Digital Signage Solution

thinvent

Introduction

In this document, Thinvent would like to describe digital signage, description of hardware required for it and the customer's requirements.

What is Digital Signage?

Digital signage is a form of electronic display that shows information, advertising and other messages. Digital signs (such as LCD, LED, plasma displays, or projected images) can be found in public and private environments, such as retail stores and corporate buildings.

Advertising using digital signage is a form of out-of-home advertising in which content and messages are displayed on digital signs with a common goal of delivering targeted messages to specific locations at specific times. This is often called "digital out of home" or abbreviated as DOOH.

The benefits of digital signage over traditional static signs are that the content can be exchanged more easily, animations can be shown, and the signs can adapt to the context and audience, even interactively. Digital signage also offers superior return on investment compared to traditional printed signs.

The most common applications of digital signage are as follows :

- **Public information** – news, weather and local (location specific) information, such as fire exits and traveller information
- **Internal information** - corporate messages, health & safety, news, etc.
- **Advertising** – either related to the location the signage is in or just using the audience reach of the screens for general advertising
- **Brand building** – in-store digital signage to promote the brand and build a brand identity
- **Influencing customer behaviour** – directing customers to different areas, increasing the dwell time on the store premises
- **Enhancing customer experience** – applications include the reduction of perceived wait time in restaurant waiting areas, bank queues, etc., as well as recipe demonstrations in food stores
- **Enhancing the environment** – with interactive screens

Hardware description

The customer needs a digital signage solution where they will have an LCD screen and a thin client. The customer requires an embedded computer with the following configuration :

- VIA C7 1GHz fanless processor with CN700 chipset, *or* Intel Atom N230 1.6GHz processor with 945GC chipset.
- Audio output
- VGA video output
- 512MB IDE flash
- 512 MB RAM

This configuration is sufficient for the digital signage application that has been mentioned in the customer's email. However, the 512MB flash is not sufficient for content storage and an additional USB pen drive or a larger IDE flash drive will be required in case the content is very high.

Customer's Requirements

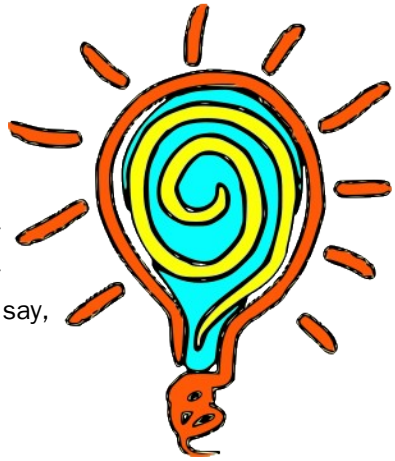
The system is a network connected digital signage solution. The screens will be used to project information and messages. A central server will collate information from various sources and lay it out in web format. A web browser running on the digital signage device will render this information on the LCD TV screen.

Proposed Solution

We will provide the firmware that resides on the client device flash. The firmware will comprise of a complete Linux operating system environment along with remote management and monitoring. We will also provide the application and web browser that delivers the digital content to the screens.

Remote Monitoring

An important part of any digital signage project is the remote management and monitoring of the system. Typically, monitoring is performed by a central server which periodically, say,



every 5 minutes, connects to each of the clients and polls various system parameters. These parameters include:

- Temperature of the processor
- Temperature of the mother board
- Processor utilisation
- Voltage values of various critical components
- Disk space used
- Network consumption
- Whether the software is running properly or not
- Whether the VGA monitor is connected and active or not, etc. etc.

However, often enough, we may not have control over the client side network. Therefore, we do not know how to establish reachability to the clients. In such a scenario, we will run a local monitoring application on each of the clients. Each client device will be running an embedded web server. This web server can be opened to view the graphs of all the parameters that we have mentioned above.

Remote Management

An embedded web server on the client device provides access to Thinvent's remote management application. The comprehensive remote management suite provided by Thinvent, allows the operator at the central console to control every aspect of the device and OS. It can also be used to control the operation of the digital signage application and browser.

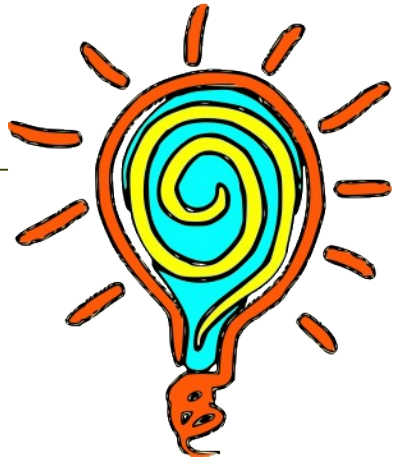
Network and Bandwidth Requirements

The management system of Linux firmware provides the customer's site administrators the ability to configure various network parameters, such as DNS servers. After configuring these parameters the site administrator can use utilities such as 'Ping' to confirm connectivity.

Conclusion

We hope to have covered most of the important items in this document. We look forward to receiving your feedback and valuable comments.

We are confident that as a team, Thinvent and the customer can provide an excellent digital signage solution to the end customer.



Thinvent Technologies Pvt. Ltd.
www.thinvent.in
S-90 · Uppal South End · Sohna Road · Gurgaon
+91 124 425 2359
info@thinvent.in