages are customized to a greater or lesser extent for use with specific Feeds.

5. Rename the Message to something recognizable such as *Midnight A10x1 BBC Business*.
6. Enter the Feed ID for the feed you want to use in the Feed:ID property, in this case *BBCBusiness*.
7. Copy the Field Tags or Expressions created in Stage 2 into the Message properties you want to display the feed data (see FIG. 17).

NOTE: You should only add image data feed field tags to image property fields

The *Message Property Values* can be configured as follows:

News Feed Message Properties and Values	
Message Property	Value
Feed:ID	BBCBusiness
Title	<<HEADT>>
Body	<<BODYT>>
Image	<<IMG_2>>

Stage 5 - Assign the Newly Created FeedReel Message to an Area Playlist

1. In the *Content Management* section, select the *Playlist* sub-section.
2. Select the Playlist **Area Playlist 10x1 Primary**.
3. Click **Edit Playlist**.
4. Search for the Message in the left hand dialog pane.
5. Select the Message and Click **Append Messages** to add the Message to the end of the Playlist.
6. Click **Save**.

Stage 6 - Publish the Updated Playlists

A) Verify that the Playlist is being sent to all the Players which you configured in Stage 1:

1. In the *Content Management* section, select the *Playlist* sub-section.
2. Select the Playlist **Area Playlist 10x1 Primary**.
3. Click **Edit Playlist Publish Points**, expand the Publish Point System and check that this Playlist is being published to all the Players configured in Stage 1

B) Publish the Updated Playlist as follows:

1. Click the Publish icon in the Toolbar to show the *Publish* menu.
2. Click **Publish Content Changes**.
3. Go to the Web Configuration Tool on the Player(s) you want to display this Feed.
4. Select **Data Integration** followed by **Refresh Data Now** and then **Start** to force the Player to fetch the News Feed.
5. After a few seconds the display of the Players configured in Stage 1 should update to display the Data Feed in the 10x1 Bar at the bottom of the screen as in FIG. 18



FIG. 18 News Feed in 10x1 Layout Area

To see how to create other data feeds, refer to the *Player Web Configuration Tool, Data Feed* section. Click the help icon in this section for information about different feed types. Alternatively, consult the relevant IS Xpert How-To guide on the AMX website.

- Non-FeedReel versions of FeedReel Messages are available for the majority of FeedReel Messages. You can use the preview feature on the non FeedReel version to see what a Feed based on this Message would look like.

- If you are having problems displaying a Feed then you can republish the Architecture.tpk Template Pack to the Player to refresh the whole display.
- Once you have configured feeds on a Player then you can copy this setup to another Player using the Copy Feed Reels feature in Player Management > Players.

RMS Integration

You can configure IS Xpert Players to integrate with AMX's Resource Management Suite called RMS. This allows you to do the following:

- Display messages from RMS on Player displays in specified locations using the RMS send message feature. You can either send user defined text or use predefined message. Note that you can use RMS Macros to send messages to multiple Players.
- Monitor Player parameters such as hard drive space, CPU temperature, etc. You can also configure thresholds for these same parameters which can be used to alert support staff to potential problems.
- Modify Player Public Variables, this can be used to change the Layout, turn on or off Live Media, etc. on Players at predefined locations. Note that you can use RMS Macros to control multiple Players.

NOTE: For more information about RMS refer to the System Administrator's Guide - RMS Enterprise Resource Management Suite.

There are two stages to configuring a Player to integrate with RMS:

1. Use the Player web configuration tool to configure a Player to communicate with a specific RMS Server
2. Assign the Player (Client Gateway) to a location within RMS

These steps are described in detail below.

Step 1 - Set RMS Settings in the Player Web Configuration Tool

Configure your Player's RMS settings as follows:

1. Login to the Player Web Configuration tool on the Player you wish to configure using the following credentials:
 - default *Username* - **administrator**
 - default *Password* - **administrator**
2. Select the **RMS** section in the left hand pane.
3. Set the **RMS enabled** checkbox to enable RMS control/monitoring of this Player.
4. Enter the URL of the RMS Server (for example *http://rms-server.com/rms*) in the **RMS Server Address** field. Ask your RMS Server administrator for this information,
5. Enter a unique name in the **Client Gateway Field** to identify this Player within RMS.

NOTE: IS Xpert Players act as Client Gateways in RMS (similar to NetLinx masters).

6. Enter the password for the RMS Server in the **password** field.
Ask your RMS Server administrator for this information; the default password is **password**.
7. Set a time in minutes for the alert to time out in the **Alert Timeout (Minutes)** field.

NOTE: This Alert Timeout is only used in the "Modal RMS alerts". All other RMS alerts have a timeout value parameter that is set in RMS.

8. Set the **Time Synchronization** checkbox to set and synchronize the Player date/time to that of the RMS Server.

NOTE: Note this will only work if Time Synchronization is enabled on the RMS Server.

Ensure this field is cleared if you want the Player to use it's own time and date settings or to take part as a slave in a Time Synchronization group.

Note that if you set this checkbox, you can no longer modify the Player time/date settings in the *Regional Configuration* section.

9. Click **Test** to check the connection.

The RMS version information and whether Time Synchronization is enabled on RMS Server will appear to the right of the test button if everything is correctly configured.

Step 2 - Assign Player (Client Gateway) to a Location within RMS

By default Players appear as unassigned client gateways in RMS. Assign your Player to an RMS Location as follows:

1. Launch RMS in your web browser using the URL provided by your administrator in Step 1. Login at the welcome prompt.
2. Select the **Management Menu** followed by **Configure Locations/Clients** and then **Client Gateways**.
3. Click **Unassigned Client Gateways** in the Group menu to view all unassigned clients in the Client Gateway Table
4. Select you Player from the table, the name should be the same as the name you used in the section on configuring your Player to access an RMS Server.
5. Right click and select **Assign** from the drop down menu.
6. Click the + symbol in front of **All Groups** to expand the location structure.
7. Continue to expand this hierarchy to locate the correct location for the Player.
8. Select a location and click **Next** to view Client Gateways attached to this location.

9. Finally, click **OK** to assign this Player to this Client Gateway.

Your Player is now integrated with RMS, you now use RMS to carry out the tasks mentioned in the introduction to this section on RMS integration.

These tasks are described in the following sub-sections:

Display RMS Messages

To display a message from RMS on Players at selected RMS location(s):

1. Login to RMS.
2. Click **Dashboard**.
3. Click the envelope icon in the top right corner of the screen to open the *Send Message* dialog.
4. Expand the location hierarchy to find the location or locations you want to send the message to (FIG. 19):.

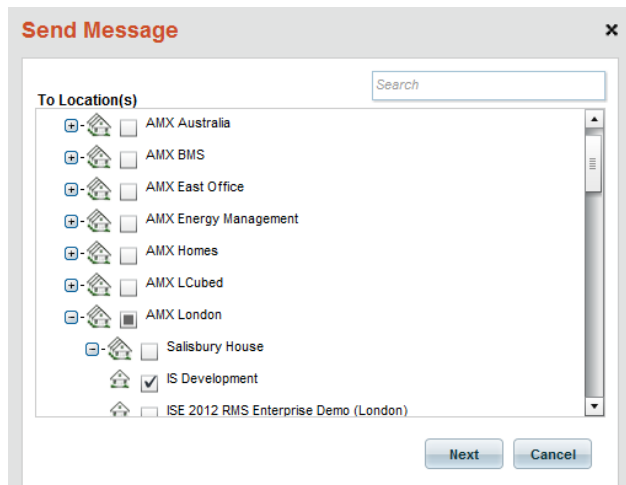


FIG. 19 RMS Send Message dialog

5. Click the checkboxes to select locations until you have selected all the locations you want to send the message to.
6. Click **Next** to continue.
7. Either select a predefined message from the drop down menu.
See FIG. 20 on page 22 for examples of predefined messages, or proceed as follows:
 - a. Select a message type, see the **Table of Message Types** for a list of message types.
 - b. Enter a message title in the **Title** field, use a maximum of 51 characters.
 - c. Enter message text in the **Message** field, use a maximum of 129 characters.

Only windows-1252 characters are supported in message text (all western European languages are supported, however Indian, Chinese, Japanese, Russian languages, etc are not).

The following table indicates unsupported symbols: .

Unsupported Symbols	
	↵
	⋮
	<
	>
	/

8. Set/clear the **Modal** checkbox to determine whether a message will automatically clear or not after a given time interval.
 - If the *Modal* checkbox is cleared then the message will remain on screen for the number of seconds specified in the **Timeout** field.
 - If the *Modal* checkbox is set then the message will remain on screen for 15 minutes or until another message is sent to that Player.

- Click *Send* to send the message. The Player screens at the selected locations will update in about 30 seconds to display the new message. Note this assumes that the Player screen is set to display the Signage Input channel.



FIG. 20 Message Types/Colors (Example Messages shown)

Monitoring Player Parameters

To view monitored Player Parameters proceed as follows:

- Login to RMS using the username and password provided by your system administrator.
- Choose **Management** and select **Configure Locations/Clients**.
- Expand the location hierarchy in the left hand group pane and select the location containing the Player or Players you want to monitor.
- The right hand pane shows the Client Gateways associated with this location - select the Client Gateway associated with your Player.
- Select the *Client Gateway Assets* tab.
- In the asset table, double click the **IS XPert Player** table entry to open the *Asset Management* screen.
- Select the *Parameters* tab to view Player Parameters such as CPU temperature, whether the Player is on or off, etc.

The following table lists the Player parameters monitored by default:

Table of Player Parameters Monitored by default in RMS	
Parameter	Description
Power Status	Whether Player is switched ON/OFF
CPU Temperature 1	Temperature of CPU Core 1 in degrees centigrade
CPU Temperature 2	Temperature of CPU Core 2 in degrees centigrade
GPU Temperature	Temperature of GPU (Graphics Processor Unit) in degrees centigrade
HDD Temperature	Temperature of Hard Drive in degrees centigrade
Power Consumption Rate	Power used by Player measured in watts. Note this is the last measured value for this device and must be entered manually
Available Disk Free	Free Space on Player Hard Drive in GB and MB
System Memory Usage	RAM usage of applications and windows operating system running on Player
CPU Usage	System CPU Usage as a percentage divided by 100

- You can modify the thresholds that parameters must pass to show up on the RMS hotlist and cause alerts. Refer to the System Administrator's Guide - RMS Enterprise Resource Management Suite for more details.
- You can modify which parameters are monitored on a particular Player by modifying the file `monitor.xml`. This file is located on the Player at `C:/data/healthmonitoringservice/monitor.xml`. You will need to login as administrator with the default password **Insp1red!** Any parameters available in windows `perfmon` can be monitored along with the built in parameters listed in `availablesensors.xml`

Modifying Public Variables

If you have published content to a Player that is displaying content with public variables then you can modify these variables to achieve certain effects. With the default template packs provided with Composer you can achieve the following effects on a Player:

- Turn Live Media on/off
- Change the Live Media channel

- Change the Layout displayed
- Turn the override Playlist on/off. The override Playlist is shown in front off and obscuring all other Player content

NOTE: Allow at least 30 seconds for changes to take effect.

These effects are realized by using control methods within RMS.

To access control methods in RMS:

1. Login to RMS as an administrator using the username and password provided by your RMS administrator.
2. Select the *Management* tab.
3. Select **Client Gateways** in the *Configure Locations/Clients* menu.
4. Expand the location hierarchy in the left hand pane and select the location containing the Player you want to control.
5. The right hand pane shows the Client Gateways associated with this location, use this to select the Client Gateway associated with your Player.

You should name your Players with recognizable names in the Web Configuration Tool so you can identify them easily.

6. Select the *Client Gateway Assets* tab, you should see a table of assets associated with this Client Gateway.
7. Double click the **IS Xpert Player** table entry to open the *Asset Management* screen.
8. Click the *Control Methods* tab, to open the control methods screen.

This screen contains two panes.

- The left hand pane is used to select a control method from those that are available.
- The right hand pane shows the options for the selected control method.

See the appropriate Control Method section below for an explanation about how to use each control method.

NOTE: If your Player does not have content on it that supports public variables then no control methods will be available. If your content does not support an override layer, selectable layouts, or Live Media then these control methods will not be available and only the Set Public Variable method will be available.

NOTE: Note that you can use RMS Macros to control groups of Players. For more information refer to the System Administrator's Guide - RMS Enterprise Resource Management Suite.

The following table shows the Template Packs that you must publish to the Player to make this control method available:

Template Packs Required to use Control Method		
Control Method	Description	Associated Content
Display Live Media	Turn Live Media on/off on a Player	Audio Livemedia and Architecture.tpk provided on Player companion CD (Audio-LiveMedia_Templates.tpk)
Display Override Content	Display Override Playlist on a Player	Architecture.tpk provided on Player companion CD
Select Signage Layout	Select Layout to use on Player	Any Layout TPKs and Architecture.tpk provided on Player companion CD e.g. 3DBoxes_Landscape_Layouts.tpk
Select Live Media Channel	Change Live Media channel displayed on Player	Audio Livemedia and Architecture.tpk provided on Player companion CD (Audio-LiveMedia_Templates.tpk)

Displaying Live Media

Start Displaying Live Media

1. Select **Display Live Media** from the *Select Control Method* pane.
2. Set the **Display Live Media** checkbox in the right hand pane.
3. Click *Execute Control Method*.

Stop Displaying Live Media

1. Select **Display Live Media** from the *Select Control Method* pane.
2. Clear the **Display Live Media** checkbox in the right hand pane.
3. Click *Execute Control Method*.

In order for the *Display Live Media* option to appear in the Control Method pane, you must have published a Live Media control Message to the Player you want to control as well as the Audio LiveMedia and Architecture TPKs.

You must also set up a number of Live Media channels in the Live Media section of the Player Web Configuration tool.

If everything is set up correctly then you will see the public variable **LiveMedia:Show** on this Player.

To verify, login to the Player Web-Configuration and select the Public Variable section, this variable should be among the list of variables displayed.

Change Live Media Channel

1. Select **Live Media Channel** from the *Select Control Method* pane.
2. Choose the Live Media channel to display from the **Select Live Media Channel name** drop down menu.
3. Click *Execute Control Method*.
 In order for the *Select Live Media Channel name* option to appear in the Control Method pane, you must have published a Live Media control Message to the Player you want to control as well as the Audio LiveMedia and Architecture TPKs.
 You must also set up a number of Live Media channels in the Live Media section of the Player Web Configuration tool.
 If everything is set up correctly then you will see the public variable **LiveMedia:Show** on this Player.
 To verify, login to the Player Web-Configuration and select the Public Variable section, this variable should be among the list of variables displayed.

Display Override Content

To display override content:

1. Select **Display Override Content** from the Select Control Method pane.
2. Set the **Display Override Content** checkbox.
3. Click *Execute Control Method*.

To clear override content:

1. Select **Display Override Content** from the Select Control Method pane.
2. Clear the **Display Override Content** checkbox.
3. Click *Execute Control Method*.

In order for the Display Override Content option to appear in the Control Method pane, you must have published an Architecture TPK and one or more Layout TPKs to the Player you want to control.

You will also need to publish Override content to your Player.

If everything is set up correctly then you will have the public variable **Override:Show on this Player**.

To verify, login to the Player Web-Configuration tool and select the *Public Variable* section, this variable should be among the list of variables displayed.

Select Signage Layout

To change the Layout displayed on a Player:

1. Select the option **Select Signage Layout t** from the Select Control Method pane.
2. Select a Layout from the drop down menu. This menu shows the Layouts present on the Player.
 Note that User created Layout Messages are not shown, only the default Layouts in Layout TPKs.

NOTE: *If you have just updated the Layout TPKs on a Player then you may have to wait five minutes for the menu of available Layouts to update. You will also need to refresh the screen by clicking Back to Asset Management and re-selecting Control Methods again.*

3. Click *Execute Control Method*.

NOTE: *In order for the Select Signage Layout option to appear in the Control method pane you must have published an Architecture TPK and one or more Layout TPKs to the Player you want to control. If everything is set up correctly then you will have a number of LayoutControl public variables on this Player. To verify, login to the Player Web-Configuration tool and select the Public Variable section. You will see three variables beginning with LayoutControl among the list of variables displayed if everything is correctly configured. Note that this list will not display Layouts that have been created*

Setting a Public Variable

To set a Player public variable to a new value:

1. Select **Set Public Variable** from the Select Control Method pane
2. Select a public variable from the drop down menu **Set Public Variable Name**
3. Enter the new value for the variable in the Variable Value field
4. Click *Execute Control Method*.

Advanced Section

Overview

In this section we introduce some more background theory followed by some advanced techniques which use this theory to add flare to your Digital Signage system. These are as follows:

- Creating new Secondary Playlists for different groups within your organization and for different uses
- Setting one set of Players to use one Layout and another set of Players to use a different Layout
- Scheduling different Layouts at different times or dates
- Using Composer with multiple Users (covers User Groups and Resource Pools)
- External Player Control (Including NetLinx)
- Controlling devices attached to the Player serial port

Understanding IS XPert Playlist Types

In the IS XPert system, Player output is determined by a number of special Playlists types.

The most important are the **Layout Scheduling Playlist** and **Area Playlists**.

Layout Scheduling Playlist

The Layout Scheduling Playlist is used to determine the current layout of the screen.

You can only have one Layout Scheduling Playlist per Player. However you can create extra Layout Scheduling Playlists to display different Layouts on different Players at the same time. This also applies to Overlay Playlists.

Area Playlists

Area Playlists are used to display standard Messages, Video Stream Messages (for LiveMedia), and FeedReel Messages (used for Data Feeds) in one or more Layout areas. Area Playlist can be further subdivided into:

Content Playlists

Content Playlists contain standard user Messages as well as FeedReel Messages used to display data feed information such as RSS news feeds. There are two types of Content Playlists:

- **Primary Content Playlists** - There is at most one Primary Content Playlist for each area in the currently active Layout. This is a high priority Playlist for this layout Area. By default, Messages in this Playlist are displayed three times more frequently than Messages in the Secondary Content Playlists discussed below although this is configurable, see the *Area Playlist Mixing Rules* on page 27. As result Primary Content Playlists are used for high priority Messages. Note that very high priority Messages are best displayed in an *Override Playlist* discussed below.
- **Secondary Content Playlists** - For each area in the Layout you can have zero, one, or more Secondary Content Playlists. As mentioned these are for lower priority Messages

LiveMedia Playlists

LiveMedia Playlists are used for displaying video streams in one or more areas of the currently active Layouts.

You can only have one LiveMedia Playlist per Layout Area.

Global Playlists

There are a number of global Playlists which apply to the whole Player rather than a specific Layout area:

- **Overlay Playlist** - used for displaying content over the whole screen using a mask so you can still see the rest of the content.
- **Override Playlist** - used for high priority full screen announcements, for example Fire alarm Messages, etc. The contents of the override playlist are shown over the top of all other Playlists.
- **Audio Content** - used to play background MP3 files, i.e. audio which is unsynchronized with the display.
- The **Layout Scheduling Playlist** mentioned above.

Override Playlist

The Override Playlist is a special whole screen Playlist. Valid Messages in the Override Playlist are displayed over the whole screen area in front of all other content on the screen.

- Override Playlists must have filenames which match the convention `OverrideContent_<SubName>.pool` such as `OverrideContent_Default.pool` or `OverrideContent_FireAlarm.pool`.
- You can have more than one override Playlist for each Player. If multiple Override Playlists are sent to a Player the different Override Playlists are interleaved on screen (one Message is displayed from each override Playlist in turn) unless filtered using public variables. See *OverrideControlOverride:Filter* on page 33.

Overlay Playlist

The Overlay Playlist is a special whole screen Playlist which displays masked content in front of the standard Player content but behind the Override Playlist.

This is often used for seasonal greeting or other celebratory Messages.

Creating New Playlists

In order to create more interesting and varied displays you will need to understand the process of creating new Playlists. Each Playlist you create must have a filename which follows a naming convention that depends on the Playlist type: Content Playlist, LiveMedia Playlist, etc. Note, if you do not use this convention then the Playlist will behave incorrectly or will not be displayed.

The naming conventions are listed below

Playlist Filename Convention		
Playlist Type	Playlist File Name Convention	Example Playlist Filename
Primary Area Content Playlists	AreaContent_<Area Name>_Main.pool	AreaContent_R1_Main.pool
Secondary Area Content Playlists	AreaContent_<Area Name>_Sub_<SubName>.pool	AreaContent_R1_Sub_Sales.pool AreaContent_R1_Sub_Marketing.pool
Overlay Playlists	OverlayContent.pool	
Override Playlists	OverrideContent_<SubName>.pool	OverrideContent_Default.pool OverrideContent_Fire.pool
Audio	AudioContent.pool	
Live Media Area Playlists	AreaContent_<AreaName>_LiveMedia.pool	AreaContent_R1_LiveMedia.pool
Layout	LayoutSelection.pool	

Once you have created a Playlist you can restrict the content that can be added to the Playlist using Playlist Restrictions. Playlist Restrictions are a list of Template Definitions; only Messages derived from Template Definitions that are not in the Restriction List can be added to the Playlist.

AMX offers a way to quickly add a number of Template Definitions to the Restriction List based on the metadata label(s) the Template Definitions are tagged with. To setup Playlist restrictions we need to know what labels are used by the Template Definition creators.

AMX Template Packs use the following labels:

- **Livemedia** - use d for LiveMedia Template Definitions
- **Layout** - used for Layout Template Definitions
- **A10x1** - used for Template Definitions with this aspect ratio
- **A26x1** - used for Template Definitions with this aspect ratio
- **A3x5** - used for Template Definitions with this aspect ratio
- **A3x4** - used for Template Definitions with this aspect ratio
- **A9x16** - used for Template Definitions with this aspect ratio
- **A16x9** - used for Template Definitions with this aspect ratio

Playlist Conflict Prevention

A playlist conflict occurs when two or more playlists defined with identical pool names are assigned to a player -either directly to the player or indirectly through the player's parent publish points. When a playlist conflict is created the system will not allow the user to perform any publishing tasks until the conflicts are removed. The reason is that the player uses the playlist's pool name as a unique identifier when the content is rendered. Why do we allow the user to create playlists with duplicate pool names? Well, originally it was decided that an administrator with this advanced knowledge can use this "feature" to swap playlist content on the player. He/she would create 2 or more playlists with different content, define them with the same pool name, then swap them out when the content needs to change (only one of the playlists would be assigned to the player at any given time).

The problem is that admins without this knowledge can get themselves in trouble because the system does not prevent the user from assigning playlists with duplicate pool names to a player. So I have added as much prevention as possible so that the user is not allowed to assign playlists with duplicate file names to a player. So, any time the user assigns a playlist to a player (or publish point) the user may see the prevention triggered.

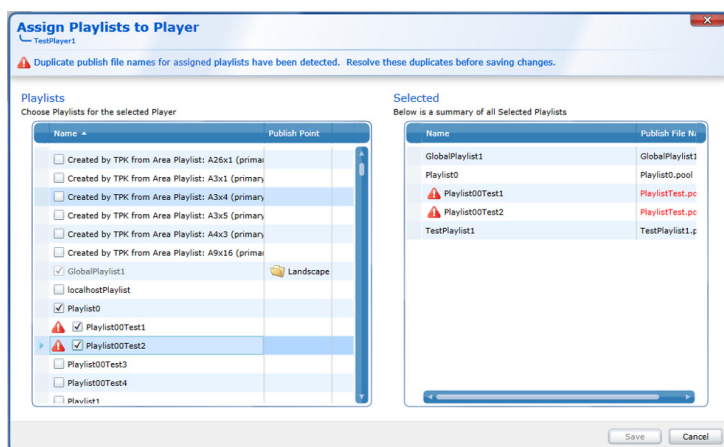


FIG. 21 Set Playlists Publish Points Task Example: User Cannot Click The Save Button Until The Conflict is Corrected.

Setting Up Playlist Restrictions Using Labels

1. Select the Content Management Section of Composer.
2. Select the *Playlist* sub-section
3. Select *Set Playlist Restrictions*
4. Click *Auto Populate*
5. Enter one or more of the labels listed above into the dialog box separated by commas.
6. You can now refine the Playlist Restrictions manually by adding/removing Template Definitions to/from the Chosen Template Definitions column.

Area Playlist Mixing Rules

The area mixing rules determine how the three types of Area Playlist are mixed together to create the display for each Layout area. The rules are as follows:

- If there is a valid LiveMedia message in the LiveMedia Playlist for this area, display this LiveMedia message in this Layout area.
- If there are no valid LiveMedia messages in the LiveMedia Playlist for this area, display 3 messages from the Primary Playlist for every 1 message taken from the Secondary Playlist.

Construct the Secondary Playlist by taking 1 message in turn from each of the Secondary Playlists.

You can alter the three numbers described in the previous paragraph by setting the Public Variable **PlaylistControl:SelectCounts** to a comma separated group of three numbers.

The default value is **3,1,1**

NOTE: See the *Public Variable* section of the *Player Web Configuration Tool help* for more details about modifying Public Variables.

FIG. 22 explains each of the series of three numbers that make up the public variable *PlaylistControl:SelectCounts* used to control Playlist Mixing:

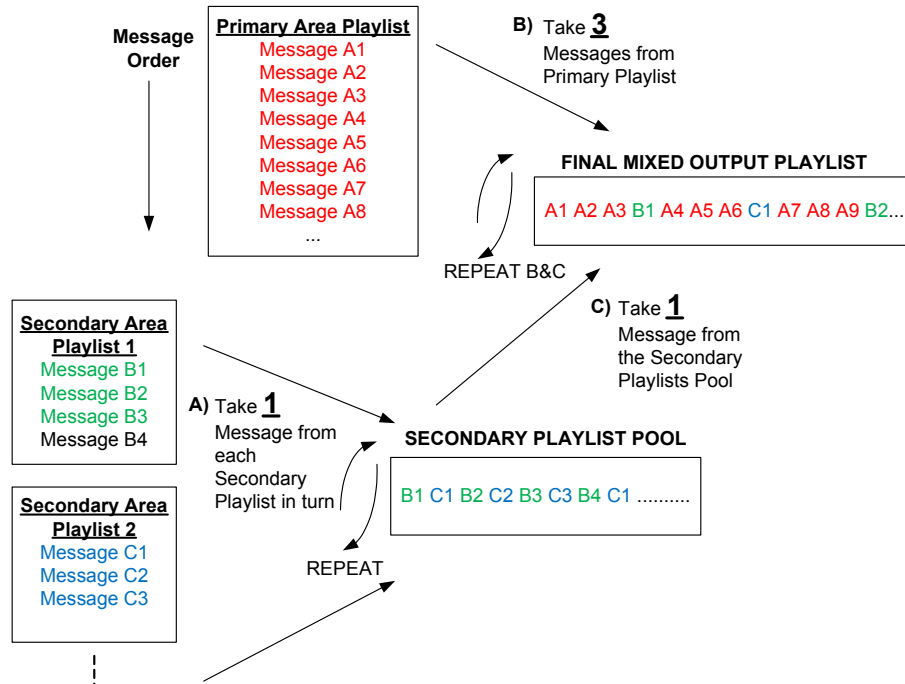


FIG. 22 Default Playlist Mixing Rules - Public Variable PlaylistControl:SelectCounts set to 3,1,1

- The first number controls how many Messages to take from the Primary Playlist.
- The second number controls how many Messages to take from the Secondary Playlist Pool.
- The third number controls how many Messages to take in turn from each Secondary area Playlist to construct the Secondary Playlist Pool

Link Between Layout Message Area Property Values and Area Playlists

Each Layout contains a number of area properties which are used to select the Playlists to display in this area.

In the following example, one of the Layout Message area properties is set to **A16x9**. Therefore, the contents of any Playlist with a filename which match *AreaContent_A16x9_Main.pool* or *AreaContent_A16x9_Sub_<Playlist ID>.pool* or *AreaContent_A16x9_LiveMedia.pool* will be interleaved using Area Playlist Mixing Rules and displayed in this area of the Layout.

The screenshot shows a 'Playlists' table on the left and an 'Edit Message' window on the right. The table lists various area playlists with their publish file names. The 'Edit Message' window shows the 'Area(A16x9):ID' property set to 'A16x9'. Red and green circles and arrows highlight the connection between the 'A16x9' value in the property and the 'AreaContent_A16x9_Main.pool' playlist in the table.

The Area ID sets the text to look for in a section of the Playlist publish filename delimited by two _ characters. Any Playlists with matching filename segments are combined together and displayed in this Layout Area.

FIG. 23 Link between Area Playlists and Layout Messages

Examples Playlists that would match an area property setting of A16x9 are shown in the following table:

Example of Playlists that would match an Area Property Setting of A16x9	
Playlist Types	Example Playlist Filenames
Primary Content Playlist	AreaContent_A16x9_Main.pool - used for priority messages for this layout area
Secondary Content Playlists	AreaContent_A16x9_Sub_Marketing.pool - used for Marketing messages AreaContent_A16x9_Sub_Sales.pool - used for Sales messages
LiveMedia Playlist	AreaContent_A16x9_LiveMedia.pool

Scheduling Different Layouts at Different Times

You can schedule different Layout at different times by:

- Adding more than one Layout Message to the Layout Scheduling Playlist.
- Setting Validity Rules on these Layout Messages so that only one Layout Message is valid at a particular time.

FIG. 24 shows how the Area Playlists restart when changing Layout (Layout Messages). Please note that the Player takes 10 seconds to change from one Layout to another.

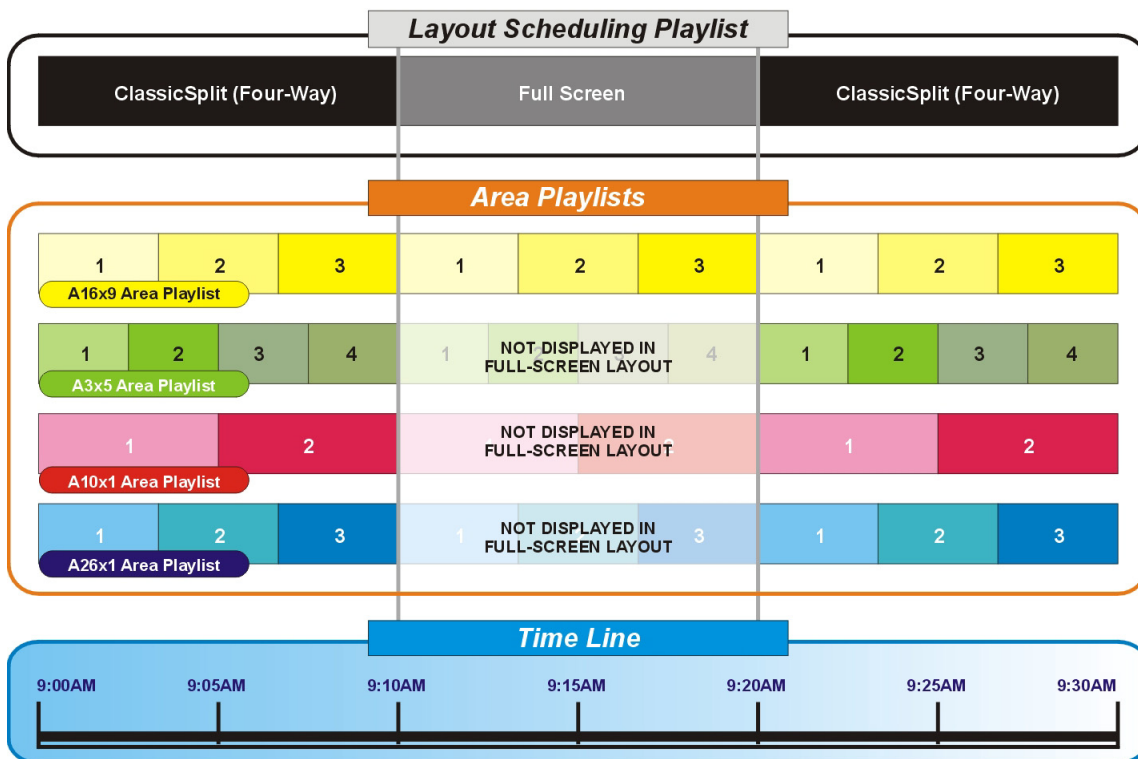


FIG. 24 Interaction between Layout Scheduling Playlist and Area Playlists

Practical Examples

In this sub-section we illustrate some advanced practical examples.

Playlist Mixing Example

This sub-section describes how to use Playlist mixing to make your content more interesting. In the following example scenario there are two different departments in an organization, Engineering and Marketing, which both want to display Messages on screen. Typically an organization would also want to display news and weather feeds interleaved with the Messages from the Engineering and Marketing departments. Here are the outline steps required to achieve this effect:

1. Create Secondary Area Playlists for each department to be shown in one of the layout areas such as the A10x1 area. For example, create an Engineering Secondary Area Playlist and a Marketing Secondary Area Playlist using the following Playlist filenames:
 - AreaContent_A10x1_Sub_Marketing.pool
 - AreaContentA10x1_Sub_Engineering.pool
2. Create an additional Secondary Area Playlist for news data feeds with filename:
 - AreaContent_A10x1_Sub_NewsFeed.pool
3. *Optional* - set Playlist Restrictions so that only Messages based on Feed Reel Templates can be added to this Playlist.
4. Create an additional Secondary Area Playlist for a weather data feed.
5. *Optional* - set Playlist Restrictions so that only Messages based on Feed Reel Templates can be added to this Playlist.
6. Restrict access to the Engineering and Marketing Playlists so that only Engineering Staff can add Messages to the Engineering Playlist and only Marketing Staff can add Messages to the Marketing Playlist.
7. Finally you can configure the Permissions so that only Managers can access the Primary Area Playlist to display priority messages in this Layout Area.
See Resource Pool s, User Groups, and Permissions in the *Composer Help* or the *Composer Instruction Manual* for details .
The Player will now take 3 Messages from the Primary Area Playlist (Manager content) followed by 1 Message taken from a collection (pool) of Messages constructed by taking 1 Message from each Secondary Area Playlist in turn.
8. Repeat the process for the remaining layout areas.

Displaying Different Layouts on Different Groups of Players

This section describes how to display a Portrait Layout on one Group of Players and a Landscape Layout on another group of Players:

1. Configure all Portrait Players display settings to display an aspect ratio of 9x16 and a display angle of 90 degree using the Player Web Configuration Tool.
2. Create a new Layout Playlist to control Layout Scheduling for the Portrait Players.
3. Create two new Player Sets, *Portrait Players* and *Landscape Players* and add the relevant Players to each Player Set.
4. Change where the landscape layout playlist (Layout Playlist) and the new portrait layout playlist are published.
 - Set the Portrait Layout Playlist to publish to the Portrait Player Set
 - Set the Landscape Layout Playlist to publish to the Landscape Player Set
5. Publish the Playlist changes.

NOTE: *The technique can also be used to display different Area, Override, or Overlay Playlists on different groups of Players.*

Step 1 - Configure all Portrait Player Display Settings for Portrait Layout

See the beginner section of this guide for a explanation of how to configure Player display settings to display a Portrait Layout.

Step 2 - Playlist Configuration

To create a New Layout Playlist for use with Portrait Players:

1. In the *Content Management* section of Composer, select the *Playlists* sub-section.
2. Click **Create Playlist**.
3. Name the Playlist *Portrait Layout* and use *LayoutSelect.pool* as the Playlist Filename.
4. Next, select the standard Layout Playlist and rename it Landscape Layout

Step 3 - Create New Player Sets for Landscape and Portrait Players

1. In the *Player Management* section of Composer, select the *Publish Point* sub-section.
2. Create a Publish Point called *Landscape*.
3. Create a Publish Point called *Portrait*.
4. Select the *Landscape* Publish Point and click **Add Players to Publish Point**.
5. Select all the Landscape Players.
6. Select the *Portrait* Publish Point and click **Add Players to Publish Point**.
7. Select all the Portrait Players.

Step 4 - Change Playlist Publish Points for Landscape and Portrait Playlists

1. In the *Content Management* section of Composer, select the *Playlists* sub-section. Select the Landscape Layout Playlist and click **Edit Playlist Publish Points**.
2. Select the *Landscape* Player Set created in Step 3.
3. Select the *Portrait* Layout Playlist and click **Edit Playlist Publish Points**.
4. Select the Portrait Player Set created in Step 3.
5. Select **Publish Menu** from the toolbar.
6. Click **Publish Content Changes** and wait for the Players to update.

Resource Pools and User Groups (Multiple Users)

AMX provide two features to help with installations containing more than one user:

- User Groups
- Resource Pools

User Groups

All User accounts in Composer are members of a User Group. When you create a new User, you must specify the User Group it belongs to. User Groups control access rights in Composer, specifically what Composer functions members of the User Group can carry out. For example you can set whether they have the ability to create Templates or configure an IS Xpert system by creating Playlists or Players etc. When you create a User in Composer you need to set which User Group the User belongs to.

AMX provide the following default User Groups:

- **Administrators** - Access to all functions in Composer including configuration functions.
- **Managers** - Super Users, without access to configuration functions which are restricted to administrators
- **Editors** - End Users
- **Basic Users** - End Users with a very restricted set of rights, good for casual or beginner users

You can create more User Groups as required. Refer to the Composer Instruction Manual for more details.

Resource Pools

Resource Pools are used to set access rights (edit, create, delete, etc.) for collections of Resources such as Messages, Templates, or Playlists. For example, using Resource Pools you could create a collection of Playlists that can only be edited by members of the Manager User Group. If these Playlists control a specific Layout Area on your Player then you can use this to enforce access control over the different regions that make up the Player display. Composer provides the ability to set different access rights for different User Groups to the contents of the same Resource Pool so, for example, you could give edit access to the Playlists in the Resource Pool above to Managers but only allow read only access to these Playlist to Editors.

Three User Groups have default Resource Pools with preconfigured access rights:

- **Managers** - Manager RP
- **Editors** - Editor RP (Note Managers have access to the Editor Resource Pool as well)
- **Basic** - Basic RP (Note Managers have access to the Basic Resource Pool as well)

NOTE: *Members of the Administrator User Group have view and edit access to all Resource Pools.*

Making Imported Template Packs Viewable to Managers/Editors/Basic Users

It is important to note that when you import Template Packs into Composer, the Template Definitions they contain and the Messages and Templates that you create are not automatically placed in Resource Pools.

To remedy this you need to copy them into the relevant Resource Pool (Editor RP for Editors, Manager RP for Managers. Basic RP for Basic Users) so that they can be viewed by members of these User Groups.

In order to allow a member of the Manager User Group to view Template Definitions imported into Composer along with Templates and Messages created during the import process, proceed as follows:

1. Select the Content Management Section of Composer.
2. Select the Resource Pool Sub Section.
3. Select the Manager Resource Pool.
4. Click *Edit Resource Pool*.
5. Select Template Definitions in the resource type drop down.
6. Select the Template Definitions you want the Manager to have access to. Note you can use Shift or Ctrl+A to select multiple items.
7. Click Assign Resource to add them to the Resource Pool.
8. Repeat steps 5-7 but with the resource type drop down set to Template and Message.
9. Click *Save*.

You should now be able to view these Templates Definitions, Templates and Messages when you login as member of the Manager User Group.

External Player Control (Including NetLinx)

AMX allows some external control over the content displayed on Players via the mechanism of Public Variables. Public Variables are pairs of name/value strings. Public Variables serve two purposes, they allow you to modify the behaviour of content displayed on the Player or provide information for external systems about the state of the content the Player is currently displaying. You can read/modify Public Variables in three ways:

- Using the *Public Variable Section* of the Web Configuration Tool
- Using NetLinx commands
- By HTTP GET requests

We describe each of these methods in this section beginning with the Web Configuration Tool as this is the simplest method, and it allows us to concentrate on the effect of each variable. In the later part of this section we will describe how to control these same variables using NetLinx and HTTP Get Requests.

Using the "Public Variables" Section of the Web Configuration Tool

Public Variables serve two purposes, they allow modifying the behavior of content displayed on the Player, or provide information for external systems about the state of the content that the Player is currently displaying. Access the Web Configuration Tool on the selected Player using your browser, login, and select **Public Variables** in the Menu Pane on the left of the screen, see FIG. 25. The Public Variables are arranged in a table with the variable name on the left and its value on the right. Click on a variable to modify its value.

Once you have made a change to the variable you can *Save All* or *Cancel All* these changes, alternatively you can delete the variable completely, or reset its value back to the default setting.

Public Variables Configuration

DebugA	-	Delete
DebugPanel:Show	0	Delete
DebugQ	0	Delete
HeartBeat	1696	Delete
LayoutControl:CurrentID	AMX_Skyline_A9x16_FullScreenTicker	Delete
LayoutControlOverride:Filter		Delete
LayoutControlOverride:Valid	1	Delete
LiveMedia:Show	1	Delete
Override:Show	<input type="text" value="0"/>	Delete
OverrideControlOverride:Filter		Delete
OverrideControlOverride:Valid	1	Delete
PlaylistControl:SelectCounts	3,1,1	Delete
PlaylistControlOverride:Filter		Delete

FIG. 25 Modifying Public Variables in the Player Web Configuration Tool

NOTE: *Public Variables retain their value when the Player is restarted.*

Description of Standard Public Variables

In this section we describe the standard public variables used in IS Xpert content.

Summary of Standard Player Public Variables		
Public Variable	Function	What it controls
LayoutControlOverride:Filter	Input	Which Layout(s) to filter in
LayoutControlOverride:Valid	Feedback	Number of valid Layouts; can be used to track how many Layouts are remaining after a filter and therefore whether the Layout filter should work or not
LayoutControl:CurrentID	Feedback	Layout currently showing; can be used to track when/whether a Layout swap takes place
PlaylistControlOverride:Filter	Input	What playlist(s) to filter in for one or more areas
PlaylistControl:SelectCounts	Input	The number of items to play from each of the playlists for each area
Override:Show	Input	Whether to show the override content or not 0 = turn Override layer off 1 = turn Override layer on
OverrideControlOverride:Filter	Input	Which override playlist(s) to filter in
OverrideControlOverride:Valid	Feedback	Number of valid Messages in the override playlists; can be used to track whether the override filter has an effect and would leave anything to show on screen
LiveMedia:Show	Input	Whether to show LiveMedia content or not. 0 = turn LiveMedia off 1 = turn LiveMedia on
LiveMedia:ChannelName	Input	What LiveMedia channel to display

Playlist Filter Variables

Playlists in the IS Xpert solution have filenames which **must** follow naming conventions to function correctly. The conventions for Area and Override Playlists are as follows:

- **LiveMedia Playlist:** *AreaContent_<Area:ID>_LiveMedia.pool*
- **Primary Content Playlist:** *AreaContent_<Area:ID>_Main.pool*
- **Secondary Content Playlists:** *AreaContent_<Area:ID>_Sub_<SubName>.pool*, *OverrideContent_<SubName>.pool*

There are a number of filter variables which allow you to select which of the published Area and Override Playlists Player should actually be displayed. Except for two special cases discussed later, the filtering works on the <SubName> segment of the Playlist filename.

The Player decides what Playlist to display by matching the start of the Playlist identifier. If you have several Playlists that have identifiers with a common start string, and you set the filter to that common section, they will all be selected and interleaved, i.e. one Message is shown from each matching Playlist in turn. The following examples which discuss specific filter variables should make this clearer.

OverrideControlOverride:Filter

This variable is used to select which override Playlists published to the Player should actually be displayed. If this variable is not set then all Override Playlists are interleaved and displayed on the Player (provided Override:Show is set to 1 and there is valid content in the Override Playlists).

To filter which Override Playlists are displayed, set this variable to the <Subname> of the Override Playlist you want to show in the override layer. If we assume we have a situation where there are three Override Playlists with the following filenames:

- OverrideContent_Normal1.pool
- OverrideContent_Normal2.pool
- OverrideContent_Special.pool

With the example Playlists above, if you set **OverrideControlOverride:Filter** to "Special" then only the playlist with filename *OverrideContent_Special.pool* will be shown.

If you set to **OverrideControlOverride:Filter** to "Normal" then the playlists with filenames: *OverrideContent_Normal1.pool* and *OverrideContent_Normal2.pool* are displayed.

NOTE: You can get feedback on the result of using an Override Filter by examining the variable *OverrideControlOverride:Valid* which shows the total number of valid Messages in the Override Playlists after the filter is applied.

PlaylistControlOverride:Filter

This variable is used to select which of the Area Playlists published to the Player should be displayed, if no filter is set for a particular area then all Area Playlists with that Area ID will be displayed. The format is as follows:

<Area:ID1>=<SubName1>,<Area:ID2>=<SubName2>, etc.

Area:ID is the area property value in the current layout Message (The Layout Message that is currently playing in the Layout Selection Playlist)

SubName is either

- All or part (the first part) of the SubName section of the Secondary Playlist (or Playlists) Filename(s)
- main - to select the Primary Playlist for this area

Examples

If we assume a situation where area A16x9 and area A10x1 have the normal Primary Playlists (*AreaContent_A16x9_Main.pool* and *AreaContent_A10x1_Main.pool*) and the following Secondary Playlists:

Area16x9

- *AreaContent_A16x9_Sub_Normal-HR.pool*
- *AreaContent_A16x9_Sub_Normal-Sales.pool*
- *AreaContent_A16x9_Sub_Normal-Ops.pool*
- *AreaContent_A16x9_Sub_Special-Event.pool*

Area10x1

- *AreaContent_A10x1_Sub_NewsFeeds* - this Playlist could contain FeedReel Messages to display RSS News Feeds
- *AreaContent_A10x1_Sub_WeatherFeed* - this Playlist could contain FeedReel Messages to display a Weather Forecast

To display only the Main (Primary) Playlist in the area with Area:ID A16x9 you would use the string:

A16x9=Main

Note, the A10x1 area will continue to show a mix of content from all its Playlists.

To display only the Main (Primary) Area Playlist in the area with Area:ID A16x9 and only the Weather Playlist in the area with Area:ID A10x1 you would use the string:

- *A16x9=Main,A10x1=WeatherFeed*

To display all the Normal Secondary Area Playlists in the area with Area:ID A16x9 you would use the string

- *A16x9=Normal*

This has the effect of switching off the Special Event Playlist

Show/Hide Layers

Override:Show

Set this variable to 1 to show the override layer and to 0 to hide it. Showing it should be pretty much immediate, hiding it can take up to a minute (depending on the length of the Message(s) in the Override Playlist(s)).

Feedback Variables

LayoutControl:CurrentID

Shows the Layout:ID of the current layout displayed on the Player.

LiveMedia Variables - Switching LiveMedia Channel and Turning LiveMedia on/off

LiveMedia:ChannelName

Name of a LiveMedia channel configured on the Player to display. If LiveMedia:ChannelName does not match the name of a preconfigured channel name on the Player then the Player will display white.

You can use this variable to change the LiveMedia channel displayed on the Player, the process is as follows:

1. Configure a number of video streams in the LiveMedia section of the Player Web Configuration Tool. Make a note of the channel names as you will need them later.
2. Publish a message based on the Template LiveMedia Aflex ExternalControl Item template to a LiveMedia Area Playlist
3. Set the variable **LiveMedia:ChannelName** to one of the names of the different video stream channels that you have pre-configured on each Player you want to display this video stream.

NOTE: *The LiveMedia channel will not change until everything else currently playing in the same layout area has finished. This could take 30 secs or longer in extreme cases*

Livemedia:Show

Set this variable to 1 to show LiveMedia (video stream) and to 0 to hide LiveMedia.

Layout Control Variable - Switch Layout

LayoutControlOverride:Filter

Switch Layout using the variable: **LayoutControlOverride:Filter**. This variable selects which of the valid Layouts in the Layout Playlist (*LayoutSelection.pool*) can control the Player layout. All Layout Messages have a property called Layout:ID which uniquely identifies them. Set this variable to the Layout:ID of the Layout Message you want to switch to. The player will (within 2 minutes) attempt to switch to that layout. This will only work if the Layout Message is present in the Layout Selector playlist and is currently valid.

To get feedback from the player, check the following public variables after switching layout:

LayoutControlOverride:Valid this will indicate whether the override selection is valid. Possible values are:

- 0 = Invalid Selection. Either there is no layout with this name in the Layout Selector playlist, or this layout is currently not valid (due to validity rules set in Composer)
- 1 = OK, the player will be able to switch to it
- 2 = There are too many layouts with this name. The player will switch to the first valid one.

LayoutControl:CurrentID indicates the Layout:ID of the current layout on screen, which allows you to track when the layout change happens.

Reading/Setting Public Variables using HTTP GET

Set/Read/Reset Public Variables using HTTP GET as follows:

Set a public variable:

- `http://<player ip>:25050/proxy/player/default//setpublicvariable.html?[varname]=[value]`

Get a list of all public variables, as an XML document:

- `http://<player ip>:25050/proxy/player/default/publicvariables.xml`

the name/value pairs are returned in XML format:

- `<value name="[varname]">[value]</value>`

Get a single public variable, as an XML document:

- `http://<player ip>:25050/proxy/player/default/getpublicvariable.xml?VarName=[varname]`

The name/value pair is returned in XML format:

- `<value name="[varname]">[value]</value>`

Get the value of a single public variable, as pure text:

- `http://<player ip>:25050/proxy/player/default/getpublicvariable.html?VarName=[varname]`

Reset all public variables to their default value:

- `http://<player ip>:25050/proxy/player/default/resetpublicvariables`

Examples

To set the variable Message to the value 'Hello':

- `http://<player ip>:25050/proxy/player/default//setpublicvariable.html?Message=Hello`

To fetch the value of the public variable Message as text:

- `http://<player ip>:25050/proxy/player/default/getpublicvariable.html?VarName=Message`

To view the public variables for the Player at IP address 192.168.216.74:

`http://192.168.216.74/:25050/proxy/player/default/publicvariables.xml`

To set the public variable LiveMedia:ChannelName to ChannelOne on Player with IP address 192.168.216,74:

`http://192.168.216.74/:25050/proxy/player/default/ setpublicvariable.html? LiveMedia:ChannelName=ChannelOne`

NOTE: HTTP GET request arguments should be properly URL encoded e.g.

`http://...?Message=Hello%20World Space = %20.`

See <http://www.blooberry.com/indexdot/html/topics/urlencoding.htm> for more details.

Using NetLinx to Set/Read Public Variables

Set/Read Player Public Variables using NetLinx as follows:

1. Configure the Player(s) as NetLinx Device(s).
2. Declare the Player(s) as NetLinx Device(s) in your NetLinx code.
3. Write NetLinx code to read/set public variables.

Step 1 - Configure Player(s) as NetLinx Device(s)

Configure your Player(s) as NetLinx Device(s) as follows:

1. Login to the Player Web Configuration Tool. Select the NetLinx section.

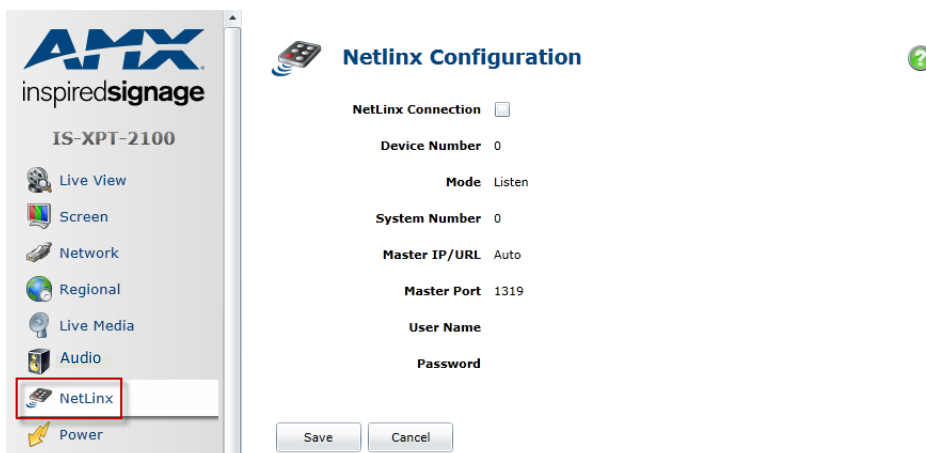


FIG. 26 Configuring NetLinx

2. Configure NetLinX settings as follows:
 - Set or clear the NetLinX Connection checkbox to enable or disable communication with a NetLinX controller as required.
 - Enter a device number for the Player. A device number is used to uniquely identify a NetLinX device amongst all the NetLinX devices in your system. The device number range is from 1 - 32000. Check that this number does not conflict with another NetLinX device in the system.
3. Choose a communication mode, there are two communications modes, URL is the most common method:
 - URL - Uses the URL or IP address of the NetLinX Master to make a connection.
 - LISTEN - Sets the Player to "listen" for broadcasts from the Master (using the Player IP from its URL list). In this system, the Player acts as a "Server" (in that Clients attach to it) and the Master acts as a "Client".
4. The process for each method is described below:
 - URL/IP Method - Enter the URL/IP address of the NetLinX Master
 - LISTEN Method - No action required
5. Optional - Advanced users can alter the port number used for NetLinX communication. The default value is 1319
6. If the NetLinX master has been secured you must enter a user name and password for the master.
7. Repeat for any other Players you want to control via NetLinX.

Step 2 - Declare Player(s) as NetLinX Device(s) in your NetLinX Code

Declare each Player using NetLinX code as follows:

```
DEFINE_DEVICE

[PlayerDevice] = [ID]:[Port]:[System]
(* You will need a line here to define each Player that you wish to control. ID is the device number of
the Player you wish to control. This is configured using the NetLinX section of the Player Web
Configuration Tool)
```

[PlayerDevice] is the name you've assigned to the player; [ID] is the player device number that you set in the player web configuration tool. [Port] is the port number to use; and [System] is the ID for the system number (usually 0, unless setting masters to communicate with each other).

Step 3 - Write NetLinX Code to Set/Read Public Variables

The following examples show how to Set/Read Public Variables using NetLinX:

Set a public variable to a value

- SEND_COMMAND Player, '@setpublicvariable,[varname],[value]'

Retrieve the value of a public variable

- SEND_COMMAND Player, '@getpublicvariable,[varname]'

The variable value is sent back in turn as a ?PublicVariableChange feedback event.

Retrieve the value of all public variables

- SEND_COMMAND Player, '@getpublicvariable'

Each public variable is sent back in turn as a ?PublicVariableChange feedback event.

Examples

A Public Variable called "Message" can be set to the value "Hello!" using the following NetLinX code:

- SEND_COMMAND Player, '@setpublicvariable,Message,Hello!'

To retrieve the value of a variable (in this case the variable named Message), use

- SEND_COMMAND Player, '@getpublicvariable,Message'

To retrieve the value of all variables, use

- SEND_COMMAND Player, '@getpublicvariable'

NetLinX Feedback

Whenever a Public Variable changes, whether as the result of a NetLinX Command, or as a result of an action within the content, the Player will send a STRING feedback message to NetLinX. The format is:

- ?PublicVariableChange:Varname=Value

If the variable Message changed its value to 'Hello!' the feedback string would be:

- ?PublicVariableChange:Message=Hello!

This feedback can be intercepted with a DATA_EVENT: STRING handler.

The Player will send the status of every Public Variable automatically whenever it goes online.

Public Variables can hold any type of string data, which may be cast to other types by the Player as and when needed.

Example - Using NetLinx to Display a Fire Alarm Message

This section describes a practical example of using NetLinx and Public Variables to display a FireAlarm Message on the Player in the event of an alarm. The process is as follows:

1. Create a Fire Alarm Override Playlist with filename OverrideContent_Fire.pool called FireAlarm Playlist
2. Create and add a Fire Alarm Message based on the template ImportantMessage to the FireAlarm override Playlist
3. Publish the Fire Alarm Message to the Player(s)
4. Use Public Variables to test
5. Configure the Player as a NetLinx device using the Player Web Configuration Tool
6. Create and test NetLinx code to set the appropriate Public Variables in response to a fire

Step 1 - Create a FireAlarm Playlist

Create a FireAlarm Playlist as follows:

1. Select the Content Management section of Composer
2. Select the Playlist sub-section
3. Click **Create Playlist**
4. Name the Playlist FireAlarm and use the filename OverrideContent_Fire.pool

Step 2 - Create and Assign a FireAlarm Message

Create and assign a FireAlarm Message based on the ImportantMessage Template to the FireAlarm Playlist.

Step 3/4 - Publish the FireAlarm Message and Test Using Public Variables

1. Show the Alarm Message by setting the Override Filter Public Variable to the value Fire (or anything else which is invalid)
2. Hide the Fire Alarm Message by setting the Override Filter to the value 1 which shows the default override playlist OverrideContent_1.pool
3. Test this works using the Public Variable section of the Web Configuration Tool

Step 5 - Configure the Player as a NetLinx Device

As described in the previous sub-section.

Step 6 - Create and Test NetLinx Code

1. Create and test NetLinx code based on the following example:
2. Create code to define the Player or Players in your system as follows:
 - [PlayerDevice] is the name you've assigned to the player;
 - [ID] is the player device number that you set in the Player Web Configuration tool.
 - [Port] is the port number to use
 - [System] is the ID for the system number (usually 0, unless setting masters to communicate with each other)
3. Create Channel Event code to respond to the firealarm control wire going high to indicate the firealarm is on or low when the firealarm is turned off again as follows:

```
CHANNEL_EVENT [<device>,<channel>]
{
ON:
{
(* FireAlarm Line goes high, set OverrideControlOverride:Filter to Fire to show the fire Override
Playlist containing the FireAlarm Message *)
SEND_COMMAND [PlayerDevice],
'@setpublicvariable,OverrideControlOverride:Filter,Fire'
}
OFF:
{
(* FireAlarm Line goes low, set OverrideControlOverride:Filter to 1 to hide the fire Override Playlist
containing the FireAlarm Message *)
SEND_COMMAND [PlayerDevice],
''@setpublicvariable,OverrideControlOverride:Filter,1'
}
}
```

Device Driver Configuration

AMX provides the ability to control display devices (e.g. Monitors, TVs and Projectors). The player allows for the user to control the display device via RS232 (legacy or XDD method) or IP (XDD method only). The addition of the Device Driver XDD feature allows for easier RMS integration/control of the display device.

Configuring the Legacy Serial Port

Access the Web Configuration Tool on the selected Player using your browser, login, and select Serial Port in the Menu Pane on the left of the screen. The main part of the screen now contains the following items:

- A browse and upload button which allows you to upload a number of serial protocol files. Serial protocol file contains a list of command names and command strings which are understood by the device attached to the serial port. The command strings can be found by reading the device manual and looking for a section on serial or RS232 control.
- A drop down to select the active protocol
- Serial port settings such as baud rate

FIG. 27 Device Driver Configuration Page

The serial port settings are described below:

Serial Port Settings		
Setting	Default	Description
COM Port	1	Serial port to use. Note that virtual com ports are supported.
Available Ports		The port numbers of any USB to serial port cables attached to the Player. Set the COM Port setting to one of these values to control devices attached to the cable.
Baud Rate	9600	Transmission speed in bits per second, check what speed your device supports.
Data Bits	8	The number of data bits in each transmitted character. Values are 4,5,6,7,8. Typically 8 for modern equipment
Parity	None	Parity is a method of detecting errors in transmission. A extra parity bit is sent with each character. Typically set to none - in this case error detection is handled at the protocol level. Values are: None, Odd, Even, Mark, Space
Stop Bits	1	Stop bits sent at the end of every character allow the receiving signal hardware to detect the end of a character and to re-synchronize with the character stream. Electronic devices usually use one stop bit
Flow Control	None	Flow Control is a mechanism to pause and resume the transmission of data over a serial port to avoid sending data faster than the receiving device can handle. Values are: None, RTS-CTS, DTR-DSR, Xon-Xoff
Timeout	1000	Timeout in milliseconds for any communication with the serial port

Serial Port Settings		
Log Communications	Enabled	Logs communication with the serial port. This information is added to the Player logs Values: set = enabled/ cleared = disabled.

Configuring the Player to Send Serial Commands

Prepare the player to send serial commands as follows:

- Set the serial port settings - consult the device's manual for the baud rate and other settings
- Click *Save* and then click the option to reboot the Player at the top of the screen
- Create a protocol file for the serial device using the protocol generator - consult the device's manual for details about the commands accepted. See **Creating Serial Protocol Files** for more details
- Upload the protocol file created in the previous step onto the Player
- Activate the protocol file for this device (Note that you can upload a number of protocol files to the Player but only one can be active at a time)

Now the protocol is active, you can send commands to the Player's serial port using an http get request as described over the next few pages. Uploading and activating a protocol file are discussed in more detail below:

Upload a protocol file

Upload a protocol file as follows

1. Click *Browse*.
2. Search for a protocol XML file you created earlier.
3. Click *Upload*.

Activate a Protocol File

Activate a protocol file as follows:

1. Select the protocol in the drop down list.
2. Click *Apply*.

Send Commands to the Player using HTTP Get Requests

http://<player ip>:25002/serialcommand.html?<command name>

Sends a named command to the player serial port.

- If log communications is enabled then log files contain the line "Serial Data TX" followed by the data transmitted over the serial port for this command.
- If the device responds to the command and log communications is enabled then "Serial Data RX" is added to the log file followed by the device response data. The response data is also returned to the browser as the response to the HTTP get request.
- If the device does not send a response to the command and log communications is enabled then "[Sent OK - No Returned Data] logged" is added to the log file.

http://<player ip>:25002/serialcommand.html?<command name>=<value>

Sends a named command and value to the Player serial port.

NOTE: To use a hex value, prefix the value with a %.

http://127.0.0.1:25002/serialcommand.html?volume=%f result: volume is set to15

- If log serial communications is enabled then log files contain the line "Serial Data TX" followed by the data transmitted over the serial port for this command.
- If the device responds to the command and log serial communications is enabled then "Serial Data RX" is added to the log file followed by the device response data. The response data is also returned to the browser as the response to the HTTP get request.
- If the device does send a response to the command and log serial communications is enabled then "[Sent OK - No Returned Data] logged" is added to the log file.

http://<player ip>:25002/serialcommand.html?command=<command string>

Sends a command string to the Player serial port:

- If log serial communications is enabled then log files contain the line "Serial Data TX" followed by the data transmitted over the serial port for this command.
- If the device responds to the command and log serial communications is enabled then "Serial Data RX" is added to the log file followed by the device response data. The response data is also returned to the browser as the response to the HTTP get request.
- If the device does not send a response to the command and log serial communications is enabled.
- Then "[Sent OK - No Returned Data] logged" is added to the log file.

Note that only one command will be processed at a time, however the service can respond to other requests while processing a command.

Notes:

- Values can be entered in HEX notation if each two byte hex value is preceded with a % (e.g. %3a).
- All ASCII characters beyond ASCII value 127 must be represented in HEX. Note that due to a limitation of URL encoding the special characters in the following table must also be entered as HEX values:

Table of Special Characters	
Special Character	Hex value
<	%3C
>	%3E
&	%26
'	%27
"	%22
+	%2B

The following example shows how you would send a string of hex values to a Player at IP address 192.168.1.100:

List all the protocols currently installed on the Player separated by semi colons.

```
http://192.168.1.100:25002/serialcommand.html?command=%ff%00%10%0D
http://<player ip>:25002/allprotocols.html
```

Activate a named protocol.

```
http://<player ip>:25002/protocol.html?<protocol name>
```

The following examples show how you could control a typical display which supports a command to turn the screen on and a command to set the volume level:

Turn the screen on.

```
http://<player ip>:25002/serialcommand.html?poweron
```

Set the volume to 23.

```
http://<player ip>:25002/serialcommand.html?volume=23
```

Send a command string to the display.

```
http://<player ip>:25002/serialcommand.html?command=kf 00 10%0D
```

Activate a named protocol.

```
http://<player ip>:25002/protocol.html?monitor2
```

List all the protocols currently installed on the Player separated by semi colons.

```
http://<player ip>:25002/allprotocols.html
```

NOTE: HTTP GET request arguments should be properly URL encoded e.g.

`http://...?Message=Hello%20World Space = %20.`

See <http://www.blooberry.com/indexdot/html/topics/urlencoding.htm> for more details.

Sending characters over HTTP will result in HEX characters being resolved, for example %0D will convert to a carriage return. Users must place a '%' in front of the HEX code of the special character they wish to send.

Using the Protocol Editor

Access the protocol editor at <http://isprotoeditor.amx.com/>. The protocol editor contains a variable list section which shows commands added to this protocol. The different columns which make up the variable list are described in detail in the following table:

Variable list columns	
Column name	Description
Variable Name	Command Name, either full name in the case of Range commands or the first part of the command name for List commands
Type	Command Type: Range or List
Command Text	For List Commands this details the final part of the command followed by the word Text and then the command string For Range Commands you have the word Text followed by the command string
Actions	Click Edit to edit a command or Delete to delete a command

AMX Serial Protocol File Editor

Manufacturer: Model: Target:

Variable List

Variable Name	Type	Command Text	Actions
volume	Range : 0 to 100	Text kf 00 #value#\$0D	[Edit] [Delete]
power	List	on Text ka 00 01\$0D; off Text ka 00 00\$0D;	[Edit] [Delete]

[Add Variable](#)

[\[Export XPress File \]](#) |
 [\[Export XPart File \]](#) |
 [\[Edit Protocol File \]](#) |
 [\[New Protocol File \]](#)

FIG. 28 AMX Serial Protocol File Editor

Select XDD Serial Control Method

Use the following steps to upload XDD files to control devices connected to serial ports.

NOTE: Some device XDD files have been preconfigured and are provided on the AMX website at www.amx.com under Partners - Search Third Party Devices located in the Tech Center left hand menu panel.

1. In the Select the Serial Control Method section (FIG. 29), select **Device Driver .XDD** and click on Apply.

AMX inspiredsignage
IS-XPT-2100

Live View
Screen
Network
Regional
Live Media
Audio

Device Driver Configuration

Select the Serial Control Method
(Requires Restart)

Legacy Serial Port
 Device Driver XDD

Set Active Protocol
Active Protocol:

Upload Protocol File

Select Device Driver .XDD and hit Apply

FIG. 29 Device Driver Configuration Page

1. At the top of the screen, the system prompts that this will require a Hard Restart (FIG. 30). Click on **Hard Restart** to continue.

Hard Restart Hard restart required to apply some settings. Complete all config steps on all pages and restart.

Device Driver Configuration

Select the Serial Control Method

FIG. 30 Device Driver Control Method Change - Restart Notice

2. A notice appears (FIG. 31), click **OK** to continue.

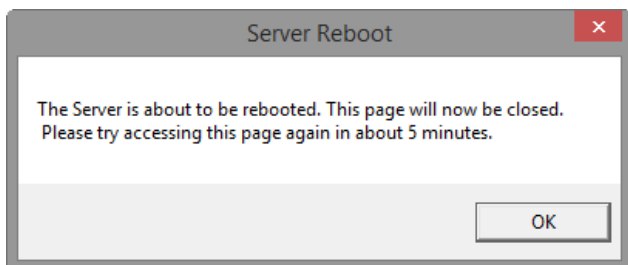


FIG. 31 Device Driver Control Method Change - Reboot Notice

3. The system will reboot. Log back in to continue and select the Device Drivers menu option again. The window appears with new options for .XDD files (FIG. 32).

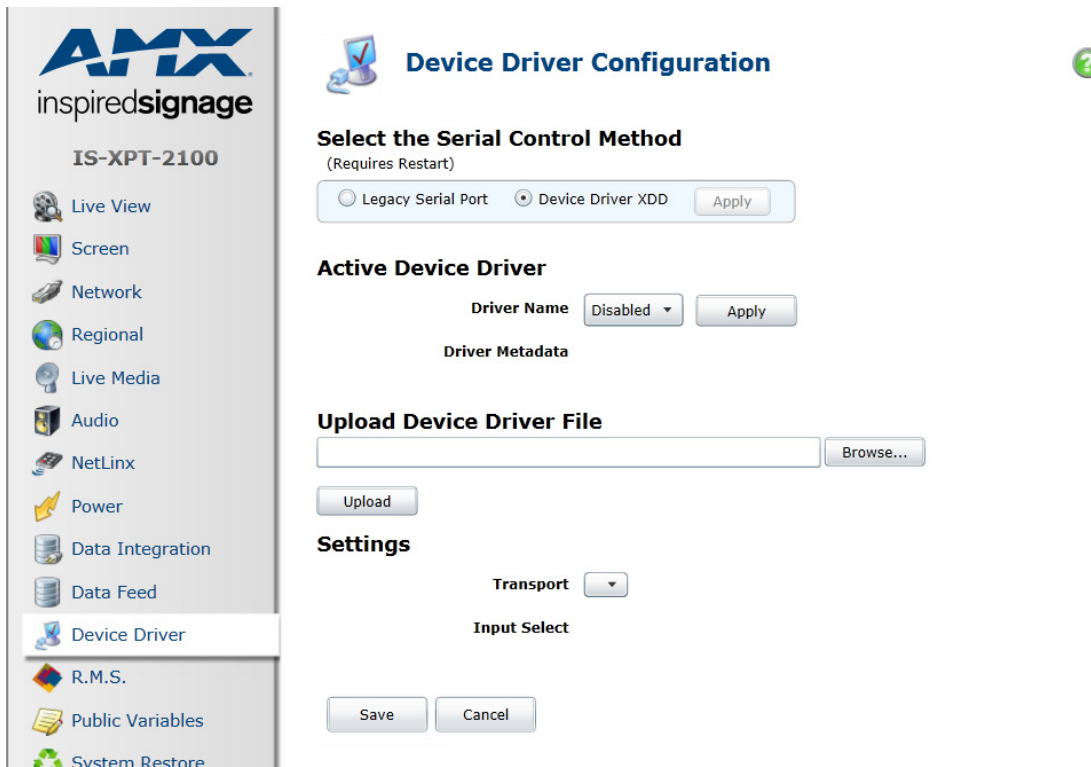
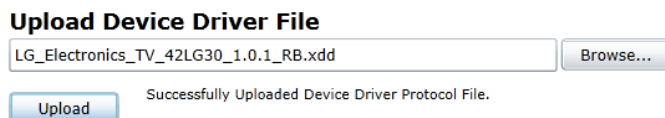


FIG. 32 Device Driver Control Method Change - XDD Options

4. Click the **Browse** button to locate your locally saved .XDD file to control your device with. Select your file and click on **Upload**.
5. The system will upload the .XDD file and provide a confirmation message (FIG. 33).



Settings

FIG. 33 Device Driver File Successfully Loaded

- Under the *Active Device Driver* heading, click on the drop-down labeled **Driver Name** (FIG. 34) to select your uploaded .XDD file and click **Apply**.

Active Device Driver

Driver Name Disabled Apply

Driver Metadata Disabled
LG_Electronics_TV_42LG30_1.0.1_RB

Upload Device Driver File

Browse...

FIG. 34 Select Uploaded .XDD Driver

- The system then provides a metadata list and new options under **Settings** (FIG. 35).

Active Device Driver

Driver Name LG_Electronics_TV_42LG30_1.0.1_RB Apply The 'LG_Electronics_TV_42LG30_1.0.1_RB' protocol has been applied

Driver Metadata
 DriverName = LG_Electronics_TV_42LG30_1.0.1_RB
 DriverVersion = 1.2.7
 DeviceRevision = 1.0.0
 Manufacturer = LG Electronics
 DeviceType = TV
 Model = 42LG30

Driver metadata displayed

Upload Device Driver File

Browse...

Upload

Settings

Transport Serial

COM Port 1 No Ports Found. Check Serial Cable.

Input Select [Current Input]

Use XDD Default Settings

Save Cancel

New options

FIG. 35 Device Driver Loaded - New Options

- Set the serial port settings as needed selecting the Transport type (Serial or TCP/IP), COM port and Input Type.

XDD Settings	Options	Definition
Transport	Serial or TCP/IP	The device driver method has the ability to use Serial Or TCP/IP connectivity, depending on XDD file contents referring to the device. NOTE: If TCP/IP is selected, then the user needs to enter the IP address of the device.
COM Port	1-x (system dependent)	Defines the port number on the Xport system.
Input Select	[Current Input] Digital TV RGB HDMI1-4 Component 1/2 Analog TV/Cable AV1/2 Digital Cable	Used to switch the display device to the desired input during an alert. If the Input Select is set to "Current Input" no switch will be performed during the alert. For example, if the Input Select is set to HDMI2, when an alert from RMS is sent to the player, the player will switch the display device's input to HDMI2 for the length of the alert.
Use XDD Default Settings	Check box	Uncheck the Use XDD Default Settings check box to manually enter the serial port Baud Rate, Bits, Parity etc., otherwise leave the box checked.

- Click **Save** at the bottom of the page to update new device driver settings.

As Run Report

IS Xpert allows turning on Message display logging on the Players so that they record all the Messages displayed known as As Run Logging. Composer can interrogate these logs to generate XML or CSV reports detailing how often different Messages have been displayed on the Players.

There are three steps required to generate a report on what your Players are displaying:

- Enable As Run logging on the Players you wish to monitor.
- Leave the Players to collect data over the time period you are interested in.
- Generate a Report using the As Run Report option in the Composer Content Management > Messages Task Pane.

Steps 1 is described in detail below.

NOTE: Make sure that Composer is updated to a version which supports As-Run logging (version 5.4 or above). Once Composer is updated, Republish All Messages needs to be performed to those Players to monitor, otherwise the As-Run logs will not be created properly on the Players.

Enabling As Run Logging on a Player

If you have a large installation with many Players, contact AMX support for help enabling As Run Logging on all your Players. Alternatively you can enable logging on individual Players as follows:

1. Click *Login* to login to the web configuration tool and enter the Player's Webconfig tool username and password. By default these are:
 - username = administrator
 - password = administrator.

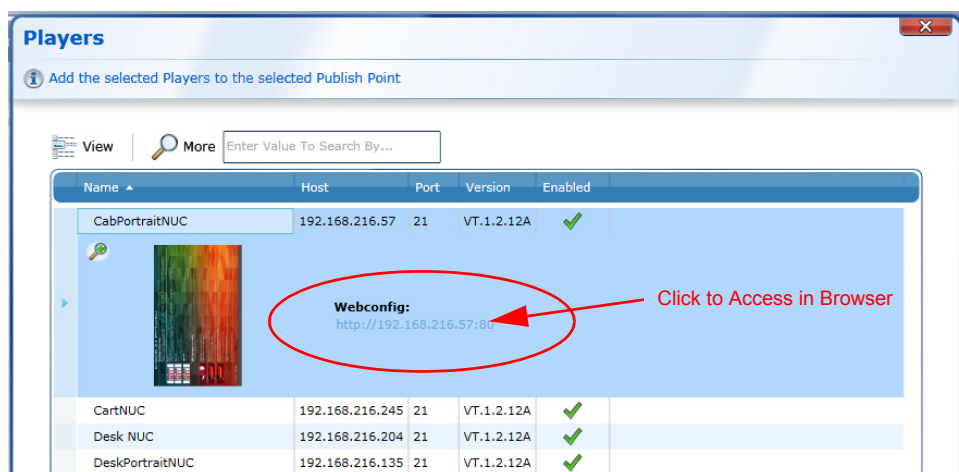


FIG. 36 Players Window

The Browser launches and displays the WebApp as shown in FIG. 37.

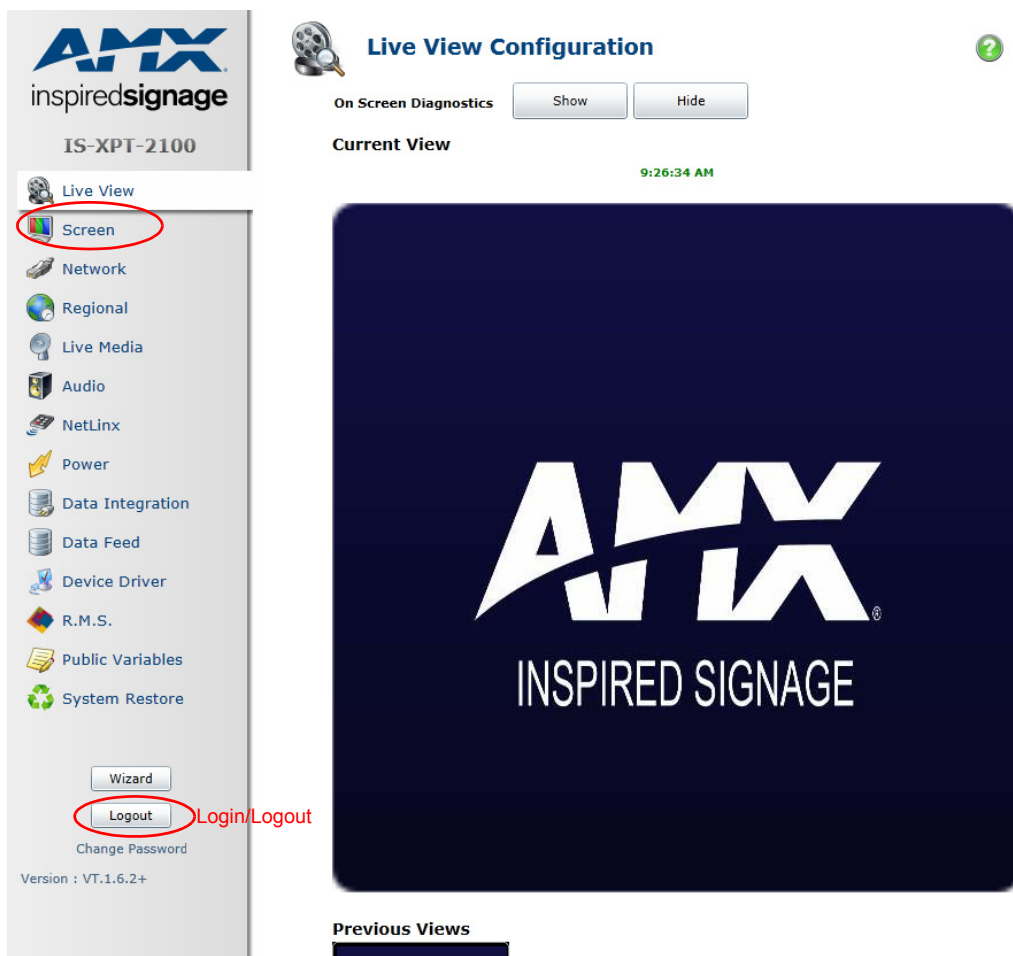


FIG. 37 Live View Configuration

NOTE: The actual system clock is displayed in green text above the current view. When displaying screen shots of the system, a clock time is displayed using black text which shows when the screen shot was actually taken. The black clock text is not a live system clock.

2. Select **Screen** in the left hand pane shown circled in FIG. 37.

3. Search for As-Run Logging under rotation. Set the check box **Enable As-Run Logging**.

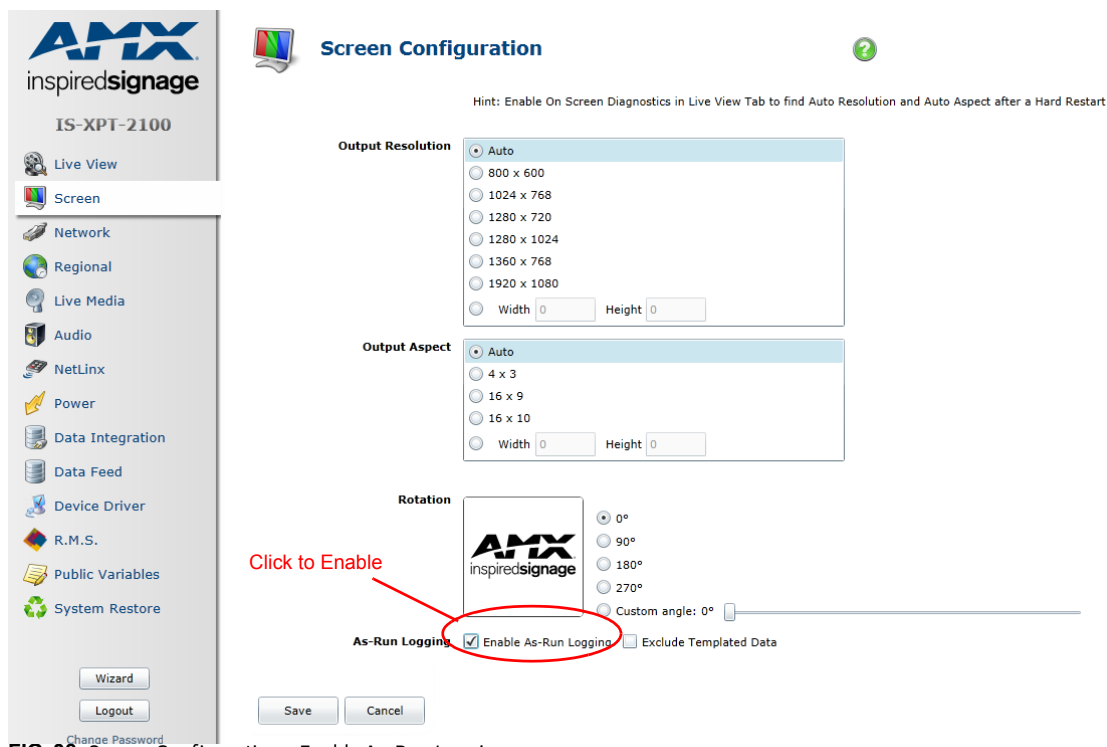


FIG. 38 Screen Configuration - Enable As-Run Logging

4. Click *Save* to save changes.
5. If you want to save log space and not report the data that each Message displays then set the check box *Exclude Templated Data*.
6. Next, reboot the Player for the new setting to take effect. Select the *Power* option on the left menu tree.

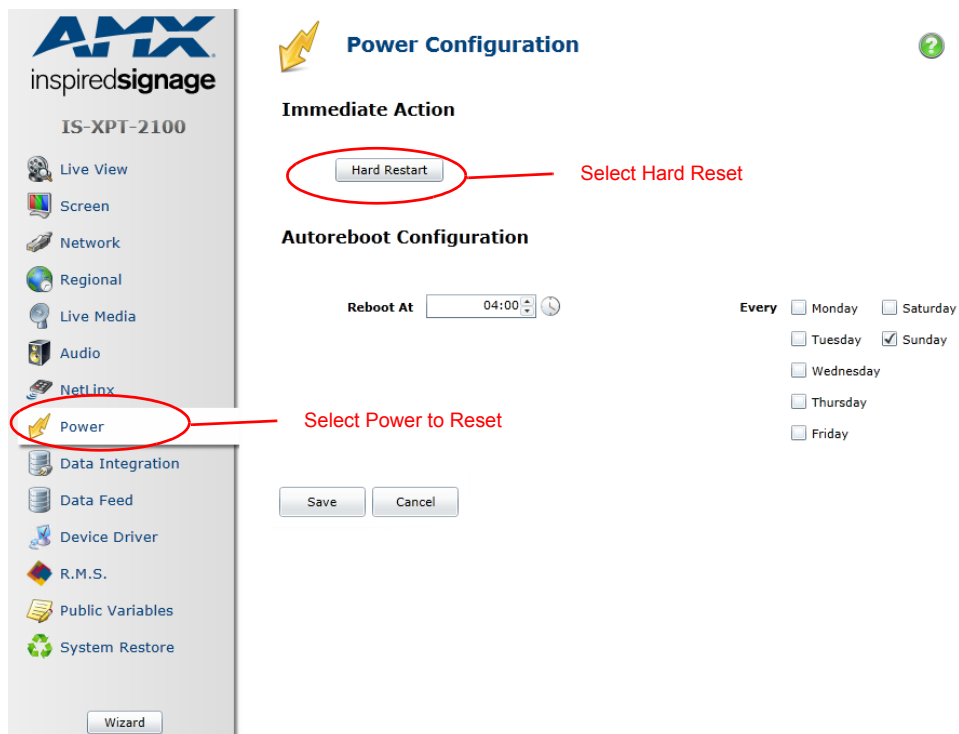


FIG. 39 Live View - Power Option

7. Select **Hard Reset** at the top off the page and wait for the Player to reboot. As-Run Logging is now enabled.
8. Repeat the process for all Players you wish to log.
9. Once you have enabled As Run Logging on your Players you can now generate reports from Composer showing when Messages have played on these Players.

Troubleshooting

Overview

This section contains a list of common issues with the IS Xpert system along with ways to resolve these issues.

Layout has hourglass symbols in one or more Layout Areas

1. Add Messages to the Playlists displayed in this Layout Area.
2. Check that these Playlists are assigned to all the correct Publish Points (Players).
3. Check that the relevant Layout Message area property references the correct Playlist. See the *Link Between Layout Message Area Property Values and Area Playlists* on page 28.

Content is not changing on one or more Players even though I am publishing changed Playlists

1. Check Playlists are assigned to Publish Points.
2. Check that you have published the Template Pack containing the Template Definitions from which these Messages are derived to these Players.

Feeds are not displayed on one or more Players

1. Check that you have created a Feed Reel Message and assigned it to a Playlist which is attached to the current Layout.
2. Check that the Feed:ID property of the Feed Reel Message matches a Feed:ID of one of the feeds in the Data Feed section of the Player Web Configuration Tool.
3. Publish the Architecture.tpk Template Pack to the Players that are not displaying the Feed.

A Layout Area is displaying white

1. Check that you have not accidentally turned on LiveMedia for this Layout Area. See "Live Media - Displaying a Video Stream in the Main Layout Area" on page 13. for more details.
2. If you have deliberately turned on LiveMedia, check that it is configured correctly. Check the channel names match values the channel selected using the LiveMedia public variable. See "Live Media - Displaying a Video Stream in the Main Layout Area" on page 13. for more details.

A Layout Area shows no content for a period of 12 seconds or more

This can be caused by a FeedReel Message belonging to a Playlist displayed in this Layout Area. This problem will occur if this FeedReel Message is linked to a Feed that contains no data.

If more than one Layout Area is effected then it is likely there is network access problem preventing all Feeds from being read. Check network access; contact your network administrator if necessary. Otherwise proceed as follows:

1. Check all the FeedReel Messages which are part of Playlists displayed in this Layout Area. Make a note of the Feed:ID values and the field tags used in each FeedReel Message.
2. Login in to the Player Web Configuration Tool on the Player(s) with the problem. Select **Data Feeds**.
3. Preview the data feeds with Feed:IDs that match the ones you noted in the previous step.
 - If there is no data for the field tags noted in Step 1 for that Feed then there must be a problem with the feed configuration in XPort or with the Feed itself. Check the Feed configuration and correct as necessary.
 - Check to see if any problems have been reported by the Feed provider.

A Data Feed published to a Layout Area but it is not being displayed on a Player or Players

Publish the Architecture Template Pack to the relevant Player or Players.

System Restore

The System Restore section is provided to help troubleshoot issues dealing with the Signage system not displaying content. There are two Restore severities to choose from as defined below:

- **Data Folder Wipe & Restore** - Clicking on **Restore Data Folder** erases the player's data folder. The user will have to manually republish data (Playlists and TPKs) from the Composer server.
 - **System Applications & Settings Restore** - Clicking on **Restore System** performs a Data Folder Wipe and Restores most of the player settings to default. The user must republish any TPKs used (excluding the Architecture and Aurora TPKs) and any Playlists. The System Restore will NOT default the Network Configuration.
1. Log into the Webview to access the **System Restore** menu.
 2. Click on either of the Restore options provided as needed.



FIG. 40 Power - System Restore



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