

ONELAN Digital Signage

Net-Top-Box User Guide



ONELAN
Digital Signage

Net-Top-Box Digital Signage

User Guide

V9.2.3

by ONELAN Limited

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The ONELAN Net-Top-Box Digital Signage Appliance is a multimedia, multizoned solution capable of displaying stored media and live media e.g RSS feeds, web pages and broadcast or locally streamed TV. With a browser based user interface, the system is fully multilingual including all main European languages.

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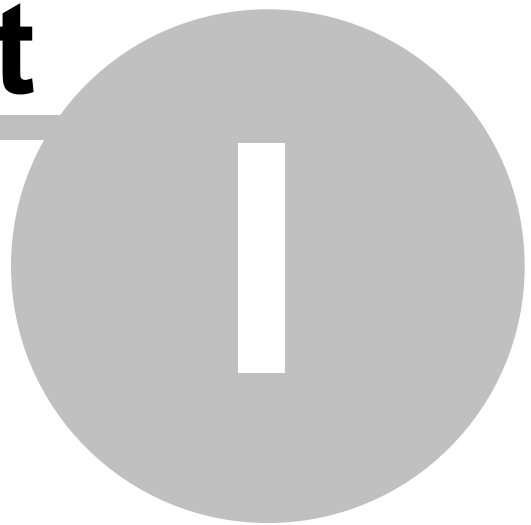
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Part



Welcome to ONELAN
Digital Signage

1 Welcome to ONELAN Digital Signage

Welcome to the Net-Top-Box (NTB) user guide. Here you will find comprehensive information about how to create digital signage with the NTB and how to manage the NTB 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 the NTB, how it operates, and what it can offer, you will find helpful orientation by reading through the [Terms You Need to Know](#)^[8]. Following that, check through the steps needed to [log on to the NTB](#)^[10] and the description of [the NTB user interface features](#)^[10].

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

- [Creating Digital Signage](#)^[16] – Getting started with designing and implementing your display.
- [Understanding Media Types](#)^[3] – Understanding the different types of content you can display and how the NTB manages them.

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

- [Player and System Status](#)^[9] – Keeping your NTB running smoothly.
- [Setup](#)^[10] – Performing configuration and maintenance tasks.

1.1 Terms You Need to Know

The NTB provides powerful facilities to help you to design, structure, and control sophisticated and effective content display. Before you can make full use of those facilities, you need to be familiar with some core concepts.

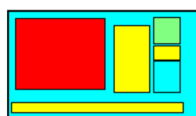
The NTB is a digital signage player that displays content on a screen. The screen is physically attached to the NTB and is usually an LCD panel or LCD TV. To design what appears on the screen, and to manage the NTB itself, you connect to it over your network using a web browser running on your PC.

To understand how you use the NTB 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**:

A **Schedule**:



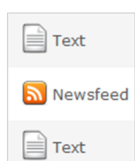
...shows a **Layout**:



...made of **Zones**:



...each running a **Playlist**:



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

Schedule

Your NTB 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 colour 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 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 on a single NTB. However, if your licence permits it, you can also easily create a network of inter-related NTB players. You do this by designating and configuring one NTB as a **Publisher**, which means it shares the design and content of its schedule and layout with other NTB players. In turn, you designate those other NTB players as **Subscribers**. This shared content is referred to as a **Channel**.

You can also allow people local to the subscriber NTB players to have a degree of control over the content the NTB 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 NTB. Other sections introduce and describe additional terms and concepts as needed. An extensive [glossary](#)^[135] provides definitions of the core NTB terminology.

But now, to consider further how to use schedules, layouts, zones, and playlists to create your digital signage, you might want to refer to [Creating Digital Signage](#)^[16].

1.2 Logging On

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

Follow these steps to log in to your NTB:

1. Ensure that the NTB 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 NTB.
3. In your browser's address bar, type in the IP address of your NTB 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 NTB 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 NTB master password and check that the security services configuration matches your requirements (see [Security – General Settings](#) ^[109] for details).

For the future, you might want to bookmark the **Home** page or add it to your favourites for easier access. If your network is set up to provide DHCP and DNS support, you can also access the NTB later using its name rather than its IP address: the name is automatically generated in the format NTB`serial`, where `serial` is the serial number of your NTB (for example, NTB123456).

The NTB 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 NTB user interface.

1.3 Using the Web Interface

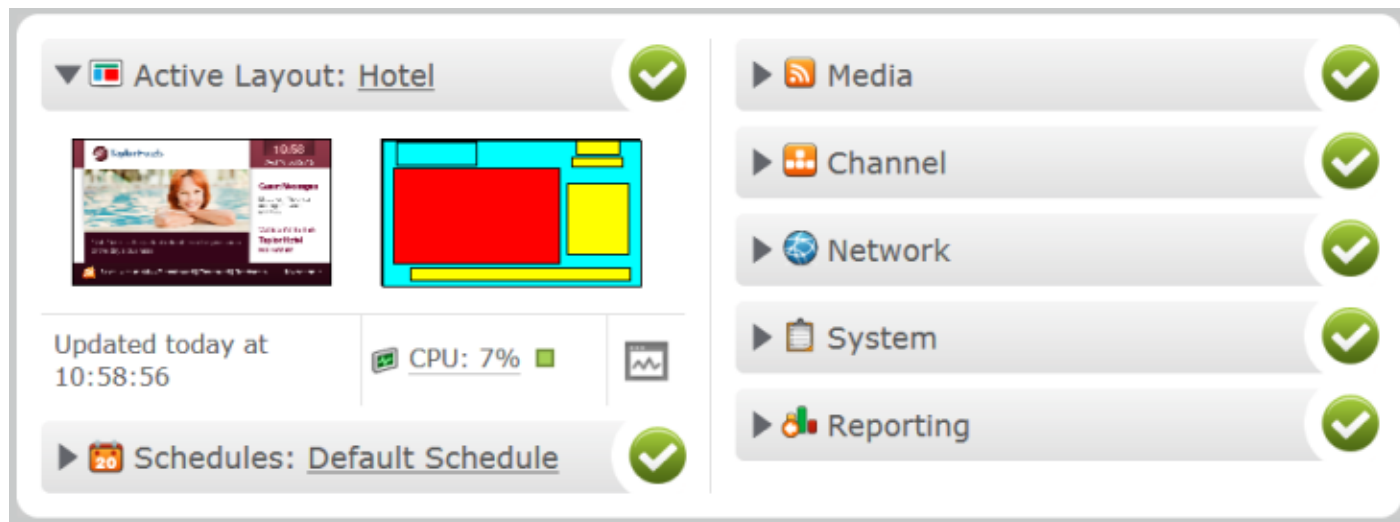
You control and manage the NTB through your browser using the web-style pages of the NTB user interface.

You should familiarise yourself with the essential features of the user interface before beginning to use the NTB. 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 NTB.

At its heart is this view of the current state of the NTB, picturing what it is currently displaying and showing a summary of its operational status:



The components of that display are:

- Layout thumbnail
- Layout icons
- Status bars

Layout Thumbnail

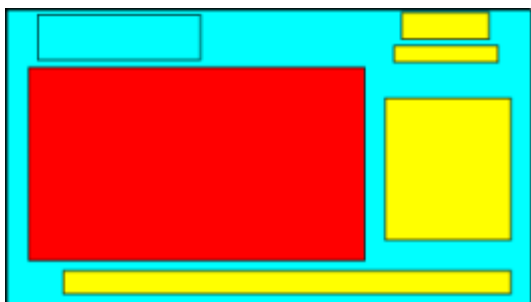
This shows you what the NTB is currently playing. If you click on the thumbnail, the NTB opens the page showing a full-size screen snap shot.




The bar above the thumbnail includes the name of the layout and a link to open the editor for it. The time underneath indicates when the NTB last updated it.

Layout Icons

This shows you the arrangement of zones in the layout. Each zone is represented by a rectangle and the colours indicate the kind of content that zone can display. If you click on a zone, the NTB opens the graphical layout editor for you to edit it.



The panels underneath the layout show:



- How much CPU the NTB is currently using to display the layout
- The  icon: click this to open the system status page.

Status Bars

These indicate the status of key NTB operational components. Each status bar has this general appearance:



The features to note are:

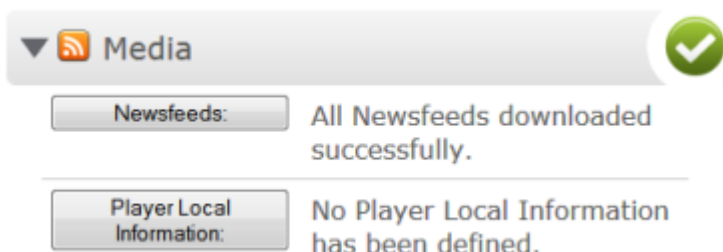
- Open/close arrow – Click the  arrow to reveal more details. Click the  arrow to reduce the detail.
- Name – The subject of the status report (in the above case the subject is the **Network**).
- Status summary – The colour of the icon indicates the current status (in the above case, the network status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

More generally, opening a status bar provides you with additional information about the subject area with a selection of buttons to take you to relevant pages in the user interface. For example, opening the **Media** status bar reveals details about the NTB media state:

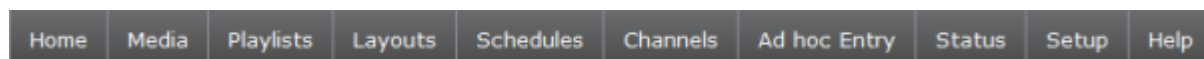


Generic Features: The Menu Bar

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:



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 NTB features are only available if you enable the **Detailed** or **Expert** option on the **UI Options** page. Restrictions may also apply if your NTB hardware components and capabilities do not support certain functions or if you do not have the requisite software licences.

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 Schedules** page.



– The **Manage Layouts** page.



– The **Setup** icons page.



– Confirmation of 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 NTB does not display the quick access icons if your PC screen is too small or you have restricted the size of the browser window.

To allow you to use more of the screen to display page content, the left-hand side of the menu bar includes a control to collapse and expand the screen banner:



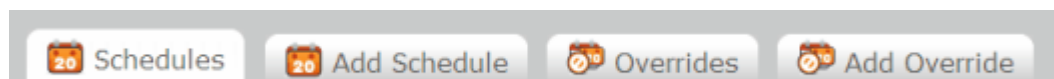
– Collapse the banner.



– Expand the banner.

Generic Features: Tabbed Pages

Many options in the NTB user interface are split across tabbed pages.



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

Generic Features: Action Buttons

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



– Audition



– Delete



– Rename



– Copy




– Edit



– Drag to reorder

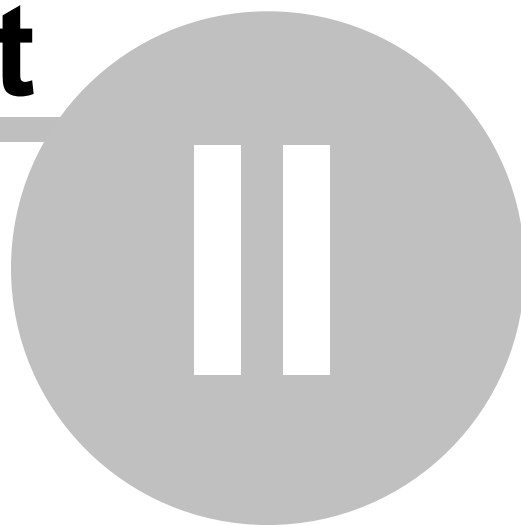
Generic Features: Command Buttons

Some commands are common across different NTB pages. The user interface provides command buttons for these.

To execute the command, click the button. The label on the button describes the command, such as  or



Part



Creating Digital Signage

2 Creating Digital Signage

This section describes how to create your digital signs. If you are new to the NTB see [Terms you need to know](#)^[8] before you begin.

The details in this section apply equally to creating content for a standalone NTB and for creating content for a [channel publisher](#)^[89].

Click on the links below for more information on:

[Schedules](#)^[16]

[Layouts](#)^[21]

[Zones](#)^[23]

[Playlists](#)^[26]

[Media types](#)^[31]

[Enhancing your digital signage](#)^[61]

2.1 Using Schedules


Your NTB is designed to run continuously. You control which layouts are displayed on what days and at what times by creating a **Schedule**. A schedule always contains at least one **Schedule Entry**, which defines at least one NTB 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 NTB 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.

Whenever you make a change to a schedule or layout, you must click the  button to implement the change.

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

To list all of the schedules configured on the NTB:

1. On the menu bar, click **Schedules**.
2. Click **Manage Schedules**.

There are these action buttons for each schedule:



– Delete the schedule (does not delete the associated layouts).



– Copy the schedule.



– Edit the schedule.

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



2.1.1 Creating a Schedule

To display content on your NTB, you need to create at least one schedule. Create additional schedules as required. You add schedule entries to a schedule to fine tune how the NTB runs it.

To create a new schedule:

1. On the menu bar, click **Schedules**.
2. Click **Manage Schedules**.
3. 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 NTB starts running the schedule (the default is in 24 hours time).
Valid Until	<p>Select the option that matches your requirement:</p> <ul style="list-style-type: none"> • Superseded – The NTB keeps playing this schedule until a more eligible schedule becomes available. • Date – The NTB keeps playing this schedule until the date and time you choose. It then plays the next eligible schedule. If the NTB 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 NTB (see Player Local Information ⁽¹¹⁵⁾ for details).</p> <p>If it is enabled, you have two options:</p> <ul style="list-style-type: none"> • Play Always – Default. The NTB always plays the schedule. • Play if Player Local Information Item – The NTB 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 NTB 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.

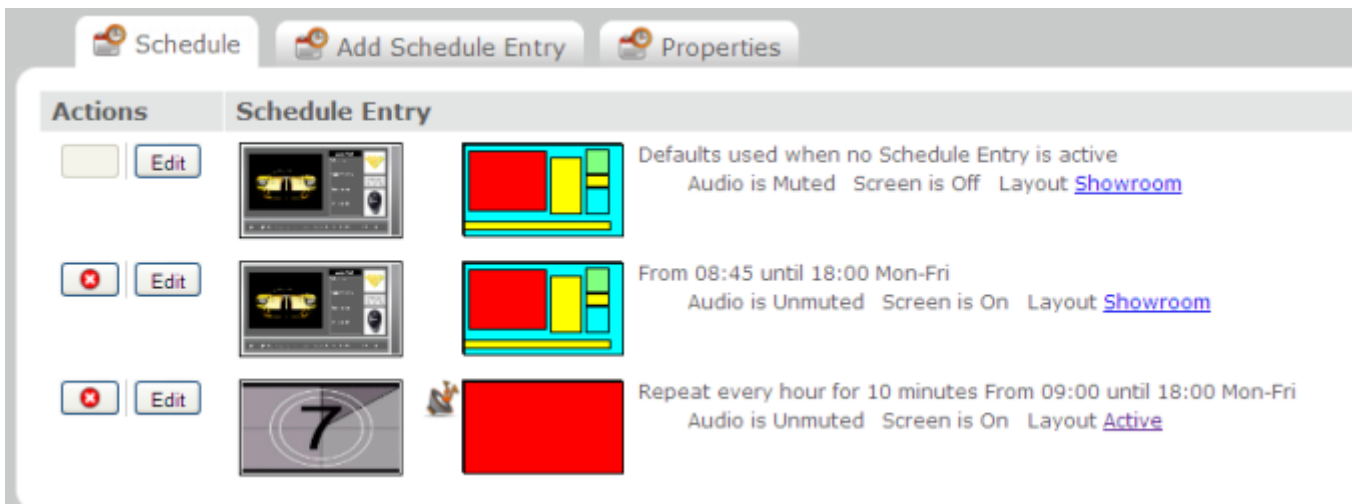
Whenever you create a new Schedule, the NTB automatically includes a **Default Schedule Entry**. The default schedule entry has no start and end time and defines the default states when no other entry is active.

Schedule entries allow you to direct your NTB to perform simple or highly sophisticated sequences of actions. You can have the NTB 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 NTB will:

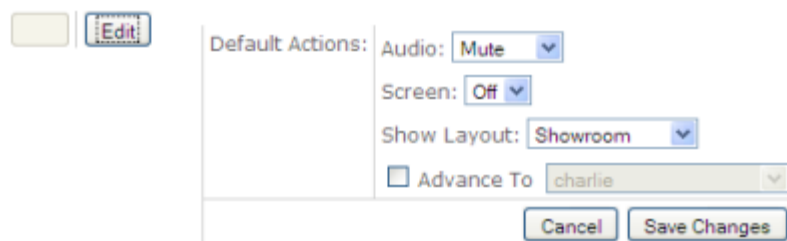
- Turn the screen on to show the **Showroom** layout from 08:45 until 18:00 on Mondays to Fridays.
- Display the **Active** layout (carrying a news broadcast) for 10 minutes every hour.
- Turn the screen off at all other times the screen is turned off.



Schedule made up of three Schedule Entries

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 NTB to turn the screen off and mute the audio soundtrack (note that the **Showroom** layout plays even though the screen is off):



Details of first Schedule Entry

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

The screenshot shows the configuration form for the second schedule entry. It includes fields for 'From' (08:45:00) and 'Until' (18:00:00) times, 'On' days (Mon-Fri), and 'Repeat' options. The 'Repeat' section is set to 'During the Period, only perform Actions' with 'Every' 01:00:00 for 10:00:00. The 'Ad hoc' section is disabled. The 'Actions' section is checked for 'Audio: Unmute', 'Screen: On', 'Layout: Showroom', and 'Advance To: charlie'. 'Cancel' and 'Save Changes' buttons are at the bottom right.

Details of second Schedule Entry

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


The screenshot shows the configuration form for the third schedule entry. It includes fields for 'From' (09:00:00) and 'Until' (18:00:00) times, 'On' days (Mon-Fri), and 'Repeat' options. The 'Repeat' section is set to 'During the Period, only perform Actions' with 'Every' 01:00:00 for 10:00:00. The 'Ad hoc' section is disabled. The 'Actions' section is checked for 'Audio: Unmute', 'Screen: On', 'Layout: Active', and 'Advance To: charlie'. 'Cancel' and 'Save Changes' buttons are at the bottom right.

Details of third Schedule Entry


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


From	Select the time range during which you want the NTB to apply the schedule entry. 00:00:00 means midnight. Set both From and Until to midnight for the NTB 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 NTB 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 NTB performs the actions all of the time. • During the period, only perform actions – The NTB 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 the for setting. The minimum for setting is 30 seconds.
Ad hoc	<p>This is only enabled when you have added schedule ad hoc items to the NTB (see Managing Ad Hoc Pages for details).</p> <p>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.</p>
Actions	<p>Check the boxes and select the required action you want the NTB to perform:</p> <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.

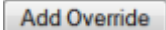
Modify a schedule entry by clicking the  button next to it on the **Schedule** tab.

2.1.3 Overriding the Schedule

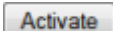
You may need to override the current schedule at certain times (for example, to show a special event from a TV broadcast feed). You can create a **Schedule Override** which temporarily replaces the current schedule. The NTB stops playing the current schedule and displays a different layout. You restore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


Note: Although channel subscriptions take place, they are not activated until you click the  button to return to the normal schedule.

To create a schedule override, follow these steps.

1. On the menu bar, select **Schedules** then **Manage Schedules**.
2. Click the **Add Override** tab.
3. Enter a name for the override. Use a descriptive name (for example, 'Emergency Instructions').
4. Select what you want the NTB to do with audio and the screen.
5. Choose a layout for the NTB to display.
6. Click the  button.

To activate an override, follow these steps:

1. On the menu bar, select **Schedules** then **Manage Schedules**.
2. Click the **Overrides** tab.
3. Click the  button next to the override you want to use.

The NTB displays the override layout immediately and continues to do so until you 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 NTB 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 NTB screen background is visible in any part of the layout that is not covered by a zone. You can define the colour 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 NTB.






For each layout, the NTB displays:

- A thumbnail image (blank if the NTB has not used the layout yet).
- A diagram of the layout's zones.
- The name and description of the layout.
- If applicable, the names of the schedules 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 NTB 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.

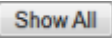
The NTB provides the following action buttons for each layout:

-  – Audition the layout (on the screen or in your browser, depending on your UI Options setting).
-  – 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:



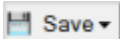
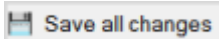
1. Click the  button.
2. Enter all or part of the layout's name.

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 click the  button
4. Click the  button next to your new layout in the layouts list to open the graphical layout editor.
5. Add and set the properties for the zones you require.
6. When done, click  and .

You can return and edit your layout whenever you wish.

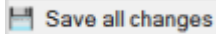
2.2.3 Editing a Layout

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

The layout's page has these tabs:

- **Zones** – Displays the graphical layout editor for you to add or modify zones and their properties.
- **Layout Properties** – Displays the **Ad Hoc Page** and **Soundtrack** options for you to enable or disable.
- **Interaction** – Displays the interactivity options for you to configure.

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 NTB displays this on the Layout pages underneath the layout's name.
Layout Ad hoc Page	Check this box and the NTB 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 NTB will add or remove them from that ad hoc page. If you delete all ad hoc items, NTB deletes the ad hoc page.
Soundtrack	Check the Include Soundtrack box to enable a soundtrack for this layout. By default, the NTB checks the Add default media to Soundtrack's Playlist box. This means that the NTB 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.

2.2.5 Interaction Properties

The **Interaction** tab allows you to define how the layout responds to touch screen and general purpose input/output events.

Note: You may require a license to use these options.

See [Using Interactivity](#) ⁶³¹ for details on designing and implementing interactive responses.

2.3 Using Zones

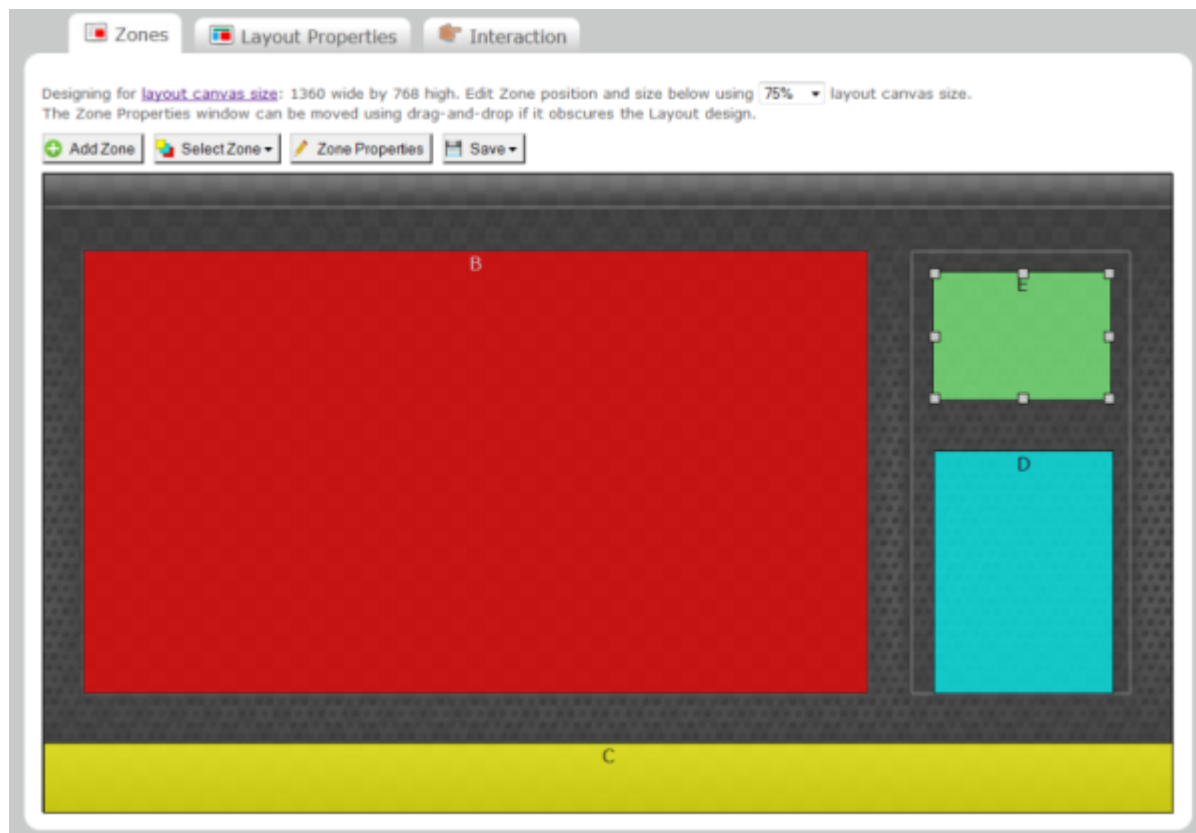
You compose layouts from defined rectangular areas called zones. Each zone can display various types of media content. The number of zones in your layout, their size, and location is up to you.

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 on its name or thumbnail 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:



The graphical layout editor

By default, the editor displays the layout at 75% of the currently defined screen resolution (not the monitor of your PC). You can change this by using the drop-down list at the top of the page.

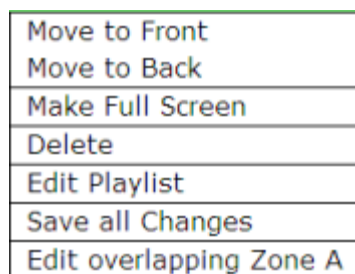
The editor displays each zone in a colour indicating the media player enabled for the zone:

- 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:







Zone context menu

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

-  Save all changes – Simply saves your layout changes.
-  Save all changes and audition Layout – Saves your layout changes and the NTB auditions them.
-  Save all changes and edit Playlist – Saves your layout changes and opens the playlist for you to edit it.

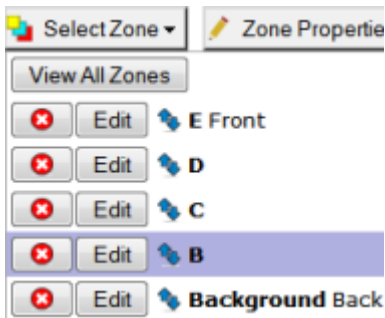
2.3.2 Editing a Zone

The **Zones** tab includes these buttons:

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

The  Select Zone and  Zone Properties buttons provide the detailed editing features.




Click the  button to open a list like this:



Select Zone list

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

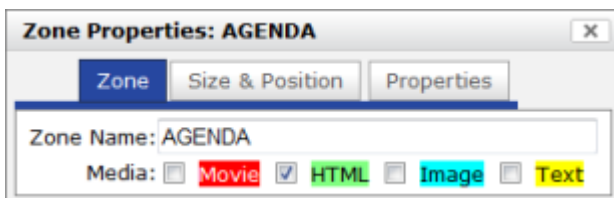
Perform the following actions with the **Select Zone** features:

- 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).


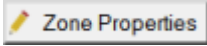
Close the **Select Zone** list by clicking its button again or clicking elsewhere on the page.

2.3.3 Editing a Zone's Properties

Click the  button to open its dialog:



Zone Properties 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 NTB 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.
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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 NTB 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 NTB calculates the required zone size keyed to the height or to the width.
Properties	<p>Check the box or boxes to enable the options required:</p> <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 coloured 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 & Remote Setup^[11b] for more details on reporting.

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 NTB 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).
- Folders containing multiple items.
- Special Items (such as a newsfeeds, TV stations, and tables).
- 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** – Lists the items in the playlist (displays their type, media details, and play duration).
- **Files & Folders** – 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 NTB Disk](#)^[35] for more information.
- **Upload Files** – Use to copy files onto the NTB and to create new folders. See [Uploading Content Files](#)^[36] for more

information.

- **Specials** – Use to add special items to the playlist (items other than files and folders). See [Adding Special Items to a Playlist](#) ²⁷ for more information.
- **Defaults** – 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.


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

-  – Move the item (by drag-and-drop).
-  – Audition an item (preview on the screen or in your browser).
-  – Delete an item.
-  – Edit an item's properties.

2.4.1 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 NTB. 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. Click the name of the folder 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).

2.4.2 Adding Special Items to a Playlist

You can add special items to a playlist if supported by your NTB 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).

2.4.3 Adding Folders to a Playlist

You can add a whole folder to a playlist. The NTB 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](#)^[52] for information on customising how the NTB plays the folder items).


2.4.4 Playing Content Items to Test Them

There are various ways of playing content items to test them:

- Activate a layout and view it on the screen. This is useful if you want to see the complete run of all items and you can easily view the screen.
- Audition a layout, playlist, or individual items on the screen. This is useful if you want to see individual items and you can easily view the screen.
- Display a single image of the current screen or view a live screen display of the current layout in your web browser. This is useful if you want to see the content of the current display but cannot easily view the screen.
- Preview an item in your web browser. This is useful if you want to see one particular item but cannot easily view the screen.

Activate a Layout and View it on the Screen


To activate a Layout and view it on the Screen, take these steps:


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

To return to what was previous being played, click the  button.

Audition a Layout, Playlist, or Individual Item on the Screen

To audition a layout on the screen, take these steps:

1. On the menu bar, click **Layouts** and then **Manage Layouts**.
2. Click the layout's  button.
3. The NTB shows the layout on the screen until you click the **Activate Schedule and Layouts** button.


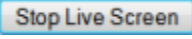
Alternatively, to view an item, click on a zone in the layout preview and then the item's  button.

Display a Single Image of the Current Screen or View a Live-Screen Display in Your Web Browser

To preview a single pixel-perfect screen snap shot or a 60 second-long live-screen display, take these steps:



1. On the menu bar, click **Status** and **Player**.
2. Click the **Screen Snap Shot** tab. NTB displays an exact image of the current screen content.
3. To run the live-screen display, choose the view size you want and how many frames per second to update it.

Note: Viewing the live-screen display may impact the quality of the actual screen's output.

4. Click the  button. The NTB displays the live-screen display in your web browser. By default, it runs for 60 seconds but you can stop it at any time by clicking the  button.

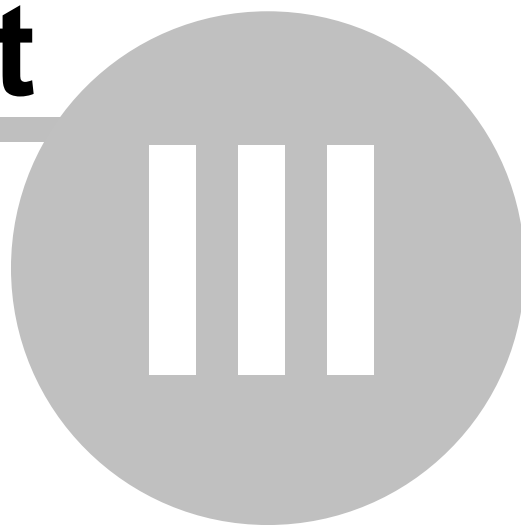
Preview an Item in Your Web Browser

To preview an item in your web browser, take these steps:

1. On the menu bar, click **Help** and **UI Options**.
2. On the **My Options** tab, set the **Audition method** to **Web Preview**.
3. Click the  button.
4. On the menu bar, click **Layouts** and **Manage Layouts**.
5. Click the layout's  button.

Note: The screen will go black for a moment while the NTB takes the snap shot then reverts to the current layout. The NTB displays the snap shot in a new browser window (or browser tab).

Part



Understanding Media Types

3 Understanding Media Types

The NTB allows you to 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](#)^[39] and [Radio](#)^[43] for more details).

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

- [Media Directly Managed by the NTB](#)^[31] (includes text, newsfeeds, clocks, tables, RS-232 outputs, and QR Codes).
- [Media Run from the NTB Disk](#)^[35] (includes video, text files, images and photos, audio, presentations, HTML web pages, Adobe Flash files, and folder play).
- [Media from External Sources](#)^[42] (includes TV, radio, live video, multicast video, and external web pages).

3.1 Media Directly Managed by the NTB

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

[Text](#)^[31]

[Newsfeeds](#)^[32]

[Clocks](#)^[33]

[Tables](#)^[33]

[RS-232 Outputs](#)^[35]

[QR Codes](#)^[35]

[Ad Hoc Content](#)^[70] items are also managed by the NTB.

3.1.1 Text

You can display text you directly enter on the NTB. (You can also display text files: see [Text Files](#)^[39] for more details.)

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

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

Additional notes:

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

3.1.2 Newsfeeds


You can display newsfeeds from external sources on the NTB.

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 NTB, on the 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/tepeg/en/pti/pti_rss.xml).
Refresh Interval	Specify how often the NTB checks for updates.
Maximum Age	Specify how long the NTB will continue to display existing items if there is no connection to the newsfeed to obtain new ones.
Authentication	<p>Select the required authentication style:</p> <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	<p>Select the required proxy configuration:</p> <ul style="list-style-type: none"> • No proxy required – The NTB connects directly to the internet. • Use proxy if configured – The NTB accesses the internet through the configured proxy. You must first configure the proxy (on the Setup > System > HTTP Proxy page).
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3.1.3 Clocks

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

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

Note: Earlier versions of the NTB supported clocks in zones enabled with the **HTML** player. If you already have HTML clocks in your layout you can continue to use them.

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

3.1.4 Tables

You can create, format, and display tables using the NTB. 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 centre room allocations). The NTB creates tables using HTML.

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



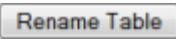


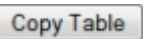
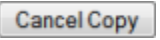
Playlist tab containing the item: **Special**.


Adding and Editing an Ordinary Table:

To add a table, follow these steps:


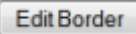
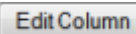

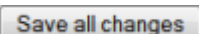
1. On the menu bar, click **Media** and **Tables**.
2. Click the **Add Table** tab.
3. Enter a descriptive name for the table.
4. Enter the number of rows and columns. The maximum size is 19 rows by 39 columns. You cannot change the size of a table after you create it.
5. Click the  button.

The NTB 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  button. If you decide not to rename the table, click the  button.
	Copy the table. Enter the name for the copy in the field and click the  button. If you decide not to copy the table, click the  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:


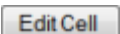
1. Click the table's  button.
2. Click the **Style** tab.
3. Take whichever of these formatting steps are needed to get the effect you want:
 - Click the  button to change the width and colour of the border.
 - Click the  button for each column you want to size manually.
 - Click the  button for each cell whose text font and size you want to adjust. [Text Properties](#)⁴⁹ describes the formatting options. You can edit one cell and specify that the NTB 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  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  button. 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  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 NTB 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 NTB 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 Outputs

You can add an RS-232 output item to a playlist. When the item is reached in a playlist, the NTB 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 on the NTB.

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 adjust the interaction properties.

3.1.6 QR Codes

You can create and display QR Codes using the NTB.

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 NTB creates QR Codes with Level H error correction (30%) and uses byte encoding.

3.2 Media Run from the NTB Disk

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

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

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 NTB system folders.

The **Upload Files** tab provides the means to bring files onto the NTB and to create new folders (as described in [Uploading Content Files](#)^[36]).

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

[Video](#)^[38]

[Text Files](#)^[39]

[Images and Photos](#)^[39]

[Audio](#)^[39]

[Presentations](#)^[40]

[HTML Web Pages](#)^[41]

[Adobe Flash](#)^[41]

[Folder Play](#)^[42]

3.2.1 Uploading Content Files


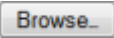
You can upload content files to the NTB in several ways:

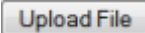
- [Using the Upload Files Tab](#)^[36] – The NTB offers an **Upload Files** tab on the **Media > Files & Folders** page or when you open a specific playlist.
- [Using FTP](#)^[37].
- [Using Drag and Drop](#)^[37] – If supported by your browser.

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 sub-folder:
 - a. Type a name for the sub-folder in the **Folder name** field.
 - b. Click the  button.
 - c. Click the sub-folder 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 NTB. If you do not know the IP address, consult the person who administers your network or reboot the NTB: it displays its IP address during the process.

Note: You need to have the **FTP Read/Write** permission on the NTB 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 NTB 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 NTB in the address bar (for example, ftp://192.168.0.254) and press the **Enter** key.
4. When prompted, enter your NTB username and password. Windows Explorer now displays your default NTB folder location.
5. Navigate to the **Media** folder. **Do not** add or modify files in any other folder as this may render the NTB 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 NTB, 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 NTB with FTP, you can also:

- Rename and delete files on the NTB.
- Download files from the NTB to your PC 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 PC and then upload it to the other NTB folder. Alternatively, move files using the **Media > Files & Folders** page.

Using Drag and Drop:

Some browsers allow you to drag files off of your PC desktop and drop them directly into a playlist or a folder on the NTB. Neither Internet Explorer nor Opera provide drag and drop, but the following browsers do:

Operating System	Browser and Minimum Version
Windows	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 NTB 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 over the preferred position.
- Folder within a playlist – Hover over the folder.
- Folder – Hover over the preferred location.
- Folder within a folder – Hover over the folder.

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

1. Open the page on the NTB that is the location for the upload (either a playlist or a folder).
2. On your PC 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. A progress bar tracks the upload (you might not see this for small files).

3.2.2 Video

You can play various video formats with the NTB.

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

Note: For best performance, only enable one movie zone per layout on less powerful NTB models.

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

Additional notes:

Supported Formats	Notes
MPEG-1	Good performance but poor resolution.
MPEG-2	Recommended. Best combination of performance and resolution but large file size. MPEG-2 is the recommended format as it requires less decoding by the processor. Where possible, convert other formats to MPEG-2 before upload.
MPEG-4	Small file size but high processing load. May slow down some models.
AVI	Best image quality but extremely high processing load. May overload some models.
QuickTime (MOV)	Apple Macintosh format. Can have very high processing load. May overload some models.
VOB	Same as MPEG-2.

3.2.3 Text Files

You can display text files on the NTB. (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 NTB 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 NTB.

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

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

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

Additional notes:

Supported Formats	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 colours but does support transparency. The NTB 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 NTB.

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 Formats	Notes
MP3	Recommended. Good performance.
WAV	Similar quality to MP3 but much larger file sizes.
WMA	Performs acceptably on the NTB.

3.2.6 Presentations

Presentations often have complex animations, timings, and graphics. To ensure the NTB 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 Formats	Notes
Microsoft Office 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 NTB.
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 NTB 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 NTB. (You can also display whole or part pages from a remote web site: see [External Web Pages](#) ^[44] for details.)

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

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

Additional notes:

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

3.2.8 Adobe Flash

You can display Adobe Flash files with the NTB.

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

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

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

Additional notes:

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

3.2.9 Folder Play

Rather than adding a number of files individually to a playlist, you can add and play an entire folder from the NTB disk. This is known as **Folder Play**. You can add or delete files even while the NTB is playing the folder.

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 NTB 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.

3.3 Media from External Sources

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

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

[TV](#) ⁴²

[Radio](#) ⁴³

[Live Video](#) ⁴³

[Multicast Video](#) ⁴³

[External Web Pages](#) ⁴⁴

3.3.1 TV

You can play output from external digital and analogue TV stations with the NTB.

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

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

Additional notes:

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

Your NTB must be set up with:

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

- Analogue TV station name and number pairs.

See [TV & Radio](#)^[107] for more details of tuning and setting up digital and analogue TV.

3.3.2 Radio

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

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.

Your NTB 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](#)^[107] for more details).

3.3.3 Live Video

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

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

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

Additional notes:

Supported Formats	Notes
S-Video Composite video	Includes output from video cameras, DVD players, set-top boxes, and so on. Your NTB must be set up with: <ul style="list-style-type: none"> • A TV tuner card. • Either an S-Video or composite video cable connecting the video device to the TV tuner card.

Before you can add live video in to a playlist you need to [configure your TV Tuner](#)^[107] to recognise the video source as a TV input.

3.3.4 Multicast Video

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

Note: Using multicast video requires an additional ONELAN license.

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

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

Additional notes:

Supported Format	Notes
MPEG-2 Transport Stream in UDP	<p>Your set up needs to include:</p> <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 you can add live video in to a playlist, you need to configure your TV tuner to recognise the video source as a TV input. See [TV & Radio](#) ^[107] for more details.

3.3.5 External Web Pages

You can display whole or parts of pages from an external web site with the NTB. See [Displaying Part of a Movie or Web Page](#) ^[68] for details of how to display only a part of a web page. See [HTML Web Pages](#) ^[41] for how to display HTML files held locally on the NTB.

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




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

Additional notes:

Supported Format	Notes
HTML	<p>The NTB 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, your NTB 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 NTB 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 NTB 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 NTB 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 NTB. This loses the connection with the source and your files will not be updated.


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 folder with all its files onto the NTB as described in [Uploading Content Files](#)^[36].
2. Add to a playlist as described in [Adding Media Item Files to a Playlist](#)^[27].

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 NTB displays the properties on three 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).
- **Advanced** – Advanced properties that apply to all media items (position and size, time validity, conditional play, and media audit). (See [Common Advanced Properties](#)^[54] 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 Colour	<input type="radio"/>		<input type="radio"/>		
Subtitles	<input type="radio"/>				
Volume	<input type="radio"/>	<input type="radio"/>			<input type="radio"/>

	Movie	HTML	Image	Text	Soundtrack
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"/>		
Text Style				<input type="radio"/>	
Font				<input type="radio"/>	
Text Colour				<input type="radio"/>	
Background Colour				<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](#) ^[47]

[HTML Properties](#) ^[47]

[Image Properties](#) ^[39]

[Text Properties](#) ^[49]

[Soundtrack Properties](#) ^[50]

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](#) ^[32]

[Clock Properties](#) ^[33]

[Folder Play Properties](#) ^[52]

[Ad Hoc Properties](#) ^[55]

3.4.1 Movie Properties

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

Duration	Select the duration you require: <ul style="list-style-type: none"> • Play the movie file indefinitely – The movie plays continuously. • Play movie file for – The movie plays for the period you specify.
Deinterlace	The NTB automatically performs deinterlacing if required. To explicitly enable or disable deinterlacing, select Yes or No from the drop-down list.
Mode	You can set the display mode to one of these options: <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 NTB displays the letterbox colour 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 Colour	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 colour the NTB displays in that space.
Subtitles	Check the Display subtitles box to enable subtitles for the video (if available).
Volume	Enter the volume as a percentage of the maximum volume.
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	Choose the option you require: <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 zones enabled as a **HTML** player:

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

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 <i>n.n</i> 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 NTB shows the image always. • Show the image for – The NTB 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 <i>n.n</i> 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 <i>n.n</i> 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 NTB displays the letterbox colour 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 Colour	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 colour the NTB 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.

3.4.4 Text Properties

The following properties apply to zones 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	Select the font family you want and the size and style to apply.
Text Colour	If you want text in a different colour than the default, click the Pick Colour button to select an alternative.
Background Colour	If you want the background in a different colour than the default, click the Pick Colour button to select an alternative.
Horizontal Alignment	Select the text horizontal position (only enabled for stationary and vertically- scrolling text).
Vertical Alignment	Select the text vertical position (only enabled for stationary and horizontally-scrolling text).
Margins	Set values to add blank space at each margin (in pixels).
White Space	<p>Choose the option for how you want extra spaces, tabs, and new lines handled (collectively termed 'whitespace'):</p> <p>Display multiple spaces as single space and multiple new lines as single new line – Ignore extra whitespace (default).</p>

	Display spaces and new lines as entered – Display all whitespace as entered. Note: This property is for text files only.
Character Set	If necessary, select an alternative text-encoding standard. Note: This property is for text files only.
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..



3.4.5 Soundtrack Properties

The following properties apply to zones enabled as a **Soundtrack** player:

Duration	Select the duration you require: <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	Enter the volume as a percentage of the maximum volume.

3.4.6 Newsfeed Properties

The NTB 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](#) ³² for a description of those properties).
- Clicking the  button for the newsfeed in the playlist. The NTB displays some properties on the **Media** tab and some on the **Style** tab.

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

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

Customisation Status	Indicates the newsfeed selection status.
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The newsfeed properties on the playlist **Style** tab are:

Item Selection	<p>Choose the properties that specify how you want the NTB 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 <i>n</i> items – Play just this number of articles. • Play all Items in groups of <i>n</i> 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 Synchronisation	<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 Synchronising 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 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	Select the font family you want and the size and style to apply.
Text Colour	If you want text in a different colour than the default, click the Pick Colour button to select an alternative.
Background Colour	If you want the background in a different colour than the default, click the Pick Colour button to select an alternative.
Horizontal Alignment	Select the text horizontal position (only enabled for stationary and vertically- scrolling text).
Vertical Alignment	Select the text vertical position (only enabled for stationary and horizontally-scrolling text).
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..

3.4.7 Clock Properties

The NTB 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 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 NTB displays the clock all the time. • Show Clock for – The NTB displays the clock for the period you specify
Font	Select the font family you want and the size and style to apply.
Text Colour	If you want text in a different colour than the default, click the Pick Colour button to select an alternative.
Background Colour	If you want the background in a different colour than the default, click the 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 Folder Play Properties

The NTB 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 customise how long the NTB 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 NTB 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	<p>Check the Management box to enable ad hoc management of this folder.</p> <p>If the ad hoc user places files in the indicated ad hoc media folder, the NTB plays them instead of those in the current folder. If there are no suitable files in the ad hoc media folder, the NTB plays the files in the current folder.</p> <p>If this NTB is a subscriber, a channel update does not remove the ad hoc files. This means that even a subscriber NTB can use local content.</p>
Item Selection	<p>Choose the properties that specify how you want the NTB 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).
Item Synchronisation	<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 Synchronising Player Displays Between Zones ⁶¹ 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 NTB 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, limit 1.
 - Add the **Advertisements** folder to the playlist with memory, limit 2.

- Add the logo image as an individual file, duration 10 seconds.

3.4.9 Common Advanced Properties




All media items have in common the set of properties present on the **Advanced** tab.

Other than the **Media Audit** property, the NTB 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:

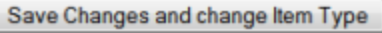
Position and Size	<p>To override the position and size of a zone, select the Use custom position and size radio button and set the values you require:</p> <ul style="list-style-type: none"> • Top edge offset – Amount to move the zone relative to the screen's top edge. • Left edge offset – Amount to move 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>
Time Validity	<p>To control when the NTB 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 NTB skips the item when its turn comes in the playlist. • The NTB continues to play the item even if the valid time expires before the item ends. • These settings do not prevent you auditioning a single media item or zone. • These settings will apply if you audition the whole layout.
Conditional Play	<p>This is only enabled when you have added player local information to the NTB (see Player Local Information for details).</p> <p>If it is enabled, you have two options:</p> <p>Play Always – Default. The NTB always plays the schedule.</p> <p>Play if Player Local Information Item – The NTB only plays the schedule if certain conditions are met.</p> <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.

	<p>2. Select the test to apply from the second drop-down list.</p> <p>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).</p> <p>4. Click the  button to apply the setting.</p>
Media Audit	<p>To change whether the NTB 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 NTB 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.

3.4.10 Ad Hoc Properties

The NTB 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 customisable or ad hoc:

Item Type	<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 customized using this Layout's Ad hoc Entry Page • There are no existing Shared Ad hoc Items of this type • Create and use a new Ad hoc Item.
Ad hoc Entry Label	The label used to refer to this item on the layout's Ad hoc Page
Ad hoc Item Name	Unique identifier for the ad hoc Item on the NTB. (Only for ad hoc items that you cannot customize.)
Properties dependent on media type.	<p>The NTB displays some properties that are dependent on the type of ad hoc item:</p> <ul style="list-style-type: none"> • Directly entered text: <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. ○ Customization Scope – Either Local (customized text displays only on the ad hoc user's local NTB) or Remote (customized text displays on players that are subscribers to the ad hoc user's publisher NTB). • 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 NTB. ○ Default Newsfeed – Select the default newsfeed to display.

	<ul style="list-style-type: none"> ○ 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 NTB. ○ 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.
Customization 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 customize.)

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](#)^[56]
- [Change Layout Command](#)^[57]

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 NTB 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 NTB 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 NTB 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 NTB actions as a result of user interactions, such as motion sensor, pressure mat, or touch screen events (see [Using Interactivity](#)^[63] for more details).

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



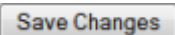
1. Click the **Specials** tab.
2. In the **Rendezvous Point** field, enter a name. You can enter any text for the name (but not starting with the string `auto_`) and names are not case-sensitive.
3. Click the  button.
4. Make sure the rendezvous point appears immediately before the item you want the NTB 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 NTB 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 **In** 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 **Edit** and alter your selection.

3.6 Colours

Use the **Media > Colours** page to set the colours the NTB applies to fonts, backgrounds, and other items.

When you create a new layout or a new table, the NTB automatically creates new colour items:

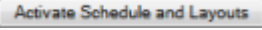
- For layouts, the colour items are for the text foreground, the text background, and the letterbox background.
- For tables, the colour items are for the text foreground and text background.

The NTB names colour items in the format *Layout name: Colour item*. For example, if you create a new layout named



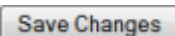
'Holidays', the NTB creates the following colour items for it:

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



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

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

Click the tab for the option you require:

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

To add a new colour, complete the following information and click the  button:

Name	Enter a unique and meaningful name for the colour. This does not have to be in <i>Layout name: Colour item</i> format followed by the NTB.
Colour Value	Specify the colour using either separate RGB values or a single hexadecimal value. On a Windows PC, you can find the RGB values for a colour 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 colour. 3. Use the Colour Picker tool  to select a pixel of the target colour. 4. Click the Edit Colours tool . 5. Read off the RGB values at the bottom right of the Edit Colours 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 NTB offers a collection of standard fonts that are suitable for most purposes.

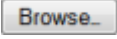
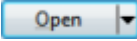


To view the installed fonts:

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 NTB (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 NTB, you must add your own font files. The NTB supports TrueType (TTF or TTC) and OpenType (OTF) format font files. If your NTB is a publisher, you must also install that additional font on every subscriber NTB.

To add a font file, follow these steps:

1. On the menu bar, select **Media** and **Fonts**.
2. Click the **Add Fonts** tab.
3. Click the  button and navigate to the font file you wish to add.
4. Click the  button.
5. Click the  button.
6. After you add a font file, you must restart the NTB.
7. To preview a font, click the  button. This interrupts the current layout display and shows a test message on the screen. You can change the test message using the **Font Options** tab.

Part

IV

Enhancing Your displays

4 Enhancing Your displays

You can enhance your digital sign display in various ways:

[Synchronizing Playlist Displays Between Zones](#) ^[61]

[Using Interactivity](#) ^[63]

[Using the RS-232 Interface Port](#) ^[67]

[Displaying Part of a Movie or Web Page](#) ^[68]

[Changing the Screen Background](#) ^[68]

4.1 Synchronising Playlist Displays Between Zones

You can synchronise 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](#) ^[61]).
- 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](#) ^[62]).

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 NTB 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.



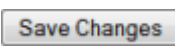
4.1.1 Automatic Captioning

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 NTB forces the slave playlists to start playing the first item after the rendezvous point.



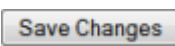
To have the NTB perform automatic captioning, you have to use files with corresponding file names. For example, to display captioning for a video file called Marketing_Highlights_01.mpg, you would need to create a file called Marketing_Highlights_01.txt containing the text captions.

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 NTB.
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 NTB. (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 NTB 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 NTB 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 NTB 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 NTB starts playing the item after rendezvous point **Option1** and this is **Option1 Movie Item**.
4. At the end of **Option1 Movie item**, the NTB processes the **Advance To** command **Start**.
5. The NTB 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 NTB 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 NTB unit's RS-232 port).
- Someone pressing a button on a remote keypad (infra-red controller).

The way you configure the NTB 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 NTB 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 NTB 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 NTB 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 NTB can pass a touch event to the currently showing web page. If there is no web page, the NTB 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 NTB 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 NTB change its response to touch events throughout the playlist.

If you enable touch for a zone that is displaying an HTML page, the NTB 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 **Interact Clear** (found on the playlist's **Special** tab) to deactivate existing **On Touch** items. Otherwise, **On Touch** items will take precedence over the HTML player. Then, the NTB 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 NTB processes an event depends upon:

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

The NTB 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 NTB performs the specified action and stops processing.
4. If no zone has an active touch action, the NTB performs the touch action defined for the layout.

The NTB 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 NTB performs the specified action and stops processing.
4. If no zone has an active RS-232 input action, the NTB performs the RS-232 action defined for the layout.

The NTB 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 NTB performs the specified action and stops processing.
4. If no zone has an active remote keypad button action, the NTB performs the remote keypad action defined for the layout.

Passing Touch Events to HTML Pages:

If the current zone supports HTML, the NTB 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 NTB 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 using the RS-232 port.

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 NTB can respond to changes in voltages generated by a GPIO device such as a motion sensor or a pressure mat. The NTB receives those inputs through its RS-232 port. It can also send output signals. For more details see the [RS-232 Technical Reference](#) ^[132].

Control Line Inputs:

The NTB RS-232 port 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 Items 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 NTB. This is triggered when the NTB detects a line transition generated by a user action.

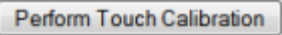
Control Line Outputs:


The NTB 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 in the NTB configuration.

4.2.3 Touch Screens

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

You can configure the response at one or both of these levels:

- Touch screen physical interface – The NTB supports USB touch-screen overlays that report absolute X/Y coordinates and key up and key down events. There is no support for a mouse-like device that sends relative movements since this requires an on-screen cursor.
- Touch screen calibration – On the menu bar, click **Setup** and select **Player > Interactivity**. Click the **Touch** tab and click the  button.

See [Interactivity](#)  for more details.

4.2.4 Click On Touch

You can configure the NTB 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 NTB 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 NTB 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

Most products in the NTB range have a single RS-232 port presented on a 9-way D-type plug.

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 NTB reports the most recently received string in the **Items** tab on the **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 16x9 (widescreen) format to a 4x3 (standard) format. This avoids resizing the zone, which would alter the aspect ratio and distort the image.


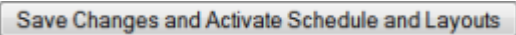
To display only part of a movie item, modify the values for its **Movie Size** property (see [Movie Properties](#)^[47] for details). To display only part of an HTML item, modify the values for its **Web Page Size** property (see [HTML Properties](#)^[47] for details).

4.5 Changing the Screen Background

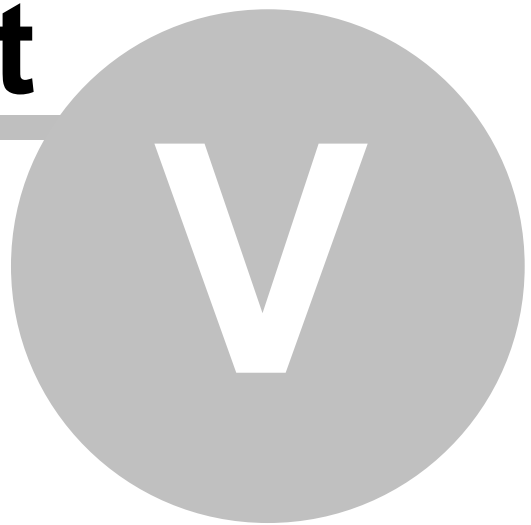
When switching between layouts, you can have the NTB display a coloured background or image. It can also display this background in any areas of a layout that are not covered by zones.

Note: Setting the colour 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 colour** or **Image**:
 - If you select **Solid Colour**, then click the  button to select a colour.
 - 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



Ad Hoc Content

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 NTB 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 Centre**. This allows the ad hoc user to update those items on the publisher and in turn that updates each subscribing NTB.

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 NTB 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 NTB 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 authorised 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.



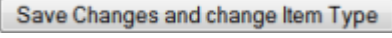
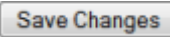




Creating Ad Hoc Content as You Build Your Design:

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:

Text	<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 customised using this Layout's Ad hoc Entry Page box. 3. Click the  button. 4. Click the  button and set the item's Customisation Scope: <ul style="list-style-type: none"> • Local – Only affects the display for this NTB).
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	<ul style="list-style-type: none"> • Remote – Affects the display for all the subscribers to this publisher's channel.
Tables	<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.
Newsfeeds	<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 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.
TV and Radio Stations	<p>You should have already tuned 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 NTB 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 and select the users you want to be able to see this ad hoc page.
9. Click the  button.

5.2 Remote Keypad Control

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

Note: the **Remote Keypad** tab indicates the status of the NTB infra-red receiver. The remote keypad feature only works if the NTB infra-red receiver is connected.

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 NTB 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 NTB 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** and click the  button.
4. 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 NTB.
 - **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 NTB players all play the same content.

Using additional Ad hoc, multiple NTB 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 NTB 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 a NTB 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.

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 the extra 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 ad hoc 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 NTB is playing the playlist, it will jump to the point in the playlist under the selected rendezvous point.

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

1. On the menu bar, click **Schedules** and **Manage Schedules**.
2. Click the **Add Override** tab.
3. Enter a descriptive name for the override.
4. Select the layout from the drop-down list.
5. Click the  button.
6. On the menu bar, click **Media** and **Manage Ad hoc items**.
7. Click the **Add Item** tab.
8. For the option **Add Ad hoc Item of type**, select **Schedule Override** from the drop-down list.
9. Enter a name for the schedule override and click the  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 NTB.
 - **Only Selected Schedule Overrides** – Allows ad hoc users to select only from the schedule overrides you select.

5.4 Ad Hoc from Centre

The **Update from Centre** feature allows ad hoc users to make changes on a publisher NTB that will be updated to the channel's subscribers. The ad hoc users on the publisher NTB can only change the content on the ad hoc page you create.

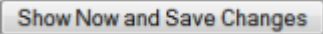
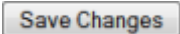
You can use the **Update from Centre** feature with ad hoc text and schedule override items. When you create an ad hoc from centre item, you set its scope as one of:

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

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

5.5 Making Ad Hoc Changes




To make an ad hoc change:

1. Logon to the NTB as an ad hoc user.
2. Click the ad hoc page you want to edit.
3. Make the changes you want on the page.
4. If the NTB is playing the item, click the  button. Your change takes effect immediately.
5. If the NTB is not playing the item, click the  button. Your change takes effect when the NTB next plays the item.

5.6 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 and enter a unique name for it.

To delete an ad hoc item, click the  button. If the NTB 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 NTB supports these Item types:

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

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 NTB offers you the **Customisation Scope** option. Use this to select where those ad hoc items can be customised and displayed:

- **Local** – Ad hoc user changes only affect this NTB.
- **Remote** – Ad hoc user changes made on the publisher NTB are also applied to each subscriber NTB.

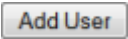

Text also has its own set of ad hoc options. Use these to control what an ad hoc user can enter in the **Default Text** and **Ad hoc User** pages:


- **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 for the NTB 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.

5.7 Creating Ad Hoc User Accounts

If you want a user on a subscriber NTB to update ad hoc channel content, you must create an ad hoc user account for them on the subscriber. If you want a user on a publisher NTB to be responsible for ad hoc from centre content, you must create an ad hoc user account for them on the publisher.

To creating an ad hoc user account, take the following steps:

1. On the menu bar, click **Setup** and select **System > Users**.
2. Click the **Add User** tab.
3. Enter a username and a password. By default, the NTB provides the user with the **Ad Hoc** permission.
4. Click the  button.
5. On the **Users** page, click the new account's  button.



6. Select the other permissions the user needs. As well as the **Ad hoc** permission, options here include **Activate Channel** and **Publish Channel**. If the user requires access to an ad hoc media folder, select the folder name from the **Media Folder** drop-down list.
7. Click the  button.

5.8 Ad Hoc Pages

When ad hoc users access the NTB using their browser, they only see the pages you have created for them. The NTB does not allow ad hoc users access to any other pages in the NTB user interface. The NTB 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 NTB enables ad hoc pages for all layouts when you create them. This means that when you add customisable or ad hoc items to a layout, the NTB generates an ad hoc page for that layout containing all the customisable and ad hoc items within it.



You can also create ad hoc pages that are not directly associated with a specific layout following these steps:

1. On the menu bar, click **Help** and **UI Options**.
2. For the **User Interface Policy** option, select **Detailed** or **Expert**.
3. Click the  button.
4. On the menu bar, click **Media** and select **Design Pages > Manage Ad Hoc Pages**.
5. Click the **Add Page** tab.
6. Enter a unique name for the ad hoc page.
7. Click the  button.

5.8.1 Managing Ad Hoc Pages

To view or modify an ad hoc page, follow these steps:

1. On the menu bar, click **Media** and select **Design Pages > Manage Ad hoc Pages**.
2. Click the page's  button.

To delete an ad hoc page, follow the same procedure and click the  button. If the NTB 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.

5.8.2 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 NTB 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, the user message, and the users allowed to change items on it.

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 NTB displays it on the **Data Entry** page.
- **User Guidance Message** – Optional. Enter a message for the NTB to display on the **Data Entry** page to help users when entering values.
- **Users allowed to Enter Data** – Select the users who have permission to view and make changes to the **Data Entry** page (users with **Layout Manager Access** permission can view and modify all ad hoc **Data Entry** pages).

5.9 Ad Hoc Folder Play



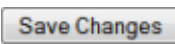
You can add a folder to a playlist and then give ad hoc users permission to upload their own content into that folder. For example, you might develop a layout for an education authority with a zone dedicated to showing student artwork that is published to subscriber NTB units in each school: each school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

Your NTB does not need to be a publisher to use an ad hoc folder play. The same principles apply to a standalone NTB.

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 and 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.


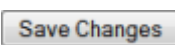
The NTB creates a `default_files` subfolder in the folder you have added: put your default content into that subfolder. The NTB will display the content ad hoc users upload the main folder but, if it is empty, the NTB displays what you have added to the sub-folder.

5.10 Ad Hoc Media Folder

You designate ad hoc media folders to delimit the media folders that ad hoc users can access.

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 NTB plays it in preference to any other. If no suitable media is available, the NTB plays the content of the default folder for that playlist instead.


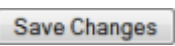
You must create an ad hoc folder for the user to upload content to. If you see the message 'No Media Folder has been configured for this user', you need to designate a media folder for the user's account. Do so by following these steps:

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.

Go to the **Media > Files & Folders** page to create the folders and to browse the file system.

5.11 Changing Ad Hoc Content

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

1. Connect to the NTB 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 NTB is playing the item, click the  button. Your change takes effect immediately.
6. If the NTB is not playing the item, click the  button. Your change takes effect when the NTB next plays the item.
7. Exit your browser to leave the NTB.

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.
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 NTB 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 ^[36]. 5. To change the order in which files play, see Folder Play Properties ^[52].
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 NTB 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.

	<ol style="list-style-type: none"> 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 NTB 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.

5.12 Ad Hoc Theming

You can change how the NTB 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 NTB.

The ad hoc theme applies to ad hoc users on the NTB or on an NTB 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 customising. • Header text colour – Click the Pick Colour button to select a different header text colour. • Header background colour – Click the Pick Colour button to select a different header background colour. • Page logo – Choose the button for the alignment you want a logo image 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 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 Edit Pages

- **Media Folder**

The NTB displays the default text on the left. Enter your new text in the field on the right.

When complete, click the  button.

Part



VI

Sharing Content Using
Layout Packages

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 NTB.

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




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

1. [Create the layout package](#)^[85] on the originating NTB.
2. [Upload and install the layout package](#)^[86] on the destination NTB.

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 NTB. 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 NTB. If any of those items already exist on the NTB, but have different values, you are asked how you want conflicts handled (see Layout Package Conflicts ^[86] 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 NTB 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.

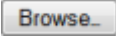
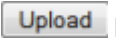

Note: The NTB also includes layouts referenced by **Change Layout** commands even if you do not select those layouts explicitly here.

6. Click the  button. The NTB displays the **Status** tab.
7. When the layout package creation completes, click the **Package Filename** link and use the dialog to save the package file on your computer.
8. Send copies of the layout package ZIP file to those who need them.

Note: There is a 2 GB size limit to layout packages ZIP files. Because a 40 minute MPEG-2 encoded video film can be 2 GB in size, you may need to exclude large video media files before creating your layout packages.

6.3 Uploading and Installing a Layout Package

To upload and install a layout package on your NTB, 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 NTB. The NTB displays a progress bar during upload.
4. After uploading, the NTB 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 NTB, the NTB prompts you to resolve the conflict (see [Layout Package Conflicts](#)^[86] for more details).

Note: Layout packages are compressed ZIP files. The NTB does not list other types of file on the layout package page.

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

6.4 Layout Package Conflicts

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

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


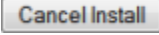
The NTB flags a conflict when an item in the package is identical to an existing item, but has different property values. You are prompted to resolve the conflict with one of these options:

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

The NTB may offer specify 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 NTB 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 NTB shows additional, secondary conflicts 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 NTB displays this information:

- The originating NTB.
- Layouts included in the package.
- Special Items included in the package.
- Other additional settings (such as colour 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 NTB.

Part



Channels and Signage Networks

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 NTB players. A collection of NTB players that all play the same content on their screens is known as a **Channel**.

A channel has three parts:

- A **Publisher** NTB.
- The **Channel Content Server** (CCS). The server delivering channel content to the subscriber NTB players.
- One or more **Subscriber** NTB players.

The publisher NTB publishes content to the CCS. (On small networks, the publisher NTB can also act as the CCS.) Each subscriber NTB regularly polls the CCS for the most up-to-date content.

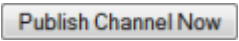
Note: Some NTB players are sold as 'Subscriber only' and cannot act as publishers.

When you publish to a channel, it includes all the related schedules, layouts, and media content. However, the channel does not include:

- Any custom fonts you have installed.
- User records, including ad hoc users.

If your content relies on either of the above, you will need to ensure they are already present on each of the subscribers.

To begin using a channel, you need to take these general steps:

1. Configure each NTB in the channel with their role (either publisher or subscriber). One NTB will be the publisher and the rest will be subscribers.
2. Decide the best way to get the content from the publisher to the subscribers (see [Channel Content Servers](#)^[90] for more details).
3. Create the content on the publisher. You need to consider these factors:
 - Are the subscriber NTB players 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 the screens attached to the subscriber NTB players? 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.
4. When you are ready, click the **Published** link that appears at the top of each screen on your publisher NTB.
5. Click the  button. The NTB will not make changes to a channel until you publish them.

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

Two other features may be of interest to you:

- Add ad hoc content to your channel. This provides content that varies on a per NTB basis. For example, if you have NTB 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 NTB players with the appropriate ad hoc permissions. See [Ad Hoc Content](#)^[70] for more details.
- Publish more than one channel from your publisher. See [Multichannel Publishing](#)^[93] for more details.

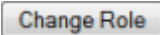
Note: It is recommended that the publisher NTB and each subscriber NTB run the same software version. Although later-version subscribers can sometimes display content created on earlier-version publishers, they will fail to display features no longer supported.

7.1 Channel Roles

In a channel, you configure each NTB to operate according to the role it performs. The NTB can have one of these roles:

- **Publisher** – The NTB publishes content to a channel. Subscribers download and display the content.
- **Subscriber** – The NTB downloads and displays content from a channel. Publishers create and publish content to the channel.
- **Standalone** – The NTB is neither a publisher or subscriber. It does not take its content from a channel (that is, it is not part of a digital signage network).

To change the channel role, follow these steps:

1. On the menu bar, click **Channels** then **Manage Channels**.
2. Select the required role.
3. Click the  button. If the role is not standalone, NTB displays a configuration screen matching the role you have selected.
4. Complete the items on the configuration screen (see either [Configuring the Publisher](#)^[91] or [Configuring the Subscriber](#)^[94] for more details).

Notes:

- Some NTB models are 'subscriber-only' and cannot be configured as publishers.
- You cannot change the role of a publisher NTB if it publishes more than one channel. You must delete all but one channel to proceed.

7.2 Channel Content Servers

Subscriber NTB players can download channel content directly from your publisher NTB. However, this is not always possible or the best solution for your signage network.

Besides distributing content physically on a USB stick, you can also use an external channel content server (CCS) to offload channel distribution processing from your publisher NTB. Each subscriber NTB polls the CCS for the latest channel contents in the same way it would poll the publisher directly.

How you publish your channel depends on the number of NTB players in the channel and the network they are connected to:

How to Publish	Description	When Would You Use This Method?
On the publisher NTB	You store channel files on the publisher NTB and subscribers download them using HTTP, HTTPS (recommended), or FTP.	You only have a small number of subscribers (typically, less than five) that will not slow the publisher down. This method requires no extra hardware.
Using a USB memory stick	You publish channel files onto USB memory sticks. You distribute the sticks to each subscriber, which automatically reads the channel from it. You have to perform this process every time you update the channel.	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 FTP to upload the channel content to a CCS. The CCS makes the files available to the subscribers, either through HTTP, HTTPS (recommended), or FTP.	<p>You have a large number of subscribers or there are larger media files in the channel.</p> <p>This method:</p> <ul style="list-style-type: none"> • Takes the processing load off of your publisher NTB • Does not require any special FTP or web server. • 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 publisher and 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 supplied credentials for either the publisher or a 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.


7.3 Publishing

You can publish content from your publisher NTB either manually or automatically:

- In automatic mode, you set your publisher NTB to always publish the currently active channel at a specified time of day.
- In manual mode, you manually issue a command to publish the channel.

7.3.1 Configuring the Publisher

When you set the NTB role to **Publisher**, the NTB opens the **Publisher** tab for you to complete the configuration. You can also access the **Publisher** tab on the menu bar by clicking **Channels** and **Manage Channels**.

Complete the publisher settings you require and click the  button to enable them:

Channel Name	Enter a unique name for the channel. When the channel is active, this appears at the top of the page on the subscriber and publisher.
Publishing Mode	<p>Select the mode of publication you want:</p> <ul style="list-style-type: none"> • Manual – You publish by issuing a command on the channel publishing page. • Automatic – The NTB publishes at a specific time every day.

Channel Server	<p>Select how you want to publish the channel:</p> <ul style="list-style-type: none"> • The NTB /channel/N folder – The NTB publishes the channel to a folder within the publishing NTB. Subscribers access the content through FTP, HTTP, or HTTPS. • The USB Flash Memory's / channel folder – The NTB publishes the channel to the channel folder to an attached USB stick. • FTP Site – The NTB uploads the channel to an FTP site. If you need to provide a username and password, do so in the Authentication panel.
Publishing Root URL	<p>If you chose to publish using the FTP Site option, the NTB enables this box. Enter the URL required.</p> <p>A valid FTP URL begins with ftp:// followed by the host name or address and the full folder path to the location to publish the channel. Examples of valid FTP URLs are:</p> <ul style="list-style-type: none"> • ftp://example.com/mychannel/ • ftp://192.168.0.23/channel/ • ftp://somehost/a/b/c/ <p>Note these points:</p> <ul style="list-style-type: none"> • If the folders do not exist on the FTP server, the NTB 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 NTB attempts to log into the FTP server you have defined. It notifies you if this is successful or not.
Authentication	<p>If you chose to publish using the FTP Site option, select whether the destination server requires authentication or not. If it does, select Login with and enter the required username and password.</p>
Error Retry Interval	<p>If you chose to publish using the FTP Site option, and the NTB fails to connect to the FTP server, specify the period before it tries to publish again.</p>
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 NTB models, choose a value to ensure you will not overload them.

You should consider these factors when calculating the storage space required for a channel:

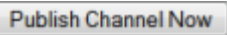
- With the exception of video files, content does not require large amounts of storage. If your layouts do not include video files, you should find 1 GB to 2 GB of space sufficient.
- If your layouts include video files, increase storage by at least 2 GB per hour of standard quality video. Allow for more if the video is high quality.
- The NTB displays the size of the channel on the **Status > Channel** page. Allow at least twice that on the subscriber NTB as it stores the channel twice: once to subscribe and again to display.

7.3.2 Publishing a Channel

After configuring the NTB as a publisher, you are ready to begin publishing your channel. You can also publish additional channels later.

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

On the menu bar, click **Channels** and **Publish Channel**.

To publish your channel immediately, click the  button. Alternatively, select the **Activation** option **Activate after**. If you select **Activate after**, the publisher 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). A slow network carrying many large media files can lead to large differences in when each subscriber completes downloading.

What happens next depends on where you chose to publish the channel:

- **On the publisher NTB or to an external server** – The NTB begins the copying process and displays the **Status** tab showing a progress bar. The NTB will display error messages if there are any problems. When copying is complete, the next time the subscriber players check the channel, they will download the new content.
- **To a USB stick** – The NTB begins the copying process and displays the **Status** tab showing a progress bar. The NTB will display error messages if there are any problems. When copying is complete, remove the USB stick and use it to load the channel content onto the subscriber players.

Repeat the same process even if you have only changed the schedule. Subscribers obtaining content from the publisher or an external server will upload the change the next time they poll for updates. For subscribers you update with a USB stick, you will need to take the new copy to upload them with.

In all cases, the publisher NTB displays the following banner if you have changed the channel contents but have not published it yet:

Schedule or Layout changes have been made since the channel was last **Published**.


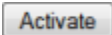
Clicking the **Published** link takes you to the **Publish** tab so that you can publish the new content, as above.

7.3.3 Multichannel Publishing

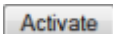

You can publish more than one channel from the same publisher NTB. Although schedules are unique to each channel, more than one channel can share layouts and contents.

Remember that the NTB can only publish the currently active channel. Both the publisher and subscriber players display the name of the active channel at the top of each of their pages. As suggested previously, you will find it helpful to give a channel a useful name.

To add a new channel, follow these steps:

1. On the menu bar, click **Channels** and **Manage Channels**.
2. Click the **Channels** tab.
3. Click the  button.
4. After the NTB creates the new channel, click its  button.
5. Create all the content for the new channel.
6. Publish the channel following the usual steps.

To delete a channel, follow these steps:

1. On the menu bar, click **Channels** and **Manage Channels**.
2. Click the  button against another channel to make it active. This deactivates the channel for deletion.
3. Click the  button next to the channel you wish to delete. This only deletes the channel schedule: the channel

content is still on the NTB.

Note: Before you can work with or publish a channel, you must activate it. To do so, follow steps 1 and 2.


7.4 Subscribing

If you configure a NTB in a subscriber role, it receives all of its content (other than ad hoc content) from a publisher NTB. The subscriber NTB obtains the content across the network from the publisher NTB or from a channel content server. It can also obtain its content from a directly-attached USB stick.

Note: You can log in to a subscriber NTB and make changes but these are removed (except ad hoc content) the next time the subscriber uploads a channel update.

7.4.1 Configuring a Subscriber

When you set the NTB role to **Subscriber**, the NTB opens the **Subscribing** tab for you to complete the configuration. After you have finished, the NTB will begin uploading content from the channel and periodically check it for updates. You can also access the **Subscribing** tab on the menu bar by clicking **Channels** and **Manage Channels**.

Complete the subscriber settings you require and click the  button to enable them:

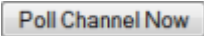
Subscription Poll Interval	Specify how often the subscriber polls for new channel content. Set this often enough to pick up changes but not so often as to overwhelm the network or channel content server with requests.
Update From Centre Poll Interval	Specify how often the subscriber polls for changes to ad hoc from centre items. As above, take care with how often you poll. However, these changes require less bandwidth and you could set the poll interval accordingly.
Channel Server	Select where the channel content comes from: <ul style="list-style-type: none"> • The USB Memory stick's /channel folder – Channel content is on a USB stick • Remote Web site or FTP server – Upload channel content from a publisher NTB or channel content server.
Channel Subscription URL	<p>If the subscriber uploads channel content from a publisher NTB or channel content server, enter the URL required. The format of the URL depends on whether you upload content by HTTP/HTTPS or FTP.</p> <p>For HTTP/HTTPS, the required URL is of the form:</p> <p><code>http://<publisher>/data/channel/<channel_number></code></p> <p>Specify the protocol at the start of the URL (HTTP or HTTPS). In the rest of the URL, <i><publisher></i> is the host name or IP address of the publisher or server and <i><channel_number></i> is the channel number. You can find out the channel number on the publisher's Status > Channel page in the Publisher State report.</p> <p>For FTP, the required URL is slightly different:</p> <p><code>ftp://<publisher>/channel/<channel_number></code></p> <p>Example subscription URLs:</p> <ul style="list-style-type: none"> • <code>https://192.168.1.54/data/channel/1</code> • <code>http://NTB9038/data/channel/2</code> • <code>ftp://NTB9038/channel/2</code> • <code>ftp://192.168.1.54/channel/5</code>

	Check the Append NTB Serial to Channel Subscription URL box to have the NTB add its serial number to the URL.
Authentication	Select whether the target publisher or server requires authentication or not. If it does, select Login with and enter the required username and password.
Proxy	If access to the internet is by a proxy, select Use Proxy if configured . You must have already configured the proxy.
Error Retry Interval	If the subscriber fails to connect, or an update is incomplete, specify the period before trying again.
File Transfer Allowed	If required, specify From and To times to control when the subscriber uploads files. You might do this if updates typically involve large files and you want to choose times when other network activity is low.

7.4.2 Updating Subscription

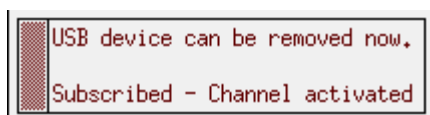
After you configure the NTB as a subscriber to a channel, it continues to automatically poll the channel for updates without any further intervention.

You can also manually command a subscriber NTB to poll for updates by following these steps:

1. On the menu bar, click **Channels**.
2. Click **Subscribe Channel**.
3. Click the  button.

To update a subscription by USB stick, follow these steps:

1. On the publisher NTB, publish the updated channel to the USB stick you are using.
2. Plug the USB stick into the subscriber NTB.
3. The subscriber NTB detects the USB stick, recognises there are changes to the channel, and proceeds to upload the new content. During the update, the subscriber displays a status message at the top left corner. When it completes the update, the subscriber displays this message to let you know you can remove the USB stick:



7.5 Channel Ad Hoc

Using ad hoc content within a channel enables you to allow users to show their own content on their local NTB 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 NTB and change that content.

Ad hoc from centre 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 NTB, with ad hoc from centre the user can make changes on the publisher NTB. Consequently, the subscribers to that publisher upload the ad hoc from centre 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 centre updates arrive more quickly.

Part



Player and System Status

8 Player and System Status

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

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

- **Player**^[97] – Viewing the current and recently displayed layouts and the CPU load.
- **System**^[97] – Viewing the disk and CPU temperatures over time, general system status, and hardware specification.
- **Conditional Play**^[98] – Checking the items that are subject to conditional play.
- **TV & Radio**^[99] – Examining the state and use of the TV card.

Note: The NTB only displays the **TV & Radio** item if it has a TV card installed.

8.1 Player Status

The **Player** status page provides details about what the NTB is currently playing and what it played recently. The NTB refreshes this display automatically as it plays new content.

Select the tab for the option you require:

- **Playing Now** – Displays a CPU usage graph for each zone. Compare this with the information on the **CPU Load** tab to determine which media, or combination of media, imposes a high load on the NTB CPU.
- **Played Recently** – Displays a list of recently displayed layouts and recently-implemented **Advance To** commands.
- **Screen Snap Shot** – Displays a pixel-perfect image of the current screen display. You can also view a live-screen display of what is running on the screen. See **Screen Snap Shot**^[99] for more details).
- **CPU Load** – Displays a 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.

Note: The **Home** page displays the average CPU load over the last 60 seconds. The NTB displays a warning if that value is 90% or above.

8.2 System Status

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

Select the tab for the option you require:

- **°C 24 Hours** – Viewing disk and CPU temperatures from the last 24 hours.
- **°C 30 Days** – Viewing disk and CPU temperatures from the last 30 days.
- **Status** – Viewing uptime, temperature, Ethernet, and memory metrics.
- **Hardware** – Viewing NTB processor specification and memory capacity.

°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. NTB 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:

NTB Uptime	How long the NTB has been running since its last restart
Disk Temperature	Current disk temperature
CPU Temperature	Current CPU temperature
MB Temperature	Current motherboard 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 NTB processor
Available Memory	Amount of NTB 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 fitted).

8.3 Conditional Play Status

The **Conditional Play** status page summarises 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 NTB 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 **Schedules**. Each tab displays:

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

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

8.4 TV & Radio Status

The NTB only displays the **TV & Radio** status page if it has a TV card installed. This page provides information about how the NTB uses the TV card.

The first line of **TV Hardware State** contains one of these values:

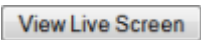
Not in use	No NTB feature is using the TV card.
Rebroadcasting	The NTB is using the TV card to rebroadcast a TV or radio station. The display includes: <ul style="list-style-type: none"> • Signal Status (one of Good, Acceptable, or Bad). • The current channel used to rebroadcast. • Bandwidth information.
In use by movie player	The NTB is using the TV card, either to preview or audition TV and radio media or to play a layout. The display includes <ul style="list-style-type: none"> • Signal Status (one of Good, Acceptable, or Bad). • The current channel being used. • Channel type (one of TV or Radio).

8.5 Screen Snap Shot

The **Screen Snap Shot** status page offers you two views of the current screen display:

- When you first open the page, NTB displays a pixel-perfect image of what is currently on screen.
- NTB can also provide a live-screen display of what is currently running.

To view the live-screen display, follow these steps:

1. Select the relative percentage size for the display.
2. Select the frames-per-second refresh rate for the display.
3. Click the  button.

By default, the display runs for 60 seconds but you can stop it at any time by clicking the  button.

Note: Viewing the live-screen display may impact the quality of the actual screen's output.

Part



IX

Setup

9 Setup

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

Select the menu item for the option you require:

- **System Setup**^[102] – Configuring the administrative and infrastructure aspects of the NTB system.
- **Player Setup**^[118] – Configuring the display output characteristics you want the NTB to support.
- **Maintenance and Troubleshooting**^[125] – Performing backup, update, and support activities.

9.1 Help and User Options



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

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

- **My Options** – Changing user interface behaviour (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 **Save Changes** button to enable them.

To change the general options, select from the following:

User Interface Policy	<p>Select the display mode you want:</p> <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.
Audition Method	<p>Select the audition method you require:</p> <ul style="list-style-type: none"> • On Screen – The NTB shows the content on the screen. (The relevant pages will display the audition  button.) • Web Preview – The NTB shows the content on your browser. This is useful if you cannot easily view the screen. (The relevant pages will display the preview  button.) <p>To create the web preview, the NTB has to momentarily turn off the screen and mute the audio. It then restarts the screen and audio again with the existing layout. This is useful when new content should not be seen before you add it to the active schedule.</p>
Media Thumbnail	Disable or resize the thumbnail by selecting from the drop-down list.

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 country and language you set on the Setup > Player > International page.
Time Separator	A colon is the default. Enter another character to use as an alternative.
Date Style	Select the date format you prefer: Locale Specific means the format matches the country and language you set on the Setup > Player > International page.

Date Separator	A hyphen is the default. Enter another character to use as an alternative.
Month Style	Select how you prefer to see the month expressed.

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

Update Currently Playing Status	<p>Select when you want the NTB to update the current status information:</p> <ul style="list-style-type: none"> • Screen thumbnail and currently playing Layout information is updated each time the web page is shown – Updates when you open the Home page. • Screen thumbnail and currently playing Layout information is updated every few seconds – Updates every few seconds (this may prevent smooth on-screen text scrolling).
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.
Home Page	<p>Select the Home page style you prefer:</p> <ul style="list-style-type: none"> • Use operational status summary Home page – Displays current layout as thumbnails and player status as colour-themed bars. • Use graphical Home page – Displays current and recently used layouts as thumbnails. • Classic NTB Home and Setup pages – Displays current layout as thumbnails and setup options as icons.
Playlist Add Item	<p>Select where you want the NTB 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 System Setup

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

Select the menu item for the option you require:



- [Users](#)^[103] – Adding and managing user accounts.
- [Date and Time](#)^[104] – Specifying time source and time zone.
- [Network](#)^[104] – Setting up and testing the network connection.
- [TV & Radio](#)^[107] – Tuning and using TV and radio stations (only displayed if the NTB has a TV card installed).
- [HTTP Proxy](#)^[109] – Setting up proxy server access.
- [Security](#)^[109] – Configuring firewall and secure access services.

- [Player Local Information](#)^[115] – Adding customised data items to the player.
- [Reporting & Remote Setup](#)^[116] – Configuring the NTB to report to the Digital Signage Manager (DSM).
- [Licensing](#)^[117] – Managing your software licenses.


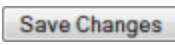
9.2.1 Users

Use the **Users** options to add and manage NTB user accounts.

Click the tab for the option you require:

- **Users** – Listing the users and their permissions. Click the  button to delete a user (you cannot delete the current user). Click the  button to change the user settings.
- **Add Users** – Adding a new user.

The NTB displays the same settings whether you are adding a new user or editing an existing one.

To add or change a user account, complete the following settings and click the  or  button:

Username	The name the user logs in with (for example, 'remote', or 'chef'). This must be unique on this NTB. 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.
Permissions	Check the boxes next to the permissions you wish to grant the user: <ul style="list-style-type: none"> • System Settings – Access to the Setup and Fonts pages. • Layout Editor – Ability to access layouts you have permitted the user to edit. Grant edit permission on the layout Properties tab. • Subscribe Channel – Read-only access to a channel using HTTPS or HTTP. • FTP Read/Write – Read, write, and delete files in the Media folder and all its subfolders using FTP. • Status Monitor – Access to the Player and System status pages only. • Activate Channel – Permits the user to activate channels. • Ad hoc – Access to the data entry ad hoc pages (not the ad hoc content design pages). Read, write, and modify files in the Media folder using the Ad hoc Media Folder page. If you enable this permission, you must specify a named directory using the Media Folder setting (rather than All Folders). • FTP Read Only – Read-only access to the Media folder and all its subfolders using FTP. • Layout Manager – Access to the Manage Layouts, Schedules, Ad hoc Entry, Newsfeeds, Tables, Colours, and Files & Folders pages. • Publish Channel – Allows the user to publish to a channel. • XML Control – Access to the XML message interface allowing non-browser based control of the NTB. (Does not allow access to pages.)
Media Folder	Select the user's FTP home and ad hoc media folder from the drop-down list. This prevents users from accessing any folders above the one you specify when they log in through FTP or through the Ad hoc Media Folder page.

9.2.2 Date and Time

Use the **Date and Time** options to configure the time source and time zone for your NTB.

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 options then click the **Save Changes** button and reboot the NTB:

Date and Time Settings	Choose the time method to use: <ul style="list-style-type: none"> • Network Time Protocol (NTP) – Best for accuracy but requires the NTB 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 NTB internal clock. Only use if the NTB cannot access an NTP server. Without an external reference, the local system clock may drift.
Time Zone Setting	Select the time zone for the NTB to use.
Local System Clock Settings	If you chose the Local System Clock method, NTB activates this display. The values shown are those current when you opened the Date and 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 NTB will only synchronise 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 NTB to synchronise times again.

Status:

Not displayed if you have chosen **Local System Clock**. Shows the latest characteristics of the NTP servers you have designated.

9.2.3 Network

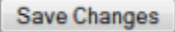
Use the **Network** options to configure, check, and test the NTB network connection.

Note: The NTB 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](#)^[105] – Configuring IP address and DNS settings.
- [3G Modem](#)^[105] – Configuring a 3G network connection.
- [Wireless](#)^[105] – Configuring a wireless connection.
- [Network Status](#)^[106] – Checking current IP address and DNS values.
- [Order](#)^[106] – Designating the preference order for using network connections.
- [Tests](#)^[106] – Running ping, trace, DNS lookup, and TCP dump tests.

Ethernet:

To configure IP addressing, complete the following information then click the  button and reboot the NTB:

Ethernet Settings	Select how the NTB obtains its IP address: <ul style="list-style-type: none"> • DHCP – Select if the NTB will obtain its IP address from a DHCP server on your network. If the NTB 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 NTB. Enter it in the IP Address field. If you select this option, the NTB enables the Static Address Settings and Static DNS Settings fields.
DHCP Setting	Optional. For ease of reference, enter a name for the NTB. 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 NTB. • Netmask – Specify the address range for the NTB subnet. • Default Gateway – Enter the gateway IP address if the NTB 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.

3G Modem:

If your NTB can connect to a 3G network, complete the following information then click the  button and reboot the NTB:

Enable	Select whether you want to connect by 3G or not: <ul style="list-style-type: none"> • Disable 3G network – The NTB will not use the 3G network. • Enable 3G network – The NTB will use the 3G network.
PPP Authentication	If the 3G network requires authentication, enter the username and password.
PIN	If the 3G network requires a PIN, enter the PIN.
Access Point Name	If the 3G network requires an Access Point Name (APN), enter the APN.

Wireless:






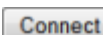
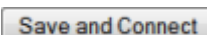
Use these options to manage the NTB connections to wireless networks.

The NTB will only connect to a wireless network if:

1. You have enabled the wireless interface.
2. You have defined the wireless network settings. If you define multiple networks, you cannot specify which one the NTB will prefer.

3. The wireless network is in range.



Wireless has its own set of tabs and you use them as follows:

Enable/Disable	Select the Disabled or Enabled option depending on whether you want to use wireless or not. Click the  button to switch:
Defined Networks	<p>Lists the networks you have already defined. Manage the networks using the buttons displayed next to each network:</p> <ul style="list-style-type: none">  – Click to delete this network from your list. If the NTB is currently connected to the network, clicking this button disconnects it.  – Click to change the network configuration. When complete, click the Save Change button to update the details..  or  – Displays according to the current setting for the network. Click to disable or enable whether you want the NTB to try connecting to this network.  – Click to connect to this network. The NTB will attempt to make the connection (if you have enabled wireless). This breaks any existing wireless connection. If you restart the NTB, it may not reconnect to the same network.
Add New Network	<p>Chose the network you want to use, complete the required information, and click the  button:</p> <ul style="list-style-type: none"> Visible – Lists reachable wireless networks. Select the button next to the network you want to connect to. If the network requires a network password or key, enter it in the Key field. Other – Select if the network you want is not listed above. Enter the network SSID and select the correct Key Type option. If the network requires a network password or key, enter it in the Key field. IP Settings, DHCP Setting, Static Address Settings, and Static DNS Settings – You can use either DHCP or static IP settings. For guidance on completing these fields, refer to the description of the Ethernet ⁽¹⁰⁵⁾ tab.


Network Status:

Displays the current network connection status and values.

Order:

You can specify the order in which NTB tries to make a network connection. If a particular network is unavailable, the NTB tries the next preference. Change the order using the  and  buttons.

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.

9.2.4 TV & Radio

Use the **TV & Radio** options to configure the NTB to tune and use TV and radio stations.

Note: Some features may depend on installed ONELAN licenses or hardware. Consequently, your NTB may not display all of the tabs and options described here.

Click the tab for the option you require:

- [Rebroadcaster Settings](#)^[107] – Configuring TV rebroadcasting.
- [Digital Tuning](#)^[107] – Tuning and auditioning digital TV and radio stations.
- [Analogue Settings](#)^[108] – Adding, naming, and managing analogue TV stations.
- [Capture Tests](#)^[108] – Testing the Composite and S-Video capture inputs.
- [Streaming TV & Radio](#)^[108] – Specifying and checking multicast addresses.
- [TV System](#)^[108] – Specifying and checking the TV system for your locale.


Rebroadcaster Settings:

To configure rebroadcasting, complete the following information then click the

[Save Changes and Activate Schedule and Layouts](#) button:

Enabled	Check the Rebroadcast a Digital Station option to enable rebroadcasting. If you enable it, the NTB TV card is disabled for analogue TV, digital TV and radio, and Composite and S-Video capture.
Station	Check the TV or Radio option and select the station from the drop-down list.
Stream As	Enter a descriptive name for the station. This is the name that is visible in streaming announcements for other NTB players to pick up. If you use a generic name, you can configure a different station here and the other NTB players will pick it up by referencing the same generic name.
Media Streams	Check the streaming option that best matches your requirements.
Stream Address	Specify the address the client needs to listen to for the broadcast.
Port	Specify the port number the client needs to listen on for the broadcast.
TTL	Enter the number of hops required. For example, 1 means the stream will reach the network. Increase the TTL by 1 for each multicast router the stream has to pass through.
SAP Address	Enter the address that the NTB sends SAP announcements to.

Digital Tuning:



If you have completed the tuning process before, the NTB displays a list of the tuned stations. To audition a station, click its  button (the NTB auditions it on the screen and stops showing the scheduled layout).

To scan for and tune to digital TV and radio stations, follow these steps:



1. Click the [Tune for Digital TV and Radio Stations](#) button. The NTB starts scanning for digital TV and radio stations. This takes approximately 8 to 20 minutes depending on circumstances. During the process, the NTB displays a progress notice on the screen instead of the scheduled layout.
2. After the NTB completes the scan, click the [Accept Tuning results](#) button to store the channel list or click the [Reject Tuning results](#) button to revert to a previous channel list.

3. If you wish, click the  button to audition any of the new stations on the screen.


Analogue Settings:

If you have selected analogue stations before, the NTB displays a list of the stations. To audition a station, click its  button (the NTB auditions it on the screen and stops showing the scheduled layout). To delete a station, click its  button.

To add a station, follow these steps:

1. Select a channel from the drop-down list.
2. Enter a name to identify in the field next to the list.
3. Click the  button.
4. If you wish, click the  button to audition the new station on the screen.

Capture Tests:

Click the  button to audition the capture feature indicated.


Streaming TV & Radio:

If the NTB cannot receive a TV signal directly, you might be able to deliver the TV signals by multicast streams using the local network. The NTB decodes the multicast stream and displays the TV image in a zone in the normal way.


If you want to use multicast streams there are these requirements:

- An additional ONELAN license.
- A streaming transmit server to convert the TV signals into multicast packets.
- All routers and switches on the local network between the streaming transmit server and each NTB enabled for multicast streaming.
- 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  button to audition a station on the screen.

Click the **Settings** tab to specify the multicast addresses by following these steps:

1. Specify the range of addresses on which to receive the Service Advertising Protocol (SAP) packets by entering the start address and end address in the respective fields. Valid addresses are between 224.0.0.0 and 239.255.255.255.
2. If required, specify additional address ranges in the following rows.
3. Click the  button.

TV System:

Different countries use differently configured TV systems. You need to specify your country so that the NTB can configure itself correctly.

Select your country from the drop-down list and click the  button. The NTB now restarts to complete the configuration.

9.2.5 HTTP Proxy

Use the **HTTP Proxy** page to set up proxy server access if the NTB 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 NTB must use a HTTP proxy when you setup individual Internet resources (for example, a newsfeed).

After you have configured the HTTP proxy, specify that the NTB uses it on the relevant setup page:

- HTML player – Setup on the **Setup > Player > Players** page.
- Channel subscription – Setup on the **Channels > Manage Channels** page.
- Newsfeed – Setup for the individual newsfeed on the **Media > Newsfeeds** page.
- Reporting – Setup on the **Setup > System > Reporting & Remote Setup** page.
- Software update – Setup on the **Setup > Maintenance and Troubleshooting > Software Update** page (**Settings** tab).

The NTB does not transfer a proxy configuration in a channel.

Note: Newsfeeds and channel subscription do not support use of Microsoft NTLM authentication. We recommend changing the Windows proxy to allow **Digest** authentication. You must restart the NTB when you make any changes to the HTTP proxies.

To configure the HTTP proxy, complete the following information then click the **Add and Restart** button:

Server Address	Enter the IP address of the proxy server.
Server Port	Enter the port the NTB 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 NTB needs to use the proxy for.

9.2.6 Security – General Settings

Use the **Security** options to configure the NTB firewall and other security services and to monitor firewall activity.

Caution: The NTB 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 NTB.

The NTB firewall protects it against unwanted and potentially malicious traffic. However, the NTB also needs to accept your login and allow necessary communications. To allow and protect such access, the NTB supports a variety of secure services:

- VPN – Virtual Private Network. Allows the NTB to communicate over an encrypted path through firewalls.
- HTTP/HTTPS – Hypertext Transfer Protocol and Hypertext Transfer Protocol Secure. HTTP encrypts passwords but

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 NTB kernel 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** ^[110] – Examining and configuring the firewall and other security services settings.
- **Master Password** ^[111] – Changing the NTB master password.
- **LDAP** ^[112] – Detailing access control using the Lightweight Directory Access Protocol.
- **LDAP Expert** ^[112] – Entering XML-based LDAP parameters. (Only displayed if you have set the **User Interface Policy** to **Expert**.)
- **Firewall Status** ^[111] – Monitoring the detailed firewall activity report.
- **LDAP Tests** ^[111] – Testing your LDAP configuration.
- **SSL Certificates** ^[112] – Using customised 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 **Save Security Settings** button and reboot the NTB:

Firewall Service Settings	<ul style="list-style-type: none"> • IP Address Filtering – Default: Disabled. Check this box to prevent any access to the NTB except from the Allowed IP Addresses. • Allowed IP Addresses – Enter the IP addresses that can access the NTB, 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"> • Supported Protocols – Default: HTTP and HTTPS. Select either HTTP or HTTPS to restrict access to that protocol. You cannot manage the NTB without either HTTP or HTTPS enabled. • HTTP Ports – Default: 80. Modify or add if you want your NTB to accept HTTP connections through different ports. • HTTPS Ports – Default: 443. Modify or add if you want your NTB to accept HTTP connections through different ports.
FTP Service Settings	<ul style="list-style-type: none"> • Service State – Default: Enabled. Uncheck this box to disable FTP access. • Supported Protocols – Default: FTP. There are no other options. • FTP Ports – Default: 21. Modify or add if you want your NTB 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 2500 KiB/Second. Modify the Limit to value to specify a different transfer rate.

SSH Service Settings	<ul style="list-style-type: none"> • SSH Ports – Default: 22. Modify or add if you want your NTB 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 NTB listens on.

Master Password:

The **Master Password** tab allows you to change the master password. You need the master password to access the NTB kernel through SSH.

Note: This is not the same password you use to login to the NTB 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 NTB.

LDAP:

See [Security – Advanced LDAP Settings](#)^[112] for details.

LDAP Expert:

See [Security – Advanced LDAP Settings](#)^[112] for details.

Firewall Status:

The **Firewall Status** tab displays the detailed NTB 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 NTB on various protocols.
- The NTB checks the IP address of incoming connections against the **Chain PLAYER-INPUT-ADDRESSES** rule set. NTB drops connections from IP addresses disallowed by security settings.
- The NTB checks allowed connections against the **Chain PLAYER-INPUT-PORTS** rule set. NTB 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 NTB.

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 NTB.

To run a test:

1. Enter the name of the target NTB 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.

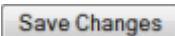
When you have a correct setup, and the NTB username is valid, the LDAP test returns the **Passed** status. To correct any indicated problems, check the user permissions and change the associated LDAP settings.

The NTB performs the following tests and indicates any failures as well as displaying detailed log messages:

Test	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	HTTP Permissions section
Ad hoc Permissions	Ad hoc Users section

SSL Certificates

If you want to use customised SSL certificates, rather than the default certificates, follow these steps:

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  button and reboot the NTB:

9.2.7 Security – Advanced LDAP Settings

The NTB **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 NTB unless you have expertise with LDAP implementations. LDAP is a powerful technology and enabling a misconceived configuration can make the NTB unusable.

Before beginning to configure security for the NTB 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 NTB (see [LDAP Tests](#) for details).

To begin with, it is important to understand the difference between the NTB and the LDAP security models:

- The basic NTB 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.

What follows is guidance for completing each of the fields on the **LDAP** tab:

- [Configuration](#) ^[113]
- [Fallback User](#) ^[113]
- [Bind](#) ^[113]
- [FTP User](#) ^[113]
- [HTTP User](#) ^[114]
- [HTTP Permissions](#) ^[115]
- [Ad Hoc Users](#) ^[115]

Configuration:

You must check the **Enable LDAP** box to allow the NTB 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).
- **SSL** – NTB encrypts all communications with the LDAP server using SSL (standard LDAP port is 636).
- **TLS** – NTB encrypts all communications with the LDAP server using TLS (standard LDAP port is 389).

The Certification Authority (CA) Certificate is required when SSL or TLS encryption is used. The certificate is required to be in PEM 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 NTB and perform management tasks, even when LDAP authentication is not working.

Enter the username and password that you wish to use to manage the NTB in the event of problems with the LDAP setup.

Recommendation: 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 NTB. 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 NTB.

Example user filters for the relevant contexts are:

- Active Directory – `(&(sAMAccountName=%s)(objectclass=user)(memberOf=CN=NTB 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 NTB. 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.
- 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 a name for the user for the NTB to use in the banner. 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.

HTTP Permissions:

After a user has been authenticated to access the NTB web interface through HTTP, the NTB 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 these permission filters:

Monitor Access Filter	Access to player status and system information only.
System Settings Filter	Access to the Setup menu and Fonts page.
Layout Manager Filter	Access to the Layouts , Schedules , Ad hoc Entry Page , Newsfeeds , Tables , Colours , and Files & Folders menus
Layout Editor Filter	Access to the graphical layout editor.
Publish Channel Filter	Access to the Publish Channel menu.
Activate Channel Filter	Access to the Activate Channel option.
XML Control Filter	Access to the XML message interface allowing non-browser based control of the NTB only. (Provides no access to menu options.)

Set those to LDAP filters that match the user's permissions. Use `%s` where you wish the users 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))`.

Ad Hoc Users:

Click the button to add an ad hoc user and to set the filters for them as required.

9.2.8 Player Local Information

Use the **Player Local Information** page to add, delete, or modify data items for customising the NTB behaviour. Examples include the following features:

- Conditional play – Add data that the NTB checks to determine which playlist items or schedules to play.
- Localise HTML pages – Add data that the NTB uses to localise output from web pages.
- Configure a weather widget – Specify the current location to customise a weather widget display.

Any change you make to the player location information can have an immediate effect on the currently playing item.

These examples further expand and illustrate how you might use player local information:

- Design general channel content that also allows each NTB 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 NTB 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 NTB includes player local information in its reports to the DSM 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 DSM reports.

9.2.9 Reporting & Remote Setup

Use the **Reporting & Remote Setup** options to configure how your NTB reports status information to the DSM.

Note: Some features may depend on installed ONELAN licenses.


You can configure your NTB to send reports to the DSM using any of HTTP, HTTPS, or VPN. However, if you want to use some or all of the remote setup features you must configure your NTB according to these settings:

- Report using VPN – Allows the DSM to remotely control your NTB (and optionally connect to it over SSH).
- Report using VPN and enable the **Remote Setup** option – The above plus your NTB can accept setups from and donate its setup to the DSM.
- Report using HTTPS and enable the **Remote Setup** option – Your NTB can accept setups from but cannot donate its setup to the DSM.

Click the tab for the option you require:

- **Reporting Settings** – Enabling and configuring reports.
- **Status** – Checking reporting states and events.
- **Remote Setup Settings** – Enabling and configuring remote setup.


Reporting Settings:

To configure reporting, complete the following information then click the  button (you must also reboot the NTB 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 NTB does not send reports. • Report status to a DSM via HTTP – The NTB sends report using HTTP or HTTPS. • Report status to a DSM via VPN – The NTB sends report using VPN.
Screen Thumbnails	<p>Check the box for the NTB to include a thumbnail of its current display in the report. This increases the bandwidth required for each report.</p>

Media Auditing	<p>Check the button for the media audit reporting option you want:</p> <ul style="list-style-type: none"> • Do not send media audit logs to the DSM – The NTB does not send media audit reports. • Send media audit logs every – Specify how often you want the NTB to send media audit reports. • Send media audit logs every day at – Specify the time when you want the NTB to send media audit reports only once a day.
Reporting Interval	Specify how often you want the NTB to send a report. The minimum interval is 5 seconds.
Report to DSM via HTTP	Select whether the NTB sends reports using HTTP or HTTPS. Enter the name or network address of the DSM in the field (optionally with the required port number appended after a colon).
Report to DSM via VPN	<p>Enter the name or network address of the DSM 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 DSM to connect to the NTB over SSH.</p>
Authentication	Enter the username and password for the reporter account on the DSM.
Proxy	Check the Use proxy if configured box if the NTB has to send reports through a proxy. You must have already configured the proxy (see HTTP Proxy ^[109] for details).

Remote Setup Settings:

To configure remote setup, complete the following information then click the  button and reboot the NTB:

Remote Setup	Check the Enable remote setup for this player box to allow the NTB to report its setup to and receive setup updates from the DSM.
Categories	<p>Check the boxes for the categories of setup you want the NTB to report or donate and for which it will accept updates.</p> <p>Note: You cannot select the Channel category when the NTB is a publisher.</p>

9.2.10 Licensing

Certain features beyond the normal capabilities of the NTB 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 NTB must be rebooted for newly installed license features to become available.

9.3 Player Setup

Use the **Setup > Player** options to configure, check, and test the NTB player settings.

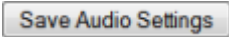


Select the menu item for the option you require:

- [Audio](#)^[118] – Setting the volume and source of sound.
- [Screen](#)^[118] – Configuring characteristics of the display screen.
- [Players](#)^[120] – Enabling HTTP proxy, flash, and XML web service options.
- [RS-232 Outputs](#)^[121] – Configuring and adding RS-232 items.
- [Interactivity](#)^[122] – Configuring touch screen, RS-232, and remote keypad interaction.
- [International](#)^[124] – Designating country and language preferences for screen output.

9.3.1 Audio

Use the **Audio** page to set the sound volume and output type.

Click the tab for the option you require:

- **Settings** – Enter the settings you require and click the  button to enable them:
 - **Master Volume** – Set the master output volume as a percentage of maximum (100%) output level. You specify individual item volumes as a percentage of this master volume. (Only applies to the analogue output.)
 - **Input Level** – Set the input level as a percentage of maximum (100%) input level.
 - **Audio Output** – Select the output type from the drop-down menu.
- **Status** – Indicates if audio is muted or not.
- **Tests** – Click the  button and the NTB sends audio test signals so you can hear how the setup sounds. Running the test stops the currently playing media. To stop the test and restart the media, click the  button.

9.3.2 Screen

Use the **Screen** options to set the screen resolution and orientation and to test its performance.

Click the tab for the options you require:

- **Settings** – Changing the screen settings.
- **Status** – Displaying a summary of the screen's Extended Display Identification Data (EDID), including screen resolution.
- **Tests** – Testing different aspects of screen performance.

Before setting up your screen, you need to understand the **Layout Canvas Size** setting and understand its application when designing your content.

You use the layout canvas size setting to:

- Define the size of the display space on which the NTB will render your layouts.
- Define the design space for the layout editor tool.
- Specify the screen resolution if the NTB cannot read it automatically.

Follow these best practice principles when designing your content:

- Decide on your desired output resolution (typically, 1360 x 768 or 1920 x 1080).
- Set the layout canvas size to match that output resolution.
- Choose or design layouts to fit that layout canvas size.
- If your content will be distributed in a channel, set all the screens involved to the same layout canvas size.

The NTB configures the screen by plug-and-play, using values obtained from the screen's EDID information. If the screen does not include a preset display mode matching your layout canvas size, the NTB automatically scales the layout to fit the screen as best it can. In that case, so long as your layout fills the layout canvas size, the NTB will display all of your layout though some of the screen may remain unused.

If the NTB is unable to obtain EDID values, it outputs at the same resolution as the layout canvas size and uses the fallback timings you provide on the **Settings** tab. This can occur because your screen is connected through a VGA extender or distribution amplifier that does not support EDID or DDC. Otherwise, fallback timings should only be needed for VGA screens as all digital interface specifications mandate plug and play support.

Note: Only connect one screen to the NTB at a time.

Settings:

To configure your screen, complete the following information then click the **Save Changes and Restart** button:

Layout Canvas Size	Specify the dimensions you want for your layout canvas size in pixels: <ul style="list-style-type: none"> • Width – Whole numbers in the range 640 to 2000. • Height – Whole numbers in the range 480 to 2000.
Orientation	Specify the orientation of the display relative to the screen by selecting from the drop-down list: <ul style="list-style-type: none"> • Landscape - Top edge at top – Default. Corresponds to 0 degrees of rotation. • Portrait - Left edge at top – Corresponds to 90 degrees of rotation. • Portrait - Right edge at top – Corresponds to 270 degrees of rotation. • Landscape - Bottom edge at top – Corresponds to 180 degrees of rotation.
Fallback Timings	Select and complete the fallback timings appropriate to your screen: <ul style="list-style-type: none"> • VESA CVT Timings – The width and height are taken from your layout canvas size. The NTB calculates timing information using the standard VESA CVT formula. Always use Normal Blanking for CRT screens. Try Reduced Blanking for flat-screen displays. • Custom Timings – For advanced users only. The width and height are taken from your layout canvas size. Enter your required values for the indicated timing characteristics.
Target Frame Rate	The NTB set this to provide the best results for the hardware available. Select an alternative rate if that causes problems.

Status:


The NTB lists its available screen connection ports and details of the connected screen.

Tests:

Click the  button for the test you want to run on your screen:


- Alignment
- Checker board
- Colour bars
- Grey scale bars
- Horizontal lines
- Vertical lines

Be aware of these characteristics:

- Tests run immediately and interrupt the currently scheduled display.
- Tests run indefinitely until you stop them. Stop a test by running another test or by clicking the  button to resume the scheduled display.

9.3.3 Players

Use the **Players** page to adjust the settings for the NTB HTML player type.

To configure the HTML player settings, complete the following information then click the  button:

HTTP Proxy	<p>Specify whether the NTB has to use a HTTP proxy to access the Internet:</p> <ul style="list-style-type: none"> • No Proxy required – The NTB connects directly to the Internet and does not use a proxy to do so. • Use proxy – A proxy is required. Select the proxy to use (you must have already defined the proxy. See HTTP Proxy ¹⁰⁹ for details). If the NTB can also connect to some Internet resources directly, specify their address or URL in the No proxy for field.
Trust Local Flash	<p>Select the trust level for local flash:</p> <ul style="list-style-type: none"> • Restrict disk based flash from reading local data and accessing cross-domain urls – Default and safest option. Select if flash content does not require cross-domain access to data or to read local files. • Allow disk based flash to read local data and communicate with internet – Select if flash content requires cross-domain access to data or needs to read local files.
XML Web Services External URL Access	<p>Select whether the HTML player can access external web sites:</p> <ul style="list-style-type: none"> • Allow XML web services to access external sites – The HTML player can access external sites. • Do not allow XML web services to access external sites – The HTML player cannot access external sites.

9.3.4 RS-232 Outputs

Use the **RS-232 Outputs** options to add and manage RS-232 items.

If your NTB includes an RS-232 interface, you can use it 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 NTB.

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 NTB to execute the item.

Click the tab for the option you require:

- **Items** – Listing the RS-232 items already defined on the NTB.
- **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 NTB 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.

If your NTB is a publisher, the RS-232 Items are published as part of the channel and are downloaded to subscriber players. However, the NTB 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, a subscriber or publisher NTB 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.

The **Last Response** section details the response received the last time the NTB executed this item. Click the **Execute RS-232 String** button to have the NTB execute the RS-232 item immediately and display any response string.

Add Item:

To create the RS-232 item, complete the following settings and click the **Add** button:

Name	Enter a name to uniquely identify this RS-232 item.
Perform Enabled Actions when	Specify when the NTB 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 NTB 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 NTB to send (in hexadecimal).
DTR (Data Terminal Read) Action	Check the Set DTR level box to enable the NTB 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 NTB to set the RTS line voltage to the option you select. Clearing the box disables it..

Configuration:

Configure the NTB RS-232 transmission to match the settings of the connected RS-232 equipment. To configure RS-232, complete the following settings and click the **Save Configuration** 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: If your NTB is either a subscriber or publisher, it 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.

9.3.5 Interactivity

Use the **Interactivity** page to program the NTB to respond to input from user-interaction devices.

Click the tab for the option you require:

- **Touch** – Setting up and calibrating touch-sensitive screens.
- **RS-232 Inputs** – Configuring and enabling responses to inputs through the RS-232 port.
- **Remote Keypad** – Programming the actions associated with the buttons on the remote control.

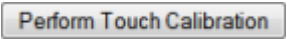
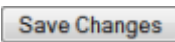
Note: Some features may depend on installed ONELAN licenses.

Touch:

The **Status** field indicates the current state of the touch system:

- No touch screen is connected.
- Touch screen is connected but is not calibrated.
- Touch screen is available. (The touch screen is only usable when the NTB displays this status.)

After you have connected a touch screen, you must calibrate it by following these steps:

1. Click the  button.
2. On the touch screen, carefully press your finger on the centre of each of the three crosshairs as they appear.
3. Touch the **Press to finish** message in the centre of the screen.
4. On your browser, if necessary adjust the **Drag Threshold** value (see below).
5. Enter a name for the screen in the **Name** field (only displayed after the screen is calibrated).
6. Click the  button.

You can cancel the calibration by clicking the **Cancel Touch Calibration** button on the **Calibrating Touch Screen** page. The NTB will also cancel calibration automatically if:

- You do nothing for 60 seconds.
- You or the NTB activates a layout.
- You audition an item.

If the calibration process does not complete successfully, the NTB uses a previously successful calibration or leaves the screen in an uncalibrated state.

When you perform the calibration, the NTB estimates a **Drag Threshold** using the difference between your press and release on the three calibration crosshairs. The drag threshold is the minimum number of screen pixels distance between the press and the release to interpret your action as a press-drag-release, rather than a press-release. This is particularly important when the NTB passes touch events to a displayed web page, as typically a press-release is required.

You may need to adjust the drag threshold to take account of the media the NTB will display and the intended users. To do so, enter the required value in the **Drag Threshold** field.

RS-232 Inputs:

The NTB 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 NTB.
- **Name** – The name to use for this input when referencing it elsewhere in the NTB.

In addition, there are two informational properties:

- **Current Level** – Indicates the current state of the input (positive or negative voltage).
- **Used By** – Indicates the zones and layouts that use the input.

Remote Keypad:

The NTB can respond to button presses on a infra-red controller or remote keypad. The buttons are:

- Volume up and down – Adjusts the master volume level up and down in 10% divisions. The NTB indicates the new volume at the top right of the screen.

- Station up and down – Selects the next station up or down in the list of available ad hoc TV or radio stations. The NTB indicates the new station, or that none are available, at the top right of the screen.
- Four programmable buttons: A, B, C, D – Provides interaction with layout and playlists. If you have not programmed the button with an action, the NTB reports that in a message at the top right of the screen.

The status message on the **Remote Keypad** tab indicates if the NTB has the infra-red receiver connected or not. The NTB requires the infra-red receiver to enable it to receive remote keypad inputs.

9.3.6 International Settings

Use the **International** page to choose language and country preferences for the screen output. You should choose the setting that best matches the expectations of those viewing the screen.

Note: These are different from the language and localisation settings of the user interface, which are determined by the browser settings.

The settings on the **International** page are used by:


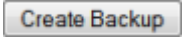
- The HTML player – To provide a preferred language and locale to web sites that support localisation.
- The text clock – To determine locale-specific date and time formats if you have not specified explicit formats.

9.4 Backing Up Your Player

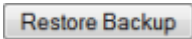
In case of problems, you should maintain regular backups of the media content files and settings that your NTB uses. See [Backup Contents](#)^[133] for details of what is backed up.

Use the **Setup > Maintenance & Troubleshooting > Backup & Restore** page to create and save the backup files. You save the files on a USB device attached to the NTB (for example, a USB stick or external disk drive, depending on how much space your backup needs). If needed later, you can restore those files and settings onto this or another NTB.

To create a backup:

1. Attach a USB device to the NTB.
2. On the menu bar, click **Setup** and select **Maintenance and Troubleshooting > Backup & Restore**.
3. Click the **Create Backup** tab.
4. If you want to create a new folder to hold the backup:
 - a. Enter the folder name in the **Named** field.
 - b. Click the  button.
 - c. Click the new folder's link to specify it as the backup location.
5. Click the  button. It can take several minutes for the NTB to create the backup.
6. When the backup process finishes, remove the USB device.

To restore a backup:

1. Attach the USB device containing the backup to the NTB.
2. On the menu bar, click **Setup** and select **Maintenance and Troubleshooting > Backup & Restore**.
3. Click the  button next to the backup you want to restore.

4. Wait for the NTB to reboot after the restore process finishes.
5. Remove the USB stick.

If you wish to restore media content onto a different NTB that does not have the **Backup & Restore** page, then there are two methods available:

- Using the options on the **Manage Channels** page – Use for a player that is part of your signage network or to transfer media content between networked systems. See [Configuring the Publisher](#) ⁽⁹¹⁾ for more details.
- Using the options on the **Layout Packages** page – Use to create files that you can store on or transfer to a different NTB. See [Creating a Layout Package](#) ⁽⁸⁵⁾ for more details.

9.5 Software Update

You can access the **Software Updates** page from the **Setup > Maintenance and Troubleshooting** menu.

Use the **Software Update** options to check the latest update status and to configure whether the NTB performs updates automatically or not. Please contact your reseller or supplier 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 NTB 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 NTB 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 NTB is allowed to check for updates. If it indicates it is not allowed, this is because you have either selected Turn off automatic update or have set a Download Allowed period that does not include the current time.
Last Checked for updates	Indicates when the NTB last checked for updates.
Update File	Indicates if an update is available or not. If one is, this displays details of the file if it has not yet been installed.
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:


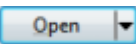
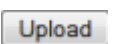
To configure software updating, complete the following options and click the  button:

Update Mode	Choose how you want automatic updating to work: <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	Only activated if you have chosen Automatically download and install updates . Specify the day and time when the NTB can reboot to install an update.
Download Allowed	Not activated if you have chosen Turn off automatic update . Specify the day and a time slot when the NTB can download an update.
Update Server URL	Not activated if you have chosen Turn off automatic update . If different from the default, specify the URL where the NTB checks for updates.
Check Interval	Not activated if you have chosen Turn off automatic update . Specify how often the NTB checks for updates (in hours and minutes).
Authentication	Not activated if you have chosen Turn off automatic update . If the update server requires authentication, enter the details here.

Manual Update:

Confirms the version of the software currently installed on the NTB.

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.

9.6 Reboot System

You can access the **Reboot** page from the **Setup > Maintenance and Troubleshooting** menu.

Use the **Reboot** page to perform a controlled reboot of the NTB.

Caution: You can stop and restart the NTB simply by switching the power off and on. However, following a software update, you must reboot the NTB using this controlled process to ensure the update completes successfully.

Select **Yes** from the drop-down list and click the  button.

Part



Troubleshooting

10 Troubleshooting

Your NTB requires little maintenance.

From time to time, ONELAN Limited may release software updates for your NTB. To make sure you keep your NTB up to date, you can set it to receive and install those updates automatically (see [Software Update](#)^[125] for more details).


The following topics provide more information about NTB maintenance and problem solving procedures:

- [Backing Up Your Player](#)^[124] – Creating and restoring a backup of your media files and NTB settings.
- [Reboot System](#)^[126] – Manually rebooting the NTB.
- [Support Snap Shot](#)^[128] – Creating a collection of log and device data for support purposes.
- [Connection Troubleshooter](#)^[128] – Following a sequence of tasks to track down and correct connection problems.

10.1 Support Snap Shot

If you have a problem with your NTB, your support representative may ask you to create a **Support Snap Shot**. A support snap shot consists of a detailed collection of NTB logs and device setting data.

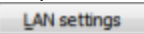
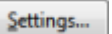
You can access the **Support Snap Shot** page from the **Setup > Maintenance and Troubleshooting** menu

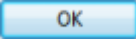
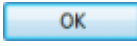

Click the  button and follow the on-screen instructions to create the support snap shot, if you are asked to do so.

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 NTB.

10.2 Connection Troubleshooter

If you are having difficulties connecting to your NTB, work through the tasks in the following table:

Task	Comment
There must be network cables connecting the NTB to your PC.	Use either a network cable connecting your PC to your LAN and one connecting the NTB to the LAN, or a crossover cable connecting your PC directly to the NTB. Make absolutely sure that you are using a crossover cable.
If you are using a laptop, connect it to mains 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 NTB.
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).
If you are using a crossover cable, your PC 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 .

Task	Comment
Reboot the NTB and the PC.	
During the NTB boot sequence, press the ESC key and look for an OK message (in green) for the eth0 parameter.	If you see a [Fail] message (in red) for the eth0 parameter this usually means that the NTB has found nothing to connect with at the other end of the cable.
During the NTB 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 NTB must have completed its boot sequence.	The screen connected to the NTB should be showing the default layout and content.
The yellow LEDs on all applicable network sockets should be on or flashing.	If applicable, check the yellow light (if present) is lit on the socket that the network cable plugs into on your PC, on the NTB, and any hubs or routers in the path from the PC to the NTB.
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 PC displays its IP address.
Make sure that the IP addresses of the NTB and PC are in the same sub-net.	You may need to consult your network administrator for further advice.
You should try to ping the NTB from the PC. (Some networks do not allow pings.)	On a Windows PC 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 NTB. Press the Enter key. After a few seconds you should see a message that includes the phrase (0% loss). The yellow LED on the network socket of the NTB should flash during the ping.
You should be able to access the NTB with your browser.	In the address bar of your browser, enter the IP address of the NTB and click the Enter key. When prompted, enter the username and password for the NTB. The home page of the NTB should appear in the browser.
Make sure your browser is not showing a cached version of the NTB 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.
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 PC from dialing out for an Internet connection, install the Firefox browser on your PC and use it to access the NTB.
You should be able to connect to the NTB using FTP.	In Internet Explorer, in the address bar type <code>ftp://</code> followed by the IP address of the NTB and press the Enter key. When prompted, enter the same username and password. 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 NTB. For example, <code>ftp://remote:9999@192.168.1.2</code> . You should see a list of folders including media.

Part



XI

Technical Reference

11 Technical Reference





This section contains technical reference topics not covered elsewhere:

- [Energy Saving](#)^[131] – Reducing the amount of power your system consumes.
- [Optimising Playback Performance](#)^[132] – Enhancing the playback performance of specific media types.
- [RS-232 Technical Reference](#)^[132] – Understanding RS-232 pin assignments and electrical interfaces.
- [Backup Contents](#)^[133] – Understanding which files and folders the NTB saves in a backup.

11.1 Energy Saving

Digital Signage players like the NTB are designed to run continuously. To reduce the energy consumed, you may wish to shut down part or all of your system during appropriate times of the day or night.

Here are some techniques you might consider using:

Technique	Steps to Follow	Effects
Switch Screen to Standby Mode	<p>To put the screen into standby mode immediately, follow these steps:</p> <ol style="list-style-type: none"> 1. On the menu bar, click Schedule and select Manage Schedules. 2. Click the  button for the currently running schedule. 3. Click the  button for the current schedule entry. 4. Set Screen to Off. 5. Click the  button. <p>To put the screen into standby mode at other times, create schedule entries to turn the screen off when it is not needed.</p>	<p>Screen in standby mode.</p> <p>NTB continues to run.</p>
Switch Screen off with RS-232 Cable	<ol style="list-style-type: none"> 1. Refer to the screen manufacturer's information for the RS-232 codes needed to switch the screen on and off. 2. Connect the NTB to the screen using a RS-232 cable. 3. On the menu bar, click Setup and select Player > RS-232 outputs. 4. Click the Add Item tab and create separate RS-232 items containing the screen on and off codes. Click the  button to save each item. 5. Add those RS-232 output items to a playlist from the Special tab. 	<p>Screen switched off.</p> <p>NTB continues to run.</p>
Switch Screen and NTB Off with Timer Switch	<p>You cannot damage NTB units by cutting off their power. However, do not cut off power during a software update. To switch off the screen and the NTB with a timer switch, follow these steps:</p> <ol style="list-style-type: none"> 1. Obtain a timer switch for the power supply to the screen and the NTB. 2. Program the timer switch to turn power on and off at the desired times. 3. Plug the screen and NTB power cables into the timer switch. 	<p>Screen switched off.</p> <p>NTB switched off.</p>

11.2 Optimising Playback Performance

You can optimise the playback performance of specific media by taking note of these points:

- NTB players have no problem displaying MPEG-2 video at a reasonable rate (up to 10 Mbps). This typically uses less than half of the NTB processing power.
- You should resize images (especially digital photos) before uploading them onto the NTB. 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 NTB. If this occurs, the animation will typically run slowly but other zones will continue as normal.

11.3 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 NTB	DCD	High impedance
2	Input to NTB	RxD	High impedance
3	Output from NTB	TxD	-ve voltage level
4	Output from NTB	DTR	-ve voltage level
5		Sig. GND	
6	Input to NTB	DSR	High impedance
7	Output from NTB	RTS	-ve voltage level
8	Input to NTB	CTS	High impedance
9	Input to NTB	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 NTB 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) (can drive LEDs/PIR modules and provide a voltage for contact closure applications).

11.4 Backup Contents

[Backing Up Your Player](#)^[124] describes how you create a backup for your NTB. The folders and files included in the backup are:

Folders	Files
/data/data/ad_hoc_media/	/data/data/config/audio_settings.xml
/data/data/channel/	/data/data/config/http_proxy_settings.xml
/data/data/config/ad_hoc/	/data/data/config/local_information.xml
/data/data/control/	/data/data/config/player_settings.xml
/data/data/fonts/	/data/data/config/remote_setup_settings.xml
/data/data/media/	/data/data/config/schedule_log_rotate.xml
/data/data/package/data/config/channel/	/data/data/config/screen_settings.xml
/etc/onelan/ntb/layout_permissions/	/data/data/config/software_update_settings.xml
	/data/data/config/streaming_video_settings.xml
	/data/data/config/tv_settings.xml
	/etc/onelan/common/user_passwords.xml
	/etc/onelan/common/users.xml
	/etc/onelan/ntb/date-and-time-settings.xml
	/etc/onelan/ntb/dsm_reporting_password.xml
	/etc/onelan/ntb/dsm_reporting_settings.xml
	/etc/onelan/ntb/ldap_passwords.xml
	/etc/onelan/ntb/ldap_passwords_pending.xml
	/etc/onelan/ntb/ldap_settings.xml
	/etc/onelan/ntb/ldap_settings_pending.xml
	/etc/onelan/ntb/security_settings.xml

Part



XII

Glossary

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 centre	An ad hoc schedule override which is managed and sent by a remote publisher NTB to one or more specific subscriber NTB players.
Audition	Manually launching new content to observe how it performs.
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 Digital Signage 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 NTB 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.
Layout icons view	Abstract display of a layout showing only the distribution and size of its zones. The colour of each zone indicates the media it is enabled to play.
Layout package	The media and settings for a layout bundled a ZIP file for distribution to other players.
Media	Dynamic content such as streaming video, TV, radio and newsfeeds is referred to as media.

Term	Meaning
Media audit	Reports indicating which media items played on the NTB, when, and for how long.
Media folder	Designated area on the NTB disk holding media items for adding to playlists.
Media player	The type of media each zone is enabled to display.
Menu bar	Appearing on all of the user interface pages, the menu bar provides access to the various NTB configuration and design options (such as Media or Playlists).
Multichannel publishing	A publisher configured with more than one channel. Only one channel at a time can be active.
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 NTB 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 ONELAN Digital Signage Platform. Player is the generic term for the appliance that runs the screen. Specifically, the player is the ONELAN Net-Top-Box (NTB).
Player local information	Data entered on an NTB 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 NTB players for display on their associated screens.
Publisher	A player that provides content to other players through channels.
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 Digital Signage Manager through a folder.
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 NTB schedule.
Screen snap shot	A picture of what the NTB 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	NTB players that show a schedule from a publishing NTB subscribe to that device.
Subscriber	A player that accepts a channel from a publisher.

Term	Meaning
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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