DisplayIt!

Best Wave

DisplayIt!
Installation and User's Guide

Revision 2.7
February, 2008

CONTENTS

DisplayIt! Functionality

DisplayIt! is an exciting new way to create and display digital sign content. The objectives of this exciting new software program are:

1) To give non-programmers the ability to manage digital signage projects.
2) To simplify content creation for digital signs.
3) To manage the schedule for one or more digital signs or groups of digital signs using a simple calendar interface.

The functionality of **DisplayIt!** is divided into categories corresponding to the functions typically performed by someone creating and managing digital signage programs. These are:

Displays - naming and defining the location of a digital sign, and what content should be shown on it whenever nothing else is scheduled.

Groups - creating groups of displays, to speed the scheduling process.

Media - acquiring media elements for use with digital signs. These include digital movies, still images, flash movies, text, and web pages (HTML).

Templates - defining content templates, using a visual interface that allows you to drag and resize boxes to specify the location of various media types on your digital signs. You can use our pre-defined templates, or create your own.

Presentations - combine media elements and templates to specify the exact mix for any situation. You may preview what your presentations will look like right on your computer, or on a nearby display. In either case, you will know how your presentation will look in the field before you use it.

Schedule - sends the right presentation to the right display (or group of displays) any time of the day or night. Any schedule event may be repeated, daily, weekly, monthly, on weekends or weekdays, for as long as you want.

Logging – the event logging feature keeps track of what content was sent to which digital display and when. Logs are kept in Microsoft Excel format.

Emergency Notification System – put an emergency notice onto all of your displays instantly by utilizing the DI Now! companion program. Best Wave also offers artist-designed graphics for this purpose.

At Best Wave, we want to help make your digital signage program productive and easy to operate. Let us know how we may improve **DisplayIt!** to meet your needs. Thank you for selecting **DisplayIt!** for your digital sign program.

DisplayIt! Software Components

DisplayIt! is not one piece of software, but a family of integrated components. Each component serves a specific function. Some components must be used, others are optional. The current **DisplayIt!** components are listed on this page.
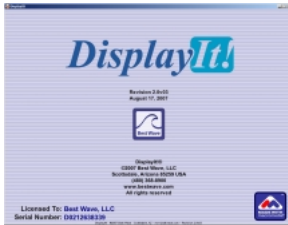
 DisplayIt! is the software you will use for defining your display network, loading media files, creating digital sign templates, adding media to templates to create presentations, and then, scheduling presentations onto your digital signs. It may be run from one or more workstations (additional license fees apply). It only has to be running when creating content or scheduling signs.

DI Robot watches your schedule, and, when any display in the network needs to be changed, DI Robot will do that. DI Robot comes in two versions, one that is minimized on the task bar, and another that runs as a background process. After you have scheduled content, one of these two should be running at all times, either on the server or on a workstation that is not turned off at night.

DI-Transport is the program that "pushes" presentations onto the local storage of the media players in the network. It does this via FTP protocol. Having media local to the player reduces the amount of network traffic by virtually eliminating streaming of content. More than one instance of DI Transport may be run for larger networks.

DI-Text is a simple way for a receptionist or other person in your organization to change the text being shown on a presentation, but nothing else.

This is a great way to greet visitors to a facility, or make other timely announcements quickly and easily.

DI-Now! is an interactive way to change one or more displays instantly. **DI-Now!** is the heart of the **DisplayIt!** Emergency Notification System.

It is also useful when there are multiple service lines (i.e. an airport - with a display over each line) that are used to identify or promote the service being offered in that line.

DisplayIt! Network Architecture

Media is stored within the application created directory, "DISPLAYIT!" that resides within the **HTTP** server's root directory. Content is streamed to media players via port 80 or is sent and stored via ftp using port 21.
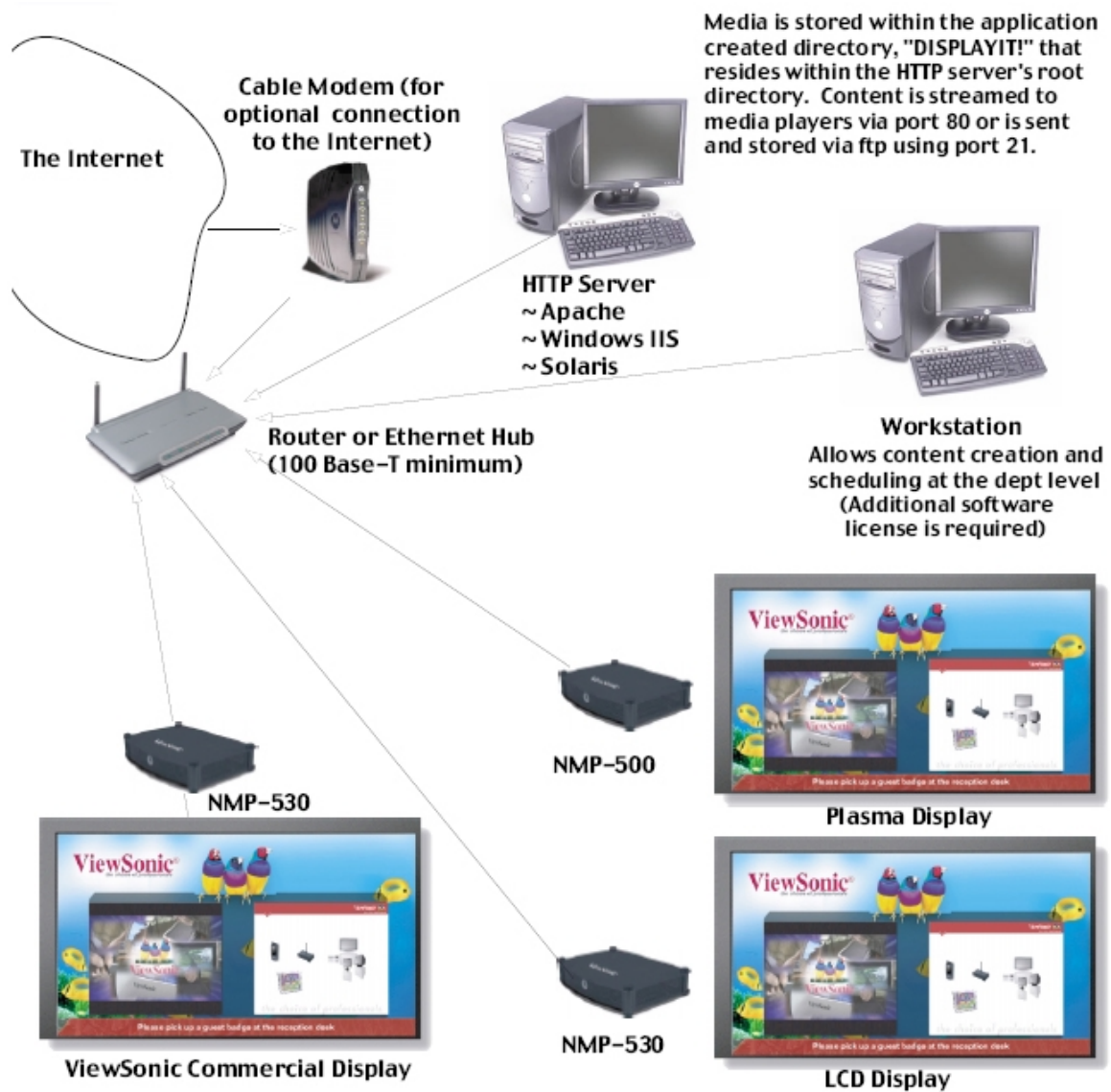
HTTP and ftp protocols are used to send and receive data to the Network Media Players. Commands are sent via port 80. Data is streamed back to media player from server via port 80. Static IP addresses for the server and Network Media Players are suggested to prevent "losing" displays after power interruptions. Revision 2.0 and later of DisplayIt! also uses port 21 to transmit data to and from the media player via ftp protocol.

Any workstation running DisplayIt! must have the primary folder for the **HTTP** server mapped as a network drive, and set to be automatically mounted on system startup.

Note: Cisco media players may be substituted for the NMP devices shown above

Installing **DisplayIt!**

<u>Step 1 – copy the folder from the CD to your hard drive</u> or <u>Extract All… from downloaded zip file.</u>

If you are installing **DisplayIt!** from a CD, Insert the supplied CD into your CD drive, go to "My Computer" and double click on the CD's icon:
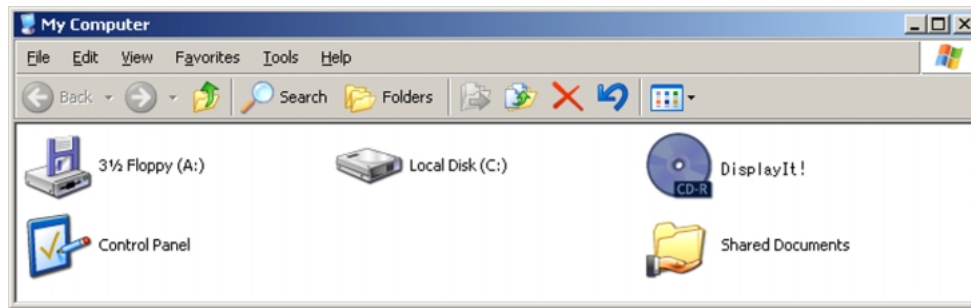
Once the CD's contents are visible, copy the "DisplayIt" folder from the CD to your main hard drive (C: in most cases). Eject the CD from the drive, and store it in case you might need it later. **DO NOT RUN DISPLAYIT FROM THE CD!**

If you have downloaded **DisplayIt!** from the Best Wave web site, you will have a file named DisplayIt.zip on your desktop – (or where you saved it on your hard drive). Right-click that file, and select "Extract All" from the popup menu.

When the extraction is complete, there will be a folder named DisplayIt, on your desktop. **Drag the DisplayIt folder onto your main hard drive (C: in most cases).** You can delete the DisplayIt.zip file. You can place it inside your Program Files folder if you would like. Now, open the DisplayIt folder. The contents will look like this:
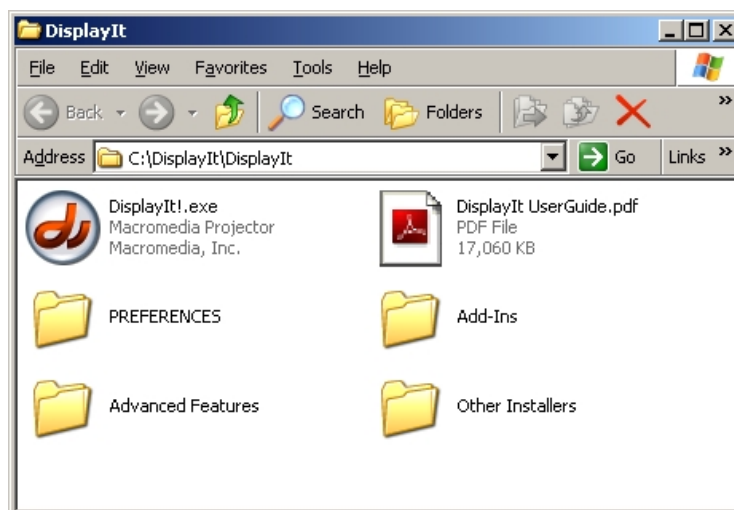
Step 2 – Install an HTTP Server and locate the primary folder

The network media players pull content from a web (HTTP) server. Before you can complete the next step, you must have HTTP server software running on your computer, or be able to access the web server on your corporate network.

Option 1 – Use a corporate network HTTP server

Map the disk drive on the web server you will be using. It should be automatically re-mounted when the workstation computer starts up.

You must know the **IP address of the server**. You can get that from your system administrator.

When **DisplayIt!** runs for the first time, it will create a folder named DISPLAYIT! inside the server's root directory. **Your system administrator needs to give you permission to create, modify, and delete files within the "DISPLAYIT!" directory.** The administrator may limit your ability to create and delete files to just the DISPLAYIT! directory. You do not need permissions for other directories within the server's root directory.

Option 2 – Run HTTP server software on your computer

Any HTTP server software, such as IIS from Microsoft, or Apache Server should be fine. If you decide to use Apache Server software on your computer, and are running Windows XP, you may run the standard installer which is inside the "Other Installers/Apache Server Installer" folder (supplied with DisplayIt).

If you need a different installer, download it from: <http://httpd.apache.org/>   Go to the Binaries folder and find your operating system before downloading. As of the printing of this User Guide, there is no charge for Apache Server.

You must know the **IP address of your computer (the server)**. To get the IP address of your machine, choose Settings>Network Connections>Local Area Connection from the Start menu. Then click on Properties. One of the items in that window will be Internet Protocol (TCP/IP). Click on it once to highlight it, then click on Properties again. You will see the IP address of your computer.

Every HTTP server has a primary (root) folder. That is the folder where **DisplayIt!** content will reside. For Apache Server it is the "htdocs" folder. For IIS it is the "inetpub/wwwroot" folder. You will need to know where the root folder is to complete this installation.

Make sure that your monitor settings are set to a resolution with a height larger than 768 (i.e. 1280 x 1024). If your monitor resolution is set too small, you will not be able to see the **DisplayIt!** minimize and close boxes at the top, and will have to exit **DisplayIt!** by touching the **Esc** key on your keyboard.

Double-click on the DisplayIt!.exe icon to run the software. The first time you run **DisplayIt!** you will be prompted to locate the server's primary folder:

In the above example, the htdocs folder (for Apache Server) is highlighted. After locating the primary folder for your server, click the OK button. Now, go to the folder you selected above, and view its properties. The Read Only box should not be checked. If it is, uncheck it, and apply to all sub-folders as well.

 After Activation, **DisplayIt!** will create a sub-directory within the primary folder. This folder will be named "DISPLAYIT!"

A text file named "settings.txt" is created inside of the DISPLAYIT! directory. If you ever want to change the server's IP address, or any other information that you enter during the activation process, you may edit that file using WordPad. Then run **DisplayIt!** again for the changes to take effect.

If you ever need to move the DISPLAYIT! folder to a different server or a different location within this server, you must change the path inside of the **serverfolder.txt** file to match its new location. You can find **serverfolder.txt** inside of the Preferences folder where DisplayIt.exe is located.

Step 3 – Install Video Codecs

Windows comes with only 3 video Codecs – which are filters for playing back video and audio. **DisplayIt!** uses more. A complete set of Codecs is inside the "Other Installers/Video Codec Installer" folder that comes with **DisplayIt!** It is recommended that you install these and restart your computer. Otherwise you will probably see errors in the Media and Presentations tabs of **DisplayIt!**

Activating **DisplayIt!**

After locating the primary server folder, you will be taken to the software activation screen:

Call the telephone number on the screen, identify your name and company, and read the code to the operator. If it is more convenient, you may e-mail the code, along with your name, company, number of displays you want to activate, and the code to support@bestwave.com   You will receive an activation code via return e-mail (usually within 1-2 hours).

Do not quit the program until you have received the activation code, or you will have to repeat the process. (You may minimize the screen). Once you have your activation code... Type it into the box labeled "Enter it here:"

Type your Company's name as you want for it to appear on the startup screen.

Enter your Server's IP address in the next box. Make sure to enter that address exactly as it is given to you by your server administrator. For small numbers of displays, you may run server software on a standard computer – or your desktop machine – so the IP address would be your computer's IP address in that case.

The Restart Displays field, determines if your displays should be automatically restarted every day. Enter either the word "Yes" for the automatic restart or "No" if you do not want this service. You may set the restart time to any time of the day, in the next field, Restart Time. It is strongly suggested that you utilize the restart service. This will restart each media player at the set time, which is a benefit for overall reliability.

Select the correct language/date format from the "Language and date format" pop-up button.

DisplayIt! is licensed for a specific maximum number of media players (displays). That way, you only pay for as many media players as you need.

Enter the correct number of displays in the Number of Displays field. The operator on the telephone will tell you how many displays have been licensed for your company.

Click on the Done button, to activate **DisplayIt!**. After activation, you will see the following screen:

Read the license agreement. Click on Agree only if you agree to all of the license terms, and you have the authority to enter into agreements of this type. You will then see the main menu screen.

Beneath the Best Wave logo it says, "Click on either logo for information". Clicking on the Best Wave or **DisplayIt!** logo will display version information for your copy of **DisplayIt!** as well as a revision history which is a chronological list of enhancements to the product.

Step 4 – Installing Advanced Options
Do not perform any of the following installations until you have gone through DisplayIt, created a presentation, and scheduled it to play.

DI Robot
Inside the DisplayIt>Advanced Options folder, you will find two program files named "DI Robot- Minimized.exe" and "DI Robot-Hidden.exe". The difference between them is that "Minimized" will appear on your taskbar, so that you may quit it easily. The hidden version will run in the background, and must be quit from the task manager (if that is ever necessary).

The Robot program sends scheduled events from **DisplayIt!** to your digital signs. It is a Windows application and can run either on your server or workstation computer. Install only **ONE** of the Robot programs, using the procedure below.

DI Transport
In order to minimize network traffic, content may be stored inside the network media player. DI Transport will manage that content for you automatically.

DI Transport connects to each media player every 15 minutes. It compares the media, presentations, and other digital sign elements on your server with what is stored locally, and updates the media player as necessary.

To install DI Transport, use the installation procedure below. Once it is running, you can watch the status messages on the screen or minimize it.

Option 1 – On a server computer
 1) Create a "DisplayIt Options" folder on the server
 2) Copy the program you are installing to the Options folder
 3) Copy the Preferences folder from the DisplayIt folder and
     paste it inside the Options folder
 4) create a shortcut to the Robot (right click its icon and choose
     "Create Shortcut"
 5) place the shortcut inside of the Start menu>Programs>StartUp folder

Option 2 – On a your workstation computer
 1) move the program you are installing to the main DisplayIt folder
 2) create a shortcut to the program (right click its icon and choose
     "Create Shortcut"
 3) place the shortcut inside of the Start menu>Programs>StartUp folder

DI Now! and **DI Text**
To install either program, just move it to the DisplayIt folder. DI Text and DI Now! are site licensed, so you may run them on as many computers as you wish. Copy the program to a new folder on the target computer, then copy the Preferences folder from the DisplayIt folder and paste it inside the new folder.

Security Administration

DisplayIt! provides security through a system of login user id's and passwords. Security is optional. If it is not set up, you will never be asked to log in.

If you are using DisplayIt for the first time, skip this chapter until you are familiar with the other elements of DisplayIt! (it will be more meaningful).

To access the security system, click on the Administration button at the bottom right corner of the screen:

That will take you to the Security Administration screen:
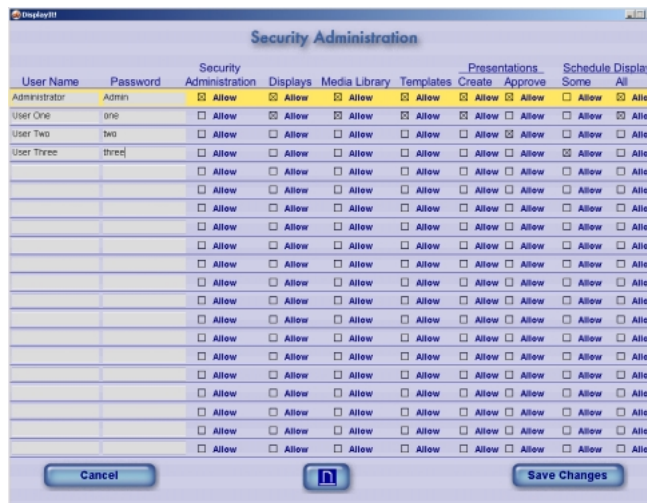
On this screen we have set up an Administrator and four users.   The settings that you define on this screen affect which tabs the user can access, and what they can do within those tabs. In addition, companion programs such as DI Text use these settings to control access on a user-by-user basis.

Security Administration

User Name	Password	Security Administration	Displays	Media Library	Templates	Presentations Create	Approve	Schedule Displays Some	All
Administrator	Admin	☒ Allow	☒ Allow	☒ Allow	☒ Allow	☒ Allow	☒ Allow	☐ Allow	☒ Allow
User One	one	☐ Allow	☒ Allow	☒ Allow	☒ Allow	☒ Allow	☐ Allow	☐ Allow	☒ Allow
User Two	two	☐ Allow	☐ Allow	☐ Allow	☐ Allow	☐ Allow	☒ Allow	☐ Allow	☐ Allow
User Three	three	☐ Allow	☐ Allow	☐ Allow	☐ Allow	☐ Allow	☐ Allow	☒ Allow	☐ Allow

Cancel   Save Changes

The first line, shaded in yellow, is for the administrator. The administrator's capabilities cannot be modified. The administrator can:

       1) access this screen (**Security Administration**),
       2) Add, modify, or delete **Displays**,
       3) Add, modify, or delete **Media Library** elements,
       4) Create, modify or delete **Templates**,
       5) Create, modify, delete and Approve **Presentations**, and
       6) **Schedule** All Displays.
       7) Use the Emergency Notification System (no other user can do this)

Notice how these capabilities closely follow the tabs at the top of **DisplayIt!** The only difference is that Presentations also have an Approved attribute, which allows one user to create, modify and delete presentations, and a different user to Approve them. This is especially useful in an educational environment where the students might be allowed to create Presentations, but a professor must approve them before they may be shown on a display.

The next line down we have entered a user name and password for User One. That user cannot access Security Administration, and cannot Approve Presentations, but can do everything else.

User Two might be the professor in the educational example. That user can approve presentations, but nothing else. User Three could be a departmental user, who is allowed to Schedule presentations onto displays, but only for some displays, not all.

Note: Users do not have to have a password. You may leave that field blank for one or more users, although it is not recommended for obvious reasons.

Note: If you want to disable the Security Administration system, uncheck all Allow buttons, and delete user names and passwords. Then click the Save Changes button. Thereafter, no login will be required for any **DisplayIt!** program. Note: If any presentations have been locked, you won't be able to change or delete them, so unlock all presentations before disabling security.

When the Allow checkbox under Some is clicked, a screen for selecting which displays and display groups this user can schedule is shown:

Clicking on any display name or group name will toggle it from plain to **Bold** text. The user may schedule displays and groups that are bold. Click on the "Save Changes" button when you have finished selecting displays and groups.

When you are done setting up users and their allowed capabilities, you may print this screen by clicking on the print button. When you are satisfied with all of your selections, click on the Save Changes button.
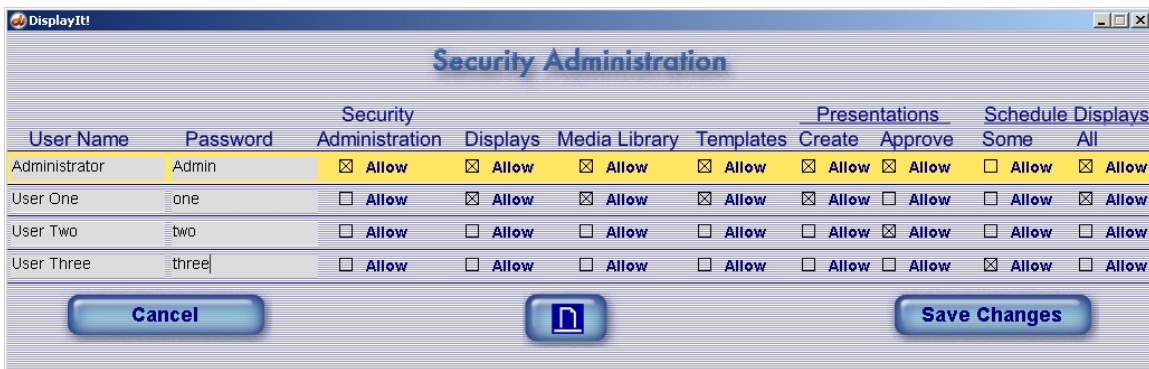
Remember, no security system, including this one, is foolproof. You must make certain that the users who have access to the DISPLAYIT! folder within your root server directory are trustworthy. Although most of the files within that directory are encrypted, a hacker with sufficient access could make changes that could compromise the content shown on your displays.

Displays and Display Groups

The tabs across the top of the screen are the major sections that **DisplayIt!** is divided into.

You may select any tab at any time. The first tab is for defining Displays and Groups. Once you have your displays set up, you probably won't go into that tab again, unless you add another display to your digital signage program.

To set up the displays in your digital sign network, you will need to know the IP address for each of them. If you do not know the IP address, find out now. Then click on the "Displays" tab, and you will see the following screen:

Click on the "New Display" button, and enter the information in the fields as in the example above. **The media player settings will be automatically supplied by your media player when you save changes.**

The description field is for your reference. It helps identify which screen is in which location, especially if there is more than one screen in the same room.

The IP Address is how **DisplayIt!** knows where to send commands. It is very important that this be accurate. To make sure that the IP address is correct, click on the "Display IP Address" button. You will see the IP address on the display connected to the media player.

There is also a red, "Restart Display" button. **If you restart a display or send a test image to a display, it will not have any content on it again until you send it a presentation, or until the next scheduled event occurs.** More on that in the Scheduling chapter.

The orientation pop-up lets you select whether the screen is mounted horizontally, "Landscape" or vertically, "Portrait".

You may click the Plus (+) or Minus (-) to set a time-zone offset for the display. This tells **DisplayIt!** the time difference between this location and the display's location. If the display is in the same time zone as this computer, it is zero.

The Default Presentation pop-up will be empty right now. Later, you will assign a default presentation to each of your displays. This presentation will be kept on each screen until a specific event is scheduled for it.

Remember to click on the Save Changes button after you finish entering the information for a new display. It will take a few seconds to get the model and version information for the display. Meanwhile, you will see this screen:
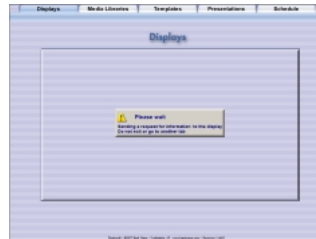
Depending on the media player and how busy the network is,this process may take as long as 60 seconds. Please wait. If you receive a message that the media player is not responding, check the network connection and make sure the media player is turned on, then try saving the display information again.

After getting the necessary information from the media player, **DisplayIt!** will compare the current settings with the specified settings for that model. If the settings are not correct, you will be prompted to replace the settings. It is recommended that you say "Yes" so that the settings are according to specs.

After a display is saved, send it a test image by clicking on the Display Test Image button. The test image looks like this:

It is not a white screen with a butterfly or black screen! Those mean your HTTP server is blocked by a firewall or router - or the server is not running!

Once all of your displays are defined, and tested, you may divide them into groups. This allows you to schedule presentations to play on a group of displays, instead of having to schedule each display individually.

Click on the "Groups" sub-tab, and you will see this screen:

Click on the New Group button, and type a name into the Group Name field.

On the left, in the Available Displays box, you will see all of the displays you defined in the previous step.

Highlight the name of each display that you want to include in this group, and click on the + Add to Group button to move it into the group.

If you want to remove a display from a group, highlight it inside of the Displays in this Group box, and click on the Remove from Group button.

When you are done, remember to click on the Save Changes button.

You may define any number of groups that you wish. Each group must contain at least two displays (otherwise, there is no need for group, is there?).

Media Libraries

DisplayIt! allows you to maintain several libraries of media content for use in your digital signage program. To begin building your media library, click on the Media tab. You will see this screen:
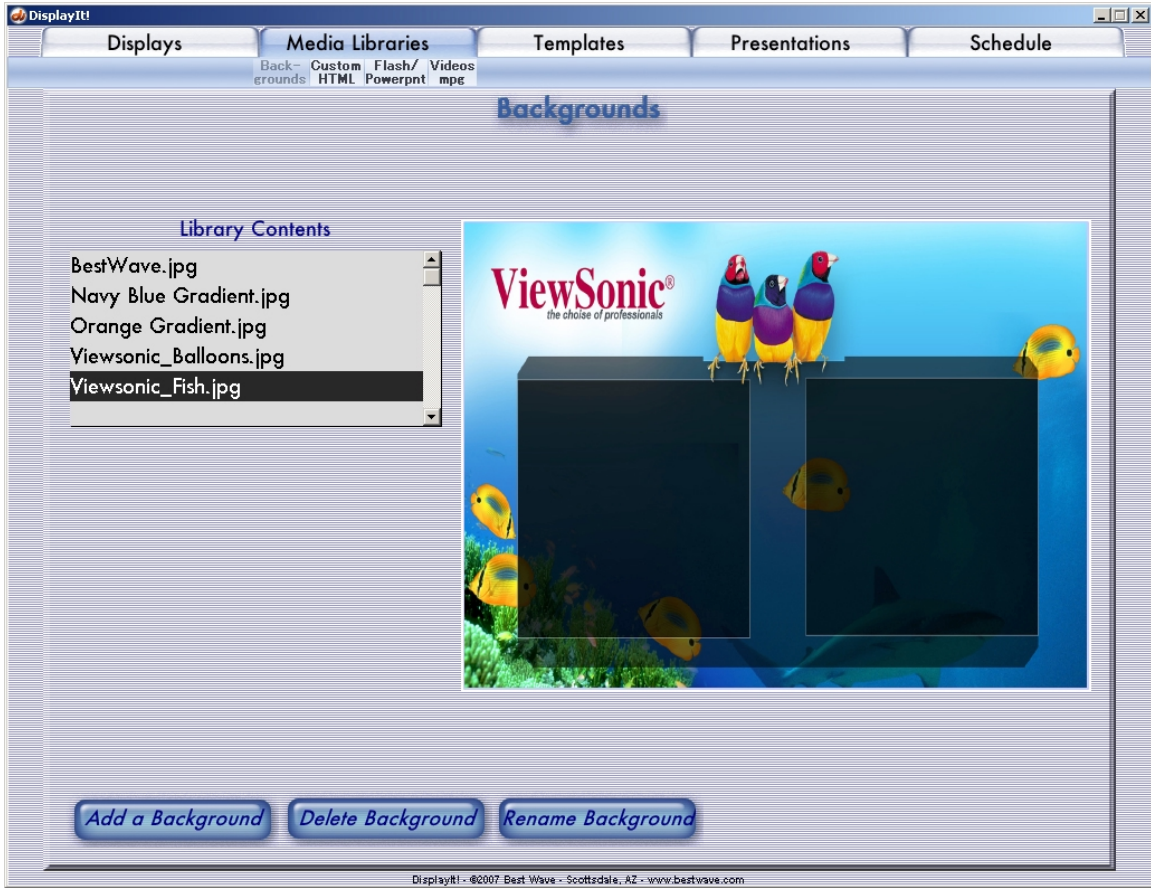
This is the first of 4 media sections, Backgrounds. To add a background, click on that button and select it using the standard file opening dialog box:
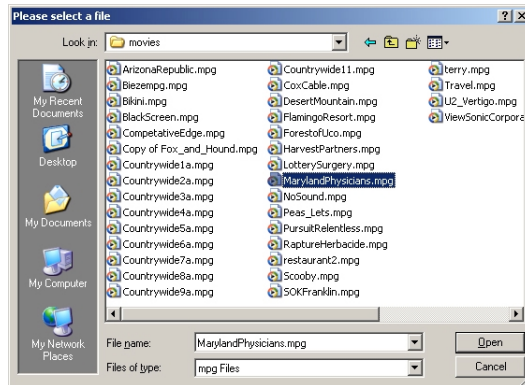
Backgrounds must be in the correct aspect ratio for your displays… either 16 x 9 or 9 x 16 (for Portrait orientation). They are typically high quality jpg image files at a resolution of 1366 x 768 pixels at 72 DPI.

If your backgrounds are not in this resolution, or are in a different aspect ratio, they will be stretched to fit, so the results may not look as good as you would like.

As you add each background to the library, you will see it previewed on the screen. This will give you some idea of how it will look on the actual displays.

Bringing backgrounds, (or any other media content) into the **DisplayIt!** content libraries will not move or delete the original file. It makes a copy of it inside of **DisplayIt!** leaving your original file untouched.

Click on the Rename Background button to rename the background (again, your original file will not be renamed, just the copy in the **DisplayIt!** library.

Of course you may delete a background by clicking the Delete Background button.

The next sub-tab is Custom HTML. Click on it, and you will see a screen like this:
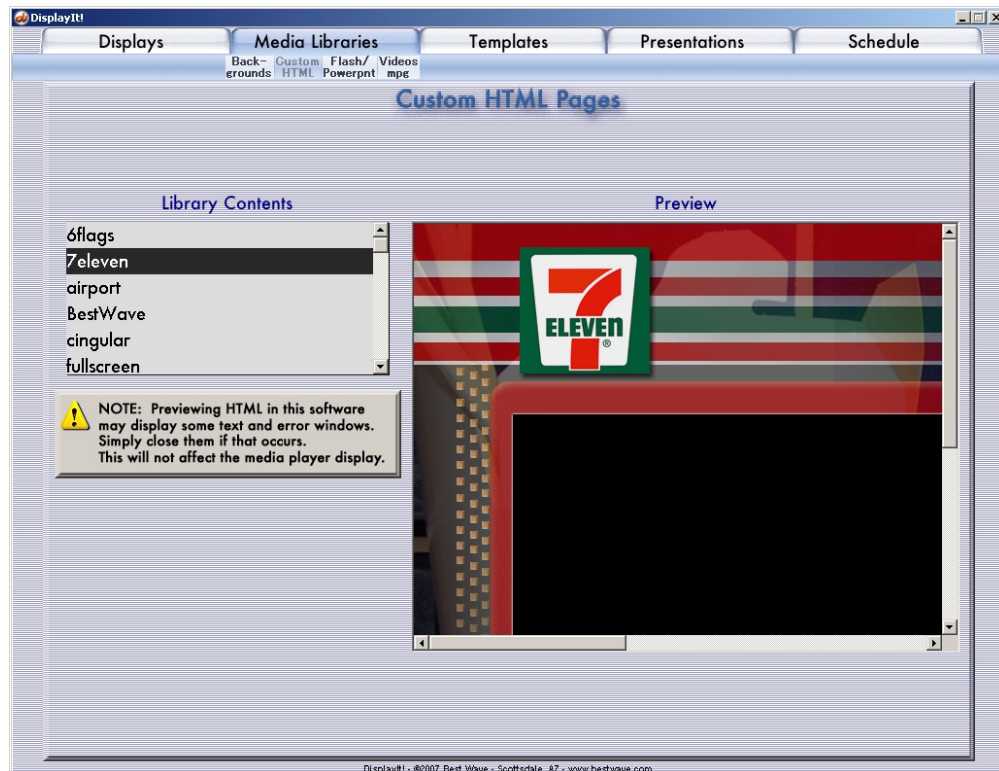
This library is different from the other **DisplayIt!** libraries. You will notice there are no buttons for adding, deleting or renaming library contents!

Actually, the library contents you see on the screen represent a collection of folders, inside your server's primary folder, that contain a file named index.html or index.php.

You create these using web creation tools for html, java script, and so forth. If you do not have any custom HTML folders like this, the Library Contents window will be empty.

To preview the contents of any of the custom HTML folders, click on its name.

Notice the message beneath the window. It warns that you might get some unexpected results when you try to preview certain custom HTML. That is caused by scripts that work in a media player (the machine that runs each of your digital signage displays) but do not play well on a standard web browser.
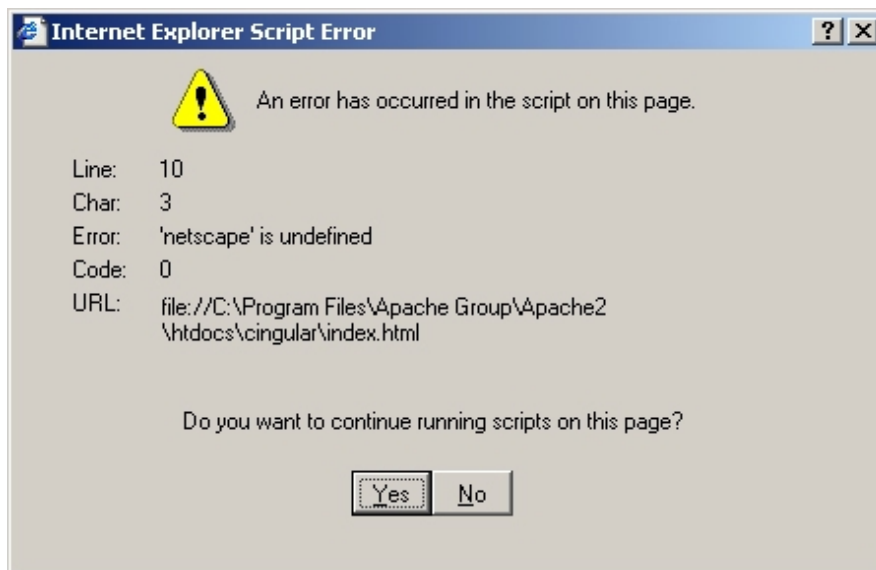
If any unexpected windows open after you click on a folder, simply close the window. If the window asks you a question, such as, "do you want to continue running scripts?" click on the Yes button.

The next sub-tab in the Media section is for Flash and PowerPoint presentations. Click on that sub-tab, and you will see a screen similar to this:
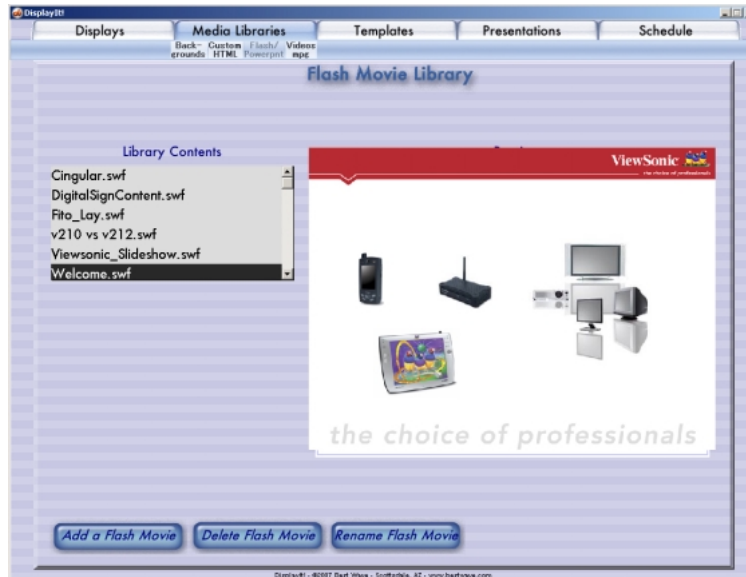
This library works exactly like the Background library. You may add, preview, rename, and delete Flash content here.

You will notice that all of the files in this library have the .swf extension, which means it is a Flash media file.

PowerPoint presentations can be converted to Flash format using software such as FlashPoint by JustDo. A free trial copy of that software is included on the **DisplayIt!** CD or download. A complete discussion of how to install and use this software appears later in this user guide. You can find out more about FlashPoint at http://www.flashdemo.net

Whatever program you use to convert PowerPoint to flash, remember to save the Flash as a single file, not a series of jpg files.

As of Revision 2.5 of this software, PowerPoint may also be imported as a series of images. That is often less expensive and easier. The resulting images can be imported using **DisplayIt!**'s new slide show feature that is discussed in detail in Chapter 8.

The next sub-tab in the Media section is for Digital Video. When you click on it, you will see a screen similar to this one:
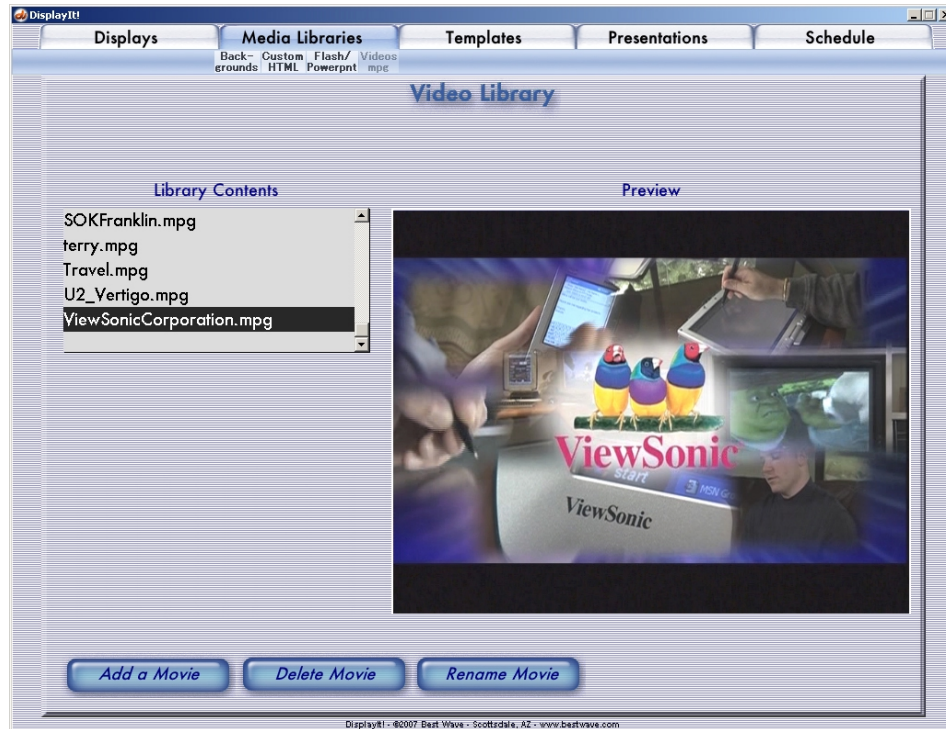
To preview a video, click on its name in the Library Contents window. If the video you select causes a red X to appear in the preview window, or a "Script Error" message appears, the Codec that is necessary to play the particular video is probably missing from your computer or not installed correctly.

NOTE: The K-Lite full Codec Pack is included with **DisplayIt!** It is inside a folder named "Other Installers/Video Codec Installer." Learn more about it at: http://www.free-codecs.com/K_Lite_Codec_Pack_download.htm.

You may add, preview, rename and delete digital video to and from the **DisplayIt!** media library using the Add, Delete, and Rename buttons.

The controls at the bottom of the preview window allow you to play, pause and resume play of a digital video. There is also a volume button on the far left of the controls to adjust the playback volume for each video.

A demonstration copy of KingDia Video Converter is also included with **DisplayIt!**. This converter will help you convert your videos to a compatible format. It can be licensed at: www.kingdia.com .

Continue to add media into all of the tabs until you have a good library of content to draw upon.

Templates

One of the most powerful features of **DisplayIt!** is the ability to create and use templates for laying out digital sign displays.

Click on the Templates tab and you will see this screen:
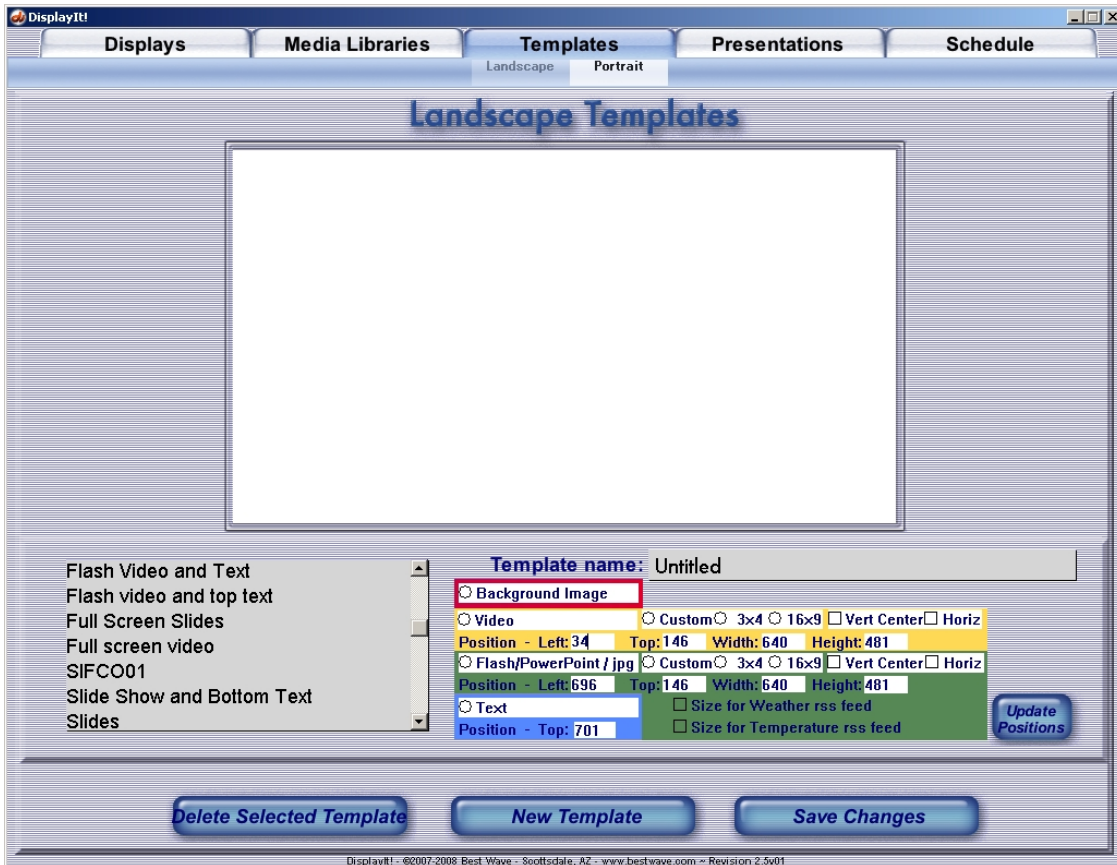
Click on the New Template button, and the word "Untitled" will appear in the template name field. Type the name you want to use into that field.

You may select the types of media you want to use in the template by clicking on one or more of the radio buttons in the bottom center portion of the screen. In this example, all four types of media are selected:
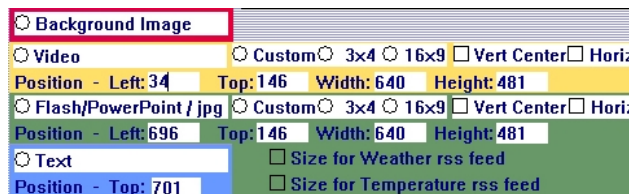
Notice the color of each of the media type button areas... red for background images, yellow for video, green for Flash, and blue for text.

As you select each media type, a corresponding color rectangle will appear in the preview window:
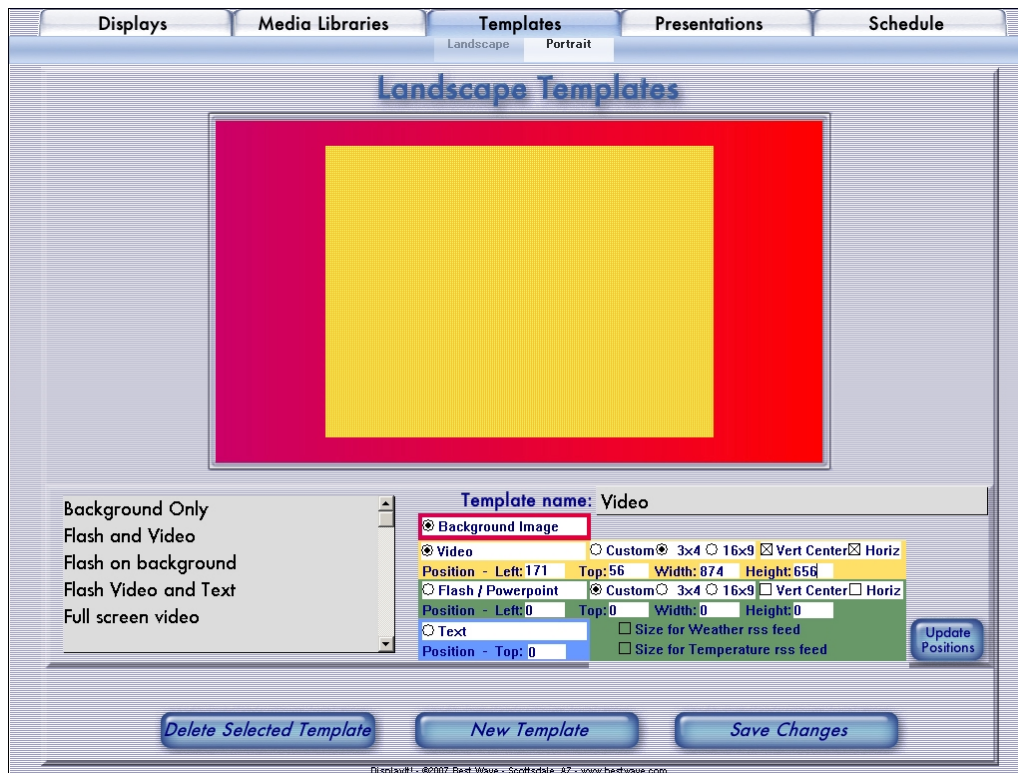
Here we have a new template named Video. It has two media types selected, Background Image and Video. There are corresponding boxes in the preview window for each of these media types.

You may resize the video and Flash media types (green and yellow boxes) by dragging any of their four sides in and out, by dragging any of the four corners, or by typing the coordinates and sizes you want directly into the Position boxes, and then clicking the Update Positions button.

Two special checkboxes allow setting the size of the Flash zone for Weather or Temperature rss feeds. Clicking either of these will set the zone size correctly.

You may also move the flash and video boxes anywhere on the screen two other ways; 1) click and hold down the mouse near the center of a box and drag it around the screen, or 2) click on a box so that it becomes selected (dark) then use the arrow keys to move the box in any direction.

IMPORTANT NOTE: Template names should generally **not** begin with the letters "zzz" this designates a template for use with the Emergency Notification System, and will be visible to the Administrator only.

In this example, the video box is selected and being moved around the screen:
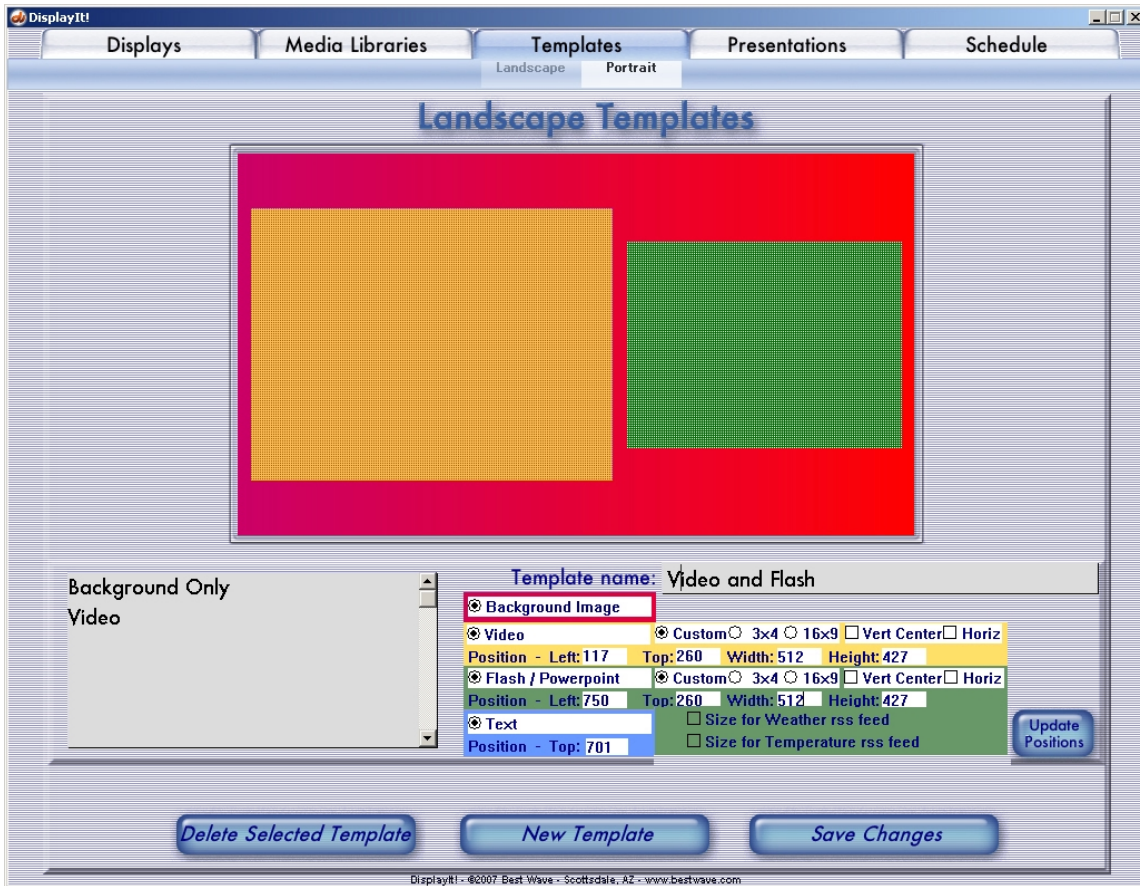
You will notice, as you move the box, the position numbers inside of the media element area will change. There are four position numbers, Left, Top, Width, and Height. Look at the position numbers in the example below:
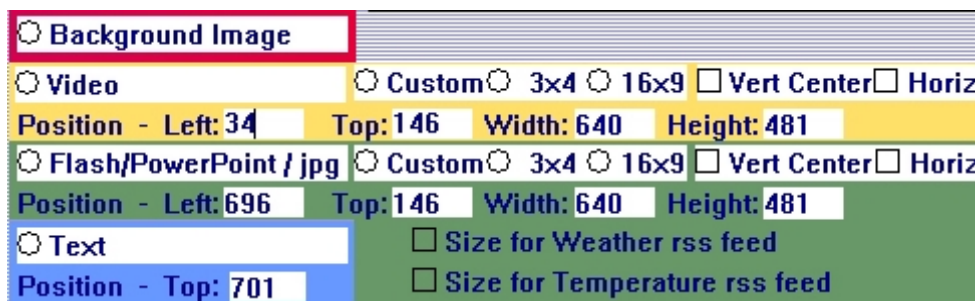
In this case, the video element will be 34 pixels from the left of the display, and 146 pixels from the top. It has a width of 640 pixels, and a height of 481.

The Flash element will be 696 pixels from the left of the display, and 146 pixels from the top. It has a width of 640 pixels, and a height of 481.

If you are using a background that has pre-defined rectangles (where certain types of content should appear), go into your design software (typically Photoshop) and get the screen coordinates of those rectangles. Then type the coordinates and sizes you need directly into the Position boxes. When they are exactly as you want them, click the Update Positions button.

There are also two buttons for the video and two buttons for Flash elements that may used to speed up the placement of media. The first two control aspect ratio, and the second two, centering.

To force either the video or Flash elements to be in a 3x4 or 16x9 aspect ratio, click on the appropriate button. In the example above, the video element is set to a 3x4 aspect ratio. If you resize an element by dragging its sides, and happen to make it exactly one of these aspect ratios, the button will highlight automatically.

You may center the video or Flash elements by clicking on the appropriate buttons. Again, if you happen to drag an element to either the vertical or horizontal center of the screen, these buttons will be checked for you.

The template below has all of the media elements on it, text, video, flash, and a background image. Text, the blue rectangle, may not be resized, just moved up and down. On the actual display, the text area will be a bar that contains a single line of text, which changes periodically. You will enter the text in the next section, Presentations.
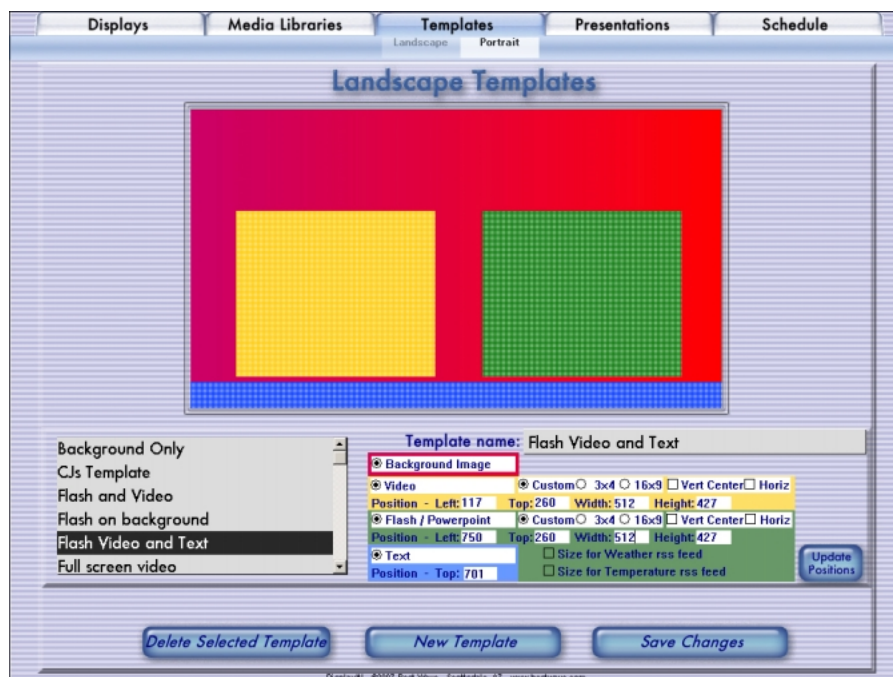
Presentations

Now we get to the really exciting part, where you can see your media content, on the templates you have designed! A presentation is just that – the combination of a template (which tells **DisplayIt!** where to put things) and media content (which is what to put there).

Click on the Presentations tab and you will see a screen like this:
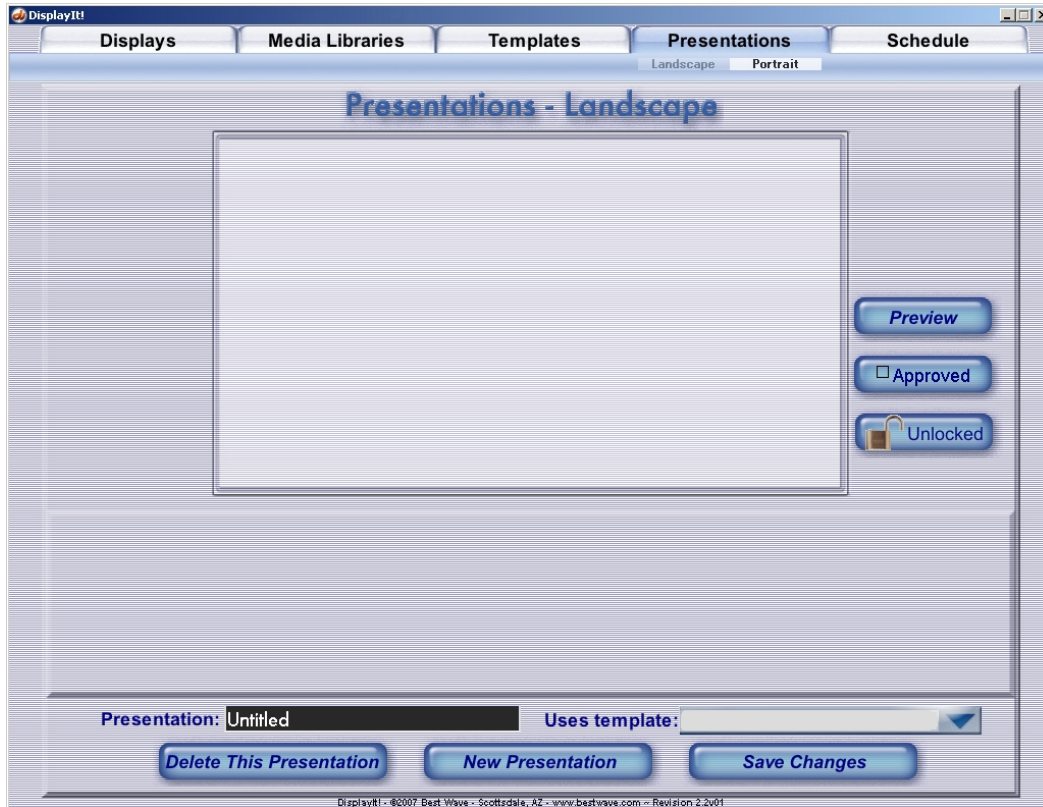
Click on the New Presentation button, and type a name over the word "Untitled" inside the presentation name box.

You may name your presentations in just about any way you want. We suggest using names that suggest the application of that presentation, for example, if you are creating a presentation that will be used in the main lobby, "Main Lobby" is a good name.

IMPORTANT NOTE: Presentation names should generally **not** begin with the letters "zzz" this designates a Presentation for use with the Emergency Notification System, and will be visible to the Administrator only.

Notice that this presentation layout is for Landscape oriented displays. You may click the Portrait sub-tab to create presentations for Portrait oriented

displays. **Note:** *Portrait oriented displays must have their video created in portrait mode (sideways) because the media player cannot rotate video.*
To begin adding media elements to your new presentation, select a template from the "Uses template:" pop-up on the bottom right:
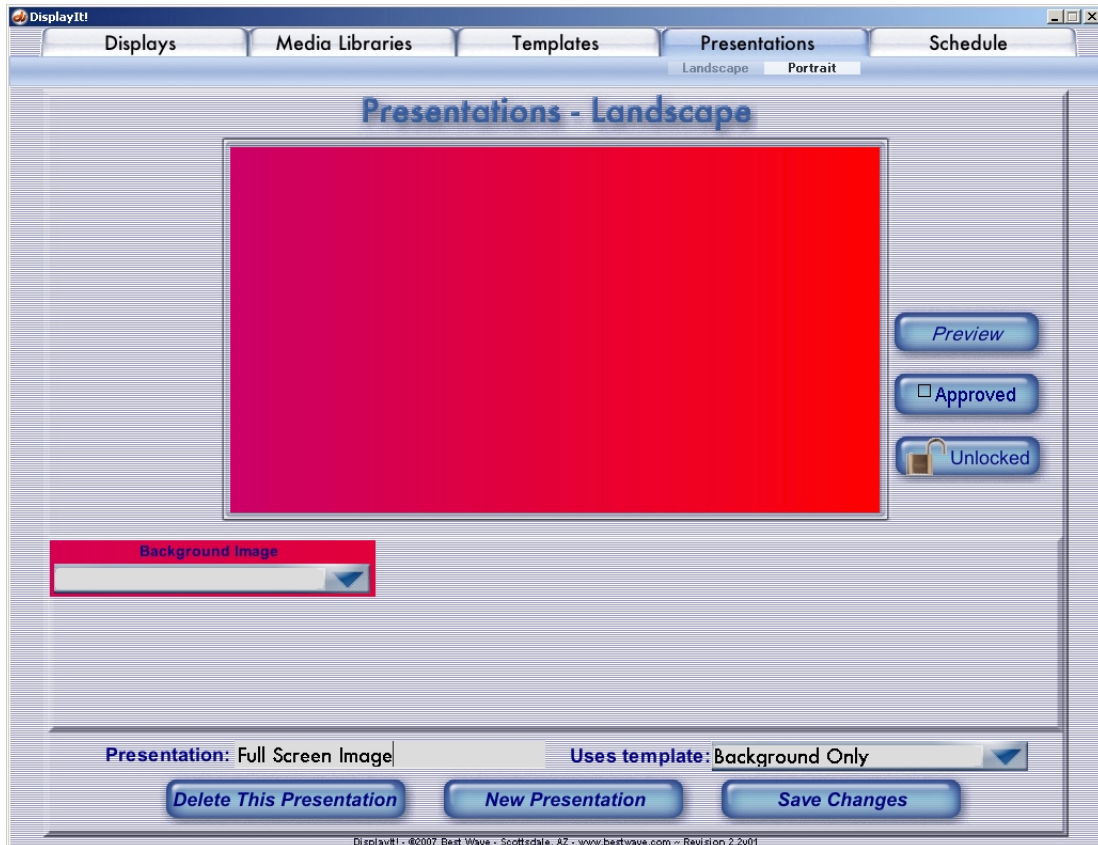
In this case, we selected a template that only has one media element, a background image. Depending on the template you select, and how many media elements it contains, there may be more media types to specify.

To complete this presentation we select the background image we want from the Background Image pop-up. All of the background images saved in the background image media library are listed on the pop-up for to choose from.

You will not see the actual background image here. Its name will be filled into the background image pop-up button so you know what you selected.

Presentations must be approved before they can be played on a media player or scheduled. If you have permission to approve Presentations, you can simply click on the Approved button now. Then, save your presentation by clicking on the Save Changes button. You cannot preview a presentation unless it has been saved. (if you forget, a gentle reminder will be there to remind you).

You may also lock a presentation so that only you can make changes to it. More on that a little later on.

Now, you can preview your completed presentation by clicking the Preview button on the right hand side:
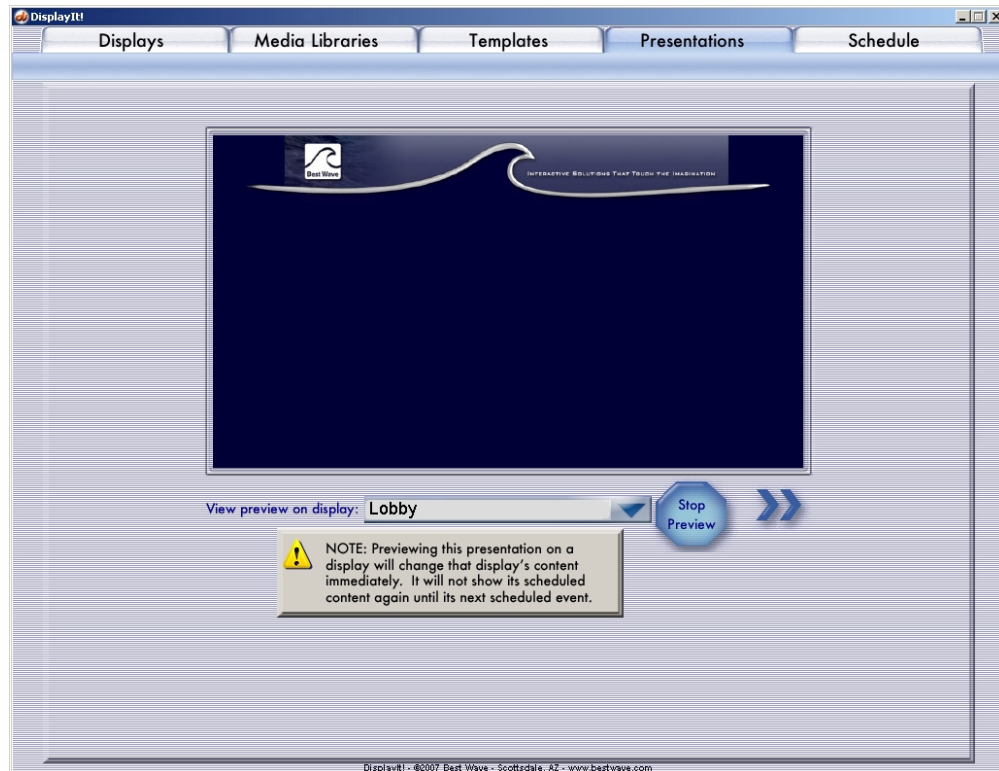
This will be a reasonably accurate (except for size) representation of what the presentation will actually look like on a display. Sometimes the preview function inside of **DisplayIt!** does a better job rendering certain types of media than the media player can. One example of this is Flash media.

You may also preview your presentation on an actual display in your network.

There is a message beneath the "Preview on display:" pop-up warning you that if you choose to do this, your presentation will replace whatever is normally playing on that display, and will stay there until a scheduled event occurs. That may be minutes later, or hours later, so be careful about previewing content in public spaces.

Of course, this capability can come in handy in the event that you want to immediately broadcast a presentation to a specific location. It won't give you the precise control that scheduling (next chapter) does, but it will put your message on a display in a hurry!

Selecting a more complex template will give you several more content selections to make, as in this example:
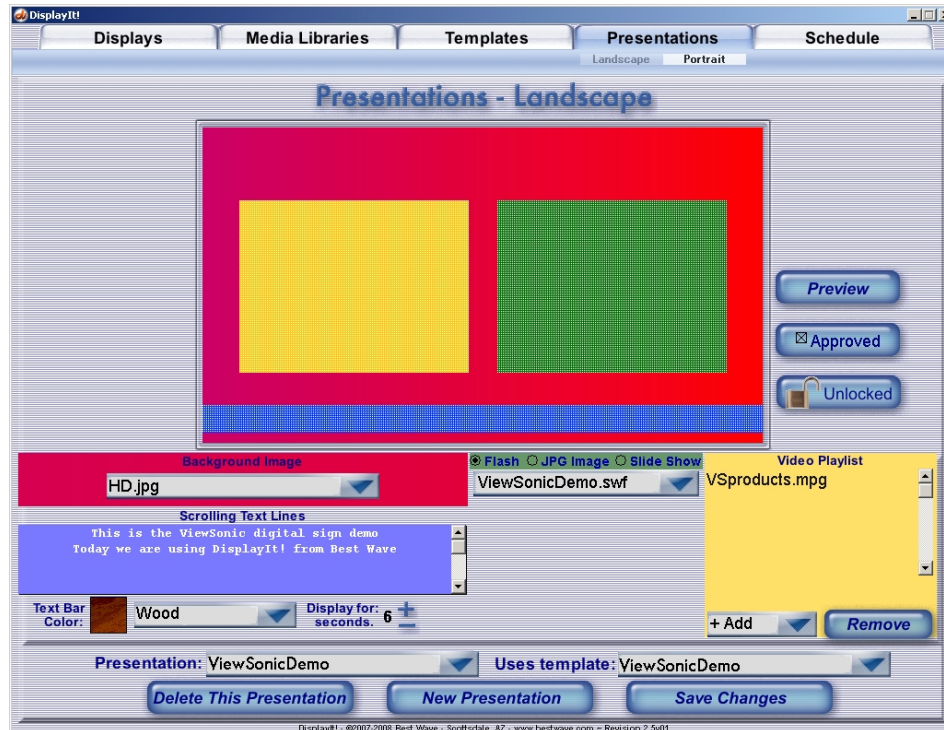
Here, we selected a background from the Background Image pop-up, a Flash movie from the Flash Content pop-up, and several movies from the +Add Video pop-up. Notice that there are three radio buttons in the Flash area that allow us to choose a Flash movie, a single JPG image or an entire group of images (slide show). If you click on the JPG Image radio button, the popup menu will display your jpg image (background) list instead of your Flash media list. The jpg image will appear exactly where the Flash media would appear in the template. Slide shows will be discussed in detail on the next page.

Notice that the heading over our video selections is "Video Playlist." That is exactly what we have created, a looping list of movies, that will play one after another as long as this presentation is being shown.

To remove a video from the playlist, simply click on its name, and then the Remove Video button. Yes, your playlist can be only one movie long! In that case, the same video will simply play over and over again.

The blue text field "Scrolling Text Lines" allows you to enter one or more text lines that will be shown, on the text bar (in this case at the bottom of the screen). You can select the color of the text bar, from one of 40 choices with

the pop-up menu. If you want the date or time to appear, use one of these 4 choices {short date}, {long date}, {short time}, or {long time} as a text line.

A number of Unicode characters (such as accents and other dialectic marks) can be displayed by putting the character's Unicode in braces like this: {0233}. A list of supported characters appears in Chapter 15 of this guide. If you need a character not listed, contact Best Wave, and we will add it.

Slide Shows are one of the most powerful capabilities of **DisplayIt!**. By clicking on the "Slide Show" radio button, you will see the slide show specifications:

Slide images may be added to the list by selecting them from the "+Add" pop-up menu. You can remove an image by highlighting it, then clicking the "Remove" button. The first selection in the "+Add" pop-up allows you to browse your computer for images, and select several at a time.

Slide images may be in any of the following formats, JPG, TIF, PCT, PNG, BMP, or GIF. They will be automatically resized to fit into a 1366 x 768 format, and converted to JPG so that they are able to be played on the media player.

Images that do not fit, will be placed on a background which you can select from the "Background" pop-up in this area. There are 50 backgrounds plus "Custom" available for use here. You can create your own custom background in PhotoShop. Save it as a TIF file inside the Preferences/SlideBackgrounds folder to make it available to **DisplayIt!**.

You can also set the time per slide for your show, from 2 seconds each to 120 seconds each by using the + and – buttons. Holding down either button will quickly increase or decrease the number of seconds per slide.

You can also select if the slide show should be played sequentially (in the order listed) or in random order by clicking one of those two checkboxes.

When you save your presentation, you will see each of your images as they are imported, resized, placed on your background selection, and exported as JPGs.

Remember to save your changes before previewing your presentation! If you preview a presentation that has one or more videos in its play list, it will look like this:


Notice the words "Video 1 of 3" (and the name of the video) appear just beneath the >> (next video) button. You can click on this button to skip to the next video in your playlist. Of course, you can just wait till it is done playing and the next video will come up automatically, but who is that patient? **Note: this has no effect on the video playing on any of your displays. It is just changing the video playing here, in the preview window.**

Note: If you are trying to preview a presentation and you see an error message or there is a red X where the video should be, a video Codec may be missing that a video needs. Try playing the problem video outside of **DisplayIt!** to see if this is the cause.   Or simply install the K-Lite Codec pack from the "Other Installers/Video Codec Installer" folder that is inside the DisplayIt folder.

To stop previewing, and go back to the Presentation screen, click on the large "Stop Preview" button.

The Flash area of your Presentation may be reserved for temperature or weather information. Special tools in the Template design process help in setting the Flash area to precisely the correct size for the built in Flash movies that format this information onto the screen.

To select a Weather or Temperature feed, select it from the top of the Flash movie selection pop-up:
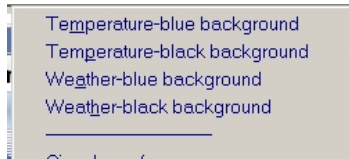
There are two Temperature choices, with blue and black backgrounds, and two Weather choices.

When you save a Presentation with any of these as the Flash choice, you will be asked to choose a location that you want weather or temperature information for. First, it will ask if the information is for the United States or another country:

Then, if you selected U.S., you will be asked to select a state or US territory, and then a city or airport location as follows:

If you selected a country other than the United States, you will be asked to select the country, then the city as follows:

DisplayIt! will then attempt to connect to either the National Oceanic and Atmospheric Administration database (United States) or to the METAR aviation weather database (all other countries) to retrieve the most current data.

Weather information is automatically updated by the DI Robot programs every 30 minutes. Of course, the data may not be that current, as NOAA data is only updated hourly, and METAR data less or more frequently depending on the location.

You may also incorporate live video feeds, or "video streams" into your presentation. With **DisplayIt!** this is just as easy as using an mpg video!

When selecting videos for a multi-zone presentation or a full-screen playlist, you will notice there is a selection at the very top of your movie list called "UDP/RTP Video Stream."
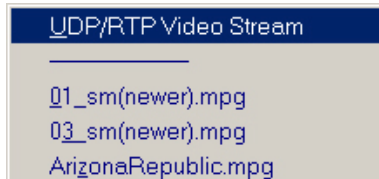
Choosing this will allow you to specify the stream as in the example below:
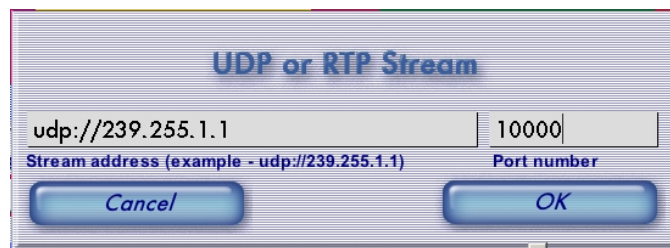
The first field contains the address of the UDP/RTP stream. It is an IP address with either "udp://" or "rtp://" in front of it. The second field is the stream's port number. The port number must be an integer.

There are a couple of things to keep in mind about video streams… First, they do not have a defined length like a movie. In fact, they can play forever! So, if you include a video stream within a play list of mpg movies, **DisplayIt!** will play each mpg video until it reaches the video stream in the list, then it will continue to play the video stream until it stops, or forever, whichever comes first.

Second, **DisplayIt!** cannot receive the video stream to show it in the preview window. Still, if you send it to a media player, or schedule it, the video stream will play on the display.

Third, streaming a video over the Internet is not going to work unless you have some pretty sophisticated routing and networking hardware. If you need a video stream in a particular location, create the stream there.

Creating a video stream can involve complex and expensive video encoding equipment, or for more simple applications, a computer with a video card capable of video capture and some software can work. VLC Media Player, a free software package from www.videolan.org seems to work quite well for many applications.

Incorporating Dynamic Content – XML Data Files

A Flash movie can incorporate and display data that comes from a file in XML format. The XML file can then be changed, either by typing in new information, or with an external software program. The changes will be reflected in the digital sign presentation almost immediately.

DisplayIt! allows you to "attach" an XML data file to any Flash movie by checking the box (just beneath the Flash movie pop-up) called "Attach XML:". You can then browse to find the file on your computer or network:


When you save the Presentation, **DisplayIt!** will place a copy of the file inside the Presentation's folder on the web server. It will ask you if you would like a shortcut to that location placed on your desktop. A shortcut will allow you to easily open, and modify the XML file.

A demonstration XML file is inside the "Demonstration Files" folder that came with your **DisplayIt!** download, or **DisplayIt!** update. It should be used with the "Digital_Menu" Presentation. To see what it can do, follow these steps:

      1) Go to the Presentations tab, and open "Digital_Menu"
      2) Click on the "Approved" checkbox (if it is not already Approved)
      3) Click on the "Save Changes" button
      4) When it asks you if you want a shortcut to the attached file, say "Yes"
      5) Preview the presentation, and send it to a screen using the pop-up
      6) Minimize DisplayIt! so that you can see your desktop
      7) Open the PriceList.xml file in Excel by double-clicking the shortcut
      8) Change some of the prices or item names (prices can't be over $9.99)
      9) Close the file or quit Excel to release it for the Flash movie to read it
      10) Note the changes appear on the Preview and on the digital sign!

There is a special template, called Full Screen Playlist built into **DisplayIt!** that allows the creation of mixed-media content displays. To use the Full Screen Playlist, select it from the Template pop-up when you create a new presentation:
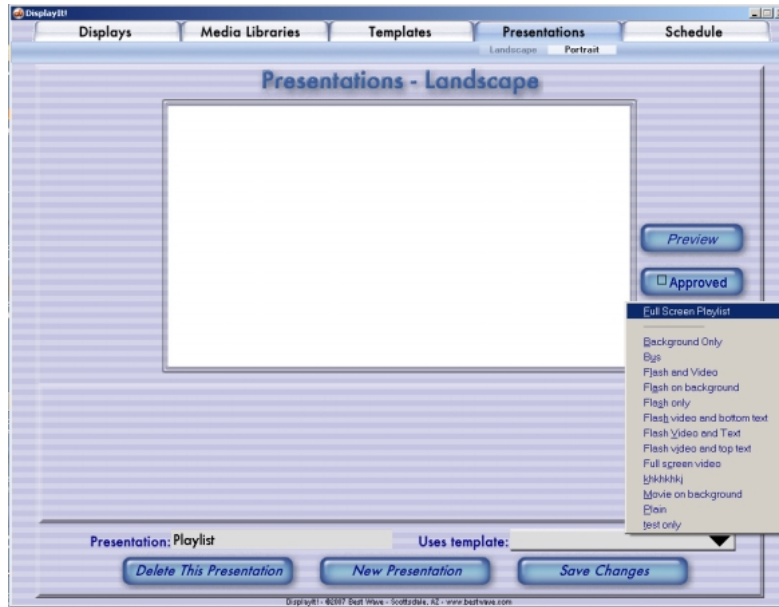
You will see an area on the screen where the playlist can be created and modified. To add items, just select them from the Add Image, Add Flash and Add Video pop-up menus. To remove an item from the list, click on it to select it, then, click on the "Remove Item" button:
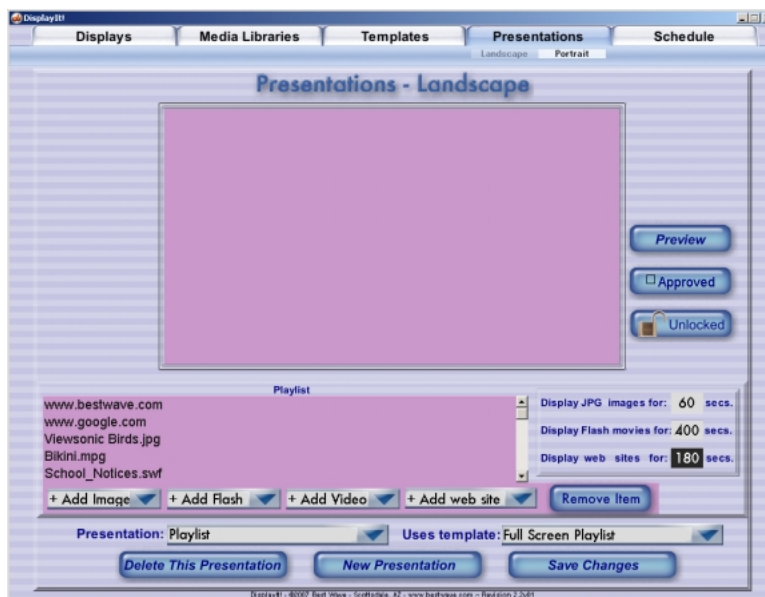
For each media type in the playlist (except movies which play till the end), you may specify the amount of time you want them to appear on the screen:
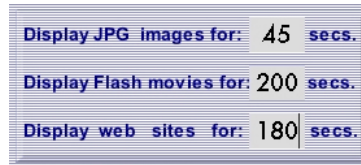
Although times may range from 10 seconds to 900 seconds (15 minutes), short times will be quite distracting... so try to set most times to 30 seconds or more.

You can include a web site in your playlist. Click on the Add Web Site button, and the following dialog box will appear:

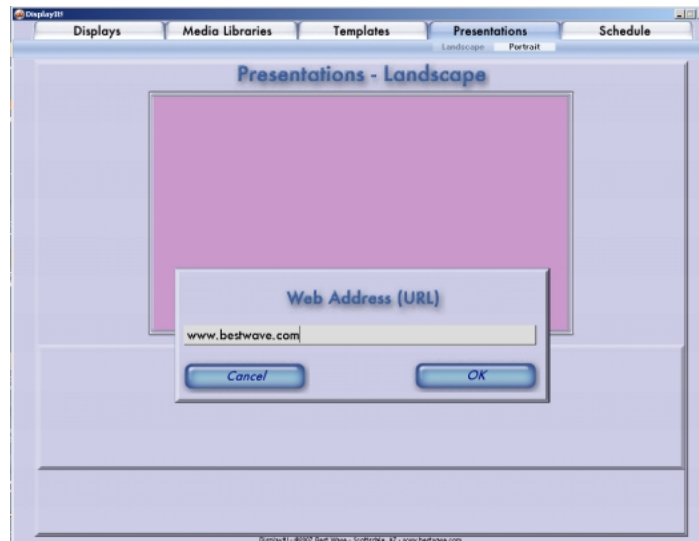In the example above, the Best Wave web site is being added to the playlist. Web addresses must begin with www. (including the period). Obviously, your digital sign network must be connected to the Internet for web sites to appear!

You may preview your playlist, just like any other presentation. Remember to click the Save button when you are satisfied with the results.

If you are working in a multi-user environment, you might want to protect your presentation from changes by others. In that case, click on the "Unlock/Lock" button on the right side of the preview window so that Locked is selected **before** you click on the save button:

Now that you have created a presentation or two, you are almost ready to schedule them to play... there is just one key detail to take care of!

Every display must be assigned a default presentation (remember that pop-up in the Displays section?) Let's go back and take care of that now. Click on the Displays tab:
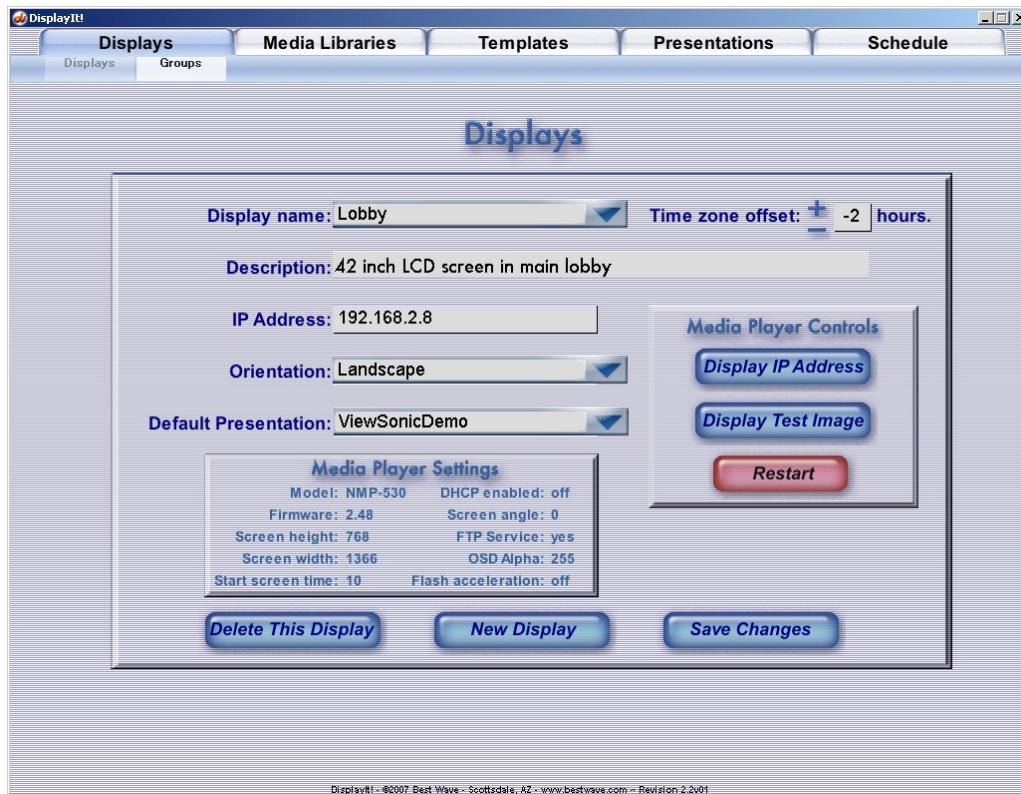
Click on the Default Presentation pop-up and choose one of the presentations that you have created to be the default for this display. Repeat that for every display you have.

The default presentation will play on a display when nothing else is scheduled. That way you never have a blank display sitting there if you have forgotten to schedule anything! Or you might just always want a certain presentation to be on a certain display – forever. That's fine too.

There are two requirements for doing this... 1) the presentation must be Approved and saved, and 2) you must have rights in the Administration Security system to schedule the display you are setting to a default presentation.

Now we can go on to schedule presentations (other than the default one) onto the displays.

Scheduling

IMPORTANT NOTE: Your schedule will "not work" until one of the DI Robot programs is running!

Click on the Schedule tab and you will see this screen:
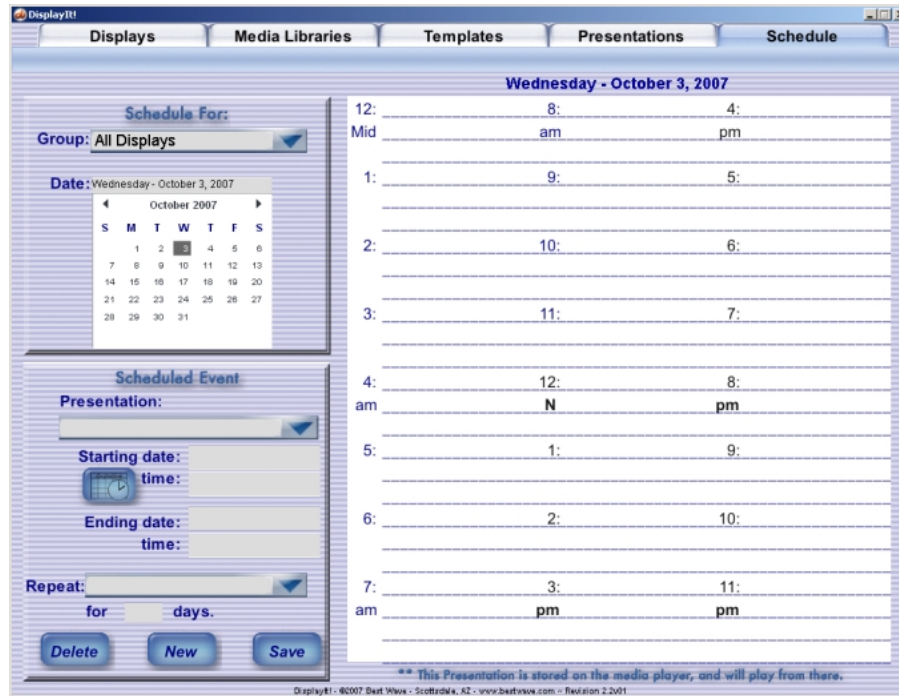
On the top left corner, is the Display pop-up. It allows you to select either a single display or a group of displays (if you have defined groups) to schedule.

Below that is a calendar. Right now, it will be showing the current date (with a gray box). To view the schedule for a future date, simply click on that date. You cannot click on previous dates – and you will hear a beep if you try.

In the next box down, we will be selecting the Presentation that we want to schedule, and the date and time to start, and end the scheduled event. An event is a particular presentation, displayed over a particular time frame.

Beneath that, is a Repeat pop-up. This is a powerful feature of **DisplayIt!** that allows you to repeat a scheduled event many times in the future. We will learn more about that a little later.

On the right side of the page is the day, divided into three hourly columns. Column 1 begins at midnight, and goes through 7:59 AM. Column 2 begins at 8:00 AM and runs through 3:59 PM, and column 3 begins at 4:00 PM and runs through 11:59 PM. Outside the U.S., times are in 24 hour clock format.

Select one of your displays to see what the default presentation looks like:
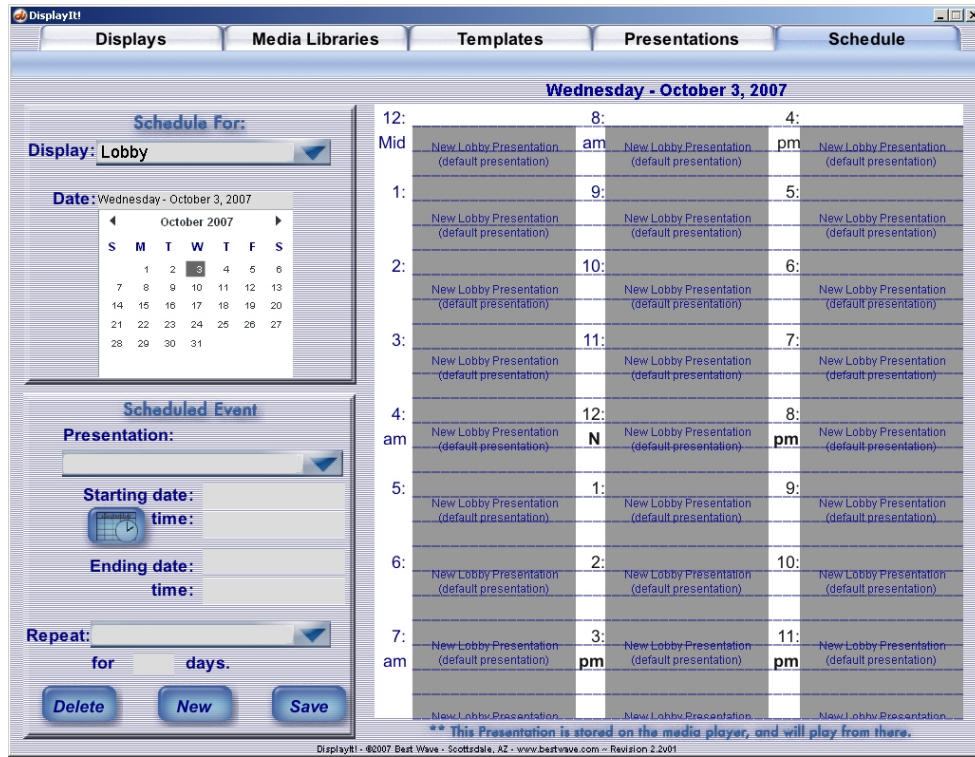
Notice the name of the presentation we set as the default appears throughout the schedule day, and is followed on the next line by the words "(default presentation)."

If you click on any future date, you will see exactly the same thing!

Now add a schedule event for this display. Click on the New button near the bottom left hand corner.

The words "Please select" appear in the Presentation pop-up, and "Please specify" in both the Starting date and Starting time boxes.

You can select and specify in any order – you can even begin with the ending time if you happen to think that way. But most people begin by selecting the the start and then the end times, then the presentation, then the repeat settings.

You will notice on the Presentation pop-up, the default presentation for this display is grayed out. Obviously, there is no need to schedule the default presentation on top of the default presentation!

You will also notice that the last item in the Presentation pop-up is "DISPLAY OFF". This event turns off the video to any display or group of displays.

Be careful when using the DISPLAY OFF event. Some displays have the ability to shut themselves off or go into a hibernation mode when they do not have a video signal for a particular period of time. If you turn off the video to a display that is set that way, it will not come back on. So test this and make sure your display is set not to hibernate or go into standby before using this feature.

In the following example, we have selected the "Full Screen Image" presentation to schedule. And have chosen 7:00 AM through 10:30 AM for the time for this event:
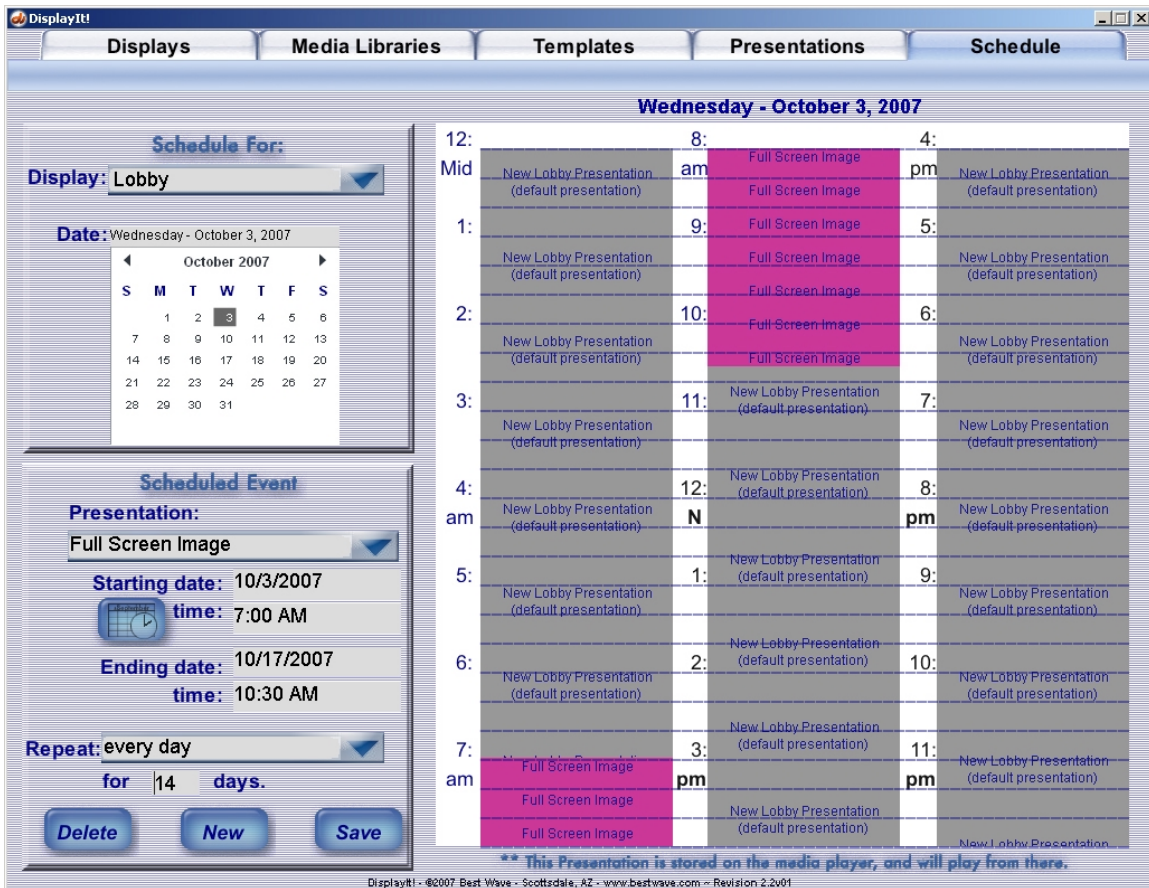
Lets take a closer look at how that is done. First, we clicked on the New button, to create a new schedule event.

That button, (as well as the Time button) will bring up a starting and ending time selection window, which looks like this:
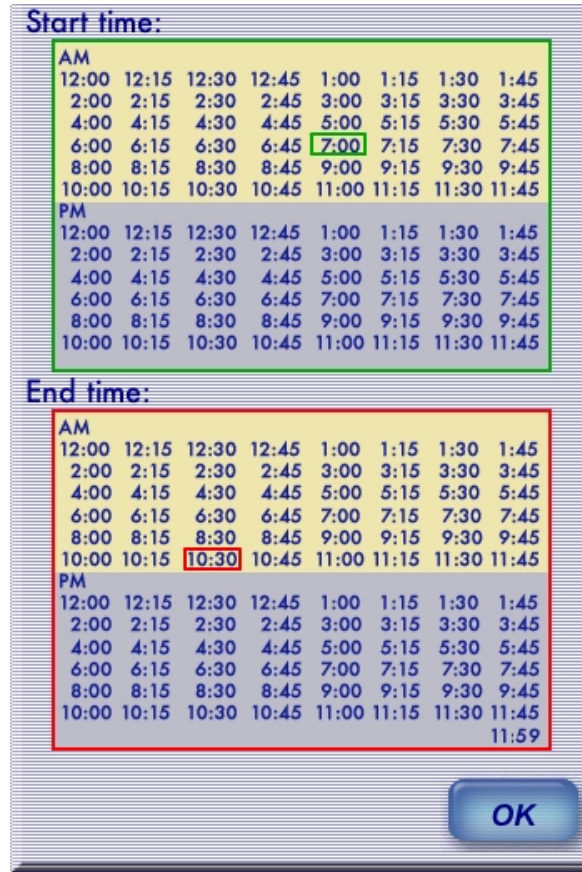
Click on a starting time from the top half of the window. Notice that the times are in 15 minute increments. That is just to make it easy… you can actually set the times to a precise minute later on. The only time you cannot set an event to is exactly midnight… that is reserved by **DisplayIt!**. You may use 12:01 AM. Notice the start time is highlighted in green and the end time in red.

When you have selected both the starting and ending times, click on the OK button to close the window. Then, click on the Save button to save the event. The schedule will be revised, as shown here:

A unique color is assigned to every presentation. That makes it easy to spot a particular presentation on any schedule, today, or far in the future.
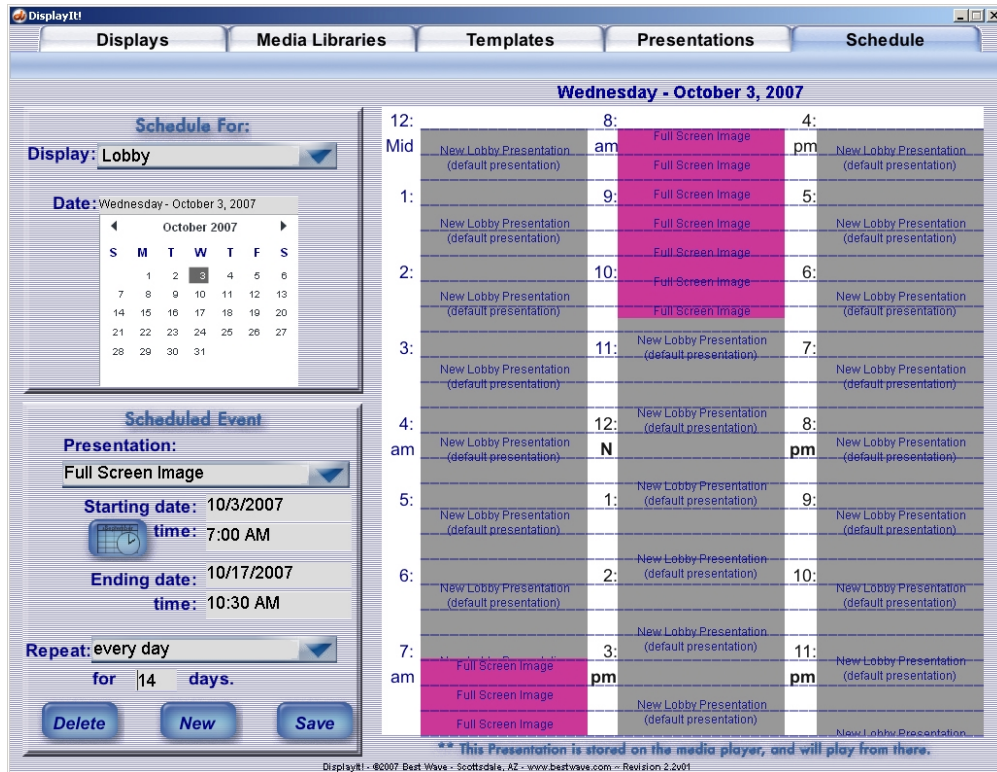
As a last step, before saving this event, we selected a repeating pattern from the Repeat pop-up and entered a number of days in the for ___ days Box:
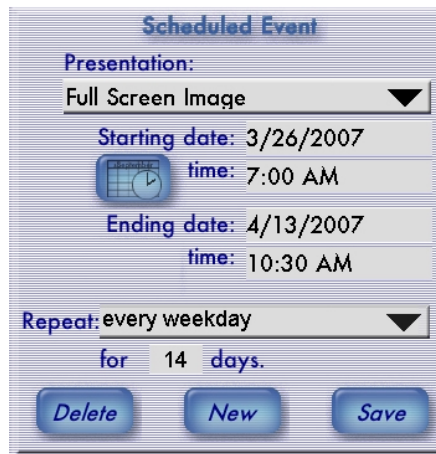
The Repeat choices are, every day, every weekday, every weekend, every week, every month, and every year. If you select every week, it will ask you to fill in for ___ weeks (instead of days). And, if you select months or years, the for ___ selection will be changed appropriately.

After clicking the save button, move the calendar forward, a few days, and see that the event is there for the number of <u>additional</u> days specified.

Next, we will schedule an event for a group of displays. The process is identical, except that we begin by selecting one of the defined <u>groups</u> from the Display pop-up. In this case, we selected a group named "Public areas."

Group events overlay the scheduled events and default events for every single display that is in the group. In other words, the group event takes precedence over the other events scheduled, <u>and</u> the default presentation <u>for each display in the group</u>.

You may schedule the "DISPLAY OFF" event for a group of displays just like any other event. It will turn off the video to all of the displays in the group, so be careful when using this feature. Take special note of differences in time zones. You may otherwise turn off some displays during times that they should be on. In that case, you could schedule the displays to be off individually, or set up a group for each time zone.

In the following example, we placed the Full Screen Image presentation on the schedule beginning at 12:00 noon, ending at 4:00 PM, and repeated it every weekend for 12 weeks:
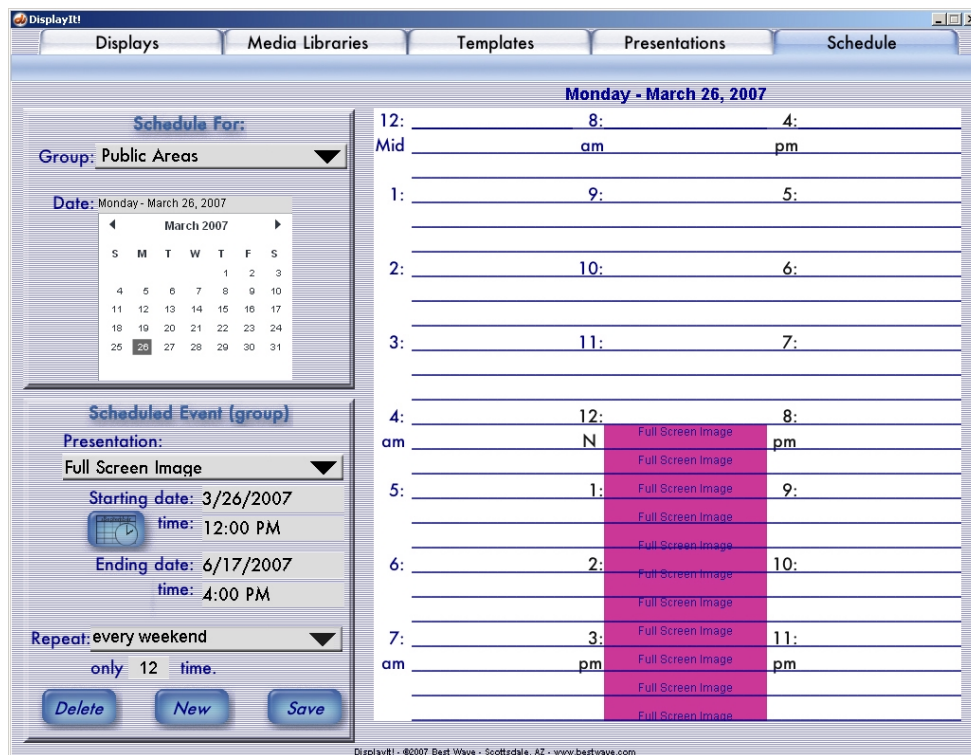
If we look at the lobby display on a weekend, its schedule looks like this.

Clicking on an event in the calendar area will show its details in the scheduled event box. You may then edit the event.

Important **Note:** a group event cannot be edited from a display's calendar. If you want to change a group event, select that group from the Display pop-up, then click on the event and change it there. In the schedule area, the names of group events are bracketed like this:

If you are using the DI Transport program to push your presentations onto the storage of your media player, you will notice two asterisks "**" in front of the presentation name like this:
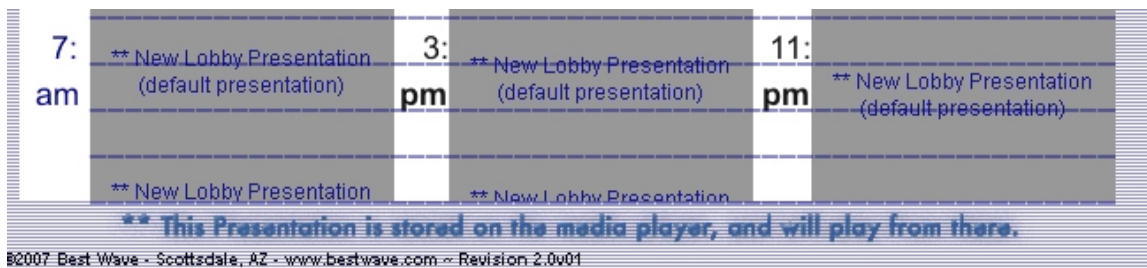
That means that the presentation will play directly from the media player's storage, rather than being streamed from the server.

DI Transport looks ahead in the schedule 7 days and pushes the necessary content for each scheduled presentation in that time period. It also manages the media elements in terms of their time and date, so if you change a presentation, or the media (such as a jpg or mpg file), DI Transport will re-send that media element to each media player that needs it.

Since DI Transport only wakes up every 15 minutes to check the schedule, there may be some lag time between a change, and when it is available for local playback. Also, ftp transfer rates may vary, and be especially slow during the day, so it is best if you plan ahead a bit and make changes a few days ahead of when they are needed. Of course, if a presentation or media is not available on the media player, the presentation will usually be able to stream from the server. (this may not be true in all circumstances due to bandwidth considerations) If for some reason (like you have a lot of displays) DI Transport is not keeping up, you can actually run more than one instance of DI Transport!

We have now covered all the areas of **DisplayIt!** The next section deals with converting PowerPoint presentations to Flash movies using FlashPoint.

Using PowerPoint

PowerPoint presentations are a great way to add automated slide shows to digital sign content. They are easy to create, and many companies have quite a few PowerPoint presentations that they have created for other purposes, which they would like to use in their digital sign program.

For best results on a digital sign, use the Page Setup menu in PowerPoint to set the width of your presentation to 13.6 and the height to 7.6. That will set the converted presentation to approximately a 16x9 aspect ratio.

To use a PowerPoint presentation in a digital sign, it can either be converted to a Flash movie, or it can be exported to a series of JPG images. There are several commercial software programs that do this quickly and easily.

Trial copies of two of those, pptXTREME and FlashPoint are included with **DisplayIt!** software.   This section will go through how to convert a typical PowerPoint presentation to using these tools. This should not be construed as an endorsement of either product, nor a reflection on the quality or value of other products. (Note: If you want sound and transition effects, you may want to explore the use of PowerPoint to MPG video exporter software instead).

Of course, you must have PowerPoint installed on your computer to use these (or any other) PowerPoint conversion products.

To install pptXTREME, double click on the pptX_ImEx_Setup.exe file inside of the pptXTREME Installer folder. This folder can be found inside the "Other Installers" folder that came with **DisplayIt!**
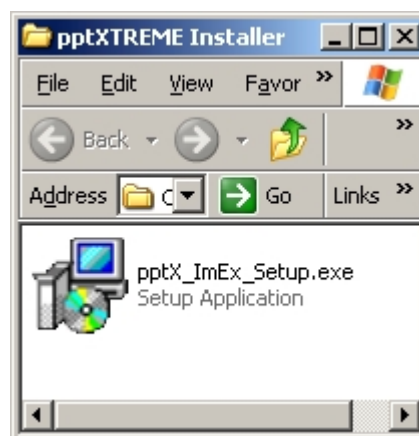
An installation wizard will go through the installation process. It will tell you how to get a license key, if you decide to license the software permanently. Licenses are quite reasonable, beginning at less than $30 as of this writing.

Once pptXTREME is installed, a menu option will appear on the right side of your PowerPoint menu. To export a presentation, you will choose the Import/Export – Export Images option from that menu as shown here:
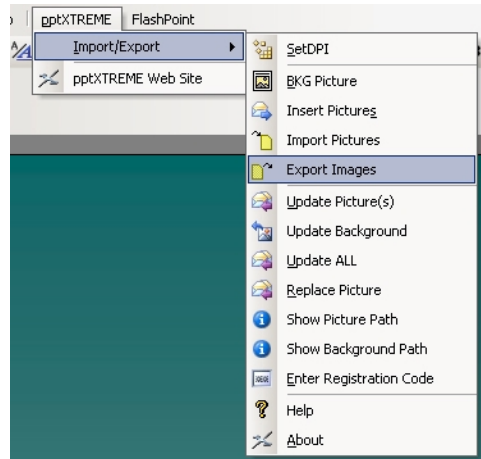
You will then see this dialog box:
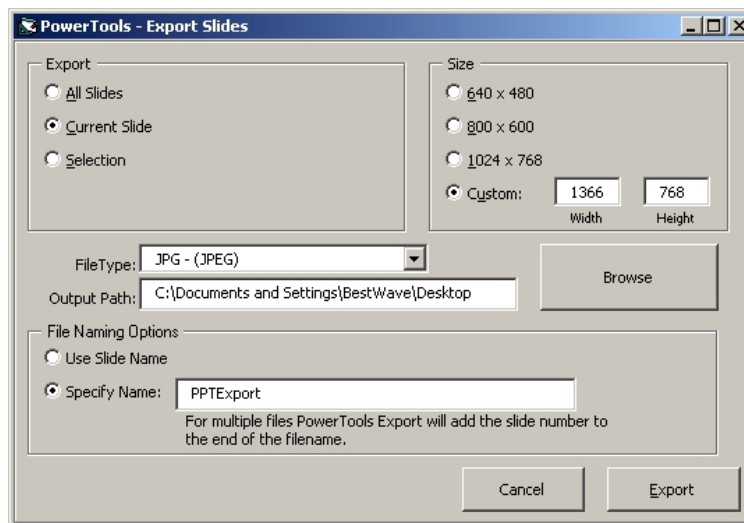
Click on the "Custom" size button, and enter 1366 for the width and 768 for the height for optimum results. The file type does not matter, unless you want to preview or use the slide images for some other purpose, in which case select the JPG option as shown here.

You can also browse to select an output folder. The process is easiest if you export the images to a single folder. That way, you can instantly import the images into **DisplayIt!** slide shows. To import the images into **DisplayIt!** click on the "Slide Show" radio button in a Presentation, then choose "Browse for image files…" from the "+Add" pop-up.

To install FlashPoint, double click on the flashpoint.exe file. It is inside the "Other Installers/FlashPoint Installer" folder inside the DisplayIt folder. An installation wizard will go through the install process. It will tell you how to get a license key, if you decide to license it permanently. Until it is licensed, FlashPoint movies will have a watermark on them.

The Revision of FlashPoint included in this package, (2.70) is the correct one to use. Do not upgrade to a newer version, or your Flash movies may not work in your media player.

Once it is installed, FlashPoint will place a new menu item in the PowerPoint menu:
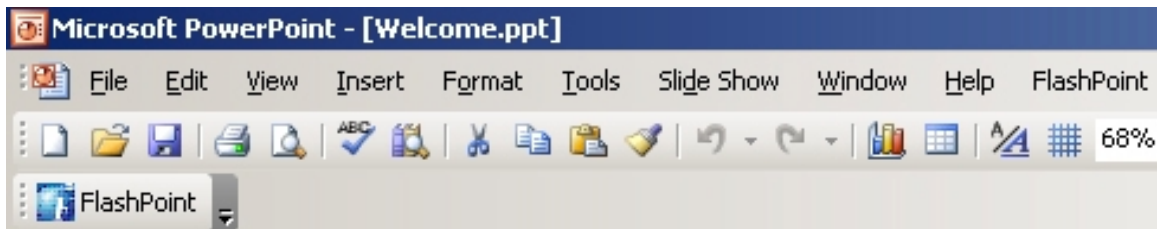
The FlashPoint menu's first selection is "Convert." This begins the conversion process. When you select it, you will see this screen:
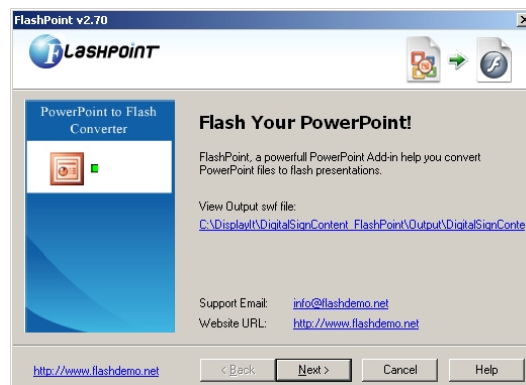
Notice that there are links on this screen that take you to the author's web site where you can license the product at any time. Click on the Next button to continue.

On this screen, make sure the Convert to a Single Flash File is selected. That is the default. Then, click on the Next button again.
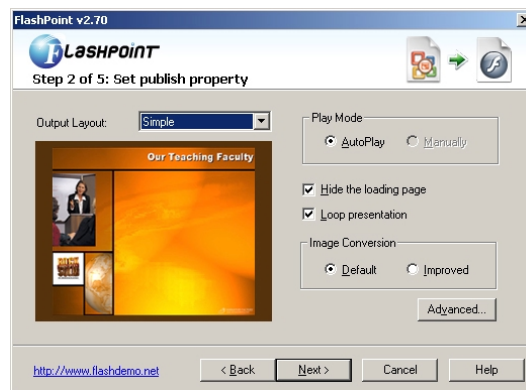
On this screen you must make three choices. First, select "Simple" from the Output Layout pop-up. Then click the "Hide the loading page," button and finally, click the "Loop Presentation" checkbox. Click on Next.
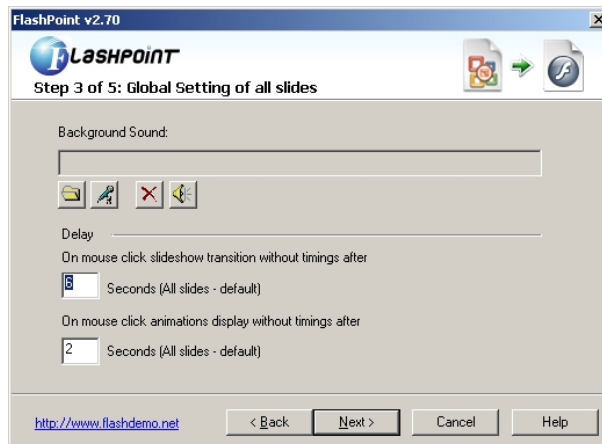
The default time for displaying slides is 8 seconds. In this case, we decided to change that to 6 seconds. This setting is a matter of personal preference.

On the next screen you will be able to change the time for each slide to be on screen individually. When you are done, click on the Next button to continue.
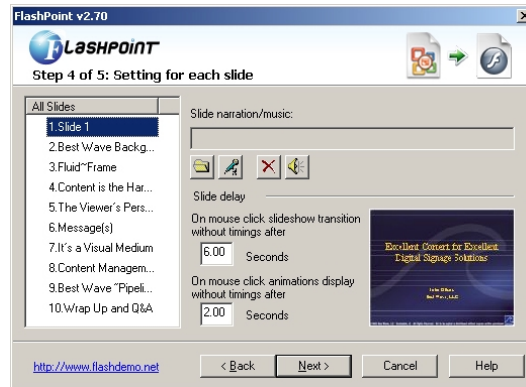
This screen allows individualized control of the slide duration. The mouse click animation box is not relevant for digital signs. In most cases, you can just click on the Next button, using the default timing you specified earlier.
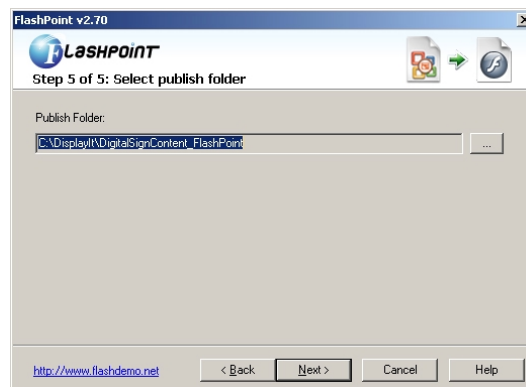
This screen allows you to change where the converted Flash movie file will be placed. Unless you want it to go somewhere other than the location of the PowerPoint presentation, you can just click on the Next button.

FlashPoint will create a new folder, and inside of it will be a folder named Output.

That folder will contain two files, an index.htm file which you can ignore, and a file that is named the same as your original PowerPoint presentation, but with the .swf extension rather than the .ppt extension.

This is the file that **DisplayIt!** will use.
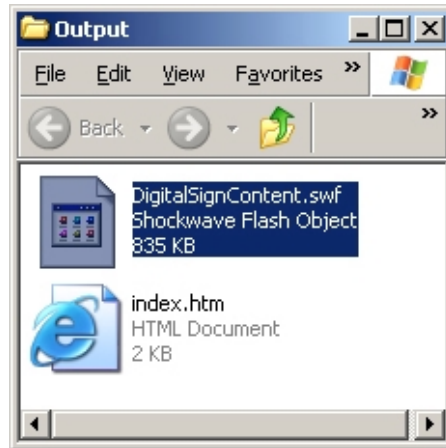
If you used FlashPoint to create a Flash version of a PowerPoint presentation, you need to import it into the **DisplayIt!** media library before it can be used.

Start up **DisplayIt!** again, and go to the media tab. Then, click on the Flash/PowerPoint sub-tab. Add your new presentation to the media library by clicking on the Add a Flash Movie button, and then locating the file on your hard drive.

That's it! You may now use the converted PowerPoint presentation as part of your digital signage program.

Using KeyNote from Apple Computer for Slide Shows

If you are a Mac user, you can use KeyNote to create a slide show, and export the finished product to Flash.

To do this, open a new presentation in KeyNote, and import each of your images as a new slide. Although you may set transitions between slides, be careful to use simple transitions. Complex transitions such as blends, ripple effects, and so on, are too difficult for the media player's limited processing capability.

Be sure and set the timing of each slide, and the "Go to" for each slide to the next one (except for the last slide, which should go back to the first one). Also set the "Loop Slide Show" setting to true.

Then, use the Export utility built into KeyNote to create a Flash movie (.swf file) that you can bring into the **DisplayIt!** media library.

Event Logs

One of the most useful features of **DisplayIt!** is its ability to let you know what has been occurring on a minute by minute basis for all of the digital signs in your network.

In Chapter 2, Installation, you told **DisplayIt!** where the main server folder is located:
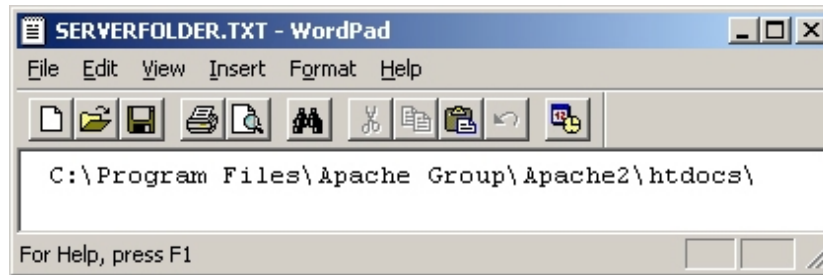
DisplayIt! creates a folder at that location named DISPLAYIT! (appropriately enough). Inside, are the files that **DisplayIt!** uses to store display information, templates, presentations, schedules and so forth:
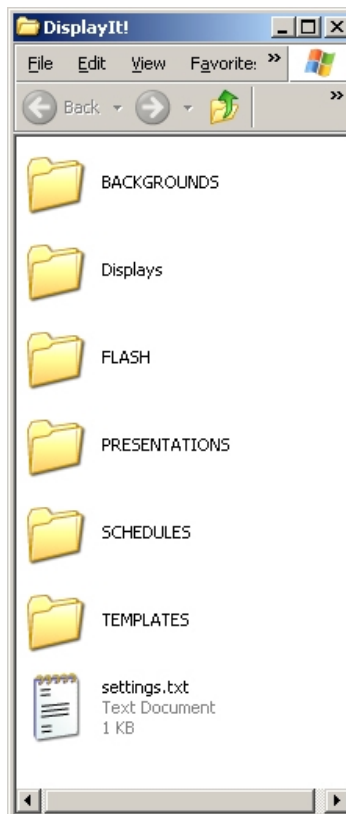
Open the SCHEDULES folder inside of the DISPLAYIT! folder, and you will find several files:
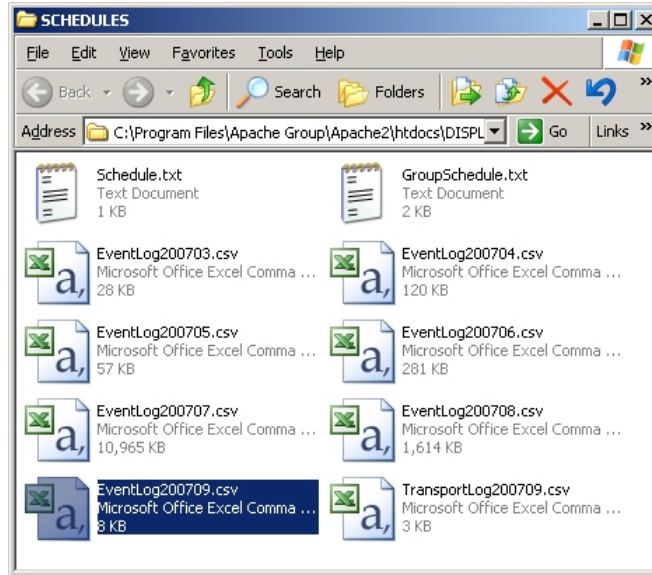
There will be an EventLog file for every month that **DisplayIt!** has been running on your server. Notice that the EventLog files have an extension of .csv which means that they are in Excel format.

The .csv extension means that the files are filled with values, like the date and time, and each value is separated from the next one by a comma. Hence the term csv – comma separated values.

You can actually open these files with WordPad, but opening them in Excel (by double clicking) will give you nice headings and columns, and make it easy to sort the data if you wish.

Double click on the EventLog file you want to look at:

Column A is the Sort Field. That means, if you want to sort the information by date and time, use Column A as your primary sort field.

Column B is the date that an event command was sent to a display.

Column C is the time that the event was sent.

Column D is the IP Address that the command was sent to.

Column E contains the Display Name that you defined for that IP address.

Column F is the name of the Presentation that was sent.

Column G is a notes area for **DisplayIt!** This will contain additional important information. In the example above, you see "Refreshed Presentation" in the first line. That is telling you that **DisplayIt!** sent a refresh command to that display – which it does every 90 minutes that the same presentation is scheduled for any display. Other notes you will see are for restart commands, and any errors that may be noted for a particular display.

If you are using the DI Transport program, you will see that another set of logs is maintained by that program. The format of the transport logs is very similar to the event logs. Again, the TransportLog.csv files are contained in the SCHEDULES directory:
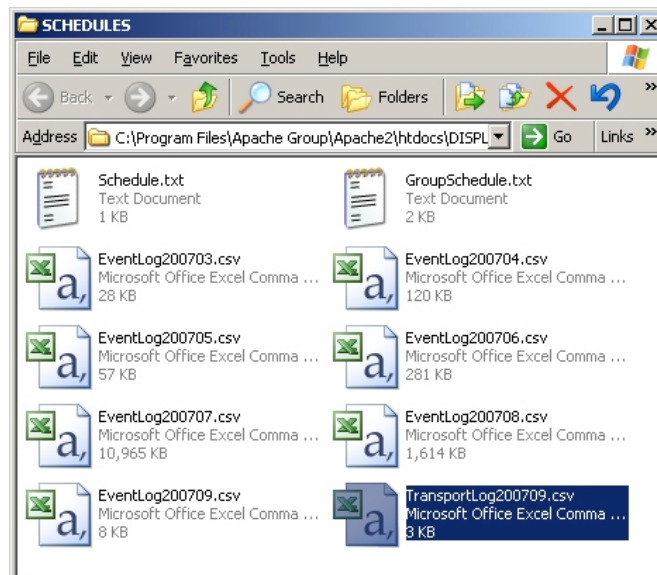
Like the event logs, these may be opened by Excel or WordPad. Excel will format them into neat columns for you.

Double click on the TransportLog file you want to look at:

Column A is the Sort Field. If you want to sort the information by date and time, use Column A as your primary sort field.

Column B is the date that the transport occured.

Column C is the time that event occured.

Column D is the name of the display.

Column E is a notes area for DI Transport to tell you what happened. In the example above, you see "Checking connection speed" in the first line. That is telling you that DI Transport is attempting to communicate with the display. If too much time goes by, DI Transport will skip that display till later on. In this case, the display did not support ftp (which is shown in the second line), so it was skipped.

The next dozen lines are more typical, showing a successful communication sequence with a display.

Each media element that is needed for the next 7 days' schedule is checked to make sure it is there, and is the most recent version.

All of the Presentations are also checked. Extra files are deleted, missing files are added.

Then the display is set to automatically start up using the default presentation defined for it.

DI-Text

Often, a receptionist or other front-office personnel are required to greet guests to buildings, and wish to do so via the digital signage in the area.

Instead of giving these associates full access to all of **DisplayIt!** - a simple, fast and elegant way of modifying the text on a digital sign was developed. It is called **DI-Text** – which stands for **DisplayIt!** text management.

DI-Text is an optional application program that you may choose to license for your installation. As many copies as you wish may be used at the same time, as long as they all have access to the same IP subnet as your **DisplayIt!** program.

Simply place the DI-Text.exe program inside a folder on the primary drive of any workstation. It will prompt you to find the server's primary folder, just like **DisplayIt!** did when it was installed. You should map the drive containing that folder to the workstation computer, and make sure it is re-mounted on startup.

When the user launches **DI-Text**, they see the following splash screen:
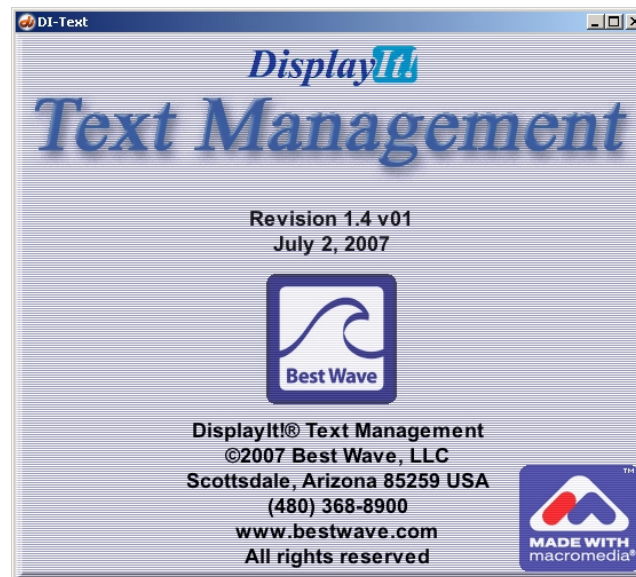
The revision number of the **DI-Text** program should match the revision of **DisplayIt!** that you are using elsewhere. If you have set up users in the Security Administration area of **DisplayIt!** they will be required to log in.

If you upgraded **DisplayIt!** from a version earlier than 1.4, every presentation that uses text must be opened and re-saved for the **DI-Text** management application to be able to modify the text while the presentation is in use.

The user needs to know which presentation is playing in their area. Presentations that will be modified by **DI-Text** users should be localized – meaning that they are only shown on a particular screen - because text changes from **DI-Text** are applied to all displays showing that presentation. You may prevent that by only allowing the **DI-Text** user access to particular screens in the Administration Security area (Chapter 4 of this guide).

Note: If you have Security set up, all users of DI Text must have Presentations allowed in their profile. See Chapter 4 of this guide for more information.

To modify the text of any presentation, simply select it from the pop-up menu:
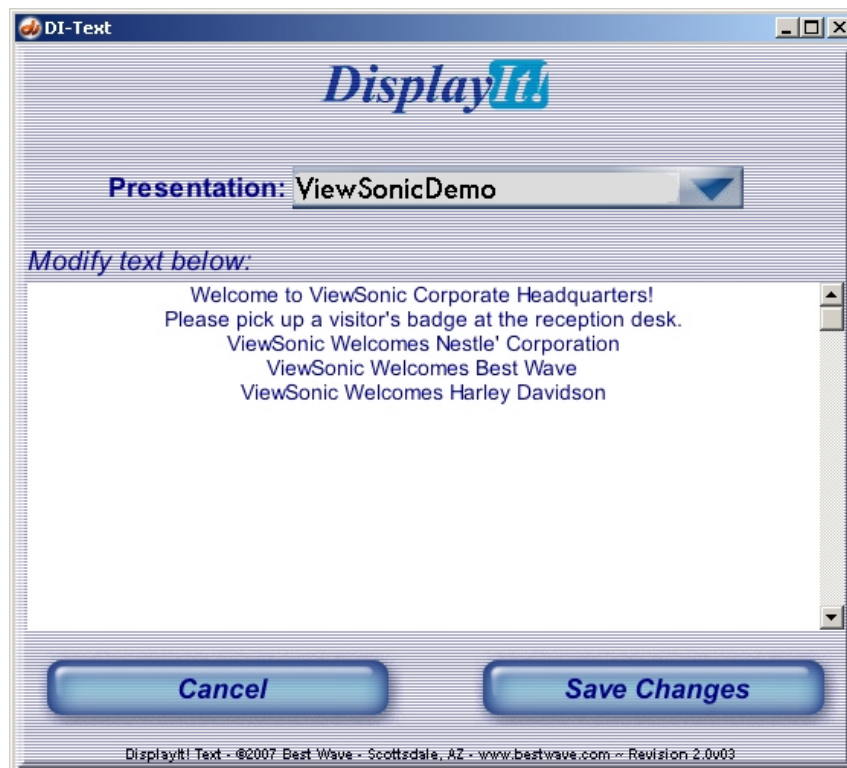
Once the text appears, modify it as necessary and click the Save Changes button. If you decide to not apply the changes, click on the Cancel button.

Presentations without a text bar, if selected in this application, will display a message, "The selected presentation does not include any text!"

At least one line of text must be entered before saving changes. If you want no text to appear, type a space or two for the first line and no other lines of text.

As many lines of text as you want may be included. The list will be used over and over again. The new text will appear immediately after the last line of the old text is done.

DI-Now!

Sometimes a presentation needs to be placed on a particular display, or a number of displays immediately. That is the purpose of **DI-Now!**

A typical application of **DI-Now!** is managing the displays above the windows of ticket lines. For example, at an airport, or railway station, each teller may have a copy of DI-Now! on their workstation.

When they open in the morning, they can select a pre-defined presentation for the type of service they are offering, for example, Domestic Flights Only, or International Flights, or First Class.

When they leave for lunch, they can select the Line Closed presentation, then change it back when they return. The presentations they are choosing are any **DisplayIt**! presentation, including whatever media elements you selected… for example, a jpg image with the type of service, followed by a promotional movie for a special that is being offered, followed again by the jpg image.

To set up **DI-Now!** on a workstation, place the program inside a folder, it can be named anything you wish, i.e. "DisplayIt Now". Inside, place the DI-Now.exe program file, and a Preferences folder. (you can copy the preferences folder from another DisplayIt installation). Now, create a text file named "nowdisplays.txt" using WordPad and place it inside the preferences folder.

Inside of the "nowdisplays.txt" file place the name of one, or more displays exactly as they appear on the Displays tab of DisplayIt!. You can have as many displays as you want listed. Selections made by this user will affect the displays listed, and no other displays. So, if you want only their overhead display to be affected, only put in theirs.

When you start **DI-Now!,** you see the following splash screen:

After a couple of seconds, the splash screen goes away, and, if Security is set up, you will be asked to log in. After login, you will see the presentation selection screen:

All you have to do is select a presentation from the pop-up menu, and click on the Display it NOW! button. You will be asked if they want to send that presentation to the display(s) immediately. Click "Yes" and the presentation will be sent. After each use, **DI-Now!** returns to a ready state and awaits another selection. It may be minimized between uses.

Note: If you have Security set up, **DI Now**! users must have either All Displays or Some Displays checked under the Schedules tab.

Emergency Notification System

If you logged into DI-Now! as the Administrator, you will see a this screen:

The buttons at the bottom of the screen are for setting up and using the Emergency Notification System.

 There are 8 pre-defined emergency categories, Fire, Police Emergency, Bomb Threat, Blizzard or Extreme Cold, Tornado or Cyclone, Hurricane, Earthquake, and Tsunami. There is also an "Other…" category for use in specific situations that may be relevant to your area.

IMPORTANT NOTE: YOU MUST BE LOGGED IN AS AN ADMINISTRATOR TO USE THE EMERGENCY NOTIFICATION SYSTEM - EITHER FOR SETTING UP YOUR EMERGENCY PROGRAM OR ACTUALLY NOTIFYING OF AN EMERGENCY.

Before using DI-Now! to set up notification of emergencies, you should create a set of Presentations for use with this system. There are two Landscape templates and two Portrait templates included with DisplayIt! for this purpose. They are named zzzEmergency and zzzEmergency_With_Text. They are designed for use with the slide show capability described in chapter 8 (Page 29). You should be familiar with this functionality before attempting to use the Emergency Notification System.

Best Wave offers sets of artist-quality emergency notification displays for this purpose. Or you may elect to create your own graphics for this purpose. If you choose to use the Best Wave supplied graphics, you will find that they come in folders, one for each language you have licensed, and sub-folders titled Landscape and Portrait.   Here are some samples:
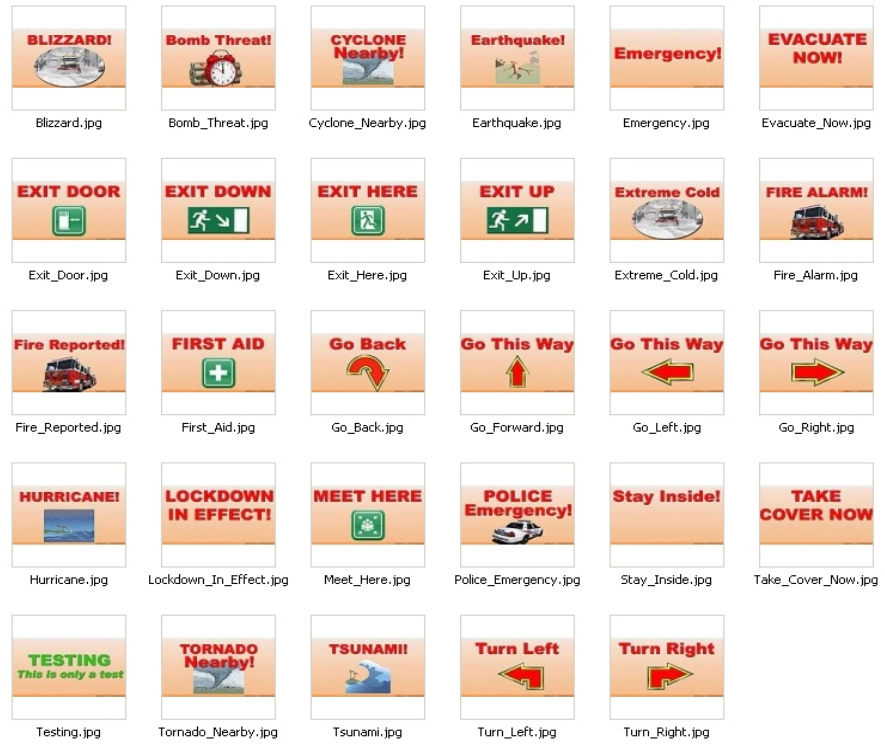
There are nearly 60 graphics inside of each language's folders. These graphics are specifically designed to allow use of more than one image as part of an emergency slide show presentation.

For example, if there is a bomb threat, you may use three messages near an exit door:
Bomb Threat! – Evacuate Now! – Exit Here.
       If the display is at the end of a hallway, you might use:
Bomb Threat! – Evacuate Now! – Go Back!

As you set up your Presentations for this purpose, be sure and give them descriptive names. The two examples above might be named zzzBomb_Threat_Evac and zzzBomb_Threat_GoBack. That way it will be easy to know which Presentation should play on each display in the event of an emergency.

IT IS CRITIAL THAT YOU SET UP YOUR EMERGENCY SYSTEM COMPLETELY BEFORE IT IS NECESSARY TO USE IT. DO NOT EXPECT TO USE IT AS-IS, OR WHEN AN EMERGENCY ARISES. YOU MUST ALSO TEST THE SYSTEM TO SEE IF THE CORRECT MESSAGE IS BEING SENT TO EVERY SCREEN PRIOR TO ACTUAL USE. THE CORRECT IMPLEMENTATION AND USE OF THIS SYSTEM IS CRITICAL - AND IT IS YOUR RESPONSIBILITY.

Note: A DI Robot program MUST BE RUNNING for the emergency notification system to function properly.

Click on any of the 9 emergency buttons to see the setup screen for that emergency:
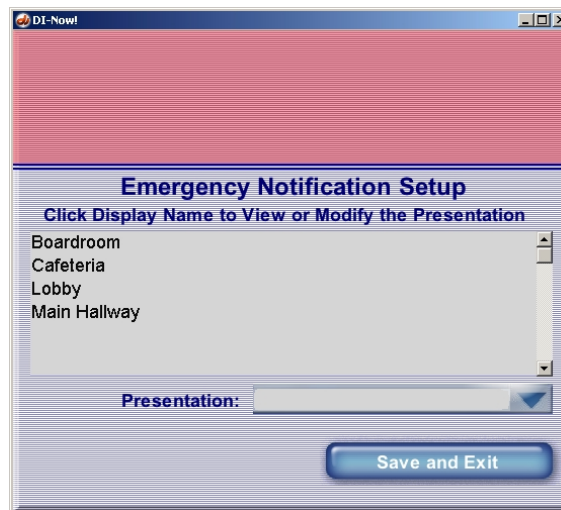
In this example, we are setting up the "Bomb Threat" emergency. This screen allows you to select the emergency notification (Presentation) you want sent to each display.

Click on a display name, and use the Presentation pop-up to select the emergency Presentation you want sent:
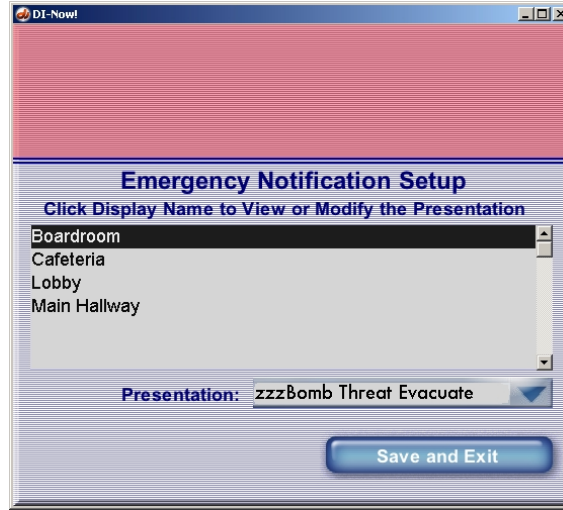
In the example above, we are sending the "zzzBomb Threat Evacuate" message to the Boardroom display. Do the same thing for each display.

When you are done, click on the Save and Exit button.

Now, click on the same emergency again (in this case Bomb Threat). This time you will see the "Begin notification" button at the top of the screen:
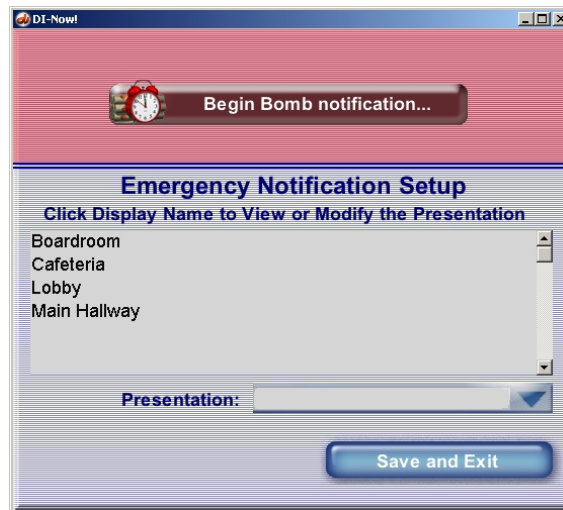
Seeing the "Begin Notification" button on this screen tells you that a presentation has been selected for each of the displays and that the system is ready to notify for this emergency. You may change what Presentation goes to each display as often as necessary using this screen.

When an actual emergency arises, or you want to test preparedness for an emergency click on the "Begin notification" button – and you will see this message box:
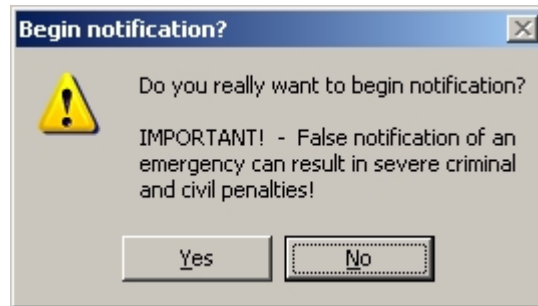
As you can see, **false notification of an emergency is a serious issue**. You must click on the Yes button to begin actual notification. You will see a notice at the top of the screen as each display is sent the Presentation:
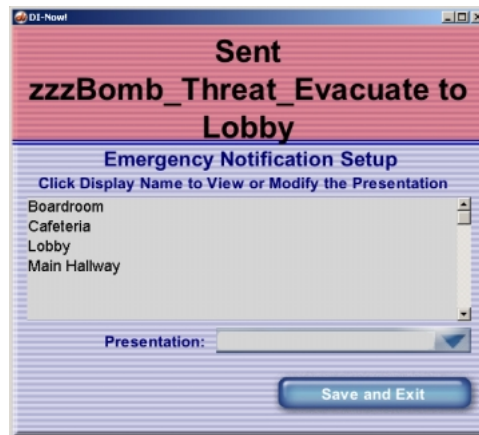
When you click on Yes, here is what happens…

1) The normal schedule being sent to the displays from DI Robot is suspended.

2) The Presentation you specified for each display is sent to it.

3) The DI Robot will refresh emergency presentations once each hour instead of every 90 minutes as it does with ordinary schedule presentations.

4) The "Begin notification" button will change to an "End notification" button.

To stop the emergency and return to normal operation, click on the "End notification" button:
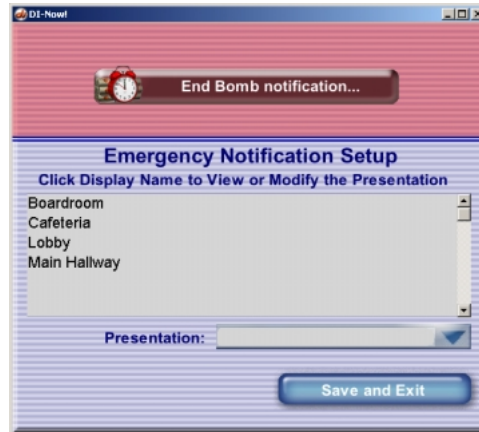
You will see the following message box:
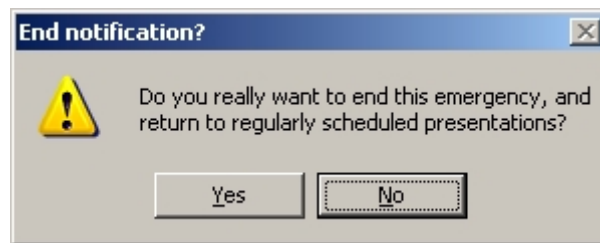
Clicking on the Yes button will put the system back into normal service.

Note: The DI Robot program MUST BE RUNNING for the displays to return to normal service.

It is strongly recommended that you thoroughly test this system before it is actually needed. The Best Wave supplied graphics have a "Testing – This is Only a Test" image with green letters to assist you with testing. Be sure and get rid of the testing image after your testing is complete so that it does not appear when there is an actual emergency.

Best Wave is committed to assisting our customers in setting up and using this system. Although we hope you never need to use it in an actual emergency, we want to help you to set up and test the system so it will be ready in the event of an emergency. Do not hesitate to call or e-mail at any time when you are setting up and testing to receive assistance.

We are also interested in hearing about additional graphical messages that you think would be useful to you and other Best Wave clients. We will do our best to incorporate these messages in future releases of the Emergency Notification System.

Troubleshooting

The most common issues with **DisplayIt!** occur upon installation, and have to do with permissions on the HTTP server, CODECs for video playback, and video connections between the media player and the screen. All of these issues are covered in the Frequently Asked Questions chapter in detail. A synopsis appears below:

Server software   A suitable HTTP server must be in use. It may be Apache, I.I.S., Linux, or Solaris. Other HTTP server programs may also work.

Permissions   The media players cannot log on to the server. So authentication cannot be required.

Firewalls   Firewalls cannot block the ports listed below, and must, in some cases, explicitly allow HTTP services for server programs such as Apache.

Ports   Ports 21, 80 and in some cases 7777 are used and must be open.

Rights   Workstation users must have read, write, and delete capability to the DISPLAYIT! folder within the root server directory. This folder is created by **DisplayIt!** the first time it is executed.

Dates   The long date format – which is set using the Regional and Language control panel – must have the day of the week as the first item.

Scheduling   To "execute" the schedule, a DI Robot has to be running.
If it is not running, you will only be able to send presentations to displays via the preview window.

IP Addresses   Each media player has its own IP address. It is shown on the connected display on startup. If you do not see it there is either a video cable problem, or display input selection problem, or media player output selection problem.

Media   If a media type plays within **DisplayIt!** but does not play on the media player, make sure it matches the specifications shown within the appropriate **DisplayIt!** media tab.

CODECs   Video playback requires specific CODEC files are installed on the Workstation computer. If they are not, you will see an error or black square when you try to preview a movie.

To assist you in correcting problems, **DisplayIt!** creates diagnostic files that you can look at, and creates configuration files that you can modify if necessary.

ServerFolder.txt file

Upon installation, you are asked to locate the primary or root directory of your HTTP server. The path to that directory is saved in a text file named "ServerFolder.txt" which may be found inside the "Preferences" folder inside of the same directory as **DisplayIt!**

Here is the content of some typical ServerFolder.txt files:

> C:\Program Files\Apache Group\Apache2\htdocs\

> C:\inetpub\wwwroot\

If the path you see does not point to the correct place, you may change it, and run **DisplayIt!** again.

From a user workstation, with a mapped drive to the same folder above, the ServerFolder.txt file would simply contain: F:\   (substitute the correct mapped drive letter for the letter "F" used in this example).

ActualServerPathUsed.txt

When **DisplayIt!** is run, it saves a diagnostic file named "ActualServerPathUsed.txt" inside of the Preferences folder. The contents should point to the Settings.txt file that is discussed in the next paragraph. Here is what it would contain in a typical (Apache) installation:

> C:\Program Files\Apache Group\Apache2\htdocs\DISPLAYIT!\settings.txt

Settings.txt file

Upon software activation, **DisplayIt!** will create a directory named DISPLAYIT! within the root directory you specified above. Everything **DisplayIt!** needs to operate from that point forward will be stored inside of that directory. The first thing it places there is a file named "settings.txt" which stores the information you entered on the activation screen.

This is a typical settings.txt file:

> Server IP,192.168.2.10
> Restart,Yes
> Restart time,12:00 AM
> Date format,mmddyy
> Language,English (U.S.A.) mm/dd/yy

You may change any of this information, if necessary, and start **DisplayIt!** again to effect the change. The most common use of this is moving to a new server. You would

move the entire DISPLAYIT! directory to the new server, then change the Server IP line to reflect the change. Of course all of the workstations would need to have the path to the new server inserted in their ServerFolder.txt file.

urlString.txt file

Whenever a presentation, Display IP Address command, or Display Test Image command is sent from **DisplayIt!,** a file named "urlString.txt" is created. Here is a typical one:

http://192.168.2.8/set_param?init.BROWSER_CMD=http://192.168.2.36/DISPLAYIT!/PRESENTATIONS/L_Lobby/859886.html

This line can be broken into two segments to make it easier to understand what is going on. The first half is the command sent to the media player:

       http://192.168.2.8/set_param?init.BROWSER_CMD=

The IP address should be the IP address of the media player you specified. The rest of the command is telling the browser that the location of an HTML file is about to be sent, and that it should read and execute the commands within that HTML file.

Here is the second segment of the command:

       http://192.168.2.10/DISPLAYIT!/PRESENTATIONS/L_Lobby/859886.html

This time, the IP address is the address of the HTTP server. That address comes directly from the "settings.txt" file that we discussed earlier. The rest of the line directs the media player to the correct HTML file.

In this case the presentation being sent to the player is named "Lobby" and it is a landscape orientation presentation (the "L_" before its name tells us that). The HTML file is a number, or a number and some letters. There are actually 8 different html files created each time a presentation is saved, one for each type of media player and level of firmware.

Any errors that you see here, will result in a problem when the presentation is played. You can correct them by correcting the configuration files that we have discussed in this section. In most cases, if you make a change to a configuration file, you must re-save all of the presentations that exist at that time.

Since a urlString.txt file is created whenever a command is sent from **DisplayIt!** to the media player, you can troubleshoot a pesky display or network by looking at the urlString.txt file after clicking on the Display IP button or the Display Test Image in the Displays tab. Once the Display Test Image command works, chances are very good that all of the rest of the features of **DisplayIt!** will work.

Frequently Asked Questions

What are the PC requirements for DisplayIt!, DI Robot, and DI Transport?

PC Requirements • Operating System: Windows® OS 2000, 2000Pro, NT, XP Home, XP Pro, or Vista • Processor: Intel® Pentium® 4, 1 GHz or higher (or compatible microprocessor)•Memory: 512 MB RAM or more • Network Interface: 100Base-T. Actual memory usage will be 40-60MB for **DisplayIt!** and 23MB each for DI Robot and DI Transport.

What are the server requirements?

PC Requirements (for basic server) •Operating System: Any Windows® OS capable of running a web server* • Processor: Intel® Pentium® 4, 1 GHz or higher (or compatible microprocessor) • Memory: 512 MB RAM or more • Network Interface: 100Base-T.
*(there is an open issue with video on Server2003 when using ND4210 displays)

What server software may be used?

Any HTTP server, such as Apache Server or IIS from Microsoft. We also have clients using Solaris servers as well as Apache on Linux servers. A video problem has been reported when using IIS on a Windows 2003 server – but only with the ViewSonic ND4210 display (which has a built-in media player).

What has to run on the server, and what can run on a workstation?

All of the programs that comprise **DisplayIt!** may run on a Windows-based server, or on a Windows workstation computer. The same computer may be the server and be the computer that you use to run **DisplayIt!** Typically, the DI Robot and DI Transport programs are run on the server 24x7 while **DisplayIt!**, DI Now!, and DI Text run on workstations.

Can more than one workstation run DisplayIt! at the same time?

Yes. Each copy of **DisplayIt!** must be licensed and activated, but the answer is that you can run **DisplayIt!** on the server, and simultaneously on one or more workstation computers. (there is a low-cost license available for additional copies of **DisplayIt!** for your workstations).

A word of caution; with more than one user scheduling content onto the same display, you might have unexpected results – especially for the person who scheduled a particular display first. Their schedule choices might be overridden by another person. The best way to do this is to have each workstation responsible for a particular display or display group.

Can I forget the server, and just have **DisplayIt!** run off a shared folder on my computer?

NO! The players require an HTTP server be running on the "server" computer.

How much disk space do I need? And where are my media libraries stored?

> Disk space requirements really are dictated by the type and number of media files that you are using for your digital sign program. Large high-definition movies can take up to 1Gb or more to store. While images, and PowerPoint presentations take a lot less space. With **DisplayIt!** all media elements are re-usable, and stored in a single library location.

> When you set up **DisplayIt!** you will specify the primary folder for your server. Typical folders are "Apache2/htdocs" for Apache server, or "inetpub/wwwroot" for IIS. The path to that folder is saved inside of a text file called "ServerFolder.txt" which is stored inside the **DisplayIt!** Preferences folder. The path you specify is where **DisplayIt!** will keep your media files.

> All **DisplayIt!** media, including templates, presentations, and display data may be stored in a sub-folder called "**DisplayIt!**" inside of the server's primary (root) folder that you specified earlier. That allows your system administrator to give you <u>read and write permission to that one folder</u>, instead of the entire web server.

> Alternatively, for users who already have an extensive video library on their server, mpg movies may be kept in a folder called "Movies" – inside of the primary server folder.

What are the most common installation problems with **DisplayIt!**???

> **1) Not having read and write permissions to the** DISPLAYIT! **folder inside of the root server directory.**

> Check the folder that you pointed to as the server's primary folder by getting its properties. If the Read Only button is checked, uncheck it, and hit the Apply button. Then when it asks if you want to apply the change to just this folder or all sub-folders, choose All Sub-Folders.

> When an additional workstation is added, and **DisplayIt!** is started up for the first time, it asks the user to find the root directory of the HTTP server. The second most common problem is that the user does not have that drive mapped on their workstation computer, and the necessary permissions to read and write.

> **2) Guest access for the media players! Make sure that guest access is allowed from the media players to the server.** The media players cannot "log in" to get their media, so they have to connect as guests. You can change that setting by right clicking "My Computer" and selecting the "Computer Management" menu,

then the Shares folder. Of course your network may be different so ask your system administrator if you don't know.
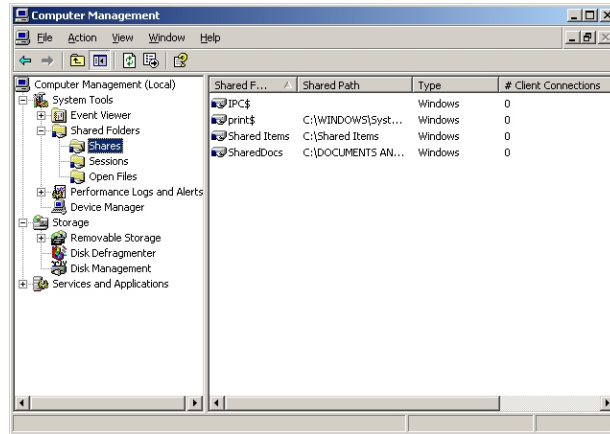
3) Firewall issues. Make sure that HTTP services are allowed by your firewall. In the example below, (for Apache Server), The local area connection services need to have Web Server (HTTP) checked to allow the media players to have access to Apache's services.   Port 80 must be open to workstations and to the media players, and port 21 must be open for ftp protocol.
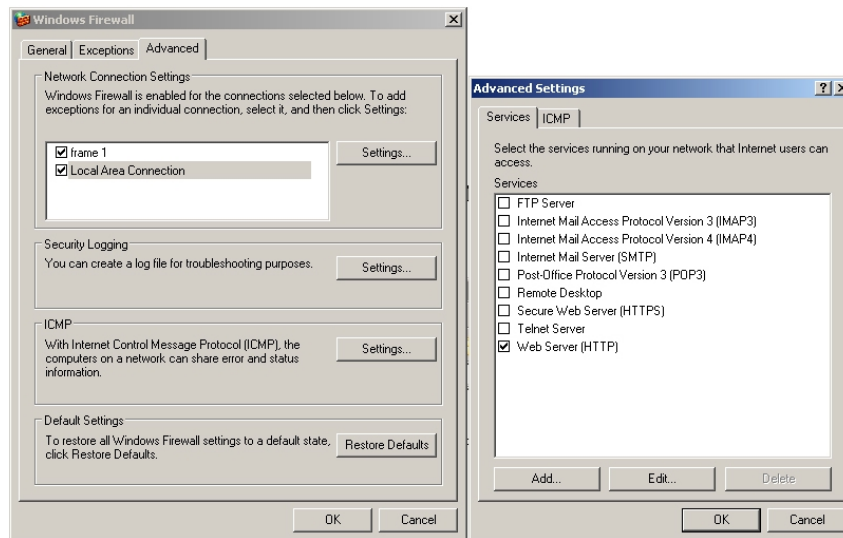
4) Permission issues. Vista OS users must have permissions necessary to read and write files to the DISPLAYIT! folder that is created inside of the HTTP root folder. Vista users may need to turn off User Access Control in the Users and Groups control panel to make sure that read and write are available. It can then be turned back on, as long as anyone using **DisplayIt!** has the ability to read and write to the DISPLAYIT! folder inside of the HTTP root folder.

Can I show RSS feed information on a DisplayIt presentation?

> Yes, in a roundabout way. Create a presentation using the Full Screen Playlist template. Then, add a web site (the location of your RSS feed data).

> We are currently working on an embedded RSS feed capability for **DisplayIt!**

Can I put the Robot.exe files inside of the DISPLAYIT! folder on the server and run it from there?

> NO! That will cause all sorts of problems. It does not matter where the Robot.exe files run from, except for that one folder. The easiest thing to do is put the entire DisplayIt folder that you extract from the Best Wave web site on your server, get it set up according to what it says in the manual, and leave everything in that folder.

> Then, if you want to have additional workstation machines, extract the installation zip file again, on those, but delete the robot.exe and transport.exe files.

When I try to load in my first mpg file into the movie media category, I see an error message. What does that mean?

> Look at your primary server folder and make sure that the folder is not locked by looking at the "read-only" property. If it is, unlock it, and all the folders inside of it. (see the previous question re permissions) If you see a folder named Movies inside your server folder, check that it is not locked too. Try placing an mpg video file inside of the root>DisplayIt!>Movies folder yourself to make sure you can store data in it.

> Another factor could be the Codecs installed on your computer. Try downloading a full set of Codecs – one good set is the K Lite Codecs:

> > http://www.free-codecs.com/K_Lite_Codec_Pack_download.htm

> This set of Codecs is supplied with DisplayIt. Also, your video may not be encoded as an MPG II or MPG I – try copying the sample.mpg movie that is inside the DisplayIt>Preferences folder into your media library as a test.

How do I know the IP address of my displays and network media players?

> When the displays and Network Media Players are powered on, they will display their IP address on the screen.

> To test that you have the correct IP address, go to the Displays tab in **DisplayIt!** and click on the "Display Test Image" button.

I can't see the entire **DisplayIt!** software window on my screen – what should I do?

Set your screen resolution should to a resolution with a height greater than 768 pixels. Use the Display control panel to set your resolution appropriately.

How can the Facilities Manager or some other key individual place an emergency message on all the displays?

There is an emergency notification system built into **DisplayIt!** It uses the DI-Now! program to send emergency notices to all of the displays on your network. Best Wave also offers a set of graphical emergency sign messages – in a number of languages – designed for this purpose. This capability is described in chapter 13 of this Guide.

Some important points to remember:
1) To see emergency Templates, Presentations, or buttons you must be logged in as the Administrator in **DisplayIt! and DI-Now!**
2) All emergency Templates and Presentations must begin with 3 letter "z" characters, like this: zzzFire_Exit_Here
3) Emergency presentations are made from one or more "slides" using the built-in slideshow capability.

When I power up my Network Media Player, I don't see anything on the screen, what's wrong?

The media player's output setting may not be correct for the display and cable you are using. Try switching to an S-Video cable. Make sure your display is set to S-Video input if you do this. Then re-power the Network Media Player and see if it shows video. You may need to try more than one cable/input setting to get to the right one.

Media players are initially set to DHCP enabled. So, they expect to get an IP address from your router. If you do not have a router connected, they just sit there, and the screen is black. Connect a router, restart the media player. You should see the IP address on the screen.

DisplayIt! will automatically reset the DHCP and other settings on the media player to the correct ones when the display is initially defined. All you need to know is the initial IP address.

My Flash media does not play. What could possibly be wrong?

The firmware in your media player may not be able to play Flash media created after Revision 6 of Flash. Try saving it as Rev 6 and see if that fixes the problem. Revision 2.5, will allow Flash 7, so you may want to upgrade your firmware. (for Cisco Digital Media Players, revision 2.3 or newer firmware supports Flash 7).

There is only 2GB of storage on my media player. Can I add more?

> All of the ViewSonic and Cisco media players (other than the NMP-500) allow ftp transfer of media to their storage device(s). The media players have a USB port on the back that allows additional storage to be added. Make sure the storage you add has a fast access time. If there is a USB drive in the media player, DI Transport will place Presentations on the internal storage and other media such as movies on the external storage (your external device should be larger than 2GB).

What are the settings for the Network Media Player and how do I set them?

> You do not need to set most media player settings yourself. Once your media player is connected, and the IP address is entered into **DisplayIt!** – it will set all the settings for you, except for the TV Mode setting which we cover next.

> You can use Internet Explorer on any workstation or server that is on the same network as the displays to interface directly with the Network Media Player by entering it's IP address in the address bar. For example: http://192.168.12.100 This will bring up an administration interface that allows you to change settings.

> After changing any setting, remember to click on the Apply tab. When you are done changing all the settings you need to, go to the Save Configuration tab and click on the Save button.

> Audio/Video Configuration tab:

> The TV mode should be set to a resolution that corresponds to your display. S-Video and Component video resolutions will result in screen cropping. Get a DVI or HDMI cable/adapter and use a higher resolution. **This is the only setting that you should have to change manually.**

Video/Audio Configuration	
TV mode	HDMI_1080i60
Brightness	0
Contrast	128
Saturation	128
Volume (for all channels)	50
Apply	

My schedule does not play. What is wrong?

> **DisplayIt!** does **not** send scheduled events to the media players. The Robot programs do that. Start up either DI Robot-Hidden or DI Robot-Minimized.

Is it possible to stream SKY TV in one part of the screen?

> The latest Revision of **DisplayIt!** (on our web site now) allows the video window to be an UDP or RTP stream. Select that option when choosing a video for either a multi-zone Presentation or for a full-screen-playlist.

What about security issues? Is it easy for anyone to break into the system and input their own content?

> Revision 2.2 of **DisplayIt!** (which will be released in early October, 2007) allows the system administrator to assign up to 20 usernames and passwords. Each user may be allowed or not allowed to create/modify Displays, Media, Templates, Presentations, and Schedules. In addition, Presentations now have an "Approved" attribute. That allows one user to create presentations, but another to approve them for use. (example: a grad student creates Presentations, a professor must approve).
>
> Also, users are allowed to schedule all displays or selected displays/display groups. The administrator may assign the selected displays or groups to a particular user so that they can only schedule for a specific set of displays.

Is it possible to increase the SD capacity on the NMP-530 from 2GB up to 8GB?

> You may plug a USB drive (flash memory for example) into the USB port of any media player except the NMP-500 (it does not support ftp). The DI Transport program will recognize it, and ftp media such as mpg movies to that device, while Presentation information continues to be stored in the internal SD memory. A 4 or 6 GB flash memory drive would be fine. Just make sure it has a good transfer rate for movie playback.

I just changed my default Presentation, but the displays showing it did not change. Why not?

> Unless you preview the presentation, and then send it to specific displays from the pop-up menu, the changes will not appear until one of two things occurs, the DI Robot program sends a "refresh" command to the display (which occurs every 90 minutes) or when a different presentation finishes playing, and no other Presentation is scheduled… then your default presentation will be shown again.

I am having scheduling problems and dates and times appear incorrect. What is wrong?

Most likely, your Settings.txt file does not match the date and time format of your computer. You can find the Settings.txt file by going to the root directory of your HTTP server, and opening the "DISPLAYIT!" folder. The Settings.txt file is inside.

The possible choices for the language line are:

```
Language,Danish dd-mm-yy
Language,Dutch dd-mm-yy
Language,English (U.S.A.) mm/dd/yy
Language,English (United Kingdom) dd/mm/yy
Language,French (Canada) dd.mm.yy
Language,French (France) dd/mm/yy
Language,Finnish dd.mm.yy
Language,German dd.mm.yy
Language,Greek dd/mm/yy
Language,Italian (Italy) dd/mm/yy
Language,Italian (Switzerland) dd.mm.yy
Language,Norwegian (Nynorsk) dd.mm.yy
Language,Russian (Russia) dd.mm.yy
Language,Spanish (Mexico) dd/mm/yy
Language,Spanish (Spain) dd/mm/yy
Language,Swedish dd-mm-yy
```

Make absolutely certain that the language selected in the Regional and Language Control Panel on your computer matches the language (it does not have to match the country) of the Language line inside the Settings.txt file.

The line above the language line is the date format, and should be
        Date format,mmddyy   for the United States or
        Date format,ddmmyy   for any other country.

How do I change the server IP address?

The Settings.txt file contains the server's IP address, which can be changed with a text editor. You can find the Settings.txt file by going to the root directory of your HTTP server, and opening the DISPLAYIT! folder. The Settings.txt file is inside.

DisplayIt only reads the Settings.txt file when it starts up, so you will have to restart it for the change to take effect. You will also need to resave each of your presentations after you restart DisplayIt. This allows DisplayIt to create new HTML files that reference the new server IP address.

What accented characters are supported inside of text bars, and what are the codes for them?

Capital Vowels

À {0192}
Á {0193}
Â {0194}
Ä {0196}
Å {0197}
Æ {0198}
È {0200}
É {0201}
Ê {0202}
Ë {0203}
Î {0206}
Ï {0207}
Ô {0212}
Ø {0216}
Œ {0140}
Ù {0217}
Û {0219}

Ü {0220}
Ÿ {0159}

Lowercase Vowels

à {0224}
á {0225}
â {0226}
ä {0228}
å {0229}
æ {0230}
è {0232}
é {0233}
ê {0234}
ë {0235}
î {0238}
ï {0239}
ô {0244}

ø {0248}
œ {0156}
ù {0249}
û {0251}
ü {0252}
ÿ {0255}

Consonants/ Punctuation

Ç {0199}
ç {0231}
« {0171}
» {0187}
€ {0128}

How do we arrange to set up an account with Best Wave?

We accept wire transfers, credit cards, and checks. We only give permanent activation codes after our customers are 100% satisfied with the performance of **DisplayIt!** during their free trial period, and after we receive payment.

In Europe, all customers must purchase through the distribution channel. We have fifteen Distributors and hundreds of Resellers throughout Europe set up for this purpose.