Spyeworks 5.4
User Guide

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Spyeworks 5.4 Operations Manual

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Spyeworks Scheduler and Player

Spyeworks Digital Signage Software powers dynamic and robust digital communications over a wide variety of successful digital signage projects in corporate, public and retail locations.

Spyeworks promotes ease-of-use whilst retaining powerful signage building capability with support for a wide range of multimedia formats and unlimited layouts. Backed by the most advanced management platform available today Spyeworks provides a comprehensive digital signage platform geared towards customer satisfaction and empowerment.

Spyeworks can be used in everyday locations including offices, hotels, retail stores, public transport, restaurants and more. Spyeworks brings motion to previously static methods of communications.

Introduction

Spyeworks is a software based digital signage solution that provides content management, scheduling, distribution, playback and network management services. Each player is unique in the digital signage network and can be addressed individually or as part of a group.

Content is registered in the content management database, the genre, multimedia format, duration, display characteristics and associated meta data are recorded for each item. The meta data can be expanded to include custom fields for easy searching at a later stage. Spyeworks currently supports MPEG1, MPEG2, MPEG3 Audio, MPEG4, Windows Media (WMA & WMV), ASF, Apple QuickTime, HTML, Microsoft PowerPoint, BMP, JPEG, TIF and PNG images, Windows Media Streaming, Live Video, Macromedia Flash, WAV audio, AVI, VOB, DVD, Disk Carousels, Digital Signs and scrolling ticker messages.

Each player display can be layered to play out more than one item of multimedia simultaneously; these display layouts can be altered dynamically during playback.

The Spyeworks Digital Signage Management system provides several management functions including hardware auditing, screenshot retrieval, hard disk management, the ability to reboot, execute applications and update the registry, heartbeat monitoring of players, playlist monitoring, version reporting and event management. Players can be polled for current playlist information and can be configured to report any anomalies or playlist changes to a central location. Playback log files are delivered back to a central location for processing by a log file manager. Reports can be retrieved detailing playback of multimedia assets for a specific date or date period.

Terms Used in This Guide

Media Asset -- A multimedia file such as a video or photograph.

Enhanced Asset -- A script used to define a non-file based Media Asset, such as a Live TV source or RSS feed.

Display -- A Plasma Screen, LCD screen, TV or VGA monitor, or Projector.

Player -- The Spyeworks Software that is used to playback multimedia files in a defined layout.

Installation and Configuration

Software Installation

The Sypeworks software is downloaded via the Internet. You are provided an "Activation Key" which authenticates the software.

Spyeworks is provided in three install packages:

- Scheduler
- Network Manager
- Player

If you are installing Spyeworks for a dedicated player device, execute the Player install package. If you are installing Spyeworks on the computer that will be used for scheduling and network management, execute the Scheduler and Network Manager install packages.

When you execute an install package, the Install wizard will display relevant licensing information and will require that you click *Next* to continue to the following installation page. Read the End-User License Agreement (EULA) and if you agree to the terms contained therein, click *I Agree* and then click *Next* to continue.

Select the destination path where Spyeworks will be installed and click *Next* to continue. When installation process has completed, the installer will exit and Spyeworks will be ready for use.

Required Components

The following software components are required for the Spyeworks Player to function correctly:

For Flash® Content Playback: Macromedia® Flash® Player 6.0 or higher. Visit http://www.adobe.com for more information

For MPEG1 & MPEG2 Playback: Microsoft® DirectX 9.0 or higher. For MPEG2 playback you will need to license a CODEC that supports MPEG2 playback. Visit http://www.microsoft.com/directx for more information.

For HTML content playback: Microsoft® Internet Explorer 6.0 or higher. Visit http://www.microsoft.com for more information.

For PowerPoint playback: Microsoft® PowerPoint 2000 or higher.

For QuickTime playback: Apple QuickTime 6.0 or higher.

We recommend using Microsoft® Windows® XP Professional, Microsoft® Windows® XP Home, Windows Vista® or Windows 7 as the operating system.

Scheduler Configuration

The application can be configured using several dialog windows available via the *File … Configuration…* menu option.

Application Configuration

Select *File… Configuration… Application* to activate the configuration window.

Require user login
Enable this field if you require user authentication before the scheduler can be used.

Preview on Second Display
If your computer has a dual display configuration you can configure Spyeworks to play all content previews on the second display.

Default Asset duration
The duration entered here will be used for any Media Assets that don't have an inherent duration such as bitmaps, JPEG images and PNG images, these Assets only have 1 frame and therefore do not include a duration.

Spyeworks Player
This field contains the full path to the Spyeworks Player executable. Click *Browse* to locate the file using the Windows Explorer interface.
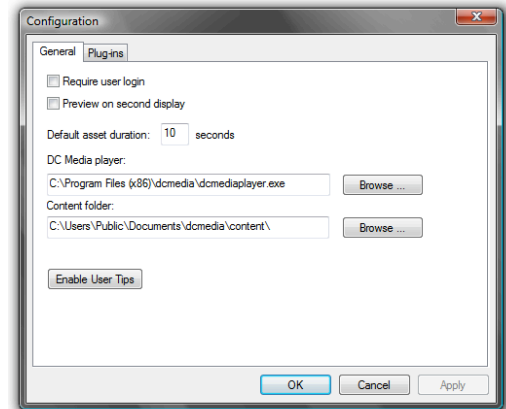
Content Folder
This field contains the full path to the multimedia content used by Spyeworks. Click *Browse* to locate this folder.

Enable User Tips
Click on this button to re-enable messages that assist the user in operating the software.

Database Configuration

When Spyeworks is installed it will automatically install the Spyeworks Database Engine (unless it detects an existing installation of a Microsoft SQL database engine) and will also automatically configure the data settings. *"Database Configuration"* is therefore only for advanced users who wish to user another database configuration.

Select *File… Configuration… Database* to activate the following configuration dialog:

Database Engine
Select either Spyeworks or Microsoft SQL Server depending on your configuration.

Server address/name
Enter the SQL Server address or computer name.

Database name
Enter the name of the database on the SQL Server.
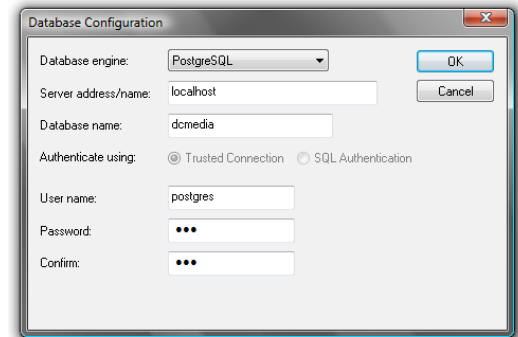
Authenticate using
Specify whether the SQL Server connection uses SQL Authentication or Trusted Connection. If you are unsure, select Trusted Connection.

Username
If you have selected SQL Authentication, enter the username used to authenticate the SQL Server connection.

Password
If you have selected SQL Authentication, enter the password used to connect to the SQL Server database.

Content Distribution

Select *File… Configuration… Content Distribution* to activate the following configuration dialog:

Default file actions:
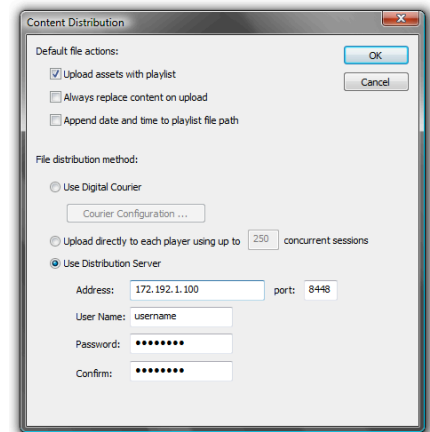
Upload assets with playlist
Enable this option if you want to distribute multimedia files along with the selected playlists. If this option is disabled, only playlists are distributed to players.

Always replace content on upload
Enable this option to ensure that all content is always replaced; existing content on players is always over-written.

Append date and time to playlist file name
If this option is enabled Spyeworks will post-fix the date and time to every playlist that is distributed across the network.

File distribution method:

Use Digital Courier
Select this option if you are going to distribute content via a Digital Courier distribution service. When you select this option the Courier Configuration button will be enabled. To configure your courier link, the following dialog window is available via this button.

Upload directly to each player
This is the default setting. Select this option if you want the Scheduler to upload content and playlists directly to each player. By default, the Scheduler will use up to 250 concurrent file transfer sessions to distribute content.

Use Distribution Server
Select this option if you want to upload the content and playlists to a Spyeworks Distribution Server, the server will then distribute the content to each player using multiple concurrent file transfer sessions.

Digital Courier Configuration *(ignore this section if you are not using a Digital Courier service)*

Courier Address
Enter the IP address or host name of the Digital Courier distribution server that will provide playlist and content distribution services.

Port
Enter the port number that the Digital Courier distribution server is listening on for incoming distribution requests.

Upload to Courier using

Protocol
Select the appropriate file transfer protocol that will be used to upload playlists, content and distribution requests.

Port
The relevant port number for the protocol selected. For FTP this value is 21, for DFT the value is 8448.

Username
Enter the username that is used during file transfer authentication.

Password
Enter the password that is used during file transfer authentication.
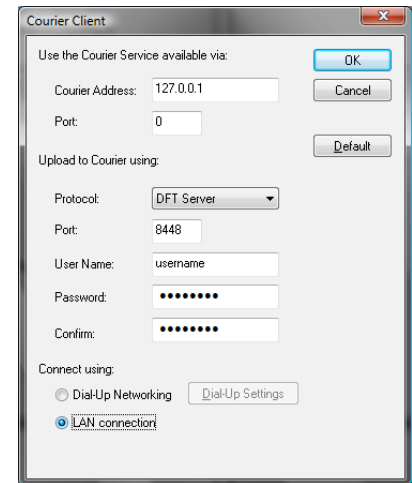
Connect using

Dial-Up Networking
Select this option if you want Spyeworks to establish a dial-up connection before connecting to the Digital Courier distribution server.

LAN connection
Select this option if you want Spyeworks to connect directly to the Digital Courier distribution server.

Scheduler Administration

To access the Administration menu, select *File… Administration* and select the appropriate option from the menu presented.

User Account Administration

The User administration window is used to add, modify or delete User Accounts.

To add a new User Account, click *Add*. To modify a User Account, click *Edit* and to delete one or more User Accounts, select the Accounts in the list and then click *Delete* – you will be prompted for confirmation before any records are deleted.
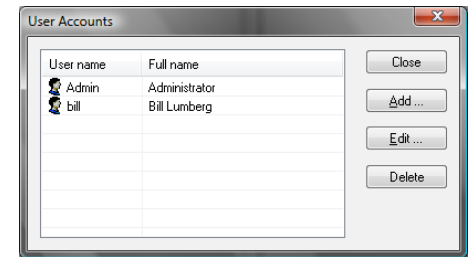
Adding a User Account

The User Account properties window is shown below:

User name
Enter a user name containing alpha or numeric characters up to 16 characters in length.

Password
Enter a password containing alphanumeric characters up to 16 characters in length. Confirm the password entry in the field below the password field.

Full name
Enter the user's full name.

User account is enabled
The user will not be able to login with the Account if this field has been unchecked.

User Rights
Select the rights that are assigned to this user. Read *"User Rights within the Scheduler"* for more information on user rights.
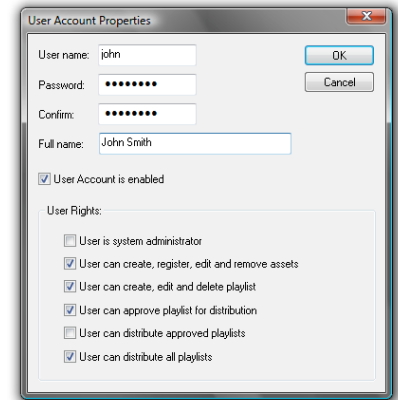
Editing a User Account

To edit the User Account, select the relevant item in the list of User Accounts and click *Edit* or double click on the item in the list. Modify the properties accordingly and click *OK* to store the changes or click *Cancel* to discard any changes made.

Deleting a User Account

Select the User Accounts that you wish to delete and then click *Delete*. When prompted click *Yes* to confirm the delete request or click *No* to cancel.

System Table Administration

The System Tables hold information about Asset Genres and Languages. Genres and Languages are used for information purposes only. In order to modify these tables, use the System Table configuration option available under the menu option *File…Administration…System Table.*

Adding, Modifying and Deleting Genres

To add a new Genre, click *Add*. Enter the new Genre name and click *OK* to store the record or click *Cancel* to discard the new entry.

To edit a Genre, select the entry and click *Edit* or double click the item in the list.

To delete one or more Genres, select the relevant items and click *Delete*. You will be prompted for confirmation before any records are deleted.
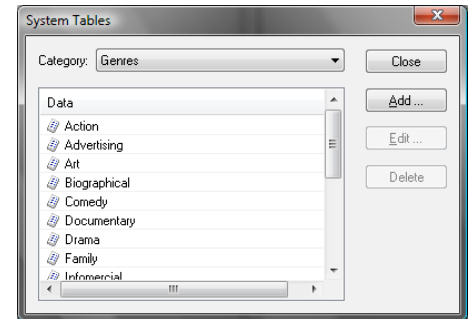
Adding, Modifying and Deleting Languages

To add a new Language, click *Add*. Enter the new Language name and click *OK* to store the record or click *Cancel* to discard the new entry.

To edit a Language, select the entry and then click *Edit* or double click the item in the list.

To delete one or more Languages, select the relevant items and click *Delete*. You will be prompted for confirmation before any records are deleted.

Meta Data Administration

Meta Data tags store extra information about Media Assets that can assist in searching and cataloging. The Meta Data Administration window is available via the *File…Administration…Meta Data…* menu option.

Adding, Modifying and Deleting Meta Data

To add a new Meta Data Tag, click *Add*. Enter the new Meta Data Tag name and click *OK* to store the record or click *Cancel* to discard the new entry.

To edit a Meta Data Tag, select the entry and then click *Edit* or double click the item in the list.

To delete one or more Meta Data Tags, select the relevant items and click *Delete*. You will be prompted for confirmation before any records are deleted.
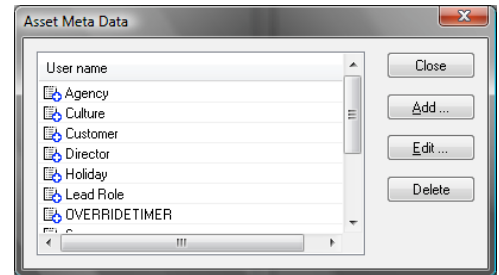
Managing Multimedia Editor Applications

The Spyeworks Scheduler provides the facility to launch an external editor application in order to edit a registered Media Asset. To configure the list of editor applications, select the *File...Administration…Asset Editors…* menu option.

Each multimedia format is listed along with the application command line that will be executed in order to activate the relevant editor application. The *Default application* setting means that Spyeworks will use the default registered Windows Explorer action to open the file.

 You can change the Editor Application setting for any of the listed Media Asset types by selecting the Media Asset type and clicking on *Change*.

In the Asset Editor Properties window, browse to the application executable required for editing the Media Asset. The command line can be modified to use the Asset file path as a parameter by inserting %1 into the command line, for example:

```
c:\program files\msoffice\powerpnt.exe %1
```
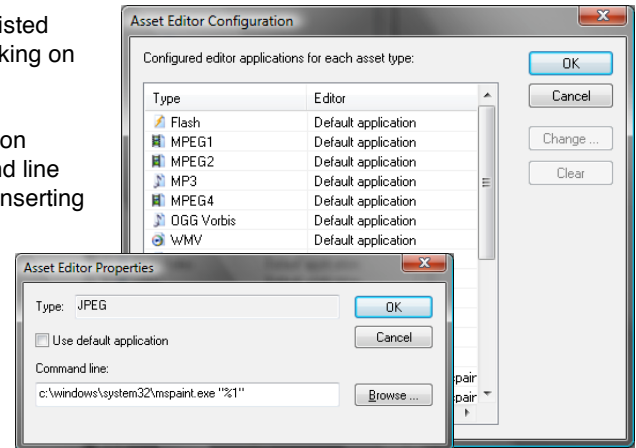
Player Configuration

By default no configuration changes are required after installation in order for the Spyeworks Player to display content and use playlists however the *PlayerConfig* application is provided for the customization of player parameters.

The *PlayerConfig* application (playerconfig.exe) has three configuration windows accessed using Tabs displayed at the top of the Player Config application (General, Display, Capture) . All configuration parameters are stored in a file called "spyeworksplayer.ini " stored in the Spyeworks application folder.

General

Player Name
Enter a unique name for the Player, this name will be used to prefix all proof-of-play files and will also be used for DSMAP authentication.

Zip Code
Enter the zip code for the area where the player is installed. This entry does not affect player operation and is used primarily by Digital Signs for dynamic content such as weather.

Content Folder
Enter the path where playlists and content for this player can be found.

Run Status Host on Port
This item specifies the port number that the player will listen on for incoming status connections. This port does not need to be changed unless multiple players are installed on the same computer.
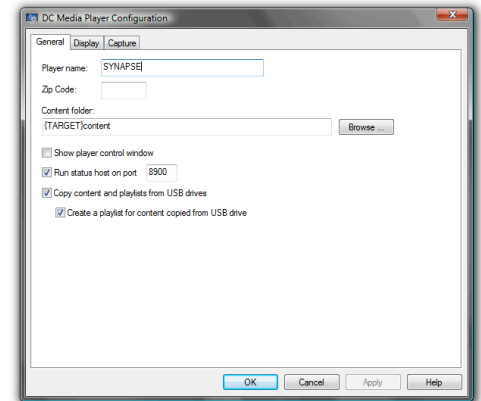
Copy content and playlists from USB drives
If this item is enabled and the player detects the insertion of a USB drive, the player will scan the drive and copy all content and playlists from the USB drive to the content folder. If the USB drive does not include any playlists but does include content, the Player will automatically create a playlist for the new content.

Create a playlist for content copied from USB drive
Disable this option to prevent the player from creating a playlist for new content copied from the USB drive.

Play in Windowed Mode
If this option is enabled Spyeworks Media Player will run as a standard application window with a close button, caption and window title.

Display

Display number
Select the display that Spyeworks will use for content playback.

Span Across
If your display configuration has multiple monitors configured horizontally you can specify how many displays the Spyeworks Player should span when it displays content. For example, if you have a dual monitor configuration and you specify the Span Across value to be 2, Spyeworks will display content across both screens as show below:

Span Down
Specifies how many screens the player will span vertically.

Capture

The TV Capture configuration is specific to the device being used as well as the signal infrastructure. Refer to   the equipment suppliers documentation for additional information.
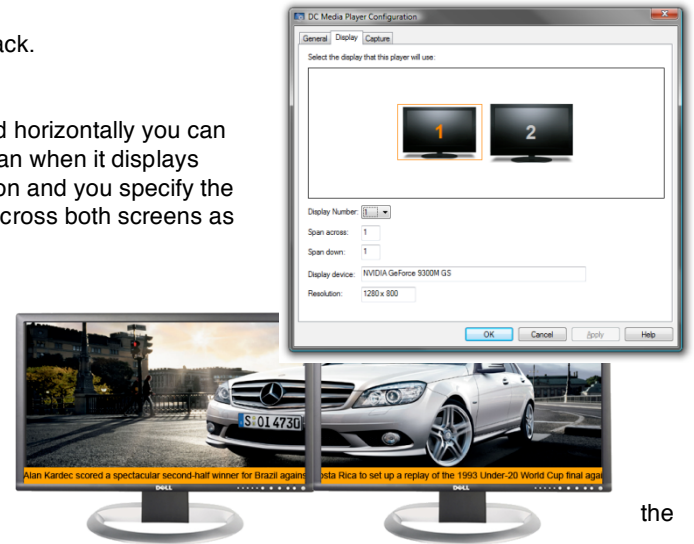
The Scheduler User Interface

Media Asset Window

Playlist Management Window

Asset Preview Window

Scheduled content

Layer List

Switch between Looped and Scheduled Items

The Media Asset Window

In Spyeworks, all multimedia files are known as Media Assets. The Asset Management Window is used to register and manage these Assets by storing them in user defined Categories with the option of adding Meta data tags (descriptive text) to each Asset.

Media Assets can be previewed in the Asset Preview Window simply by select the relevant Assets and pressing the *space bar* or clicking on the *Preview* toolbar button.

The left most window pane of the Spyeworks user interface is the Media Asset window. The Media Asset Window can operate as a large icon view, a small icon view, a report view or a list view depending on which option is selected by the user. To change the view style, click the appropriate toolbar button or select the icon view style from the *View...* menu option.
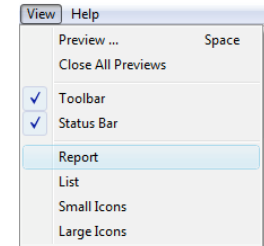
Spyeworks can group Media Assets into Categories for easier searching and navigation. To create a Category, see *"Creating a Playlist"*. Once a Category has been created, the user can view the contents of this Category by double clicking on the Category icon. The Media Asset view will be refreshed to list all the Media Assets and sub-Categories contained within the selected Category.

To navigate back to a parent Category, double click the icon listed at the top of the Media Assets window.

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The same navigation principles applied in the Media Asset window are applied to the Playlist window located in the center of the Spyeworks user interface.

Media Asset Categories

A Media Asset Category is used to group related Media Assets and sub-Categories of Media Assets.

To create a new Category, select the *Media Assets* menu option and then select *Insert Category* or right click in the Media Asset window pane and select *Insert Category* from the menu presented.

In the Category properties dialog shown below, enter a name an optional description for the new Category.
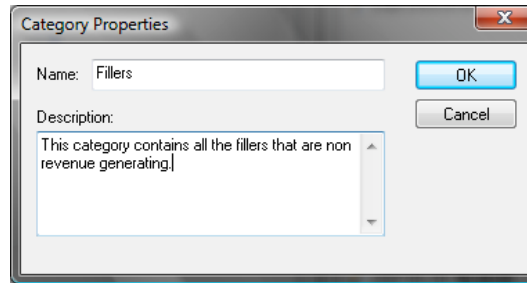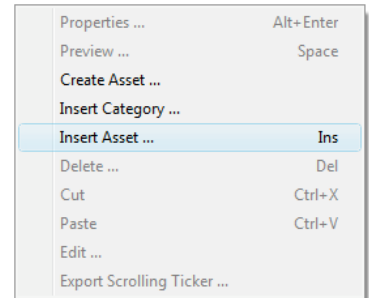
Click *OK* to store the new Category or click *Cancel* to abort the operation.

Registering an Asset

To register a new Media Asset, navigate to the appropriate Category using the Media window. Once inside the Category, you can either drag-and-drop multimedia files into the Category directly from the Windows Explorer window for automatic registration or you can manually register each Asset using the *Media Assets…Insert Asset…* menu option.

Drag and Drop Asset Registration

Using the Windows Explorer, select the multimedia files that must be registered (any number of files can be selected simultaneously). Using the mouse pointer, hold down the left mouse button and drag the files into the media browser window. Spyeworks will detect the multimedia format and properties for each file and register the files that are recognized to be one of the many supported file formats. By default the name of the file will be used as the title.

Manual Asset Registration

To register an Asset manually, select the *Media Assets…Insert Asset…* menu option, or press the *Ins* key on the keyboard.

Using the Insert Asset window, select the asset format that you would like to register and click *Next* to locate the media file or enter the asset properties.
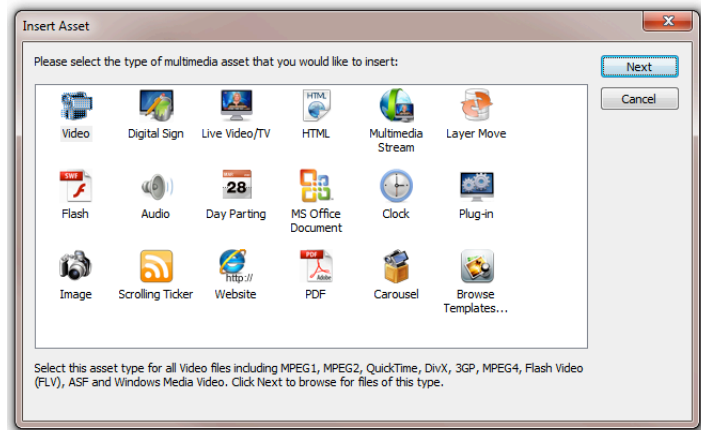
Modifying the Properties of a Registered Asset

To modify the properties of a Media Asset, select the Asset listed in the Media Asset window and then select the *Edit… Properties* menu option or press *Enter* on the keyboard. Modify the properties accordingly and click *OK* to store the changes or click *Cancel* to discard the changes.

Category
This field is displayed for information purposes only; the name listed in this field is the name of the current Asset Category.

Title
Enter a title for this Media Asset.

File path
This field describes the location on disk for the multimedia file. Click *Browse* to locate the file using the Windows Explorer interface. It is recommended that you select the file path before entering any further data as Spyeworks will attempt to automatically detect various properties of the Media Asset. Once a multimedia file has been selected, you can preview the content by clicking on the Preview button.

Log Playback
Enable this field if you want playback of this Asset to be logged in a Proof-of-Play file for audit purposes. Read *"Proof-of-Play Reports"* for more information on Proof-of-Play logging.

Description
Enter a detailed description for the Asset.

Genre
Select the Genre for this Asset.

Language
Select the language used in the Asset content.

Format
Spyeworks will attempt to recognize the format of the file by its file extension however you may select the format from the list.

MPAA rating
Select the appropriate The Motion Picture Association of America (MPAA) rating. The following rates are available:

No rating
G - General audiences
PG - Parental Guidance suggested
PG13 - Parental Guidance required
R – Restricted
NC-17

Author
Enter the name of the author or authoring company.

Extern. Ref.
This field can be used to the store a reference number or ID for a master tape or a backup storage copy of the Media Asset.

Duration

The duration of the Asset using Society of Motion Picture and Television Engineers (SMTPE) notation HH:MM:SS:FF where:

HH   refers to Hours (between 0 and 99)

MM   refers to Minutes (between 0 and 59)

SS   refers to Seconds (between 0 and 59)

FF   refers to Frames (between 0 and 999)

File size

This field is for display purposes only, the value displayed here is the actual file size of the Media Asset expressed as bytes, Kilobytes (KB), Megabytes (MB) or Gigabytes (GB).

Frame rate

No always applicable to audio files. The number of frames per second. Spyeworks will attempt to detect this value. If you change the value here, the SMPTE duration will automatically be updated.

Frame count

No always applicable to audio files. The total number of frames in the Media Asset. Spyeworks will attempt to detect this value. If you change the value here, the SMPTE duration will automatically be updated.

Frame width
No applicable to audio files. The value displayed here is the width of a frame in pixels. Spyeworks will attempt to detect this value.

Frame height
No applicable to audio files. The value displayed here is the height of a frame in pixels. Spyeworks will attempt to detect this value.

Audio bitrate
The encoded bitrate of the audio track in the Media Asset.

Audio frequency
The encoded frequency of the audio track in the Media Asset.

Audio mode
The type of audio in terms of Mono, Stereo, Dual Stereo etc.

Colors
Only applicable to images, the value displayed here represents the number of colors in the Media Asset.

Meta data table
The Meta data tags defined in the system tables are displayed here. The user registering the new content can use these tags to store extra information about the Media Asset such as location of shoot, director, actor, style, soundtrack etc. This information will assist in searching for particular Media Assets

Deleting an Asset

To de-register one or more Assets, select the relevant Assets and press *Del* on the keyboard or select the *Edit… Delete* menu option. You will be prompted for confirmation before any records are deleted. You will be prompted to delete the associated multimedia file from disk or not.

Previewing an Asset

To preview one or more Media Assets, select the relevant Assets and then select *View… Preview* or press the *Space-bar* on the keyboard. Each Media Asset will be opened in a separate preview window.

The Media Asset will begin playing immediately. To replay the content, click the *Play* button and playback will begin again.

To mute the audio for the Asset being previewed, click the *mute* toggle button located at the bottom of the preview window.
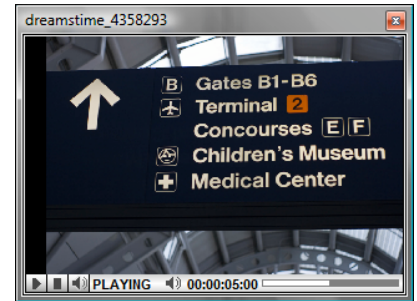
Creating an Asset

The Spyeworks Digital Sign Creator application is an authoring suite for creating Digital Signs containing one or more slides. To create a new Digital Sign Asset, select the *Media Assets* menu option and then select *Create*. Once you have created the Digital Sign and saved it to disk, the file will automatically be registered as an Asset. Read *"Content Authoring"* for detailed information on how to author content using the Digital Sign Creator.

Editing an Asset

Spyeworks Digital Sign Assets can be edited in the Digital Sign Creator simply by select *Media Assets…Edit…* Spyeworks also supports the linking of 3rd party applications to specific multimedia formats in order to facilitate quick editing directly from within Spyeworks. An example of this is the linking of

Microsoft PowerPoint to the PowerPoint format. To edit a PowerPoint Asset, highlight the relevant item and click the Edit Asset toolbar button or select *Edit* from the *Media Assets* menu option. If you have Microsoft PowerPoint installed on your computer, the multimedia file will be opened inside the PowerPoint application ready for editing. To manage the list of applications that can be linked to each multimedia type, see *"Managing Multimedia Editor Applications"*.
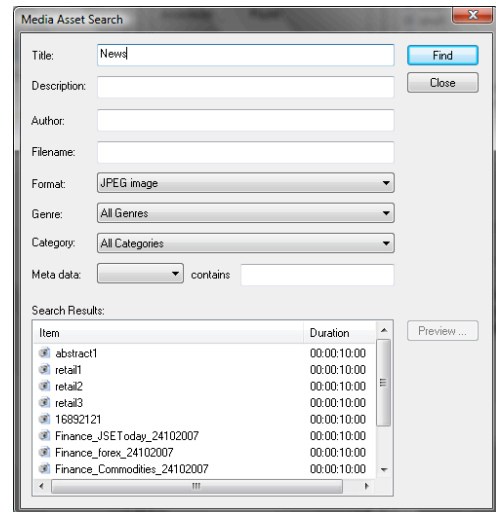
Searching for Assets

To find one or more Media Assets, select the *Media Assets…Find* menu option. The following search criteria window will be displayed:

Each field in the window is optional and if left blank will not be used in the search query. To define search criteria, enter specific keywords in the relevant fields and click *Find*. The search results are listed at the bottom of the dialog.

Once search results have been displayed you can preview one or more items in the result list or you can drag the Assets into the loop list or schedule list for the current playlist.

Enhanced Media Assets

Spyeworks provides several special function Media Assets that are not based on multimedia files but rather on external data such as RSS new feeds, Live TV capture, multimedia streams etc.

The following enhanced Assets are available:

1. Scrolling Ticker
2. Multimedia stream
3. Live video & audio capture
4. Real-time clock (analog or digital)
5. Disk Carousel
6. Layer Move
7. Day Parting
8. Website

Scrolling Ticker

The Scrolling Ticker Media Asset is used to display text and images scrolling left, right or vertically in a portion of the display area. The information contained in the scrolling ticker can be entered directly into the ticker Asset definition or it can be obtained from a file on disk or from a published RSS source on the Internet. RSS content can be stored in a disk file and read out from the file at the remote site in the event that the player computer does not have a live Internet connection.

The following property dialog is used to define a scrolling ticker:

Title
Provide a title for this scrolling ticker Asset.

Message Comes From
Select the message source from the list provided. The message can either be entered directly into the space provided or read from a file on disk or downloaded from an Internet based RSS feed.

Templates
Click on the Templates button to open the Spyeworks Content Library, you can select pre-made scrollers from the list of available templates.

Type your message below/File name/URL:
Depending on the message source, you may enter a message in this field, alternatively enter the file name for the file that contains the message that will be displayed in this ticker or if the message source is an RSS feed, enter the URL. If you enter a URL, ensure that you supply a protocol prefix such as http:// or rss://.

Background
The scrolling ticker can be displayed with a background color or a background image. To display a color as the background, click the color button and select the color from the list provided. If you want a background image behind the scrolling ticker text, click the image button and then click the browse button (…) to locate the file on disk.

Logo Divider
If you want a logo to be displayed between each item in the ticker, click the logo button and then click the browse button (…) to locate the logo file on disk.

Side logo
If you want a logo on the left or the right side of the scrolling ticker, click the side logo button and then click the browse button (…) to locate the image file on disk.

Scroll style
Select whether the message will be scrolled left, right or vertically.

RSS update cycle
The number of seconds before the ticker will connect to the data source and look for updates. If the source is a file on disk, the file date and time will be checked periodically as defined by the number of seconds in this field.

Scroll speed
Enter the ticker scroll speed, ranging from 1 to 10 where 1 is the fastest speed.

Multimedia Streaming

Spyeworks can display the contents of a Microsoft Media Services Video or Audio stream as a Media Asset.

Title
Provide a title for this Asset.

Duration
Enter the default duration that this Asset. The duration must be supplied in the format HH:MM:SS where HH can range from 0 to 23, MM can range from 0 to 59 and SS can range from 0 to 59.

Published point URL
Enter the URL for the published stream (usually an ASX link). The stream format must be compatible with Microsoft Media Player.
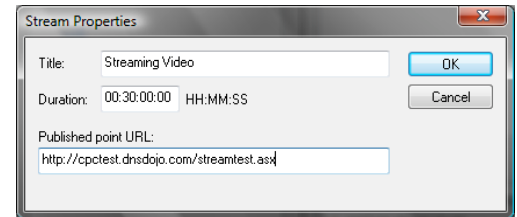
Live Video and Audio Capture

A WDM compatible Video Capture card is required for this Media Asset to function. Consult *"Video Capture Cards"* for a list of Video Capture cards tested with Spyeworks.

Title
Enter a title for this Asset.

Input
Select the video source from the list of input types. This list includes Default, S-Video, Composite and TV Tuner. When Default is selected, Spyeworks will leave the capture Device in its default input state whether this input is S-Video, Composite or TV Tuner.

Channel/Freq
If the Input parameter is set to TV Tuner, enter the channel number or frequency. Values less than 99998 are considered to be channel numbers, values greater than 99997 are considered to be exact frequency values.
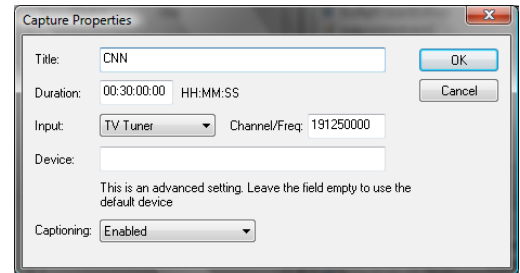
Device

This field is provided for playback Devices that have multiple capture sources such as a capture card and a webcam or two capture cards. To ensure that Spyeworks uses the relevant capture Device, enter the Device ID in this field. To view a list of capture Device ID's, execute the dcmdiag.exe utility supplied with the Spyeworks Player software on the remote computer. The output from this utility would look as follows:

```
Spyeworks Diagnostics
Version 2.0
(c) 2009 MediaSight Inc.

WDM Video Capture Device = @Device:pnp:\\?\usb#vid_046d&pid_0920#5&3816cc72&0&1#{65e8773d-8f56-11d0-
a3b9-00a0c9223196}\global

WDM Video Capture Device = @Device:pnp:\\?\pci#vid_052d&pid_0921#5&1821cc72&0&1#{23e8773d-8f56-11d0-
a3b9-00a0c9211196}\global
```

As with the example above, the Device ID's consist of a lot of text, any portion of this text can be used as the Device ID so long as the text is unique to the Device you are using, in the example above the ID used could be 'PCI' (vs. 'USB' in the other Device ID).

Clock

Spyeworks can display a real-time analog or digital clock as a Media Asset.

Title
Enter a title for this Asset.

Format
The Clock can be displayed as a 12 hour digital clock, 24 hour digital or Analog clock.

Offset time by
Enter a positive or negative number in this field to display a time that is relevant to another time zone.
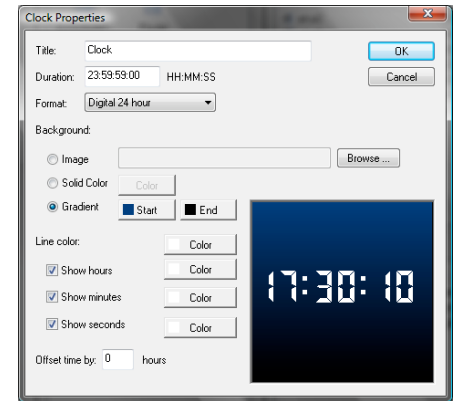
Disk Carousel

The Disk Carousel Asset will playback all supported multimedia files found in folder on disk. The specified folder will be scanned for multimedia files that conform to the specified filter (or if the filter is empty all multimedia files will be played) and playback will begin. At the end of every Asset, the folder is re-scanned for any new multimedia files.

Title
Enter a title for this Asset.

Path on disk
Enter the full path on the player Device where the player software will look for multimedia files. . All supported files found in this folder will be played out in a loop list.

Include sub folder
Enable this option if sub folders are to be included in the file search.

Play files with extension
Enter a list of allowed file extensions that can be played out. Extensions can be specified with or without the period or wildcard, i.e. *mpg* or **.mpg* or *.mpg* are acceptable.

Default duration for images
Because images have no inherent duration the value specified here will be applied to each image played out.
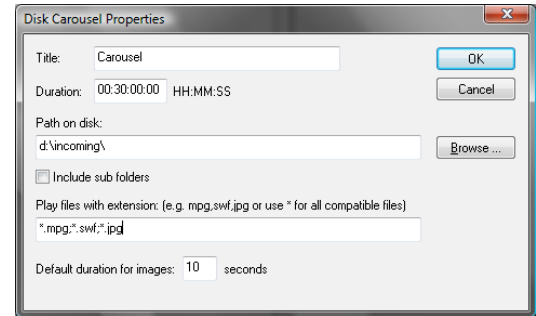
Layer Move

The Layer Move Asset is not a visual Asset itself but it can be used to manipulate the size and position of any of the layers in the Playlist. For example a Layer Move Asset can be used to squeeze back a specific video thereby revealing advertising content in the newly visible space.

Title
Enter a title for this Asset.

Layer Name
Enter the name of the layer that must be moved.

Duration
Specify the duration of the move operation. A duration of 0 indicates that the move must occur immediately and should not last longer than necessary. A value greater than 0 will cause the move operation to be animated for the duration specified.

Horz. Position
The horizontal pixel coordinate that will be used as the leftmost position for the layer.

Vert. Position
The vertical pixel coordinate that will be used as the topmost position for the layer.
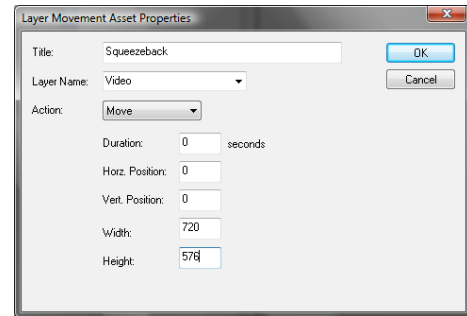
Width
The new width for the layer.

Height
The new height for the layer.

Day Parting

A day parting is used to break a loop list of content into groups that are only played before the time specified in a day parting. For example, if you create a Day Parting asset with the time 11:00 am, any content listed in a playlist before the day parting will only be played before 11:00 am, all content listed after the day parting will only be played after 11:00 am.
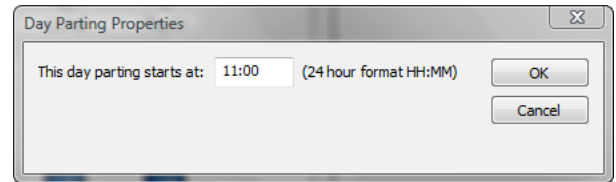
The following diagram illustrates this concept:
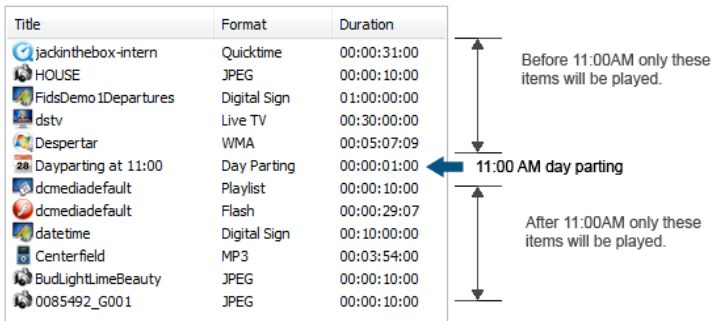
Website

A live Internet website can be registered as an asset.

URL
Enter the URL of the website and display duration.

Horz. Offset & Vertical Offset
You can hide portions of the website content by using a horizontal and vertical pixel offset.

Automate website login
To automate authentication on a website, enter the username and password and the field names for the login page.

Playlist Creation

Once you have registered and created your multimedia assets, you need to create a playlist with one or more layers to display the assets.

A Playlist has one or more layers that represent an independent portion of the display, each layer has a list of assets that are scheduled to play in a sequenced order (loop list) or at specific dates and times (scheduled items).   When Spyeworks plays out a playlist, each layer in the playlist will play items scheduled for specific dates and times and if no scheduled items are due assets in the layers loop list will be displayed.

Navigating the Playlist window is done using the same user interface guidelines described in *"The Scheduler User Interface"*.

Creating a Playlist

To create a Playlist, select the *Playlist… Insert Playlist…* menu option, or right click in the Playlist view (the center pane) and select *Insert Playlist*. A Playlist property window will be displayed:

Name
Enter a name for this Playlist.

Description
Enter a description for this Playlist.

Display Dimensions
Select the dimensions of the Playlist in pixels specified as *width x height*. By default the Playlist dimension is set to 1024 x 768. You can select a predefined dimension from the drop down list or you can enter your own custom dimensions.

Start Date
If you wish to restrict this Playlist to a specific start date, enter the date in the fields provided.

End Date
You may specify an end date for this Playlist.

Once you have created your playlist the default layer properties window will be display in the rightmost window pane.
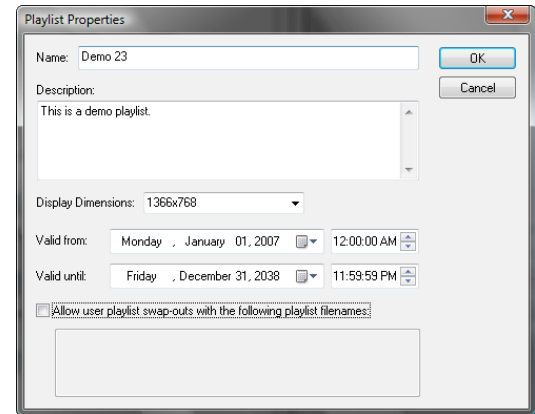
A single layer is created with dimensions matching your playlist dimensions. Each layer in the playlist has a Looped Content section and a Scheduled Content section.

The Looped Content section list a list of assets that will play in a continuous loop inside the layer. This loop list can be sub divided using Day Parting assets (see "*Day Parting*").

The Scheduler Content section has time slots for a 24 hour period. Assets can be added to these timeslots and scheduled for specific times of the day. The play back day can be a specific date, everyday or a selection of week days.

To add layers or to change the dimension of a layer, click on the Designer button.
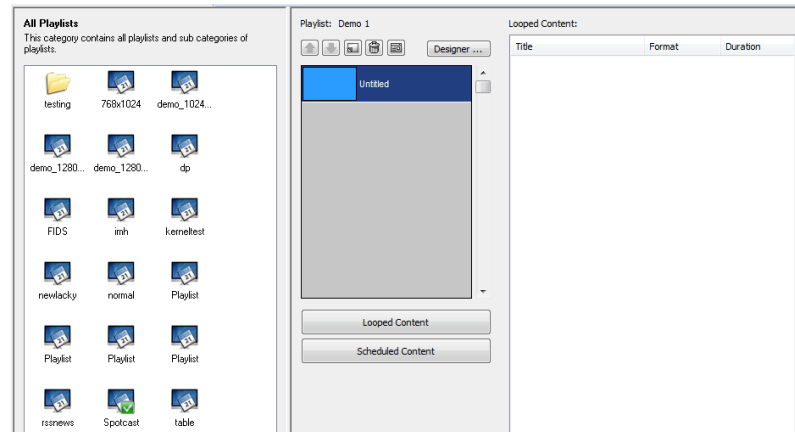
The Visual Playlist Editor

Arranging the layout of layers in a Playlist is done visually using the Layout Editor. To open the Layout Editor, select the *Playlist…Open Designer…* menu option or click on the *Designer* button.

Each layer is represented on the display with a rectangle. These rectangles can be moved around and resized according to the layout design that you wish to create.

Inside each layer rectangle, the name of the layer, width, height and position are displayed as illustrated below:

Name: Default   Position: 485,16   Size: 451,364
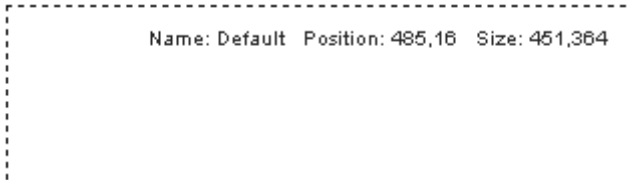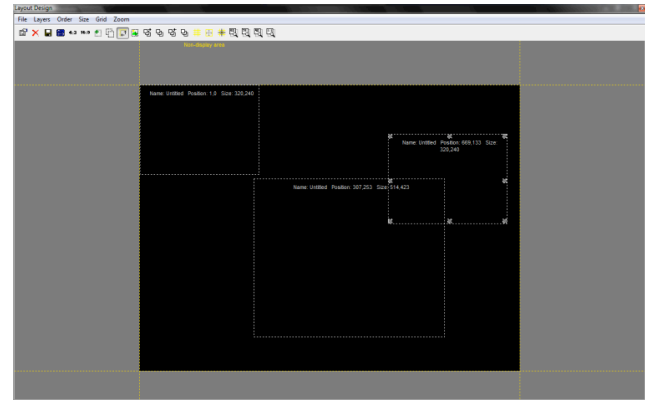
The position is displayed as the horizontal pixel coordinate followed by the vertical pixel coordinate (horizontal, vertical). The size of the layer window is displayed as the pixel width and the pixel height (width, height).

The display area is divided into two areas, the outside area is drawn in dark gray and this area represents coordinate space that is not part of the actual display. Layers placed in this area will not be displayed on the screen during playback. The inner portion of the display represents the actual display area on the playback screen.

In the screenshot on the next page, three layers are represented. The layer drawn with a photograph background has gray blocks at each corner; these blocks are used to indicate the active layer in the editor the layer space. The editor provides an image loading function to facilitate layer sizing during design.

To resize a layer position the mouse cursor over a gray block anchor point, hold down the left mouse button and move the anchor point until the required size is achieved.

To move a layer, position the mouse cursor anywhere inside the layer rectangle and click the left mouse button. Hold the mouse button down and move the layer around the display.
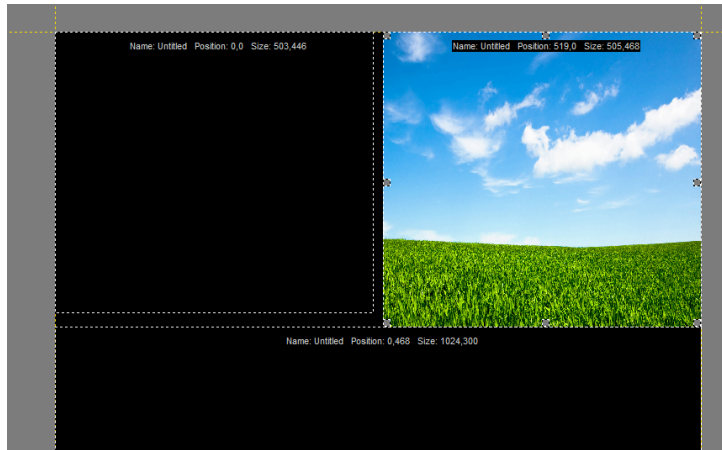
The following toolbar functions are available:

Each toolbar button is described below:

	Cut	Cut the selected layers from the display and store in the clipboard.
	Copy	Copy the selected layers to the clipboard.
	Paste	Paste layers stored in the clipboard into the display.
	Properties	Displays a dialog containing the properties for the selected display dynamic.
	Undo	Undo the last change made.
	Delete	Delete the highlighted layer.
	Save Changes	Store changes made to the database.
	Display Size	Use this option to define the display size at the remote site.
	4:3 Aspect Ratio	Adjust the aspect ratio of the selected layer to a 4:3 ratio.
	16:9 Aspect Ratio	Adjust the aspect ratio of the selected layer to a 16:9 ratio.
	New Layer	Add a new layer to the display layout.
	Duplicate	Duplicates the selected layer by adding a new layer with the same width and height.
	Constrain within Display	Enable this item to prevent layers from moving outside of the display area.

	Load Image or digital sign	Provides a file browser window whereby the user can select a bitmap, JPEG, PNG or Digital Sign (DSN) file for display inside the layer window. This is used to size layers to match specific content. You will be prompted with the option to automatically resize the layer window to match the size of the image.
	Send Backwards	Moves the selected layer behind the next layer in the order of visibility.
	Send To Back	Moves the selected layer to the back of the order of visibility.
	Bring Forwards	Moves the selected layer forward in the order of visibility.
	Bring to Front	Moves the selected layer to the front in the order of visibility.
	Display Grid	Toggles the grid display.
	Define Grid Size	Provides a dialog whereby you can define the size of the grid square in pixels.
	Snap to Grid	Toggles the Snap to Grid option. When enabled, all mouse movement is constrained along the grid square size.
	Zoom to 50%	Zoom in by a factor of 10%
	Zoom to 75%	Zoom out by a factor of 10%
	Zoom to 100%	View the display layout at the actual resolution.

Adding Media Assets to a Playlist

To add one or more Assets to a Playlist, select the Assets in the Media Asset Window using the mouse and then without de-selecting the Assets, drag the items across the display and drop them into the active loop list or scheduled items window.

Loop List items

Media Assets listed in the loop list will be played in the order they are listed whenever scheduled content is not due.

Scheduled Items

The assets listed in the scheduled list are assigned a playback time and optionally a specific date. By default when you drag an asset into this list the asset will automatically be scheduled to play every day at the scheduled time. If you hold down CTRL when you drag the asset into the schedule list the asset will only be scheduled for playback on the current Schedule day (as per the calendar alongside the schedule). To change the start date and time, double click the item or right click and select *Duration & Playback*….

Duration & Timing

Time
Specify a start time for this asset.
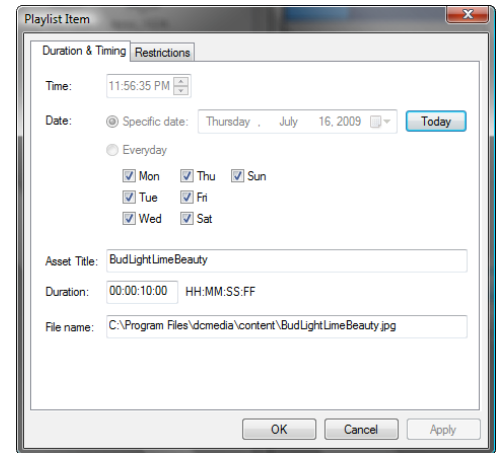
Date
Select a playback date using the drop down calendar control or specify that the asset must be played on specific days of the week.

Restrictions

Click on the restrictions tab to specify an end date after-which the asset will no longer be played.

Playback Expiry
By default an asset will always be valid however you can specify a period of validity by entering a start date & time as well as end date & time. If you select this option, the asset will only be played between the start date & time and the end date & time. You can also indicate if you wish to have the asset deleted from the hard disk when it expires.
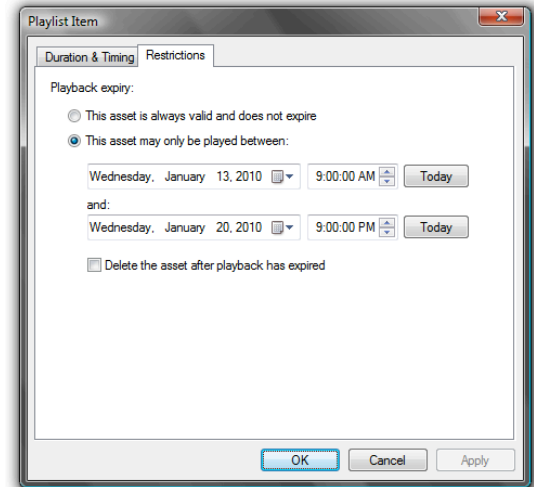
Removing a Media Asset from a Playlist

To remove one or more Assets from a Playlist, select the relevant Assets and then drag the items out of the Playlist window. Release the mouse button once the mouse cursor has left the Playlist window and the items will be removed from the Playlist, alternatively select the Assets and then select the *Edit…Delete…*menu option.
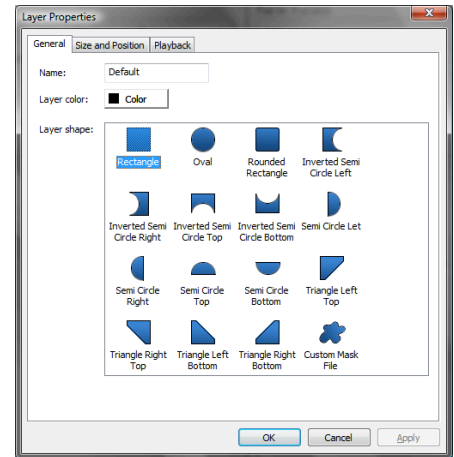
Layer Properties

Each playlist has properties that define how content is played out. To control how Assets are played out, select the layer and then select *Edit…Properties*

Name
Set the layer name here.

Layer Color
Specify the background color for the layer.

Layer Shape
Layers can be shaped using one of the predefined shapes or using a black and white mask file. By default the layer shape is a rectangle.

Primary Position – Left / Top
The pixel coordinates of the top left corner of the layer.

Primary Position – Right / Bottom
The pixel coordinates of the bottom right corner of the layer.

Switch to secondary layout
A layer can be assigned a secondary position either to prevent screen burn or simply to create an alternative display effect. The layer will switch between the primary and secondary positions based on a cycle time.
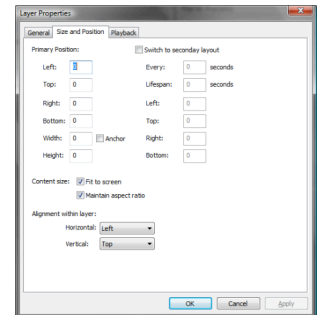
Every
Enter the number of seconds between primary and second position switches.

Lifespan
Enter the number of seconds that the layer will spend in the secondary position.

Maintain Aspect Ratio
If this option is selected, images that displayed with dimensions different to the display area or layer size will not be distorted to match the aspect ratio of the display area.

Fit to screen
Images that are smaller or bigger than the display area will be resized to fit the display.

Horizontal Alignment
Items that do not fit the display dimensions will be aligned to the horizontal alignment setting specified here.

Vertical Alignment
Items that do not fit the display dimensions will be aligned to the vertical horizontal alignment setting specified here.

Audio Priority
Select the audio priority for this item or Playlist. If an item in another layer Playlist is due to play and the item have a higher audio priority, all lower priority items will be muted and the higher priority item will be given the speaker.

Transition between slides
Select the transition that will be applied between the current and the next image (JPEG, Bitmap or PNG) to be displayed. Transitions are not applied to video.

Effect
Select either Alpha blending, Sliding or Swipe effects.

Type
Select the sub-type of effect. For fade effects the effect can fade to a color, fade from a color or fade between images (crossover).

Duration
Enter the duration of the transition in frames.

Re-arranging Layers

Layers are displayed in the scheduler from top to bottom in order of precedence where the topmost layer will always be displayed over the bottom most layer. If you intend using layer moves to squeeze-back a layer, ensure that the layer being squeezed back is higher in precedence than the layer being revealed during the squeeze back.

To move a layer up in the order of precedence, select the [↑] layer and then click on the Up arrow button located at the top of the layer list. To move the layer down, click on the Down arrow.

To delete a layer, select the layer and then [🗑] click on the Delete layer icon
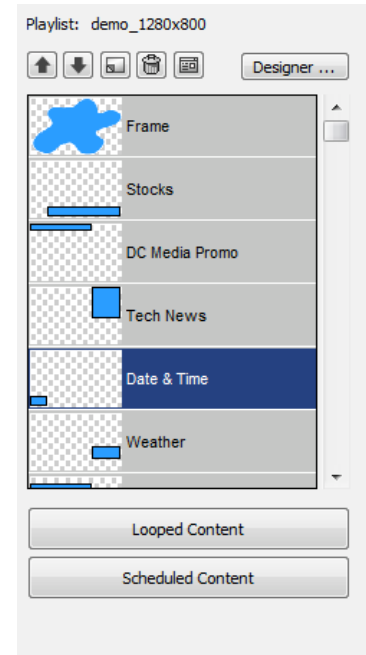
Distributing Playlists and Content

Displaying the Digital Signage Network window

When you are ready to distribute a playlist,
select the *Distribution…Distribute Content…*
menu option.

Upload Assets with Playlist
Enable this option if you want Spyeworks to
distribute multimedia files along with the
selected playlists. If this option is disabled, only
playlists are distributed to play-out sites.

Overwrite Assets on upload
Enable this option if you would like all content
listed in the playlist to be uploaded regardless
of whether it exists on the remote player device.

Send at a later date and/or time
Enable this option if you wish to schedule the distribution of playlists and content for a later date or time.
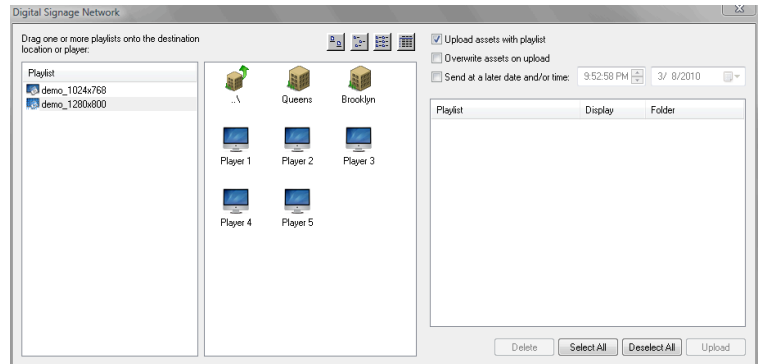
Selecting a Playlist for Distribution

To distribute a Playlist, select the relevant Playlist icon and drag onto a specific player or a group of players. Each Player in your network is listed with a blue screen icon:

Player5

A location is listed with a building icon:

New York

If you drag a playlist onto a location icon, the playlist will be distributed to all the players located in that location.

When you drag a playlist onto one or more players, distribution items will be listed in the outbox located on the right hand side of the network dialog. Click *Upload* to send the Playlist and content files to the selected players.

To configure your list of players you must use the Spyeworks Digital Signage Network Manager.

User Rights within the Scheduler

By default the Scheduler can be accessed without a user name or password. It is possible to configure a user list and provide user rights for asset management, playlist management and playlist distribution.

To manage the list of users, select the *File…Administration…User Accounts…* menu option.

To create a new user account click on the *Add* button and to modify an existing user account select the user and click on *Edit*.

To delete a user account, select the account and click on *Delete*. (You will be prevented from deleting the Admin account as this will lock you out of the Scheduler.)

The default password for the Admin account is **password**.

The user account properties dialog window enables you to select user rights for various activities in the scheduling environment. These rights are:

User is a system administrator
If this right is assigned, the user may create, modify and delete other user accounts as well as
Manage assets, create playlists and distribute playlists.
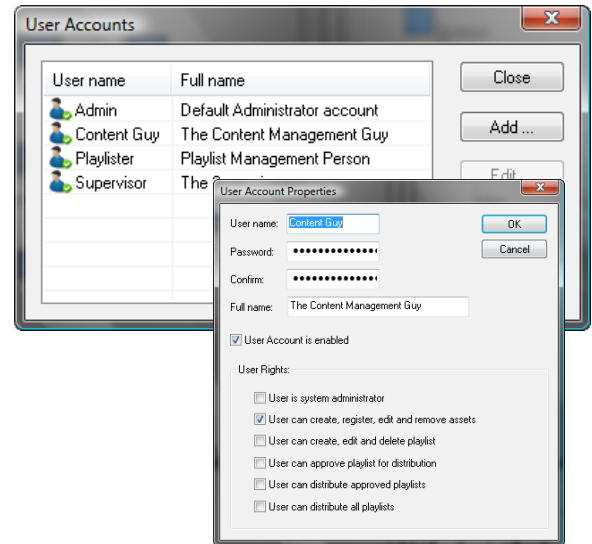
User can create, register, edit and remove assets
This right enables a user to manage the list of registered assets. If the user only has asset
Management rights he/she won't be able to view the playlist window in the scheduler,
the asset management window will be the only window displayed.

User can create, edit and delete playlists
This right enables a user to manage the list of playlists. If the user only has playlist
Management rights he/she won't be able to view the asset window in the scheduler, only an asset management window will
be displayed.

User can approve playlist for distribution
This right enables a user to preview and approve a playlist for distribution.

User can distribute approved playlists
This right enables the user to distribute only approved playlists.

User can distribute playlists
This right enables the user to distribute any playlists regardless of the approved status.

Enable User Login

If you have configured user accounts, you must enable user login before users will be required to login. Select the
*File…Configuration…*menu option and tick the *Require User Login* field. Close the Scheduler application and execute it
again.

Spyeworks Digital Sign Creator

The Digital Sign Creator is an authoring tool that can be used to create Digital Signs composed of one or more slides containing shapes, images and text objects.

A variety of display characteristics can be applied to the objects in a slide including alpha blending, key coloring, position, size and more. A Slide can contain multiple shapes, images and text objects in order to create a composite image for advertising, welcoming, information or entertainment.

Each object can be moved and resized in the editing window as well as ordered in a layered structure. Objects overlap according to the layered structure.
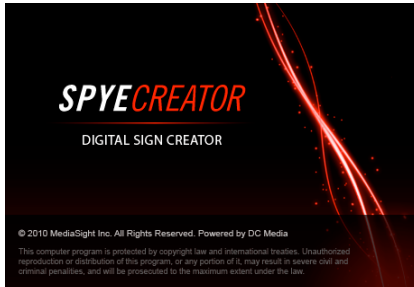
Content Authoring

The application can be used to edit multiple Digital Sign files simultaneously with each open file shown as a Window Tab at the bottom of the application window. The Sign file currently being edited is represented with a white Window Tab and the remaining open Sign files are represented with gray tabs.
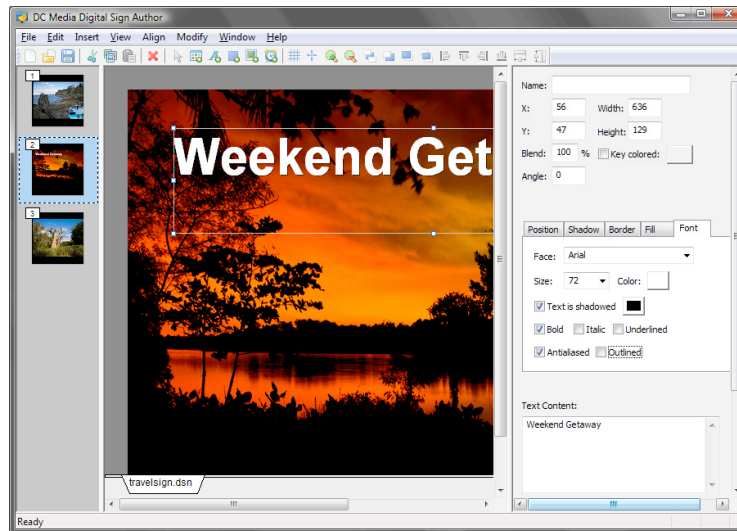
Slide Management

Each Slide in the Sign file that is currently selected is displayed as a small thumbnail down the left most window pane. The window pane in the center of the application window is the edit space where the current Slide in the selected Sign is edited.

The Slide currently being edited is highlighted with a blue frame.

To insert a blank slide, select the *Insert… Slide…* menu option

To edit any other Slide in the Sign simply click on the Slide thumbnail. To delete a Slide, right click on the Slide thumbnail and select *Delete* from the context menu, or click on the *Edit…Delete* menu option.

Slide Objects

A Slide can contain multiple shapes, images and text objects in order to create a composite image for advertising, welcoming, information or entertainment. Each object can be moved and resized in the editing window as well as ordered in a layered structure. Objects overlap according to the layered structure.

Objects currently selected are displayed with a dotted rectangle surrounding the object. Clicking on an object will select the object and any other object currently selected will be deselected. To select more than one object simultaneously, hold down the *Ctrl* key before clicking on the object.

The rightmost portion of the interface is used to display the properties for the slide or the object currently selected in the slide. To view the Slide properties select all objects by clicking in an unpopulated portion of the screen.

External Dependencies

If you have objects that contain or reference external images, data and add-on DLL files, the external files are included in the digital sign file when the sign is stored on disk. By storing external dependencies the digital sign becomes highly portable, when it is played out on a player device, the dependency files are extracted to hard disk before playback occurs.

Extraction of dependency files will not occur if the file already exists on the hard disk and has been updated by the user. For example, if you include a text file in the digital sign and the text file contains a message for display, the text file will be extracted to the hard disk before playback. If however the text file exists and has been edited by the user, the file will not be overwritten.
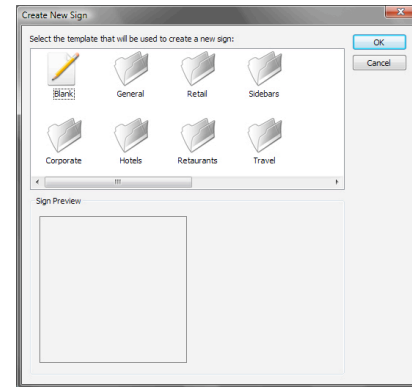
Creating a Digital Sign

To create a new Sign, select the *File… New…* menu option. The Sign Template window will be displayed

To create a blank Sign, click on the *Blank* icon and click on *OK*, alternatively pre-made Sign templates are available under the Categories represented in the window by each folder icon. To view the available templates in each Category, double click on the Category icon. Each template in the Category will be displayed as a thumbnail. To view more details on the template, click on the icon and a description and larger preview will be displayed in the Sign Preview section of the window.

When you select a template, a new Sign is created using the contents of the template Sign. You are then able to add, change or remove objects as required.

Editing a Digital Sign

This section describes in detail the various actions that can be taken to create and edit a Digital Sign.

The Editing Environment

The editing window has various options that can assist with Sign editing, for example the editing window can be zoomed in or out during the editing process, a grid can be displayed to assist with object placement and objects can be sized to match other object sizes. Menu options are also available to alter the object layering structure of each Slide.

Zooming

To Zoom In on your Sign, select the *View…Zoom In* menu option, or click on the applicable toolbar button. A keyboard shortcut is also available for this action, simply press the *Ctrl* and + keys together.

To Zoom Out, select the *View…Zoom Out* menu option, or click on the toolbar button or simply hold down *Ctrl* and – (minus).

Grid Display and Snap to Grid

A grid can be displayed as a guide for object placement. To view the grid, select the *View…Show Grid* menu option or click on the relevant toolbar button. Object movement can be constrained within the grid rectangles by select the *View…Snap to Grid* menu option. The grid size can be defined by selecting *Edit…Preferences*… and entering a new grid size in the field provided.

Object Sizing

While objects can be sized individually using the mouse cursor, objects can also be sized to match the size of a specific object in the Slide. To size multiple objects, select the objects that must sized and then holding down the *Ctrl* key select the object that the selected objects will be adjusted to match. The diagram illustrates this action:
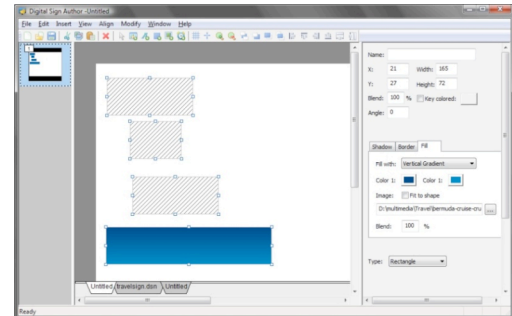
Select *Modify…Make same width* or *Modify…Make same height* to update the objects according to your requirements. In the example above we've selected *Make same width* and the results are shown:

Object Alignment

In the same manner as Object Sizing described above, multiple objects can be aligned to match a selected object. To align multiple objects, select the objects that must aligned and then holding down the *Ctrl* key select the object that the selected objects will be aligned to match. Select either *Align…Left*, *Align…Right*, *Align…Top* or *Align…Bottom* to align the objects accordingly.

Object Layering

Objects are layered in the order in which they were inserted. To bring and object closer to the front of the slide, select and object and click on *Modify…Arrange…Bring forwards* to adjust the object layering one layer at a time or *Modify…Arrange…Bring to front* to bring the object to the top layer immediately.

At any time during the editing process, hold down the left Ctrl key on the keyboard to highlight all the objects in the slide. This is particularly useful for text objects that do not contain any text or that have a color making them difficult to locate.
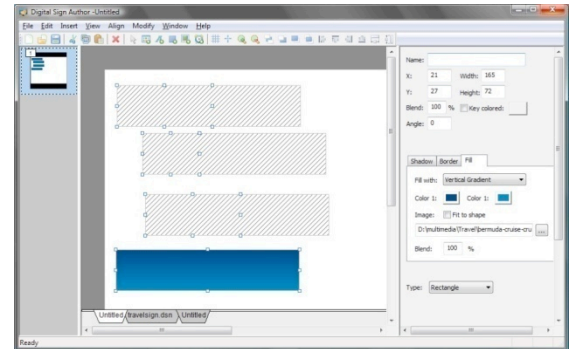
Inserting Objects

Inserting an Image

The Digital Sign Creator supports JPEG, BMP and PNG image formats. Select the *Insert…Picture…* menu option, the mouse cursor will change to indicate that an object can be placed and sized. Hold down the mouse button and move the mouse, an object sizing rectangle will be displayed. Release the mouse button and a new image object will be placed in the slide. To specify the image file that must be displayed inside the object, ensure the image object is selected and then enter the file path in the *Image file:* field located at the bottom right hand corner of the application window:

To locate the image file using Explorer, click on the browse button:
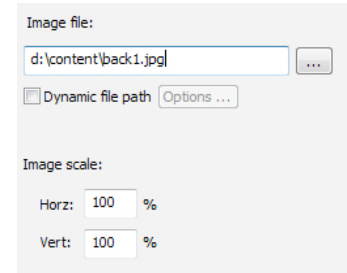
The file path for the image file can be dynamically constructed using macros, for example you may require an image that relates to external data such as weather or finance. A variety of macros are available for XML, CSV, INI or SQL data selection, for more information consult *"Dynamic Data Macros"*.

The image will always be scaled to match the size of the object, to set the image to display at 100% its original size, enter 100 in both the *Horz* and *Vert* scale entry fields or set the image object size in the object properties .

Images can also be inserted in the slide using drag 'n drop actions. Select the image file in the Windows Explorer window and then drag the file into the slide. An image object will automatically be created to display the image at 100% of its original size.

Inserting a Shape

To insert a shape object such as a rectangle, a triangle or ellipse, click on *Insert…Shape…* or click on the *Insert Shape* toolbar button. The mouse cursor will change to indicate that a shape can be inserted into the slide. Hold down the mouse button and move the mouse, an object sizing rectangle will be displayed. Release the mouse button and a new shape object will be placed in the slide. By default the shape is set to an ellipse. To change the shape type, select the new type from the drop down list in the bottom right hand corner of the window:
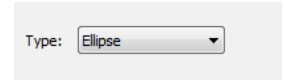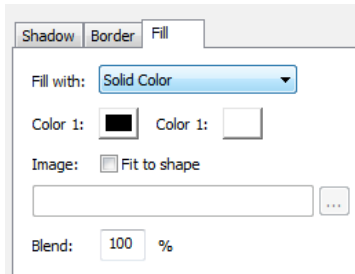
The shape can be filled with a solid color, a color gradient or an image. To set the fill properties, use the object format controls found directly above the object shape dropdown list.

Inserting Text

To insert a text object, select the *Insert…Text…* menu option or click on the *Insert Text* toolbar button. The mouse cursor will change to indicate that text can be inserted into the slide. Hold down the mouse button and move the mouse, an object sizing rectangle will be displayed. Release the mouse button and a new text object will be placed in the slide. To set the font, fill and other display properties of the text object use the object properties controls shown above.
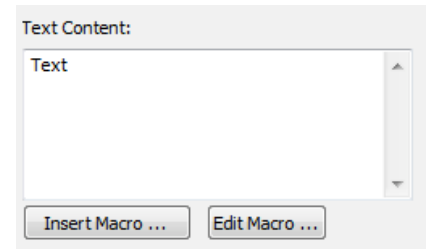
The text that will be displayed can be entered in the *Text Content:* field located at the bottom right hand corner of the display.

This field can also accept dynamic text macros as a method of displaying external data such as weather, news, financial date, the current time or date and more, consult *"Dynamic Data Macros"* for more information.

Inserting a Clock

To insert a clock object, select the *Insert…Clock…* menu option or click on the *Insert Clock* toolbar button. The mouse cursor will change to indicate that a clock object can be inserted into the slide. Hold down the mouse button and move the mouse, an object sizing rectangle will be displayed. Release the mouse button and a new clock object will be placed in the slide. The clock type can be set to Analog or Digital and various display characteristics can be modified for the clock object such as line width, color, etc.

The clock will reflect the current time on the host Device, this time can be adjusted using the Hour offset field. Enter either a positive or negative number in the field provided in order to adjust the clock by the specified hours. This is useful for displaying international times in a slide.

Inserting a Table

A table can be used to display data from an external CSV file, SQL database or XML source. To insert a table object, select the *Insert…Table…* menu option or click on the *Insert Table* toolbar button. A default table Object will be inserted into the Digital Sign. To configure the data source, columns and format of the table, click on Table Properties. The table definition dialog will be displayed.

Source Type
This field is used to select the source of the table data.

Table Displaying CSV data

File path:
Enter the file path for the CSV file or click on *Browse* to locate the file.

Field Delimiter
The field delimiter will default to a comma however this can be changed to match the delimiter in your data file.
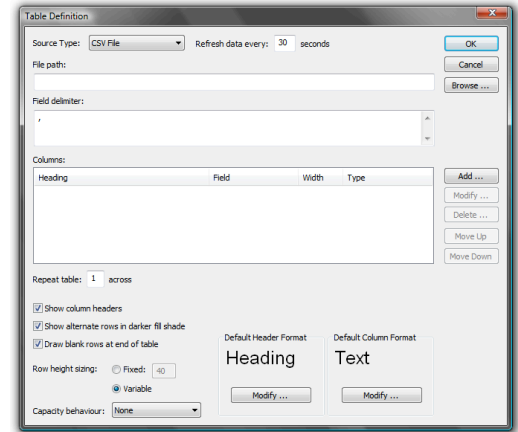
Table Displaying XML Data

File path:
Enter the file path or URL for the XML file or click on *Browse* to locate the file.

Tag Path
This field must list the tags that will be followed in order to reach the column data, each tag must be separated by a period. Consider the following example XML:

```
<NEWS>
      <ITEM>
            <TITLE>Peace broke out today in the city</TITLE>
            <DESCRIPTION>….</DESCRIPTION>
      </ITEM>
</NEWS>
```

The TITLE and DESCRIPTION tags will be used for column data, the tag path used to reach these tags is

```
news.item
```

Table Displaying SQL Data

DSN/Connection String
Enter the name of the ODBC DSN that will be used to connect to the database, alternatively enter a the OLE DB connection stirng.

SQL Query
Enter the SQL query that will be executed in order to retrieve column data.

Common Table Configuration

Columns
The table must contain at least one column. Click *Add* to create a new column in the table or select an existing column and click *Modify* to edit the column properties. Click *Delete* to delete a column.

Repeat table across
Use this field to indicate how many times the columns should repeat in the table. This is useful for building wide tables that list many rows.

Show column headers
Enable this option to make column headers visible.

Show alternate rows in a darker shade
Enable this option to have the table automatically darken every other row based on the color scheme you have chosen for the table.

Draw blank rows at end of table
If this option is enabled, the table will be drawn with blank rows until the full table height is covered.

Row Height Sizing
Select Fixed and enter the row height to have all rows the same height. If variable sizing is selected, each row will determine its height based on the content of the row.

Capacity behavior
This option controls how the table will handle a situation where the number of rows exceeds the visible space in the table. If *None* is selected, rows that are not visible will not be drawn. Select *Smooth scroll items* for each row to be scrolled slowly up the table in a continuous loop with rows repeating at the bottom of the table. *Skip row per cycle* and Display *next page* are variants of the scrolling option.

Default Header Format
Click on Modify to define the default header display attributes.

Default Column Format
Click on Modify to define the default column display attributes.

Inserting an Audio Player

An audio player object can be used to play a list of MP3 and WMA files as well as display the album art, progress bar, title, album name and artist for each mp3. To insert an audio player, select the *Insert…Audio…*menu option or click on the *Insert Audio Player* toolbar button.
The audio player requires a one of the following:
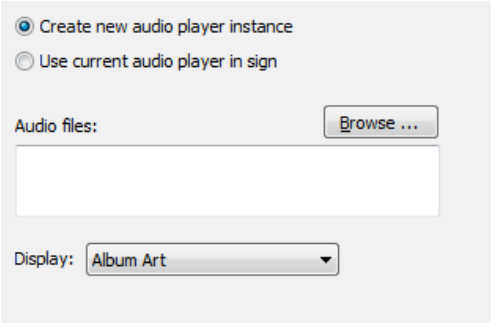
- A path to the MP3 files
- A specific file name of an audio file
- A text file listing audio files
- A M3U playlist file

Specify the source of the audio files or click on *Browse* to locate a playlist file.

Select the display characteristic of the audio player - i.e. select whether the audio player will display album art, title, artist, album, progress bar or duration.

To display multiple characteristics of the audio file being played, insert another audio player and configure the object to use an existing instance of an audio player by selecting *Use Current Audio Player in Sign* instead of *Create new audio player instance*. Thereafter select whether the audio player will display the progress bar, album art etc. This approach allows the freedom to create an audio player display with varying color, font, size and placement of audio properties.

Inserting an Add-On

Add-On objects allow for the expansion of the Digital Sign capabilities by using DLL files as plug-ins, for example a table of departing flights or arriving flights can be inserted into the sign using the FIDS in a Box add-on. To insert an Add-On object, select *Insert … Add-On* or click on the Insert Add-On toolbar button. The sign creator will scan the Spyeworks content folder for Add-On DLL's, these files will be listed in the Insert Add-On window.

Select the Add-On that you wish to insert and click on the *Select* button. If the Add-On can be configured a *Configure* button will be displayed under the object properties window.
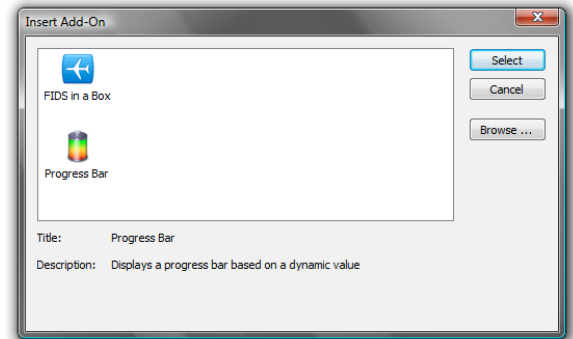
Object Display Properties

Each object has a number of properties that define how and where the object will be displayed. The common properties are:

Property	Description
Name	Object name
X	Horizontal pixel coordinate with 0 representing the left hand side of the slide.
Y	Vertical pixel coordinate with 0 representing the top of the slide.
Width	Width in pixels.
Height	Height in pixels.
Blend	Alpha blending level. 100 = totally opaque and 0 = invisible.
Key Colored	Specifies color that will be excluded from the object display.
Angle	Reserved for future use.

In addition, each object will include all or some of the following property sections:

Border

Property	Description
Style	Can be solid, dotted, dashed or none.
Color	The color of the border.
Size	Size of the border, only applicable to solid border style.

Fill

Property	Description
Style	Type of fill effect. Can be Solid color, Gradient, Image or none.
Color 1	Color of the fill effect, for gradients this is the first color in the gradient.
Color 2	Second color in gradient.
Fit to shape	Applies to Image fill style.
Image	Image file path
Blend	Alpha blending level. 100 = totally opaque and 0 = invisible.

Font

Property	Description
Face	The font face.
Size	Font point size.
Color	Text color.
Text is shadowed	Text includes color shadow.
Bold	Font is bold.
Italic	Font is Italic.
Underline	Font is Underlined.
Ant aliased	Font is smoothed.
Outlined	Font has black outline.

Margin

Property	Description
Alignment: Horz	Specify horizontal alignment within object rectangle. Can be left, center or right.
Alignment: Vert	Specify vertical alignment within object rectangle. Can be top, center or bottom.
Margins: Left	Left Margin within object rectangle.
Margins: Top	Top Margin within object rectangle.
Margins: Right	Right Margin within object rectangle.
Margins: Bottom	Bottom Margin within object rectangle.

Dynamic Data Macros

Overview

Dynamic Data Macros can be inserted into Text objects and Image file paths in order to use external data as part of the rendered text or image. For example, in order to display the date and time in a slide, a macro must be used instead of the actual date and time. An image object can be updated to display an image file based on a file path that includes specific data such as the day of the week, the time of the day or any other data driven condition.

Macros are always enclosed by square brackets for example [dayName]. The macro is replaced in the text whenever the text is rendered. For example:

Today is [dayName]

is rendered as:

Today is Wednesday

Macros can also be used to retrieve data from a XML file, a CSV file, a INI file or an SQL database. The following macros are supported:

Macro	Function
[day]	Day of the month as a number, padded to two digits e.g. 02
[month]	Month as a number, padded to two digits e.g. 12
[year]	Year as a number
[dayName]	Day of the week name with first letter uppercase. [dayname] returns day of the week name in lowercase. [DAYNAME] returns day of the week name in uppercase.
[dayName3]	Day of the week name abbreviated to 3 letters, [dayname3] returns same name in lower case, [DAYNAME3] returns name in uppercase.
[daynum]	Day of the month with postfix , e.g 3rd or 21st. Number is not padded.
[MonthName]	Name of the month. [monthname] returns name in lowercase, [MONTHNAME] returns name in uppercase.
[12hr]	Current hour between 1 and 12, padded to 2 digits.
[24hr]	Current hour between 0 and 23, padded to 2 digits.
[min]	Current minute padded to 2 digits.
[sec]	Current second padded to 2 digits.
[ampm]	AM or PM depending on time of day.
[exepath]	Current directory path used by executable, e.g. c:\program files\spyeworks\
[exedrive]	Current drive used by executable, e.g. d:\

XML Data

The XML data macro syntax is fairly complex to simply enter in the text content field. To ease the task of macro configuration, a window is provided in the macro selection process in order to capture relevant XML parameters. The actual macro syntax is:

[src:xml;file path or URL;tag path;item;default value;]

Parameters are separated by semicolon. The macro parameters are described as follows:
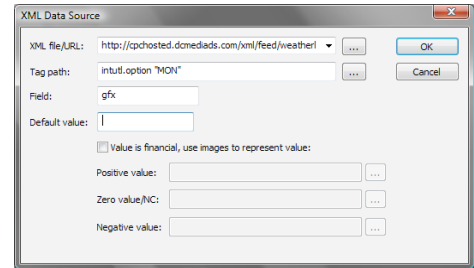
src:xml	Indicates an XML data source.
file path or URL	The local file or online URL for the XML data.
tag path	A dotted notation of each tag that must be opened in order to reach the data (see example below).
Item	The last tag that contains the data.
default value	The value that will be used if the data is not available.

For example:

[src:xml;http://cpchosted.spyeworks.com/xml/feed/weather.xml;cabs_tabdata.row id="THURSDAY";column id="gfx";;]

In this example the XML looks as follows:

```
<cabs_tabdata>
        <row id="THURSDAY">
                <column id="day">THURSDAY</column>
                <column id="min">2</column>
                <column id="max">22</column>
                <column id="desc">Fine</column>
                <column id="gfx">sun</column>
                <column id="ldesc">light westerly</column>
                <column id="date">2008-04-24</column>
        </row>
```

The value retrieved is *sun* and this value can be used in an Image object file path to specify the image that must be used in the daily weather report.

CSV Data

CSV data is a lot simpler to use than XML. A easy to use
configuration window is supplied to capture the CSV
configuration parameters:

The CSV Macro syntax is:

[src:csv;CSV file path;row;col;default value;]
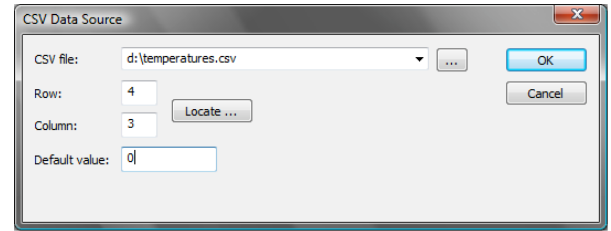
Parameters are separated by semicolon. The macro parameters are described as follows:

src:csv	Indicates a CSV data source.
file path	The local file containing the CSV data.
row	Data row starting at 1.
col	Data column starting at 1.
default value	The value that will be used if the data is not available.

For example:

[src:csv;d:\temperatures.csv;4;3;0;]

Would retrieve the value at row 4 column 3 in d:\temperatures.csv.

INI Data

Data can be retrieved from text configuration files known as .ini files. To retrieve data, a window is provided for easy configuration:

INI data is particularly useful for retrieving information from a configuration file, for use in other macros such as a SQL data retrieval macro. For example, a wayfinding scenario requires an LCD screen to display event scheduling for a specific conference room. The media player will have an INI file that indicates the room ID that should be used in retrieving scheduling information from a SQL database.

The syntax for the INI macro is:

[src:ini;file path;section;key;default value;]

Parameters are separated by semicolon. The macro parameters are described as follows:

src:csv	Indicates an INI data source.
file path	The local file containing the INI data.
Section	Section, example *[settings]*
Key	Data key, example *name=test*
default value	The value that will be used if the data is not available.
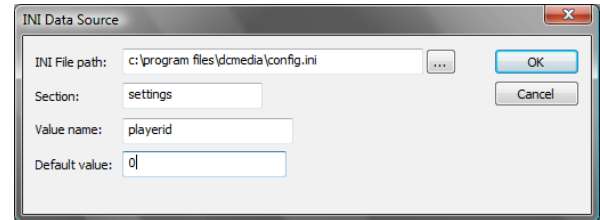
For example, to retrieve the room ID from the INI file, the macro would look as follows:

[src:ini;c:\program files\spyeworks\room.ini;settings;roomid;0;]

And the INI file would be:

```
[settings]
roomid =3
```

SQL Data

Data can be retrieved directly from a SQL database using a database query contained within a macro. A macro configuration window is provided:

By default the OLE DB Connect field can be left blank in which case the current Spyeworks connection string will be used. If no connection is configured, the connection string must entered in the field provided.

The Field type can be left blank until further notice.

The syntax for the SQL macro is:

[src:sql;connect string;query;field;field type;default value;]
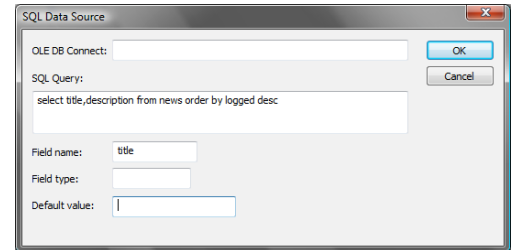
Parameters are separated by semicolon. The macro parameters are described as follows:

src:sql	Indicates a SQL data source.
connect string	The OLEDB connection string
Query	The SQL query that will be executed.
Field	The field that must be retrieved.
default value	The value that will be used if the data is not available.

For example:

[src:sql;;select title,description from news order by logged desc;title;;]

Add-On Macros

Digital Sign Add-On DLL's can be also be used for macro replacement. Each DLL supports a custom list of macros that can be used to obtain dynamic data values. Consult the user manual for the add-on to see the list of macro's that can be used and how to use them.

Macros within Macros

Macros can be embedded within other macros. For example, using INI file data to build a SQL query in order to retrieve data that must be displayed:

[src:sql;;select title from events where roomid = [src:ini;c:\room.ini;settings;roomid;0;] order by schedule desc;title;;]

Digital Signage Network Manager

The Digital Signage Network Manager is the most advanced network manager for digital signage networks available today. The manager provides a wealth of management features that ensure you have full control over your digital signage network, and that you are able to detect and resolve any points of failure, minimizing screen downtime and maintaining customer satisfaction.

By deploying the management agent on a player Device you will be able to control playback, execute applications, update the registry, control the display resolution, audit the hardware, retrieve screenshots and more.

The agent will also monitor for any popup dialog windows appearing over your digital signage displays, when a popup is detected the agent closes the window and relays the window message back to the management server.

The Digital Signage Network Manager can be used to monitor any digital signage network that is based on Windows XP or Vista simply by installing the agent software.

Using the Digital Signage Network Manager

The main application interfaces is divided into several sections as shown below:

Locations → Device List Network Map Screenshot View

Status Window →
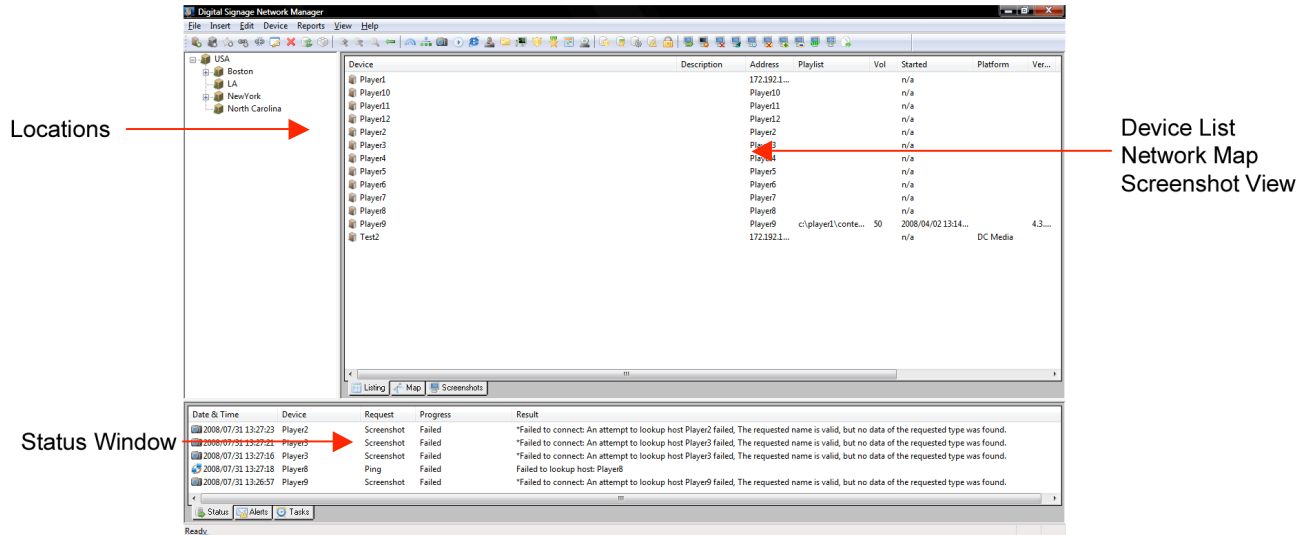
Locations

The leftmost window in the user interface is used to create and manage a structured hierarchy of Locations, these Locations can be physical locations or virtual groupings. When a Location is selected in this view, the Devices associated with this Location are listed in the Device List window located on the right hand of the Location window.

Creating a New Location

To create a new Location, select the *Insert… Location…* menu option or right click inside the Location window pane. The new location will be inserted underneath the Location currently selected in the Location tree.

Parent
This field details the parent Location for this new item.

Name
Enter a name for this Location. The name may include spaces, mixed caps and alphanumeric characters.

Description
Details relevant to this Location such as physical address or contact details can be included in the description.
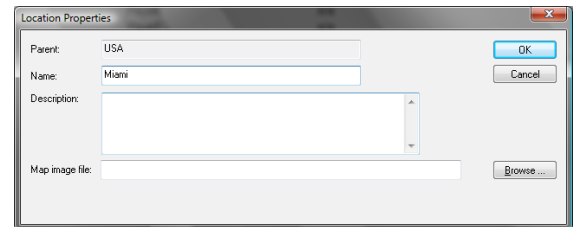
Map image file
When you select a Location, the Devices associated with this Location are listed in the Device List window alongside the Location window. The Device List window can list Devices in a tabular view, a network diagram of a list of screenshots. When the Devices are shown in a network diagram, you have the opportunity of placing a bitmap behind the network diagram to enhance the map. To do this, enter the file path of the bitmap or JPEG image file that will be used whenever this location is selected. Examples of such a background image could be floor plan, a country map or a city map.

Editing a Location

To edit a Location, double click on the item or select the item and then select *Edit… Properties …*

Deleting a Location

To delete a Location, select the relevant item and click on the *Delete* location toolbar button or select *Edit… Delete….*

Please note:	*When you delete a Location all Devices and locations stored under this Location will also be deleted.*
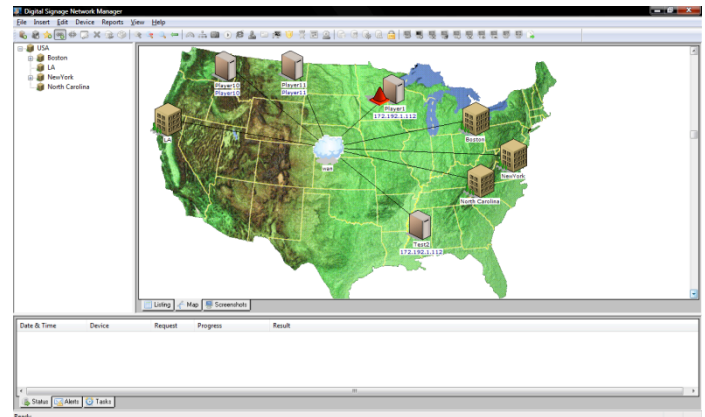
Moving a Location

To move a Location underneath another Location, select the Location that you wish to move and select the *Edit… Move to Location…*menu option. Select the target Location from the list presented

The Device List

The Device List window pane lists the Devices for the current Location in three styles; as a tabulated listed of Devices, a network diagram and a list of Device screenshots. To switch between the three view styles,
select the appropriate view style from the three tabs located at the bottom of the Device List window.
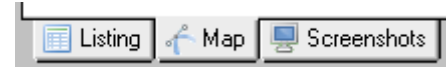
Detailed List of Devices

The Device List window lists all the Devices currently associated with the selected Location. Each Device is listed along with its description, network address, status, Playlist and any message relating to the latest management activity taking place on the Device.

Devices can be added, changed or deleted in this view.

Adding a New Device

To add a Device, select the *Insert… Device…* menu option or right click in the Device List window and select *Insert Device…*

General Tab

Location
The Location field indicates the current Location for this Device.

Name
This name is used in identifying the Device throughout the Spyeworks application suite. The name does not necessarily need to match the computer name or Device host name.

Description
Enter a description for this Device.

Device Type
Select the type of Device from the list presented. The type of Device is used primarily for documentation purposes and it will also be used to determine the management options available to you for the specific Device.

Style
This field is merely for documentation purposes and describes whether the Device is free standing or rack-mounted.

DS Software
Enter the product name of the Digital Signage software or hardware that powers this display. If you are unsure, the agent can attempt to auto detect the software platform. If you require auto-detection, ensure that **Auto detect** is checked.
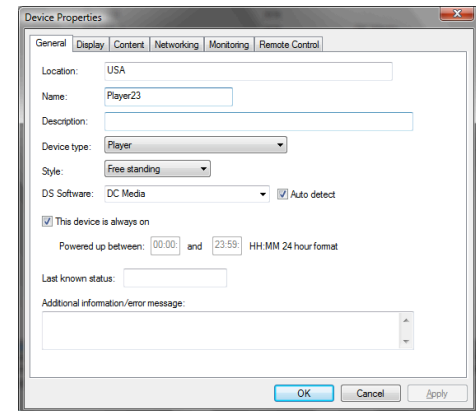
This Device is always on
If the Device is always powered up and playing content then this field should be left checked. If you uncheck this field, you need to enter a start time and end time during which this Device can be polled for status information. If auto polling is enabled, Devices that are not always powered up will only be checked during their specified power up times.

Last known status
Indicates that last know status from an automated poll, a telemetric poll operation or screenshot retrieval operation.

Display Tab

This Device Produces a Digital image
This field must be checked in order to support screenshot retrieval.

Virtual Display Number
Enter the Windows Desktop number that this Device uses to display content. It is possible to run multiple Spyeworks players on a single Device with each player using a specific desktop number.

Orientation
Set the display orientation as Portrait or Landscape. This setting is used by the screenshot display window to display the screenshot in the correct orientation.
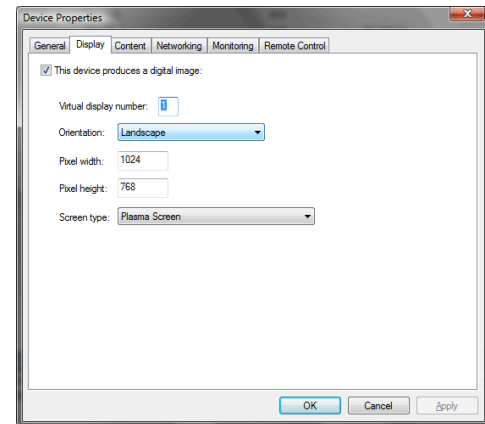
Pixel width
Defines the width of the display in pixels.

Pixel height
Defines the height of the display in pixels.

Screen type
This field is used for documentation purposes only; it is used to describe the type of display technology attached to the Device.

Content Tab

Content Path
Enter the full path where the content used by this Device is stored.
Spyeworks requires this path in order to direct content and Playlists to
the right location on disk.

Playlist Path
For current versions of Spyeworks this path is not used, its purpose is
reserved for integration with other Digital Signage software solutions.
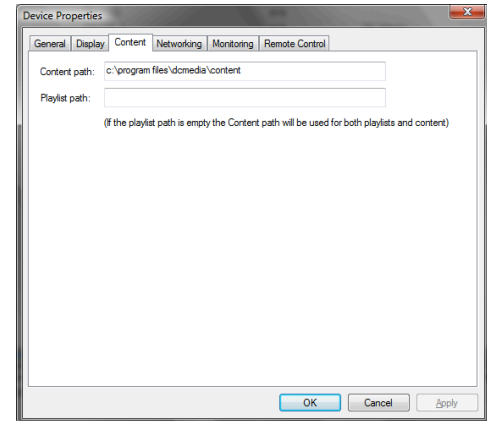
Network Tab

Network Address
Enter the IP address, computer name or host name for this Device.

Connection Type
In most cases this field should be set to *TCP/IP connection to Device.* In cases where Digital Courier is used for satellite distribution, the field can be changed to *Digital Courier* however this should only be done when there is no direct IP connection to the Device.

This Device can receive files
Check this field if this Device can receive files over the network.

Protocol
Select the file transfer protocol that must be used to transfer files to this Device. Options include FTP, DFT (a proprietary protocol used by Spyeworks), UFTP (reliable multicast), TFTP and UNC Network Shares.

Port
Enter the network port that is used for file transfer.
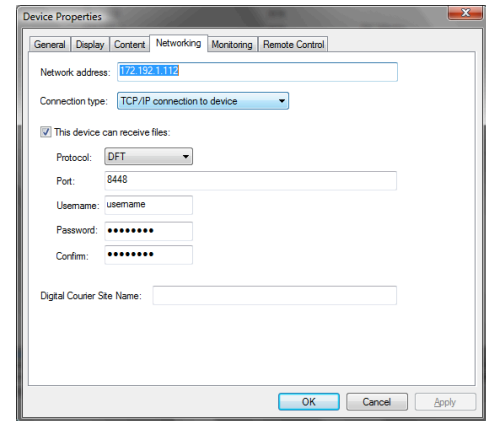
Username
Enter the username used for authentication.
NOTE: This is <u>not</u> the Windows username and password but rather a proprietary username and password used by the network manager.

Password
Enter the password used for authentication. Confirm this password in the *Confirm* field.

Digital Courier Site Name
This field is optional and is used only by the Digital Courier Agent. If you are unsure of what to enter here, enter the computer name as the Digital Courier Agent adopts the computer name as its own during installation.

Montioring Tab

Device can be monitored with ICMP ping
Check this field if the Device responds to ICMP ping packets during monitoring.

This Device supports Sentry polling on port
The Digital Signage Agent should be installed with the relevant agent extensions, by default the agent will listen on port 9000 for polling connections. When an agent is polled, data is collected from each agent extension and sent back to the server, including volume, date and time, platform, version and more.

Password
Enter the password defined in the Sentry configuration on the remote player. The default password is *password*.

This Device has a webcam monitor
Check this field if the Device can be monitored via webcam.

Connection Type
The webcam can be attached via a USB port or it can have its own network address.

Address
Enter the webcam address if the webcam connection type is set to HTTP.
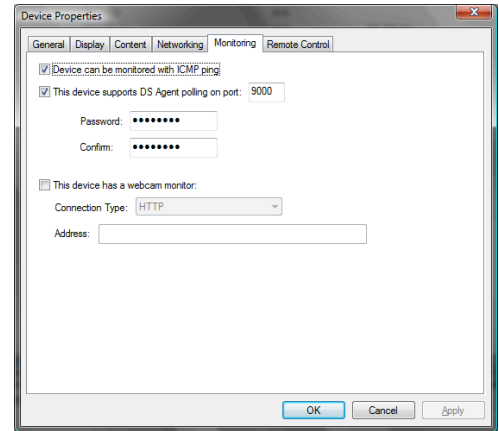
Remote Control Tab

Supports Web browser access on port
Check this field if the Device supports HTTP access. This allows the network manager to open a web browser interface with the site address entered automatically via a toolbar button and makes for easier management without having to re-enter network addresses.

Supports remote player control on port
Spyeworks players support remote player control via port 8900. The operator can play, pause, stop, select the previous item or advance to the next item in the Playlist uses the player control over a network link.

Supports remote desktop sharing on port
Check this option if the Device supports Remote Desktop, VNC, TightVNC, Timbuktu or any other remote desktop sharing platform.

Command line
The command line that will be used to connect to the remote desktop software can be configured in this field.

Editing a Device

To edit the properties for a Device, double click on the item or right click and select *Properties*.

Deleting a Device

To delete a Device, select the item and select the *Edit…Delete…* menu item or right click and select delete.

Moving a Device

To move a Device to another Location, select the Device and select *Edit... Move to Location...* or right click and select *Move to location.* Select the target Location from the list provided to complete the operation. You can move multiple Devices at once simply by selecting all the Devices that you wish to move before selecting the *Move to location* menu option.

The Network Map

The network map view provides a network diagramming tool that can be used to visualize a digital signage network.

Each Device in the current Location, as well as any Locations that are grouped into the current Location are represented on the map using an object. These objects can be moved around to create a network map.

Objects can be linked to illustrate networking by enabling the link tool. The link tool is enabled by selecting the *Edit… Link* menu option. When the link tool is active, objects can be linked simply by clicking on the first object and then dragging the line onto the second object.

If you wish to remove a link, select one of the linked objects and then select the *Edit.. Unlink* menu option. All links to the selected object will be removed.
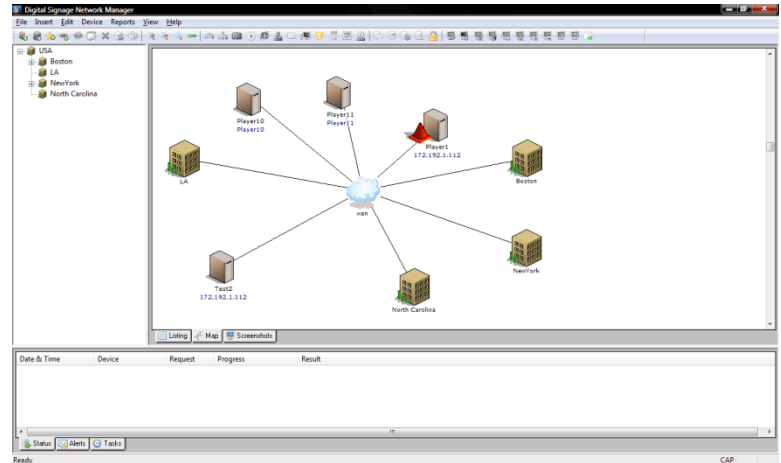
Devices

Each Device is represented on the map using an icon that describes the type of Device. The following icons are used for each Device type:

Player   Player   Server   Server   Router   Router   Projector   Projector   Firewall   Firewall
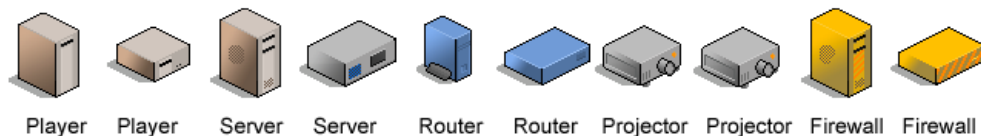
Symbols

The network map can be enhanced by adding a variety of symbols. Each symbol is a visual element that has no network address and cannot be pinged or polled for data. The following symbols are available:

Plasma   Plasma   WAN   Building   LCD   Switch   Wireless AP

Manipulating the Map

The map can be zoomed-out, or zoomed-in using the two zoom toolbar buttons. To move any object, select the object by clicking on it or by dragging the mouse cursor along the map creating a selection box. To view the previous map, click on the Go Back toolbar button.

Screenshot View

The screenshot view will list each Device that produces a digital display in the current Location. The example alongside shows a number of portrait style plasma screenshots.

Retrieving a Screenshot

To retrieve a screenshot, select one or more Devices and select the *Device… Request Screenshot* menu option, or right click on a Device icon and select *Request Screenshot*. You will see a new status line appear at the bottom of the screen. This status item will describe the network operation as it progresses to the point of producing a screenshot or a failure related message. If failure should occur, a red cone is placed on the screen alongside the Device icon to indicate a problem.
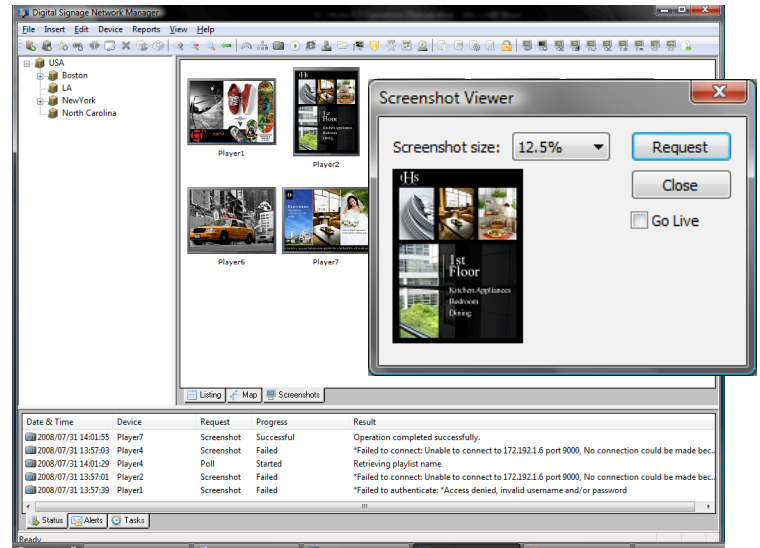
If you require a large screenshot, right click on the screenshot and select *More Screenshots…* A dialog window will be displayed where you can select the size of the screenshot that you require.

To view a live sequence of screenshots, click *Go Live* and a continuous stream of images will be displayed. To stop the stream, deselect *Go Live*.

Device Management

Device management activity falls into two Categories, Read operations that generally result in status data being collected and Write operations that result in configuration changes. User management will ensure that only authorized users are permitted to execute Write type instructions. Users restricted to Read type instructions will be required to enter a supervisor User Name and Password if they attempt to execute a Write type instruction.

Polling a Device

In order to retrieve telemetry data from agent extension DLL's, the Device must be polled. This is done by select one or more Devices and then selecting the *Device…Poll…* menu option. The management application will connect to each Device and retrieve polling data, this data is then encoded and stored in the database. By default polling data includes player execution state, version, Sentry version, current Playlist, volume, current date and time, platform and more. This data is extended to include any additional telemetry data provided by the extension DLL's. An example of an extension DLL is a UPS monitor that collects information from an external UPS Device via RS232.

Actions

The digital signage management application provides a list of actions that can be executed directly on the remote Device to assist with Device administration and configuration. The following actions are available:

Executing an Application

To execute an application, select one or more Devices and select the menu options *Device…Action… Execute*.

Enter the full file path of the executable in the field provided and then enter any command line parameters below the executable file path. You do not need to include quotation marks in the executable file path.

Click on OK to send an instruction to execute the application. The application must reside on the target Device before this instruction can be sent. Monitor the Status window at the bottom half of the application window for status information relating to this command.
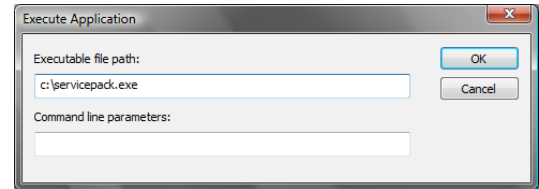
Rebooting the Device

To reboot one or more Devices, select the Devices and then select the menu options *Device…Action…Reboot*. You will be prompted to confirm the reboot command before the command is sent. If you click No then the reboot command will be cancelled.

Terminating a Process

To terminate a process on one or more Devices, select each Device and then select the menu options *Device…Action…Kill* Process. Click *OK* to send the command. If the executable is found in the process list on the remote Device it will be terminated. Monitor the Status window at the bottom half of the application window for status information relating to this command.
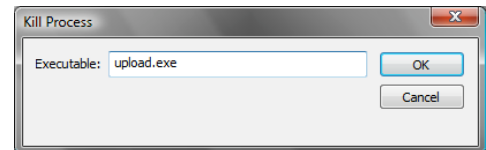
Updating the Registry

Select the menu options Device*…Action…Update Registry*. Enter the updated registry entry keys in the text entry field or click on *.reg File* to browse to an existing *.reg* file on disk. This is the preferred method of performing registry updates.

Setting the Date and Time on the Device

To set the date and or time on one or more Devices, select the *Device…Action… Set Date & Time* menu options. Enter the new date and time and click on *OK* to send the command or click on *Cancel* to abort.
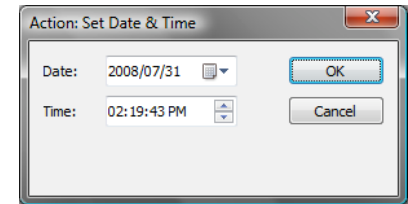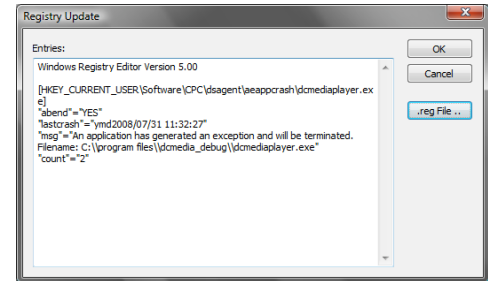
Deleting Files

To delete one or more files on any number of Devices, select the
Device…Action…Delete Files menu option.

Enter the full file path in the field provided or specify a wildcard in the file
path to delete multiple files matching the specification. *WARNING:* Files are
permanently deleted and cannot be recovered from the recycle bin.
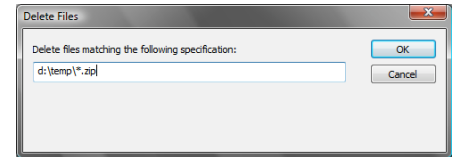
Wildcard deleting in the root folder of C: drive, the Windows folder and the System32 folder is blocked by the application.

Copying Files

To copy one or more files from one location on disk to another, select the
Device…Action…Copy Files menu option.

Specify the source folder and specific file name or wildcard. Files
matching the source specification will be copied to the target folder. The
target folder will be created if it does not already exist.
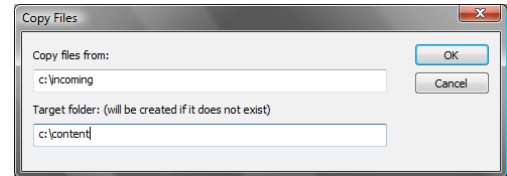
Moving Files

To copy one or more files from one location on disk to another, select the
Device…Action…Move Files menu option.

Specify the source folder and specific file name or wildcard. Files
matching the source specification will be moved to the target folder. The
target folder will be created if it does not exist.
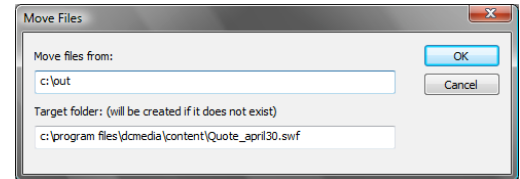
Setting Device Master Volume

To set the master output volume on one or more Devices, select the
Devices and then click on *Device…Action…Set Volume*. Set the new
volume using the slider control in the Set Volume window.
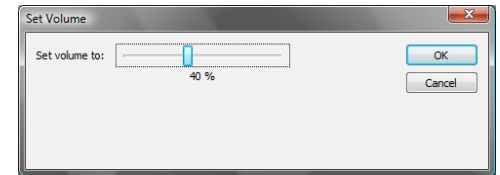
Setting the Display Resolution

The display resolution on a remote Device can be changed by selecting
Device…Action…Set Display Resolution.

Enter the required changes and click on *OK* to send the command. If the Device must
be rebooted for the change to take effect, check the *Reboot Device* option.
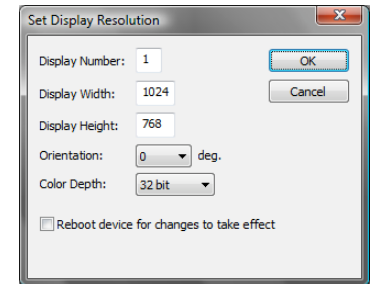
The Remote File Explorer

The management application provides a File Explorer type interface that allows direct access to the file storage on the remote Device. To activate the File Explorer, click on *Device…Remote File Explorer*.

By default, no files will be listed and only the root directory for each disk will be listed on the left side of the window. To open a drive, double click on the folder or select the folder and then click on *Refresh*. Files located in the selected folder will be displayed on the right side of the window and sub folders will be listed underneath the selected folder. The file listing will be stored in a cache file on the local hard disk for future viewing. To refresh the cached list simply select the folder and then click on the *Refresh* button.

To delete a file directly from a remote disk, select the file and click on *Delete*. You will be asked to confirm the delete operation before the file is deleted.

The Remote File Explorer will retrieve drive and directory listings on demand. When the file explorer is first opened, the list of hard disks on the remote device is listed. To view the files on a hard disk, double click on the relevant disk. The current path will become the root of the selected hard disk and this root path will then be displayed at the top of the window as the *Current Path*. If you double click on a folder listed in the root, the files and folders located in the folder will then be retrieved and the *Current Path* will be updated.
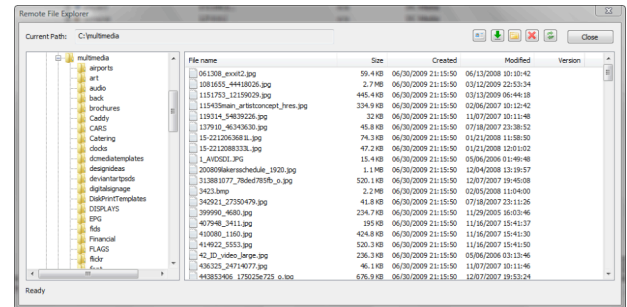
Viewing Remote Files

To view a file located on a remote device, select the file in the listing and then click on the *View* button. The file will be downloaded to your current temporary path and then displayed using the default application for the selected file type.

Downloading a Remote File

Using the same technique as Viewing, this option enables you to download the file to custom location on your hard disk.

Create a remote folder

Click on the *Create Remote Folder* button and enter the folder name.

Deleting a remote file

To delete one or more remote files, select the files and click on the *File Delete* button

Refreshing the list of files

To refresh the file listing click on the *Refresh* button

The Remote Task Manager

Included in the management application is a Remote Task Manager interface that allows direct access to the list of running processes on the remote Device. To activate the Task Manager, click on *Device…Remote Task Manager*.

Each process is listed along with the relevant PID and current memory usage statistic. To end a process, select the process and click on *End Process*.
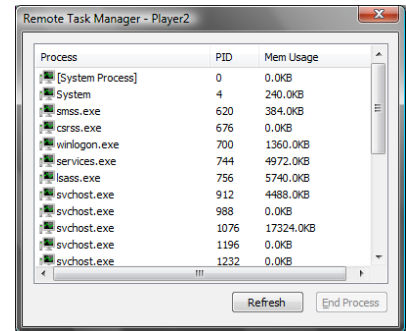
Reporting

Reports can be generated on proof-of-play data, Playlist integrity, events and telemetry. In order to generate a report, the data must be collected from the Device beforehand. The following topics describe the data collection process and subsequent report generation steps.

Proof-of-Play Reports

Proof-of-play log files are generated by the player whenever content is played out. To collect the proof-of-play report, select the Device and then select the *Device…Retrieve Proof-of-Play* menu option.

To retrieve only a single days proof-of-play data, select the *Single Day* option and enter the date required. If you would like to retrieve data for a period of time, select the *Date period* option and then enter the start and end dates required. Click on
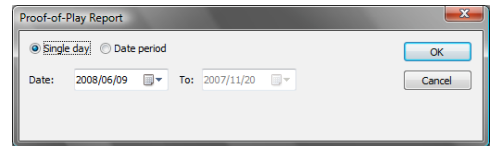
OK to initiate data retrieval. Monitor the Status window at the bottom half of the application window for status information relating to this command.

Once data collection has completed, select the *Reports…Proof-of-Play* menu option. You will once again be presented with the date selection dialog shown above. Click on *OK* to generate the report.

Playlist Integrity Report

The Playlist integrity report indicates the integrity of the current Playlist by listing each Asset in the Playlist along with a status indicator relating to the content being found in the required location. To retrieve Playlist integrity data, click on *Device… Check Playlist Integrity*. Monitor the Status window at the bottom half of the application window for status information relating to this command.

Once data collection has completed, select the *Reports…Playlist Integrity* menu option. The report will be generated and displayed.

Device Event History Report

This report details the list of events received from the Device along with any status updates for each event. To generate this report, click on *Reports…Device Alert History*.

Device Telemetry Report

Each agent extension DLL on the remote Device is called by the Sentry to provide telemetry data in response to a poll command. Accordingly, the same DLL's are called by the management application to decode the stored telemetry data and present the information in an HTML format. The report generated will list all telemetry data retrieved during the latest poll command. To generate this report, ensure that you have already polled the Device (see *"Poling a Device")*.

User Management

By default the management application has no defined users and authentication is not required in order to use the application. Full control is provided in this mode and it is recommended that the application be secured by defining one or more users. To add, modify or delete users, click on the *File… User Management* menu option, When the application is has no users defined this menu option is accessible however once users have been defined only authorized users may select the User Management menu option.
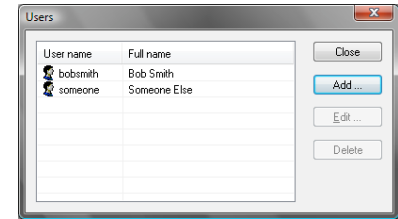
Adding a User

To add a new user record, click on the Add button.

User name
Enter the user name in this field. The user name may contain spaces, uppercase and lowercase characters and numeric digits. The user name may not exceed 16 characters.

Password
Enter the users password, the password may contain spaces, uppercase and lowercase characters and numeric digits. The password may not exceed 16 characters.

Confirm
Confirm the password in the field provided.
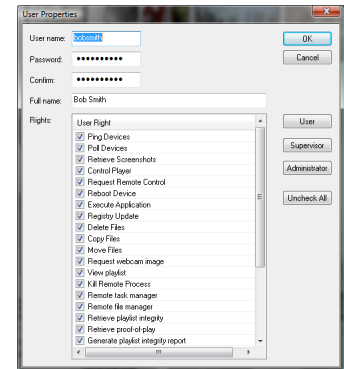
Full name
Enter the user's full name.

Rights
Select the rights assigned to this user. For convenience, rights can be assigned according to pre-defined roles simply by click on the *User, Supervisor* or *Administrator* buttons.

Modifying a User Record

To modify a user record, double click on the username or select the username and click on *Modify*.

Deleting a User Record

To delete a user record, select the user name and click on *Delete*. You will need to confirm the delete operation in order for the record to be deleted.

The Digital Signage Sentry

All management functionality provided through the management application is implemented in the Digital Signage Sentry. The DS Sentry must be installed on a Device in order to execute any management function.

The DS Sentry runs as a minimized application with a small icon that is visible in the system tray. The agent application window can be restored to a visible state by right clicking on the icon and selecting the Open menu option.

The Sentry Application Window

The Sentry application window lists the agent extension DLL's located on disk along with information relating to the filename and enabled state of each extension.

The topmost configuration button is used to configure the Sentry application. The Configure button located alongside the list of extension DLL's is used to configure each extension.
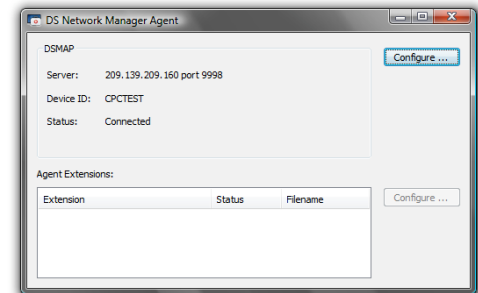
Sentry Configuration

Configuration of the Sentry is done by click on the topmost *Configuration* button.

General

This configuration window provides general configuration options.

Delay Polling
Enter the number of seconds that the agent will use to delay extension polling. This is useful to prevent false events being uploaded to the server during Device startup. For example, a satellite
DVB-S receiver Device may require a period of time to establish signal and the relevant extension DLL's must be delayed from polling in order to prevent false 'low signal' events.

Report agent startup
Tick this option if you require an event whenever the agent is started (in effect signaling Device startup).

Allow incoming status connections on port
By default this option should not be disabled, the management application uses this port to retrieve status information and download instructions. This port should only be disabled if the Device is excluded from external management for a time period.

Allow incoming event reports on port
Tick this option to support event logging from external applications, for instance an external LED screen monitor can log faulty LED panels via this port.

Start error dialog scanner
Tick this option to start the error dialog scanner. This scanner will detect and remove any error messages or dialog windows that may overlay your digital signage display.

Report error messages as events
When an error dialog is detected by the scanner the actual error text can be reported back to the server as an event.

File Transfer

The File Transfer settings control the ability of the Sentry to receive files using the DFT protocol.

Allow incoming file transfers
If you are using the Spyeworks Scheduler to distribute content to a player, you must enable this option.

Port
Enter the port number that this file transfer host will listen on for incoming connections. The default value is 8448.

Username
Enter the username; this value must match the username specified in "*Detailed List of Devices*" under the networking tab of the device properties in the network manager.

Password
Enter the password and confirm the password using the same value specified in *Detailed List of Devices*" as discussed above.

Maintain 3G/dial-up connection
Enable this option if you want the Sentry to ensure that a 3G or Dial-up connection is always connected.

Event Upload

Send Events to Network Manager
To enable event reporting to a Digital Signage Network Manager application, enable event report by checking Send Events to Network Manager

Let Network Manager configure this option
Enable this option to allow the Network Manager to automatically configure event uploading the next time it connects to this Sentry via a poll operation.

Protocol
Select *Event Report* if the Sentry will upload directly to a Network Manager, or select *FTP* if you wish to use an intermediate server.

Address
Enter the IP address or hostname of the server that will receive event file uploads.

Port
Specify the port number relating to the server, for example port 21 for *FTP* or 9500 for *Event Report*.

Username
The username used for authentication during the upload.

Password
The password used for authentication.

Confirm
Confirm the password in this field.

Connect Using
Indicate if dialup networking is used to establish a connection or if the connection already exists.

Security

This dialog window is used to control security for incoming management instructions and activity from the Digital Signage Network Manager.

Password
Enter the password used by the Digital Signage Network Manager to authenticate with this agent. By default the password is '*password'*.

Confirm
Confirm the password in this field.

Player

Enable this option if you want the Sentry to monitor the Spyeworks Player. The Sentry can report an event if the player is not running and it can be configured to restart the player in the event that the player stops executing.

Executable
Browse to the Spyeworks player executable or enter the file path.

Restart player if not running
Enable this option if you want the Sentry to start the player if the player is not running.

Report player events
If the agent detects the player has stopped or fails to start the player it will report an event back to the manager.

DSMAP

The Digital Signage Management Access Protocol (DSMAP) will allow direct connections to the Sentry or file transfers and management without requiring router configuration, port mapping or dynamic DNS. If you have a DSMAP account profile for this player device, enable this option and enter the DSMAP server address, port and password.

Troubleshooting

10.1 **The Player won't play the playlist that I have selected/distributed**
Check the date and time on the Player device. If the date and time are ahead of the start date and time specified in the playlist then the Player won't select the playlist for playback.

10.2 **I get the error message '*Failed to connect: Unable to connect to (address) port 9000, No connection could be made because the target machine actively refused it.*' Whenever I try to retrieve a screenshot from the player.**
The Sentry is not running on the remote device. Restart dsagent.exe and try again.

10.3 **I get the error message '*Connection timed out. A connection attempt failed because the connected party did not properly respond after a period of time, or established connection failed because connected host has failed to respond*' whenever I try to connect to a player across the network**
In most cases this error occurs when the Windows firewall is enabled on the player or there is a router configuration problem on the network.

10.4 **I cannot connect to the player even though the address and port are correct.**
Ensure that the Windows firewall on the remote Device is disabled or has been configured to allow connections through on port 9000.

10.5 **PowerPoint files aren't being played out at all**
If the path and file name of the PowerPoint presentation file exceed 218 characters then the file cannot be viewed by Spyeworks. This is a due to a limitation in the Microsoft Office programs. Consult the Microsoft Knowledge base article http://support.microsoft.com/kb/416351 for more information.

10.6   PowerPoint files open in a new window in the player
This will occur when the Browse in Same Window option is not enabled for the .PPT or .PPS file types in the Windows Explorer configuration. To remedy:

1.   Open Windows Explorer.
2.   Locate the PowerPoint file that you are attempting to play.
3.   Right click on the file, select *Open with…*
4.   Select Internet Explorer.
5.   In the dialog window that opens, de-select *Always ask this question*.
6.   Click on *Open*.
7.   Close Internet Explorer and restart the player.

10.7   Screenshots are blank when video is being played.
For Spyeworks players, enable VMR by entering the following line in the spyeworksplayer.ini file or use the player configuration utility to set this value:

```
[dshow]
Usevmr=1
```

Ensure that Hardware Acceleration is disabled:

1.   Open the Windows Control Panel
2.   Double click on the Display settings icon
3.   Click on the Settings tab
4.   Click on the Advanced button
5.   Click on the Troubleshooting tab
6.   Disable all hardware acceleration.

Note: For more troubleshooting and support please visit http://www.spyeworks.com/support

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Technical Notes and Specifications

Spyeworks Minimum Hardware Specifications

The minimum hardware requirements for a Spyeworks Player are:

- Intel Dual Core Processor
- 512 MB RAM (1024 MB is recommended for improved Flash playback)
- 80 MB hard disk space
- VGA graphics adapter (PCI express or onboard)

The minimum software requirements are:

- XP Service Pack 2 or Vista
- DirectX 9.0c

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In addition, while the following software components are optional they are required in order to play out specific multimedia formats:

Multimedia Format	Requirement
MPEG video	DirectX 9.0c
Flash (SWF)	Macromedia Flash 6.0 or higher
Quicktime (MOV)	Apple Quicktime 7.0 or higher
Windows Media	Windows Media Player 10 or higher
Windows Media Streaming	Windows Media Player 10 or higher
HTML	Internet Explorer 6.0 or higher

Hardware Compatibility and Integration

Video Capture Cards

Spyeworks has been successfully tested with the following video capture Devices:

- ADS Tech InstantTV+FM PCI
- Gigabyte Global TV PCI
- Gigabyte USB TV
- Leadtek Winfast TV2000XP Expert
- Leadtek Winfast TV2000XP Deluxe
- Leadtek Winfast TV USB II Deluxe
- Z-Cyber Genie Wonder Pro
- Hauppauge WinTV-PVR 150
- Hauppauge WinTV 1600
- VideoMate S350
- YUAN FunTV

USB Webcams

- Logitech QuickCam Express
- Acer OrbiCam

Integration

Hardware integration is possible via the Spyeworks Plug-in architecture. The following Devices have been successfully integrated with:

Plasma & LCD Screens

- Sony LCD
- Panasonic Plasma
- NEC LCD

Video and Audio Switches

- Kramer VS601
- Kramer VS162AV
- Kramer VP719XL
- AMX Netlinx Series

Digital Projectors

- Panasonic PT series
- Panasonic DLP series

Network Security Configuration

The Spyeworks and Digital Signage Network Management applications used the following network ports for all file transfer, remote control and status monitoring operations:

Port	Type	Description	Protocol
8181	TCP	HTTP Web Interface used to configure Digital Courier Agent and check agent status. HTTP authentication is required before any configuration changes can be made.	HTTP 1.1
8448	TCP	DFT file transfer protocol. DFT is a proprietary Digital Courier file transfer protocol. Authentication is required before a file transfer operation is granted.	Proprietary
8900	TCP	Spyeworks Player Status, the Sentry will connect to this port via localhost in order to retrieve playlist and other status information. The player can also be controlled via this port. Authentication is required before any commands can be issued.	Proprietary
9000	TCP	The Sentry listens on port 9000 for incoming status requests and commands. Authentication is required before any command or status request is granted.	Proprietary
9500	TCP	Used by the Sentry to upload event messages to the Network Manager	Proprietary
9998	TCP	Used by the Sentry to maintain a DSMAP connection to a DSMAP server	Proprietary