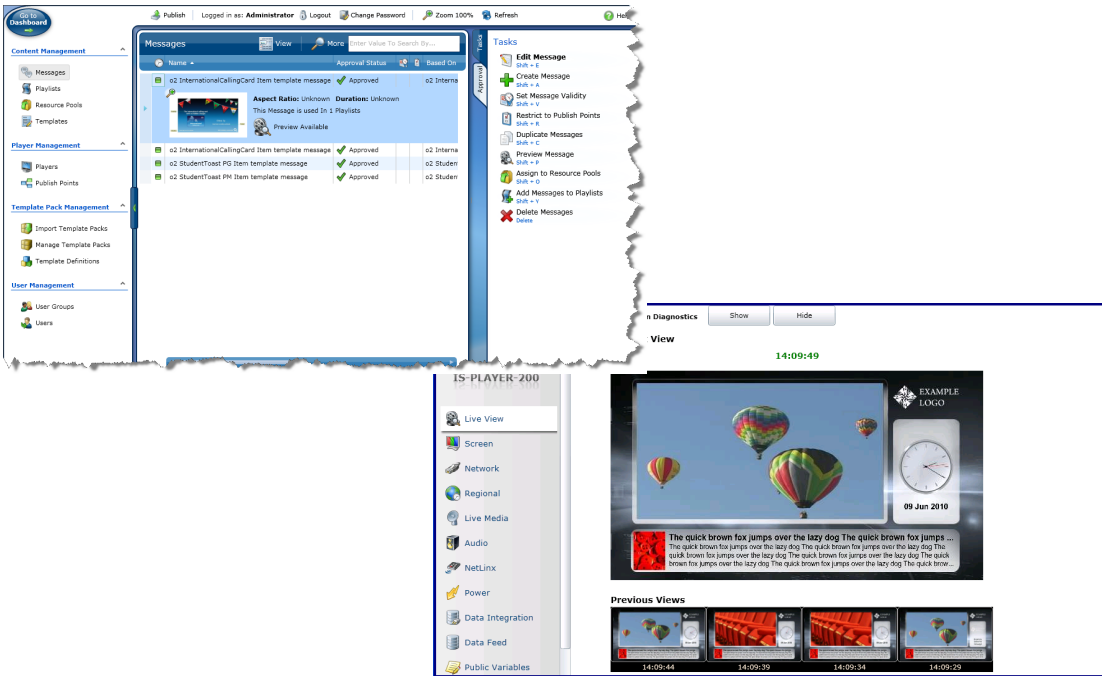
Operation/Reference Guide

Inspired XPert



AMX Limited Warranty and Disclaimer

This Limited Warranty and Disclaimer extends only to products purchased directly from AMX or an AMX Authorized Partner which include AMX Dealers, Distributors, VIP's or other AMX authorized entity.

AMX warrants its products to be free of defects in material and workmanship under normal use for three (3) years from the date of purchase, with the following exceptions:

- Electroluminescent and LCD Control Panels are warranted for three (3) years, except for the display and touch overlay components are warranted for a period of one (1) year.
- Disk drive mechanisms, pan/tilt heads, power supplies, and MX Series products are warranted for a period of one (1) year.
- AMX lighting products are guaranteed to switch on and off any load that is properly connected to our lighting products, as long as the AMX lighting products are under warranty. AMX also guarantees the control of dimmable loads that are properly connected to our lighting products. The dimming performance or quality there of is not guaranteed, impart due to the random combinations of dimmers, lamps and ballasts or transformers.
- AMX software is warranted for a period of ninety (90) days.
- Batteries and incandescent lamps are not covered under the warranty.
- AMX AutoPatch Epica, Modula, Modula Series4, Modula CatPro Series and 8Y-3000 product models will be free of defects in materials and manufacture at the time of sale and will remain in good working order for a period of three (3) years following the date of the original sales invoice from AMX. The three-year warranty period will be extended to the life of the product (Limited Lifetime Warranty) if the warranty card is filled out by the dealer and/or end user and returned to AMX so that AMX receives it within thirty (30) days of the installation of equipment but no later than six (6) months from original AMX sales invoice date. The life of the product extends until five (5) years after AMX ceases manufacturing the product model. The Limited Lifetime Warranty applies to products in their original installation only. If a product is moved to a different installation, the Limited Lifetime Warranty will no longer apply, and the product warranty will instead be the three (3) year Limited Warranty.

All products returned to AMX require a Return Material Authorization (RMA) number. The RMA number is obtained from the AMX RMA Department. The RMA number must be clearly marked on the outside of each box. The RMA is valid for a 30-day period. After the 30-day period the RMA will be cancelled. Any shipments received not consistent with the RMA, or after the RMA is cancelled, will be refused. AMX is not responsible for products returned without a valid RMA number.

AMX is not liable for any damages caused by its products or for the failure of its products to perform. This includes any lost profits, lost savings, incidental damages, or consequential damages. AMX is not liable for any claim made by a third party or by an AMX Authorized Partner for a third party.

This Limited Warranty does not apply to (a) any AMX product that has been modified, altered or repaired by an unauthorized agent or improperly transported, stored, installed, used, or maintained; (b) damage caused by acts of nature, including flood, erosion, or earthquake; (c) damage caused by a sustained low or high voltage situation or by a low or high voltage disturbance, including brownouts, sags, spikes, or power outages; or (d) damage caused by war, vandalism, theft, depletion, or obsolescence.

This limitation of liability applies whether damages are sought, or a claim is made, under this warranty or as a tort claim (including negligence and strict product liability), a contract claim, or any other claim. This limitation of liability cannot be waived or amended by any person. This limitation of liability will be effective even if AMX or an authorized representative of AMX has been advised of the possibility of any such damages. This limitation of liability, however, will not apply to claims for personal injury.

Some states do not allow a limitation of how long an implied warranty last. Some states do not allow the limitation or exclusion of incidental or consequential damages for consumer products. In such states, the limitation or exclusion of the Limited Warranty may not apply. This Limited Warranty gives the owner specific legal rights. The owner may also have other rights that vary from state to state. The owner is advised to consult applicable state laws for full determination of rights.

EXCEPT AS EXPRESSLY SET FORTH IN THIS WARRANTY, AMX MAKES NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. AMX EXPRESSLY DISCLAIMS ALL WARRANTIES NOT STATED IN THIS LIMITED WARRANTY. ANY IMPLIED WARRANTIES THAT MAY BE IMPOSED BY LAW ARE LIMITED TO THE TERMS OF THIS LIMITED WARRANTY. EXCEPT AS OTHERWISE LIMITED BY APPLICABLE LAW, AMX RESERVES THE RIGHT TO MODIFY OR DISCONTINUE DESIGNS, SPECIFICATIONS, WARRANTIES, PRICES, AND POLICIES WITHOUT NOTICE.

AMX Software License and Warranty Agreement

- LICENSE GRANT. AMX grants to Licensee the non-exclusive right to use the AMX Software in the manner described in this License. The AMX Software is licensed, not sold. This license does not grant Licensee the right to create derivative works of the AMX Software. The AMX Software consists of generally available programming and development software, product documentation, sample applications, tools and utilities, and miscellaneous technical information. Please refer to the README.TXT file on the compact disc or download for further information regarding the components of the AMX Software. The AMX Software is subject to restrictions on distribution described in this License Agreement. AMX Dealer, Distributor, VIP or other AMX authorized entity shall not, and shall not permit any other person to, disclose, display, loan, publish, transfer (whether by sale, assignment, exchange, gift, operation of law or otherwise), license, sublicense, copy, or otherwise disseminate the AMX Software. Licensee may not reverse engineer, decompile, or disassemble the AMX Software.
- ACKNOWLEDGEMENT. You hereby acknowledge that you are an authorized AMX dealer, distributor, VIP or other AMX authorized entity in good standing and have the right to enter into and be bound by the terms of this Agreement.
- INTELLECTUAL PROPERTY. The AMX Software is owned by AMX and is protected by United States copyright laws, patent laws, international treaty provisions, and/or state of Texas trade secret laws. Licensee may make copies of the AMX Software solely for backup or archival purposes. Licensee may not copy the written materials accompanying the AMX Software.
- TERMINATION. AMX RESERVES THE RIGHT, IN ITS SOLE DISCRETION, TO TERMINATE THIS LICENSE FOR ANY REASON UPON WRITTEN NOTICE TO LICENSEE. In the event that AMX terminates this License, the Licensee shall return or destroy all originals and copies of the AMX Software to AMX and certify in writing that all originals and copies have been returned or destroyed.
- PRE-RELEASE CODE. Portions of the AMX Software may, from time to time, as identified in the AMX Software, include PRE-RELEASE CODE and such code may not be at the level of performance, compatibility and functionality of the GA code. The PRE-RELEASE CODE may not operate correctly and may be substantially modified prior to final release or certain features may not be generally released. AMX is not obligated to make or support any PRE-RELEASE CODE. ALL PRE-RELEASE CODE IS PROVIDED "AS IS" WITH NO WARRANTIES.
- LIMITED WARRANTY. AMX warrants that the AMX Software (other than pre-release code) will perform substantially in accordance with the accompanying written materials for a period of ninety (90) days from the date of receipt. AMX DISCLAIMS ALL OTHER WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WITH REGARD TO THE AMX SOFTWARE. THIS LIMITED WARRANTY GIVES LICENSEE SPECIFIC LEGAL RIGHTS. Any supplements or updates to the AMX SOFTWARE, including without limitation, any (if any) service packs or hot fixes provided to Licensee after the expiration of the ninety (90) day Limited Warranty period are not covered by any warranty or condition, express, implied or statutory.
- LICENSEE REMEDIES. AMX's entire liability and Licensee's exclusive remedy shall be repair or replacement of the AMX Software that does not meet AMX's Limited Warranty and which is returned to AMX in accordance with AMX's current return policy. This Limited Warranty is void if failure of the AMX Software has resulted from accident, abuse, or misapplication. Any replacement AMX Software will be warranted for the remainder of the original warranty period or thirty (30) days, whichever is longer. Outside the United States, these remedies may not available. NO LIABILITY FOR CONSEQUENTIAL DAMAGES. IN NO EVENT SHALL AMX BE LIABLE FOR ANY DAMAGES WHATSOEVER (INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF BUSINESS PROFITS, BUSINESS INTERRUPTION, LOSS OF BUSINESS INFORMATION, OR ANY OTHER PECUNIARY LOSS) ARISING OUT OF THE USE OF OR INABILITY TO USE THIS AMX SOFTWARE, EVEN IF AMX HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. BECAUSE SOME STATES/COUNTRIES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES, THE ABOVE LIMITATION MAY NOT APPLY TO LICENSEE.
- U.S. GOVERNMENT RESTRICTED RIGHTS. The AMX Software is provided with RESTRICTED RIGHTS. Use, duplication, or disclosure by the Government is subject to restrictions as set forth in subparagraph ©(1)(ii) of The Rights in Technical Data and Computer Software clause at DFARS 252.227-7013 or subparagraphs ©(1) and (2) of the Commercial Computer Software Restricted Rights at 48 CFR 52.227-19, as applicable.
- SOFTWARE AND OTHER MATERIALS FROM AMX.COM MAY BE SUBJECT TO EXPORT CONTROL. The United States Export Control laws prohibit the export of certain technical data and software to certain territories. No software from this Site may be downloaded or exported (i) into (or to a national or resident of) Cuba, Iraq, Libya, North Korea, Iran, Syria, or any other country to which the United States has embargoed goods; or (ii) anyone on the United States Treasury Department's list of Specially Designated Nationals or the U.S. Commerce Department's Table of Deny Orders. AMX does not authorize the downloading or exporting of any software or technical data from this site to any jurisdiction prohibited by the United States Export Laws.

This Agreement replaces and supersedes all previous AMX Software License Agreements and is governed by the laws of the State of Texas, and all disputes will be resolved in the courts in Collin County, Texas, USA. For any questions concerning this Agreement, or to contact AMX for any reason, please write: AMX License and Warranty Department, 3000 Research Drive, Richardson, TX 75082.

Table of Contents

Introduction 5
Basic Concepts 6
Messages 6
Playlists 6
Layout 6
Accessing the Tools used to Configure your Signage System 7
Composer 7
Player Web Configuration Tool 7
Manual Method 7
Composer Method 7
Beginner Section 9
Setup Composer To Display a Simple Layout on a Player 9
Step 1 - Import/Manually Configure your Player(s) 9
Step 2 - Add Player(s) to Publish Point System 10
Selecting a Different Layout for the Player Display 14
Displaying a Portrait Layout on the Player(s) 14
Step 1 - Configure the Player Display Settings for Portrait Layout 15
Step 2 - Assign a Portrait Layout Message to the Layout Playlist 15
Step 3 (Optional) - Set Playlist Restrictions on the Layout Playlist so that only Portrait Layout Messages can be added to this Playlist 15
Schedule a Full Screen Announcement to Display at Set Times 16
Steps 1 & 2 - Create an Announcement Message and add it to the Override Playlist 16
Steps 3 & 4 - Set Message Validity Rules and Publish the Playlist Changes 17
Adding Media (Images or Video) to Messages 17
Adding Images to Messages or Templates 17
Adding Video to Messages or Templates 17
Playing Audio 18
Intermediate Section 21
LiveMedia - Displaying a Video Stream in the Main Layout Area 21
Step 1 - Configure the Player to Display a Live Video Stream 21
Step 2 - Create a LiveMedia Message 22
Step 3 - Add the LiveMedia Message to the LiveMedia Playlist and Publish the Updated Playlist 22
LiveMedia - Displaying a Video Stream in a Different Layout Area 23
Step 1 - Create a New Live Media Playlist 23
Data Feeds - Displaying Data on Players 26
Data Feed IDs 26

FEED:ID Matching 27
The Process of Creating and Displaying Internet Feeds 27
Example - Displaying a News Feed in a Player Layout Area 27
Stage 1 and 2 - Create a News Feed on the Player and Preview it 28
Stage 3 - Create a FeedReel Message for the News Feed in Composer 29
Stage 4 - Assign the Newly Created FeedReel Message to an Area Playlist 30
Stage 5 - Publish the updated Playlists 30
RMS Integration 31
RMS Setup Step 1 - Set RMS Settings in the Player Web Configuration Tool 32
RMS Setup Step 2 - Assign Player (Client Gateway) to a Location within RMS 32
Display RMS Messages 33
Monitor Player Parameters 35
Modify Public Variables 36
Display Live Media 38
Change Live Media Channel 38
Display Override Content 38
Select Signage Layout 39
Set Public Variable 39
Advanced Section 41
IS XPert Playlist Types 41
Override Playlist 42
Overlay Playlist 42
Creating New Playlists 42
Area Playlist Mixing Rules 43
Link Between Layout Message Area Property Values and Area Playlists 44
Practical Examples 45
Playlist Mixing Example 45
Displaying Different Layouts on Different Groups of Players 46
Step 1 - Configure all Portrait Player Display Settings for Portrait Layout 46
Step 2 - Playlist Configuration 46
Step 3 - Create New Player Sets for Landscape and Portrait Players 46
Step 4 and 5- Change Playlist Publish Points for Landscape and Portrait Playlists 46
Multiple Users - Introduction to Resource Pools and User Groups 47
User Groups 47
Resource Pools 47
Making Imported Template Packs Viewable to Managers/Editors/Basic Users 47
External Player Control (including Netlinx) 49
Introduction to Public Variables - Using the Public Variable Section of the Web Configuration Tool 49
Description of Standard Public Variables 50

Playlist Filter Variables 50
Show/Hide Layers 52
Feedback Variables 52
LiveMedia Variables - Switching LiveMedia Channel and Turning LiveMedia on/off 52
Layout Control Variable - Switch Layout 52
Reading/Setting Public Variables using HTTP GET 53
Process for Using Netlinx to Set/Read Public Variables 54
Step 1 - Configure Player(s) as Netlinx Device(s) 54
Step 2 - Declare Player(s) as Netlinx Device(s) in your Netlinx Code 55
Step 3 - Write Netlinx Code to Set/Read Public Variables 55
Example - Using Netlinx to Display a Fire Alarm Message 55
Step 1 - Create a FireAlarm Playlist 56
Step 2 - Create and Assign a FireAlarm Message 56
Step 3/4 - Publish the FireAlarm Message and Test Using Public Variables 56
Step 5 - Configure the Player as a Netlinx Device 56
Step 6 - Create and Test Netlinx Code 56
Filtering/Grouping and Ordering your Data (Internet Feeds) 57
Setting Advanced Properties for Feeds 57
Filtering/Ordering Properties 58
filter-by 58
order-by 58
Grouping Properties 59
group-by 59
group-records-per-page 59
group-select-map 60
group-select-aggregate 61
group-limit-pages-per-group 61
limit-records 62
disable-grouping 62
..... 62
Formatting Parameters 62
..... 62
culture 62
formatstring-date 62
formatstring-time 62
Miscellaneous Parameters 63
first-record-contains-headers 63
csv-delimiter 63
record-node-name 63
Serial Control 64

Configuring the Serial Port 64
Configuring the Player to Send Serial Commands 65
Using the Protocol Editor 68
Troubleshooting 69
A Layout has an hourglass symbols in one or more Layout Areas 69
Content is not changing on one or more Players even though I am publishing changed Playlists 69
Feeds are not displayed on one or more Players 69
A Layout Area is displaying white 69
A Layout Area shows no content for a period of 12 seconds or more. 69

Introduction

This guide explains how to use the Inspired Signage XPert 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 Operation/Reference Guide*. We also introduce more theory in the Advanced section of this guide.

This guide is divided into four sections:

- Introduction
- Beginner
- Intermediate
- Advanced

These sections are described in more detail below:

Document Sections	
Type	**Description**
Introduction	• Basic Concepts
Beginner	• 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	• 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	• Advanced Concepts • 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

Basic Concepts

Messages

The basic component of AMX Inspired Signage content is the Message. There are two main types of Message and various subtypes:

- Standard Messages - collections of images, video, text, shapes, and animations used to create announcements, notices, and advertisements
- Special Messages which 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.)
  - Video Stream Messages - Used to display video streams (also known as LiveMedia)

When you create a Message you 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 Meta-Templates (Template Definitions) which are used to construct Templates. Template Definitions are created by AMX Graphic Designers 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, you can 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, colour schemes, divider bars, panels, etc are determined by Layout Messages in the Layout Playlist, specifically the currently playing Layout Message.

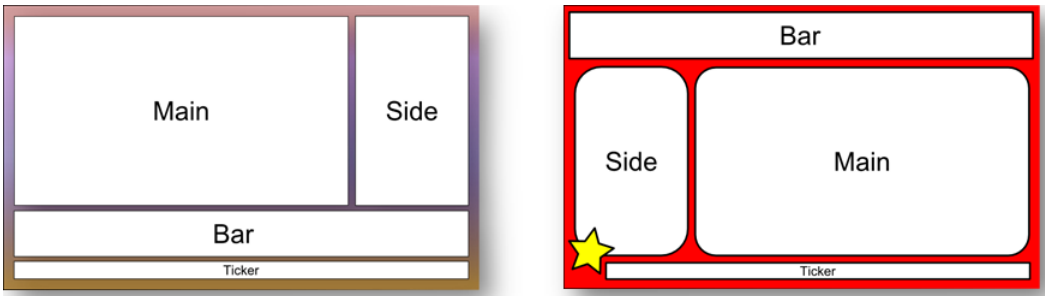


FIG. 1 Example Layout Messages created from different Layout Templates

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
- A 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 Tools Used to Configure your Signage System

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

- The Player Web Configuration Tool
- Composer

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 http://<Composer Server URL>:5143/ComposerWeb/ComposerShell.aspx into the Internet Explorer address bar,

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:

- Manually
- Through the Player Section of Composer

These methods are described below:

Manual Method

Login to the Player Web Configuration tool as follows:

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

Composer Method

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

1. Select the Player Management section of Composer from the left hand menu pane.
2. Select the Players sub-section
3. The left hand pane shows the list of Players configured within Composer, underneath 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 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. Each screen has a help icon. See FIG. 2

FIG. 2 Help Icon

Click the help icon to see information about this particular section of the Player Web Configuration Tool.

Beginner Section

This section will explain:

- 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
- Scheduling a high priority announcement Message
- Selecting a Portrait Layout for the Player Display
- Things to consider when adding Images or Video to Messages e.g. supported file formats, etc.
- Playing Audio

Set Up 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 your Player(s). You must carry out the operations described below in the correct order to avoid problems. Refer to the *Composer Reference Guide* for more details about using Composer and for the theory behind these steps. The process is as follows:

1. Import or Manually Configure your Players
2. Add your Players to a Publish Point System (A hierarchical grouping of Players)
3. Import Template Packs and publish these Template Packs to the Publish Points which contain your Players. If you publish a Message to a Player

These steps are described in more detail below.

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

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

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

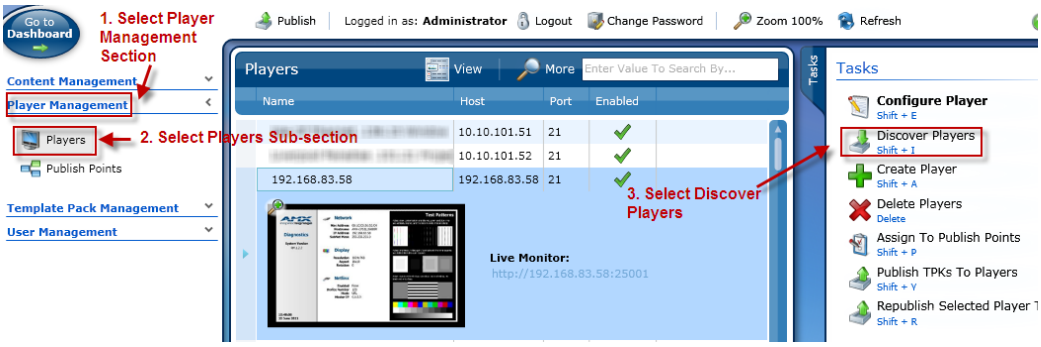


FIG. 3 Discovering Players on the LAN using the Discover Player feature

Configure your Players manually as follows:

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

FIG. 4 Configuring a Player for use in Composer

2. Enter the Player Name and Player IP Address
3. Repeat the process for the rest of your Players.

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

Add the newly configured Player(s) to the Publish Point System (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, Publish Points can be either individual Players or groups of Players. The process is as follows:

1. Select the Publish Point sub-section under Player Management
2. Select the 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 your Players
5. Click Publish to add these Players to the selected Publish Point.

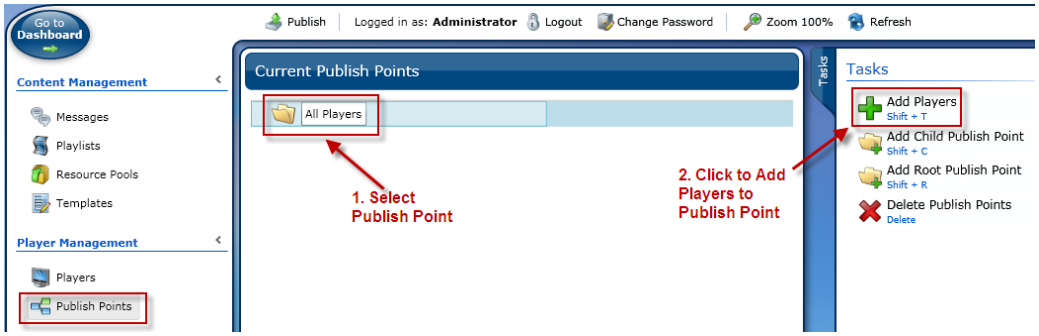


FIG. 5 Setting up a Basic Publish Point System

Import the following IS-XPert Template Packs from the folder inside the TPK folder inside the CD supplied with your Player using the Import Template Packs sub-section of Template Pack Management:

- Architecture Templates - Architecture.tpk
- Audio/LiveMedia Templates - Audio-LiveMedia_Templates.tpk
- Manual and FeedReel Skyline Templates - AMX_Skyline_Templates.tpk.
- Daylight and Midnight Templates - AMX_Daylight_Templates.tpk, AMX_Midnight_Templates.tpk
- Daylight and Midnight Feed Templates - AMX_Midnight_FeedReel_Templates.tpk, AMX_Daylight_FeedReel_Templates.tpk
- Weather_Icons_Square_Looping.tpk

The Architecture Template Pack is the most important Template Pack as it provides the foundation on which to build your display. If you omit this pack then nothing will be displayed. You can republish the Architecture TPK to a Player to reset your display at any time

Import the following Template Packs from the folder TPK\Layouts inside the CD supplied with your Player using the Import Template Packs sub-section of Template Pack Management:

- 3DBoxes_Landscape_Layouts.tpk
- 3DBoxes_Portrait_Layouts.tpk
- Blur_Landscape_Layouts.tpk
- Blur_Portrait_Layouts.tpk
- Graphite_Landscape_Layouts.tpk
- Graphite_Portrait_Layouts.tpk
- Marble_Landscape_Layouts.tpk
- Marble_Portrait_Layouts.tpk

The Template Packs listed above are provided by default. Other Layout, Standard and FeedReel Templates are also available from AMX. These Templates will have different options but will behave in a similar manner to the Templates discussed in this document.

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.

Then click **Import** to Import the selected Template Packs, this will set up the following Playlists:

- A number of Area 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.

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.

For now we will just describe selecting a four way split Landscape Layout. The process is as follows:

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 Template 3DBoxes A16x9 AltWidgets ModalLayout
7. Click **Next**
8. The Create Message dialogue appears, 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. 6 for an example. 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.

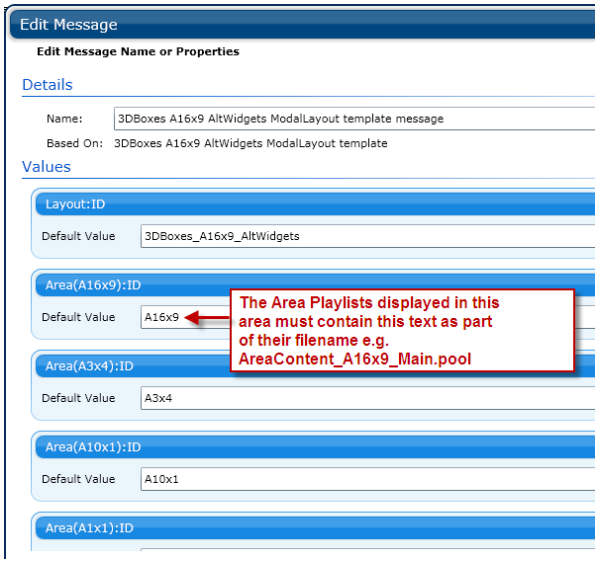


FIG. 6 Layout Area Properties

9. Click **Save** to save the changes to the Message, this brings up 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.
10. Click **Add Messages to Playlists** in the New Message Options window
11. Select the Layout Playlist
12. Click **Save**

13. Click **Finished** to finish working with the new Message

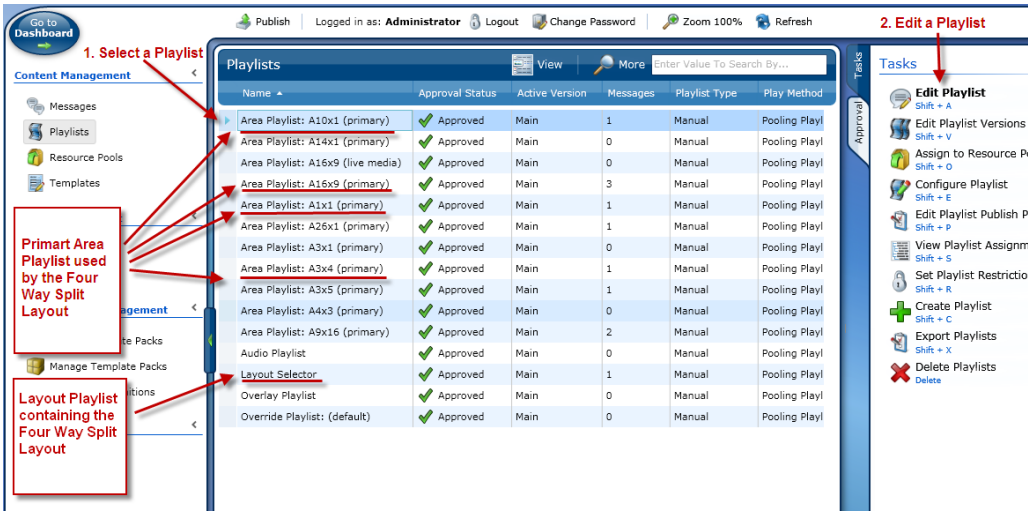


FIG. 7 Playlist sub-section Playlists used by the Four Way Split Layout

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.

Now you need to add content to the four Primary Area Playlists displayed by this Layout as underlined in FIG. 7 as follows:

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

NOTE

You can use Shift or Ctrl A to select multiple items

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 **Set Playlist Publish Points** to open the Pick Publish Points dialogue
3. Set the check box to the left of All Players in the left hand dialogue pane, note you will need to click the check box more than once. The right hand pane should show All Players
4. Click **Save** to save these changes.

Next. publish the newly changed Playlists to your Player or Players as follows:

1. Select the Publish Menu in the toolbar
2. Click **Publish Content Changes**
3. Wait about five seconds and your Player(s) display should update. You should see a display similar to FIG. 9. The Arrows point to the different Layout Areas each controlled by a different Playlist or Playlists.

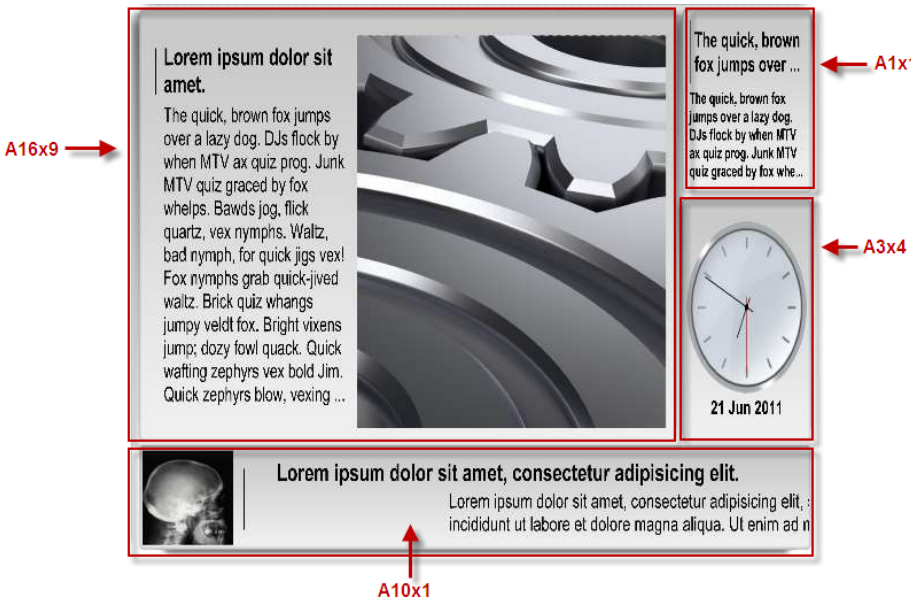


FIG. 8 Example Horizontal Layout Displaying Basic Content and Layout Areas

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. 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)

To display a Portrait Layout on a Player the steps are as follows:

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

4. Login to the Player Web Configuration Tool on the Player you wish to modify by enter the Player IP into a web browser e.g. http://192.168.1.1
5. Click **Screen** in the Menu pane on the left of the screen
6. Set the anticlockwise rotation angle to either 90 degrees or 270 degrees as appropriate
7. Set a Custom Aspect Ratio of 9x16 rather than 16x9
8. A message appears at the top of the screen prompting you to restart the Player

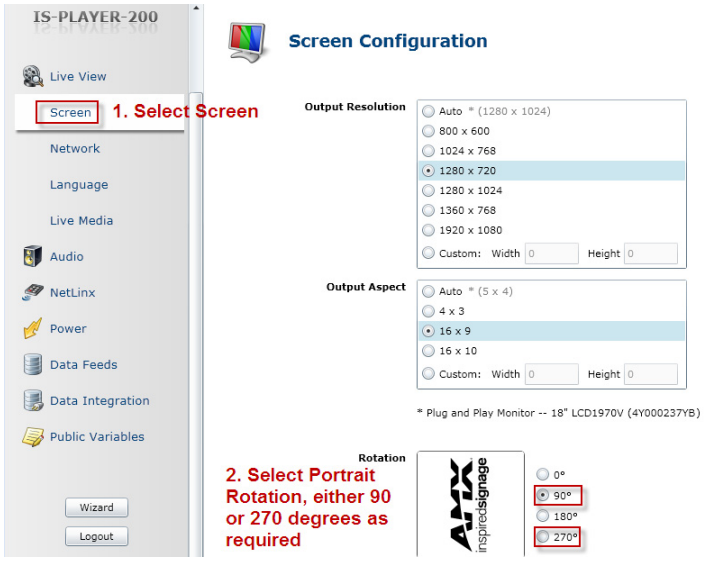


FIG. 9 Set Screen Configuration Settings for Portrait Display

Step 2 - Assign a Portrait Layout Message to the Layout Playlist

Assign a Portrait Layout Message to the Layout Playlist as follows:

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.

Set Playlist Restrictions as follows:

1. Select the Playlist sub section
2. Select the Layout Playlist
3. Click **Edit Playlist Restrictions,** this 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. To prevent people adding Landscape Layouts to this Playlist
4. 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 a Full Screen Announcement to Display at Set Times

You can add a Message to Playlists and then configure the Message to only display at scheduled times by setting the Message Validity Rules. This process could be useful for a Message announcing a Staff Meeting for example. The process is as follows:

1. Create an announcement Message
2. Add this Message to the Override Playlist. Messages in the Override Playlist are displayed across the whole screen in front of the other content on the display
3. Set Validity Rules on this Message
4. Publish the Playlist changes

These steps are described in more 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 opens the Message Creation Dialog
6. Change the FireAlarm picture to another picture or remove the picture.
7. Add some text such as the meeting title: Staff Meeting and meeting location
8. Name the Message, 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 we just leave the Announcement message in the Override Playlist then 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 Change**s.

Adding Media (Images or Video) to Messages

This section discuss the information you need to know to get the best results when adding image o video files to Messages or Templates.

Adding Images to Messages or Templates

When you add Images to Messages or Templates you need to consider two factors:

1. The aspect ratio of the image and the aspect ratio of the rectangle used to display this image.
2. The resolution of the image. Images should not exceed 1280 pixels in width and 1024 pixels in height as screens used in most installation do not normally exceed this resolution.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.

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 ration 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 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
- The vector format.WMF

CMYK formats are not supported.

Adding Video to Messages or Templates

You can add videos to Message or Templates to display the video on one or more of your screens.

When you add a Video to Messages or Templates that support them, you need to 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. The video property name will describe the aspect ratio of the rectangle used to display the video e.g. VideoField16x9 has a 16x9 aspect ratio. Aspect ratio is the ratio of height to length for video and images. 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. Consult the table of supported Video and Audio codecs below
- The size of the video file must not exceed 2GB

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.

The following video file formats are supported:

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

NOTE

Composer will allow users to upload other container formats in order to support legacy systems, but the use of these container formats is not supported. You should only use the supported container formats.

NOTE

AMX does not support .vob files which contain Linear PCM, AC-3 (also known as Dolby Digital), or DTS audio. You can check what codecs a particular video file uses by analyzing it with the Windows free-ware program MediaInfo.

We advise that 1080p video should only be played full-screen - never in a Layout area belonging to a multi area Layout. Video played inside one of a number of Layout areas should be at most 720p. 1080p MPEG2 files should not exceed 20Mbps. 1080p MOV files containing H.264 should not exceed 10Mbps. For lower resolutions the bandwidth should drop proportionally.

Playing Audio

The IS XPert system can be used to play audio continuously or at scheduled times. The IS XPert System has an Audio Playlist which works in a similar way to a MP3 Playlist. The Audio Playlist is set to repeat by default. The following Audio File types are supported:

- 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 the Audio Message created in the previous step to the Audio Playlist
3. Optional - To play the audio at set times rather then continually you need to set the validity on the Audio Message using the Content Management > Messages > Set Message Validity task, the Audio will only play when the Message is valid.

Intermediate Section

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:

- LiveMedia - 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 controlled and monitored from within this application, see the RMS Integration section below for more details.

LiveMedia - Displaying a Video Stream in the Main Layout Area

All Inspired Signage Players can be configured to display network video streams (network LiveMedia). Some Inspired Signage Players (IS-Player-200LM) have a video capture card which can be configured to display analogue video streams connected to the Player in a part of the screen (an area in the current layout), this is known as local LiveMedia. The process is as follows:

1. Configure a Player to display a video stream using the LiveMedia section of the Player Web Configuration tool. Repeat this process for each Player you want to display this video stream.
2. Create a Message based on the Template LiveMedia_Aflex_Item
3. Add the newly created LiveMedia Message to the appropriate LiveMedia Playlist. Publish the updated Playlist to the relevant Player(s).

These steps are discussed in detail below.

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

Configuring Network Live Media (All Player models)

Create a network video stream as follows:

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 only supports MPEG2 or H264/MPEG4 UDP video streams.
3. Enter the UDP port for the Network video stream, contact your network administrator for this information.

Configuring Local Live Media (IS-Player-200LM only)

Configure a local analogue video stream as follows:

1. Each IS-Player-200LM has three analogue video inputs (Composite, SVideo, and Component). Connect your video stream to the correct input.
2. Select the correct video format (PAL, NTSC, etc.) for this input in the local live media table. Click in the video format column to activate the drop down menu of video formats, see FIG. 12 for an example.

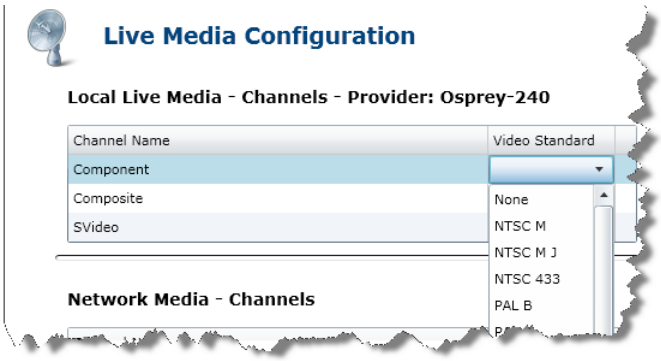


FIG. 12 Inspired Signage Live Monitor - Player Configuration

Step 2 - Create a LiveMedia Message

Create a LiveMedia 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 other Template, LiveMedia_Aflex_ExternalControl_Item is used when you wish 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 must match a channel name in the Player LiveMedia configuration (Step 1 part 1 above),
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 more detail below.
9. Set/Clear the **Mute** check box to mute/unmute the video stream audio.
10. Click **Save** to create the LiveMedia message.

Step 3 - Add the LiveMedia Message to the LiveMedia Playlist and Publish the Updated Playlist

Next we need to add the newly created LiveMedia Message to the LiveMedia Playlist. By default there is one LiveMedia Playlist.

NOTE

You need to create another LiveMedia Playlist if you wish to display this video stream in a different area of the current Layout.

Add the newly created LiveMedia Message to the default LiveMedia Playlist as follows:

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 and click **Insert Messages** to add this Message to the 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.

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

LiveMedia - Displaying a Video Stream in a Different Layout Area

This sub-section describes how to display a video stream in another Player Layout Area. Note that you should 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.

Display a video stream in a different Layout Area as follows:

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

Effects of Horizontal and Vertical Zoom Factors

Use horizontal and vertical zoom factors to remove black borders around video streams and to adjust the aspect ratio of the video stream. Examples of such usage are given below:

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

FIG. 13 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.

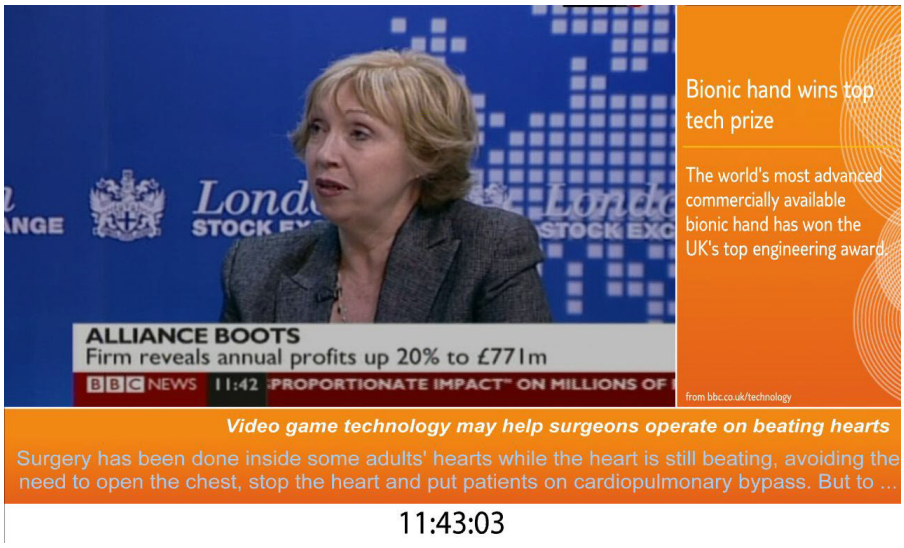


FIG. 14 Live Media Message with zoom settings used to eliminate black borders around the video stream

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

Data Feeds - Displaying Data on Players

Inspired Signage Players can display Data Feeds in one or more areas of the screen. Example Data Feeds include RSS news feeds, Twitter, 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.

AMX support two different feed engines. The feed engine built into each Player, called Internet Feeds and the separate XPort feed engine. The XPort feed engine is an optional extra component (the XPort Server) that can be purchased from AMX. With Internet Feeds, each Player fetches feed data directly from the feed source. This can be inefficient when you have large numbers of Players each requesting the same data. With XPort feeds, the feed data is fetched by the XPort Server. In this configuration the Players request feed data from the XPort Server. This places less demands on the feed source and supports larger number of feeds. XPort also offers an framework which can be used by .NET programmers to create their own feed handlers.

The following discussion describes the built in feed mechanism, Internet Feeds. XPort Feeds work in a similar manner but the Feeds are created using the XPort web application. You can then select which XPort feeds to display on each Player. Refer to the XPort Feed Engine Operation/Reference guide for an explanation of how to use XPort Feeds. AMX recommend that you learn how to use the default Internet Feeds before progressing to use XPort.

Internet Feeds provide a number of predefined Data Feed handlers for the most common scenarios so you can easily view these Data Feeds on screen. See the table below for a list of predefined Data Feed handlers. Using the configuration settings of the Data Feed handler you can select which elements of the Data Feed are displayed on screen and add basic formatting.

Data Feed Handlers	
Feed Name	**Description**
RSS or Atom	Display RSS or Atom news feeds
Yahoo Weather	Display Yahoo Weather data for a location
Google Spreadsheets	Display Google Spreadsheet data
Flickr / Google Picasa web album	Display web photo album(Picassa, Flickr, etc.)
Yahoo Stock Data	Display Yahoo Stock price or index data and charts
Google Calendar	Display events from a Google Calendar
Twitter	Display tweets
Generic	Display XML data

Data Feed IDs

Each Data Feed that you create in the Player Web Configuration Tool has a feed identifier: the Feed:ID that you provide when you create the Feed (see the example below). 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 Feed:ID in the Web Configuration tool. When these two Feed:IDs match, the contents of the Data Feed are used to populate the other properties of this Message.

If you want to display the same Feed on multiple Players then you need to configure exactly the same Data Feed with the same Feed:ID on each Player that will display this Feed. 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 Web Config Feed:ID 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:ID 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 Feed:ID 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 creating Feed:IDs. 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 IDs 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:IDs do not contain a common prefixes. For example, you could use Feed:IDs like AFEED, BFEED, CFEED, DFEED, etc.

You could also use the same Feed:ID on multiple Players to display slightly different Feeds on a number of Players. For example, you could configure a FeedReel Message to display Weather data and then configure different Players to show the Weather from different parts of the country using the same Feed:ID in each case.

The Process of Creating and Displaying Internet Feeds

Create and display data feeds as follows:

1. Create the same data feed with the same Feed Identifier (Feed:ID) on all the Players you want to display this data feed.
2. Preview the data feed and use the expressions builder section of the Preview screen to select and format the data you want to display.
3. Create a FeedReel Message in Composer. Copy the field tags or expressions in step 2 into the Message Property Fields.
4. Assign the FeedReel Message to a Playlist which is configured to publish to all the Players (Publish Points) in step 1 above.
5. Publish the updated Playlist to these Players. The data feed will now be displayed on screen.

These steps are described in more detail over the following pages.

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.

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

Stage 1 and 2 - Create a News Feed on the Player and Preview it

Login to the Player Web Configuration Tool

Login to the Player Web Configuration tool on the Player you wish to configure using the following credentials:

- Default Username - Administrator
- Default Password - administrator

Check with your network administrator whether access to the internet is restricted by a Proxy Server. You also need to ask for the Proxy Server IP address and authentication details.

Enter Proxy Server Details - If Access to the Internet is Controlled by a Proxy Server

If access to the Internet is not restricted skip to the next step Create the News Feed

If Internet access is restricted by a Proxy Server, proceed as follows:

1. Select **Data Integration** from the menu pane.
2. Select **Use Proxy Server**.
3. Enter the Proxy Server IP address.
4. Select the correct Authorization mode.

Create the News Feed

Create a News Data Feed on the Player as follows:

1. Select **Data Feeds**
2. Click **New Feed** to start creating a new data feed
3. Click the feed type drop down menu and select **RSS or ATOM feed**
4. Enter a string of characters as the feed identifier, for example **BBCBusiness** - make a note of the identifier, this feed identifier must be the same on all Players which display this data feed.
5. Enter a news feed URI e.g.

   http://newsrss.bbc.co.uk/rss/newsonline_uk_edition/business/rss.xml

News Feed URIs can be found by looking for an icon similar to the following on the web page of the feed you want to display:

FIG. 16 RSS Icon

Copy the link location for the news feed into the News Feed URI field.

6. Select a way to order the stories in the news feed, for example by reverse chronological order (the most recent news stories are shown first).
7. Enter the number of feed stories to publish. 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 **Save** to save the feed setup otherwise the changes will be lost.

9. Click **Generate Preview**, you should see a screen similar to FIG. 17. showing 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.

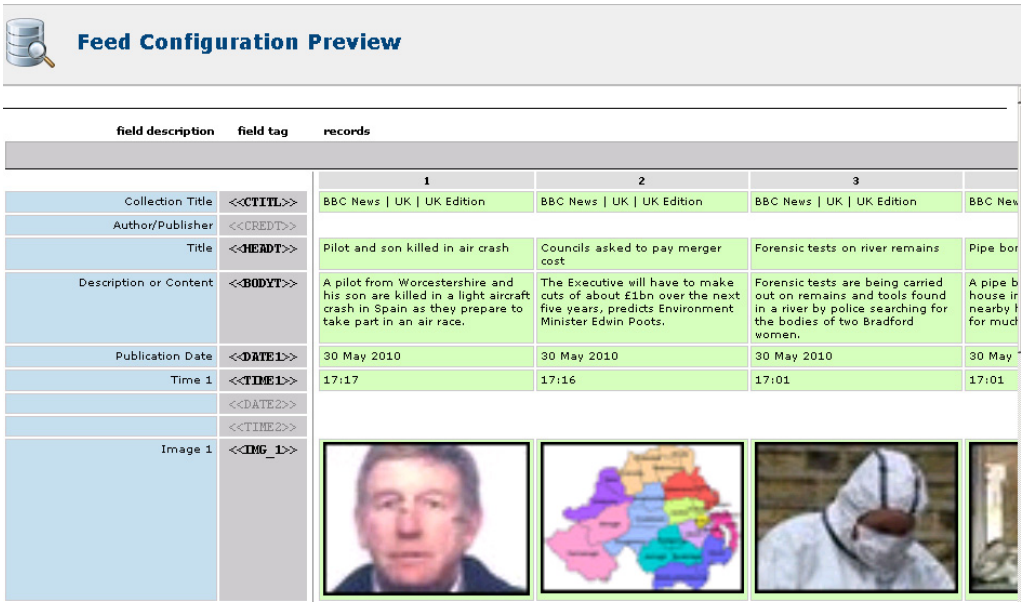


FIG. 17 News Feed - Data Preview

10. 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 puts 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. 18 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. You can also make more complicated expressions as follows:
    f. Click on a cell in another row to add this Field Tag to the Expression Builder.
    g. Enter text and spaces to format the data, continue the process until you have achieved the desired result.
    h. Copy the expressions and/or field tag names you want to use into a text editor like notepad for use in the next stage.

Stage 3 - Create a FeedReel Message for the News Feed in Composer

Create a Feed Reel Message for the News Feed as follows:

1. In Composer select the Content Manager section
2. Select the Message sub-section
3. Click **Create Message**
4. Enter FeedReel in the Search Bar so that only FeedReel Templates are displayed
5. 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

6. Rename the Message to something recognizable such as Midnight A10x1 BBC Business.
7. Enter the Feed ID for the feed you want to use in the Feed:ID property, in this case BBCBusiness.

8. Copy the Field Tags or Expressions created in Stage 3 into the Message properties you want to display the feed data. See FIG. 18 for an example.

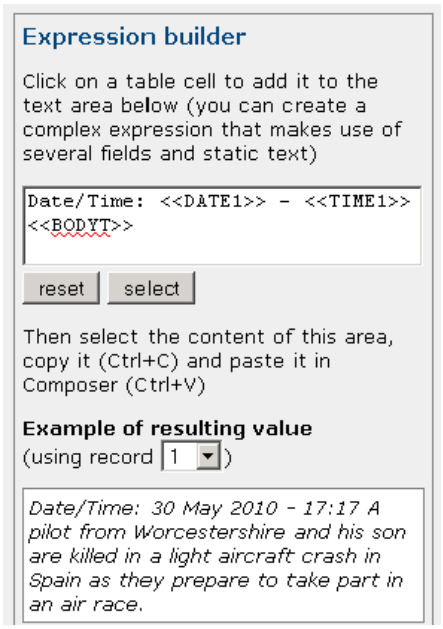


FIG. 18 News Feed - Using the Expression Builder

NOTE

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

The Message Property Values should be configured as follows:

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

Stage 4 - Assign the Newly Created FeedReel Message to an Area Playlist

Assign the newly created FeedReel Message to the Playlist Area Playlist 10x1 Primary as follows:

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

Stage 5 - Publish the updated Playlists

Check that the Playlist is being sent to all the Players which you configured in Stage 1.

1. Go to the Content Management section.
2. Select the Playlist sub-section.
3. Select the Playlist Area Playlist 10x1 Primary.
4. 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.

Publish the Updated Playlist as follows:

5. Click the Publish icon in the Toolbar to show the Publish menu.
6. Click **Publish Content Change**s.
7. Go to the Web Configuration Tool on the Player(s) you want to display this Feed.
8. Select Data Integration and click **Stop** followed by **Refresh Data Now** and then **Start** to force the Player to fetch the News Feed.
9. 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. 22.

FIG. 19 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.

NOTE

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.

The Internet Feed mechanism built into IS XPert Players currently support the following feed type as well as RSS: Yahoo weather feeds, Yahoo stock feeds, Twitter, web photo albums such as Flickr and Picasa, Google spreadsheets, generic XML, and Google Calendar

NOTE

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.

NOTE

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 Livemedia, etc. on Players at predefined locations.Note that you can use RMS Macros to control multiple Players.

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.

RMS Setup 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 by entering http://<Player IP> into your web browser and entering a user name and password. Default values are administrator, administrator
2. Select the **RMS** section in the left hand pane.
3. Set the **RMS enabled** check box to enable RMS control/monitoring of this Player
4. Enter the URL of the RMS Server in the **RMS Server Address** field. Ask your RMS Server administrator for this information, for example **http://rms-server.com/rms**
5. Enter a unique name to identify this Player within RMS in the Client Gateway Field. IS XPert Players act as Client Gateways in RMS as do 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 the **Time Synchronization** check box to set and synchronize the Player date/time to that of the RMS Server. 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, if you set this check box then you can no longer modify the Player time/date settings in the Regional Configuration section.
8. Click Test to check the connection, 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.

RMS Setup 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 mentioned over the following pages.

Display RMS Messages

Display a message from RMS on Players at chosen RMS location(s) as follows:

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** dialogue.
4. Expand the location hierarchy to find the location or locations you want to send the message to, see FIG. 20 for an example.
5. Set a check box to the left of a location name to select that location. Repeat until you have selected all the locations you want to send the message to.
6. Click *Next* to continue.
7. Perform one of the following steps:
   - Select a predefined message from the drop down menu. See FIG. 21 to FIG. 25 for examples of predefined messages.
   - or proceed as follows:

     Select a message type, see the **Table of Message Types** for a list of message types.
     Enter a message title in the **Title** field, use a maximum of 51 characters.
     Enter message text in the **Message** field, use a maximum of 129 characters.

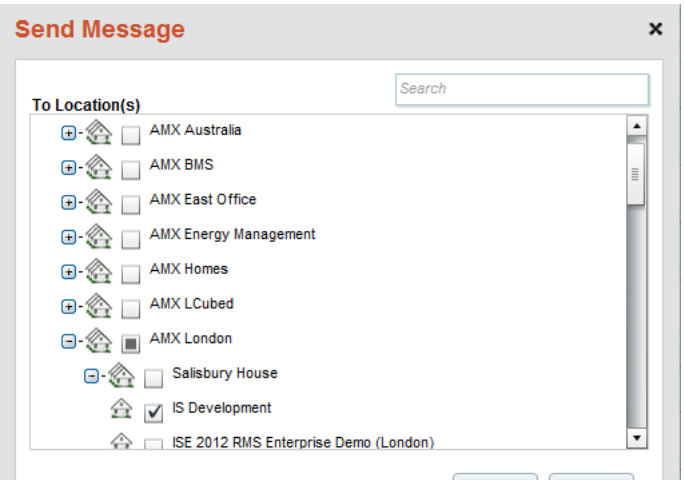


FIG. 20 Select the Location or Locations to send the message to

NOTE

Only windows-1252 characters are supported in message text- in practise this means that all western european languages can be used, however indian, chinese, japanese, russian languages, etc are not supported.

Table of Unsupported Symbols in RMS Message Text
Unsupported Symbols
¬
¦
<
>
/
|

8. Set/clear the **Modal** check box to determine whether a message will automatically clear or not after a given time interval
   - If the **Modal** check box is cleared then the message will remain on screen for the number of seconds specified in the **Timeout** field
   - If the **Modal** check box is set then the message will remain on screen for 15 minutes or until another message is sent to that Player.
9. 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.

Table of RMS Message Types	
Message Type	**Description**
Information	Light blue, see FIG. 24
Warning	Yellow, see FIG. 21
Security	Blue/Purple, see FIG. 22
Critical	Red, see FIG. 23
Question	Green, see FIG. 25

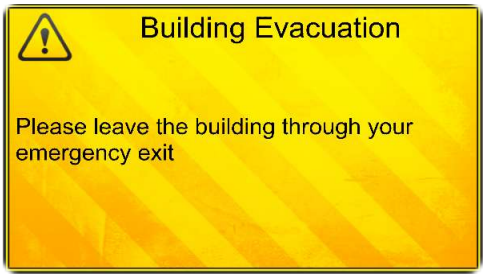


FIG. 21 Building Evacuation - Example Warning Message

FIG. 22 Building Lock Down - Example Security Message

FIG. 23 Critical Condition - Example Critical Message

FIG. 24 Service Level High Priority - Example Information Message

FIG. 25 Is it fixed? - Example Question Message

Monitor Player Parameters

To view monitored Player Parameters proceed as follows:

1. Login to RMS using the user name and password provided by your system administrator
2. Choose **Management** and select **Configure Locations/Clients**
3. Expand the location hierarchy in the left hand group pane and select the location containing the Player or Players you want to monitor
4. The right hand pane shows the Client Gateways associated with this location
5. Select the Client Gateway associated with your Player
6. Select the Client Gateway Assets tab, you should see a asset table
7. Double click the IS XPert Player table entry to open the Asset Management screen
8. Select the Parameters tab to view Player Parameters such as CPU temperature, whether the Player is on or off, etc. See the table below for a list of the Player parameters monitored by default.

NOTE

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 file. 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.

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

Modify 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 Livemedia on/off
- Change the Livemedia 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

You need to allow at least 30 seconds for a change to take effect

These effects are realized by using control methods within RMS. Access control methods as follows:

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 Config 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.

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 livemedia then these control methods will not be available and only the Set Public Variable method with be available.

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)

Display Live Media

To start displaying Livemedia

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

To stop displaying livemedia

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

In order for this to work you must have published a Livemedia 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 Livemedia channels in the Livemedia 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

To change the live media channel

1. Select **Live Media Channel** from the Select Control Method pane
2. Choose the livemedia channel to display from the **Select Live Media Channel name** drop down menu
3. Click *Execute Control Method*

In order for this to work you must have published a Livemedia 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 Livemedia channels in the Livemedia section of the Player Web Configuration tool. If everything is set up correctly then you will have the public variable LiveMedia:Show and LiveMedia:ChannelName on this Player. To verify, login to the Player Web Configuration tool and select the Public Variable section, these variables 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** check box
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** check box
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.

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*

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.

Set Public Variable

Set a Player public variable to a new value as follows:

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

In this section we introduce some more background theory followed by some advanced techniques which use this theory to add more 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)
- Filtering, Ordering and Grouping the output of your Data Feeds
- Controlling devices attached to the Player serial port

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. 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 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 - these 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* section on page 43. 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 - 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.

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* section on page 51.

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_<Sub-Name>.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>_LiveMe-dia.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 offer 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 - used 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

Setup Playlist Restrictions using labels as follows:

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, its default value is 3,1,1.

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

FIG. 26 explains each of the series of three numbers that make up the public variable PlaylistControl:SelectCounts used to control Playlist Mixing. This variable is set to 3,1,1 by default.

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

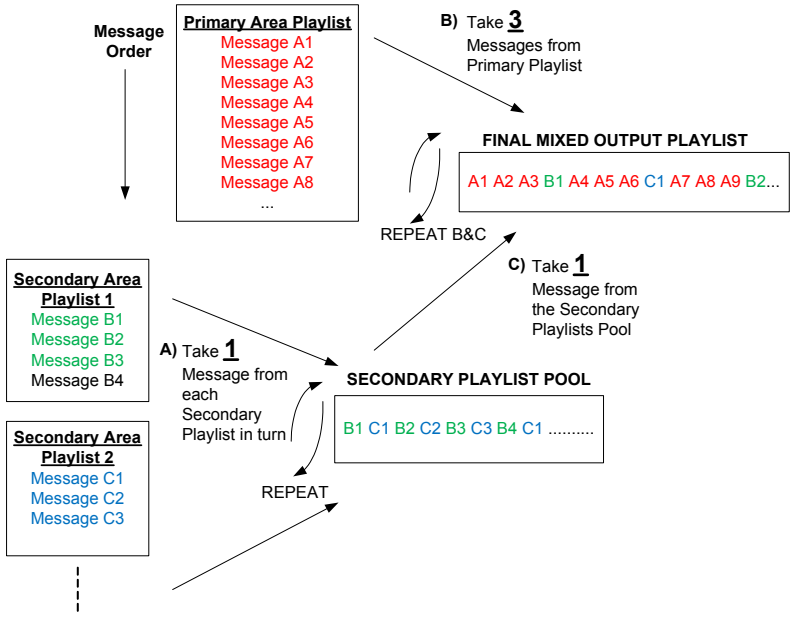


FIG. 26 Default Playlist Mixing Rules - Public Variable PlaylistControl:SelectCounts set to 3,1,1

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, this means 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. See FIG. 27 for another example.

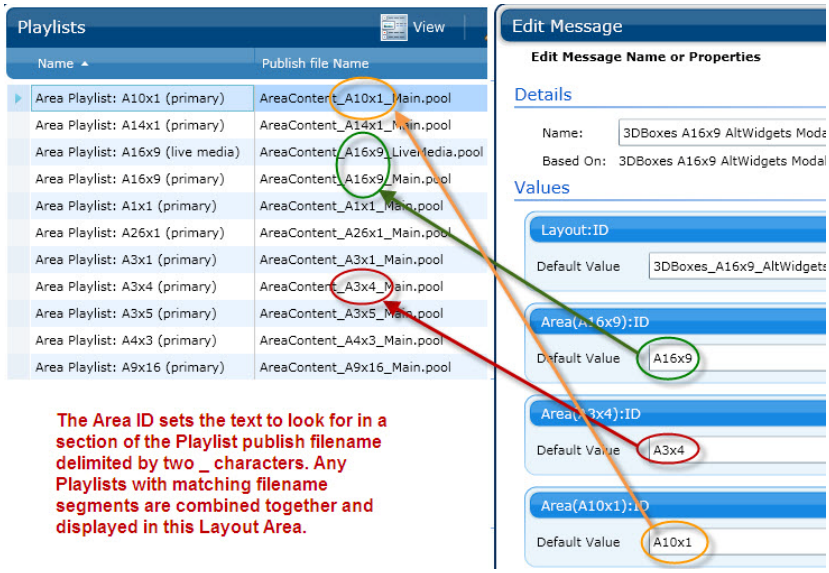


FIG. 27 Link between Area Playlists and Layout Messages

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. 28 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.

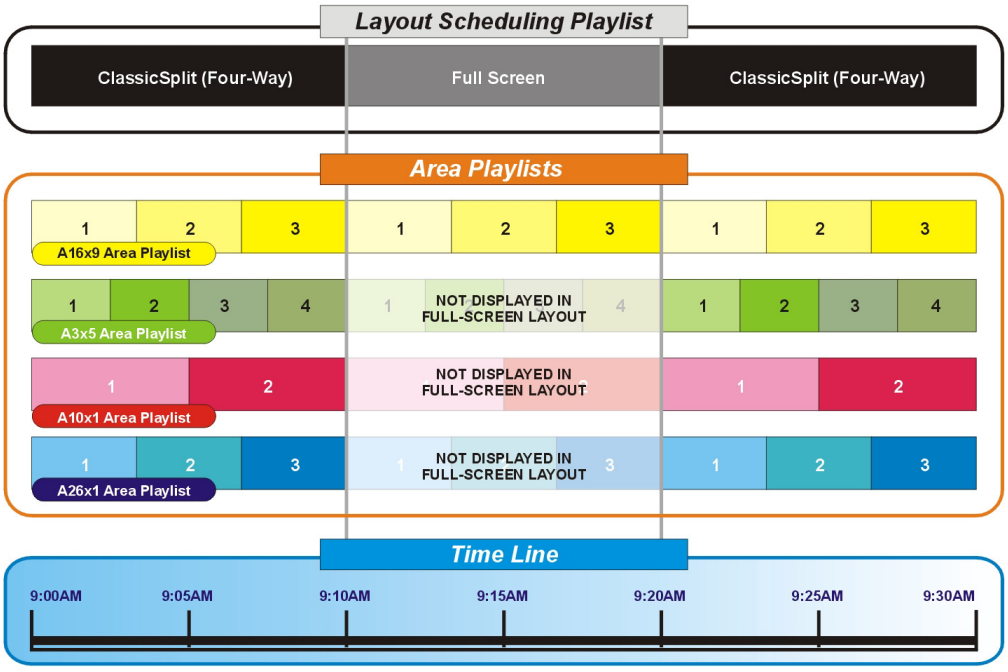


FIG. 28 Interaction between Layout Scheduling Playlist and Area Playlists

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. 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 Pools, User Groups, and Permissions in the *Composer Help* or the *Composer Operation/Reference Guide.*

7. 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 sub-section describes how to display a Portrait Layout on one Group of Players and a Landscape Layout on another group of Players. The same technique can be used to display different Area, Override, or Overlay Playlists on different groups of Players. The process is as follows:

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 and the Landscape Layout Playlist to publish to the Landscape Player Set.
5. Publish the Playlist changes.

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

Create a New Layout Playlist for use with Portrait Players as follows:

1. Select the Content Management section of Composer.
2. Select the Playlists sub-section.
3. Click **Create Playlist.**
4. Name the Playlist Portrait Layout and use LayoutSelect.pool as the Playlist Filename.

Next, select the standard Layout Playlist and rename it Landscape Layout.

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

5. Select the Player Management section of Composer.
6. Select the Publish Point sub-section.
7. Create a Publish Point called Landscape.
8. Create a Publish Point called Portrait.
9. Select the Landscape Publish Point and click **Add Players to Publish Point.**
10. Select all the Landscape Players.
11. Select the Portrait Publish Point and click **Add Players to Publish Point.**
12. Select all the Portrait Players.

Step 4 and 5- Change Playlist Publish Points for Landscape and Portrait Playlists

1. Change the Publish Points for the Playlists in Step 2 as follows:
2. Choose the Content Management section of Composer.
3. Select the Playlists sub section.
4. Select the Landscape Layout Playlist and click **Edit Playlist Publish Points.**
5. Select the Landscape Player Set created in Step 3.
6. Select the Portrait Layout Playlist and click **Edit Playlist Publish Points.**
7. Select the Portrait Player Set created in Step 3.
8. Select the Publish Menu from the toolbar.
9. Click **Publish Content Changes** and wait for the Players to update.

Multiple Users - Introduction to Resource Pools and User Groups

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

- User Groups
- Resource Pools

These features are discussed in more detail below.

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 Operation/Reference Guide 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 that 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.

Introduction to Public Variables - Using the Public Variable Section of the Web Configuration Tool

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. 29. 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 or cancel this change, alternatively you can delete the variable completely, or reset its value back to the default setting. Note that Public Variables retain their value when the Player is restarted.

FIG. 29 Modifying Public Variables in the Player Web Configuration Tool

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.

You can get feedback on the result of using an Override Filter by examining the variable OverrideControlOveride: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_A10xl_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.

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>/player/setpublicvariable.html?[varname]=[value]

Get a list of all public variables, as an XML document
http://<player ip>:25001/proxy/player/default/publicvariables.xml

the name/value pairs are returned in XML format as follows:
<value name="[varname]">[value]</value>

Get a single public variable, as an XML document
http://<player ip>:25001/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>/player/getpublicvariable.html?VarName=[varname]

Reset all public variables to their default value
http://<player ip>:25001/proxy/player/default/resetpublicvariables

Examples
To set the variable Message to the value 'Hello' use the following:
http://<player ip>:/player/setpublicvariable.html?Message=Hello

To fetch the value of the public variable Message as text use the following:
http://<player ip>/player/getpublicvariable.html?VarName=Message

To view the public variables for the Player at IP address 192.168.216.74:
http://192.168.216.74:25001/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/player/setpublicvariable.html?LiveMedia:ChannelName=ChannelOne

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

Process for 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.

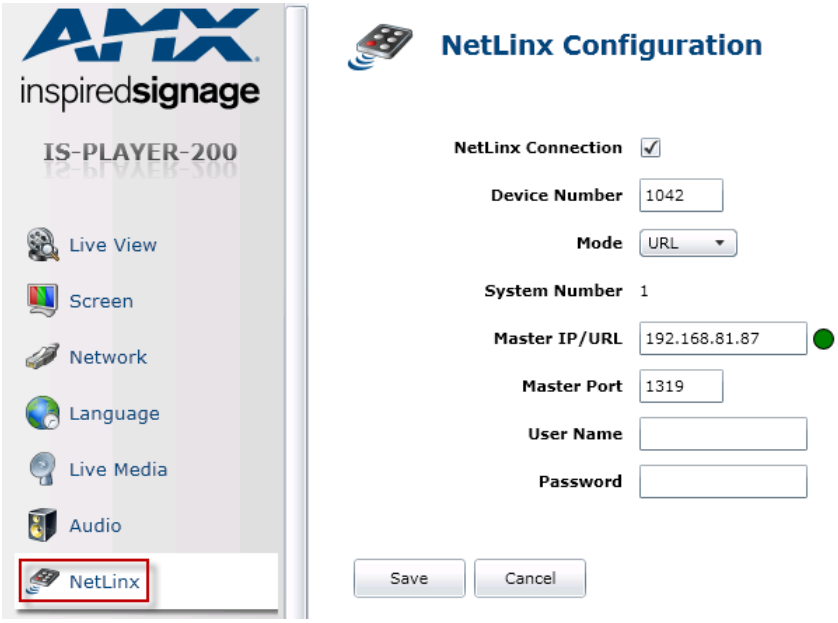


FIG. 30 Configuring Netlinx

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

Create and test Netlinx code based on the following example:

Create code to define the Player or Players in your system 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 set in Step 5 *)
```

[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)

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'
}
```

Filtering/Grouping and Ordering your Data (Internet Feeds)

This section describes how to filter, order, and group the output of Internet Feeds. Once you have configured a data feed and previewed it to check that you can view your data, the next step is to manipulate this raw data before display using the advanced feed properties. These properties are used in a similar manner to basic SQL queries. For example you could group calendar entries that occur on the same day in a Google Calendar feed and then sort these entries using time order to present a day view of your calendar.

The order in which the different data manipulation operations are applied is as follows:

1. Filtering - filter in/out records based on certain conditions
2. Ordering - order remaining records based on the values in certain fields
3. Grouping - group several separate input records into one output record either by combing records which have one or more fields with the same value or by combining a specified number of consecutive records (paging)

You can see the effect of these advanced properties by previewing the feed a second time once you have set the relevant advanced properties.

Setting Advanced Properties for Feeds

To add advanced properties to a feed. Select the feed in the data feed section of the Player Web Configuration Tool and click **Advanced Property** under the Feed URI field, see FIG. 31.

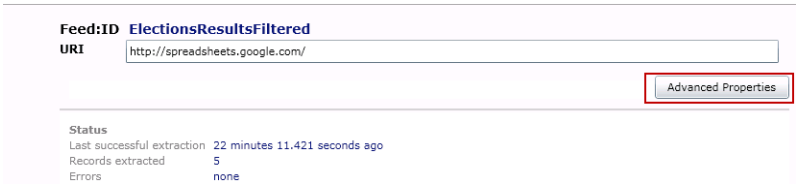


FIG. 31 Advanced Properties

Advanced Properties consist of name/value pairs in two columns on the screen, see FIG. 32 for an example. Click **Add Parameter** to add a property, two fields appear. Enter the Property Name in the left hand field and the Property Value in the right hand fields. Click **Delete** to remove a Property.

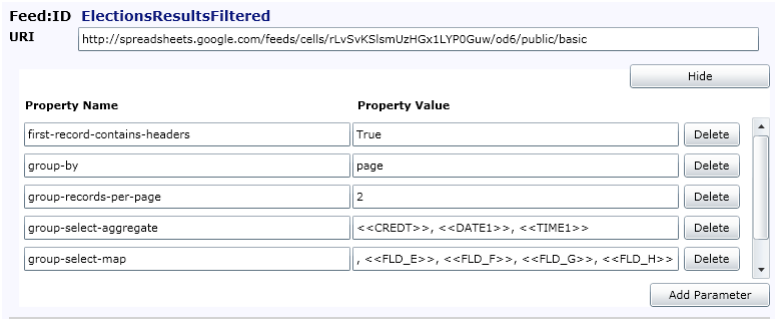


FIG. 32 Some Example Advanced Property Name/Value pairs

Filtering/Ordering Properties

The properties in this subsection are used to filter and/or order records. For each parameter we show the parameter name followed by a description of the different values accepted by this parameter.

filter-by

The filter-by parameter allows you to set conditions that must be met by input records for this record to be included in the output recordset. Conditions are expressed in the format:

```
<FIELD NAME> <OPERATOR> <VALUE> (optional),
<FIELD NAME> <OPERATOR> <VALUE> (optional)
```

This is loosely equivalent to an SQL WHERE statement. The available operators are shown below:

Condition Operators	
Condition Operator	**Description**
ne	test whether two values are not equal
gt	tests whether the first value is greater than the second
ge	tests whether the first value is greater than or equal to the second
lt	tests whether the first value is less than the second
le	tests whether the first value is less than or equal to the second
eq	tests whether two values are equal
is-empty	tests whether a field has no value
is-not-empty	test whether a field has a value
contains	test whether the first value contains the string

Example:

```
filter-by <<FLD_A>> is-not-empty, <<FLD_B>> gt 0, <<FLD_G>> contains boardroom
```

order-by

Specifies how to order records in the recordset based on the value of one or more fields. You can order the records in ascending order using the keyword **asc** or descending order using the keyword **desc**. Sorting criteria are expressed as follows:

```
order-by <<FIELDNAME>>(asc|dec)
```

Example:

```
order-by <<DATE1>> desc, <<CREDT>> asc
```

The records are first sorted using the values in the DATE1 field in descending order. The fields which have equal DATE1 field values are then sorted in ascending order using the second field, CREDT.

Grouping Properties

This sub-section describes some properties you can use to group records.

group-by

Concatenates records with the same values for specified fields to create a smaller output set of records. Loosely equivalent to an SQL GROUP BY clause. If **group-by** has the value **page** then records are not grouped by a field value, instead a number of consecutive records are combined together. The number of records is set by the **group-records-per-page** parameter.

Note that we are limited to the 26 additional fields from <<FLD_A>> to <<FLD_Z>>. When you concatenate records you may come close to this limit, as a result you may have to select which of the original fields to keep using the **group-select-map** command.

Example:

```
group-by <<FLD_A>>, <<FLD_B>>
```

This groups records with the same value in the first field FLD_A and then further groups the subset of these records which also have the same value in the second field FLD_B.

group-records-per-page

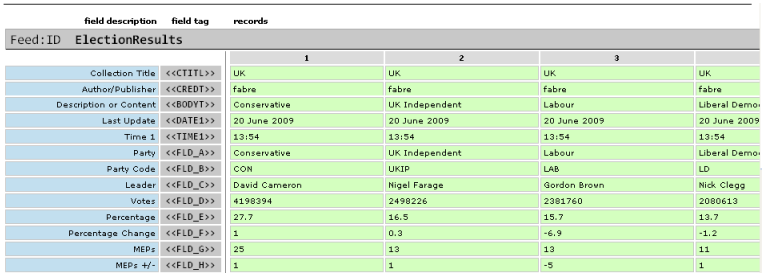
Specifies the maximum number of records that should be combined into a smaller set of records through grouping. If the **group-by** parameter is not specified or has the value **page** this defines how grouping is done creating 'pages' of records in the order defined by the **order-by** code where present. "Pages" correspond to columns in the feed preview screen.

Note that we are limited to the 26 additional fields from <<FLD_A>> to <<FLD_Z>>. When you concatenate records you may come close to this limit, as a result you may have to select which of the original fields to keep using the **group-select-map** command.

Example:

```
group-by page
group-records-per-page 2
```

FIG. 34 shows the effect of this command on the output recordset shown in FIG. 33



field description	field tag	records			
Feed:ID	ElectionResults				
		1	2	3	
Collection Title	<<CTITL>>	UK	UK	UK	UK
Author/Publisher	<<CREDT>>	fabre	fabre	fabre	fabre
Description or Content	<<BODYT>>	Conservative	UK Independent	Labour	Liberal Democ
Last Update	<<DATE1>>	20 June 2009	20 June 2009	20 June 2009	20 June 2009
Time 1	<<TIME1>>	13:54	13:54	13:54	13:54
Party	<<FLD_A>>	Conservative	UK Independent	Labour	Liberal Democ
Party Code	<<FLD_B>>	CON	UKIP	LAB	LD
Leader	<<FLD_C>>	David Cameron	Nigel Farage	Gordon Brown	Nick Clegg
Votes	<<FLD_D>>	4198394	2498226	2381760	2080613
Percentage	<<FLD_E>>	27.7	16.5	15.7	13.7
Percentage Change	<<FLD_F>>	1	0.3	-6.9	-1.2
MEPs	<<FLD_G>>	25	13	13	11
MEPs +/-	<<FLD_H>>	1	1	-5	1

FIG. 33 Preview of a spreadsheet feed with no filtering/grouping or ordering properties configured

Author/Publisher | Record 1	<<FLD_A>>	fabre	fabre	fabre
Description or Content | Record 1	<<FLD_B>>	Conservative	Labour	Green
Last Update | Record 1	<<FLD_C>>	20 June 2009	20 June 2009	20 June 2009
Time 1 | Record 1	<<FLD_D>>	13:54	13:54	13:54
Party | Record 1	<<FLD_E>>	Conservative	Labour	Green
Party Code | Record 1	<<FLD_F>>	CON	LAB	GRN
Leader | Record 1	<<FLD_G>>	David Cameron	Gordon Brown	Caroline Lucas
Votes | Record 1	<<FLD_H>>	4198394	2381760	1303745
Percentage | Record 1	<<FLD_I>>	27.7	15.7	8.6
Percentage Change | Record 1	<<FLD_J>>	1	-6.9	2.4
MEPs | Record 1	<<FLD_K>>	25	13	2
MEPs +/- | Record 1	<<FLD_L>>	1	-5	0
	<<FLD_M>>			
Author/Publisher | Record 2	<<FLD_N>>	fabre	fabre	fabre
Description or Content | Record 2	<<FLD_O>>	UK Independent	Liberal Democrat	British National
Last Update | Record 2	<<FLD_P>>	20 June 2009	20 June 2009	20 June 2009
Time 1 | Record 2	<<FLD_Q>>	13:54	13:54	13:54
Party | Record 2	<<FLD_R>>	UK Independent	Liberal Democrat	British National
Party Code | Record 2	<<FLD_S>>	UKIP	LD	BNP
Leader | Record 2	<<FLD_T>>	Nigel Farage	Nick Clegg	Nick Griffin
Votes | Record 2	<<FLD_U>>	2498226	2080613	943598
Percentage | Record 2	<<FLD_V>>	16.5	13.7	6.2
Percentage Change | Record 2	<<FLD_W>>	0.3	-1.2	1.3
MEPs | Record 2	<<FLD_X>>	13	11	2
MEPs +/- | Record 2	<<FLD_Y>>	1	1	2

FIG. 34 Preview of group-records-per-page 2

group-select-map

When record grouping takes place, this function defines the list of fields from the original input set of records to extract and remap in the smaller output recordset. After grouping, original fields are mapped onto new ones in the output recordset with different names.

If **group-records-per-page** is not defined (or is 0), the number of fields in the value for this parameter will define how many original records are combined in the output set of records.

Example:

```
group-select-map <<FLD_A>>, <<FLD_B>>, <<FLD_C>>
```

FIG. 35 shows the effect of this command on the output recordset shown in FIG. 33

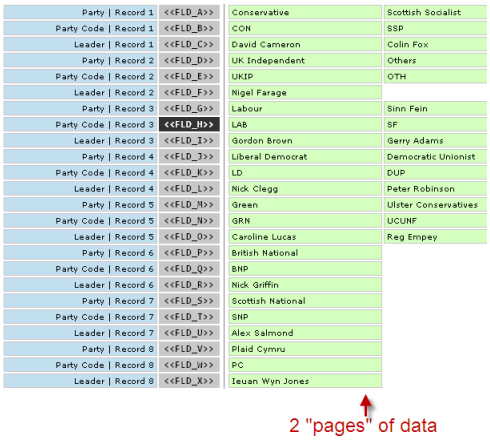


FIG. 35 Preview of group-select-map <<FLD_A>>, <<FLD_B>>, <<FLD_C>>

group-select-aggregate

When grouping takes place this section defines a set of fields to populate by summarizing (aggregating) information from the original records being grouped. Conditions are expressed in the following format:

(function) <<FIELDNAME1>>, (function) <<FIELDNAME2>>....

Aggregate Functions	
aggregate function	**description**
first	selects the first value for that field
last	selects the last value for that field
min	selects the minimum value from the matching records for the output field
max	selects the maximum value from the matching records for the output field
count	count the number of records with a value for this field
count-distinct	count the number of records with a value for that field where that value is distinct (different from all others)
sum	computes the sum of all numeric values for that field
avg	computes the average (mean) of all numeric values for that field
csv	builds a comma separated list of all values for that field
concat	builds a string from all values for that field (separated by a blank space)

Example:

```
group-select-aggregate min <<DATE1>>, min <<TIME1>>, max <<TIME2>>
```

group-limit-pages-per-group

Default=0

When record grouping takes place, this specifies the number of resulting "page" records to generate for each grouping key. If group-by is not defined or has the value **page** then this parameter acts in the same way as **limit-records**

Example:

```
group-limit-pages-per-group 1
```

FIG. 36 shows the effect of this command on the output recordset shown in FIG. 33

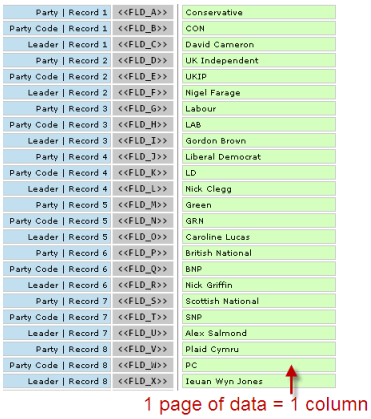


FIG. 36 Preview of group-limit-pages-per-group 1

limit-records

Default=0

Specifies the maximum number of records to output after processing. This is used as a last stage after data filtering, sorting, and grouping. This parameter is typically used to reduce the size of large unfiltered feeds. Together with the **filter-by** parameter it offers an easy way of creating effects such as the five most recent news stories. If this parameter is not specified, is empty, or 0 the number of records is not limited. This parameter is loosely equivalent to the LIMIT statement in SQL

Example:

```
limit-records 5
```

disable-grouping

Temporarily disables the grouping feature. This allows a user to quickly check (by previewing) what the original fields are (before grouping)

Example:

```
disable-grouping
```

Formatting Parameters

culture

Specifies the culture (language and format) to use to post-process the extracted data. The name must be a valid RFC 4646 language code (commonly known as IETF language tag) supported by the platform on which FlexData is executed. See the column, Culture Name, in the Microsoft National Language Support Page for a reference for Windows systems. If this parameter is not defined, Flexdata will use the system default (which for IS XPert is defined in the Player Web Configuration Tool)

Example:

```
culture en-GB
```

formatstring-date

Default=D

Specifies the format to use to represent date in output data. The format string must be a standard or custom format pattern for the expression of date strings as defined by the Microsoft.NET Framework, see http://msdn.microsoft.com/en-us/library/system.globalization.datetimeformatinfo.aspx . If the parameter is not specified the Long Date pattern for the current culture is used. E.g. dddd, MMMM dd, yyyy

formatstring-time

Default=t

Specifies the format to use to represent dates in the output data. The format string must be a standard or custom format, see http://msdn.microsoft.com/en-us/library/system.globalization.datetimeformatinfo.aspx

If the parameter is not specified, the Short Time pattern for the current culture is used

Miscellaneous Parameters

first-record-contains-headers

default=false

Some types of feed (in particular CSV recordsets and spreadsheets) contain column headers in the first record. Set this to true to instruct FlexData to ignore these records (and use them as field labels)

Example:

```
first-record-contains-headers True
```

csv-delimiter

default=,

Field separator for CSV files, defaults to ','

Example:

```
csv-delimiter ;
```

record-node-name

Used with XML feeds only, this is the name of the XML nodes containing data records. If you omit this parameter then the data engine will attempt to automatically identify the correct nodes. As an example, if you had an XML feed similar to the XML code following this paragraph then you would set record-node-name to <PLANT>

```
<CATALOG>
   <PLANT>
        <COMMON>Bloodroot</COMMON>
        <BOTANICAL>Sanguinaria canadensis</BOTANICAL>
        <ZONE>4</ZONE>
        <LIGHT>Mostly Shady</LIGHT>
        <PRICE>$2.44</PRICE>
        <AVAILABILITY>031599</AVAILABILITY>
   </PLANT>
   <PLANT>
        <COMMON>Columbine</COMMON>
        <BOTANICAL>Aquilegia canadensis</BOTANICAL>
        <ZONE>3</ZONE>
        <LIGHT>Mostly Shady</LIGHT>
        <PRICE>$9.37</PRICE>
        <AVAILABILITY>030699</AVAILABILITY>
    </PLANT>
```

It is essential that you use the record-node-name parameter if you have an XML feed that may only contain one data record as the automatic mechanism that selects the nodes containing data records needs at least two records to work.

Serial Control

AMX provide the ability to control devices (e.g. Monitors, TVs and Projectors) attached to a Player's serial port.

Configuring the 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

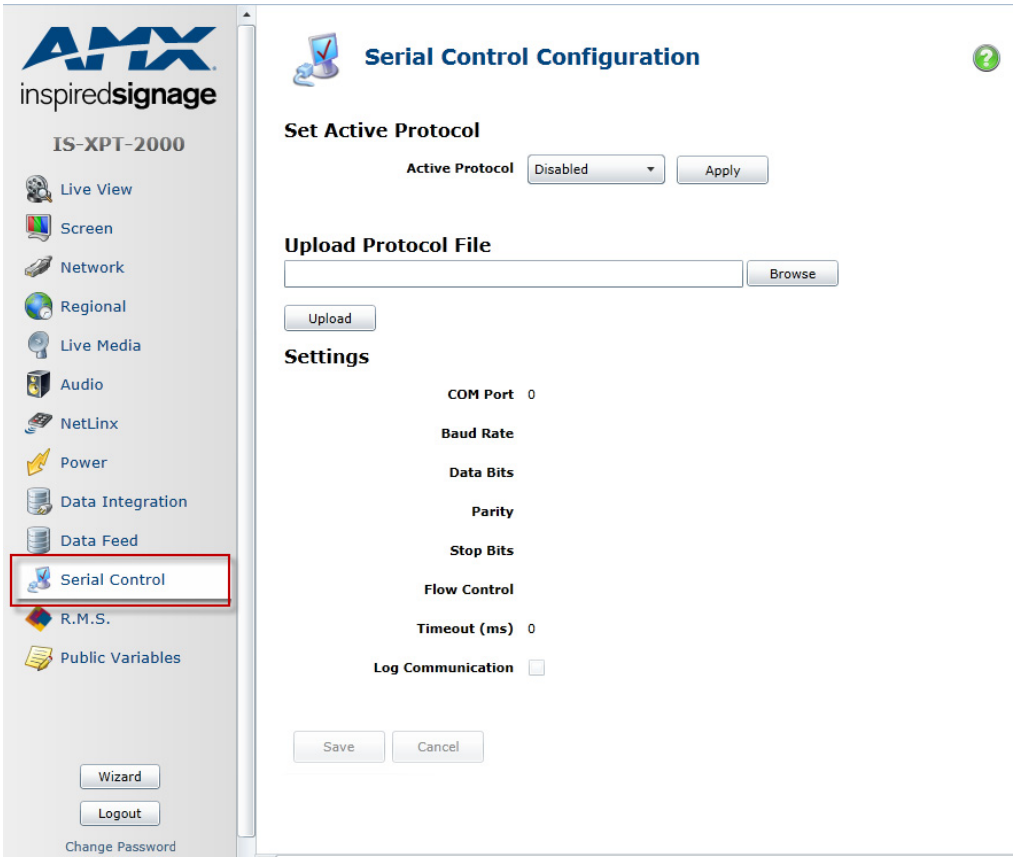


FIG. 37 Serial Control Configuration Page

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.
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
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*

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 if you want to use a hex value prefix the value with an %.

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.

You can enter values in HEX notation if you precede each two byte hex value with an % 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

http://192.168.1.100:25002/serialcommand.html?command=%ff%00%10%0D

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

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

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

Activate a named protocol

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:

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

Send a command to turn the screen on

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

Send a command to set the volume to 23

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

Send a command string to the display

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

Activate a named protocol

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

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

NOTE

HTTP GET request arguments should be properly URL encoded e.g. http://....?Message=Hello%20WorldSpace = %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://isprotocoleditor.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

FIG. 38 AMX Serial Protocol File Editor

Troubleshooting

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

A Layout has an 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* section on page 44.

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 accidently turned on LiveMedia for this Layout Area. See “LiveMedia - Displaying a Video Stream in the Main Layout Area” on page 21. 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 “LiveMedia - Displaying a Video Stream in the Main Layout Area” on page 21. 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 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.

You've published a Data Feed 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.

Increase Your Revenue through education + knowledge

In the ever-changing AV industry, continual education is key to success. AMX University is dedicated to ensuring that you have the opportunity to gather the information and experience you need to deliver strong AMX solutions. Plus, AMX courses also help you earn CEDIA, NSCA, InfoComm, and AMX continuing education units (CEUs).

Visit AMX University online for 24/7/365 access to:

- *Schedules and registration for any AMX University course*
- *Travel and hotel information*
- *Your individual certification requirements and progress*

3000 RESEARCH DRIVE, RICHARDSON, TX 75082 USA • 800.222.0193 • 469.624.8000 • 469-624-7153 fax • 800.932.6993 technical support • www.amx.com