



ICC-AP-100	ICC-VM-100
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iCOMPEL Content Commander (iCC)

User Manual v2.0.6

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Instrucciones de Seguridad (Normas Oficiales Mexicanas Electrical Safety Statement)

1. Todas las instrucciones de seguridad y operación deberán ser leídas antes de que el aparato eléctrico sea operado.
2. Las instrucciones de seguridad y operación deberán ser guardadas para referencia futura.
3. Todas las advertencias en el aparato eléctrico y en sus instrucciones de operación deben ser respetadas.
4. Todas las instrucciones de operación y uso deben ser seguidas.
5. El aparato eléctrico no deberá ser usado cerca del agua—por ejemplo, cerca de la tina de baño, lavabo, sótano mojado o cerca de una alberca, etc.
6. El aparato eléctrico debe ser usado únicamente con carritos o pedestales que sean recomendados por el fabricante.
7. El aparato eléctrico debe ser montado a la pared o al techo sólo como sea recomendado por el fabricante.
8. Servicio—El usuario no debe intentar dar servicio al equipo eléctrico más allá a lo descrito en las instrucciones de operación. Todo otro servicio deberá ser referido a personal de servicio calificado.
9. El aparato eléctrico debe ser situado de tal manera que su posición no interfiera su uso. La colocación del aparato eléctrico sobre una cama, sofá, alfombra o superficie similar puede bloquea la ventilación, no se debe colocar en libreros o gabinetes que impidan el flujo de aire por los orificios de ventilación.
10. El equipo eléctrico debe ser situado fuera del alcance de fuentes de calor como radiadores, registros de calor, estufas u otros aparatos (incluyendo amplificadores) que producen calor.
11. El aparato eléctrico deberá ser conectado a una fuente de poder sólo del tipo descrito en el instructivo de operación, o como se indique en el aparato.
12. Precaución debe ser tomada de tal manera que la tierra física y la polarización del equipo no sea eliminada.
13. Los cables de la fuente de poder deben ser guiados de tal manera que no sean pisados ni pellizcados por objetos colocados sobre o contra ellos, poniendo particular atención a los contactos y receptáculos donde salen del aparato.
14. El equipo eléctrico debe ser limpiado únicamente de acuerdo a las recomendaciones del fabricante.
15. En caso de existir, una antena externa deberá ser localizada lejos de las líneas de energía.
16. El cable de corriente deberá ser desconectado del cuando el equipo no sea usado por un largo periodo de tiempo.
17. Cuidado debe ser tomado de tal manera que objetos líquidos no sean derramados sobre la cubierta u orificios de ventilación.
18. Servicio por personal calificado deberá ser provisto cuando:
 - A: El cable de poder o el contacto ha sido dañado; u
 - B: Objetos han caído o líquido ha sido derramado dentro del aparato; o
 - C: El aparato ha sido expuesto a la lluvia; o
 - D: El aparato parece no operar normalmente o muestra un cambio en su desempeño; o
 - E: El aparato ha sido tirado o su cubierta ha sido dañada.

Black Box Digital Signage

iCOMPEL Content Commander User Guide Version: 2.0.6

The iCOMPEL Content Commander simplifies the creation, publication, and management of digital signage. It enables multiple users to create and release concurrently and supports simultaneous publication of numerous channels. With a browser-based user interface, the system is fully multilingual.

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Part I

Welcome to iCOMPEL
Digital Signage

Part 1: Welcome to iCOMPEL Digital Signage

Welcome to the iCOMPEL Content Commander (iCC) user guide. Here you will find comprehensive information about how to create digital signage with the iCC and how to manage the iCC unit.

Find the subject you are looking for in the table of contents or in the PDF bookmarks. Track down the location of specific topics with the index at the end of the guide or by using the Adobe® Reader® search facility.

If you are new to iCOMPEL digital signage, you will find it helpful to read the [Overview](#) for an introduction to the fundamental concepts and components involved. Also familiarise yourself with the [Terms You Need to Know](#) before beginning to create digital signage content with the iCC.

Following that, you will be ready to check through the steps for [Logging On](#) to the iCC and [Using the Web Interface](#).

However, the more experienced may wish to go straight to the information about creating and controlling digital displays:

- [Creating a Schedule](#) – Getting started with designing and implementing your display.
- [Understanding Media Types](#) – Understanding the different types of content you can display and how the iCC manages them.

You can also find background Information on setting up and managing the iCC:

- [System Status](#) – Keeping your iCC running smoothly.
- [Setup](#) – Performing configuration and maintenance tasks.

Important: This user guide provides comprehensive information about all the features the iCC offers. However, some features are only enabled if you purchase the appropriate license. Please contact your reseller or supplier for more information.

1.1 Overview

To understand the fundamental concepts and components of a digital signage configuration, it is useful to start by describing a very simple arrangement with a standalone display. Building on that, further illustrations will add the extra features, including the iCC, that become increasingly relevant as your network grows more distributed and more sophisticated.

Work through the description of these examples in turn:

- [Standalone Display](#)
- [Multiple Displays](#)
- [Multiple Channels](#)

1.1.1 Standalone Display

The following diagram illustrates the simplest situation with a single display controlled by an individual. You might conceive of this as a screen displaying information in the foyer of a school:



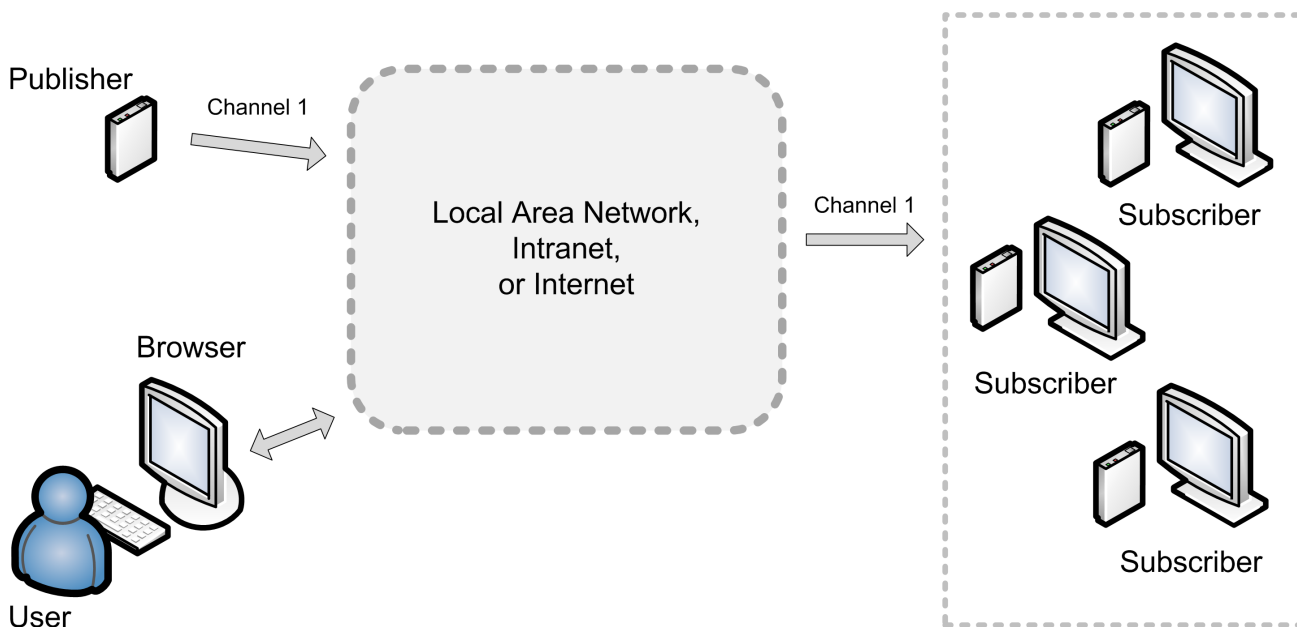
Note the significance of the highlighted features in that scenario:

- User – The person controlling the screen content and its operation (that is, you).
- Browser – You exercise control through a web browser (such as Mozilla® Firefox® or Microsoft® Internet Explorer®). This remains the case for even the largest digital signage network.
- Local area network, Intranet, or Internet – In principle, you do not need to be physically close to the screen's location. This becomes more significant as the size of the network increases.
- Player – **Player** is the generic term for the appliance that runs the screen. Specifically, the player is the Black Box Net-Top-Box. The player has to be physically attached to the screen.
- Display Screen – The equipment that displays the content you have defined. You configure the player to display various media on selected areas of the screen at chosen times.

As you might expect, additional features are needed to support a network that includes [Multiple Displays](#).

1.1.2 Multiple Displays

The following diagram illustrates a more fully-featured situation where a user controls several players and their screens. You might conceive of this as a set of screens displaying sales information on the floors of a shop. In practice, the number of players would be much higher, which is why it is desirable – and soon necessary – to add further components to the network:



You can see that certain features are the same: the user, the browser, and the network. Note now the significance of the additional features, discussed clockwise as they appear:

- **Publisher** – A **Publisher** is a system you configure to provide content to multiple players. This enables you to display consistent content on several screens and means you only need update it in one place. Although some player models can perform this role, in our context the publisher is specifically the Black Box Content Commander.
- **Channel** – A **Channel** refers to both the content it contains and its originating publisher. The **Channel Name** (in this case 'Channel 1') identifies the channel and is often just the name of the publisher.
- **Subscriber** – A **Subscriber** is a player that you configure to accept content from a publisher. In the diagram, Channel 1 provides the content for all the subscriber players and their screens. **Subscriber** and **Publisher** are referred to as **Roles** (the only other role is **Standalone**, which is the role of the player in the first diagram).

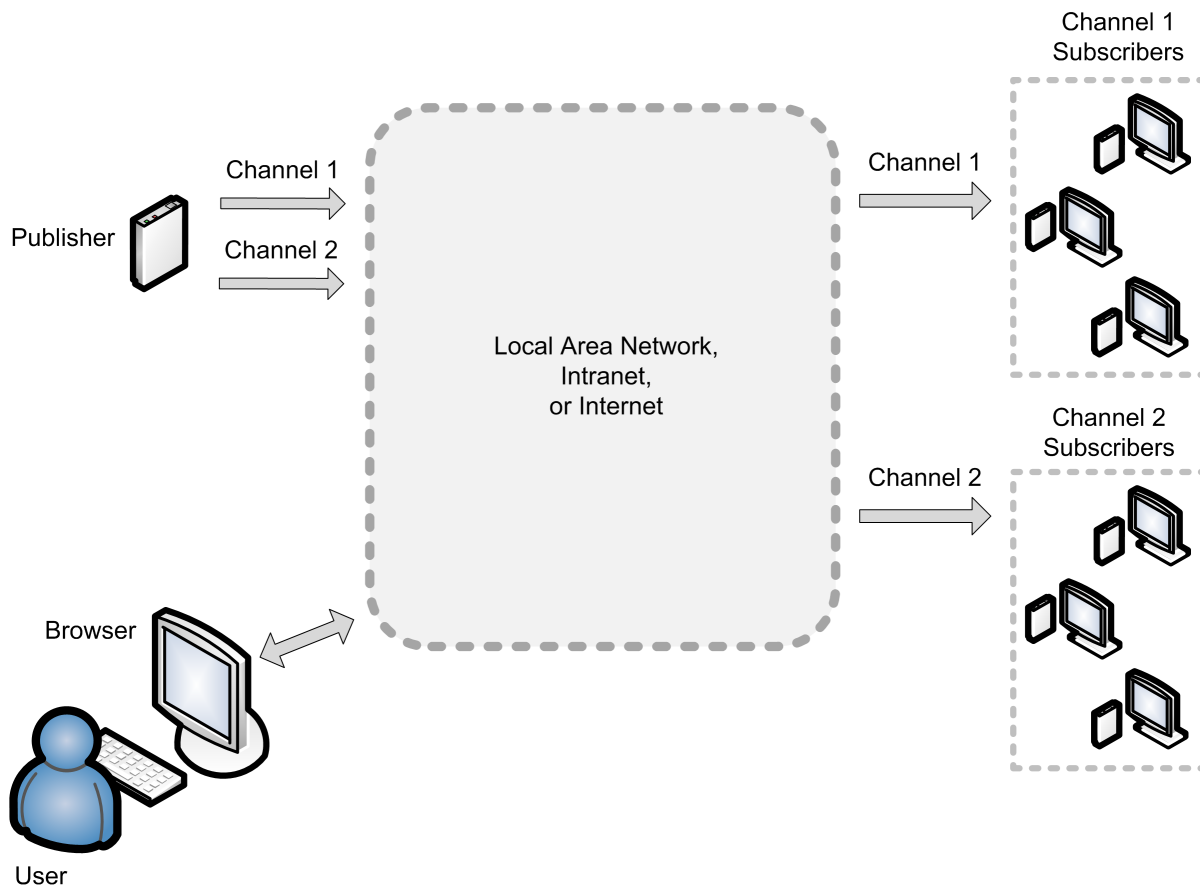
You can build on the parts already described to create a network not only of multiple displays but also of [Multiple Channels](#).

1.1.3 Multiple Channels

When your signage network grows to a large number of players and their screens, the quantity and variety of content you need to manage and distribute grows accordingly.

Once again, it is useful to envision the key components in a condensed and summarised form.

The following diagram shows how the individual network features we have discussed so far combine to provide a network infrastructure of multiple displays and multiple channels. You might conceive of this as a multisite business with sites in different cities, maintaining a resilient network of players displaying various streams of content, and all under centralized control:



Notice how the by-now familiar components operate in combination:

- At the center, you create and manage the flow of content for the network through your web browser.
- The iCC publishes content over multiple channels. You configure as many as you need to serve the needs of the business, up to a maximum of 50.
- Multiple subscriber players display content from whichever channel you designate appropriate to their function. For example, the content could be subject-based if the display is for a particular department or could be locale-based if the display is for a particular city.
- How you group the subscriber players is up to you: you can have numerous players displaying common content.

That picture is deliberately simplified to illustrate the essential components of a large network. Therefore, it is worth emphasizing that the iCC can readily scale up to manage the content for even complex digital signage networks. For example, the iCC allows you to set a bandwidth limit on a per-port basis, thereby prioritising quality of service for different purposes (see the HTTP service settings description in [Firewall](#) for more details).

This is not to say the iCC alone can provide everything required for more specialist configurations. You may need to add a **Channel Content Server** (CCS) to assist content processing if you have specific network topology requirements (see [Channel Content Servers](#) for more details).

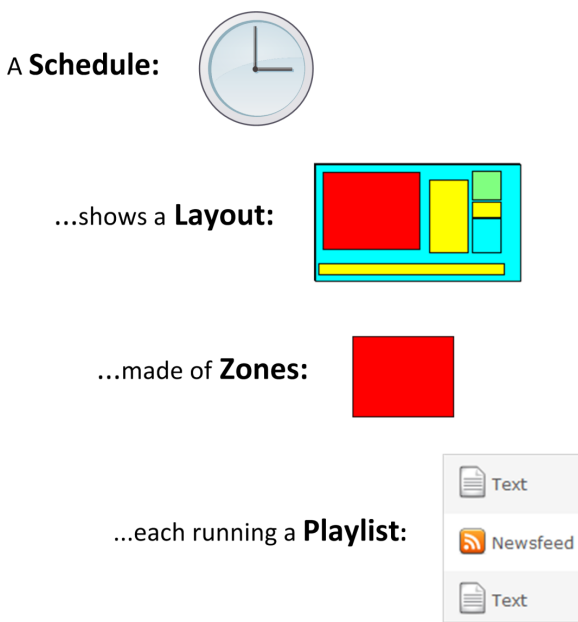
Having now considered the background terms and concepts of the digital signage network, the next step is to understand how to compose the content that you will publish through the iCC. Begin by reading the [Terms You Need to Know](#).

1.2 Terms You Need to Know

The iCC provides powerful facilities to help you to design, structure, and control sophisticated and effective content display.

To understand how you use the iCC to manage display of content, it is important to understand how certain key features relate to each other.

The following diagram illustrates the critical relationships between **Schedules**, **Layouts**, **Zones**, and **Playlists**:



To flesh out how those relationships work, consider each of those key features in turn.

Schedule

The player is designed to run continuously. You control which **Layouts** are displayed on what days and at which times by creating a **Schedule**. The schedule may be something like this:

- Layout A runs from 4.00 pm to 6.00 pm, Mondays to Fridays.
- Layout B runs from 2.00 pm to 8.00 pm, Saturdays and Sundays.
- Layout C runs at all other times, throughout the week.

Layout

A **Layout** is the arrangement of individual display areas, known as **Zones**, that you use to compose your on-screen display. Your layout might display video in one zone, scrolling text in another, a sequence of still images in a third zone, with a full-screen zone behind the others showing a background color or image.

Zones

Zones are rectangular areas, each of which can display various forms of content (known as **media items**). You can design layouts with any number of zones, of any size, in any location, either separate or overlapping. You specify which zones display which media types (for example, one for a promotional video, one for scrolling text, another for your organisation's name or logo, and so on). You can also have zones display a mix of media types. You arrange the media items for each zone in a **Playlist**.

Playlist

A **Playlist** contains one or several media items that you choose to display in a zone. Media items include fixed and scrolling text, movies, images, Adobe® Flash® animations, web pages, and newsfeeds. To display a media item, you add it to the playlist. Each zone has its own favorite playlist, which runs continuously. You can also synchronise the display between two playlists (for example, to run a scrolling text message at the same time as a related promotional video or image).

That examination of the key features gives a flavour of how you put together your signage display content for a single player. However, as we have seen, using the iCC you can also easily provide the same content for groups of players by publishing through one or more channels.

You can also allow people local to the subscriber players to have a degree of control over the content the player displays. The material and features that you allow local users to modify is called **Ad Hoc** content and they are called **Ad Hoc Users**.

That brief survey of the key terms provides the foundation to start using the iCC. Other sections introduce and describe additional terms and concepts as needed. An extensive [Glossary](#) provides definitions of the core iCC terminology.

But now, to consider further how to use schedules, layouts, zones, and playlists to create your digital signage, refer to [Creating Digital Signage](#).

1.3 Logging On

During the log on process, you will need to provide the IP address of your iCC. Make a note of this before you begin. If you do not know the IP address, restart the iCC: it displays its IP address above the progress bar towards the end of the boot sequence.

Follow these steps to log in to your iCC:

1. Ensure that the iCC is connected to the network.
2. Open a web browser (such as Mozilla® Firefox® or Microsoft® Internet Explorer®) on a computer on the same network as the iCC.
3. In your browser's address bar, type in the IP address of your iCC and click the 'go to' arrow or press the **Enter** key.
4. When prompted, enter the username and password. The factory-set defaults for these are **remote** and **9999** respectively. Your iCC displays its **Home** page.

Security: It is strongly recommended that you change the **remote** account password from the factory default as soon as possible. Also change the iCC master password and check that the security services configuration matches your requirements (see [Security – General Settings](#) for details).

That connection is secured by HTTP digest authentication, which encrypts the password. However, you should consider adopting form-based authentication as it can be configured to give stronger security. Form-based authentication also provides an explicit sign out when you want to end your session on the iCC.

Important: If you use form-based authentication, you will need to provide a valid SSL certificate (as described below). It is possible to access the iCC without a valid certificate, but your browser will at first block you and warn that the connection is untrustworthy or that there is a problem with security.

To configure form-based authentication, follow these steps:

1. On the menu bar, click **Setup** and select **System** and **Security**.
2. Click the **Firewall** tab.
3. In the **HTTP Service Settings** panel, from the **Authentication** drop-down menu, select **Form-based Authentication**.
4. From the **Supported Protocols** drop-down menu, select **HTTPS**.
5. Click the **Save Security Settings** button (ignore the prompt to reboot the ICC).
6. Click the **SSL Certificates** tab.
7. Select **Use Custom SSL Certificates for Web Server**.
8. Complete the certificate details and click the **Save Changes** button.
9. Click the prompt to reboot the iCC.

When you next access the iCC, you will need to do so using the HTTPS protocol. Your username and password will be as before. To sign out of your session, click the **Sign out** prompt at the top right of the iCC display.

For the future, you might want to bookmark the **Home** page or add it to your favorites for easier access. If your network is set up to provide DHCP and DNS support, you can also access the iCC using its name rather than its IP address: the name is automatically generated in the format `iCCserial`, where *serial* is the serial number of your iCC (for example, `iCC123456`).

The iCC comes ready-installed with a number of sample displays and you might find those useful to illustrate the kinds of features you can implement.

If you need assistance at any time, click **Help** on the menu bar to access page-specific help or to navigate to any other help page.

You can now begin to become familiar with the iCC user interface.

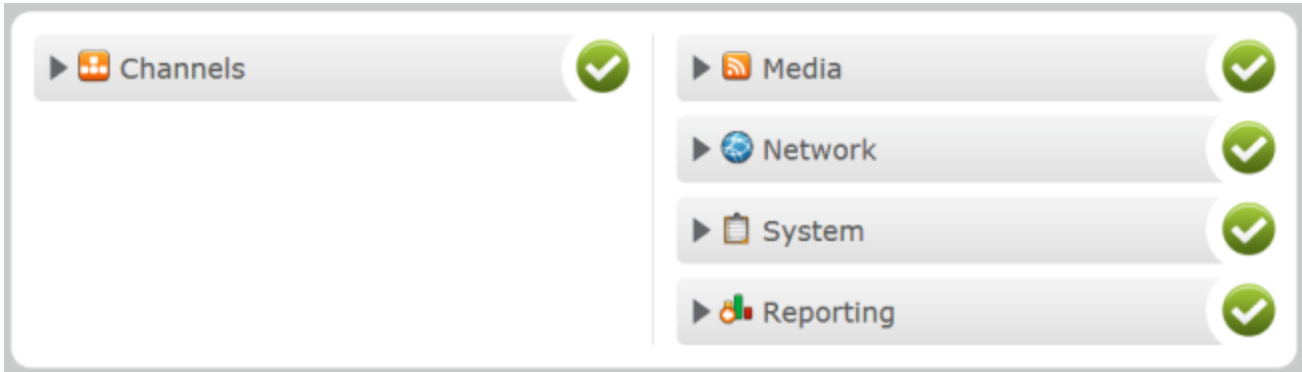
1.4 Using the Web Interface

You control and manage the iCC through your browser using the web-style pages of the iCC user interface.

You should become familiar with the essential features of the user interface before beginning to use the iCC. Most important is the main **Home** page but you should also be aware of the generic navigation and command features employed on other pages. What follows is a tour of the **Home** page followed by descriptions of those generic features.

The Home Page

This is the first page you see after logging onto the iCC. At its heart is this view of the current state of the iCC, showing a summary of its operational status:



That summary is made up of **Status Bars**.

Status Bars

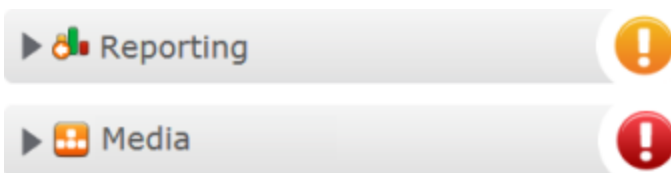
These indicate the status of key iCC operational components. Each status bar has this general



The features to note are:

- Open/close arrow – Click the ▶ arrow to reveal more details. Click the ▼ arrow to reduce the detail.
- Name – The subject of the status report (in the above case the subject is the **Network**).
- Status summary – The color of the status bar icon indicates the current status (in the above case, the network status is good).

Here are status bars that respectively indicate attention needed and problem detected:



If you click the open arrow on an attention or problem status bar, the iCC provides a description of the problem in the information revealed. To take corrective action, click on the appropriate button to open the relevant page in the interface.

In general, opening a status bar provides you with additional information about the subject area, with a selection of buttons to take you to the relevant pages in the user interface. For example, opening the **System** status bar reveals details about the iCC system state:

The System status bar is displayed with a green checkmark icon on the right. It contains several sections, each with a button on the left and text on the right:

- Hardware:** Model: [redacted] - Serial Number: 31421
- Software:** V9.2.3 (34255)
- Software Update:** Automatic updates are turned off. No pending manual updates.
- Time:** NTP - Europe/London
- Audio:** Master Volume is 100%. Using input source line with level 75%.
- Temperature:** CPU temperature is 33°C. Disc temperature is 32°C.

Most pertinently for your use of the iCC, opening the **Channels** status bar reveals a summary of the channels you have published:

The Channels status bar is displayed with a green checkmark icon on the right. It contains a 'Status:' button and a table of published channels:

Name	Status	Version
Default Channel	Published - Channel published to /channel/1	V9.0.0
mgjtvchannel	Published - Channel published to /channel/2	V7.4.0
mgj1	Published - Channel published to /channel/3	V7.4.0

As you can see, because of its importance, the iCC allocates half of the **Home** page display to the **Channels** status summary. The iCC displays this information:

- **Name** – The name of the channel.
- **Status** – The latest publication status of the channel. When a channel starts publishing, the iCC highlights this with **publishing...** and then with **publishing...** as the process progresses.
- **Version** – Indicates the minimum software version the player needs to display the channel's content.

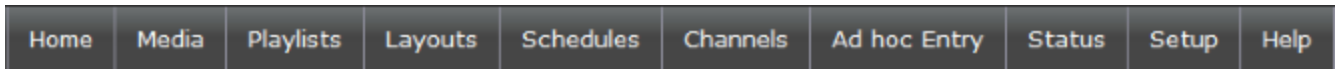
To access detailed information on the channels, click the **Status:** button to open the **Manage Channels** page.

Generic Features: The Menu Bar

The menu bar appears on every page of the user interface. It allows you to navigate to the page you need to perform detailed actions. Broadly speaking, each page corresponds to a particular feature such as:

- Layout design
- Playlist creation
- Channel publishing
- Managing user accounts

The menu bar offers these top-level options (you may see fewer options depending on your configuration):



The relevant explanatory sections describe those options in detail. You can also change how you interact with the menu bar on the **Help > UI Options** page. Some iCC features are only available if you enable the **Detailed** or **Expert** option on the **UI Options** page. Restrictions may also apply if your iCC hardware components and capabilities do not support certain functions or if you do not have the requisite software licenses.

To speed your access to important pages and information, the right-hand side of the menu bar includes a selection of icons. Click the icon to access the following:


 – The **Home** page.

 – The **Manage Channels** page.


 – The **Manage Layouts** page.

 – The **Setup** icons page.

An additional icon indicates the system status and can be one of:

 – Confirms there are no known issues.

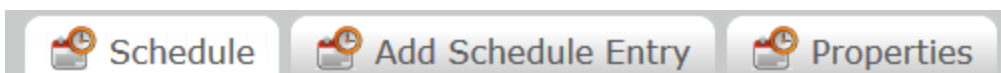
 – Brief description of an attention item (only shown if one is active).

 – Brief description of a problem item (only shown if one is active).

Note: The iCC does not display the quick access icons if your computer screen is too small or you have restricted the size of the browser window.

Generic Features: Tabbed Pages


Many options in the iCC user interface are split across tabbed pages:




To access the options on the tabbed page, click the tab label (for example, **Add Schedule Entry**).

Generic Features: Action Buttons


Numerous actions are common across different iCC pages. The user interface indicates these with icon action buttons. Click the button to perform the indicated action:

 – Delete


 – Rename


 – Copy

 – Edit

 – Drag to reorder

Generic Features: Command Buttons

Some commands are common across different iCC pages. The user interface provides command buttons for these. To execute the command, click the button. The label on the button describes the command, 

or  .

Part II

Creating Digital
Signage

Part 2: Creating Digital Signage

This section describes how to create your digital signs. If you are new to the iCC, see [Terms You Need to Know](#) before you begin.

Click on the links below for more information on:

[Using Schedules](#) – Controlling what is displayed and when.

[Using Layouts](#) – Organizing the screen into different display areas.

[Using Zones](#) – Configuring the type of content displayed in each layout.

[Using Playlists](#) – Specifying the media items that play in each zone.

[Understanding Media Types](#) – Setting up and managing the different types of media.

[Enhancing Your Displays](#) – Using synchronisation, interactivity, and the RS-232 interface.

2.1 Using Schedules

The player units are designed to run continuously. You control which layouts are displayed on what days and at what times by creating a **Schedule** for each channel. A schedule always contains at least one **Schedule Entry**, which defines at least one player action (often, which layout to display). A schedule entry does not necessarily specify a layout change, it could specify some other action (for example, switching the audio to mute).

The schedule entries define periods of time during which actions occur. The programme of schedule entries is based on a one-week cycle. The **Default Schedule Entry** defines the layout that appears, or the actions that occur, when no other schedule entry is active.

The player always displays the schedule with the most recent start time. Once a schedule starts running it continues until another schedule is set to begin. If there is only one schedule it runs indefinitely.

An example schedule might contain schedule entries taking these actions:

- Playing layout X from 4:00 pm to 6:00 pm, Mondays to Fridays.
- Playing layout Y from 2:00 pm to 8:00 pm on Saturdays and Sundays.
- The default schedule entry, playing layout Z at all other times.


You can temporarily interrupt a schedule by using a **Schedule Override**.


To access the schedules configured for a channel on the iCC:

1. On the menu bar, click **Schedules**.
2. Select the relevant channel from the drop-down list.
3. Click **Manage Schedules**.

The iCC provides these action buttons:

 – Delete the schedule.

 – Copy the schedule.

 – Edit the schedule.

Note: Deleting a schedule does not delete its associated layouts. If only one schedule remains, you cannot delete it.

To create a new schedule, click the **Add Schedule** tab.



2.1.1 Creating a Schedule

To display content on your player units, you need to create at least one channel with its associated schedule. You add schedule entries to a schedule to fine-tune how the player runs it.

To create a new schedule:

1. On the menu bar, click **Schedules**.
2. Select the channel from the drop-down list.
3. Click **Manage Schedules**.
4. Click the **Add Schedule** tab.

To create the new schedule, complete the following details and click the  button:

Schedule Name	Enter a unique name for the schedule.
Valid From	Select the date and time when the player starts running the schedule (the default is in 24 hours time).
Valid Until	Select the option that matches your requirement: <ul style="list-style-type: none"> • Superseded – The player keeps playing this schedule until a more eligible schedule becomes available. • Date – The player keeps playing this schedule until the date and time you choose. It then plays the next eligible schedule. If the player cannot find an eligible schedule, it continues to play this one.
Show Layout	Select the layout to display.
Conditional Play	<p>This is only enabled when you have added Player Local Information (PLI) to the player (see Player Local Information for details).</p> <p>If it is enabled, you have two options:</p> <ul style="list-style-type: none"> • Play Always – Default. The player always plays the schedule. • Play if Player Local Information Item – The player only plays the schedule if certain conditions are met. <p>If you select Play if Player Local Information Item, complete these steps:</p> <ol style="list-style-type: none"> 1. Select the name of the relevant player local information from the first drop-down list. 2. Select the test to apply from the second drop-down list. 3. Enter the value to test for in the final field (add further values by clicking the  button or delete values by clicking the  button).

2.1.2 Schedule Entries

A schedule entry is a set of one or more actions for the player to perform at specified times. Schedule entries repeat over a weekly cycle and a programme of schedule entries make up a schedule.

Use schedule entries to specify these actions:

- Displaying a layout.
- Switching a screen on or off.
- Switching audio on or off.
- Performing **Advance To** commands.




Whenever you create a new schedule, the iCC automatically includes a **Default Schedule Entry**. The default schedule entry has no start and end time and defines the default states when no other entry is active.

Schedule entries allow you to direct your player to perform simple or highly sophisticated sequences of actions. You can have the player display different layouts at different times of the day and different days of the week, switch the display on and off, or repeat actions at specified intervals.

To illustrate the use of schedule entries in more detail, here is a worked example.

With the following schedule, made up of three schedule entries, the player will:

- Turn the screen on to show the **Car Showroom** layout from 08:45 until 18:00 on Mondays to Fridays.
- Display the **Retail** layout (showing other sales offerings) for 10 minutes every hour.
- Turn the screen off at all other times.

Actions	Schedule Entry
<input type="checkbox"/>	 <p>Defaults used when no Schedule Entry is active Audio is Muted Screen is Off Layout Car Showroom</p>
<input checked="" type="checkbox"/>	 <p>From 08:45 until 18:00 Mon-Fri Audio is Unmuted Screen is On Layout Car Showroom</p>
<input checked="" type="checkbox"/>	 <p>Repeat every hour for 10 minutes From 09:00 until 18:00 Mon-Fri Audio is Unmuted Screen is On Layout Retail</p>

Looking at the respective settings on the **Add Schedule Entry** tab reveals how you would go about specifying each of those schedule entries.

The first schedule entry causes the player to turn the screen off and mute the audio soundtrack (note that the **Car Showroom** layout plays even though the screen is off):

Default Actions:	Audio: Mute ▼
	Screen: Off ▼
	Show Layout: Car Showroom ▼
	<input type="checkbox"/> Advance To: hide ▼
<input type="button" value="Cancel"/> <input type="button" value="Save Changes"/>	

The second schedule entry causes the player to turn the screen on and play the **Car Showroom** layout:

From:	08 ▼ : 45 ▼ : 00 ▼	Until:	18 ▼ : 00 ▼ : 00 ▼
On:	<input checked="" type="checkbox"/> Mon <input checked="" type="checkbox"/> Tue <input checked="" type="checkbox"/> Wed <input checked="" type="checkbox"/> Thu <input checked="" type="checkbox"/> Fri <input type="checkbox"/> Sat <input type="checkbox"/> Sun		
Repeat:	<input checked="" type="radio"/> Perform Actions for the entire period <input type="radio"/> During the Period, only perform Actions: Every 01 ▼ : 00 ▼ : 00 ▼ for 00 ▼ : 10 ▼ : 00 ▼		
Ad hoc:	Ad hoc Schedule is not currently available as no Ad hoc Schedule Items have been created		
Actions:	<input checked="" type="checkbox"/> Audio: Unmute ▼ <input checked="" type="checkbox"/> Screen: On ▼ <input checked="" type="checkbox"/> Layout: Car Showroom ▼ <input type="checkbox"/> Advance To: hide ▼		
<input type="button" value="Cancel"/> <input type="button" value="Save Changes"/>			

The third schedule entry causes the player to change to the **Retail** layout for 10 minutes every hour:

From:	09 ▼ : 00 ▼ : 00 ▼	Until:	18 ▼ : 00 ▼ : 00 ▼
On:	<input checked="" type="checkbox"/> Mon <input checked="" type="checkbox"/> Tue <input checked="" type="checkbox"/> Wed <input checked="" type="checkbox"/> Thu <input checked="" type="checkbox"/> Fri <input type="checkbox"/> Sat <input type="checkbox"/> Sun		
Repeat:	<input type="radio"/> Perform Actions for the entire period <input checked="" type="radio"/> During the Period, only perform Actions: Every 01 ▼ : 00 ▼ : 00 ▼ for 00 ▼ : 10 ▼ : 00 ▼		
Ad hoc:	Ad hoc Schedule is not currently available as no Ad hoc Schedule Items have been created		
Actions:	<input checked="" type="checkbox"/> Audio: Unmute ▼ <input checked="" type="checkbox"/> Screen: On ▼ <input checked="" type="checkbox"/> Layout: Retail ▼ <input type="checkbox"/> Advance To: hide ▼		
<input type="button" value="Cancel"/> <input type="button" value="Save Changes"/>			

To create a new schedule entry, click the **Add Schedule Entry** tab, complete the following details, and click the  button:

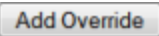
From	Select the time range during which you want the player to apply the schedule entry. 00:00:00 means midnight. Set both From and Until to midnight for the player to run the schedule entry all day. For a period that runs through midnight, add separate schedule entries: one ending at midnight, one commencing from midnight.
On	Check the boxes for the days you want the player to play the schedule entry.
Repeat	Choose the option that matches your requirement: <ul style="list-style-type: none"> • Perform actions for the entire period – The player performs the actions all of the time. • During the period, only perform actions – The player performs the actions only when and for as long as you specify. Specify the regularity with the Every options and the duration with the for options. The Every setting must be at least 30 seconds longer than the for setting. The minimum for setting is 30 seconds.
Ad hoc	This is only enabled when you have added ad hoc schedule items to the iCC (see Managing Ad Hoc Pages for details). Check the User can override From, On and Repeat settings using Ad hoc Schedule Item box to allow ad hoc users to alter those time settings.
Actions	Check the boxes and select the required action you want the player to perform: <ul style="list-style-type: none"> • Audio – Unmute or mute the display's sound. • Screen – Turn the screen on or off. • Layout – Display the selected layout. • Advance To – Play the next item in the zones containing the selected rendezvous point.

Modify a schedule entry by clicking the  button next to it on the **Schedule** tab.

2.1.3 Overriding the Schedule

You may need to override the current schedule at certain times (for example, to show a special event from a TV broadcast feed). You can create a **Schedule Override** which temporarily replaces the current schedule. The player stops playing the current schedule and displays a different layout.

To create a schedule override, follow these steps.

1. On the menu bar, click **Schedules**.
2. Select the channel from the drop-down list.
3. Click **Manage Overrides**.
4. Click the **Add Override** tab.
5. Enter a name for the override. Use a descriptive name (for example, 'Emergency Instructions').
6. Select what you want the player to do with audio and the screen.
7. Choose a layout for the player to display.
8. Click the  button.

2.2 Using Layouts

A layout is an arrangement of various display areas, called zones. Your layout may include video in one zone, scrolling text in another zone, and a sequence of still images in a third zone. You may also have a zone that is the same size as the layout and contains a background image on which all the other zones are superimposed. Your audience sees everything in your layout, so you need to take care to design layouts that are appealing and effective.

By default, the iCC names the zones for each layout on the screen in the order in which they were created – zone A, B, C and so on. To help manage the zones, you can change the names to make them more descriptive (for example, 'Background' or 'Main Video'). You can change the relative display positions of the zones in a layout.

Each zone can display media items of different types, according to the media player or players you enable for the zone.



The iCC screen background is visible in any part of the layout that is not covered by a zone. You can define the color or image for the screen background independently of any layout.

2.2.1 Manage Layout Page

The **Layouts > Manage Layouts** page shows all the layouts available on this iCC. A number of layouts are provided by default and you can create new ones by clicking the **Add Layout** tab and following the steps in [Adding a New Layout](#).

For each layout, the iCC displays:

- A diagram of the layout's zones.
- The name and description of the layout.
- If applicable, the names of the schedules and channels that use the layout.
- The canvas size required for the layout.
- The names of any rendezvous points or **Change Layout** commands.
- A link to the layout's **Ad hoc Page**.

Additionally, the iCC displays an audio icon  if you enable a soundtrack and a touch-screen icon  if you enable interactivity. Click on the icon to edit those properties.

Click the layout name (or the thumbnail) to open the graphical layout editor or to access the layout's properties. Click a zone in the layout diagram to open the zone's playlist.

The iCC provides the following action buttons for each layout:



– Delete the layout (you cannot delete a layout referenced by a schedule, even if inactive).



– Rename the layout.





– Copy the layout.

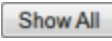


– Edit the playlists for the layout's zones or edit the layout itself.

To reduce the number of layouts displayed, follow these steps:



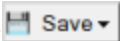
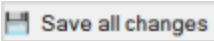
1. Click the  button.
2. Enter all or part of the layout's name.

3. Click the  button.

To clear a filter, click the  button.

2.2.2 Adding a New Layout

To add a new layout, follow these steps:

1. On the menu bar, select **Layouts** then **Manage Layouts**.
2. Click the **Add Layout** tab.
3. Enter a name for the new layout and its overall width and height.
4. Click the  button
5. Click the  button next to your new layout in the layouts list to open the graphical layout editor.
6. Add and set the properties for the zones you require.
7. When done, click  and .

You can return to and edit your layout whenever you wish.


2.2.3 Editing a Layout

To edit a layout, click its name on the **Layouts** menu or on the **Layouts > Manage Layouts** page.

The edit layout page has these tabs:

- **Zones** – Displays the graphical layout editor for you to add or modify zones and their properties.
- **Layout Properties** – Displays options for you to set up the layout's canvas size, ad hoc page, and soundtrack.
- **Interaction** – Displays the interactivity options for you to configure.
- **Permissions** – Displays the roles that can access the layout and the users allocated with those roles. If a role has only asset-based permissions, you can enable or disable the role's access here. See [Asset-Specific Permissions](#) for more information.

2.2.4 Layout Properties

The **Layout Properties** tab allows you to configure the following details (when complete, click the  button):

Description	Optional. Enter a description of the layout. The iCC displays this on the Layout pages underneath the layout's name.
Layout Ad hoc Page	Check this box and the iCC will automatically create an ad hoc page if you add ad hoc items to this layout. If you add or remove ad hoc items, the iCC will add or remove them from that ad hoc page. If you delete all ad hoc items, the iCC deletes the ad hoc page.

Soundtrack	<p>Check the Include Soundtrack box to enable a soundtrack for this layout.</p> <p>By default, the iCC checks the Add default media to Soundtrack's Playlist box. This means that the iCC will play the default soundtrack media. If you uncheck that box, you will need to add a media file by opening the Soundtrack item in the layout's Playlist menu.</p> <p>Check the Enable media auditing by default for all items in the soundtrack box to include data on the soundtrack items in the media audit reports.</p>
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2.2.5 Interaction Properties

The **Interaction** tab allows you to define how the layout responds to touch screen, remote control, and RS-232 input events.

Note: The player may require a license to use these options.

For each type of interaction, the iCC offers three basic actions in response:

- **No default action** – The layout does not respond to the interaction.
- **Advance to a rendezvous point** – Specify the rendezvous point and the zone from the drop-down menus. For a touch screen event, you can also choose whether this is on press or release and can configure an on-click sound.
- **Change to layout** – Specify the layout to change to from the drop-down menu.

In each case, the iCC also offers timeout options for you to further refine the response. You can specify the number of seconds that the player waits:

- **After the last event** – Delays the response to an interaction.
- **For the first event** – Provides a response if there is no interaction during the timeout period.

See [Using Interactivity](#) for details on designing and implementing interactive responses.

2.3 Using Zones

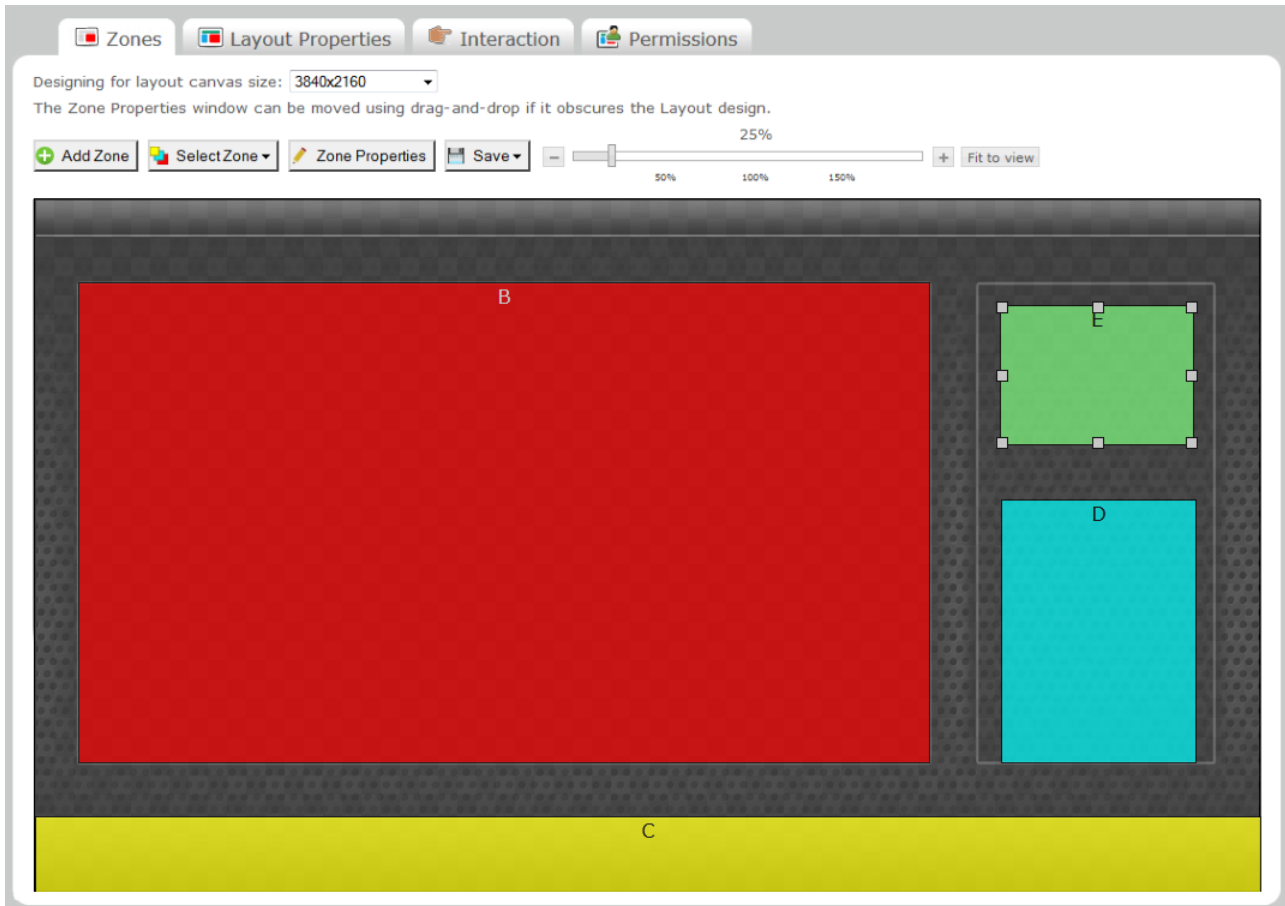
You compose layouts from defined rectangular areas called zones. Each zone can display various types of media content. The number of zones in your layout, their size, and location is up to you.

It is common to use different zones to display different types of content (for example, one for scrolling text, one for a promotional video, and so on). However, any zone can display any media type: you just have to enable the zone with the appropriate media player. You can have a zone display a single item or a sequence of items. You define the items that a zone displays in a playlist.

2.3.1 The Layout Editor

To create and manage the zones in a layout, you use the graphical layout editor. To edit a layout, click its name on the **Layouts** menu or on the **Layouts > Manage Layouts** page.

The **Zones** tab provides the graphical editor that you use to adjust the position and size of each zone in your layout:



By default, the editor displays the layout to best fit the current space on your screen. You can modify how the editor scales and displays the layout by adjusting two options at the top of the screen:

- **Designing for layout canvas size** – Select a canvas size from that drop-down list that matches the size and orientation of your output screen. Besides the standard sizes listed, you can specify a custom size. When you save the layout, the player uses that setting to size the display it creates. In the illustration, the canvas size selected is 3840x2160.
- **Fit to view** – Click for the editor to display the layout to best fit the current space on your screen. Alter the amount displayed by clicking the **+** or the **-** button: each click changes what is shown by 5%. Alternatively, click and move the slider. At 100% the display shows the layout at life size, but therefore not all of it may be visible on your screen. In the illustration, the percentage is set to 25% so that all of a large layout can be seen in the editor.

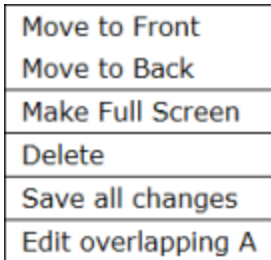
The editor displays each zone in a color indicating the media player enabled for the zone:

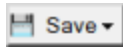
- Red – Movie player (zone B)
- Light green – HTML player (zone E).
- Light blue – Image player (zone D).
- Yellow – Text player (zone C).

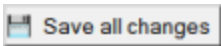
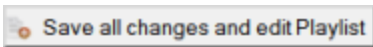
Note: The display shows the zones with a slight transparency (for example, to aid in aligning with background images). This does not indicate how the zone appears when displayed on screen.

To select a zone, click it. The editor shows the selected zone with handles (as seen for zone E). To move the zone, drag-and-drop it. To resize the zone, drag one of the handles.

You can also right-click a zone to open a context menu containing common functions:

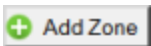
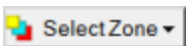
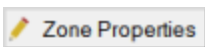
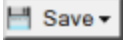


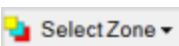
When you have finished making changes to your zones, click the  button. This offers these options:

-  – Simply saves your layout changes.
-  – Saves your layout changes and opens the playlist for you to edit it.

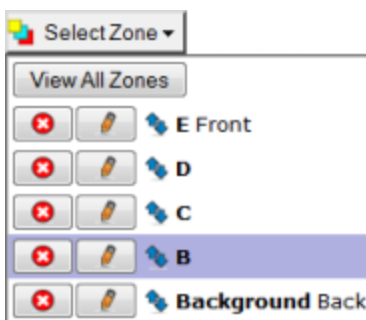
2.3.2 Editing a Zone

The graphical layout editor provides the following buttons to support your work on the layout:

-  – Click to add a zone to the layout. The iCC adds the zone for you to start sizing and positioning it.
-  – Click to display a list of all zones in the current layout.
-  – Click to toggle the **Zone Properties** dialog off and on. The iCC displays the toolbar for the currently selected zone.
-  – Click to select the **Save** options.




The  and  buttons provide the detailed editing features.

Click the  button to open a list like this:



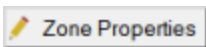
The list highlights the currently selected zone (in this case, zone B).

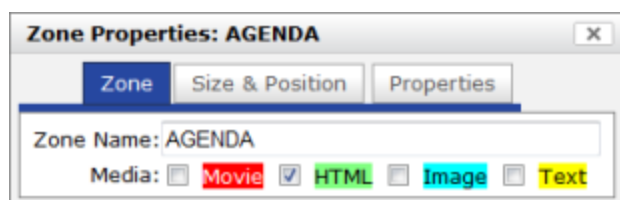
Perform the following actions with the **Select Zone** features:


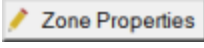
- Click the  button to delete a zone.
- Click the  button to select the zone you want to size and position. This includes zones hidden by other zones.
- Change the zone order by dragging-and-dropping the  icon. This is the zone order in layers (for example, moving the 'Background' image to the back of the layout).

Close the **Select Zone** list by clicking its button again or clicking elsewhere on the page.

2.3.3 Editing a Zone's Properties

Click the  button to open its dialog:



You can move the dialog around the screen by dragging it by its title bar. Close the dialog by clicking its  button or by clicking the  button again.

You can access and configure the properties by selecting the appropriate tab and entering the values required:

Zone	<p>Choose from the following options:</p> <ul style="list-style-type: none"> • Zone Name – Optional. Enter a descriptive name for the zone. The ICC shows this name when you are on a zone-specific page (such as in its playlist). • Media – Check the relevant box or boxes to enable the zone to play that media type.
Size & Position	<p>Size and position the zone by entering specific values.</p> <p>Note: If you use pixel values, the result may vary according to the resolution of the screen.</p> <ul style="list-style-type: none"> • Top, Bottom, Left, and Right Edge Offsets – The iCC offsets the position of the zone relative to the edge of the screen. • Width – Exact width for the zone. • Height – Exact height for the zone. • Aspect Ratio – Use to automatically size the zone depending on the aspect ratio of its content. Only available if you use pixels for Width and Height and do not select the Specify custom width and height option. First, select the type of aspect ratio needed from the drop-down list. Second, select whether the iCC calculates the required zone size keyed to the height or to the width.

Properties	Check the box or boxes to enable the options required: <ul style="list-style-type: none">• Image – If you have enabled the zone to show images, check this box to see the first item in the playlist in the layout editor (instead of the standard colored area). This helps preview the image and align other zones to it.• Design Visibility – Uncheck this box so that the zone is not shown in thumbnail views. This helps to edit other zones that are overlapped by this zone.• Media Audit – Check this box to enable media audit reporting for the zone. You can override this on an item-by-item basis in the playlist. See Reporting for more details on reporting.
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2.4 Using Playlists

A playlist is a sequence of media items that you choose for display in a zone. Each zone has its own playlist and runs independently of other playlists. A soundtrack also has its own playlist.

Playlists play their content in a continuous loop. After the player plays the last item, it starts again with the first.




You can include the following in a playlist:

- Individual content files (such as images, movies, or text).
- Special items (such as newsfeeds, TV stations, and tables).
- Folders containing multiple items.
- Ad hoc Items (controlled by your local users).


To add or modify items in a playlist, you need to access its specific page. Use one of these methods to access a playlist's page:

- On the menu bar, click **Playlists** and select the zone from the relevant layout.
- On the menu bar, click **Layouts > Manage Layouts** and click on the zone in the relevant layout diagram.


The playlist page has these tabs:

Playlist	<p>Lists the items in the playlist (displays their type, media details, play duration, and any time validity or conditional play settings you have configured). To see how to add, copy, or change a file-based media item, see Adding Media Item Files to a Playlist.</p> <p>The ICC may display icons to indicate the status of those items (as described in the Key panel at the bottom of the playlist)</p> <p>That default view of the playlist is called the Manage View. To open one of the additional play criteria views, click the relevant button at the top right of the list:</p> <ul style="list-style-type: none">  – Conditional Play View. Use this to view and edit the conditional play configuration of playlist items. See Viewing and Editing Conditional Play for more information.  – Time Validity View. Use this to view and edit the time validity configuration of playlist items. See Viewing and Editing Time Validity for more information. <p>To return to the Manage View, click the  button.</p>
Files & Folders	<p>Lists the folders containing media items you can add to the playlist (also use to navigate between folders and move files between folders). You can also add a whole folder to a playlist. See Media Run from the iCC Disk for more information.</p>
Upload Files	<p>Use to copy files onto the iCC and to create new folders. See Uploading Content Files for more information.</p>
Specials	<p>Use to add special items to the playlist (items other than files and folders). See Adding Special Items to a Playlist for more information.</p>
Defaults	<p>Use to set the default properties for media items when you first add them to the playlist. Changing a default value does not affect items already in the playlist.</p>
Permissions	<p>Use to see the roles that can access the playlist and the users allocated with those roles. If a role has only asset-based permissions, you can enable or disable the role's access here. See Asset-Specific Permissions for more information.</p>

The iCC provides the following action buttons for each item in a playlist:


 – Move the item (by drag-and-drop).


 – Delete the item.

 – Add a copy of the item to the playlist.

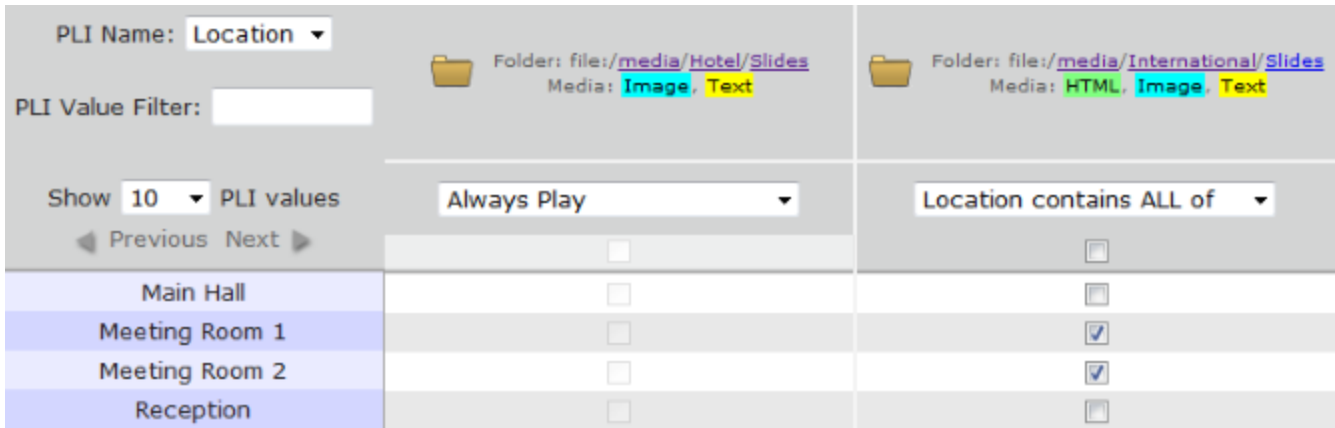
 – Edit the item's properties.

2.4.1 Viewing and Editing Conditional Play

On the playlist page, click the  button to open the **Conditional Play View**. You control whether a playlist runs conditionally by creating and applying player local information (see [Player Local Information](#) for more information).

Use the **Conditional Play View** to examine and edit the conditional play properties for all the items in the playlist. If you make changes, click the  button. You can also access the conditional play for an individual item by editing it and opening its **Play Criteria** tab.

To understand the information displayed and the tasks you can perform, this illustration shows the essential features of the view, which are described below:




The left-hand column details the player local information:

PLI Name	Select the name of the PLI you want to use from the drop-down list (in this case, 'Location').
PLI Value Filter	If you want to limit the number of PLI values displayed, enter a filtering string here. The filter is case insensitive and you can use accented characters. The iCC starts filtering the PLIs as soon as you start typing.
Show	Select how many PLI values you want displayed at a time from the drop-down list. If there are more PLI values than that, navigate through them by clicking the Previous and Next arrows.


The illustration shows how the iCC displays each PLI value on a row. The rows span all of the playlist item columns. Use the check boxes in the columns to select the PLI values needed to create your conditional play.

The right-hand columns detail the playlist items and the conditional play applied to them:

Item type	<p>The item type is illustrated with a thumbnail (if available) and a description. In the case of a folder, a Media line shows the zone type needed to display its content.</p> <p>In the illustration, the playlist item is a folder and the description is of its location.</p> <p>If you hover your cursor over that header, the  button appears: click it to edit the item's properties.</p>
Conditional operator	<p>Choose the conditional operator from the drop-down list.</p> <p>In the illustration, the first playlist item is set to the default, which is Always Play. That is, the item plays regardless of any conditions you might set for other items in the playlist. In other words, this item is not subject to conditional play.</p> <p>The conditional play operators in the remainder of the drop-down list are (with reference to the example 'Location' PLI):</p> <ul style="list-style-type: none"> • Location contains ALL of – Item plays if all of the checked values are in the PLI. • Location contains ANY of – Item plays if any of the checked values are in the PLI. • Location contains NONE of – Item plays if none of the checked values are in the PLI. <p>The illustration shows that the player would only play the second playlist item if 'Location' contains both 'Meeting Room 1' and 'Meeting Room 2'.</p>

<input type="checkbox"/>	<p>Check the boxes associated with the PLI values you want to apply. To apply all of the PLI values, check the box below the conditional operator drop-down list.</p> <p>The illustration shows that the PLI values 'Meeting Room 1' and 'Meeting Room 2' will be applied to the second playlist item.</p>
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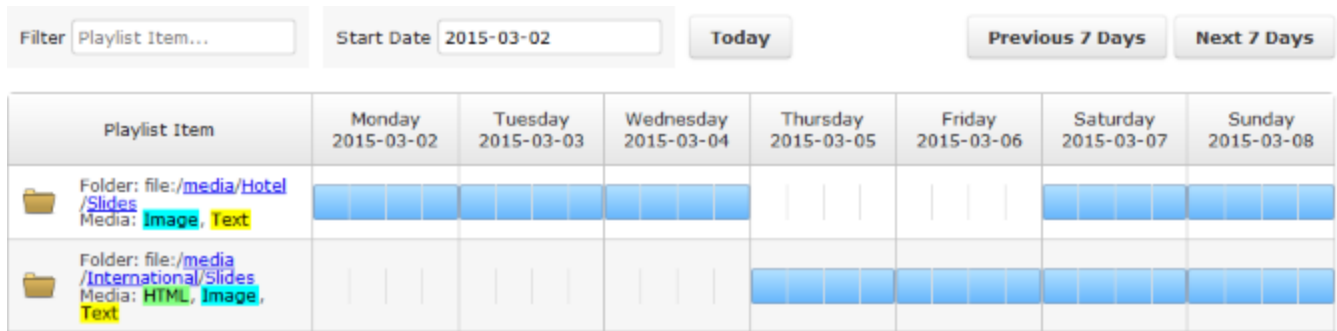
2.4.2 Viewing and Editing Time Validity

On the playlist page, click the  button to open the **Time Validity View**. You control the dates, days, and times when a playlist item runs by modifying its time validity settings (see [Play Criteria Properties](#) for more information).

Use the **Time Validity View** to examine and edit the time validity settings for all the items in the playlist.

You can also access the time validity settings for an individual item by editing it and opening its **Play Criteria** tab.

To understand the information displayed and the tasks you can perform, this illustration shows the essential features of the view, which are described below:



Playlist Item	Monday 2015-03-02	Tuesday 2015-03-03	Wednesday 2015-03-04	Thursday 2015-03-05	Friday 2015-03-06	Saturday 2015-03-07	Sunday 2015-03-08
Folder: file:/media/Hotel/Slides Media: Image, Text	■ ■ ■	■ ■ ■	■ ■ ■			■ ■ ■ ■ ■	■ ■ ■ ■ ■
Folder: file:/media/International/Slides Media: HTML, Image, Text				■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■



That view shows two playlist items, both of which are folders containing a mix of media:

- The first item plays during Monday, Tuesday, and Wednesday but not on Thursday or Friday.
- The second item does not play on Monday, Tuesday, or Wednesday but does play on Thursday and Friday.
- Both items play on Saturday and Sunday.

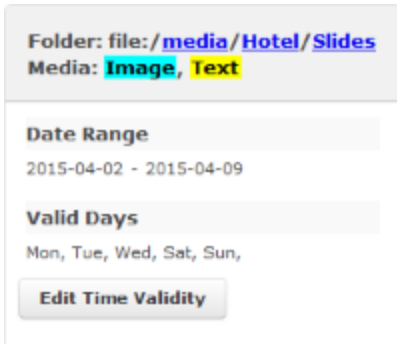
In more detail, the header options are:

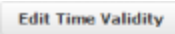
Filter	If you want to limit the number of playlist items displayed, enter a filtering string here. You can filter on any string displayed in the Playlist Item column, including on folder path components. The filter is case insensitive and you can use accented characters. The iCC starts filtering the playlist items as soon as you start typing.
Start Date	Click here for the iCC to open a calendar for you to select the view's start date. The view displays the seven days starting with that date.
Today	Click to set the view's start date to today.
Previous 7 Days	Click to view the previous seven days.
Next 7 Days	Click to view the next seven days.

The view displays each item on a row containing:

- A thumbnail of the item (if available) and a description. In the case of a folder, the description shows the zone type needed to display its content. If you hover your cursor over the thumbnail, the  button appears: click it to edit the item's properties.
- A calendar with  blocks showing when the player will display the item. If you hover your cursor over any of the blocks, the ICC displays a popup containing a summary of the item's time validity.

That time validity summary popup looks like this:





As you see, the popup contains a summary of the item's description and time validity. To change the time validity setting, click the  button.

2.4.3 Adding Media Item Files to a Playlist



Before you can add a media item file to a playlist, you need to upload it to the ICC. You must have enabled the zone to play the type of media you want to add to the playlist.




To add a file to a playlist, open the playlist page and follow these steps:

1. Click the **Files & Folders** tab.
2. If required, navigate to the location containing the file.
3. Click the  button alongside the file you want to add.
4. Click the **Playlist** tab to view the updated playlist.
5. Perform any other required actions (for example, adjusting the play order or modifying the item properties).

After adding an item, you can include a copy of it in the same playlist by clicking its  button.

For file-based or folder play items, you can change the item that the player uses by following these steps:

1. Open the playlist page.
2. Click the item's  button.
3. On the **Media** tab, click the button to the right of the media location description. The wording on the button varies according to the media type (for example, for an image file it is the  button).
4. Navigate to and click on the new file or folder.

5. Click the  or  button.
6. Click the  button. The player displays the updated playlist.

2.4.4 Adding Special Items to a Playlist

You can add special items to a playlist if supported by your ICC and the media you have enabled the zone to play.

There are two groups of special items:

- Those you need to set up in advance.
- Those you do not need to set up in advance.


The special items you need to set up in advance are:

- Video (including TV stations).
- Newsfeeds.
- Tables.

The special items you do not need to set up in advance are:

- Clocks.
- Direct text.
- External web pages.
- QR Codes.
- Interactivity actions.
- The **Wait**, **Rendezvous Point**, **Advance To**, and **Change Layout** commands.

To add a special item to a playlist, open the playlist page and follow these steps:


1. Click the **Specials** tab.
2. Click the  button alongside the item you want to add. (Depending on the item, you may need to enter text or select properties first.)
3. Click the **Playlist** tab to view the updated playlist.
4. Perform any other required actions (for example, adjusting the play order or modifying the item properties).

2.4.5 Adding Folders to a Playlist

You can add a whole folder to a playlist. The player treats the folder as a single playlist item but plays the files within it individually.

Before you add it, ensure that the folder contains the media items you want to use.

To add a folder to a playlist, open the playlist page and follow these steps:

1. Click the **Files & Folders** tab.
2. Click the  button alongside the folder you want to add.
3. Click the **Playlist** tab to view the updated playlist.
4. Perform any other required actions (see [Folder Play Properties](#) for information on how the player plays the folder items).

Part III

Understanding Media Types

Part 3: Understanding Media Types

Your player units can display a great many types of digital content (also referred to as media).

When creating a layout, you must specify the type of media each zone will display. This enables the zone to 'play' the media concerned. You can configure zones to support one or more of these players:

- **Movie** player – For media such as video and TV.
- **HTML** player – For media such as web pages and tables.
- **Image** player – For media such as graphics and photographs.
- **Text** player – For media such as text and newsfeeds.

In addition to those media types, you can add audio to a layout using the **Soundtrack** feature (see [Audio](#) and [Radio](#) for more details).

The iCC provides many features for setting up and managing the media items you want to use. It is important to understand how the iCC handles groups of media differently depending on their types and characteristics:

- [Media Directly Managed by the iCC](#) (includes text, newsfeeds, clocks, tables, RS-232 outputs, and QR Codes).
- [Media Run from the iCC Disk](#) (includes video, text files, images and photos, audio, presentations, HTML web pages, Adobe Flash files, PDF files, and folder play).
- [Media from External Sources](#) (includes TV, radio, live video, multicast video, and external web pages).

3.1 Media Directly Managed by the iCC

Some types of media are managed directly by the iCC. These include:

[Text](#)

[Newsfeeds](#)

[Clocks](#)

[Tables](#)

[RS-232 Items](#)

[QR Codes](#)

You can include a wide variety of media items as ad hoc content and they are also directly managed by the iCC. Using ad hoc content is described separately (see [Ad Hoc Content](#) for details).

3.1.1 Text

You can display text you directly enter on the iCC. (You can also display text files: see [Text Files](#) for more details.)

Zone player type to enable: **Text**.

Playlist tab containing the item: **Special**.

Additional notes:

Supported Format iCC	Notes
text editorial formats	The text editor offers formatting features (for example, use of bold, italic, font size, and color).

3.1.2 Newsfeeds


You can display newsfeeds from external sources on the player.

Broadcasters or news agencies (for example, the BBC or Reuters) provide newsfeeds containing headline news or sports reports. Providers often do not charge and usually do not require usernames or passwords. However, some providers do define terms restricting display of their newsfeeds in digital signage networks and you must check on this before using newsfeed content.

Zone player type to enable: **Text**.

Playlist tab containing the item: **Special**.

Additional notes:

Supported Format	Notes
RSS 0.91 and 2.0 (must say 'RSS' or 'XML').	Compatible newsfeeds are normally indicated by the  symbol.

To subscribe to a newsfeed, follow these steps:

1. Find the newsfeed using your browser.
2. Click the link to the newsfeed or click the RSS button .
3. Copy the newsfeed's web address from the browser's address bar.
4. On the iCC's menu bar, click **Media** and **Newsfeeds**.
5. Click the **Add Newsfeed** tab, complete the newsfeed properties, and click the button.

The newsfeed properties are:

Name	Enter a unique name for the newsfeed.
RSS Newsfeed URL	Enter or paste in the newsfeed web address. You must include the protocol (for example, http://www.bbc.co.uk/travelnews/tppeg/en/pti/pti_rss.xml).
Refresh Interval	Specify how often the iCC checks for updates.
Maximum Age	Specify how long the iCC will continue to display existing items if there is no connection to the newsfeed to obtain new ones.

Authentication	Select the required authentication style: <ul style="list-style-type: none"> • No authentication required – The newsfeed does not require a username and password. • Login with – The newsfeed requires a username and password. Enter them in the fields provided.
Proxy	Select the required proxy configuration: <ul style="list-style-type: none"> • No proxy required – The iCC connects directly to the internet. • Use proxy if configured – The iCC accesses the internet through the configured proxy. You must first configure the proxy (on the Setup > System > HTTP Proxy page).

3.1.3 Clocks

You can display a digital clock on the player showing the date and time in any one of a variety of formats.

Zone player type to enable: **Text**.

Playlist tab containing the item: **Special**.

3.1.4 Tables

You can create and format tables for display on the player. Before you can add a table to a playlist, you have to create it.

Tables are a convenient way of displaying static data. You can also use tables to hold ad hoc entries that local users control (for example, a table showing conference center room allocations). The iCC creates tables using HTML.

Zone player type to enable: **HTML**.





Playlist tab containing the item: **Special**.

Adding and Editing an Ordinary Table:



To add a table, follow these steps:

1. On the menu bar, click **Media** and **Tables**.
2. Click the **Add Table** tab.
3. Enter a descriptive name for the table.
4. Enter the number of rows and columns. The maximum size is 19 rows by 39 columns. You cannot change the size of a table after you create it.
5. Click the button.

The iCC displays the **Tables** tab with your table added to the list. Click the button next to a table to take these actions:

	Delete the table. You cannot delete a table that is in use. Check the right-hand column to see the items using the table.
	Rename the table. Enter the new name in the field and click the Rename Table button. If you decide not to rename the table, click the Cancel Rename button.
	Copy the table. Enter the name for the copy in the field and click the Copy Table button. If you decide not to copy the table, click the Cancel Copy button.
	Edit the table. To edit a table after creating it, follow the same steps as described next for setting up a new table.

You need to set up your new table by following these steps:


1. Click the table's  button.
2. Click the **Style** tab.
3. Take whichever of these formatting steps are needed to get the effect you want:
 - Click the **Edit Border** button to change the width and color of the border.
 - Click the **Edit Column** button for each column you want to size manually.
 - Click the  button for each cell whose text font and size you want to adjust. [Text Properties](#) describes the formatting options. You can edit one cell and specify that the iCC also applies those changes to other cells.
4. Click the **Values** tab.
5. Edit the default text in each cell as required.
6. Click the **Save all changes** button.

Adding and Editing Ad Hoc Tables:

To create an ad hoc table, follow these steps:

1. Create a table as described above.
2. On the menu bar, click **Media** and **Manage Ad hoc Items**.
3. Click the **Add Item** tab.
4. Add a new **Ad hoc Table Item** that references the table.

Note: If you copy an ad hoc table, the copied table is not an ad hoc table.

To edit an ad hoc table, open the **Tables** page and click the table's . Make changes on the **Style** and **Default Values** tabs as described for the **Style** and **Values** tabs above. Click the **Ad Hoc** tab to specify the ad hoc features.

Click the **Edit Cell** button for the cell you want to change and select the option required:

- **Default Value** – The ad hoc user cannot change the cell value.
- **Override with any value** – The ad hoc user can enter any value in the cell.

If you set the **User Interface Policy** to **Detailed**, the iCC also offers these options:

- **Override with Integer between** – The ad hoc user can only enter values between the lower limit and upper limit you specify (both inclusive).
- **Override with text of maximum length** – The ad hoc user can only enter text up to the number of characters you specify.
- **Override value with text matching** – The ad hoc user can only enter text that matches the regular expression you specify. In the **Feedback Message** field, enter the message you want the player to display to the ad hoc user if what they enter does not match the regular expression. Information about using regular expressions is readily available (for example, at <http://www.regular-expressions.info/>).




3.1.5 RS-232 Items

You can add an RS-232 output item to a playlist. When the item is reached in a playlist, the player sends a character string to an external device through its RS-232 port (for example, to switch on a light at the start of the day). See [RS-232 Outputs](#) for how to set up RS-232 items.

Zone player type to enable: any player type.

Playlist tab containing the item: **Special**.

To add an RS-232 output item to a playlist, follow these steps:

1. On the menu bar, click **Playlists** and select the layout and zone where you want to add the RS-232 item.
2. Click the **Specials** tab.
3. Check the **Send RS-232 Item**.
4. Click the  button.
5. In the playlist, drag the  icon to adjust the position of the RS-232 item in the playlist, as necessary.
6. If required, click the  button to change the RS-232 item on the **Media** tab or to set conditional play on the **Play Criteria** tab.

3.1.6 QR Codes

You can create and display QR Codes using the iCC.

QR Codes (Quick Response Codes) are two-dimensional barcodes carrying content that can be read by a suitable device. For example, a QR Code can contain a web site URL or an email address: a user scans the QR Code with a smartphone to open that web site or to compose an email to that address.

Zone player type to enable: **Image**.

Playlist tab containing the item: **Special**.

Additional notes:

Supported Format	Notes
QR Code	The iCC creates QR Codes with Level H error correction (30%) and uses byte encoding.

3.2 Media Run from the iCC Disk

Use the **Media > Files & Folders** option to manage media content files on the iCC disk.

Note: You cannot create or edit files on the iCC. Create or edit files elsewhere and upload the result to the iCC.

Click the tab for the options you require:

- **Files & Folders** – Manage the files and folders on the iCC disk (see below for details).
- **Upload Files** – Copy files from your computer onto the iCC (as described in [Uploading Content Files](#)).
- **Permissions** – Manage the roles that can access a folder and the users allocated with those roles. If a role has only asset-based permissions, you can enable or disable the role's access here. See [Asset-Specific Permissions](#) for more information.

The **File & Folders** tab provides these file management features:

- **List** – Displays all the files and folders in the current location.
- **Navigate** – Move between folders (click on a folder name or on a link in the **Folder** field to open it).
- **Act** – Delete, move, and rename files and folders and also copy files.

Click the button next to a folder to take these actions:

 – Delete the folder

 – Move or rename the folder.

Click the button next to a file to take these actions:

 – Delete the file.

 – Move or rename the file.

 – Copy the file.

Note: You cannot take any folder or file actions in the iCC system folders.

Refer to the media-specific information to see which zone player type to enable and for additional notes on the formats supported by the iCC:

[Video](#)

[Text Files](#)

[Images and Photos](#)

[Audio](#)

[Presentations](#)

[HTML Web Pages](#)

[Adobe Flash](#)

[PDF Files](#)

[Folder Play](#)

3.2.1 Uploading Content Files


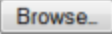
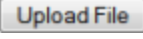
You can upload content files to the iCC in several ways:

- [Using the Upload Files Tab](#) – The iCC offers an **Upload Files** tab on the **Media > Files & Folders** page or when you open a specific playlist.
- [Using ETP](#)
- [Using Drag and Drop](#) – If supported by your browser.

Note: Always add your content files to the **Media** folder or to sub-folders of the **Media** folder.

Using the Upload Files Tab:

You use both the **Files & Folders** and playlist **Upload Files** tabs in the same way:

1. Navigate to the folder where you want to add the file.
2. Click the **Upload Files** tab.
3. If required, create a subfolder:
 - a. Type a name for the subfolder in the **Folder name** field.
 - b. Click the  button.
 - c. Click the subfolder name to enter it.
 - d. Click the **Upload Files** tab.
4. Click the  button and navigate to the file you want to upload.
5. Click the  button.
6. Repeat those steps for each file.

Using FTP:

Before using FTP, make a note of the IP address of your iCC. If you do not know the IP address, consult the person who administers your network or reboot the iCC: it displays its IP address during the process.

Note: You need to have the **FTP Read/Write** permission on the iCC to upload using FTP. FTP may also be disabled on your network for security reasons. If you have difficulty using FTP, check with the person who administers your iCC or network.

You can upload using a dedicated FTP program. A quick alternative is to use Windows Explorer (or similar file-management program):

1. Open two copies of Windows Explorer.
2. In the first copy, navigate to the folder with the content you want to upload.
3. In the second copy, type ftp:// and the IP address of your iCC in the address bar (for example, ftp://192.168.0.254) and press the **Enter** key.
4. When prompted, enter your iCC username and password. Windows Explorer now displays your default iCC folder location.

5. Navigate to the **Media** folder. **Do not** add or modify files in any other folder as this may render the iCC unusable.
6. As required, create further folders under the **Media** folder. It is good practice to create separate folders for each layout and sub-folders for each zone (for example, media/Layout_reception/Zone_A).
7. To upload content to the iCC, drag-and-drop or copy-and-paste folders and files from the first copy of Windows Explorer to the second copy of Windows Explorer.

Note: If the FTP page does not refresh, press the **F5** key or click **Refresh** to update it.

When you have connected Windows Explorer to your iCC with FTP, you can also:

- Rename and delete files on the iCC.
- Download files from the iCC to your computer using drag-and-drop or copy-and-paste.

You cannot move files from one folder to another using FTP. Instead, download the file to your computer and then upload it to the other iCC folder. Alternatively, move files using the **Media > Files & Folders** page.

Using Drag and Drop:

Some browsers allow you to drag files off of your computer desktop and drop them directly into a playlist or a folder on the iCC. The following browsers support drag and drop:

Operating System	Browser and Minimum Version
Windows.	Microsoft Internet Explorer 9, Mozilla Firefox 6.0.2, Google Chrome 14
Mac OS X	Mozilla Firefox 3.6.19, Google Chrome 14, Apple® Safari® 5.0.6
Linux	Mozilla Firefox 6.0.2

Note these limitations of drag and drop:

- You cannot upload folders, only individual or groups of files.
- If you upload a file to a place containing a file with the same name, the iCC overwrites the existing file.
- If the file is for a media type not enabled for the zone, you can upload the file but it will not appear in the playlist until you enable its media type.

You can drag and drop a file into these locations using the method indicated:

- Playlist – Hover your cursor over the preferred position on the **Playlist** tab.
- Folder within a playlist – Hover your cursor over the folder on the **Playlist** tab.
- Folder – Hover your cursor over the preferred location on the **Files & Folders** tab.
- Folder within a folder – Hover your cursor over the folder on the **Files & Folders** tab.

To perform an upload using drag and drop, follow these steps:

1. Open the page on the iCC that is the location for the upload (either a playlist or a folder).
2. On your computer desktop, select the file or files you want to upload.
3. Hold down the left mouse button.
4. Move your mouse until the cursor is over the upload location.

5. Release the mouse button. The iCC displays a green progress bar as the upload proceeds (you might not see this for small files). When the upload completes, the iCC confirms the file's name and location in that progress bar.

3.2.2 Video


You can play various video formats with the player.

Zone player type to enable: **Movie**.

Note: By default, you can enable up to two movie zones. To enable more requires an additional license and the maximum number is dependent on the player model. For best performance, only enable one movie zone per layout on less powerful player models.

Playlist tab containing the item: **Files & Folders**.

To help you identify a particular video, the iCC displays a thumbnail image from it. That appears in the **Filename** column of the **Files & Folders** display (and in the **Media** column when you add the video to the playlist). The iCC

displays the  icon if it cannot render a thumbnail.

Additional notes:

Supported Codecs	Notes
H.264	Recommended. Small file size but higher CPU load. However, supports high definition.
MPEG-1	Poor resolution.
MPEG-2	Good combination of CPU load and resolution but large file size.
MPEG-4 (ASP and AVC)	Small file size but higher CPU load. However, supports high definition.
VOB	Same as MPEG-2.
WMV 9	Windows Media Video.

Supported Containers	Notes
AVI	Microsoft® format. Can contain a wide-range of codecs. CPU load and resolution depends on the codecs within (see table above for guidance).
MOV	Apple® QuickTime® format. Can contain a wide-range of codecs. CPU load and resolution depends on the codecs within (see table above for guidance).
MPG	MPEG transport stream.
MP4	ISO MPEG-4 container (subset of MOV).

3.2.3 Text Files

You can display text files on the player. (You can also display text you enter directly: see [Text](#) for more details.)

Zone player type to enable: **Text**.

Playlist tab containing the item: **Files & Folders**.

Additional notes:

Supported Format	Notes
TXT	Plain text only. The player does not support the display of files formatted by word-processor (for example, DOC or DOCX files from Microsoft® Word or PDF files from Adobe® Acrobat®).

3.2.4 Images and Photos

You can display several image formats with the player.

Zone player type to enable: **Image**.

Note: Large images may take several seconds to appear and may slow down the performance of the player. Always resize an image to match the size of the zone before uploading it.

Playlist tab containing the item: **Files & Folders**.

Additional notes:

Supported Format	Notes
PNG	Recommended. Good quality and supports transparency.
JPG	Recommended. Edges can blur and does not look good when shown on a large screen.
GIF	Can look very grainy. Only supports 256 colors but does support transparency. The player does not support animated GIFs. To use an animated GIF, first embed it into an HTML page.
BMP	Large file size but no loss of quality.

3.2.5 Audio

You can play various audio formats with the player.

You add audio files to a whole layout and not to an individual zone. Layout property to enable: **Soundtrack**.

Playlist tab containing the item: **Files & Folders**.

Additional notes:

Supported Format	Notes
MPEG-1 (layers 1, 2, and 3)	Performs acceptably on all player models.
MPEG-2 (AAC)	Performs acceptably on all player models.
MPEG-4 (AAC)	Recommended. Good performance.
MP3	Recommended. Good performance.
Uncompressed PCM (WAV)	Container. High quality but much larger file size than MP3.
WMA V1-3	Performs acceptably on all player models.
AC3	Performs acceptably on all player models.

3.2.6 Presentations

Presentations often have complex animations, timings, and graphics. To ensure the player displays a presentation correctly, save it in the best format to ensure faithful reproduction.

Zone player type to enable:

- If saved as video – **Movie**.
- If saved as Adobe Flash – **HTML**.
- If saved as image slide show – **Image**.

Playlist tab containing the item: **Files & Folders**.

Additional notes:

Supported Format	Notes
Microsoft® PowerPoint® 2010 (PPT, PPTX)	<p>Save as WMV video – Best option for high quality and complex animations and transitions but files can be large.</p> <p>Save as Adobe Flash – Supports animations and transitions but complex and fast animation may appear choppy. Creates small files.</p> <p>Save as image slide show – Use if animations and transitions are not important.</p>
Apple® Keynote®	Save as MOV video – Best option for high quality and complex animations and transitions but files can be large.

Save as a Video:

To save a PowerPoint 2010 presentation as a video:

1. Select **File > Save & Send > Create a Video**.
2. Select the **Computer & HD displays** profile as this is likely to be the best for the player.
3. When prompted, choose where to save the video.

There are also third-party products specifically for converting PowerPoint 2010 presentations to video. Other products are more general screen capture applications, which can be useful if you want to include mouse movement or provide a voice-over.

Save as Adobe Flash:

There are third-party products for converting PowerPoint 2010 presentations to an Adobe Flash animation with varying degrees of complexity. For example, you can use the free OpenOffice suite to open a PowerPoint 2010 presentation and export it to an Adobe Flash file but without slide transitions or animations.

Save as Image Slide Show:

To save a PowerPoint 2010 presentation as an image slide show:

1. Select **File > Save & Send > Change file type**.
2. Choose a supported image file type (PNG is recommended, but the player also supports JPG, TIF, and BMP).
3. When prompted, choose where to save the files and select **Every Slide**.

3.2.7 HTML Web Pages

You can display local HTML files on the player. (You can also display whole or part pages from a remote web site: see [External Web Pages](#) for details.)

Zone player type to enable: **HTML**.

Playlist tab containing the item: **Files & Folders**.

Additional notes:

Supported Format	Notes
HTML	The player displays HTML using the WebKit browser engine for Linux. (The Apple Safari and Google Chrome browsers also use the WebKit engine.) WebKit supports web pages including JavaScript® and Adobe Flash but not ActiveX®.

3.2.8 Adobe Flash

You can display Adobe Flash files with the player.

Note: Complex Adobe Flash files may not run smoothly on less powerful player models.

Zone player type to enable: **HTML**.

Playlist tab containing the item: **Files & Folders**.

Additional notes:

Supported Format	Notes
SWF	The player supports Adobe Flash Player version 11. Flash files give no indication to the player that they are finished. You need to set a maximum duration when you add the file to a playlist to force the player to move on to the next item.

3.2.9 PDF Files

You can display pages from PDF files with the player.

Zone player type to enable: **Image**.

Playlist tab containing the item: **Files & Folders**.

Additional notes:

Supported Format	Notes
PDF	<p>Supported version: ISO 32000-1:2008 (also known as PDF 1.7). Earlier versions may display correctly but are not supported.</p> <p>The player cannot display:</p> <ul style="list-style-type: none"> • Dynamic PDF content (such as forms). • PDF files secured by password.

3.2.10 Folder Play

Rather than adding a number of files individually to a playlist, you can add and play an entire folder from the iCC disk. This is known as **Folder Play**.

Zone player type to enable: as required by the media types in the files.

Playlist tab containing the item: **Files & Folders**.

You can configure folder play properties to control how the player plays the files:

- In sequence – Files play in file name order. Numbers come before letters and uppercase characters before lowercase (for example, '1' comes before 'A' which comes before 'a').
- In random order – Files play in a random order (shuffle play).

Coupled with the order of play, you can also configure these properties:

- How many of the files to play.
- The number of files to jump before playing the next file.

See [Folder Play Properties](#) for more details about how to configure folder play.

3.3 Media from External Sources

You can display media running directly from external sources with the player.

Refer to the media-specific Information to see which zone player type to enable and for additional notes on the formats supported:

[TV](#)

[Radio](#)

[Live Video](#)

[Multicast Video](#)

[External Web Pages](#)

3.3.1 TV

You can play output from external digital TV stations with the player.

Zone player type to enable: **Movie**.

Playlist tab containing the item: **Specials**.

Additional notes:

Supported Format	Notes
Digital TV	Broadcast DVB-T digital TV, where available.

The player must be set up with:

- TV antenna connected to its TV socket.
- TV tuner card tuned to the digital transmitter.

See [TV & Radio](#) for more details of tuning and setting up digital TV.

3.3.2 Radio

You can play output from external digital radio stations with the player.

You add audio to a whole layout and not to an individual zone. Layout property to enable: **Soundtrack**.

Playlist tab containing the item: **Specials**.

Additional notes:

Supported Format	Notes
Digital radio	Digital radio stations, where available.

The player must be set up with:

- A TV antenna connected to its TV socket.
- A tuner card for tuning in to the stations (see [TV & Radio](#) for more details).

See [TV & Radio](#) for more details of tuning and setting up digital radio.

3.3.3 Live Video

You can output live video from various devices with the player.

Zone player type to enable: **Movie**.

Playlist tab containing the item: **Specials**.

Additional notes:

Supported Formats	Notes
HDMI capture	Includes output from video cameras, DVD players, set-top boxes, and so on. Your player must be set up with: <ul style="list-style-type: none"> • The correct license. • A TV tuner or video capture card. • The appropriate video cable connecting the video device to the TV tuner card.
HDMI capture (analogue audio)	
Component video	
S-Video	
Composite video	

Before the player can display the video, configure it to recognise the video source as a TV input (as described in the **TV & Radio** section of the *Net-Top-Box User Guide*).

3.3.4 Multicast Video

As an alternative to receiving TV broadcasts directly, the player can receive multicast video (also known as Internet Protocol Television (IPTV)) over the local network.

Note: Using multicast video requires an additional license.

Zone player type to enable: **Movie**.

Playlist tab containing the item: **Specials**.

Additional notes:

Supported Format	Notes
MPEG-2 Transport Stream in UDP	Your player setup needs to include: <ul style="list-style-type: none"> • An Internet Group Management Protocol (IGMP) network infrastructure to support multicast streaming. • A device to stream video onto the network.

Before the player can display the video, configure it to recognise the video source as a TV input (as described in the **TV & Radio** section of the *Net-Top-Box User Guide*).

3.3.5 External Web Pages

You can display whole or parts of pages from an external web site with the player. See [Displaying Part of a Movie or Web Page](#) for details of how to display only a part of a web page. See [HTML Web Pages](#) for how to display HTML files held locally on the player.

Zone player type to enable: **HTML**.




Playlist tab containing the item: **Specials**.

Additional notes:

Supported Format	Notes
HTML	<p>The player displays HTML using the WebKit browser engine for Linux. (The Apple Safari and Google Chrome browsers also use the WebKit engine.) WebKit supports web pages including JavaScript and Adobe Flash but not ActiveX.</p> <p>To display a web page, the player must have live access to it at the time. If the web page requires a username and password to log in, include those in the URL in the format: <i>protocol://username:password@site.</i></p>

Adding External Web Pages to a Playlist:

To add an external web page to a playlist, follow these steps:

1. Open the web page you want to link to and copy its whole URL address. (You can also sometimes use the URL to link to a specific frame or image to display.)
2. On the iCC menu bar, click **Playlists** and select the zone in the layout you want to add the page to.
3. Select the **Specials** tab.
4. Paste the web site URL into the **External Web Page** field.
5. Click the  button.
6. In the playlist, you can drag the  icon to adjust the item's position or click its  button to modify its properties.

Notes:

- HTML pages always have a white, non-transparent background.
- Auto-refresh web pages direct the player browser to reload the page at regular intervals. Add auto-refresh pages to a playlist with an indefinite duration to be sure that they always show the latest information. Determine whether a page auto-refreshes by searching for the `<meta http-equiv=refresh>` tag in its HTML code:
- To keep non-auto-refresh pages current, you need to reload them periodically. To do so, add the pages to a playlist with a fixed duration, as this forces the player to reload the page.

Saving Web Pages to Disk and Adding to a Playlist:

As an alternative to displaying a web page directly from an external source, you can save it on the iCC.

This removes the connection to the source and your files will not be updated if the source changes.

To save the HTML files, use your browser's **Save** function. For example, with Internet Explorer, follow these steps:

1. From the **File** menu select **Save as**.
2. Navigate to the location where you want to save the files.
3. From the **Save as type** drop-down list, select **Web page, complete**. This saves the page as well as all its associated files (such as images). Internet Explorer saves the associated files in a folder called `pagename_files`, where `pagename` is the name of the HTML page.


When you have saved the HTML page and its files, add to a playlist by following these steps:

1. Upload the HTML page file and the `_files` folder with all its files onto the iCC. If you need to include other files (for example, a JavaScript file implementing additional features) add them to the `_files` folder. See [Uploading Content Files](#) for how to upload files.

Note: Drag-and-drop will not upload folders so you cannot use it to upload the `_files` folder in one action.

2. Add to a playlist as described in [Adding Media Item Files to a Playlist](#).

3.4 Media Item Properties

There are different playlist properties for each type of media item. To edit the properties for a playlist item, click the  button alongside the item.

The iCC displays the properties on these tabs:

- **Media** – Location and name of the media. Can also contain ad hoc, touch screen, and item-specific properties (for example, for clocks, newsfeeds, and folder play).
- **Style** – Properties specific to the media type (this tab is not shown for folder play items).
- **Play Criteria** – Properties controlling when the item plays (time validity and conditional play). (See [Play Criteria Properties](#) for details.)
- **Advanced** – Advanced properties that apply to all media items (position and size and media audit). (See [Advanced Properties](#) for details.)

The following table lists the generic properties you will find on the **Media** and **Style** tabs for each of the zone media players:

	Movie	HTML	Image	Text	Soundtrack
Duration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>
Deinterlace	<input type="radio"/>				
Mode	<input type="radio"/>		<input type="radio"/>		
Letterbox Color	<input type="radio"/>		<input type="radio"/>		
Subtitles	<input type="radio"/>				
Volume	<input type="radio"/>	<input type="radio"/>			<input type="radio"/>
Opacity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Movie Size	<input type="radio"/>				
Web Page Size		<input type="radio"/>			
Zoom		<input type="radio"/>			
Page Background		<input type="radio"/>			
Fade In			<input type="radio"/>		
Fade Out			<input type="radio"/>		

	Movie	HTML	Image	Text	Soundtrack
Text Style				<input type="radio"/>	
Font				<input type="radio"/>	
Text Color				<input type="radio"/>	
Background Color				<input type="radio"/>	
Horizontal Alignment				<input type="radio"/>	
Vertical Alignment				<input type="radio"/>	
Margins				<input type="radio"/>	
White Space				<input type="radio"/>	
Character Set				<input type="radio"/>	

For details of those generic properties, see the information specific to each type of media player:

[Movie Properties](#)

[HTML Properties](#)

[Image Properties](#)

[Text Properties](#)

[Soundtrack Properties](#)

Some playlist items have properties additional to the generic properties. For details of those item-specific properties, see the information for each item:

[Newsfeed Properties](#)

[Clock Properties](#)

[PDF File Properties](#)

[Folder Play Properties](#)

[Ad Hoc Properties](#)

3.4.1 Movie Properties

The following properties apply to a zone enabled as a **Movie** player:

Subtitles	Check the Display subtitles box to enable subtitles for the video (if available).
Duration	Select the duration you require: <ul style="list-style-type: none"> • Play all of the movie – The movie plays continuously. • Play the movie for – The movie plays for the period you specify.
Volume	Enter the volume as a percentage of the maximum volume.

Deinterlace	The player automatically performs deinterlacing if required. To explicitly enable or disable deinterlacing, select Yes or No from the drop-down list.
Hardware Decode	<p>Select whether to use hardware or software decode:</p> <ul style="list-style-type: none"> • Use hardware-assisted decoding if possible – Default. If your player has graphics processing hardware, the player uses it to decode and display the movie. This usually provides higher performance. • Always use software-only decoding – The player decodes and displays the movie using software running on its CPU. For example, you might select this option if you have movies showing in multiple zones and another movie needs the higher performance of hardware-decode. <p>Depending on the configuration and content of your layout, choosing one or other option for an individual movie can require a trade-off between performance and processing resources.</p>
Mode	<p>You can set the display mode to one of these options:</p> <ul style="list-style-type: none"> • Fit to Zone – Stretches the movie to fill the zone. This will distort the movie if the zone does not have the same aspect ratio as the movie. • Letterbox – Shows the entire movie and preserves its aspect ratio. The player displays the letterbox color in any space in the zone not covered by the movie. • Crop – Preserves the movie aspect ratio but cuts off its edges if it is larger than the zone.
Letterbox Color	If you select Letterbox as the display mode, some space may be left in the zone outside of the movie. Use this option to select the color the player displays in that space.
Opacity	To allow background items to be visible, enter a percentage to match the opacity required. 100% is completely opaque and 1% is almost completely transparent.
Movie Size	<p>Choose the option you require:</p> <ul style="list-style-type: none"> • Use Zone Size – Display whole movie in the zone. • Show Part of Movie – Display only a 'window' view of the movie in the zone: <ul style="list-style-type: none"> ◦ Left edge offset – Amount to indent the window relative to the movie's left edge. ◦ Top edge offset – Amount to indent the window relative to the movie's top edge. ◦ Movie width – Full width of movie. ◦ Movie height – Full height of movie. <p>Note: This is only available if you set the User Interface Policy to Detailed or Expert on the UI Options page.</p>

3.4.2 HTML Properties

The following properties apply to a zone enabled as an **HTML** player:

Duration	<p>Select the duration you require:</p> <ul style="list-style-type: none"> • Play the HTML file indefinitely – The player shows the web page always. • Play HTML file for – The player shows the web page for the period you specify.
Volume	Enter the volume as a percentage of the maximum volume.

Web Page Size	<p>Choose the option you require:</p> <ul style="list-style-type: none"> • Use Zone Size – Display whole movie in the zone. • Show Part of Web Page – Display only a 'window' view of the movie in the zone: <ul style="list-style-type: none"> ◦ Left edge offset – Amount to indent the window relative to the page's left edge. ◦ Top edge offset – Amount to indent the window relative to the page's top edge. ◦ Web Page width – Full width of page. ◦ Web Page height – Full height of page. <p>Note: This is only available if you set the User Interface Policy to Detailed or Expert on the UI Options page.</p>
Opacity	To allow background items to be visible, enter a percentage to match the opacity required. 100% is completely opaque and 1% is almost completely transparent.
Zoom	Enables the Zone to zoom in on the HTML content. Smaller than 100% zooms out (to get the whole web page in a small zone for example) or larger than 100% zoom in, to fill the zone with part of a web page.
Page Background	<p>Check the HTML Page allows transparent backgrounds box to enable a transparent background (for example, to allow view of a background zone).</p> <p>Note: Enabling this prevents Adobe Flash playing correctly in the HTML zone.</p>
Automatic Sign In	<p>Check the Customise page box to enable the player to perform an automatic sign in to the web page. The player detects if the page requires sign in. Enter the username and password of the credentials required.</p> <p>This is an example web-page customisation achieved by applying external code to the HTML page. Contact Black Box for more information on customisation.</p>
Page Services	Check the Allow HTML media... box to enable access to the player page-support services for the Black Box web APIs.

3.4.3 Image Properties



The following properties apply to zones enabled as an **Image** player:

Fade In	<p>You can set the image to fade in with one of these options:</p> <ul style="list-style-type: none"> • No Fade in – Image appears immediately without fading in. • Fade In n.n seconds – Image fades in from the background. Specify the number of seconds for the fade-in to last (default is 1.5 seconds). • Cross fade from previous image – Image fades in as the previous image fades out. You must also set the previous image's Fade Out option to Cross fade to next image. If no previous image is set to cross fade, this image fades in from the background in the number of seconds you specify (default is 1.5 seconds).
Duration	<p>Select the duration you require:</p> <ul style="list-style-type: none"> • Show image indefinitely – The player shows the image always. • Show the image for – The player shows the image for the period you specify.

Fade Out	<p>You can set the image to fade out with one of these options:</p> <ul style="list-style-type: none"> • No Fade out – Image disappears immediately without fading out. • Fade out in n.n seconds – Image fades out to the background. Specify the number of seconds for the fade-out to last (default is 1.5 seconds). • Cross fade to next image in n.n seconds – Image fades out as the next image fades in. You must also set the next image's Fade In option to Cross fade from previous image. If no next image is set to cross fade, this image fades out to the background in the number of seconds you specify (default is 1.5 seconds).
Mode	<p>You can set the display mode to one of these options:</p> <ul style="list-style-type: none"> • Fit to Zone – Stretches the image to fill the zone. This will distort the image if the zone does not have the same aspect ratio as the image. • Letterbox – Shows the entire image and preserves its aspect ratio. The player displays the letterbox color in any space in the zone not covered by the image. • Crop – Preserves the image aspect ratio but cuts off its edges if it is larger than the zone.
Letterbox Color	<p>If you select Letterbox as the display mode, some space may be left in the zone outside of the image. Use this option to select the color the player displays in that space.</p>
Opacity	<p>To allow background items to be visible, enter a percentage to match the opacity required. 100% is completely opaque and 1% is almost completely transparent.</p>

3.4.4 Text Properties

The following properties apply to a zone enabled as a **Text** player:

Text Style	<p>Choose the option for how you want the text displayed:</p> <ul style="list-style-type: none"> • Show text indefinitely – Displays always. • Show text for – Displays for the period you specify. • Text moving from right to left at speed – Scrolls right-to-left at the speed you specify. • Text moving from left to right at speed – Scrolls left-to-right at the speed you specify. • Text moving from bottom to top at speed – Scrolls bottom-to-top at the speed you specify. • Text moving from top to bottom at speed – Scrolls top-to-bottom at the speed you specify. <p>For best results, set the scrolling speed in multiples of 60 (for example, 60 or 120).</p>
Font	<p>Select the font family you want and the size and style to apply.</p>
Text Color	<p>If you want text in a different color than the default, click the  button to select an alternative.</p>
Background Color	<p>If you want the background in a different color than the default, click the  button to select an alternative.</p>
Horizontal Alignment	<p>Select the text horizontal position (only enabled for stationary and vertically-scrolling text).</p>
Vertical Alignment	<p>Select the text vertical position (only enabled for stationary and horizontally-scrolling text).</p>
Margins	<p>Set values to add blank space at each margin (in pixels).</p>

White Space	<p>Choose the option for how you want extra spaces, tabs, and new lines handled (collectively termed 'whitespace'):</p> <ul style="list-style-type: none"> • Display spaces and new lines as entered – Display all whitespace as entered (default). • Display multiple spaces as single space and multiple new lines as a single new line – Ignore extra whitespace. <p>Note: This property is for text files only.</p>
Character Set	<p>If necessary, select an alternative text-encoding standard.</p> <p>Note: This property is for text files only.</p>
Opacity	<p>To allow background items to be visible, enter a percentage to match the opacity required. 100% is completely opaque and 1% is almost completely transparent.</p>



3.4.5 Soundtrack Properties

The following properties apply to the audio playlist for layouts enabled with the **Soundtrack** option:

Duration	<p>Select the duration you require:</p> <ul style="list-style-type: none"> • Play all of the audio file – The soundtrack plays continuously. • Play audio file for – The soundtrack plays for the period you specify.
Volume	<p>Enter the volume as a percentage of the maximum volume.</p>

3.4.6 Newsfeed Properties

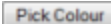
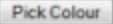
The iCC holds a newsfeed's properties in a number of locations. Access each group of properties by:

- Clicking the  button for the newsfeed on the **Media > Newsfeeds** page (see [Newsfeeds](#) for a description of those properties).
- Clicking the  button for the newsfeed in the playlist. The iCC displays some properties on the **Media** tab and some on the **Style** tab.

The newsfeed properties on the playlist **Media** tab are:

Item Type	<p>Indicates who can make changes to the setup on this page (click the Save Changes and change Item Type button to alter this).</p>
Ad Hoc Entry Label	<p>Enter a reference label for the iCC to use in the playlist Media column.</p>
Allowed Choices	<p>Select which newsfeeds the ad hoc user can choose:</p> <ul style="list-style-type: none"> • All Available Newsfeeds – User can choose from any of the newsfeeds you have added. • Only Selected Newsfeeds – User can choose only from the newsfeeds you check.
Default Newsfeed	<p>Select the default newsfeed from the drop-down list.</p>
Fields	<p>Select whether to display components of the newsfeed other than the content:</p> <ul style="list-style-type: none"> • Title – Newsfeed title. • Description – Newsfeed summary description.
Customization Status	<p>Indicates the newsfeed selection status.</p>

The newsfeed properties on the playlist **Style** tab are:

Item Selection	<p>Choose the properties that specify how you want the iCC to choose from and sequence the newsfeed articles:</p> <ul style="list-style-type: none"> • Play all Items – Play all of the articles. • Play only the first n items – Play just this number of articles. • Play all Items in groups of n items – Jump this number of articles before playing the next article. • Select items sequentially – Play articles in title order. Numbers come before letters and uppercase characters before lowercase (for example, '1' comes before 'A' which comes before 'a'). • Select items at random – Play articles at random (shuffle play).
Item Synchronization	<p>If you need to synchronise between zones, select the appropriate option for your synchronisation strategy:</p> <ul style="list-style-type: none"> • Slave - track changes to Master – The media shown in this zone is controlled from a master zone. • Master – This zone controls the media shown in a slave zone. <p>You may want to show the headline in one zone and the details in another zone: see Playlist Displays Between Zones for how to keep the displays aligned.</p>
Text Style	<p>Choose the option for how you want the text displayed:</p> <ul style="list-style-type: none"> • Show first Newsfeed item indefinitely – Displays always. • Show each Newsfeed Item for – Displays for the period you specify. • Text moving from right to left at speed – Scrolls right-to-left at the speed you specify. • Text moving from left to right at speed – Scrolls left-to-right at the speed you specify. • Text moving from bottom to top at speed – Scrolls bottom-to-top at the speed you specify. • Text moving from top to bottom at speed – Scrolls top-to-bottom at the speed you specify. <p>For best results, set the scrolling speed in multiples of 60 (for example, 60 or 120).</p>
Font	<p>Select the font family you want and the size and style to apply.</p>
Text Color	<p>If you want text in a different color than the default, click the  button to select an alternative.</p>
Background Color	<p>If you want the background in a different color than the default, click the  button to select an alternative.</p>
Horizontal Alignment	<p>Select the text horizontal position (only enabled for stationary and vertically-scrolling text).</p>
Vertical Alignment	<p>Select the text vertical position (only enabled for stationary and horizontally-scrolling text).</p>
Margins	<p>Set values to add blank space at each margin (in pixels).</p>
Opacity	<p>To allow background items to be visible, enter a percentage to match the opacity required. 100% is completely opaque and 1% is almost completely transparent..</p>

3.4.7 Clock Properties

The iCC holds a clock's properties in the playlist's **Media** and **Style** tabs.

The clock properties on the **Media** tab are:

Display Content	Select the overall date and time format.
Day of Week Format	Select the positioning and format of the day.
Date Format	Select the sequence of date components.
Year Format	Select a 2 or 4 digit year display.
Month Format	Select a month name or number display.
Time Format	Select whether to use the time format for the locale (defined on the player Setup > Player > International page) or the one you specify here.
Hour Format	Select whether to use 12 hour or 24 hour clock.
Time Zone	Select the required time zone from the drop-down list.

The clock properties on the **Style** tab are:

Duration	Select the duration you require: <ul style="list-style-type: none"> • Show Clock indefinitely – The player displays the clock all the time. • Show Clock for – The player displays the clock for the period you specify
Font	Select the font family you want and the size and style to apply.
Text Color	If you want text in a different color than the default, click the <input type="button" value="Pick Colour"/> button to select an alternative.
Background Color	If you want the background in a different color than the default, click the <input type="button" value="Pick Colour"/> button to select an alternative.
Horizontal Alignment	Select the clock's horizontal position.
Vertical Alignment	Select the clock's vertical position.
Margins	Set values to add blank space at each margin (in pixels).
Opacity	To allow background items to be visible, enter a percentage to match the opacity required. 100% is completely opaque and 1% is almost completely transparent.

3.4.8 PDF File Properties

With one addition, PDF files have the same properties as images (see [Image Properties](#) for details).

The addition is an option to select the pages you want the player to display. To select the pages you want displayed, take these steps:

1. Add the PDF file to the playlist.
2. Click the PDF file's  button.
3. Open the **Media** tab.
4. Enter the required setting in the **PDF Pages to be shown** field.

Depending on the setting, the player will display pages in sequence, repeatedly, in groups, and in a different order than they appear in the file. If you have more than one PDF file in a folder play, the settings apply to all those PDF files. This table contains example settings to illustrate the flexibility available to you (note the use of commas and hyphens to delineate page selections):

Example Setting	Pages Displayed
1-	All pages from page 1 to the end. This is the default setting.
10-	All pages from page 10 to the end.
15	Page 15.
1,5,7	Pages 1, 5, and 7.
1-3,6-9	Pages 1, 2, 3 and 6, 7, 8, 9.
3-5,3-5	Pages 3, 4, 5 and 3, 4, 5.
1-5,7-3	Pages 1, 2, 3, 4, 5 and 7, 6, 5, 4, 3.
7-2	Pages 7, 6, 5, 4, 3, 2.
-1	All pages in reverse order (page 1 last).

3.4.9 Folder Play Properties

The iCC displays folder play properties on the **Media** tab. Besides the folder play properties, this contains properties for all of the player types enabled for the zone.

You can customie how long the player plays movie, HTML, and SWF (Adobe Flash) files. Specify the length of play by adding the string `-duration-x` just before the file extension (where `x` is the duration in seconds). For example, the player would play the file `logo-intro-duration-17.swf` for 17 seconds. This customisation has no effect if you add the file into a playlist individually.

The following specific properties apply to folders in a playlist:

Media	Check the box to enable the relevant media player for the zone.
Management	Check the Management box to enable ad hoc management of this folder. If the ad hoc user places files in the indicated ad hoc media folder, the player plays them instead of those in the current folder. If there are no suitable files in the ad hoc media folder, the player plays the files in the current folder.

<p>Item Selection</p>	<p>Choose the properties that specify how you want the player to choose from and sequence the files:</p> <ul style="list-style-type: none"> • Play all Items – Play all of the files. • Play only the first <i>n</i> items – Play just this number of files. • Play all Items in groups of <i>n</i> items – Jump this number of files before playing the next file. • Select items sequentially – Play files in file name order. Numbers come before letters and uppercase characters before lowercase (for example, '1' comes before 'A' which comes before 'a'). • Select items at random – Play files at random (shuffle play). <p>If you choose a property other than Play all items, the player plays files in the sequence you have chosen. To do that, it records which files it played and when (in other words, retains the current state of play). Folders in different playlists run through their sequence independently.</p> <p>However, you may want to ensure that the player synchronises the order of folder play between different playlists. That is, have the player restart each folder play sequence from the beginning. To do so, add a Folder Play Reset item to the playlist at the point where you want that to happen. Select Folder Play Reset from the options on the Specials tab. Combine folder play reset with the rendezvous point and advance to features to create the synchronised play you require.</p>
<p>Item Synchronisation</p>	<p>If you need to synchronise between zones, select the appropriate option for your synchronisation strategy:</p> <ul style="list-style-type: none"> • Slave - track changes to Master – The media shown in this zone is controlled from a master zone. • Master – This zone controls the media shown in a slave zone. <p>See Playlist Displays Between Zones for more details.</p>

You can combine folder play properties to create complex sequences to meet specific requirements. For example, you may wish to set up a playlist that showed a sequence of music videos in a fixed order, and between each video show two randomly selected advertisements followed by a corporate logo for a fixed time.



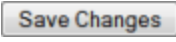
To create this sequence of folders, follow these steps:

1. Create three folders on the iCC as follows:
 - Music
 - Advertisements
 - Logo
2. Upload videos into the **Music** folder. Rename the video files as necessary to create the play order you want (for example, 'A Summer in the city.mpg', 'B Be my girl.mpg', and so on).
3. Upload the advertisements into the **Advertisements** folder.
4. Upload the logo into the **Logo** folder.
5. Create a playlist as follows:
 - Add the **Music** folder to the playlist (set to play all items sequentially).
 - Add the **Advertisements** folder to the playlist (set to play only the first two items randomly).
 - Add the logo image as an individual file (set duration 10 seconds).

3.4.10 Play Criteria Properties

All media items have the properties present on the **Play Criteria** tab.

The following properties apply to any zone:

Time Validity	<p>To control when the player shows an item in a playlist, check the relevant boxes and set the times you require:</p> <ul style="list-style-type: none"> • Date Range – Select the dates during which you want these settings to apply (for a single day, set both dates the same). • Days – Select the days you want the item to appear. • Time Period – Select the period during which you want the item to appear. <p>Examples when you might choose to use this property:</p> <ul style="list-style-type: none"> • To play adverts only on certain days of the week. • To show a traffic report only after 5.00 pm. <p>Points to note:</p> <ul style="list-style-type: none"> • Outside the times you specify, the player skips the item when its turn comes in the playlist. • The player continues to play the item even if the valid time expires before the item ends.
Conditional Play	<p>This is only enabled when you have added player local information to the player (see Player Local Information for details).</p> <p>If it is enabled, you have two options:</p> <ul style="list-style-type: none"> • Play Always – Default. The player always plays the item. • Play if Player Local Information Item – The player only plays the item if certain conditions are met. <p>If you select Play if Player Local Information Item, complete these steps:</p> <ol style="list-style-type: none"> 1. Select the name of the relevant player local information from the first drop-down list. 2. Select the test to apply from the second drop-down list. 3. Enter the value to test for in the final field (add further values by clicking the  button or delete values by clicking the  button). 4. Click the  button.

3.4.11 Advanced Properties

All media items have the properties present on the **Advanced** tab.

Other than the **Media Audit** property, the iCC only displays the **Advanced** properties if:

- You have set the **User Interface Policy** to **Detailed** or **Expert** on the **UI Options** page.
- You have previously enabled the property.


The following properties apply to any zone:

<p>Position and Size</p>	<p>To override the position and size of a zone, select the Use custom position and size radio button and set the values you require:</p> <ul style="list-style-type: none"> • Top edge offset – Amount to move the zone relative to the screen's top edge. • Left edge offset – Amount to move the zone relative to the screen's left edge • Width – Width for the zone. • Height – Height for the zone. <p>This property is not applicable to soundtrack items.</p>
<p>Media Audit</p>	<p>To change whether the player collects media audit data to send in its reports, check the relevant radio button:</p> <ul style="list-style-type: none"> • Inherit the zone's media audit setting – The player collects or does not collect the data depending on the setting in the zone's properties. • Disable media auditing – Disables data collection even if it is enabled in the zone's properties. • Enable media auditing – Enables data collection even if it is not enabled in the zone's properties.

3.4.12 Ad Hoc Properties

The iCC displays ad hoc properties on the **Media** tab.

You can apply the following properties to directly entered text, newsfeeds, radio, TV, and tables that you have set to be customizable or ad hoc:

<p>Item Type</p>	<p>Click the  button to save any existing changes to the item and to open the page to select the item's type:</p> <ul style="list-style-type: none"> • Content of this item is controlled by the Layout Designer • Content of this item can be customised using this Layout's Ad hoc Entry Page • Use an existing Ad hoc Item • Create and use a new Ad hoc Item
<p>Ad Hoc Entry Label</p>	<p>The label used to refer to this item on the layout's Ad hoc Page.</p>
<p>Ad Hoc Item Name</p>	<p>Unique identifier for the ad hoc Item on the iCC. (Only for ad hoc items that you cannot customize.)</p>

Properties dependent on media type	<p>The iCC displays some properties that are dependent on the type of ad hoc item: •</p> <p>Directly entered text:</p> <ul style="list-style-type: none"> ○ Ad Hoc Input – Options to format the text and specify allowable ad hoc user input. ○ Default Text – Enter default text to display. ○ Customisation Scope – Either Local (customised text displays only on the ad hoc user's local iCC) or Remote (customised text displays on players that are subscribers to the ad hoc user's iCC). <ul style="list-style-type: none"> • Newsfeed: <ul style="list-style-type: none"> ○ Allowed Choices – Whether you allow the ad hoc user to select all or a subset of the available newsfeeds on the player. ○ Default Newsfeed – Select the default newsfeed to display. ○ Fields – Whether to display newsfeed with or without title or description. • TV and radio: <ul style="list-style-type: none"> ○ Allowed Choices – Whether you allow the ad hoc user to select all or a subset of the available stations on the player. ○ Default Station – Select the default station to play. ○ Subtitles – Whether or not to display subtitles (if available). • Tables: <ul style="list-style-type: none"> ○ Table – Name link to the Ad Hoc tab of the Media > Tables page for configuring the table.
Customisation Status	Indicates if this item is currently displaying its default value or if it has been overridden by an ad hoc user.
Used By Layouts	Lists the layouts that use this ad hoc item. (Only for ad hoc items that you cannot customise.)

3.5 Playlist Commands

You can use the following playlist features to alter the display sequence and appearance:

- [Rendezvous Points and the Advance To Command](#)
- [Change Layout Command](#)

3.5.1 Rendezvous Points and the Advance To Command

Each playlist displays a sequence of items that operate independently. Even if two playlists contain items of exactly equal lengths, you cannot rely on their display being completely synchronized. Instead, if you want to achieve synchronization between playlists, you need to use a combination of **Advance To** commands and **Rendezvous Points**.


An **Advance To** command in a playlist causes the player to start displaying an item in another playlist. You specify the item to display by placing a matching rendezvous point at an appropriate place in the other playlist. If the receiving zone's playlist contains the rendezvous point, the player immediately starts playing the playlist item after the rendezvous point.

To link the two together, the **Advance To** command refers to the rendezvous point by name. You can select whether the player passes the **Advance To** command to a single zone or to all zones in the current layout. Therefore, by




placing the same rendezvous point in several zones, you can trigger actions in all of them with a single **Advance To** command.


You can also use the **Advance To** mechanism to initiate player actions as a result of user interactions, such as motion sensor, pressure mat, or touch screen events (see [Using Interactivity](#) for more details).

To add a rendezvous point to a playlist, follow these steps:

1. Click the **Specials** tab.
2. In the **Rendezvous Point** field, enter a name. You can enter any text for the name (but not starting with the string `auto_`) and names are not case-sensitive.
3. Click the  button.
4. Make sure the rendezvous point appears immediately before the item you want the player to synchronize with the other playlist.
5. If required, repeat to create additional rendezvous points in other playlists.
6. Add the **Advance To** command.

To add an **Advance To** command to a playlist, follow these steps:

1. Click the **Specials** tab.
2. From the **Advance To Rendezvous Point** drop-down list, select the relevant rendezvous point name.
3. Click the  button.
4. Make sure the **Advance To** command appears immediately before the item you want the player to synchronize with the other playlist.
5. If you want the **Advance To** command to target only a specific zone:
 - a. Click the  button.
 - b. Select the zone from the drop-down list.
 - c. Click the  button.


Note: If you want to change the **Advance To** command to point to a different rendezvous point or to different zones, click the  button and alter your selection.


3.5.2 Change Layout Command

Unlike the **Advance To** command, the **Change Layout** command launches a different screen layout with its own arrangement of zones.

If you want to implement a simple change of the layout, then the **Advance To** command brings a quick result. However, it is difficult to implement a complex change using the **Advance To** command. The **Change Layout** command displays a different layout entirely, but it does take longer to refresh the screen.

To add a **Change Layout** command to a playlist, follow these steps:

1. Click the **Specials** tab.
2. From the **Change Layout** drop-down list, select the new layout you want to use.
3. Click the  button.
4. Make sure the **Change Layout** command appears in the right place in the playlist.

Note: If you want to change the **Change Layout** command to point to a different layout, click the  button and alter your selection.

3.6 Colors

Use the **Media > Colors** page to set the colors the iCC applies to fonts, backgrounds, and other items.

When you create a new layout or a new table, the iCC automatically creates new color items:

- For layouts, the color items are for the text foreground, the text background, and the letterbox background.
- For tables, the color items are for the text foreground and text background.




The iCC names color items in the format *Layout name: Color item*. For example, if you create a new layout named 'Holidays', the iCC creates the following color items for it:

- Text foreground – Holidays: Text
- Text background – Holidays: Background
- Letterbox – Holidays: Letterbox



You can modify the properties for these color items as needed.

You define a **Color Item** by a unique name, a colour value, and an opacity setting. If you change the colour value or opacity setting, the iCC updates all the items that use the color. Click the button to apply your changes. You can define more than one color item with the same color values.

Click the tab for the option you require:

- **Colors** – Listing the color items and their characteristics. Click the  button to delete a color (you cannot delete it if it is in use). Click the  button to:
 - Modify a color – The settings are as described for the **Add Color** tab. Click the  button to enable your modifications.
 - Access the **Used By** tab – Lists which layouts are using the color.
- **Add Color** – Adding a new color manually.

To add a new color, complete the following details and click the  button:

Name	Enter a unique and meaningful name for the color. This does not have to be in <i>Layout name: Color item</i> format followed by the iCC.
Color Value	Specify the color using either separate RGB values or a single hexadecimal value. On a Windows PC, you can find the RGB values for a color you want to use by following these steps: <ol style="list-style-type: none"> 1. Click Start and select All Programs > Accessories > Paint. 2. Open a file containing an image that uses the target color. 3. Use the Color Picker tool  to select a pixel of the target color. 4. Click the Edit Colors tool . 5. Read off the RGB values at the bottom right of the Edit Colors display.
Opacity	To allow background items to be visible, enter a percentage to match the opacity required. 100% is completely opaque and 1% is almost completely transparent..

3.7 Fonts

The iCC offers a collection of standard fonts that are suitable for most purposes.

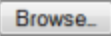


To view the installed fonts:

1. On the menu bar, click **Media** and **Fonts**.
2. Click the **Font Families** tab.

The **Font Families** tab shows details of all the fonts available on the iCC (including those you install). The **Font Files** tab lists the files for any fonts you install.

If you want to use a font that is not available on the iCC, you must add your own font files. The iCC supports TrueType® (TTF or TTC) and OpenType® (OTF) format font files. The new font is published in a channel and picked up by every subscriber. However, a subscriber has to reboot before being able to display the font.

To add a font file, follow these steps:

1. On the menu bar, select **Media** and **Fonts**.
2. Click the **Add Font File** tab.
3. Click the  button and navigate to the font file you wish to add.
4. Click the  button.
5. Click the  button.

Part IV

Enhancing Your
Displays

Part 4: Enhancing Your Displays

You can enhance your digital sign display in various ways:

[Playlist Displays Between Zones](#)

[Using Interactivity](#)

[Using the RS-232 Interface Port](#)

[Displaying Part of a Movie or Web Page](#)

[Changing the Screen Background](#)

4.1 Playlist Displays Between Zones

You can synchronize the display between playlists in useful and sophisticated ways using rendezvous points and **Advance To** commands.

Examples include:

- Displaying video or images in one zone and related text captions in another zone (for a method to achieve this, see [Automatic Captioning](#)).
- Displaying a selection of videos or images in response to ad hoc user input (for a method to achieve this, see [Displaying Video-On-Demand Using a Sub-Playlist](#)).

You can achieve further complex and powerful results with other of the rendezvous point and **Advance To** command mechanisms:

- An **Advance To** command executed in any currently playing playlist (including in the same playlist).
- An **Advance To** command delivered over the player's Ethernet port in the form of an XML message posted to the HTML TCP port.
- An **Advance To** command in a schedule entry or in an ad hoc page.
- A change in binary input lines on the RS-232 port initiating an **Advance To** command.
- An event on an attached touch-sensitive screen initiating an **Advance To** command.



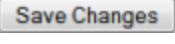
4.1.1 Automatic Captioning

To implement synchronisation between zones, you need to designate one playlist as the **Master Playlist** and one or more other playlists as **Slave Playlists**. You add rendezvous points to each slave playlist and the identically named **Advance To** command in the master playlist. When the master playlist reaches the **Advance To** command, the player forces the slave playlists to start playing the first item after the rendezvous point.



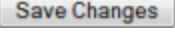
To have the player perform automatic captioning, you have to use files with corresponding file names. For example, to display captioning for a video file called `Marketing_Highlights_01.mpg`, you would need to create a file called `Marketing_Highlights_01.txt` containing the text captions.

To set up automatic captioning between the zone playing the video and the zone playing the captions, first set up the video zone:

1. Upload all the videos into one folder on the iCC.
2. Open the video zone's playlist page.
3. Click the **Files & Folders** tab and navigate to the video folder location.

4. Click the folder's  button.
5. Click the **Playlist** tab.
6. Click the folder's  button.
7. From the Item **Synchronisation** drop-down list, select **Master**.
8. In **Movie** properties, select the **Duration** option **Play the Movie File Indefinitely**.
9. Click the  button.

Second, set up the captioning zone:

1. Upload all of the text files into one folder on the iCC. (This can be the same folder that contains the videos.)
2. Open the captioning zone's playlist page.
3. Click the **Files & Folders** tab and navigate to the text folder location.
4. Click the folder's  button.
5. Click the **Playlist** tab.
6. Click the folder's  button.
7. From the **Item Synchronisation** drop-down list, select **Slave - Track Changes to Master**.
8. In **Text** properties, select the **Text Style** option to **Show Text File Indefinitely**.
9. Click the  button.

4.1.2 Displaying Video-On-Demand Using a Sub-Playlist

You can use the [Ad hoc mechanism](#) to configure the player to show videos on-demand (in response to a button-click) by using a series of **Advance To** commands. The same mechanism can also be used to set up images or any other media type to be displayed on-demand. You do this using sub-playlists.

You can create a loop, or sub-playlist, by inserting both a rendezvous point at the beginning of a sequence of items and an **Advance To** command at the end of the sequence in the same playlist. This means that the player displays the items in the sequence in a continuous loop until another **Advance To** command breaks out of the loop.

To illustrate that mechanism, here is a sequence of items in a playlist:

Rendezvous Point: **Start**

- Default Movie item
- Advance To: **Start**

Rendezvous Point: **Option1**

- Option1 Movie Item
- Advance To: **Start**



Rendezvous Point: **Option2**

- Option2 Movie item
- Advance To: **Start**




That playlist sequence might run like this:

1. The player plays **Default Movie item** in a continuous loop created by the **Advance To** command and rendezvous point **Start**.
2. An **Advance To** command **Option1** arrives from an ad hoc page.
3. The player starts playing the item after rendezvous point **Option1** and this is **Option1 Movie Item**.
4. At the end of **Option1 Movie item**, the player processes the **Advance To** command **Start**.
5. The player therefore returns to rendezvous point **Start** and plays the **Default Movie Item** again in a continuous loop.

To create a sub-playlist loop, follow these steps:

1. Click on a zone to edit its playlist.
2. Click on the **Specials** tab.
3. Type the name of the loop into the **Rendezvous Point** text box (use as descriptive a name as possible).
4. Click the  button to add the rendezvous point to the playlist.
5. Add the items that must appear in the sub-playlist in the usual manner. If you want a sub-playlist to play just once, insert an image at the end with an indefinite duration.
6. In the **Specials** tab, select the rendezvous point by name from the **Advance To Rendezvous Point** list and click the  button.
7. Make the layout live by adding to a schedule and clicking the button.

You are now able to switch between playlists by adding **Advance To** commands to an ad hoc page:

1. Select **Media > Manage Ad hoc items**, and click the **Add Item** tab.
2. Select the **Advance To** type, enter a name, and click the  button. Repeat to add an **Advance To** command for each rendezvous point.
3. Select **Media > Design Pages > Manage Ad hoc pages**, and click the **Add Pages** tab.
4. Create a new page with a name such as 'Movie control'.
5. Click the  button and add the ad hoc items for each rendezvous point to the ad hoc page.
6. In the **Properties** tab, select the users who are allowed to call the commands.
7. Click the  button.

4.2 Using Interactivity

You can configure the player to respond to inputs from an external source. External inputs are known as **Events** and they may be caused by:

- Someone pressing or releasing a defined area on a USB touch screen.
- Someone passing a detector or stepping on a pressure mat that generates a general purpose input/output (GPIO) signal (received through the player unit's RS-232 port or adapter).
- Someone pressing a button on a remote keypad (infrared controller).

The way you configure the player to respond may include:

- Executing a **Change Layout** command.
- Executing an **Advance To** command.

Those responses are known as **Actions** and you can configure the player to take them immediately or after a timeout. Together, the combination of an event and an action is known as an **Interaction**.

For all events (or timeouts), you can have the player take one of these actions:

- Change to a specified layout.
- Advance to a rendezvous point.
- Ignore the event for this zone or layout and pass it to another zone or layout.

Additionally, for touch and GPIO events, you can have the player take one of these actions:

- Touch and GPIO events – Take no action.
- Touch event – Pass to a web page. If the zone supports HTML, the player can pass a touch event to the currently showing web page. If there is no web page, the player takes no action.

Playlist and Layout Interaction:

To provide detailed control, you can specify behaviour that differs at the playlist and at the layout level:

- Playlist:
 - Process the interaction if someone touches the currently playing item.
 - Keep the interaction process active awaiting other events. You can implement complex behaviour by defining multiple interaction actions in the same playlist.
- Layout:
 - Process the interaction if there is no playlist action (that is, the layout action is a default).
 - Process the interaction if someone touches anywhere on the screen.

You will find it easier to review layout interaction behaviour because the ICC displays all layout components at once.

To configure touch actions for a playlist, you must either:

- Include an **On Touch Advance To** command in the playlist.
- Include an **On Touch Change Layout** command in the playlist.
- Play an HTML page in the zone.

To add items, click on the playlist's **Specials** tab and select those required. You can include more than one **On Touch Advance To** or **On Touch Change Layout** commands in the playlist. Each **On Touch** command overrides the previous one. This allows you to have the player change its response to touch events throughout the playlist.

If you enable touch for a zone that is displaying an HTML page, the player passes touch events to the HTML player for handling. You can use this to allow a user to navigate through web pages using links embedded in the displayed HTML page.

Note: To use HTML navigation, either omit **On Touch** playlist items or use **On Touch Screen Event Perform No Action** (found on the playlist's **Specials** tab) to deactivate existing **On Touch** items. Otherwise, **On Touch**

items will take precedence over the HTML player. Then, the player only passes **Left Mouse Button Up** and **Down** events to the HTML player.

To configure touch actions for a layout, on the menu bar click **Layouts** and select the layout you want to configure. Click the **Interaction** tab and select the touch screen actions in response to a touch screen event. The settings include:

- Whether a touch response is required for this layout at the layout level or not.
- Whether the touch response is a **Change Layout** or **Advance To** command.
- Whether it is the touch or release operation that causes the action.
- The period after which the layout will revert to another layout in the absence of a touch event.

Interaction Processing:

The way the player processes an event depends upon:

- The source (touch screen, GPIO, or remote keypad).
- The currently active interactions.

The player processes interactions for touch screen events as follows:

1. Creates a list of zones showing items directly underneath the touched screen location.
2. Processes that list in depth order, starting with the top zone.
3. If a zone has an active touch action, and that is not to pass the event to another zone, the player performs the specified action and stops processing.
4. If no zone has an active touch action, the player performs the touch action defined for the layout.

The player processes interactions for RS-232 input events as follows:

1. Creates a list of all zones showing items coincident to the RS-232 input.
2. Processes that list in depth order, starting with the top zone.
3. If a zone has an active RS-232 input action, and that is not to pass the event to another zone, the player performs the specified action and stops processing.
4. If no zone has an active RS-232 input action, the player performs the RS-232 action defined for the layout.

The player processes a remote keypad button event as follows:

1. Creates a list of all zones showing items coincident to the remote keypad button event.
2. Processes that list in depth order, starting with the top zone.
3. If a zone has an active remote keypad button action, and that is not to pass the event to another zone, the player performs the specified action and stops processing.
4. If no zone has an active remote keypad button action, the player performs the remote keypad action defined for the layout.

Passing Touch Events to HTML Pages:

If the current zone supports HTML, the player can pass touch events directly to the currently showing HTML page. Using this technique, you can build rich interactive applications using stored HTML content. However, you cannot create interactions with external web sites.

When developing such HTML applications, you will likely require a large number of files. In order for the ICC to keep track of these files during channel publishing and layout package creation, follow these rules:

- Initiate the application from a single HTML file (you can redirect from here to other files as required). Add that file to the playlist.
- Place all additional files in a single subdirectory named `[pagename]_files`, where `[pagename]` is the name of the initiating HTML file (without its extension). Locate that subdirectory in the directory containing the initiating HTML file.

4.2.1 Designing Interactive Layouts

You can design layouts that respond to user input in various ways:

- Send an **Advance To** command to play a specific item or start a playlist.
- Change the current layout.
- Change the size and position of a zone.
- Display hidden zones.
- Send a signal to another device through the RS-232 port or adapter.

You might find the following general guidance helpful when developing interactive layouts.

Develop a Storyboard:

Advance planning is particularly important when designing a layout that smoothly offers choices and options to users. A storyboard is a plan based on a series of sketches of individual scenes. Storyboarding is very effective technique when designing interaction sequences. You can create a storyboard with sketches of screen layouts or simply with a flowchart. The important point is to detail all possible outcomes at each stage of interaction.

Provide Material for Optional Actions:

You must make sure that you have collected and uploaded all the media files you require for any possible scenarios controlled by interaction events. Before you start implementing your interaction events, create playlists for zones that include all the necessary **Advance To** commands and rendezvous points.

Trade-Offs Between Display Change Methods:

You can change the display in response to an interaction either by changing the size and show/hide properties of a zone or by using a **Change Layout** command. Each method has advantages and disadvantages:

Method	Advantages	Disadvantages
Change zone size and show/hide properties	Very fast transition	Continues using existing media players
Use Change Layout command	Resets all media players	Slower, visible transition

4.2.2 General Purpose Input/Output

The player can respond to changes in voltages generated by a GPIO device such as a motion sensor or a pressure mat. The player receives those inputs through its RS-232 port or adapter. It can also send output signals. For more details see the [RS-232 Technical Reference](#).

Control-Line Inputs:

The player RS-232 interface has four input lines that can receive binary events such as contact closure or signals from other devices. The available lines are:

- Clear To Send (CTS).
- Data Carrier Detect (DCD).
- Data Set Ready (DSR).
- Ring Indicator (RI).

The lines do not affect the operation of the RS-232 **Send** and **Receive** strings.

Include an RS-232 input item in a playlist and configure it to issue an **Advance To** or **Change Layout** command. Use those commands to change the media played by the player. This is triggered when the player detects a line transition generated by a user action.

Control Line Outputs:

The player can control the output state of the RS-232 DTR and RTS lines. Create RS-232 output items to change one or both RS-232 outputs and optionally transmit a string of characters. Give the RS-232 output items unique names to clarify their purpose.

4.2.3 Touch Screens

The player includes support for touch screen input from users. These features allow you to configure the player to respond to those user inputs (for example, by executing **Advance To** or **Change Layout** commands). Connect an overlay touch-screen panel to the player through its USB port.

4.2.4 Click On Touch

You can configure the player to play an audio file when someone touches an interactive screen.

To play an audio file, click the layout's **Interaction** tab and enable **Click on Touch**. The player does not play a sound when the setting is **No Click on Touch**.

Specify these items:

- **Volume** – Express volume as a percentage of the **Master Volume** level. (You can specify the **Master Volume** level on the **Audio** page in the **Setup** menu.) If this entry is blank, the player uses 75% of the **Master Volume** level.
- **Actions** – Check the audio file's **Use sound** button. If necessary, navigate to the location of the file using the folder display.

4.3 Using the RS-232 Interface Port

If you require the player to control equipment through an RS-232 interface, use its built-in RS-232 port or the USB to RS-232 adapter, whichever is appropriate for the player model.

Considerations for sending RS-232 strings at specific events or playlist positions:

- Define the strings by expressing their byte values as separated hexadecimal pairs (for example, 3A 3B 3C 0D 0A).

- Create the strings in accordance with the needs of the attached device.
- The state of the RS-232 control lines does not affect transmission of RS-232 strings.

Considerations for receiving RS-232 strings:

- The player reports the most recently received string in the **Items** tab on its **Setup > Player > RS-232 Outputs** page.
- The state of the RS-232 control lines does not affect reception of RS-232 strings.

4.4 Displaying Part of a Movie or Web Page

You can configure a movie or HTML item in a playlist to display only a part of its output.

This is useful if you want to:

- Show a specific area of a movie or web page without resizing it.
- Crop a movie designed for a 16:9 (widescreen) format to a 4:3 (standard) format. This avoids resizing the zone, which would alter the aspect ratio and distort the image.


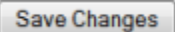
To display only part of a movie item, modify the values for its **Movie Size** property (see [Movie Properties](#) for details). To display only part of an HTML item, modify the values for its **Web Page Size** property (see [HTML Properties](#) for details).

4.5 Changing the Screen Background

When switching between layouts, you can have the player display a colored background or image. It can also display this background in any areas of a layout that are not covered by zones.

Note: Setting the color to black is not recommended because it makes fault-finding more difficult.

To change the screen background, follow these steps:

1. On the menu bar, click **Media** and **Screen Background**.
2. Select either **Solid color** or **Image**:
 - If you select **Solid Color**, then click the  button to select a color.
 - If you select **Image**, then browse the file system for an image. If you want a splash screen effect, set the **Layout Activation** option to **Activate new Layout after** and select the delay from the drop-down list.
3. Click the  button.

Part V

Ad Hoc Content

Part 5: Ad Hoc Content

The **Ad hoc** feature allows you to delegate limited control of content to staff local to the display. This is particularly useful where several players share the same channel but also need some customised content. The people at each location can make those changes with a quick and easy, browser-based operation.

Local control of content is important in a wide range of application areas:

- In an office, a secretary or office administrator can display welcome messages for visitors or display staff information.
- On a university campus with multiple displays, different information may need to be delivered to different faculties about upcoming events, room allocations, and so on.
- In the retail sector, store information and special offer details will vary from branch to branch.
- In health care, patient information and other details will vary in different hospitals or GP practices in the same health authority area.

As the content designer, you delimit how much access is allowed at each site. You retain control of the key display elements to maintain a consistent appearance and uniform identity for your organisation.

The ad hoc environment consists of these components:

- **Ad hoc user** – The person, usually at the display location, who has limited access and can update or change only the content items you specify.
- **Ad hoc entry** – Is where ad hoc users log in through their browser, access pages that are available to them, and make their changes.
- **Ad hoc media folders** – Contain all the media files that the ad hoc user can use when updating or changing content.

You can delegate local responsibility for several different types of content:

- Text
- Tables
- Newsfeeds
- TV channels, radio stations, and streaming TV
- Folders

You can allow ad hoc users to update customisable content you have added to a playlist or update content they create in the layouts you have allowed them to access.

As well as giving such access to content, you can also allow ad hoc users to:

- Change complete layouts.
- Change display schedules.
- Perform schedule overrides.
- Synchronise content.

You can also delegate control of a channel to an ad hoc user. In this case, you designate certain items as **Ad hoc from Center**. This allows the ad hoc user to update those items on the iCC and in turn that updates each subscribing player.

The ad hoc system is secure: no ad hoc user can make changes unless you specify the customisable item and give the user permission to access it.

5.1 Enhanced Ad Hoc Access Control

Generating ad hoc content is quick and easy. As the content designer, you can build-in ad hoc content during implementation of your design. Alternatively, you can work with an existing design and allocate ad hoc content as required. Whichever route you choose, the overall time taken for generating display content is minimised. Ad hoc users can be working with the system productively with minimum delay.

Automatic Ad Hoc:

By default, the iCC enables automatic ad hoc for all newly-created layouts. You can control whether it is disabled or enabled with the **Layout Ad hoc Page** setting on the layout's **Layout Properties** tab.

Automatic ad hoc makes creating content easier, as it eliminates many of the configuration and setup tasks. The layout automatically creates a single ad hoc page, which contains all ad hoc playlist Items in the layout. As you add or remove ad hoc items, the iCC automatically adds or removes them from the layout ad hoc page.

You have full control over ad hoc pages, including specifying which users are or are not authorized to make changes. However, you cannot add or remove existing ad hoc Items or reference ad hoc items in other layouts. Therefore, automatic ad hoc is unsuitable if you want multiple layouts to use the same ad hoc item.

Manual Ad Hoc:




Manual ad hoc gives you complete responsibility for creating and managing all ad hoc pages and the items within them. You need to add ad hoc items to one or more playlists and one or more ad hoc pages, as required.

You must create an ad hoc item before you can add it to a playlist. Similarly, you must create an ad hoc page and add one or more ad hoc items to it before it can be used by ad hoc users.





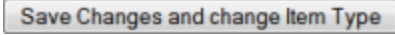





In manual ad hoc mode, you can create ad hoc pages that contain ad hoc items added to multiple layout playlists. For example, this is useful if you want to show the same ad hoc welcome message on multiple layouts.

Creating Ad Hoc Content as You Build Your Design:

Create your layout in the normal way:

1. On the menu bar, click **Layouts** and **Manage Layouts**.
2. Click the **Add Layout** tab.
3. Enter a name for the layout and click the  button.
4. Locate your new layout on the **Layouts** page and click its  button.
5. Create the zones you require and enable them to play the ad hoc media items you want to add.
6. Click the  button and select **Save all changes and edit Playlist** from the drop-down list.

You can now add ad hoc items. The way in which you do this depends on the type of ad hoc item you want to add:

<p>Text</p>	<ol style="list-style-type: none"> 1. On the playlist's page, click the Specials tab and enter the text you wish to be displayed. 2. Check the Content of this item can be customized using this Layout's Ad hoc Entry Page box. 3. Click the  button. 4. Click the  button and set the item's Customization Scope: <ul style="list-style-type: none"> ◦ Local – Only for the individual subscriber. ◦ Remote – For all the subscribers to this channel.
<p>Tables</p>	<p>You should have already created and formatted the ad hoc table you require.</p> <ol style="list-style-type: none"> 1. On the playlist's page, click the Specials tab. 2. From the Table Item drop-down list, select the table you want. 3. Click the  button. 4. Click the table's  button. 5. Click the  button. 6. Check the Use an existing Ad Hoc Item button and select the table from the drop-down list. 7. Click the  button.
<p>Newsfeeds</p>	<p>You should have already configured the newsfeed you require.</p> <ol style="list-style-type: none"> 1. On the playlist's page, click the Specials tab. 2. From the Newsfeed drop-down list, select the newsfeed you want. 3. Check the Content of this item can be customized using this Layout's Ad hoc Entry Page box. 4. Click the  button. 5. If you want to further configure the item's ad hoc options, click the  button.
<p>TV and Radio Stations</p>	<p>You should have already added the TV and radio stations. For radio, you must enable the layout's soundtrack.</p> <ol style="list-style-type: none"> 1. On the playlist's page, click the Specials tab. 2. Take the action appropriate to the type of station you want:: <ul style="list-style-type: none"> ◦ TV – From the Live Video drop-down list, select the station you want. ◦ Radio – From the Live Radio drop-down list, select the station you want. 3. Check the Content of this item can be customised using this Layout's Ad hoc Entry Page box. 4. Click the  button. 5. If you want to further configure the item's ad hoc options, click the  button.






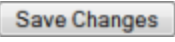
Converting an Existing Design to Ad hoc Content:

You can create ad hoc content after you have completed a design. To create ad hoc content in an existing design, the process is the same as in each case above. You need to disable **Automatic Ad Hoc** in the **Layout Properties** tab.

Creating Ad Hoc Pages:

When ad hoc users log on, their **Home** page displays the **Ad Hoc Pages** you create. Ad hoc users cannot access any other player user interface pages. You design the ad hoc pages to display only the text fields ad hoc users can change or the commands they are allowed to issue.

To create an ad hoc page:

1. On the menu bar, click **Media** and select **Design Pages > Manage Ad hoc Pages**.
2. Click the **Add Page** tab
3. Enter a name for the page. Use a name that will be easily recognizable by your ad hoc users.
4. Click the  button.
5. Click the page's  button.
6. Select the item you require from the drop-down list and click the  button.
7. To add more ad hoc items, click the **Add Item** tab again. Rearrange the order of items using the  and  buttons.
8. Click the **Properties** tab. Add any instructive text in the **User Guidance Message** field.
9. Click the **Permissions** tab. Check that the enabled roles are those you want to have access to ad hoc content. Make any necessary changes.
10. Click the  button.

5.2 Remote Keypad Control

For convenience and ease of use, ad hoc users can control their local player using an infrared remote keypad. This enables them to change content at the touch of a button instead of having to access the player by their browser.

The remote keypad has the following controls:


- **Volume** (up and down) – Adjusts the master volume level in 10% divisions.
- **Station** (up and down) – Controls the ad hoc TV and radio stations played. The user can scroll up and down the station list.
- **Programmable buttons** (A, B, C, and D) – Each can be programmed to correspond to a specific rendezvous point or layout.

When the user presses a button, the player displays a status message at the top right of the screen.

To allow ad hoc users to control the display with the remote keypad, take these steps:

1. On the menu bar, click **Layouts** and select the one the remote keypad will control.
2. Click the **Interaction** tab.
3. For each button, check the action required:
 - **No default Button Action** – Check for the player to take no action when the user presses this button.
 - **When button is pressed Advance to Rendezvous Point** – Check to assign a rendezvous point to this button. Choose the zones you allow the ad hoc user to control.
 - **When button is pressed change to Layout** – Check to assign a layout to this button. Ad hoc users press this button to switch the display to that layout.

To allow ad hoc users to choose TV or radio stations, take these steps:

1. On the menu bar, click **Media** and **Manage Ad hoc items**.
2. Click the **Add Item** tab.
3. From the **Add Ad hoc Item of Type** drop-down list, select **TV** or **Radio**.
4. Enter a name for the item and click the  button.
5. In the **Ad hoc Item property Allowed Choices**, select one of:
 - **All Available TV or Radio Stations** – Allows ad hoc users to select from any TV or radio station configured on the player.
 - **Only Selected TV or Radio Stations** – Allows ad hoc users to select from the TV or radio stations you choose.
5. Select the default TV or radio station from the **Default TV or Radio Station** drop-down list.

5.3 Additional Ad Hoc

Additional Ad Hoc features allow for greater customisation of layout content. This is particularly useful in a channel, where a network of players all play the same content.

Using additional ad hoc, multiple players in a channel can each show different content, controlled by ad hoc users locally. This allows an organisation to maintain a consistent appearance or brand image across a number of sites, while allowing local users to upload their own content and change the layouts and playlists to which they have been given access.

The content types that can be used with additional ad hoc include:

- Folder play
- Layout
- Schedule
- Schedule override
- Advance To

Folder play allows you to add a folder to a playlist and give ad hoc users permission to upload their own content into the folder. For example, different GP practices with players in the same channel could carry different local information about late night dispensing chemists.

Layouts allow the ad hoc user to select a layout for a specific time slot in the schedule. Typically, if an organisation published a channel with a layout for each department, an ad hoc user in each department could select the right layout for that location.

Schedule allows the ad hoc user to set the time when a layout should appear on the display. For example, if a lunch hour layout has been scheduled, but times vary at different locations, local ad hoc users can set their times accordingly.

Schedule override allows the ad hoc user to display one of a selection of predefined layouts and not have this interrupted by any other layout changes in the schedule. For example, this can be used to show a special TV event or display an emergency message without interruption.

Advance To allows the ad hoc user on-demand control in several areas, including content selection. For example, this might be useful in a foyer where the player is showing a corporate video in a continuous loop. The **Ad hoc Advance To** command allows a local user to switch to live TV if required.

The following two procedures describe:

- Setting up an ad hoc schedule override.
- Setting up an ad hoc **Advance To** command .

Ad Hoc Schedule Override:


To set up an ad hoc schedule override and make it available to ad hoc users:

1. On the menu bar, click **Schedules**.
2. Select the channel name and **Manage Schedules**.
3. Click the **Add Override** tab.
4. Enter a descriptive name for the override.
5. Select the audio, screen, and layout options from the drop-down lists.
6. Click the **Add Override** button.
7. On the menu bar, click **Media** and **Manage Ad hoc items**.
8. Click the **Add Item** tab.
9. Enter a name for the override in the **Add Ad Hoc Schedule Override** field and click the **Add** button.
10. In the **Allowed Choices** panel, select one of the following:
 - **All Available Schedule Overrides** – Allows ad hoc users to select from any schedule overrides configured on the player.
 - **Only Selected Schedule Overrides** – Allows ad hoc users to select only from the schedule overrides you select.
11. Select the appropriate **Customisation Scope** option:
 - **Local** – Customisation applies on the individual player.
 - **Remote** – Customisation applies on each player in the channel.
12. Click the **Save Changes** button.

Ad Hoc Advance To Command:

To set up an ad hoc **Advance To** command:

1. On the menu bar, click **Help** and **UI Options**.
2. Select the **User Interface Policy** as **Detailed** or **Expert**.
3. Click **Playlists** and select the layout and zone to locate the **Advance To** command.
4. Click the **Specials** tab.
5. Add a rendezvous point to the playlist and give it a name.
6. Add one or more media items to the playlist.
7. Click the **Specials** tab

8. Select the **Advance To** item that has the same name as the rendezvous point you created and add it to the playlist. This causes the playlist to loop back to the start again, regardless of what may follow.
9. Add a second rendezvous point to the playlist.
10. Add one or more ad hoc media items to the playlist.
11. Add the **Advance To** command that has the same name as the second rendezvous point to the playlist. This causes the playlist to loop continuously through the ad hoc media items. If you want to revert back to the original media items, omit this step.
12. On the **Manage Ad hoc Items** page, create an ad hoc **Advance To** item and select the names of the two rendezvous points you have created.
13. Add those ad hoc **Advance To** items to an ad hoc page.
14. Log in as an ad hoc user and browse to the ad hoc page you have created.
15. Select the **Advance To** command that you wish to test and click the  button. If the player is playing the playlist, it will jump to the point in the playlist under the selected rendezvous point.

5.4 Ad Hoc from Center

The **Update from Center** feature allows ad hoc users to make changes on an iCC that will be updated to the channel's subscribers. The ad hoc users on the iCC can only change the content on the ad hoc page you create. You can use the **Update from Center** feature with ad hoc text and schedule override items. When you create an ad hoc from center item, you set its scope as one of:




- **Local** – Default. Ad hoc text items behave as normal. Ad hoc users can log in and change the contents for each player.
- **Remote** – Ad hoc items will only be visible to ad hoc users on the iCC. Changing the ad hoc item on the iCC causes updates to all subscribers too. To restore the original schedule, select **Default Schedule** from the **Ad hoc page**.

Subscriber players may not normally check for updates often enough if the ad hoc from center changes are frequent. Therefore, you can configure the subscriber players to check for update from center items more frequently. On the subscriber, the **Channels > Manage Subscription** page offers the **Update From Centre Poll Interval** option. This determines how often the subscriber polls for update from center items and changes accordingly. The subscriber player checks for normal updates and for updates from center independently.

5.5 Managing Ad Hoc Items

The ad hoc items page allows you to create, delete, and set properties for ad hoc items. Reach that page from the menu bar by clicking **Media** and **Manage Ad hoc Items**.

To create an ad hoc item, click the **Add Item** tab. Select the item type from the drop-down list or select one of the other types displayed and enter a unique name for it.

To delete an ad hoc item, click the  button. If the iCC does not display the item's  button, it is in use and cannot be deleted. To see which items are in use, click the  button and look at the **Used By Layouts** and **Used by Ad hoc Pages** information.

When you add an ad hoc item, you can also set a range of properties, depending on the item. The ICC supports these item types:

- Advance To
- Layout
- Newsfeed
- Schedule
- Schedule override
- Text
- TV
- Radio

When you add an item, you have to select one of these **Allowed Choices** options:

- **All Available** – Permits the ad hoc user to choose any of the defined items.
- **Only Selected** – Permits the ad hoc user to choose only those items you select.

In addition, for schedule override and text items, the iCC offers you the **Customisation Scope** option. Use this to select where those ad hoc items can be customised and displayed:

- **Local** – Customization applies on the individual player.
- **Remote** – Customization applies on each player in the channel.

Text also has its own set of ad hoc options. Use these to control what an ad hoc user can enter in the **Default Text** and **Ad hoc User** pages:

- **Rich text** – No validation is performed.
- **Plain text** – An ad hoc user cannot customise the text colour or styling.
- **Integer between** – Enter the lower and upper integer limits (both inclusive) for ad hoc content. This option is only shown if you have set the **User Interface Policy** to **Detailed**.
- **Plain text of maximum length** – Limits the maximum length of plain text. This option is only shown if you have set the **User Interface Policy** to **Detailed**.
- **Plain text matching** – This option is only shown if you have set the **User Interface Policy** to **Detailed**.
- **Regular Expression** – The ad hoc content must match the regular expression that you provide. There are many web sites and books that provide information about using regular expressions. For example: <http://www.regular-expressions.info/javascript.html>.
- **Feedback Message** – Enter a message to display if the ad hoc user text does not match the regular expression you provided.
- **Default Text** – Enter the default text to use until an ad hoc user makes a change on the **Ad hoc Data Entry** page. Your default text must be compatible with the ad hoc input mode you have selected.
- **Customisation Status** – Indicates if the ad hoc user has overridden the default value or not.

5.6 Creating Ad Hoc User Accounts

If you want a user on a subscriber player to update ad hoc channel content, you must create an account for them on the subscriber with the ad hoc and any other required permissions. If you want a user on an iCC to be responsible for

ad hoc from center content, you must create an account for them on the iCC allocated with a role that has the **Edit Ad hoc Content** and any other required permissions.

5.7 Ad Hoc Pages


When ad hoc users access the iCC using their browser, they only see the pages you have created for them. The iCC does not allow ad hoc users access to any other pages in the iCC user interface. The iCC displays ad hoc pages with the text fields you have allowed ad hoc users to change or the commands you have allowed them to issue. You can give ad hoc users access to the ad hoc media folder, which contains all the items that they can choose from when updating or changing content.

By default, the iCC enables ad hoc pages for all layouts when you create them. This means that when you add customizable or ad hoc items to a layout, the iCC generates an ad hoc page for that layout containing all the customizable and ad hoc items within it.

You can also create ad hoc pages that are not directly associated with a specific layout.


5.7.1 Managing Ad Hoc Pages


To manage ad hoc pages, you must have your user interface policy set to **Detailed** or **Expert**. To do so, follow these steps:

1. On the menu bar, click **Help** and **UI Options**.
2. In the **User Interface Policy** section, select **Detailed** or **Expert**.
3. Click the  button.

To open the manage ad hoc pages screen, click **Media** on the menu bar and select **Design Pages > Manage Ad hoc Pages**. The iCC displays the **Ad hoc Pages** and **Add Page** tabs. **Ad hoc Pages:** The iCC provides the following action buttons for each ad hoc page:



 – Delete the ad hoc page.

 – Edit the ad hoc page to manage its items, properties, and permissions.

If the iCC does not display the page's  button, it is in use and cannot be deleted. Also, you cannot delete layout ad hoc pages, only disable them on the **Layout Properties** tab.

Add Page:

To create an ad hoc page that is not associated with a specific layout, follow these steps:

1. In the **Add Ad hoc Page Name** field, enter a unique name for the page.
2. Click the  button. The iCC displays the **Ad hoc Pages** tab with the new page listed.
3. Click the  button next to the page to configure its items, properties, and permissions.

5.7.2 Editing Ad Hoc Pages

The edit ad hoc page lists all the items you have added to the page that an ad hoc user can change.

Note: Click the **Ad hoc Entry Page** link at the top of the page to navigate to the **Data Entry** page.

The iCC displays these tabs:


- **Items** – Shows the items on the page and allows you to modify them.
- **Add Items** – Allows you to add new items to the page (not shown for layouts automatically managing ad hoc pages).
- **Properties** – Allows you to change the page name and the user message.
- **Permissions** – Allows you to see the roles that can change the ad hoc page and the users allocated with those roles. If a role has only asset-based permissions, you can enable or disable the role's access here. See [Asset-Specific Permissions](#) for more information.


Items:

To remove an ad hoc item, click its  button.

Note: This is not available on layouts that automatically manage ad hoc pages.

On pages with multiple items, you can adjust their order using these buttons:

 – Move the item to the top.

 – Move the item up one place.

 – Move the item down one place.

 – Move the item to the bottom.


Add Item:

To add an ad hoc item to the page, click the **Add Items** tab and follow these steps:

1. Select the item from the **Add Ad hoc Item** drop-down list.

Note: You can have only one ad hoc **Schedule Override** item on an ad hoc page.

2. Click the  button.

3. Perform other actions on the **Items** tab. Move the item or click its  button to add a label to show next to it on the **Data Entry** page.

Properties:

The options on the **Properties** tab are:




- **Page Name** – Unique identifier for the ad hoc page. The iCC displays it on the **Data Entry** page.
- **User Guidance Message** – Optional. Enter a message for the iCC to display on the **Data Entry** page to help users when entering values.

5.8 Ad Hoc Folder Play

You can add a folder to a playlist and then give ad hoc users permission to upload their own content into that folder. For example, you might develop a layout for an education authority with a zone dedicated to showing student artwork that is published to subscriber player units in each school: each school uploads its local artwork to the ad hoc folder so the content of the zone is unique to that school.

Your ad hoc folder must contain at least one default item that is shown until ad hoc users upload content. Even if you republish the channel, local content remains in place (unless you have removed the folder from the playlist).

To add an ad hoc folder to a playlist follow these steps:

1. On the menu bar, click **Playlists** and select the layout and zone where you want to add the folder.
2. Click the **Files & Folders** tab.
3. Click the  button for the folder you want to add to the playlist.
4. Click the **Playlist** tab and, if necessary, adjust the item order.
5. Click the folder's  button.
6. Check the **Management** box.
7. Click the  button.

The iCC creates a subfolder in the `ad_hoc_media` folder with the same name as the folder you added in step 3. Put any default ad hoc content into that subfolder. The player will display the content in that subfolder rather than the content in the original folder. Your ad hoc users can add to or delete content from that subfolder as required. However, if you or your ad hoc users leave the ad hoc subfolder empty, the player will display the content in the original folder you added to the playlist.

5.9 Ad Hoc Media Folder

You designate ad hoc media folders to delimit the media folders that ad hoc users can access. Go to the **Media > Files & Folders** page to create folders and to browse the file system.

To allow an ad hoc user to access a media folder, you must add it to the playlist and then enable it for the ad hoc user. If suitable material is available in the folder, the player plays it in preference to any other. If no suitable media is available, the player plays the content of the default folder for that playlist instead.

You must create an ad hoc folder for the user to upload content to. If you see the message 'No Media Folder has been configured for this user, you need to designate a media folder for the user's account. Do so by following these steps on the player:

1. On the menu bar, click **Setup** and select **System > Users**.
2. Click the user's  button.
3. Select the folder from the **Media Folder** drop-down list.
4. Click the  button.

5.9 Changing Ad Hoc Content

If you want to change the ad hoc content currently playing on the player, the general steps to follow are:

1. Connect to the player with your browser
2. On the menu bar, click **Ad hoc Entry**.
3. Select the ad hoc page for the content you want to change.
4. Make the necessary changes (see table below for details).

5. If the player is playing the item, click the **Show Now and Save Changes** button. Your change takes effect immediately.
6. If the player is not playing the item, click the **Save Changes** button. Your change takes effect when the player next plays the item.
7. Exit your browser to leave the player.

In more detail, how you make your change depends on the ad hoc item concerned. Follow the steps for the ad hoc item you want to change:

Text and Tables	<p>Change the text scrolling across the screen or in a table:</p> <ol style="list-style-type: none"> 1. On the menu bar, click Ad hoc Entry. 2. Select the ad hoc page for the content you want to change. 3. Edit the text or table entry. Tips: <ul style="list-style-type: none"> ◦ To remove text from the screen, delete everything in the box. ◦ To create a line break in vertically scrolling text, press the Enter key at the location required. 4. Click the Show Now and Save Changes or Save Changes button.
TV Stations	<p>Change the TV station showing on the screen:</p> <ol style="list-style-type: none"> 1. On the menu bar, click Ad hoc Entry. 2. Select the ad hoc page for the content you want to change. 3. Select the new TV channel from the drop-down list 4. Click the Show Now and Save Changes or Save Changes button.
Radio Stations	<p>Change the radio station:</p> <ol style="list-style-type: none"> 1. On the menu bar, click Ad hoc Entry. 2. Select the ad hoc page for the content you want to change. 3. Select the new radio station from the drop-down list 4. Click the Show Now and Save Changes or Save Changes button.
Newsfeeds	<p>Change the source for a newsfeed showing on the screen:</p> <ol style="list-style-type: none"> 1. On the menu bar, click Ad hoc Entry. 2. Select the ad hoc page for the content you want to change. 3. Select the new newsfeed from the drop-down list. 4. Click the Show Now and Save Changes or Save Changes button.
Media Folders	<p>Manage media items (typically, still images held in a folder) showing on the screen:</p> <ol style="list-style-type: none"> 1. On the menu bar, click Ad hoc Entry. 2. Select Media Folder. The player shows the contents of your media folder. 3. To view a file, click its name. 4. To upload a new file or manage the existing files, see Uploading Content Files. 5. To change the order in which files play, see Folder Play Properties.

Screen Layouts	<p>Change the whole layout (this assumes you have already added an ad hoc layout to the ad hoc page):</p> <ol style="list-style-type: none"> 1. On the menu bar, click Ad hoc Entry. 2. Select the ad hoc page relevant to the layout you want to change. 3. Select the new layout from the drop-down list. 4. Click the Show Now and Save Changes or Save Changes button.
Scheduling	<p>Change the schedule for when the player makes changes to the display (for example, to coincide with meal or break times or for an after-hours event):</p> <ol style="list-style-type: none"> 1. On the menu bar, click Ad hoc Entry. 2. Select the ad hoc page relevant to the schedule you want to change. 3. Modify the schedule using the drop-down lists and check boxes. 4. Click the Show Now and Save Changes or Save Changes button. <p>If the current time is within your new schedule, the player triggers the change immediately (unless it has already begun another schedule).</p> <p>If the schedule has related audio or you require silence, reprogram the audio on or off time to match.</p>
Advance To (on demand)	<p>Activate events on demand (for example, to show a video selected from a list):</p> <ol style="list-style-type: none"> 1. On the menu bar, click Ad hoc Entry. 2. Select the ad hoc page relevant to the Advance To command you want to invoke. 3. Select the relevant name from the drop-down list. 4. Click the Show Now and Save Changes or Save Changes button.

5.10 Ad Hoc Theming

You can change how the user interface appears to your ad hoc users by using **Ad hoc Theming**. Ad hoc theming lets you customise page headers and the text that appears on the page.

You might use ad hoc theming to:

- Include a company logo in a page to make it consistent with a brand identity.
- Provide a translation of pages in a language not already supported on the player.

The ad hoc theme applies to ad hoc users on the iCC or on a player subscribing through a channel. You cannot include ad hoc themes in layout packages.

To access the **Ad hoc theme** page, click on **Media** and select **Manage Ad hoc Theme**. Create your theming features using the following tabs:

Properties	<p>Select the options you require:</p> <ul style="list-style-type: none">• Ad Hoc Theme – Choose the Disabled button to retain the default appearance. Choose the Enabled button to use the theme you are customizing.• Header text color – Click the <input type="button" value="Pick Colour"/> button to select a different header text color.• Header background color – Click the <input type="button" value="Pick Colour"/> button to select a different header background color.• Page logo – Select the Alignment option for the position you want the logo to have on the page. <p>Select the logo image from the files displayed. If your logo file is not there, navigate through the folders to where it is located or click the Files & Folder link to upload it.</p> <p>When complete, click the <input type="button" value="Save Changes"/> button.</p>
Strings	<p>Allows you to provide either translations or alternative text for all the headers, boxes, instructions, and warnings that appear in three ad hoc areas:</p> <ul style="list-style-type: none">• Homepage• Ad hoc Item Edit Pages• Media Folder <p>The iCC displays the default text on the left. Enter your new text in the field on the right.</p> <p>When complete, click the <input type="button" value="Save Changes"/> button.</p>

Part VI

Sharing Content Using
Layout Packages

Part 6: Sharing Content Using Layout Packages

A **Layout Package** is a single file which contains all the media and control files required to fully install one or more layouts on another iCC.

You can distribute layout packages on DVDs, by memory sticks, through file servers. or sent by email.

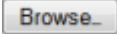
Transferring layouts from one iCC to another is a two-step process:

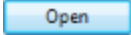
1. [Create the layout package](#) on the originating iCC.
2. [Upload and install the layout package](#) on the destination iCC.

6.1 Layout Packages

The **Layout Packages** page allows you to create, delete, and install layout packages. The **Layout Packages** tab lists all the layout packages available on the iCC.




To upload a layout package from your computer onto the iCC, take these steps:

Click the  button.

2. Select the file and click the  button.
3. Click the button.

The iCC displays a progress bar. After being uploaded, the file appears in the **Layout Packages** list.

Click the button next to a layout package to take these actions:

	Delete the layout package. This only removes the layout package file (not any media or layouts you have already installed).
	Display information about the layout package content.
	Copy the layouts and media contained in the package onto the iCC. If any of those items already exist on the iCC, but have different values, you are asked how you want conflicts handled (see Layout Package Conflicts for details).

Click the **Create** tab to display the options for creating a new layout package:

- **Name** – Unique identifier for the layout package. In the name, you can only use the characters a-z and A-Z, the numbers 0-9, or a space.
- **Description** – Optional. A description for the layout package.
- **Include Layouts** – Select the layouts you want in the layout package.

Click the **Status** tab to see information about layout package operations. The iCC only displays the **Status** tab if you have started a layout package operation or have completed one previously.

6.2 Creating a Layout Package

To create a layout package, follow these steps:

1. Finalise the layout or layouts that you will include in the layout package.
2. On the menu bar, click **Layouts** and **Layout Packages**.
3. Click the **Create** tab.
4. Enter a suitable name and optionally a description for the new layout package.
5. Check the box next to each layout to include in the package.
Note: The iCC also includes layouts referenced by **Change Layout** commands even if you do not select those layouts explicitly here.
6. Click the button. The iCC displays the **Status** tab.
7. When the layout package creation completes, click the **Package Filename** link and follow the prompts on the pop-up screen to save the package file on your computer.
8. Send copies of the layout package ZIP file to those who need them.

6.3 Uploading and Installing a Layout Package

To upload and install a layout package on your iCC, follow these steps:

1. On the menu bar, click **Layouts** and **Layout Packages**.
2. Click the button and navigate to the layout package file on your computer.
3. Click the button to copy the file onto the iCC. The iCC displays a progress bar during upload.
4. After uploading, the iCC displays the layout package in the list.
5. Click the layout package's button. If items in the package have the same name as items already on the iCC, the iCC prompts you to resolve the conflict (see [Layout Package Conflicts](#) for more details).
Note: Layout packages are compressed ZIP files. The iCC does not list other types of file on the layout package page.

You can also copy layout packages to and from the iCC by using an FTP client (for example, Internet Explorer) on your computer. Browse to the **/HOME/package** folder on the iCC.

6.4 Layout Package Conflicts

When you install a layout package, the iCC merges items in the package with existing items. This includes:


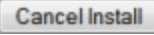
- Layouts
- Special items
- Ad hoc items
- Ad hoc pages
- Media files

The iCC flags a conflict when an item in the package is identical to an existing item, but has different property values. You are prompted to resolve the conflict with one of these options:

- **Do Not Copy** – The iCC will not change the existing items. This is equivalent to not copying any conflicting items or files from the layout package. The iCC installs all non-conflicting items.
- **Copy and Replace** – The iCC will replace existing items with items from the layout package. This is equivalent to the iCC overwriting the local items.
- **Copy but Keep Both Items** – The iCC renames the items in the layout package to avoid conflicts with existing items. The iCC displays the new names on the **Status** tab.

The iCC may offer different conflict actions for media files and layout and special items.

In some cases, selecting **Copy but Keep Both Items** may cause additional items to be in conflict. For example, if an ad hoc text item is in conflict and is contained in a layout that exists locally, but is identical, and you choose the **Copy but Keep Both Items** option, the iCC renames the ad hoc text item. This causes the layout in the layout package to be modified to reference the newly renamed ad hoc text item. This in turn causes a layout conflict, since the local layout and the modified layout are now different. The iCC shows additional, secondary conflicts on a separate line in the **Conflict Details** section.

Click the  button to proceed with the Installation or the  button to stop the installation process.

6.5 Layout Package Information

To see information about a layout package, follow these steps:

1. On the menu bar, click **Layouts** and **Layout Packages**.
2. Click the layout package's  button.

The iCC displays this information:

- The originating iCC.
- Layouts included in the package.
- Special Items included in the package.
- Other additional settings (such as color items and special fonts).
- Media item files in the package.

This information may help you resolve any conflicts between items in the package and those already on your iCC.

Part VII

Channels and Signage
Networks

Part 7: Channels and Signage Networks

Channels provide an easy way to display the same content at multiple locations by setting up a digital signage network of players. A collection of players that all play the same content on their screens is known as a channel.

A channel has these basic parts:

- The iCC.
- The content that the iCC publishes.
- One or more subscriber players.

When you publish to a channel, it includes all the related schedules, layouts, and media content. You should consider these factors when calculating the storage space required for a channel:

- With the exception of video files, content does not require large amounts of storage. If your layouts do not include video files, you should find 1 GB to 2 GB of space sufficient.
- If your layouts include video files, increase storage by at least 2 GB per hour of standard quality video. Allow for more if the video is high quality.

However, the channel does not include user records, including ad hoc users. If your content relies on that, you will need to ensure it is already present on each of the subscribers.

Also consider the capabilities of the subscriber units in your network:

- Are they powerful enough to show the content? Some content may not show optimally on less powerful player models (for example, high-resolution movies or Adobe Flash items that require a fast CPU).
- What resolution are their attached screens? Ideally, to display the same content you should have screens set to the same resolution. If some screens display at lower resolution, take into account that content will be cropped.
- Do they have any additional hardware or licenses required? Subscribers can only display certain content if they are configured to do so (for example, TV channels)?

To set up and begin using a channel, follow these general steps:

1. Create the content on the iCC.
2. When your content is ready, click the **Manage Channels Page** link that appears at the top of each screen on your iCC. The iCC displays the **Manage Channels** page. Specify your channel configuration here (see [Configuring the Channel](#) for more details).
3. Click the appropriate publish button on the **Manage Channels** page. The iCC will not distribute changes to a channel until you publish them. See [Publishing a Channel](#) for details of the publishing options.

Repeat those steps for each additional channel you want to create (see [Multichannel Publishing](#) for more details).

You will now need to configure each player in your network in the **Subscriber** role, pointing them to the correct location to find the channel content to display.

Important: The iCC user account you specify in the subscriber configuration must have the **Subscribe Channel** permission.

After a period, the subscriber players will poll for channel content, download it, and begin displaying it on the screens they control.

Some other features may be of interest to you:

- Control the timing and circumstances of publication. You can configure the ICC to publish a channel regularly or only when you initiate publication manually. You can also specify that changed content is only published after an approval process. See [Publishing Mode and Policy](#) for more details.
- Add ad hoc content to your channel. This provides content that varies on a per player basis. For example, if you have players on different sites, you may wish to allow local users to display messages specific to their location. You will need to provide the users on the subscriber players with the appropriate ad hoc permissions. See [Ad Hoc Content](#) for more details.
- Distribute channel content using a separate Channel Content Server (CCS). You might consider adding one or more CCSs to your digital signage network depending on the configuration scenarios you need to support. See [Channel Content Servers](#) for more details.

Note: It is recommended that the iCC and each subscriber player run the same software version. Earlier version subscribers may not be able to display content created on the iCC.

7.1 Publishing

The iCC provides a wide range of features for you to configure and publish multiple channels to exactly meet the needs of your digital signage network.

Refer to the topic that describes the task you wish to perform :

[Configuring the Channel](#)

[Publishing a Channel](#)

[Multichannel Publishing](#)

[Managing Channels](#)

7.1.1 Publishing Mode and Policy

Before you begin to configure a channel, you need to decide on the **Publish Mode** and the **Publish Policy** you will adopt:

- **Publish Mode** – Defines the method of publication.
- **Publish Policy** – Controls how the iCC allows publication of changes.


The publish mode and the publish policy interact so you should carefully consider the publication regime you require. The iCC prompts you to select the publish options when you add a channel. You can change your selection later by editing the channel configuration (see [Configuring the Channel](#) for details).

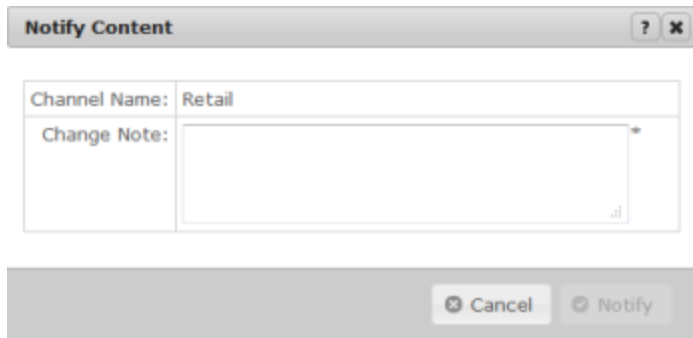
The iCC offers two **Publish Mode** options:

- **Manual** – The iCC only publishes the channel when you click a button on the **Manage Channels** page. You can only set a publish policy if you choose this option.
- **Automatic** – The iCC publishes the channel at the time of day or at the frequency you configure. Because it is automatic, you cannot set a publish policy if you choose this option.



The iCC offers two **Publish Policy** options:


- **Allow at any time** – The iCC allows any user to publish changes at any time.
- **Allow only after change complete notification** – The iCC only allows publication after you complete an approval notification.

Choosing the second option enables you to include a review and approval process in your content development and publication workflow. You have to approve changes to the channel by clicking its  button on the **Manage Channels** page and completing the **Notify Content** screen, which looks like this:



The **Notify Content** screen has these features:

- **Channel Name** – Confirms the name of the channel whose changes you are approving.
- **Change Note** – You must enter a note to approve the changes (the  button is not activated until you do). If necessary, this field automatically expands to accommodate the length of note as you write. You can also expand it by dragging the expansion icon  at the bottom right.

Click the  button to confirm your approval. The iCC will now allow publication of the changes.

7.1.2 Configuring the Channel

To configure a channel for publication, from the menu bar click **Channels** and **Manage Channels**.


When you first access the **Manage Channels** page, the display looks similar to this:



Refer to [Managing Channels](#) for a description and explanation of all the **Manage Channels** features.

Now, to configure the channel for publication, click the  button. The iCC displays the **Edit Channel** page, which has these tabs:

- **Publish Settings** – Used to configure the channel name, description, and publishing options.
- **Channel Limits** – Used to limit the number of layout zones and the maximum size of the channel and of individual media files.
- **Permissions** – Used to manage the roles that can access the playlist and the users allocated with those roles (See [Asset-Specific Permissions](#) for more information).

To get started, go through the items on the **Publish Settings** tab and configure the options you require. It is not necessary to configure **Channel Limits** or **Permissions** but if you need to, click the tab to configure those options too. Click the  button when you have completed all of your configuration.

Configure the **Publish Settings** options you require as follows:

Channel Name	Enter a unique name for the channel. This appears at the top of the page on the subscriber and in the iCC Channels Details column.
Description	Optional. A meaningful description to further identify the channel and its content.
Publish Mode	Select the mode of publication you want: <ul style="list-style-type: none"> • Manual – You publish by clicking a button on the Manage Channels page. Selecting this mode enables the Publish Policy options. • Automatic – The iCC publishes at the time you specify. Selecting this mode enables the Publish options.
Publish Policy	Only enabled if you set Publish Mode to Manual . Select the publication policy you want: <ul style="list-style-type: none"> • Allow at any time – Allows the channel to be published at any time (whether it has changed or not). • Allow only after change complete notification – Prevents a change to the channel being published until the user completes a notification. Use this as a change control mechanism.
Publish	Only enabled if you set Publish Mode to Automatic . Select the time you want the iCC to publish the channel: <ul style="list-style-type: none"> • at – Publish each day at the time you choose (00:00 is midnight). • every – Publish regularly at the interval you choose (in hours and minutes). <p>Important: Before choosing the timing, take into account when the iCC is publishing other channels in your configuration. Consider staggering the timings to balance the load on the iCC and on your network.</p>
Preview URI	Select where you want to preview the channel: <ul style="list-style-type: none"> • Default – Preview on the default URI (that is, /channel/preview). • Custom – Preview on a URI of your choice (for example, /channel/design).
Custom Preview	Only enabled if you set Preview URI to Custom . Specify the URI you want to use: <ul style="list-style-type: none"> • Create and set new URI – Enter a new URI. • URI – Select an existing URI (only enabled if you previously created a URI).

Channel Server	<p>Select how you want to publish the channel:</p> <ul style="list-style-type: none"> • The ICC /channel/1 folder – The iCC publishes the channel to one of its own channel folders. The ICC displays the folder details on the Manage Channels page. Subscribers access the content through FTP, HTTP, or HTTPS. Selecting this option enables the Channel URI option. • The USB Flash Memory's / channel folder – The iCC publishes the channel to the channel folder on an attached USB stick. • FTP Site – The ICC uploads the channel to an FTP site. Selecting this option enables the other FTP configuration items you must also complete (Publishing Root URL, Authentication, and Error Retry Interval).
Channel URI	<p>Only enabled if you set Channel Server to The iCC /channel/1 folder.</p> <p>If you want to publish to a location other than the /channel/1 folder, enter its URI here.</p>
Publishing Root URL	<p>This and the next two options are only enabled if you set Channel Server to FTP Site.</p> <p>Enter the URL required.</p> <p>A valid FTP URL begins with <code>ftp://</code> followed by the host name or address and the full path to the publication location. Examples of valid FTP URLs are:</p> <ul style="list-style-type: none"> • <code>ftp://example.com/mychannel/</code> • <code>ftp://192.168.0.23/channel/</code> • <code>ftp://somehost/a/b/c/</code> <p>Note these points:</p> <ul style="list-style-type: none"> • If the folders do not exist on the FTP server, the iCC attempts to create them. This will fail if you do not provide a login name and password with appropriate write access. • To test the setup, the iCC attempts to log into the FTP server you have defined. It notifies you if this is successful or not.
Authentication	<p>Select the login method required:</p> <ul style="list-style-type: none"> • Login using anonymous FTP access – The FTP site does not require specific login credentials. • Login with – The FTP site requires login credentials. Enter the username and password in the boxes provided.
Error Retry Interval	<p>If the iCC fails to connect to the FTP site, specify the period before it tries again.</p>

Configure any **Channel Limits** options you require as follows:

Layout Zone Limit	<p>Specify the number of zones allowed in published layouts:</p> <ul style="list-style-type: none"> • Unlimited number of zones – Default. Do not limit the number of zones. • Limit to – Do not allow more zones than the value you specify. For example, if publishing to less powerful models, choose a value to ensure you will not overload them.
Channel Size Limit	<p>Specify the size limit for the channel:</p> <ul style="list-style-type: none"> • Unlimited size – Default. Do not limit the size of the channel. • Limit to (MiB) – Do not allow the channel size to exceed the value you specify. For example, if you set a limit of 100 then all of the combined elements in that channel cannot exceed a total of 100 MiB.

Individual Media File Size Limit	Specify the size limit for each individual media file: <ul style="list-style-type: none"> • Unlimited size – Default. Do not limit the size of each individual media file. • Limit to (MiB) – Do not allow each media file size to exceed the value you specify. For example, if you set a limit of 50 then each media file uploaded cannot exceed the limit of 50 MiB.
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7.1.3 Publishing a Channel

After configuring the channel for publication, you are ready to publish and activate it. You can add and publish additional channels later.



Note: If you are publishing to a USB stick, insert that into the ICC before beginning. Ensure it has the capacity to hold the channel content.

Before continuing, it is important to understand the distinction between **publish** and **activate**:

- **Publish** – When the iCC copies the channel content to the publication location you specified.
- **Activate** – When the subscribers start displaying the channel.

You can specify that activation takes place later than publication. In other words, the iCC will publish the channel but subscribers will not display it until after the date and time you specify. This is useful to ensure all subscribers start showing the channel content at the same time (rather than as soon as they can download it). For example, you can use this to allow for the difference in time it takes several subscribers to download large media files over a slow network.

To publish and activate the channel, follow these steps:

1. On the menu bar, click **Channels**.
2. Click **Manage Channels**.
3. In the channel's **Actions** column, click the button for the publishing option you require:
 -  – Publish and activate as soon as possible.
 -  – Publish and activate later. The iCC prompts you for the date and time after which to activate.

The iCC begins the copying process and displays progress in the channel's **State** column. If there is a problem, the iCC displays an error message. After copying is complete, how the subscriber receives the new content depends on where you chose to publish the channel:

- **iCC channel folder or external server**– The subscribers will download the new content the next time they check the channel.
- **USB stick** – Remove the USB stick and use it to load the channel content onto each subscriber.

Repeat the same process even if you have only changed the schedule. In all cases, the ICC displays the following banner if you have changed the channel contents but have not yet published it:

Channels have changed. Please go to the [Manage Channels page](#) to see more details on required actions.

If you are not on the **Manage Channels** page, clicking the **Manage Channels Page** link takes you there. To publish the new content, follow the same steps as described above.

The **Manage Channels** page provides you with all of the features you need to add, edit, and delete channels. It also displays status information on each channel. You can also access detailed information on each channel by following these steps:

1. On the menu bar, click **Channels**.
2. Select **Detailed Status**. The iCC displays the list of channel names.
3. Click the name of the channel whose status you want to check.

The **Detailed Status** page contains this information:


- **Publisher State** – The current publication state of the channel.
- **Channel** – Channel identifier and activation details.
- **Required Version** – If relevant, indicates the minimum software version the players must be running to display the channel.
- **Size** – The size of the channel content sent so far, its total size, and the status of delivery progress.

7.1.4 Multichannel Publishing


iCC allows you to create and publish up to 50 channels simultaneously.

Note: Although schedules are unique to each channel, more than one channel can share layouts and contents.

To add a new channel, follow these steps:

1. If required, create the layout and content for the new channel.
2. On the menu bar, click **Channels** and **Manage Channels**.
3. Click the  button.
4. Complete the **Settings** and **Schedule** information the iCC prompts you for.
5. When you are ready to publish the channel, follow the same steps as described in [Publishing a Channel](#).

To delete a channel, follow these steps:

1. On the menu bar, click **Channels** and **Manage Channels**.
2. If the channel you want to delete is the only one, configure another channel. You cannot delete the last channel on the iCC.
3. Click the  button next to the channel you want to delete. This only deletes the channel schedule: the channel content is still on the iCC.

For more information about the tasks you can perform through the **Manage Channels** page, see [Managing Channels](#).


7.1.5 Managing Channels

You manage the channels on your iCC through the **Manage Channels** page.










To understand the tasks you can perform using the **Manage Channels** page, this illustration shows its essential features, which are described below:












The header options are:

<p>Add Channel</p>	<p>Click to configure a new channel on your iCC. The Add Channels wizard prompts you for the basic channel settings and schedule configuration. That is sufficient to create and publish a channel on the iCC using the default settings. To modify how and where the channel is published, click its  button to access the detailed configuration options (see Configuring the Channel for details).</p>
<p>Publish Listed Channels</p>	<p>Click to publish all the channels listed in the display. Channels will not be published if:</p> <ul style="list-style-type: none"> • They are not listed in the display (that is, the current filter excludes them). • Their Publish Policy requires a notification and one has not been completed after a change.
<p>Filter</p>	<p>Limit which channels are or are not displayed in the table. Enter a string in the Filter field and the iCC limits the display to the channels whose name matches that string. You can also select a filtering option (either alone or in combination with the Filter string):</p> <ul style="list-style-type: none"> • All – Default. Displays all channels. • Previewed – Displays only the channels that the iCC has published to the preview location. • Publishing – Displays only the channels that the iCC is currently publishing. • Attention Required – Displays only the channels that require your attention (for example, those that have yet to be published after you have changed them).

The table lists each channel under these headers:

<p>Actions</p>	<p>Click the button to perform the action indicated:</p> <ul style="list-style-type: none"> •  – Delete the channel. •  – Edit the channel configuration. •  – Notify a change. Only shown if the channel Publish Policy requires a change notification. After you notify the change, the iCC displays the  button. Click that to undo your notification or click the  or  button to publish the changed channel . •  – Publish the channel to the preview location, /channel/preview. Configure a player to subscribe to that location to preview the content before you publish it on a live channel. The ICC displays the preview location in the Channel Details column and the preview icon in the State column. •  – Publish the channel and activate as soon as possible. •  – Publish the channel and activate later. The iCC prompts you for the date and time after which to activate.
<p>Channel Details</p>	<p>Contains this information:</p> <ul style="list-style-type: none"> • Channel Name – Click the link to open the channel's detailed status page. • Description – If provided, the additional channel description. • Publish To – Indicates the publication location. • Compatible Version – If relevant, indicates the minimum software version the players must be running to display this channel.

<p>State</p>	<p>Contains this information:</p> <ul style="list-style-type: none"> • Last Publish – Date and time the iCC last automatically published the channel or when you did so manually. • Activate After – If you set the channel to activate later, the iCC also displays this entry to show the date and time you specified. • Next Publish – Indicates the type and date and time of the next publication: <ul style="list-style-type: none"> ◦  – Automatic publication on the date and time indicated. ◦  – Manual publication on a date and time you choose. <p>The iCC also displays dynamic status information, examples include:</p> <ul style="list-style-type: none"> • During publication – Displays progress with a cumulative percentage, file, and byte count. • After you change the channel – Displays this prompt: <p> Settings edited. Please publish</p> • After you change the channel and a notification is required – Displays this prompt: <p> Work in progress</p> • After a required change notification is completed – Displays this prompt (hover your cursor on the  icon to see the notification and which user provided it): <p> Work completed. Please publish </p>
<p>Current Schedule</p>	<p>Displays the name of the channel's schedule. Click the Manage link to open the Manage Schedules page.</p>
<p>Valid Until</p>	<p>Displays the schedule's Valid Until setting.</p> <p>If the iCC is not showing all the schedule entries, it displays the  icon. Click that icon to reveal the additional schedule entries.</p>
<p>Schedule Entries</p>	<p>Contains this information:</p> <ul style="list-style-type: none"> • Name of the layout shown for each schedule entry. Click the link to open the layout editor. • The layout's canvas size. • An icon showing the zones in each layout (click a zone to open its playlist): <div data-bbox="464 1491 727 1637" data-label="Image"> </div> <ul style="list-style-type: none"> • If the iCC is not showing all the schedule entries, it displays the  icon. Click that icon to reveal the additional schedule entries. <p>Click the Manage link if you want to edit the schedule settings.</p>

7.2 Channel Ad Hoc

Using ad hoc content within a channel enables you to allow users to show their own content on their local player while still showing the rest of the channel.

Create ad hoc content in the same way as you would a normal part of a layout. Local ad hoc users can then log into their subscriber player and change that content.

Ad hoc from center is similar to regular ad hoc in that it allows a user to log in to change an element of the signage display quickly and easily. However, instead of the user making ad hoc changes on the subscriber player, with ad hoc from center the user can make changes on the iCC. Consequently, the subscribers to that iCC upload the ad hoc from center changes to the channel. When configuring those subscribers, you might want to set their polling interval to a shorter period so that ad hoc from center updates arrive more quickly.

7.3 Channel Content Servers

The iCC itself is a channel content server. However, in certain situations, a better solution might be to use an external file server.

An alternative is to use an external **Channel Content Server (CCS)** to offload channel distribution processing from your iCC. Each subscriber player polls the CCS for the latest channel content in the same way it would poll the iCC directly.

How you publish your channels depends on the number of subscriber players and the network they are connected to:

How to Publish	Description	When Would You Use This Method?
On the ICC	You store channel files on the iCC and subscribers download them using HTTP, HTTPS (recommended), or FTP.	<p>You have up to 500 subscribers in a network with no special network topology requirements.</p> <p>The iCC bandwidth limiting feature is there to help as the numbers approach that limit (see Firewall for more details).</p> <p>This method requires no extra hardware.</p>
Using a USB memory stick	<p>You publish channel files onto USB memory sticks. You distribute the sticks to each subscriber, which automatically reads the channel from it.</p> <p>You have to perform this process every time you update the channel.</p>	Your subscribers are not connected to a network or you do not want to publish the channel through a network.

How to Publish	Description	When Would You Use This Method?
Using an external CCS	You use the iCC to publish content to an external CCS using FTP. The CCS makes the files available to the subscribers, either through HTTP, HTTPS (recommended), or FTP.	<p>One or more of these factors is true:</p> <ul style="list-style-type: none"> • Access to the subscriber domain is limited for security reasons. • Groups of content need to be physically separated from each other. • Content needs to be locally cached to reduce network congestion or to prevent consumption of expensive bandwidth. <p>This method:</p> <ul style="list-style-type: none"> • Allows you to create the network structure you need. • Easily ties this into your existing server hardware or web host.

When planning how to publish, you should bear in mind these network and bandwidth considerations:

- Using a CCS requires both the iCC and the subscriber to be able to connect to it through a local network or the internet.
- Using network-based publication will not work if there is a problem with connectivity or if the credentials provided by the subscriber for either the iCC or the CCS are incorrect.
- Bandwidth use depends on the layouts and media being published as well as the number of subscribers. Large media files take time to transfer and this increases the time before the subscribers begin playing the channel. However, after the subscriber downloads the media, it will only need to download new or updated items later.
- Subscribers periodically poll the publishing source for channel updates. If you do not update your channel frequently, then save bandwidth by decreasing the rate at which the subscribers check for new content. You need to balance this with it taking longer for the subscribers to display new content when you do change it.

Part VIII

System Status

Part 8: System Status

Use the **Status** options to access information about the system.

Select the menu item for the status information you want to access:

- [System](#) – Viewing the disk and CPU temperatures over time, general system status, and hardware specification.
- [Conditional Play](#) – Checking the items that are subject to conditional play.

8.1 System Status

The **System** status page provides details of the environmental performance of your iCC.

Select the tab for the option you require:

- **°C 24 Hours** – Viewing disk and CPU temperatures from the last 24 hours (not displayed if you are using the Virtual iCC appliance).
- **°C 30 Days** – Viewing disk and CPU temperatures from the last 30 days (not displayed if you are using the Virtual iCC appliance).
- **Status** – Viewing uptime, temperature, Ethernet, and memory metrics.
- **Hardware** – Viewing iCC processor specification and memory capacity.
- **CPU Load** – Viewing a graph of the processor loading.

°C 24 Hours:

Illustrates disk and CPU temperatures from the previous 24 hours on separate graphs. Green lines indicate the safe temperature range and red where the temperature is too high.

Beneath each graph, notes indicate the maximum temperature during the period and the shut down temperature. The iCC shuts itself down if the disk temperature exceeds 50 °C for more than 5 minutes.

°C 30 Days:

As above except covering the previous 30 days.

Status:

The display contains the following information (some systems do not report all items):

ICC Uptime	How long the iCC has been running since its last restart.
Disk Temperature	Current disk temperature
CPU Temperature	Current CPU temperature.
CPU Fan Speed	Speed of CPU cooling fan (in RPM).
Case Fan Speed	Speed of system cooling fan (in RPM).
Ethernet Receive	Total inbound network traffic (in bytes and packets) and number of errors.
Ethernet Transmit	Total outbound network traffic (in bytes and packets) and number of errors.

System Disk	How much system disk space used of how much available.
Data Disk	How much data disk space used of how much available

Hardware:

The display contains the following information:

CPU	Make, model, and speed of iCC processor.
Available Memory	Amount of iCC main memory.
CMOS Signature	Support may request this value.
TV Card	The model of TV card installed or if none is fitted.
TV Card Features	TV card features (if installed).

CPU Load:

The display contains the following information:

- The average percentage CPU load over the previous 10 seconds.
- A rolling graph of processor load sampled every second.

Values of 90% and above indicate processor overload (for example, video may not play smoothly as a result). To avoid CPU overload, you can change the media type or change the order of items in the zones.

8.2 Conditional Play Status

The **Conditional Play** status page summarizes the playlists or schedules with the **Conditional Play** property set.

The page displays details of the items that you have configured to play conditionally along with the result. If you have not added the required player local information for those conditions, the iCC displays an action message containing a link you can follow to add the missing name.

The rest of the page is split into two tabs, one each for **Playlist Items** and **Schedule**. Each tab displays:

- Details of the PLI name on which the item depends.
- The operation that the player executes to decide if the item plays.
- The values that the item contains and the current values in the PLI.

The iCC displays links to the required items: click the link to go to the page you need to access.

Part IX

Setup

Part 9: Setup

Use the **Setup** options to configure and check the operational features of your iCC.

Select the menu item for the option you require:


- [System Setup](#) – Configuring the administrative and infrastructure aspects of the iCC system.
- [Player Setup](#) – Configuring the RS-232 and interactivity characteristics you want the player to support.
- [Maintenance & Troubleshooting](#) – Performing backup, update, and support activities.

9.1 Help and User Interface Options

Use the **Help** menu to access the iCC user interface options, page-specific help, and the user guide.

Use the **Help > UI Options** page to set the iCC user interface options. Those options are on these tabs:

- **My Options** – Changing user interface behavior (these changes only apply to the user interface you see).
- **Shared Options** – Adding a title on every page of the user interface (this change applies to the user interface for all users).

When you have completed making your changes, click the  button to enable them.

To change the general options, select from the following:

User Interface Policy	Select the display mode you want: <ul style="list-style-type: none"> • Productive – Displays only the most commonly used features. • Detailed – Displays both commonly used and advanced features. • Expert – Displays commonly used, advanced, and expert features. Take care if you use this mode.
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To change the **Time & Date Display** options, select from the following:

Time Style	Select the time format you prefer. Locale Specific means the format matches the language option you have set on your browser.
Time Separator	A character to separate the time-display values. A colon is the default. Enter another character to use as an alternative. The iCC ignores this setting if you have selected the Locale Specific option from the Time Style menu.
Date Style	Select the date format you prefer. Locale Specific means the format matches the language option you have set on your browser. Uncheck the Show last 5 days as day name instead of date box if you want the ICC to display recent days by numeric date rather than by name (for example, 'Monday').
Date Separator	A character to separate the date-display values. A hyphen is the default. Enter another character to use as an alternative. The iCC ignores this setting if you have selected the Locale Specific option from the Date Style menu.
Month Style	Select how you prefer to see the month expressed.

To change the **Advanced** options, select from the following:

Layout Editing	<p>Select how you want to edit layouts:</p> <ul style="list-style-type: none"> • Graphical Layout Editing – Direct editing including use of drag-and-drop. • Non-Graphical Layout Editing – Indirect editing by entering values. May be needed if your browser does not support direct editing.
Playlist Add Item	<p>Select where you want the iCC to add new items to a playlist:</p> <ul style="list-style-type: none"> • At Top – Items are added to the top of a playlist. • At Bottom – Items are added to the bottom of a playlist. <p>After the items are added, you can move them into whichever position you wish.</p>
Drop Down Menu Display Mode	<p>Select the menu behaviour you want:</p> <ul style="list-style-type: none"> • Menu is shown when hovered over – Menu expands when you hover your cursor over it. • Menu will show when clicked – Menu expands when you click it.

9.2 Users, Roles, and Permissions

Use the **Users** and **Roles** options to set up user accounts and allocate permissions to them using roles.

To understand the relationship between users, roles, and permissions, read the information below. Otherwise, click the tab for the options you require:

- **Users** – Setting up a user account and allocating it with roles (see [Users](#) for how to do so).
- **Roles** – Managing roles and their permissions (see [Roles](#) for how to do so).

The iCC provides features for you to precisely define a user's access to and control of:

- Playlists
- Layouts
- Schedules
- Channels
- Folders
- The iCC system

So that you can closely manage what can or cannot be done by your users, the iCC offers two groups of permissions that vary in scope:

- Global permissions – System-wide permissions (for example, to manage all channels).
- Asset-based permissions – Permissions applicable only to assets (for example, to just edit layouts).

In the case of asset-based permissions, you can enable or disable access down to the level of a specific asset or even further (for example, only one aspect of a playlist item, such as its play criteria). For each relevant asset, the iCC displays a **Permissions** tab for you to manage that access (see [Asset-Specific Permissions](#) for more information).

The combination of global and asset-based permissions allow you to manage the iCC and your signage assets to a fine degree of detail.

However, enabling a user's permissions one-by-one is time consuming and is not supportive of consistency. The iCC **Roles** feature reduces the time and increases the consistency.

What are **Roles**? When you set up users, you need to grant them the various permissions that match their function and responsibilities. Users with similar responsibilities will need similar sets of permissions. For convenience, the iCC allows you to group those permissions into **Roles** for ease of allocation. For example, the iCC comes with a sample role called **Designer** that is configured with the permissions necessary to edit layouts and publish channels.

In fact, the iCC comes with a number of pre-configured roles already in place. Use them as they are, edit them to match your exact requirements, or create new roles of your own. Then, granting a new user the permissions they need is simply a matter of allocating the appropriate roles to them. It is easy to edit those allocations later to implement any changes.

9.2.1 Asset-Specific Permissions

Click the **Permissions** tab to see the roles allowed to access the current asset. If a role has only asset-based permissions, you can enable or disable its access here.

The **Asset** line describes the current asset.

The **Allowed Roles** box lists the names of the roles and their status:

- A role with a relevant global permission is already enabled. The iCC indicates this with a checked and greyed-out box to the left of the role name.
- A role with only an asset-based permission can be enabled or disabled for this asset. To enable it, check the box to the left of the role name. To disable it, clear the box. If you enable or disable a role, click the or button (the latter means the iCC will also save changes you made in other parts of this view).

Click the button at the right of the role-name bar to reveal more information:

- Left-hand column – Names of the users allocated with this role (to edit a user, click its name to open the **Users** tab).
- Right-hand column – The permissions you have granted the role (to edit a role, click its name to open the **Roles** tab.)

To hide the user and permission information again, click the button. You can reveal that information for all roles by clicking the [Expand all](#) button and hide it by clicking the [Collapse all](#) button.

If no role has any of the other permissions relevant to this asset, the iCC lists those permissions in the blue information bar near the bottom of the page. If you want to grant a permission to a role, click the **Manage Roles** link at the bottom of the page to open the **Roles** tab.

9.3 System Setup

Use the **Setup > System** options to configure and check the operational features of your iCC.

Select the menu item for the option you require:

- [Users](#) – Adding and managing user accounts.
- [Roles](#) – Managing roles and permissions.
- [Date & Time](#) – Specifying time source and time zone.

- [Network](#) – Setting up and testing the network connection.
- [TV & Radio](#) – Setting up TV and radio stations.
- [HTTP Proxy](#) – Setting up proxy server access.
- [Security](#) – Configuring firewall and secure access services.
- [Player Local Information](#) – Adding customized data items to the player.
- [Reporting](#) – Configuring the iCC to report to the network iCOMPEL Deployment Manager (IDM).
- [Licensing](#) – Managing your software licenses.

9.3.1 Users

Use the **Users** options to manage the iCC users.

The iCC displays a list of the users on the system (some are provided by default). You can take any of the following actions:





- [Add a user.](#)
- [Review a user's roles.](#)
- [Edit a user.](#)
- [Delete a user.](#)

Add a User:


To add a user, click the  button. Complete the following details:

Username	The name the user logs in with (for example, 'remote', or 'chef'). This must be unique on this ICC. Follow the on-screen guidance on how to compose the username.
Password	The user's password. Repeat in the Password Confirm field. Note: You cannot retrieve passwords. If users forget their password, you have to give them a new one. It is strongly recommended you change the factory-supplied password for the remote user.
Password Policy	Check the box to permit the user to change his or her own password.


Then, complete these steps:


1. Click the  button. The iCC displays a list of available roles. If you want to see the permissions a role has, click its  button (or the [Expand all](#) button to see the permissions for all roles).
2. Check the boxes next to the roles you want to allocate to the user.
Note: If you allocate a role that has an FTP permission, the iCC displays the FTP tab. Click  and select the FTP home folder from the drop-down list.
3. Click the  button.


Review a User's Roles:

To review the roles allocated to a user, click the user's name. The iCC displays the roles on the right of the screen. If any of those roles has an FTP permission, the display also shows the user's FTP home folder. To see the permissions a role has, click its  button (or the [Expand all](#) button to see the permissions for all roles).


Edit a User:

To edit a user, hover your cursor over the user's name and click the  button:

- The iCC displays a set of tabs, with the **Roles** tab showing first. If you want to see the permissions a role has, click its  button (or the [Expand all](#) button to see the permissions for all roles). Check or uncheck the boxes to edit the allocation of roles to the user.
- Click the **Details** tab to change the user's password.
- The iCC may also display the **FTP** tab if the user has an FTP-related role. Click it to change the user's FTP home folder.

When you have finished, click the  button.

Delete a User:

To delete a user, hover your cursor over the user's name. The iCC displays the  button. Click that button to delete the user. You cannot delete the user you are signed in as.

9.3.2 Roles

Use the **Roles** options to manage the ICC users.

The iCC displays a list of the configured roles (some are provided by default). You can take any of the following actions:

- [Add a role.](#)
- [Review a role's permissions and users.](#)
- [Edit a role.](#)
- [Delete a role.](#)

Add a Role:

To add a role, click the  button. Complete the following details and click the  button:


Role Name	A name with which to reference the role (for example, 'FolderController'). This must be unique on this iCC.
Global Permissions	Check the boxes next to any system-wide permissions you wish to grant the role. You do not have to grant a role any global permissions. See the permission descriptions below for details on each permission.


Asset Based permissions	<p>Check the boxes next to any asset-based permissions you wish to grant the role. Roles with global permissions can already access the relevant assets. For ease of reference, the ICC displays these permissions grouped according to asset type.</p> <p>Note: Granting an asset-based permissions to a role does not enable access to those assets by default (except for the channel permissions). You have to manually enable a role's access on each asset.</p> <p>See the permission descriptions below for details on each permission.</p>
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Review a Role's Permissions and Users:


To review a role's permissions and the users allocated with the role, click the role's name. The ICC displays the permissions and the users on the right of the screen.

Edit a Role:

To edit a role, hover your cursor over the role's name. The iCC displays the  button. Click that button to open the permissions configuration screen. Check or uncheck the boxes to edit the role's permissions. You cannot edit the role's name.

When you have finished, click the  button.

Delete a Role:

To delete a role, hover your cursor over the role's name. The iCC displays the  button. Click that button to delete the role.

Permission Descriptions:

The following tables describe what each permission allows.

Global permissions:

Manage System Settings	Full control over items on the Status and Setup menu pages. Access to the Media page for newsfeeds, fonts, and files & folders.
Monitor Status	View only access to the System status and Manage Channels pages.
Manage Layout	<p>Full control over items on the Media, Playlists, Layouts, and Schedules menu pages.</p> <p>Able to change a role's asset-based permissions for layouts, ad hoc, schedules, and playlists.</p> <p>View only access to the Status and Manage Channels menu pages (except for the links to the current schedule and schedule entries).</p>
XML Control	Access to the XML message interface allowing non-browser based control of the iCC.
Read/Write FTP	Read, write, and delete files in the Media folder and all its subfolders using FTP.
Read Only FTP	Read only access to the files in the Media folder and all its subfolders using FTP.
Manage Channel	<p>Full control over the Channels menu page.</p> <p>Able to change a role's asset-based permissions for channels.</p>
Subscribe Channel	Able to enable a published channel to be read by subscribers.

Asset-based permissions:

Publish Channel	Permits the role to publish a channel.
Notify Channel	Permits the role to set notification that a channel is ready to publish. A role with the Manage Channel permission can configure a channel so that it can only be published after a notification is set.
Edit Schedules	Change schedule settings.
Edit Layout	Access to the Media page (tables and colors only). Access to the Layouts and Playlists pages of the layouts you have permitted the role to edit. Grant edit permission on the layout Permissions tab. Permits the role to add content to a playlist using drag-and-drop only. Add the Manage Folder Content permission to enable the role to use the Files & Folders and Upload Files options.
Manage Playlist	Full control over playlists. Permits the role to add content to a playlist using drag-and-drop only. Add the Manage Folder Content permission to enable the role to use the Files & Folders and Upload Files options.
Edit Playlist Item Media	Edit playlist items.
Edit Playlist Item Style	Edit playlist item styles.
Edit Playlist Item Play Criteria	Edit playlist conditional play and time validity settings.
Edit Ad hoc Content	Add or delete content on the Ad hoc Entry page (not the ad hoc content design pages).
Manage Folder Content	Add or delete folder content. The role is only permitted to do so in folders with this permission enabled for it. Permits the role to add content to a playlist using drag-and-drop only. Add the Manage Folder Content permission to enable the role to use the Files & Folders and Upload Files options.

9.3.3 Date & Time

Use the **Date & Time** options to configure the time source and time zone for your iCC.

Click the tab for the option you require:

- **Settings** – Configuring the time source and time zone.
- **Status** – Checking current Network Time Protocol (NTP) characteristics.

Settings:

To configure the time settings, complete the following details then click the **Save Changes** button and reboot the iCC:

Date and Time Settings	<p>Choose the time method to use:</p> <ul style="list-style-type: none"> • Network Time Protocol (NTP) – Best for accuracy but requires the iCC to have a network connection to an external NTP server. • Windows Compatible Network Time Protocol – Use if the NTP server is a local Windows server. • Local System Clock – The iCC internal clock. Only use if the iCC cannot access an NTP server. Without an external reference, the local system clock may drift.
Time Zone Setting	Select the time zone for the iCC to use.
Local System Clock Settings	If you chose the Local System Clock method, the ICC activates this display. The values shown are those current when you opened the Date & Time page. Adjust the date and time to those required.
Network Time Protocol (NTP) Settings	If you chose one of the NTP methods, you must enter the URL of at least one NTP server (three are recommended).

Note: The iCC will only synchronize to NTP server time if the NTP time and the local system time are within a few minutes of each other. If the difference is greater, reboot the iCC to synchronize times again.

Status:

Not displayed if you have chosen **Local System Clock**. Shows the latest characteristics of each of the NTP servers you have designated. This example shows the characteristics of the active time source:

Server	IP address	Offset	Jitter	Status	Last event
Network Time Server (NTP) 1	178.254.20.157	-1.647ms	3.449ms	Active time source	sys_peer

9.3.4 Network


Use the **Network** options to configure, check, and test the iCC network connection.

Note: The iCC displays its active IP address in large text on the splash screen during the boot up process.

Click the tab for the options you require:

- [Ethernet](#) – Configuring IP address and DNS settings.
- [Network Status](#) – Checking current IP address and DNS values.
- [Tests](#) – Running ping, trace, DNS lookup, and TCP dump tests.

Ethernet:


To configure IP addressing, complete the following details then click the  button and reboot the iCC:

Ethernet Settings	Select how the iCC obtains its IP address: <ul style="list-style-type: none"> • DHCP – Select if the iCC will obtain its IP address from a DHCP server on your network. If the iCC cannot find a DHCP server, it defaults to an IP address of 169.254.1.1. • Static – Select if you are specifying an IP address for the iCC. Enter it in the IP Address field. If you select this option, the iCC enables the Static Address Settings and Static DNS Settings fields. <p>Caution: If you are using a static address in combination with an LDAP security configuration, you must specify a valid DNS Nameserver. Failure to do so will make your iCC inaccessible.</p>
DHCP Setting	Optional. For ease of reference, enter a name for the iCC. Only available if your DHCP server supports this feature.
Static Address Settings	If you selected the Static Ethernet setting, enter the addresses required: <ul style="list-style-type: none"> • IP Address – Enter the IP address for the iCC. • Netmask – Specify the address range for the iCC subnet. • Default Gateway – Enter the gateway IP address if the iCC uses one.
Static DNS Settings	If you selected the Static Ethernet setting, enter the addresses required: <ul style="list-style-type: none"> • DNS Search Path – Enter the path needed to reach the Domain Name Server (DNS). • DNS Nameserver – Enter the IP addresses of up to three DNS nameservers.

Network Status:

Displays the current network connection status and values.

Tests:

In each case, start the test by entering the host's name or IP address and clicking the  button:

Ping Host	Ping the host.
Trace Route	Trace the route to the host. This can take a few minutes to complete.
DNS Lookup	See the host's details held on the DNS.
TCP Dump	Collect IP packets for the number of seconds you specify.

9.3.5 TV & Radio

Use the **TV & Radio** options to enable the iCC to use TV and radio stations in playlists.

Click the tab for the option you require:


- [Digital Tuner Stations](#) – Adding and editing digital TV and radio station names.
- [Streaming TV & Radio](#) – Specifying and checking multicast addresses.

Digital Tuner Stations:

Click the button for the type of station you want to add:

 – Adding a TV station.

 – Adding a radio station.



In each case, the iCC prompts you to enter a name for the station. You must enter the exact name of the station the player can receive, matching any upper or lowercase characters. Click the  button to finish. The iCC then:

- Adds the TV station name to the **Live Video** drop-down list. Access that list on the playlist **Specials** tab for zones with the **Movie** player enabled.
- Adds the radio station name to the **Live Radio** drop-down list. Access that list on the playlist **Specials** tab for layouts with the **Soundtrack** property enabled.

You can now add TV or radio stations to playlists. Before adding a station, ensure that the player has the appropriate license and that it can tune into the station's signal (see [TV](#) for more on the required player setup).

The **Digital Tuner Stations** tab lists the stations you have added. Click the button to perform the action indicated:

 – Delete the station.

 – Change the station name. Click the  button when you have completed the change.

Streaming TV and Radio:

If the player cannot receive a TV signal directly, it might be able to receive it by multicast streams using the local network. The player decodes the multicast stream and displays the TV image in a zone in the normal way.


If you want to use multicast streams to provide TV to the player there are these requirements:

- The player has the appropriate license.
- There is a streaming transmit server to convert the TV signals into multicast packets.
- If your iCC and the player are on different networks, the streaming addresses must be the same.
- All routers and switches on the local network between the streaming transmit server and each player are enabled for multicast streaming.
- There is sufficient network capacity to efficiently support multicast streaming.

Note: There may be copyright issues involved in rebroadcasting material onto a local network.

Click the **Status** tab to display a list of stations available through streaming.

Click the **Settings** tab to specify the multicast address by following these steps:

1. In a blank field, enter the IP address on which to receive the Service Advertising Protocol (SAP) packets. Valid addresses are between 224.0.0.0 and 239.255.255.255.
2. If required, enter additional addresses in the remaining fields. You can specify up to six addresses.
3. Click the  button.

9.3.6 HTTP Proxy

Use the **HTTP Proxy** page to set up proxy server access if the iCC needs to use one to access Internet resources. Check with your network administrator to see if a proxy is needed.

To use a proxy for accessing an Internet resource, you must perform both of the following actions:

- Set up the HTTP proxy by completing the information on the **Add HTTP Proxy** tab.
- Specify that the iCC must use a HTTP proxy when you set up individual Internet resources (for example, a newsfeed).

After you have configured the HTTP proxy, specify that the iCC uses it on the relevant setup page:

- Newsfeed – Set up the individual newsfeed on the **Media > Newsfeeds** page.
- Reporting – Set up on the **Setup > System > Reporting** page.
- Software update – Set up on the **Setup > Maintenance & Troubleshooting > Software Update** page (**Settings** tab).

The iCC does not transfer a proxy configuration in a channel.

Note: Newsfeeds do not support use of Microsoft® NTLM authentication. We recommend changing the Windows proxy to allow Digest authentication. You must restart the iCC when you make any changes to the HTTP proxies.

To configure the HTTP proxy, complete the following details then click the  button:

Server Address	Enter the IP address of the proxy server.
Server Port	Enter the port the iCC needs to connect to on the proxy server (default is 3128).
Username	If the proxy server requires authentication, enter the username.
Password	If the proxy server requires authentication, enter the password.
Use this proxy for	Check the box for each resource the iCC needs to use the proxy for.

9.3.7 Security – General Settings

Use the **Security** options to configure the iCC firewall and other security services and to monitor firewall activity.

Caution: The iCC comes ready-prepared with default firewall and other security service settings to protect against unauthorised access. Do not change the security settings unless you have a good working knowledge of IP networking and network security. Incorrect configuration can block all access to the iCC.

The iCC firewall protects it against unwanted and potentially malicious traffic. However, the iCC also needs to accept your login and allow necessary communications. To allow and protect such access, the iCC supports a variety of secure services:

- VPN – Virtual Private Network. Allows the iCC to communicate over an encrypted path through firewalls.
- HTTP/HTTPS – Hypertext Transfer Protocol and Hypertext Transfer Protocol Secure. By default, the iCC uses HTTP with Digest authentication, which encrypts passwords. HTTPS is more secure because it also encrypts content.
- FTP – File Transfer Protocol. FTP access is controlled by password. Passwords are not encrypted. Use FTP for copying over backups and software updates.

- **SSH** – Secure Shell. Only used to access the iCC operating system for occasional support and maintenance purposes. Access is by the master password.


You can configure each of those to match the specific security needs of your network or to conform to corporate policy on port numbering.

Click the tab for the option you require:

- [Firewall](#) – Examining and configuring the firewall and other security services settings.
- [Master Password](#) – Changing the iCC master password.
- [LDAP](#) – Detailing access control using the Lightweight Directory Access Protocol.
- [LDAP Expert](#) – Entering XML-based LDAP parameters. (Only displayed if you have set the **User Interface Policy** to **Expert**.)
- [Firewall Status](#) – Monitoring the detailed firewall activity report.
- [LDAP Tests](#) – Testing your LDAP configuration.
- [SSL Certificates](#) – Using customized Secure Socket Layer certificates.

Firewall:

The **Firewall** tab allows you to examine and configure the firewall and other security service settings.

To change your security settings, complete the relevant options then click the  button and reboot the iCC:

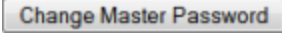
Firewall Service Settings	<ul style="list-style-type: none"> • IP Address Filtering – Default: Disabled. Check this box to prevent any access to the iCC except from the Allowed IP Addresses. • Allowed IP Addresses – Enter the IP addresses that can access the iCC, not forgetting to include your own. To allow more than eight IP addresses, specify a range using the standard syntax (for example, entering 192.168.1.0/24 allows access for all IP addresses between 192.168.1.0 and 192.168.1.255).
HTTP Service Settings	<ul style="list-style-type: none"> • Authentication – Default: HTTP Authentication. For a more secure authentication method, and to enable explicit sign out from the iCC session, take these steps: <ul style="list-style-type: none"> ◦ Select Form-based Authentication. ◦ Change Supported Protocols to HTTPS. ◦ On the SSL Certificates tab, detail the SSL certificate to use. • XML API Authentication – Default: HTTP Digest Authentication. The authentication method used for programmatic control through the XML API interface. Alternatively, select HTTP Basic Authentication if it better suits the requirements of your application. • Supported Protocols – Default: HTTP and HTTPS. Select either HTTP or HTTPS to restrict access to that protocol. You cannot manage the iCC without either HTTP or HTTPS enabled. • Bandwidth Limit – If you want to limit the bandwidth available to particular ports, specify it here (in whole numbers of megabytes per second). This allows you to differentiate the quality of service on a per-port basis (for example, restricting bandwidth for subscriber downloads). Do not restrict bandwidth on the ports through which users log in to the user interface. • HTTP Ports – Default: 80. Modify or add if you want your iCC to accept HTTP connections through different ports. Check the Limit Bandwidth box to restrict the bandwidth available to the port. • HTTPS Ports – Default: 443. Modify or add if you want your iCC to accept HTTPS connections through different ports. Check the Limit Bandwidth box to restrict the bandwidth available to the port.
FTP Service Settings	<ul style="list-style-type: none"> • Service State – Default: Enabled. Uncheck this box to disable FTP access. • FTP Ports – Default: 21. Modify or add if you want your iCC to accept FTP connections through a different port. • Passive Port Range – Default: 59000-59009. Modify the Low Port and High Port values to specify a different range. • Transfer Rate – Default: Limit to 10000 Kibit/s. Modify the Limit to value to specify a different transfer rate (in whole numbers of kibibits per second).
SSH Service Settings	<ul style="list-style-type: none"> • SSH Ports – Default: 22. Modify or add if you want your iCC to accept FTP connections through a different port.
Movie Player Unicast Listener Service Settings	<ul style="list-style-type: none"> • Service State – Default: Disabled. Check this box to enable the unicast listener service. • Listening Ports – Specify the ports the iCC listens on.

Master Password:

The **Master Password** tab allows you to change the master password. You need the master password to access the iCC operating system through SSH.

Note: This is not the same password you use to login to the iCC through a browser.

It may be desirable to change the master password, but you must know the existing one to do so. Please contact your reseller or supplier for the master password.

To enable the new password, you must click the  button and reboot the iCC.

LDAP:

See [Security – Advanced LDAP Settings](#) for details.

LDAP Expert:

See [Security – Advanced LDAP Settings](#) for details.

Firewall Status:

The **Firewall Status** tab displays the detailed iCC firewall activity report.

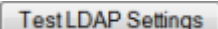
Understanding the information in that report requires a good working knowledge of IP networking and network security. In particular, note these points:

- The **Chain PLAYER-INPUT** section details the rules governing connections made to the iCC on various protocols.
- The iCC checks the IP address of incoming connections against the **Chain PLAYER-INPUT-ADDRESSES** rule set. The iCC drops connections from IP addresses disallowed by the security settings.
- The iCC checks allowed connections against the **Chain PLAYER-INPUT-PORTS** rule set. The iCC drops connections to a port disallowed by the security settings.
- The **Pkts** (packets) and **Bytes** columns show the volume of traffic accepted or rejected by each rule. An unusually high number of packets on a **DROP** line might indicate an attack on the iCC.

LDAP Tests:

Run the LDAP test to check your current LDAP settings and to receive feedback on any problems.

Recommendation: Always test any change to the LDAP settings before rebooting the iCC. To run a test:

1. Enter the name of the target iCC user in the **Test Username** field.
2. Click the  button. The test

results are displayed in two parts:

- A table showing the status of each step.
- A detailed log.

When you have a correct setup, and the iCC username is valid, the LDAP test returns the **Passed** status. To correct any indicated problems, check the user permissions and change the associated LDAP settings.

The iCC performs the following tests and indicates any failures as well as displaying detailed log messages:

Tests	Checks
Bind to LDAP server	Configuration and Bind sections
Search for FTP user	FTP User section
FTP Read/Write Access	FTP User section User Filter
Search for HTTP user	HTTP User section
Find HTTP user	HTTP User section
Search for group membership	Roles LDAP Filter section

SSL Certificates:

If you want to use customized SSL certificates, rather than the default certificates, follow these

1. Select the **Use Custom SSL certificates for the Web Server** option.
2. Enter your **Certificate**, **Key**, and **CA Chain** values in the relevant fields.
3. Click the **Save Changes** button and reboot the iCC.

9.3.8 Security – Advanced LDAP Settings

The iCC **Security** page includes tabs to allow you to configure and test LDAP:

- **LDAP** – Detailing access control using the Lightweight Directory Access Protocol.
- **LDAP Expert** – Entering XML-based LDAP parameters. (Only displayed if you have set the **User Interface Policy** to **Expert**.)
- **LDAP Tests** – Testing your LDAP configuration.

Caution: Do not use LDAP to control security for the iCC unless you have expertise with LDAP implementations. LDAP is a powerful technology and enabling a misconceived configuration can make the iCC unusable.

Before beginning to configure security for the iCC using the options on the **LDAP** and **LDAP Expert** tabs, read through the guidance that follows. When you have completed your configuration, click on the **LDAP Tests** tab to test it before rebooting the iCC (see [LDAP Tests](#) for details).

To begin with, it is important to understand the difference between the iCC and the LDAP security models:

- The basic iCC security model prevents access to system features unless a user is authenticated and has explicit permissions.
 - In the LDAP security model, a user is considered to have permission if an LDAP filter matches entries in the directory. Typically, an LDAP filter establishes that a user is a member of a group.
- Recommendation:** Use secure HTTP (HTTPS) for LDAP authentication otherwise passwords are sent in the clear and are not encrypted.

What follows is guidance for completing each of the fields on the **LDAP** tab:

- [Configuration](#)
- [Fallback User](#)
- [Bind](#)
- [FTP User](#)
- [HTTP User](#)
- [Roles LDAP Filter](#)

Configuration:

You must check the **Enable LDAP** box to allow the iCC to use LDAP.

You must enter the **Primary LDAP Server** hostname and port and choose the **Server Encryption**.

The **Server Encryption** types are:

- **None** – No encryption (passwords are sent in clear text) (standard LDAP port is 389). Not recommended.
- **SSL** – The iCC encrypts all communications with the LDAP server using SSL (standard LDAP port is 636).
- **TLS** – The iCC encrypts all communications with the LDAP server using TLS (standard LDAP port is 389).

The Certification Authority (CA) Certificate is required when you use SSL or TLS encryption. For SSL, the certificate must conform to the following (if your certificate is in a different format you must convert it to conform to the supported format):

- Is a PEM-encoded certificate (X.509).
- Is not a PEM-encoded version of an archive certificate format.
- Is an RSA-based certificate.
- Has a PEM-encoded RSA key and is not pass-phrase protected.
- Has a CA chain that is PEM encoded.
- Does not have a CA chain that is a PEM-encoded version of an archive format.

For TLS, the certificate must conform to the following:

- Is a PEM-encoded certificate (X.509).
- Is not a PEM-encoded version of an archive certificate format.

Note: Microsoft® Active Directory® does not support LDAP over TLS and by default LDAP requires additional configuration of the Active Directory server.

Fallback User:

The fallback user can always login to the iCC and perform management tasks, even when LDAP authentication is not working.

Enter the username and password that you wish to use to manage the iCC in the event of problems with the LDAP setup.

Recommendation: Give the fallback user **SystemAdministrator** access. Use a very strong password for the fallback user password.

Bind:

Select **Allow Anonymous Bind** to use anonymous binding to the LDAP server. Otherwise select **Bind using DN** and complete the **Bind Username** and **Bind Password**.

For example, the bind username is a distinguished name (DN) like: `cn=Manager,dc=yourdomain,dc=com`.

FTP User:

The information in this section is used to authenticate users and give them permission to gain FTP read/write access to the iCC. You will need to know how to find the user object in the directory that corresponds to the username given to FTP.

For **Scope**, select **Subtree** or **One level** depending on how you want to limit the search for the user object starting from the Base DN.

Enter the **Base DN** in the appropriate format for your implementation.

Set the **Login Username Attribute** to an attribute that will contain the username given to FTP. This is typically as described for the relevant context:

- Active Directory – Typically, the `sAMAccountName` attribute.
- Posix Scheme Directory – Typically, the `uid` attribute.

In the **User Filter** field, enter the LDAP filter that will match a user object in the directory (use `%s` where you wish the filter to contain the username of the user that is logging in).

Recommendation: If possible, add checks for group membership to control which users can access FTP on the iCC.

Example user filters for the relevant contexts are:

- Active Directory – `(&(sAMAccountName=%s)(objectclass=user)(memberOf=CN=ICC ftp access,OU=Security Groups,DC=yourdomain,DC=com))`
- Posix Scheme Directory – `(&(uid=%s)(objectclass=posixAccount))`

HTTP User:

The information in this section is used to authenticate users to use the web interface of the iCC. Permissions are set in the next section. You will need to know how to find the user object in the directory that corresponds to the username given to HTTP.

For **Scope**, select **Subtree** or **One level** depending on how you want to limit the search for the user object starting from the Base DN.

Enter the **Base DN** in the appropriate format for your implementation.

Set the **Login Username Attribute** to an attribute that will contain the username given to HTTP. This is typically as described for the relevant context:

- Active Directory – Typically, the `sAMAccountName` attribute (**note:** in this case, do not include this attribute in the **User Filter** field).
- Posix Scheme Directory – Typically, the `uid` attribute.

In the **User Filter** field, enter the LDAP filter that will match a user object in the directory (use %s where you wish the filter to contain the username of the user that is logging in). Example user filters for the relevant contexts are:

- Active Directory – (objectclass=user)
- Posix Scheme Directory – (objectclass=posixAccount)

In the **Display Name Attribute** field, enter an informal name for the user for the ICC to use where required. This is typically as described for the relevant context:

- Active Directory – Typically, the `displayName` or `sAMAccountName` attribute.
- Posix Scheme Directory – Typically, the `cn` or `uid` attribute.

Roles LDAP Filter:

After a user has been authenticated to access the iCC web interface through HTTP, the iCC will check the user's permissions.

For **Scope**, select **Subtree** or **One level** depending on how you want to limit the search for the user object starting from the Base DN.

Enter the **Base DN** in the appropriate format for your implementation.

Enter the **Filter Attribute** appropriate to your context. Example filter attributes for the relevant contexts are:

- Active Directory – `dn`
- Posix Scheme Directory – `uid`

You can set up permission filters for any of the configured roles. The iCC displays a field for each role.

Set those to LDAP filters that match the role's permissions. Use %s where you wish the user's username to be written into the filter.



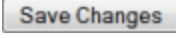


Typically, the filter checks that the user is a member of a group. Example permission filters for the relevant contexts are:



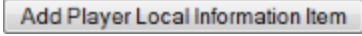
- Active Directory – (&(objectClass=group)(member=%s)(distinguishedName=CN=player monitor,OU=Security Groups,DC=yourdomain,DC=uk))
- Posix Scheme Directory – (&(objectClass=posixGroup)(memberUid=%s)(cn=monitor))

9.3.9 Player Local Information

Use the **Player Local Information** page to add, delete, or modify data items for customising player behaviour.

Click the tab for the option you require:

- **Player Local Information** – View, delete, or edit player local information. To delete a set of PLI, click its  button. To edit a set of PLI, click its  button and take the relevant action (click the  button when done):
 - Modify – Edit any of the **Name** or **Value** fields.
 - Delete a value – Click its  button.
 - Add a value – Click the  button. The iCC opens a new field for you to enter the value. A value can be anything you choose (for example, '3', 'Conference Room', 'London').

- **Add Player Local Information Item** – Add a new set of player local information. To do so, follow these steps:
 - a. Enter a name for the PLI. The iCC will use this name to reference the PLI on other screens.
 - b. Enter at least one value. To add another value, click the  button. To delete a value, click its  button.
 - c. Click the  button.

Example uses of PLI include the following:

- Conditional play – Add data that the player checks to determine which playlist items or schedules to play.
- Localise HTML pages – Add data that the player uses to localise output from web pages.
- Configure a weather widget – Specify the current location to customise a weather widget display.

These examples further expand and illustrate how you might use player local information:

- Design general channel content that also allows each player to play specific content. For example, if your company has branches in different countries, you could use player local information to specify each location in ISO format. A weather widget you install checks that value and provides a localised weather forecast.
- Design general channel content but that uses conditional play to control the media and schedule for individual player units. For example, you could create the same channel content for all branches of a chain store but use player local information to control conditional play items in that content. You could play content in each store based on the profile of customers visiting that store (using conditional play for playlist items). You might also display specific opening hours for a store (using conditional play for one or more schedules).
- When you enable reporting, the player includes player local information in its reports to the IDM and you can use this for whatever purpose you wish. For example, you could use player local information for asset tracking purposes by storing the player's address and asset tracking identifier. If there is a problem, it is easy to determine the location of the player based on IDM reports.

9.3.10 Reporting

Use the **Reporting** options to configure how your iCC reports status information to the IDM.

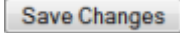
Note: Some features may depend on installed licenses.

You can configure your iCC to send reports to the IDM using any of HTTP, HTTPS, or VPN. However, if you want your IDM to connect to the iCC over SSH you must use VPN.

Click the tab for the option you require:

- **Reporting Settings** – Enabling and configuring reports.
- **Status** – Checking reporting states and events.

Reporting Settings:

To configure reporting, complete the following details then click the  button (you must also reboot the iCC if you change the **Reporting** or **SSH** settings):

Reporting	<p>Check the button for the reporting option you want:</p> <ul style="list-style-type: none"> • Status reporting is disabled – The iCC does not send reports. • Report status to a IDM via HTTP – The iCC sends report using HTTP or HTTPS. • Report status to a IDM via VPN – The iCC sends report using VPN.
Reporting Interval	Specify how often you want the iCC to send a report. The minimum interval is 5 seconds.
Report to IDM via HTTP	Select whether the iCC sends reports using HTTP or HTTPS. Enter the name or network address of the IDM in the field (optionally with the required port number appended after a colon).
Report to IDM via VPN	<p>Enter the name or network address of the IDM in the field (optionally with the required port number appended after a colon).</p> <p>Check the Allow SSH access via VPN box to allow the IDM to connect to the ICC over SSH.</p>
Authentication	Enter the username and password for the reporter account on the IDM.
Proxy	Check the Use proxy if configured box if the iCC has to send reports through a proxy. You must have already configured the proxy (see HTTP Proxy for details).

9.3.11 Licensing

Certain features beyond the normal capabilities of the iCC are licensed. This page allows you to view currently installed licenses and features and to add new licenses.

The **Licensing** tab shows a summary of all installed licenses, while the **Status** tab shows all currently licensed features.

The **Add License** tab allows you to add new licenses.

Note: The iCC must be rebooted for newly installed license features to become available.

9.4 Player Setup

Use the **Setup > Player** options to configure the player RS-232 and interactivity settings.

Select the menu item for the option you require:

- [RS-232 Outputs](#) – Configuring and adding RS-232 items.
- [Interactivity](#) – Configuring touch screen, RS-232, and remote keypad interaction.

9.4.1 RS-232 Outputs

Use the **RS-232 Outputs** options to add and manage RS-232 items.

You can use the player RS-232 port, or the RS-232 adapter attached to one of its USB ports, to send RS-232 strings or RS-232 outputs to control an external, RS-232 enabled device. You do this by creating RS-232 items on the iCC.

The RS-232 item consists of one or more of these properties:

- The voltage level for either or both of the RS-232 output lines.
- An RS-232 hexadecimal control string.
- The event causing the player to execute the item.

Click the tab for the option you require:

- **Items** – Listing the RS-232 items already defined on the iCC.
- **Add Item** – Adding a new RS-232 item.
- **Configuration** – Accessing the RS-232 configuration options, including baud rate, data bits, stop bits, and parity.

The player can execute an RS-232 item in a playlist or automatically at one of the following events:

- Screen is muted or unmuted.
- Audio is muted or unmuted.
- A specified layout starts or completes.




You have to specify the condition when you create the item: you cannot change it later.

Note: You can only create one RS-232 item for each of the conditions.

The RS-232 items are published as part of the channel and are downloaded to subscriber players. However, the iCC provides an override so you can designate an RS-232 string or configuration to use locally that is different from that defined in the channel's RS-232 item.

Items:

For each item, you can take these actions:

- Click the  button to delete an item.
- Click the  button to review or modify an item's properties. Click the  button to enable any modifications.

Note: If you have enabled **Send RS-232 String Action** for the item, the iCC also displays the **Local Override** section. This allows you to enable and define a local RS-232 string for the item separate from the one defined in the channel.


Add Item:

To create the RS-232 item, complete the following details and click the  button:

Name	Enter a name to uniquely identify this RS-232 item.
Perform Enabled Actions when	Specify when the player executes the RS-232 item (in a playlist or automatically at the event you specify).
Send RS-232 String Action	Check the Send RS-232 String Action box to enable the player to send the RS-232 string you specify. Clearing the box disables it.
RS-232 String (as Hexadecimal)	Enter the RS-232 string you want the player to send (in hexadecimal).

DTR (Data Terminal Read) Action	Check the Set DTR level box to enable the player to set the DTR line voltage to the option you select. Clearing the box disables it.
RTS (Ready To Send) Action	Check the Set RTS level box to enable the player to set the RTS line voltage to the option you select. Clearing the box disables it..

Configuration:

Configure the player RS-232 transmission to match the settings of the connected RS-232 equipment. To configure RS-232, complete the following details and click the  button:


- **Bits per Second** – Select the baud rate from 110 to 460800.
 - **Data Bits** – Select either 7 or 8 data bits.
 - **Stop Bits** – Select either 1 or 2 stop bits.
 - **Parity** – Select the parity as none, odd, or even.
- Note:** The iCC also displays the **Local Override** section. This allows you to enable and define a local RS-232 configuration separate from the one defined in the channel.

9.4.2 Interactivity

Use the **Interactivity** page to program the player to respond to RS-232 inputs.

The player can respond to voltage changes on the following RS-232 inputs:

- Clear To Send (CTS).
- Data Carrier Detect (DCD).
- Data Set Ready (DSR).
- Ring Indicator (RI).

Click the  button to view and edit the properties for each input required:

- **Enabled** – Indicates the availability of the input for use on the player.
- **Name** – The name to use for this input when referencing it elsewhere.
- **Used By** – Indicates the zones and layouts that use the input.

9.5 Backing Up Your iCC

In case of problems, you should maintain regular backups of the media content files and settings that your iCC uses. See [Backup Contents](#) for details of what is backed up.

Use the **Setup > Maintenance & Troubleshooting > Backup & Restore** page to create, save, and restore backups. Configure the iCC to automatically create backups on a regular schedule or perform a manual backup as required. You can save the backups on the iCC disk drive, on a network share, or on attached USB storage. If needed later, you can use the backup to restore media files and settings onto this or another iCC.

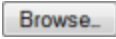
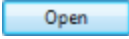



Click the tab for the option you require:

- [Backup Status](#) – Review backup information and delete or restore a backup.
- [Manual Backup](#) – Perform a manual backup.

- [Scheduled Backup](#) – Configure automatic backups.
- [Network Share](#) – Configure a network share location for backups.

Backup Status:

The display contains the following information and options:

<p>Upload a backup file</p>	<p>To upload a backup file from your computer onto the iCC take these steps:</p> <ol style="list-style-type: none"> 1. Click the  button and navigate to the file you want to upload. 2. Select the file and click the  button. 3. Click the button. <p>The iCC displays a progress bar. After being uploaded, the file appears in the Available Backups list should you wish to restore it.</p>
<p>Backup History/Status</p>	<p>Provides these pieces of information about backup activity:</p> <ul style="list-style-type: none"> • Creation Date/Time – Day and time when the iCC created the backup. • Status – Whether the backup completed successfully or not. • Location – Where the iCC saved the backup. • Backup File – The name of the file containing the backup. Click on the name for the option to open or save the file.
<p>Available Backups</p>	<p>The list of backups available for you to restore.</p> <p>Use the following options to control how many backups the iCC displays:</p> <ul style="list-style-type: none"> • Backup Location – Leave blank to see all backups. Restrict those displayed by selecting a location from the drop-down list. • Filter Results – Leave blank to see all backups. Restrict those displayed by entering a filter string. •  – If needed, click to update the list of backups. <p>The table listing the backups contains the following columns:</p> <ul style="list-style-type: none"> • Actions – To restore the backup onto the ICC, click the  button. To delete the backup, click the  button. • Location – Where the ICC saved the backup. • Backup File – The name of the file containing the backup. • Restored Size – The total size of the files and settings when restored onto the ICC. • Backup Size – The size of the backup file. • Serial – The serial number of the iCC backed up. • Creation Date/Time – Day and time when the iCC created the backup. <p>Click on a column header to change the sort order.</p> <p>Use the Show drop-down list to select how many backups you want displayed at a time. If there are more backups than that, navigate through them by clicking the Previous and Next arrows.</p>

Manual Backup:

To perform a manual backup, take these steps:

1. Select where you want to save the backup from the **Location** drop-down list.
2. If desired, edit the **File Name** field to provide a backup filename of your choice.
3. Click the button.

The iCC displays a progress bar. Click the button to stop the backup at any time.

Scheduled Backup:

To configure a scheduled backup, complete the following details and click the button:

Scheduled Backup	Check the Enable box. Uncheck the box to disable the scheduled backup.
Location	Select where the iCC saves the backup from the drop-down list.
File Name Prefix	Optional. If desired, provide a prefix name for the backup file (the suffix is always 'backup').
Back Up Every	Check the box next to the day or days you want the iCC to save a backup.
Start at	Use the drop-down lists to select when you want the iCC to start the backup.
Backup Retention Period	Default: 30 days. If you want to change how many days the iCC keeps the backup, enter an appropriate value.

Network Share:

Before configuring the iCC to use a network share, you must ensure that the share is already set up. To configure a network share, complete the following details and click the button:

Network Backup Location	Check the Enable box. Uncheck the box to disable backup to this network location.
Host	Enter the fully-qualified specification of the location host (for example, backupserver1.supportdomain.businessname.com).
Port	Default: 445. If you need to use a different port to connect to the share, enter it here.
Share	Enter the name of the share on the host.
Domain	Enter the fully-qualified domain name (for example, supportdomain.businessname.com).
Username	Enter the username for the credentials authorised to write the file.
Password	Enter the password for the credentials authorised to write the file.

After you click the button, the iCC tests the configuration and reports any errors.

9.6 Software Update

You can access the **Software Updates** page from the **Setup > Maintenance Troubleshooting** menu.

Use the **Software Update** options to check the latest update status and to configure whether the ICC performs updates automatically or not. Contact Black Box Technical Support at 877-877-2269 for more information on available updates.

Note: It is not possible to install an earlier software version than the one currently installed. The currently installed version is shown highlighted.


Click the tab for the option you require:

- **Update Status** – Checking details of the last update, how the iCC checks for updates, and if any new updates are available.
- **Settings** – Configuring or disabling automatic updating.
- **Manual Update** – Performing a manual update from a downloaded file.

Caution: Never turn off the power to the iCC while it is installing an update. It can take 30 minutes to install a large update.

Update Status:

The display contains the following information:

Last Update Messages	Describes the most recent update.
Status	Indicates whether or not the iCC is allowed to check for updates. If it reads 'Not allowed to Check for updates' this is because you have selected one of the following options on the Settings tab: <ul style="list-style-type: none"> • Turn off automatic update. • Download Allowed – specifying a period that does not include the current time.
Last Checked for updates	Indicates when the iCC last checked for updates. If you have either selected Turn off automatic update or have set a Download Allowed period that does not include the current time, this reads 'Not known'.
Update File	Indicates if an update is available or not. If an update is available, and has not yet been installed, the display details its location and description. To install that update: <ol style="list-style-type: none"> 1. Click the Settings tab. 2. Select the Automatically download and install updates option. 3. Click the  button.
Update Description	A description of what the update listed above provides. Not displayed if there is no update available.
Progress	Contains a progress bar during a download. After a download completes, indicates that an update is ready for installation at the next reboot. Not displayed if there is no update available.

Settings:

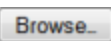
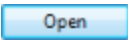
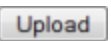
To configure software updating, complete the following details and click the  button:

Update Mode	<p>By default, automatic update is turned off. To turn it on, select the mode of operation you want to use:</p> <ul style="list-style-type: none"> • Automatically download and install updates • Check for new updates but do not download or install them • Turn off automatic update
Reboot Allowed	<p>Specify the day and time when the iCC can reboot to install an update.</p> <p>Only activated if you have chosen Automatically download and install updates.</p>
Download Allowed	<p>Specify the day and a time slot when the iCC can check for updates.</p> <p>If you have selected Automatically download and install updates, the iCC will check for updates and, if it finds one, will download and install it automatically. The iCC installs the update at the day and time specified in the Reboot Allowed option.</p> <p>If you have selected Check for new updates but do not download or install them, the iCC will check for but not download updates. Instead, it displays the details of any new update on the Update Status tab.</p> <p>Not activated if you have chosen Turn off automatic update.</p>
Update Server URL	<p>if different from the default, specify the URL where the iCC checks for updates (the default URL is http://icompelupdates.blackbox.com). Not activated if you chose Turn off automatic update.</p>
Check Interval	<p>Specify how often the iCC checks for updates (in hours and minutes).</p> <p>Not activated if you have chosen Turn off automatic update.</p>
Authentication	<p>If the update server requires authentication, enter the details here.</p> <p>Not activated if you have chosen Turn off automatic update.</p>
Proxy	<p>Select the required proxy configuration:</p> <ul style="list-style-type: none"> • No proxy required – The iCC connects directly to the internet. • Use proxy if configured – The iCC accesses the internet through the configured proxy. You must first configure the proxy (on the Setup > System > HTTP Proxy page).

Manual Update:

The first part of this screen confirms the version of the software currently installed on the iCC.

If you have manually downloaded an update and wish to install it, follow these steps:


1. Click the  button and navigate to the update file location.
2. Select the file and click the  button
3. Click the  button.
4. Follow the on-screen instructions.

9.7 Reboot System

You can access the **Reboot** page from the **Setup > Maintenance & Troubleshooting**

menu. Use the **Reboot** page to perform a controlled reboot of the iCC.

Caution: You can stop and restart the iCC simply by switching the power off and on. However, following a software update, you must reboot the iCC using this controlled process to ensure the update completes successfully.

Select **Yes** from the drop-down list and click the  button.

Part X

Troubleshooting

Part 10: Troubleshooting

Your iCC requires little maintenance.

From time to time, Black Box may release software updates for your iCC. To make sure you keep your iCC up to date, you can set it to receive and install those updates automatically (see [Software Update](#) for more details).

The following topics provide more information about iCC maintenance and problem solving procedures:

- [Backing Up Your iCC](#) – Creating and restoring a backup of your media files and iCC settings.
- [Reboot System](#) – Manually rebooting the iCC.
- [Support Snap Shot](#) – Creating a collection of log and device data for support purposes.
- [Connection Troubleshooter](#) – Following a sequence of tasks to track down and correct connection problems.

10.1 Support Snap Shot

If you have a problem with your iCC, your support representative may ask you to create a **Support Snap Shot**. A support snap shot consists of a detailed collection of iCC logs and device setting data.

You can access the **Support Snap Shot** page from the **Setup > Maintenance & Troubleshooting** menu

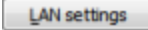
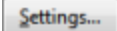
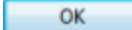
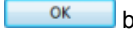

Click the [Create Support Snap Shot](#) button and follow the on-screen instructions to create the support snap shot, if you are asked to do so.

The **Extras** tab includes further diagnostic tools that you may be asked to use by the support representative to help diagnose and resolve problems with your iCC.

10.2 Connection Troubleshooter

If you are having difficulties connecting to your iCC, work through the tasks in the following table:

Task	Comment
There must be network cables connecting the iCC to your PC.	Use either a network cable connecting your computer to your LAN and one connecting the iCC to the LAN, or a crossover cable connecting your computer directly to the iCC. Make absolutely sure that you are using a crossover cable.
If you are using a laptop, connect it to main power.	If your laptop is running on battery power, and the battery is low, the networking circuits may have been shut down. You may need to reboot your laptop and the iCC.
If you are using a crossover cable, turn off any wireless networking.	Your laptop may have a switch to turn wireless networking on and off. Otherwise, look for an icon on your desktop or in your Control Panel (for Windows PCs).

Task	Comment
If you are using a crossover cable, your computer must not be configured to work through a proxy.	In Internet Explorer, select Tools > Internet Options > Connections . Click the  button and clear the Use a proxy server for your LAN box. In Firefox, select Tools > Options > Advanced . On the Network tab, click the  button and select No Proxy .
Reboot the iCC and the PC.	
During the iCC boot sequence, press the ESC key and look for an OK message (in green) for the <code>eth0</code> parameter.	If you see a <code>[Fail]</code> message (in red) for the <code>eth0</code> parameter this usually means that the iCC has found nothing to connect with at the other end of the cable.
During the iCC boot sequence, press the ESC key and look for the IP address on the screen.	A No Cable message means that the cable is missing or faulty or that there is another device on the network with the same IP address. The address 169.254.1.1 either means that DHCP could not be found or you are using a crossover cable.
The iCC must have completed its boot sequence.	The screen connected to the iCC should be showing the <code>localhost login: prompt</code> .
The green LEDs on all applicable network sockets should be on or flashing.	If applicable, check the green light (if present) is lit on the socket that the network cable plugs into on your PC, on the iCC, and any hubs or routers in the path from the computer to the iCC.
You should know the IP address of your PC.	To find the IP address of a Windows PC, click Start > Run . Enter <code>cmd</code> and click the  button. Enter <code>ipconfig</code> and press the Enter key. Your computer displays its IP address.
Make sure that the IP addresses of the iCC and computer are in the same subnet.	You may need to consult your network administrator for further advice.
You should try to ping the iCC from the PC. (Some networks do not allow pings.)	On a Windows computer click Start > Run . Enter <code>cmd</code> and click the  button. Enter <code>ping</code> followed by a space and then the IP address of the iCC. Press the Enter key. After a few seconds you should see a message that includes the phrase <code>(0% loss)</code> . The yellow LED on the network socket of the iCC should flash during the ping.
You should be able to access the iCC with your browser.	In the address bar of your browser, enter the IP address of the iCC and click the Enter key. When prompted, enter the username and password for the iCC. The home page of the iCC should appear in the browser.
Make sure your browser is not showing a cached version of the iCC home page.	In Internet Explorer, click File and select Work offline . Also, select Tools > Internet Options and click the  button in the Browsing History panel then press F5 .

Task	Comment
If you are using a crossover cable then you should not be prompted to dial up to the Internet.	If you are using Internet Explorer, and you cannot prevent the computer from dialling out for an Internet connection, install the Firefox browser on your computer and use it to access the iCC.
You should be able to connect to the iCC using FTP.	<p>In Internet Explorer, in the address bar type <code>ftp://</code> followed by the IP address of the iCC and press the Enter key. When prompted, enter the same username and password.</p> <p>In Firefox, in the address bar type <code>ftp://</code> followed by the username, a colon (:), the password, the at symbol (@), and then the IP address of the iCC. For example, <code>ftp//remote:9999@192.168.1.2</code>. You should see a list of folders, including the Media folder.</p>

Part XI

Technical Reference

Part 11: Technical Reference

This section contains technical reference topics not covered elsewhere:

- [Playback Performance](#) – Enhancing the playback performance of specific media types.
- [RS-232 Technical Reference](#) – Understanding RS-232 pin assignments and electrical interfaces.
- [Backup Contents](#) – Understanding which files and folders the ICC saves in a backup.

11.1 Playback Performance

You can optimize the playback performance of specific media by taking note of these points:

- The player units have no problem displaying MPEG-2 video at a reasonable rate (up to 10 Mbps). This typically uses less than half of the player processing power.
- You should resize images (especially digital photos) before uploading them onto the iCC. Ideally, resize them so that they match the size of the zone.
- Scrolling text uses relatively little processing power, provided it does not take up more than 30% of the screen area.
- Animations (typically in Flash or HTML with embedded JavaScript) have no upper limit to the processing power they require and can overwhelm the player. If this occurs, the animation will typically run slowly but other zones will continue as normal.

11.2 RS-232 Technical Reference

The pin assignment of the RS-232 9-way D-PLUG is as follows:

Pin	Direction	RS-232 Name	Quiescent State
1	Input to iCC Input	DCD	High impedance
2	to iCC Output	RxD	High impedance
3	from iCC Output	TxD	-ve voltage level
4	from iCC	DTR	-ve voltage level
5		Sig. GND	
6	Input to iCC	DSR	High impedance
7	Output from iCC	RTS	-ve voltage level
8	Input to iCC Input	CTS	High impedance
9	to iCC	RI	High impedance

For historical reasons, the RS-232 standard uses a variety of terminology to describe its signal status:

- Lowered = Negated = Logic 1 = -ve voltage = Off = Marking.
- Raised = Asserted = Logic 0 = +ve voltage = On = Spacing.

The iCC uses voltage level in order to describe line status since this is the only explicit identification.

Inputs have:

- Hysteresis (generally of about 0.5 V).
- A threshold level of about +1.5 V.
- An input impedance of about 5000 ohms connected to GND (defaults to a -ve voltage state with nothing attached).
- An acceptable input range of +/-15 V.

Outputs have:

- A voltage swing ranging from +/-5 V to +/-12 V (depends on hardware).
- A source current drive capability of about 15 mA (with output current limiting). This can drive LEDs or provide a voltage for contact closure applications.

11.3 Backup Contents

[Backing Up Your iCC](#) describes how you create a backup for your iCC. The folders and files included in the backup are:

Folders	Files
<pre> /data/data/ad_hoc_media/ / data/data/channel/ /data/data/config/ad_hoc/ / data/data/config/channel/ / data/data/control/ /data/data/fonts/ /data/data/media/ /data/data/package/ /etc/Black Box/ICC/ layout_permissions/ </pre>	<pre> /data/data/config/audio_settings.xml /data/data/config/http_proxy_settings.xml /data/data/config/local_information.xml /data/data/config/player_settings.xml /data/data/config/remote_setup_settings.xml /data/data/config/schedule_log_rotate.xml /data/data/config/screen_settings.xml /data/data/config/software_update_settings.xml /data/data/config/streaming_video_settings.xml /data/data/config/tv_controller_digital_ tuner_stations.xml /data/data/config/tv_settings.xml /etc/Black Box/common/user_passwords.xml /etc/Black Box/common/users.xml /etc/Black Box/iCC/custom_ssl_ca_certificate.crt /etc/ Black Box/iCC/custom_ssl_ca_certificate.key /etc/Black Box/iCC/ custom_ssl_ca_chain_certificate.crt /etc/Black Box/iCC/ date-and-time-settings.xml /etc/Black Box/iCC/dsm_reporting_password.xml /etc/Black Box/ICC/dsm_reporting_settings.xml /etc/Black Box/iCC/ ldap_passwords.xml /etc/Black Box/iCC/ldap_passwords_pending.xml /etc/Black Box/iCC/ldap_settings.xml /etc/Black Box/iCC/ldap_settings_pending.xml /etc/Black Box/iCC/security_settings.xml </pre>

Part XII

Glossary

Part 12: Glossary

Term	Meaning
Ad Hoc	An override to a display schedule, often managed locally by ad hoc users, which is restricted to a specific zone and/or content type. Ad hoc users control ad hoc content or ad hoc items, which are kept in ad hoc media folders, and displayed on ad hoc pages.
Ad hoc from center	An ad hoc schedule override which is managed and sent by a remote publisher player to one or more specific subscriber players.
Advance To	A command in a playlist that causes the player to start displaying from a specific place in this or another playlist. A matching rendezvous point indicates the place in the other playlist
Canvas	The display space in which the player renders layouts.
Channel	A source of display content used by subscribers. Also refers to the content it contains.
Channel Content Server	A server storing and publishing channel content to offload processing overhead from the publisher.
Channel name	Identifies the channel.
Conditional play	A means of controlling whether content is played or not depending on the values set in the player local information.
Content	An item of digital media or text that is displayed in a zone as part of a playlist.
Digital signage	Electronic display that may show a combination of any or all of text, graphics, and still and moving images.
Digital Signage Network	A set of systems connected together to provide integrated management of numerous display screens.
Display	The overall content being shown on the screen, rather than its layout or zone configuration.
Donate	The process of applying a player's configuration to a folder that the iCOMPEL Deployment Manager then uses to configure other players.
Event	An interactive input that causes a change in the display.
Folder play	The ability to add an entire folder of items to a playlist and have them play in sequence.
Graphical layout editor	The interactive editor for creating and modifying layouts using zones.
Interactivity	The player can run predetermined fixed schedules in the different zones within a layout. However content can also be dictated by external stimuli such as floor pressure pads, the incorporation of a touch screen display, or changing content using a remote keypad.
IPTV (Internet Protocol Television)	The delivery of television services over the Internet (as opposed to traditional broadcast technology, satellite, or cable reception).
Layout	The combination of a background image and one or more display areas (zones) and that can be shown simultaneously on a screen.

Term	Meaning
Layout icons view	Abstract display of a layout showing only the distribution and size of its zones. The color of each zone indicates the media it is enabled to play.
Layout package	The media and settings for a layout bundled in a ZIP file for distribution to other players.
Manager	A component of the Black Box Digital Signage Platform. Manager is the generic term for the appliance that manages the digital signage network. Specifically, the manager is the iCOMPEL Deployment Manager (IDM).
Media	General term for the content the player displays (such as text, images, video, and newsfeeds).
Media audit	Reports indicating which media items played on the player, when, and for how long.
Media folder	Designated area on the iCC disk holding media items for adding to playlists.
Media player	A feature that provides a zone with the ability to 'play' different types of media. You can enable a zone with players for movie, HTML, text, and image media, either singly or in combination.
Menu bar	Appearing on all of the user interface pages, the menu bar provides access to the various iCC configuration and design options (such as Media or Playlists).
Multichannel publishing	An iCC configured with more than one channel.
Override	Users can override or interrupt a schedule when necessary, for example to display special instructions in the event of an emergency, or to show a special event from a TV broadcast feed.
Page	The iCC interface is made up of different pages, accessed through the menu bar. Ad hoc users have their own dedicated pages for their limited-level access.
Player	A component of the Black Box Digital Signage Platform. Player is the generic term for the appliance that runs the screen. Specifically, the player is the iCOMPEL Subscriber Unit.
Player local information	Data entered on an player used to alter what is displayed according to conditions often tied to a locality.
Playlist	A series of digital media content items displayed in a zone.
Properties, item	Refers to the specific characteristics of a display item such as the font and type size of text, the format of images, or the duration of an item in a playlist.
Publish	To distribute channel schedules to multiple subscriber players for display on their associated screens.
Publisher	A device that provides content to players through channels. Specifically, the publisher is the Black Box Content Commander.
Remote keypad	A programmable hand-held device for local control of displays, this can be used to switch between layouts, choose TV or radio stations, and adjust volume level.
Remote setup	A feature allowing a player's configuration to be applied to other players by the iCOMPEL Deployment Manager through a folder.

Term	Meaning
Rendezvous Point	This may be added to a playlist as part of an Advance To command or may be used in multiple playlists to ensure synchronisation between them.
Role	Describes the function of a player: one of standalone, subscriber, or publisher.
Schedule	A plan or timetable for displaying layouts at specific times.
Schedule entry	An individual action added to the player schedule.
Screen snap shot	A picture of what the player is currently displaying.
Standalone	A player that is neither a subscriber or publisher.
Streaming video	Video which is delivered to the end user 'live' (that is, direct from the video provider).
Subscribe	Players that show a schedule from a publisher subscribe to that device.
Subscriber	A player that accepts a channel from a publisher.
Support snap shot	A collection of detailed logging information used for support and problem solving purposes.
User Interface policy	The level of features exhibited in the menu bar and in other options (can be productive, detailed, or expert).
Zone	A single display area in a layout.

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