DIGITAL MEDIA BRIDGE
SCREEN BUILDER USER'S GUIDE

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Introduction

Digital Media Bridge (DMB) is a software application offering reliable multicast and unicast distribution of files from a sender computer to multiple receivers on a network.

With DMB a user can offer tens, hundreds or even thousands of files to the sender, files of any size, and the sender controls and guarantees their delivery to the destination receivers.

Signage as an Application

In addition to basic file delivery DMB offers end-to-end Digital Signage and Video-on-Demand applications consisting of the following components:

• DMB Screen Builder – A Windows application letting a customer graphically create and manage sets of Signage/VOD/Menu Board screens playable by the Digital Media Bridge Portable Media Player. Using Screen Builder a customer can build and preview multiple channels of Signage/VOD/Menu Board screens in a stand-alone environment. Screen Builder also offers a publishing component where videos and control information can be automatically delivered to a content distribution service, like the Digital Media Bridge Sender, for delivery and automatic playback by one or more DMB Media Player platforms.

• DMB Media Player – A player application supporting fully configurable screen layouts and video playback with a robust set of Signage/VOD/Menu Board features. The DMB Media Player runs on Amino 130/530 STBs, Windows,Linux and MAC platforms offering customers Signage/VOD/Menu Board as a software application and Signage/VOD in a plug-and-play STB appliance.

The following diagram depicts these components and the overall workflow in a classic Digital Signage network:

As shown, the process begins with creating or gathering videos and image assets. The creative department in a company either creates these assets themselves or acquires them from an outside source (e.g., an advertising company, educational DVDs, web portals with multi-media content). The content is prepared by the creative team to make sure that the assets are formatted for suitable screen creation and suitable for playback on the destination media players (e.g., correct video encoding and bit rate, correct image resolution). There are 3rd party tools available to assist in this process (e.g., Adobe Premier, Grass Valley Procoder).

The creative team provides the assets to the marketing team to combine into screens. That is, layout multi-zone images and videos as well as playlists controlling the order in which these assets are to be played. The marketing team publishes the video and image assets and the screen control information to the DMB Sender platform for distribution and playback at remote media players.

DMB Signage Capabilities

In order to begin the process of creating multi-media content and designing screen layouts it is necessary to understand the capabilities of the DMB Media Player and the remote platform on which the assets will play. There are two elements which make up the capabilities of the Media Player in a network. The first is the hardware/OS platform on which the Media Player is running. And the second is the Media Player release.

The Media Player runs on STBs, Windows, Linux and Mac platforms. Each of these platforms has their particular video playback capabilities and performance constraints. For example, an STB may support playing h.264 encoded MPEG-Transport Stream video files and no other. Whereas a Windows platform typically has support for a great many video compression and video file format schemes. And the Media Player releases can have different capabilities that may also be platform-specific.

For the purpose of this document the general capabilities of the Media Player will be presented. These capabilities are available on almost all platforms. The user is directed to the release notes for each specific DMB Media Player release to determine the exact set of features supported.

DMB Media Player Capabilities

The DMB Media Player supports:

• Playing of both Standard (SD) and High Definition (HD) video

• Playing all video encoding and container formats supported by the target platform. The AmiNET 130/530 STBs supports MPEG2 and h.264 encoded video

• Playing continuously in signage mode based on a playlist

• Scheduled multicasting of video from the DMB Media Player to the local network. Supported on The AmiNET A530 STB and allows local video playback on a collection of locally attached devices (e.g., diskless STB, PC)

• Multi-zone asset playing (video, static image, text)

• Multiple RSS crawlers on a screen

• Multiple scrolling and static text messages on a screen

• Live video support (render a live stream in a screen zone)

• POPAI Standards Compatible Playout logging (to audit all playout activity)

• Supports 4x3 and 16x9 aspect ratio

• Displaying both Standard Definition (SD) and High Definition (HD) Images

• Video-on-Demand Program Guide for rendering cached video content

• Support for Touch Screen Monitors (useful for Kiosk operation)

• Support for emergency video broadcast detection by listening on an emergency channel

• Support for TV controls (e.g., turn off/on TV automatically)

• Support for Time-of-Day activation of individual screens

• Support for dynamic display updates from an external data source. Useful for:
- Menu Boards for use in restaurant applications
- Reader Boards of event times and locations useful in hotel applications
- Multi-day weather reports with day-of-the week, temperature and picture elements

• Way Finding Applications correlating guidance maps with grid entries selected through touch screen or other input methods.

DMB Signage Definition of Terms

Building screens using the DMB Screen Builder for playback on one or more DMB Media Players requires understanding the following terms:

• Screenlist – This is a control file which contains one or more screens to be played. There can be many Screenlists on a single DMB Media Player offering, in essence, up to thousands of separate *channels* of signs or video-on-demand content. Remote users, for interactive applications, can select a screen using a remote control or front panel button on an STB if available. In addition, Screenlists can be chained together offering the ability to automatically switch from one *channel* to another (e.g., like a 'redirect' operation in an html web page).
Screenlists contain:
- A circular list of screens to play in order from top to bottom
- The full size resolution in pixels of the screens to play
- Configuration data (e.g., the directory location of assets) for both the SB, where screens are created and published, and the DMB Media Player, where screens are played.
- TV Controls to optionally turn on and set the volume level of an external monitor
- The full size resolution in pixels of the screens to render
- The layering order of assets on a screen (e.g., background image first, then video layered over the background)
- Pointer to local assets used for screen creation
- Pointer to the DMB Sender directory to use as a publishing point for finished screens. This publishing point corresponds to a set of remote Media Players and is set-up and managed by the DMB Sender Administrator.

• Channel – Synonymous with Screenlist. Screenlists follow a naming convention which includes the channel as part of the screen list file name. For example, channel 2 corresponds to screen list file name *dmb.screenlist.02.xml*.

• Publishing Profile - Part of a Screenlist definition containing the directory references needed for asset and metadata publishing. A publishing profile includes:

- The client directory against which the DMB Screen Builder should reconcile files already published with files created or modified in the DMB Screen Builder's local directory. Here the DMB Screen Builder determines which files need to be updated and made available to the DMB Media Player(s) to apply screen changes.
- The publish directory where the DMB Screen Builder should send new files. This can be, for example, a hot folder for a content distribution service responsible for delivering files to a set of DMB Media Players or to a directory share accessible to one or more DMB Media Players (e.g., an NFS Share) or even to a single DMB Media Player supporting FTP access.
- Optional transfer directory used when publishing using FTP. Here the DMB Screen Builder delivers any and all files to the transfer directory then moves the files to the publish directory, as a last step, so all changes appear at the same time.

• Screen – A member of a screen list which designates the following:

- Specific assets (e.g., video files, static images) to play on a screen
- Optional time-of-day screen activation.
- Optional TV Controls
- The pixel addresses and sizes (i.e., the zone) on a screen for each asset
- Asset duration (e.g., how long to play a live video stream in a zone or how long to render a static image)
- The layering order of assets on a screen (e.g., background image first, then video layered over the background)
- Asset transition (e.g., how to move from one static image to another in a list of images within a zone)

• Video Asset - A video capable of being played on the target DMB Media Player platform(s) (e.g., Windows, Linux, Mac, STB). The AmiNET 130/530 STB supports MPEG2 or h.264 encoded Transport Stream files.

• Image Asset - Both standard and high definition static graphics in a format which can be displayed on the target platforms. The AmiNET 130/530 STB supports JPG, GIF, PNG and TIFF files in HD (1280x720 full screen) or SD (720x480 full screen) resolutions.

• EPG Grid Asset - Table-based information, like in a spreadsheet, useful for displaying selectable (by remote control) lists of videos by name or multi-column menu lists or reader board information (e.g., event times and locations).

• Asset Attributes - Each asset (e.g., video, image, text) has a set of attributes which controls how the asset is rendered on the screen. For example, the X and Y coordinates for screen placement of the asset.

• Playlist - A list of videos or images to be played in a sequence.

• Preview - The ability to review screen lists locally, with a local Windows-based DMB Media Player, to see how it looks before publishing.

• Publishing - Sending finished Screenlists, screens and assets to the DMB Sender for distribution to remote DMB Media Players.

Screenlist Attributes

Each Screenlist has a base set of attributes some of which are only relevant to the DMB Screen Builder and some of which are only relevant to the target DMB Media Player(s). All these attributes are stored inside the Screenlist file.

The DMB Screen Builder Screenlist attributes are:

• Content Directory - the location of all assets (videos, images, etc.) used for screen creation and preview before publishing.

• Publishing Profile (*optional*) - designates the directory location and method used to publish assets and metadata for distribution to DMB Media Player(s).

• Client Directory - the location of the assets and configuration files used to reconcile during publishing. This should be provided by the DMB Sender Administrator. It can either be a full pathname file directory or, for remote machines, an FTP location with login information.

• Publish Directory - the location to put any new files during publishing. Also provided by the DMB Sender Administrator.

• Transfer Directory (*optional*) - the location to use as a temporary staging area when FTPing files during publishing. Files sent to the Transfer Directory, once complete, are moved into the Publish Directory in a single operation so they appear to the DMB Sender fully sized.

The DMB Media Player Screenlist attributes are:

• Resolution - the pixel resolution of the full size display area of the screens to be played. This typically is the same as the full screen display resolution of the target platform(s) for which screens are being built.

• Mount Point (*optional*) - Useful for DMB Media Players without an internal hard drive for storing assets. Here, the Screenlist can point to an external drive location (e.g., an NFS server) which the DMB Media Player will mount and access when the associated Screenlist is active.

• TV Control (*optional*) - There is an optional TV control element both at the Screenlist level and the screen level. If configured, it controls a TV attached to the DMB Media Player. The attributes for the TV Control are:

- *Model* - references the manufacturer of the TV (e.g., LG)
- *Power* - on or off
- *Input* - manufacturer dependent input video source to enable (e.g., Component-1, Component-2, HDMI)
- *Aspect Ratio* - manufacturer dependent video control (e.g., 4x3, Full, Zoom)
- *Volume* - a manufacturer dependent numeric setting that controls the volume level.
- *Lock TV* - no or yes. If locked, the TV will ignore any user attempted manual or remote control operation.
- *Check Frequency* – designates how often, in seconds, the DMB Media Player should check the state of the TV. PMPs with this feature enabled (e.g., an STB connected to a TV's RS-232 control port) will apply the designated TV controls when the associated screen list is active. Individual screens, which contain time-of-day attributes, can override the default screen list controls as appropriate (e.g., to turn the TV off during the night and on weekends).

Screen Attributes

Each screen in a Screenlist has a set of attributes designating default values for screen assets and controlling when the screen is active. These attributes are:

• OnBoot - indicates whether or not the screen should only play one time after boot up. The values are yes or no. Screens play in a loop one after the other. When the screen at the bottom of the Screenlist is reached the DMB Media Player continues with the screen at the top. An OnBoot screen attribute of yes will only play the associated screen one time after the DMB Media Player boots up. This feature is typically used to render a configuration screen showing the DMB Media Players internal configuration settings only at boot up.

• Active - controls whether or not a screen is shown when encountered in the playlist.

• Background Color - the default background color for all assets in the screen.

• Duration - the number of seconds this screen should be played. If a video asset in the screen is longer than this value the video will be stopped when the duration time of the screen expires.

• Schedule File - an optional file containing time-of-day control data for screen activation. For example, the ability to make a screen active only on weekdays from 12pm to 3pm.

• Jump to Screenlist (*optional*) - A Screenlist file name where the DMB Media Player should go when it encounters the current screen. This let's a user, for example, chain together multiple screen lists for execution in a controlled sequence where each screen list can be managed separately, even by separate DMB Screen Builder operators.

• TV Control (*optional*) – used to designate specific TV Control settings (e.g., turn volume low). If active, then this setting takes effect, and overrides any overall screen list TV Controls, when this screen is active.

Screen Assets

Screens can contain one or more of the following asset types:

• Video - a video file encoded and formatted for proper playback on the destination DMB Media Player (e.g., h.264 encoding and Transport Stream file formatting compatible with the AmiNET 130/530 STBs).

• Image - a graphics file formatted for proper playback on the destination DMB Media Player (e.g., JPG, GIF, PNG, TIFF compatible with the AmiNET 130/530s STBs). Images must be created using a 3rd party program (e.g., Adobe Illustrator) and the dimensions must be set properly. For example, a full screen background image used to build screens for the DMB Media Player configured with a full screen display of 720x480 must be created as a 720x480 image. To resize an image within the DMB Screen Builder, right-click an image asset on the screen and select 'Resize'.

• Text - a static text string on a single line.

• Text Multiline - a static text string spread across multiple lines.

• Text Crawl - a crawling text string. Rate is the speed of scrolling from 1 to 5 with 1 as the fastest.

• RSS - a crawling text string formatted as a Title and Description. The RSS source can either be an external URL or an RSS formatted file stored locally.

• EPG Grid - The EPG_GRID asset supports a spreadsheet-style set of columns and rows for display. And there can be more than one EPD_GRID asset on a screen. It is useful for offering menus and other informational lists. It is also useful in interactive applications, like video-on-demand, offering a selectable (e.g., through remote control) list of videos for playback. The building blocks for an EPG_GRID are:

- *Number of Columns* – columns can be added and deleted to an EPG_GRID at creation time using the DMB Screen Builder.
- *Number of Rows* – the maximum number of rows for display.
- The set of X/Y pixel co-ordinates for positioning, width and height, font and font size which, together with the columns and rows determine the ultimate positioning of the EPG_GRID on the screen and how much space it occupies.

• Clock - renders the current time in a text box and can be formatted for 12 hour or 24 hour display.

• Config - renders a selected configuration parameter (e.g., IP Address) of the platform where the DMB Media Player is running. This is typically used during start-up of the DMB Media Player showing configuration data of interest to an installer.

• Alert Watch - a "breaking news" or "emergency channel" feature where a screen can simultaneously play its configured assets while also *listening* for activity on an IP multicast address in the background. If the DMB Media Player detects streaming video on the configured address it will interrupt the screen being played and play the video stream detected. When the video stream goes idle the DMB Media Player will resume playing the interrupted screen.

• Button - an image associated with an action. This is useful for touch screen (or mouse) interactivity.

Screen Asset Source

All screen assets have, as their primary attribute, the source content which the DMB Media Player displays. This can be as simple as a static text string embedded in the asset definition inside the Screenlist or more complex source content like a list of images in a separate playlist file.

The following asset attributes are the elements involved in defining how an asset acquires it content to display:

• Source Type – Designates the content source type. This can be:

- *file* – the content is contained in a separate file (e.g., a PNG file for a static image asset).
- *record* – the content is contained in a separate file with multiple fields comprising a complete record.
- *text* – the content is in a text string embedded in the screen list. There is no external file reference.

• Source – Designates the text string to display, if the source type is text, the file to display, if the source type is file, or the file to examine as a database record if the source type is record. If the source type is text the user may designate a placeholder in the source field, instead of a literal text string, to be filled in at run-time. The placeholder is a unique screen-wide numeric identifier. For example, a placeholder value of **%1** designates param 1 as the value to be filled in. At run-time, the asset controlling param 1, say an EPG_GRID showing two menu lists each with a unique text string title as param 1, announces param 1 to all active assets so the text string can be displayed.

• Source Index – If the source type is record this setting designates the field number in the record containing the content. For a text asset this field will be a text string. For an image asset it be an image file name.

• Playlist – If the source type is file this field is an alternative to displaying a single file using the source field. Here the user can designate a list of files to display in order from top to bottom.

Dynamic Source Content Updating

The source content for screen assets (e.g., playlists, RSS files, image files, database records) can each be updated independently, without having to modify the screen list definition, at one or more DMB Media Players. The source content in this case corresponds to individual files stored locally on the DMB Media Player's hard drive or on a shared hard drive accessible to the DMB Media Player.

The DMB Media Player monitors the source content for all screen assets in the active screen. If any content changes (i.e., the file corresponding to the asset [e.g., a static image] gets updated) the DMB Media Player applies the updated content within a few seconds.

Source content files can be updated either by being pulled periodically by the DMB Media Player (e.g., an RSS feed every few minutes) or by being pushed to the DMB Media Player by a process initiated externally (e.g., multicast file distribution, ftp file distribution, updated files on a shared drive).

Filters running on an external machine (e.g., on the same machine as the DMB Screen Builder) are designed to interact with external data based on rules unique to each filter. For example, a filter program may retrieve web-based RSS news feeds from a customer's subscription account and dynamically create a filtered RSS file for distribution to DMB Media Players according to a customer's dynamic preferences (e.g., time-of-day requirements).

Another example of a filter is a program which periodically retrieves event scheduling information (e.g., session, room number, and time) from a database and builds a CSV formatted file for distribution to DMB Media Players and automatic updating of a reader board EPG_GRID asset.

Filters are typically written by our customers using the language and programming model they prefer (e.g., a .NET application). This offers maximum flexibility when integrating external content sources with DMB Media Player screen assets. The only requirement is that the filter produce a source content file compatible with the DMB Media Player and screen asset where the file will take effect (e.g., a static image formatted correctly to update the image asset).

Screen Asset Attributes

Screens are comprised of one or more assets. Each asset contains attributes which describe how the asset should be played. See the screenshot of each asset type below for a list of the specific attributes associated with each asset. The comprehensive list of attributes for all asset types is as follows:

• Name - an optional user-defined string used as a convenience for identifying an asset.

• Source - designates the source of the asset (e.g., an image file to display, a text string).

• X - the horizontal axis pixel position of the upper left corner of the asset.

• Y - the vertical axis pixel position of the upper left corner of the asset.

• Width - the width of the rendered asset area in pixels.

• Height - the height of the rendered asset area in pixels.

• Transparency - designates the level of opacity applied to the asset (e.g., an image over a video). Values are from 0 to 255 with 0 being fully transparent and 255 being fully opaque.

• Transparent Tolerance - a number indicating the color variance that should apply when identifying the transparent color. For example, a transparent tolerance of 1 with a transparent color setting of 5.5.5 (in 24-bit RGB notation) would cause 4.4.4, 5.4.4, 5.5.6, etc. to also match as the transparent color.

• Transition - controls how an asset appears on a screen when it first begins to play. Values are top-down or left-right.

• Background Color - if the on-screen area is larger than the asset this is the background color. Values are represented as ARGB notation (e.g., 255.0.0.0 for black). The first digit represents transparency.

• Playlist Item Duration - the default, in seconds, of how long to play each asset in a playlist if a duration is not specified in the playlist file.

• Playlist - refers to a playlist file containing one ore more assets to play.

• X Alignment - specifies the horizontal positioning of an asset if it is smaller than its rendered area. For example, a 300x300 image displayed in a 400x400 zone on the screen. Values are left, right or center.

• Y Alignment - specifies the vertical positioning of an asset if it is smaller than its display area. Values are top, bottom or center.

• Destination - designates the Multicast IPMC:Port where a video being played locally should also be streamed.

• Font - one of the supported fonts used for text rendering.

• Font Size - the font size in pixles.

• Rate - the crawl rate of a text crawler from 1 to 5 with 1 being the fastest.

• Foreground Color - the color of the text.

• Separator Type - designates the method used to act as a visual separator between RSS stories in the displayed crawling RSS text. The values are text or image.

• Separator Text/Image - the text string or image to use as a separator between RSS stories.

• On Alert Action Screen - designates which screen in a screen list should be automatically activated when "breaking news" is detected on a live multicast stream.

Attributes for each Screen Asset Type

The following set of screen shots show the collection of assets and their attributes. Mandatory attributes are displayed in red.

Image:

Attribute	Value
Name	Example Image
Type	image
Source Type	
Source Index	
Source	
X	10
Y	10
Width	100
Height	100
Transparency	
Transparent Color	
Transparent Tolerance	
Background Color	
Playlist Item Duration	
Playlist	
Transition	
X Alignment	
Y Alignment	

Video:

Attribute	Value
Name	Example Video
Type	video
Source	
X	10
Y	10
Width	100
Height	100
Playlist	
X Alignment	
Y Alignment	
Video Restart Frequency	
Video Black Cover Delay	
Video Fade Out Steps	
Destination	

Button:

Attribute	Value
Name	Example Button
Type	button
Source	
X	10
Y	10
Width	100
Height	100
Event	
Event Parameter	
Transparency	
Transparent Color	
Transparent Tolerance	
Background Color	
Playlist	
X Alignment	
Y Alignment	

Text:

Attribute	Value
Name	Example Text
Type	text
Source Type	
Source Index	
Source	
X	10
Y	10
Width	100
Height	100
Font	
Font Size	
Foreground Color	
Background Color	
X Alignment	
Y Alignment	

Clock:

Attribute	Value
Name	Example Clock
Type	clock
Source	
X	10
Y	10
Width	100
Height	100
Font	
Font Size	
Foreground Color	
Background Color	
X Alignment	
Y Alignment	
Time Format	

Configuration:

Attribute	Value
Name	Example Config
Type	cfg
Source	
X	10
Y	10
Width	100
Height	100
Font	
Font Size	
Foreground Color	
Background Color	
X Alignment	
Y Alignment	

Text Multiline:

Attribute	Value
Name	Example Multiline
Type	text_multiline
Source	
X	10
Y	10
Width	100
Height	100
Font	
Font Size	
Foreground Color	
Background Color	

Text Crawl:

Attribute	Value
Name	Example Crawl
Type	text_crawl
Source	
X	10
Y	10
Width	100
Height	100
Font	
Font Size	
Foreground Color	
Background Color	
Rate	

RSS:

Attribute	Value
Name	Example RSS
Type	rss
Source	
X	10
Y	10
Width	100
Height	100
Font	
Font Size	
Foreground Color	
Background Color	
Playlist	
Rate	
Start Text/File	
Separator Text/File	
End Text/File	
Maximum On-Screen Stories	

EPG Grid:

Attribute	Value
Name	Example Grid
Type	epg_grid
Source Type	
Source	
X	10
Y	10
Width	100
Height	100
Font	
Font Size	
Foreground Color	
Background Color	
Playlist Item Duration	
Playlist	
OnClick Action Screen	
Number of rows	
Grid Color	
Border Size	
Header Height	
Header Foreground Color	
Header Background Color	
Line Selection	
Selection Foreground Color	
Selection Background Color	
Key Data Field	

Alert Watch:

Attribute	Value
Name	Example Alert
Type	alert_watch
Source	
OnAlert Action Screen	

Image Playlist File Format

The image playlist file consists of one or more entries referencing image file(s). Each line of the playlist file contains:

• File - the name of the image file to render.

• Field 2 - the number of seconds to render it.

Note that when the playlist file is selected the user sees the following:

The '*' button to the left of the file name permits editing of the playlist file contents. The '...' button to the right of the file name permits browsing for a new playlist file.

Video Playlist File Format

The video playlist file consists of one or more entries referencing video file(s). Each line of the playlist file contains:

• File - the name of the video to play.

• Duration - the optional number of seconds to play the video. The default is to play the video from start to finish.

• Optional Additional Fields - each field corresponds to a unique parameter number reflecting its column position within the line. This can be used, for example, to associate a particular external image with each video played. The name of the image to play is placed in a column position on the line for a video. When the video begins all assets on the screen, including any image asset, will be notified and the parameter value (i.e., the image file in this case) will be passed. Like the image playlist the buttons on either side of the video playlist file name offer editing of the video playlist, the left button, or browsing for a new video playlist, the right button.

Button Playlist File Format

The Button playlist file consists of two relevant lines. The first is the image to render when the button is in the UP position and the second line is the image to render where the button is in the DOWN position.

Schedule File Format

The optional schedule file applies to a screen and can be used to control the time-of-day that a particular screen is active. For example, active every Monday, Wednesday and Friday from 12pm to 3pm and inactive at all other times. The schedule file consists of one or more entries and each entry, one per line, has the following format:

Start Mon - Jan, Feb, Mar, ...
Start Day - 1-31
Start Year - 2010-2037
End Mon - Jan, Feb, Mar, ...
End Day - 1-31
End Year - 2010-2037
Start Hour - 00-23
Start Min - 00-59
End Hour - 00-23
End Min - 00-59
Week Days - Sun,Mon,Tue,Wed,Thu,Fri

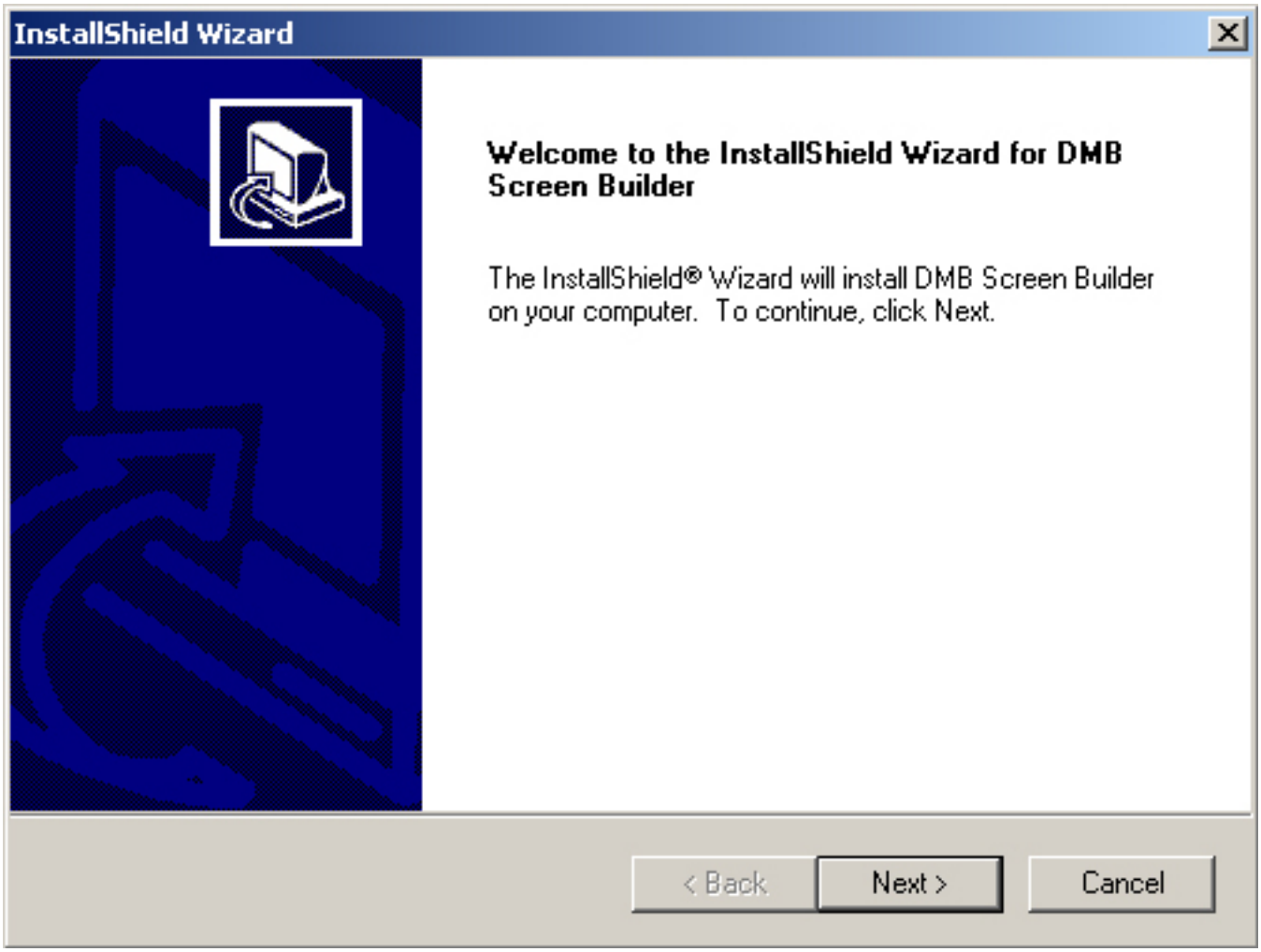
Wildcards are also supported. For example, the following rule will apply the screen on Sundays:

**********Sun

The schedule file has a *.sc* extension.

Screen Builder Installation

The DMB Screen Builder comes as a Windows installable image. To begin the installation double-click on the file named: *DMBScreenBuilder.exe* (or, *DMBScreenBuilderEvaluation.exe*). The following wizard start-up screen will appear:



Follow the defaults while proceeding through the wizard.

DMB Screen Builder Startup

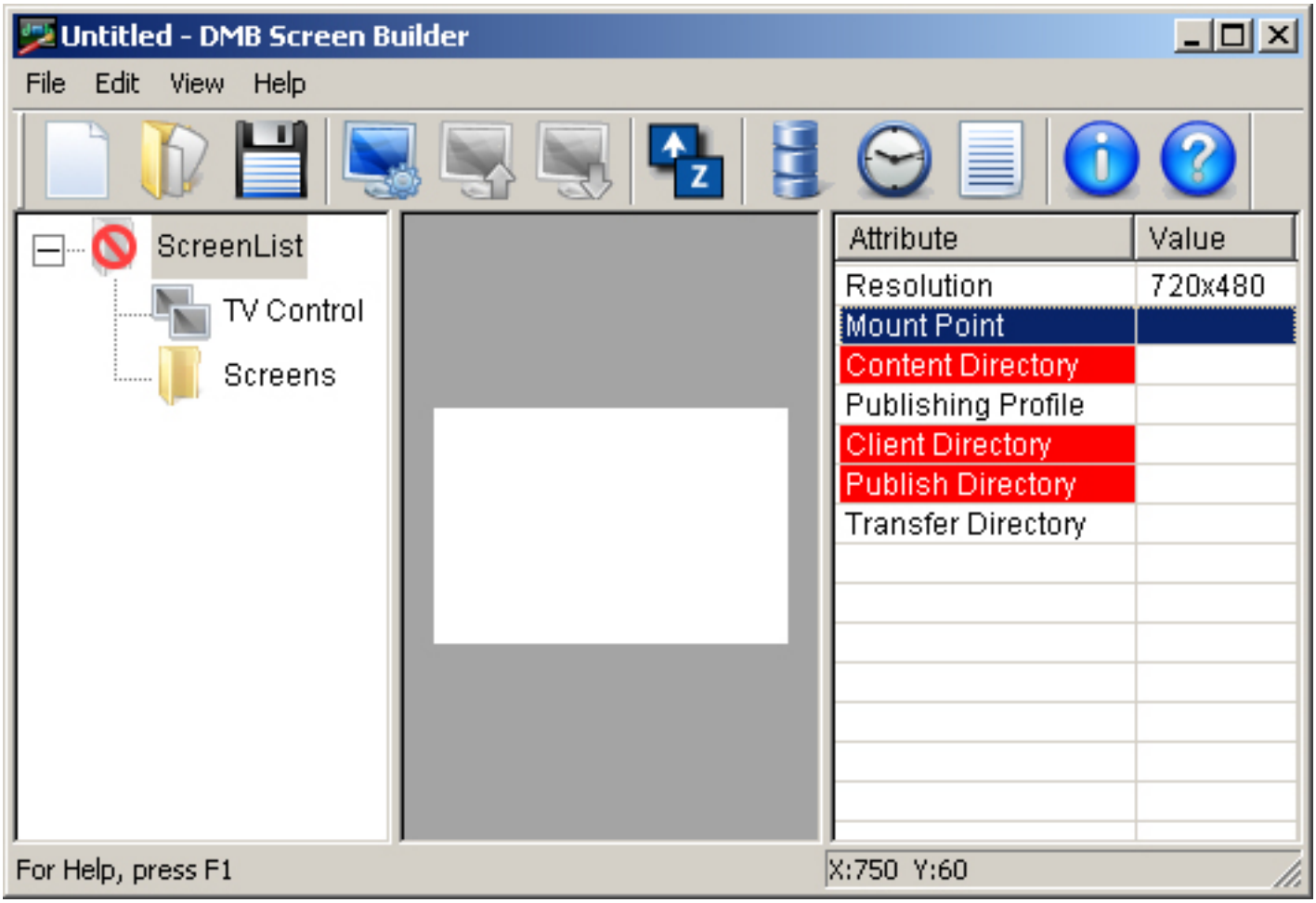
After gathering the video and image assets from the creative team, the DMB Screen Builder operator should place them in the *content* directory where they will be available for use. The default location of the content directory after installation is:

C:\Program Files\Cilutions\DMB Screen Builder\content

The operator is encouraged to first back-up this directory before making any configuration changes. Afterwards, the starter templates can be used as a starting point for making modifications as desired by the operator and is a good starting point for building test and production screens.

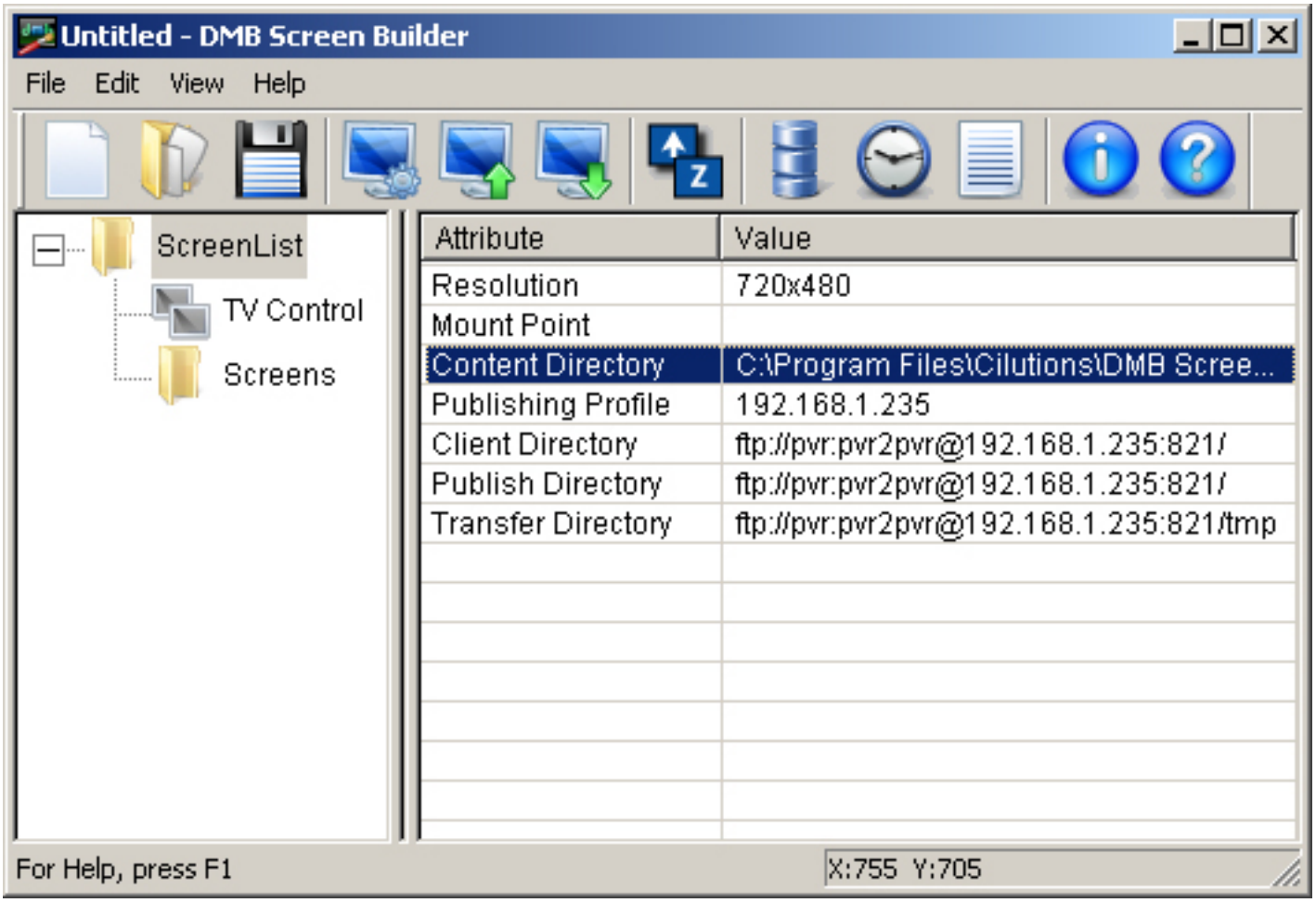
Once installed, to start the DMB Screen Builder double-click the desktop icon:  or select *Start -> Program Files -> DMB Screen Builder -> Screen Builder*

The operator sees the following screen at start-up:



Screen Builder Basic Screenlist Configuration

The following diagram shows basic configuration fields:



• Resolution - designates the pixel resolution for all screens in this Screenlist. The operator should set this value to be compatible with the screen resolution of the destination platforms on which the DMB Media Players will run. For full-screen playback this should be the exact resolution of the destination platforms. For example, AmiNET530 STBs support either 720x480 or 1280x720 resolution. On Windows platforms the DMB Media Player will dynamically compare the resolution in the Screenlist file with the current display resolution. If they are identical the DMB Media Player will render itself in full-screen mode. If the Screenlist resolution is smaller then the DMB Media Player will render as a window in a portion of the screen (useful during screen building to render locally).

• Content Directory - the location of the Content directory where assets reside.

• Client Directory - the location of the assets and configuration files used to reconcile during publishing. This should be provided by the DMB Sender Administrator. It can either be a full pathname file directory or, for remote machines, an FTP location with logon information.

• Publish Directory - the location to put any new files during publishing. Also provided by the DMB Sender Administrator.

• Transfer Directory - the location to use as a temporary staging area when FTPing files during publishing. Files sent to the Transfer Directory in a single operation so they appear to the DMB Sender fully sized.

Screen Builder Starter Templates

A newly installed version of the DMB Screen Builder preconfigured with five Screenlists. They are:

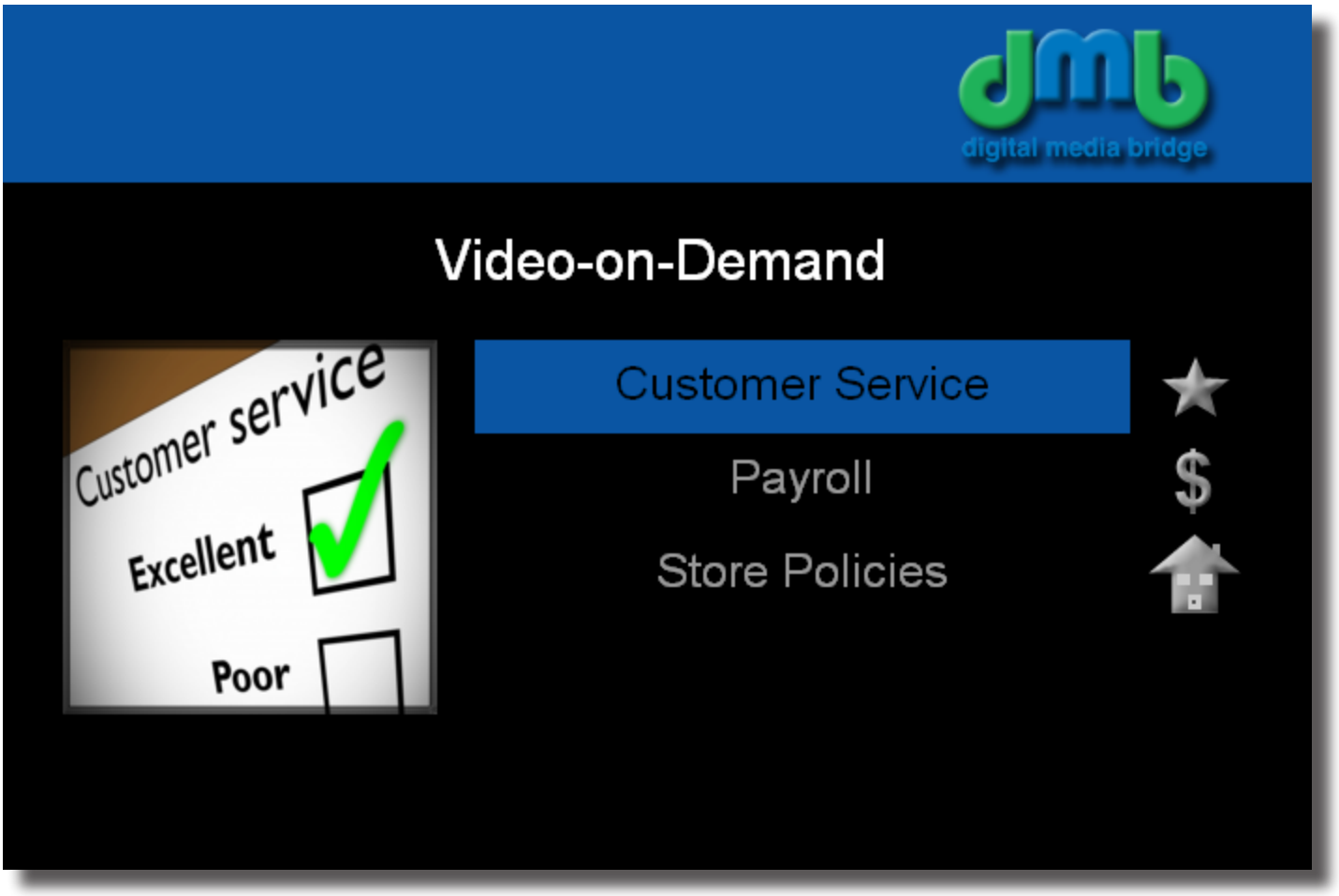
• Channel 0 (dmb.screenlist.00.xml) : *Signage with Images and Videos in Zones* - shows a configured start-up screen then cycles through a list of full-screen images and finally plays a multi-zone screen with a video, images and text crawlers.

When the DMB Media Player starts up, it plays *dmb.screenlist.00.xml* by default.

An example screen in this Screenlist is:

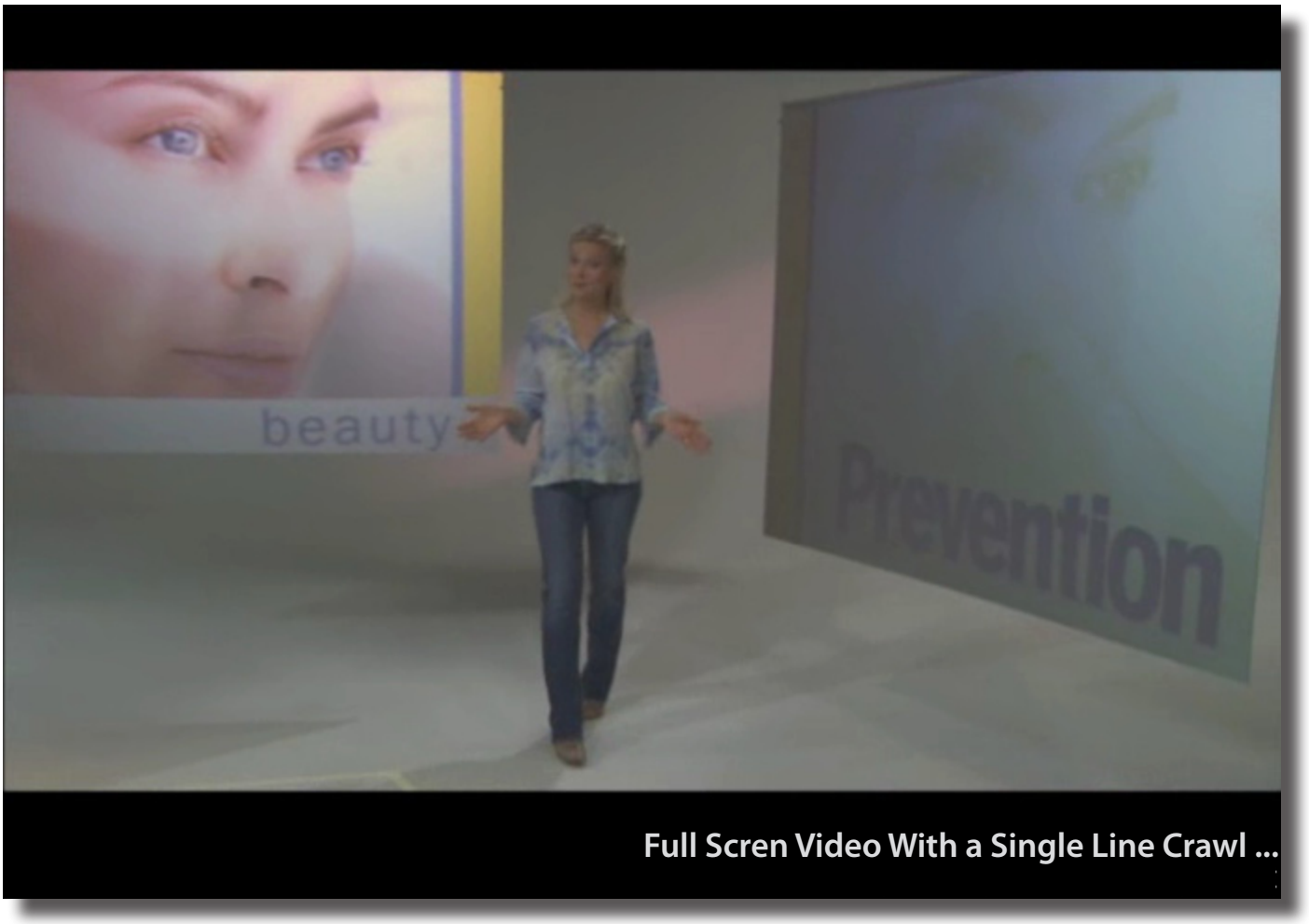
• Channel 1 (dmb.screenlist.01.xml) : *Video-On-Demand* - shows multi-level menus of categories and titles with a graphics banner. And shows associating separate categories with individual images as well as associating each video menu selection with a separate description field.

An example screen in this Screenlist is:



• Channel 2 (dmb.screenlist.02.xml) : *Full Screen Video with Single Text Crawler* - Useful for getting started with a simple layout and two screen assets.

An example screen in this Screenlist is:



• Channel 3 (dmb.screenlist.03.xml) : *Full Screen Video* - Plays full screen from a playlist file.

An example screen in this Screenlist is:

• Channel 4 (dmb.screenlist.04.xml) : *Time of Day Automatic Screen Update* - Changes the full screen background image every 5 minutes while playing a video in a screen zone. Useful for seeing how the schedule file is formatted.

An example screen in this Screenlist is:

• Channel 5 (dmb.screenlist.05.xml) : *Kiosk / Touch Screen Example* - Shows multiple buttons on a screen with each button, when pressed, corresponding to a particular video to be played.

An example screen in this Screenlist is:

Previewing Using the Windows DMB Media Player

To preview screens during the creation process start the DMB Media Player included in the Screen Builder installation image. To start the DMB Media Player on the desktop select the DMB Media Player icon,  or select *Start -> Program Files -> DMB Screen Builder -> Portable Media Player*.

The player points to the same ..*content* directory as the DMB Screen Builder. When the DMB Screen Builder operator clicks *Save* (not Publish) the player will detect any updates and render the changes immediately. This is a very useful way to preview the screens on the local computer to be sure they are correct, before publishing them to the DMB Sender for distribution to the DMB Media Players.

Separate player channels (each corresponding to its own Screenlist) can be activated by pressing the channel number on the user's keyboard. For example, to activate *dmb.screenlist.02.xml* the user should press the number 2 on the keyboard. For interactive input, simulating a remote control or touch screen, the user can use the up and down arrows, the enter key and the escape key to navigate as well as the mouse for selectable screen assets (e.g., the buttons on the starter Screenlist: *dmb.screenlist.05.xml*).