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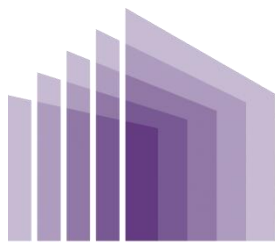
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Dynamax

# YOUR DIGITAL SIGNAGE PREPARATION KIT

## Part 2 – The Hardware



For those who want to get it right from  
the start



# dynamax

## Digital Signage Specialists

What you need to know about our digital signage software



 digitalsignage.NET  
by dynamax

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If you're working under a tight deadline and planning to launch your digital signage project soon, but you're still not sure where to start, then this 4 part series is the resource for you.



# How and when to use this kit

- Speed up the research stage as you will know what type of products to be looking for
- Decrease the risk of any unforeseen expenses and delays
- Have the ability to offer your team an educational tool which will ensure that you can all use the technology.

Whether you are in the know or a novice in all things digital signage, this kit will provide you with the knowledge you need in order to plan your project correctly and deliver it on time and on budget.

## By reading the series, you will:

Understand the subtleties of each element of the system- software, hardware, content and installation

Be able to avoid making common mistakes that can compromise the ROI of your project

Be able to measure the system's ROI based on your criteria of choice



# The Hardware

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The broad term “**digital signage hardware**” usually refers to the screens and the media playback devices that power them. There is a plethora of hardware solutions available on the market- consumer and industrial grade products, some inexpensive (like the former), other more costly (like the latter). Choose the ones that suits your content requirements, your budget and the peculiarities of your environment.

The role of the media player is to deliver content from the server to your displays. It represents the bridge between your software and your screens which is why it is very important to make sure all hardware components are compatible.

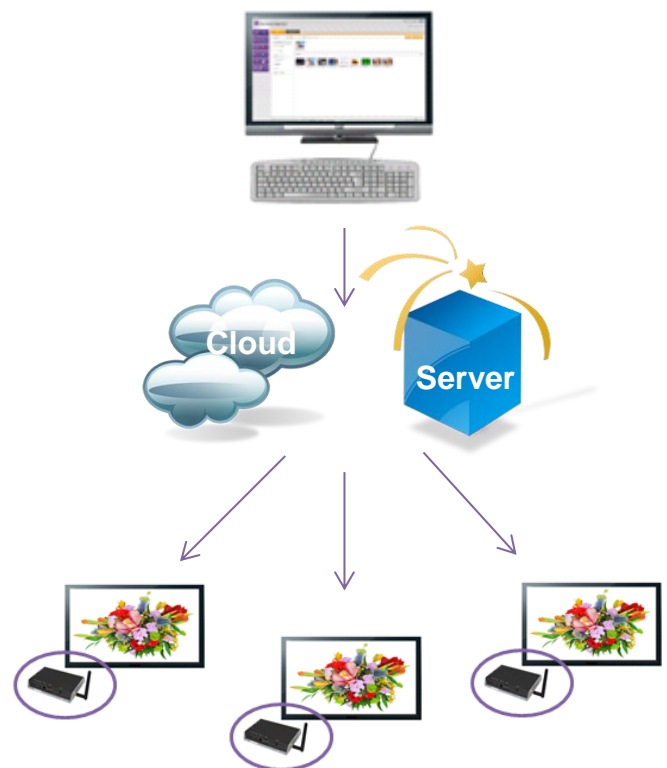
Another thing you should know is that you do not need a separate media player for every screen you are going to use if you plan to display the same information on all screens. One media player with a video output will suffice.

However, you will need one media player per screen if you are going to show different information on each individual screen.

# Media players

The decision of displaying the same information on multiple screens or displaying multiple information on multiple screens, will have an impact on the total cost of your digital signage solution. It’s good to decide right from the beginning. The media players can also be used for stretching and aligning your content across several displays.

The media players receive the content scheduled in your software and send it to the display(s) they power.



The most common question we get asked by the users of our software is what type of media players should they use our product with. As we don't take this decision on their behalf, we help them understand the options available and how to discriminate among them.

### ***What's on offer?***

In [an article](#) that was published this year, AOpen places the media playback devices that are currently available on the market in the following categories:

#### **SoC (System on a Chip) appliances-**

Characterised by their low energy consumption and suitable for basic digital signage projects. They cannot be networked and upgraded and have difficulty playing several streams of HD video or new media content.

**Embedded players-** Built within the display, they offer you the advantage of a compact solution. They run cooler (which makes them more durable) and are quieter than other media players. Their inherent disadvantage is that if a component fails, the entire solution may have to be replaced.

# Media players

#### **Industrial Grade media players-**

Highly flexible and upgradable, those are suitable for tough environments with less-than-ideal conditions.

#### **Networked streaming servers-**

A centralised solution to display content across several devices and locations. Like in the case of the embedded players, their main disadvantage is the reliance on one component of your system- the server- that when failing will cause all your screens to go blank.

#### **Windows based desktop PC's-**

Suitable if you want to avoid extra-expenses and powerful enough to deliver your content to your screens. However, the consumer-grade material they are made of, and the lack of standardised sizes, does actually affect their longevity.



Source: What's Driving Your Content? Digital Signage Media Player Choices, [rAVe pubs](#)





# Media players



[Android media players](#)- built on the Android operating system, they are more cost-effective than traditional devices while imposing little to no limitations in terms of the content management and playback. This means that users can still display the same type of media files according to different criteria, such as time of the day or day of the week and pay less for doing so.

This option is suitable for digital signage projects and users that want to get their system up and running quickly, without much effort or expenses from their side.

To help our users do just that, we have bundled our digitalsignage.NET software with an Android media player, creating the easiest and most cost-effective solution we have offered our clients so far.

The Android box now available on our website

[www.digitalsignage.net](http://www.digitalsignage.net)



Android's popularity as an operating system for media playback devices has increased dramatically over the past few months.

Android media players have now been accepted as alternatives to the long established Windows-based devices, their attractiveness residing in:

**Their cost-effectiveness** - Android players are up to 50% cheaper than standard players;

**Their reliability** - They have no moving parts.

*To learn more about our Android digital media signage solution [click here](#).*



## Choosing the right media player



Not all media players are created equal, each present both advantages and also some disadvantages specific to your own project. That is why you have to evaluate these pros and cons based on your system's requirements, rather than just general recommendations.

***Here are a few criteria we go through with our users to help them choose the right media players:***

**Their ability to support the content types.** You want to be using HD videos, live video, HTML5 and flash animation

**The amount of internal storage they have.** A unit with a low amount of storage (i.e. 1 GB) implies that you can only store and show a very limited number of files, whereas one with a higher memory (8, 16 GB or greater) would allow you to store more files and diversify your content further.

# Media players

**Their green clout.** Media players with a low energy consumption allow you to use less electricity and keep your bills under control. The devices that boast this feature also come with a low power CPU/Chipset that enables you to save up to 60%- 70% of the energy consumed by standard PC's

**Can they be networked?** If you are planning to build a network of media players and displays, this feature is very crucial. Media player will be wireless, wired or a combination of both.





# The Hardware: Media players

**The output needed-** HDMI, VGA, DVI, DisplayPort. According to the renowned hardware specialist AOpen, the newer the connector means the higher the level of backwards compatibility, meaning that it can be converted to any of the previous display technologies.

**The environment the devices will be deployed in.** Make sure you consider the temperature and the other conditions your hardware will be installed in. Rough environments impose the use of industrial type of products while clean and safe ones (such as offices) allow for the use of consumer ones.

Now that you have discovered how to choose the right media player to suit your requirements, it's time to learn some terms that you may come across when it is time to purchase the hardware.

Some terminology may be confusing if you do not work in the industry already, so the next part of the guide will help you to understand these key terms and phrases.



# Terminology

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“Jargon is a shortcut vocabulary professionals use to understand each other”

## Terms you may stumble across...

If you're not working in the digital signage or audio-visual industry then it is likely that you will be confused by the terminology that is commonly used in this sector. Try to familiarise yourself with the terms listed below that you will probably encounter when selecting your media devices:

**Graphics card** - Converts PC data into graphic signals that the screen can display

### **Ethernet cable-**

The equipment that connects to a router or a LAN (local area network) providing your media players with Internet access that they need to connect to the server and download any new media files scheduled in your software such as digitalsignage.NET

**HDMI (High Definition Multimedia Interface)** – An audio/video interface that transfers data to a compatible digital signage device (monitor)

**Media player** - A consumer product that combines hardware with software to play audio and video files as well as photos and other content sources

# Terminology

**SD media player** - In simple terms, it is a media device that allows you to display standard definition videos (i.e. SMIL players, photo frames/ digital signboards)

**HD media player** - A media device that can play high definition videos

**SMIL devices** - Non- PC devices that leverage the interoperability of SMIL, such as [ladea's products compatible with digitalsignage.NET](#). These can be used for branded product promotions and meeting rooms, shelf- edge signage etc

**S- video (separate video)** - An interface standard for analog video transmission found on most audio- visual equipment. It provides an enhanced image quality than a composite video so choose this one if possible. This connection type is used on video capture hardware in collaboration with a live TV scene scheduled within digitalsignage.NET.



# The Display

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# The Display



**If your install will be located in a more favourable, cleaner environment**

like the reception area of an office or the corner of a small clothing store, then you could choose a consumer display. Mostly priced at around £400 per unit, they're considerably cheaper but also less robust than their industrial counterparts and not designed for 24/7 use.

**The display** is the output device that is connected to the media player, which then shows the content that is scheduled in digitalsignage.NET. Both the 4:3 and 16:9 monitors are the most commonly used for digital signage projects.

Just as the media players, not all displays are created equal and you need to know the differences between them in order to choose the right one for you.

**Size, reliability, robustness and price** are just a few factors you need to keep in mind during the selection stage. In the next section we will look at the questions you should ask yourself for knowing what kind of screen your project requires.

**In what type of environment is your digital signage solution going to be installed?**

For this example we will use a post office or restaurant where the amount of dust, heat and steam are particularly high in this type of environment. For places like this, you should look into purchasing either industrial or commercial displays. Those cost somewhere in the range of £1,000 + per unit but are specifically designed to be robust. They are most suitable for harsh environments.



# The Display

## Do your displays need an extra layer of protection?

If people are going to reach them you want to make sure that they won't be able to damage or steal them. Digital displays in shopping centres, tube stations and outdoor environments are the most exposed to vandalism which is why they are sometimes protected by enclosures.

An enclosure is an external protective frame that contains the digital display and in some cases, the media players too. They can provide weatherproofing and temperature control, alongside physical protection from damage.

## Are your displays going to be located in an outdoor environment?

Historically, conventional LED screens were the only suitable type of displays for outdoor projects. However, the advances of LED backlight technology have given way to the creation of *high-brightness LCD screens* that can be used outdoors.

The brightness of a sunlight readable display is measured in the number of nits; for example a very good outdoor readable LCD screen boast a 2,000-3,000 nit brightness.

Certain types of screens present more advanced features such as *automatic brightness control*, *temperature sensing* to avoid overheating and *adjustable backlight intensity* in order to reduce power consumption.

Other environments in which you may need to use sunlight readable displays are:

- **Airports, train and railway stations**
- **Vehicles and public transport**
- **Retail- shop windows**

## Which are the specific locations in which your screens will be placed?

Spot the areas where those you want to reach are most likely to be found like cafeterias, reception areas, waiting rooms, check-in points etc.

After having established these "hot spots" be sure to check if there are electrical outlets available for each display point. Needless to say that your system can't function without electricity.





# The Display

**What area are you trying to cover and what will be the standard viewing distance of your display?**

The principle is logical and simple:

**To cover a large area and reach a high number of people** you *need* to be using large format displays. Those stand out in any environment and the main advantage is that their content is easily readable from a distance. Alternatively, if your audience is a greater distance away from the screen, then choose a bigger display to make sure that the information displayed on it is easily readable.

**To cover a near viewing area** (reception or small shop etc) and aiming to reach just a small and carefully selected audience, smaller displays would suffice.

**But wait, will your screens be floor, pole or wall mounted?**

This will determine the installation-related expenses you have to support and the simplicity or sophistication of the process. Wall-mounted screens are the most common types of installs.



***Pay attention to the angle and orientation of the screens to make sure that their content is visible from wherever people are located.***



Managing the set-up of your digital signage system is not an easy job. There are several aspects to consider, and part 3 of this series will be focused on the content.

We're here to help. [Call or email us at any time](#) for a FREE consultation and we'd be happy to answer your questions.

If you need help with choosing the right digital signage solution and installing it in your locations, our experienced partners can assist you with that. They know all about screens, media players, brackets and mounting displays and can take all the hassle of installing the system upon themselves.

[Check out a selection of Partners we work with](#)

“

*Wake up with a sense of purpose, then do your best to execute your plan!*

”

## Conclusions

### 4 Things To Keep in Mind

- Know your goals then choose the right hardware
- Plan well to avoid expensive surprises.
- Liaise with specialists that can advise you.
- Test and adjust
- Know what screens your project needs.

### What next?

We take a look at content. Part 3 of the preparation kit will explore the different options available to you.



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