

# HotelTV1

## Control Server Setup Documentation

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## 1. Revision History

Date	Owner	Version	Reason & Change
07 Mar 2011	Bora Tunçer Cem Sazara Tamer Berber	A0.1	Initial creation
18 Mar 2011	Bora Tunçer Tamer Berber	A0.2	Adding Windows 2008 setup procedure
04 Apr 2011	Bora Tunçer	A0.3	Minor fixes, Adding client update with USB update method
30 Nov 2011	Erdoğan Bulut	A0.4	Updating client release update procedures
29 Mar 2012	Görkem Giray	A0.5	Structure changed
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## 4. Introduction

### 4.1. Purpose

This document describes the setup process of HotelTV and Phantom releases. The following sections describe the environment usage model:

- “4 – Introduction” describes the goal and the scope of this document
- “5 – Prerequisites” describes items that must be installed before starting setup process.
- “6 – Release Setup” describes main steps of setup process
- “7 – PMS Integration” describes integration process of HotelTV releases and hotel PMS systems

### 4.2. Scope

This document intends to be a reference manual for installation of HotelTV / Phantom server releases and explains each step of HotelTV release setup process with examples. This document is shared and applicable for the development all VESTEL sites.

This document does not describe structure of IIS management, or SQL server usage, for this Microsoft archives should be checked. This document does not describe Windows internals. Different programming techniques are beyond of this document scope.

### 4.3. Abbreviations

- **STB** Set top box
- **IIS** Internet Information Services
- **NFS** Network File System
- **ISO** International Organization for Standardization
- **PMS** Property Management System
- **SQL** Structured Query Language
- **IPTV** Internet Protocol Television
- **DVB** Digital Video Broadcasting
- **VOD** Video On Demand
- **CI** Common Interface

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## 5. Structure

Basically IPTV means broadcasting digital TV services through network by using internet protocols. As shown in figure 5-1, basic HotelTV system architecture contains DVB Gateways, VOD servers, control servers and encryption servers (Verimatrix servers).

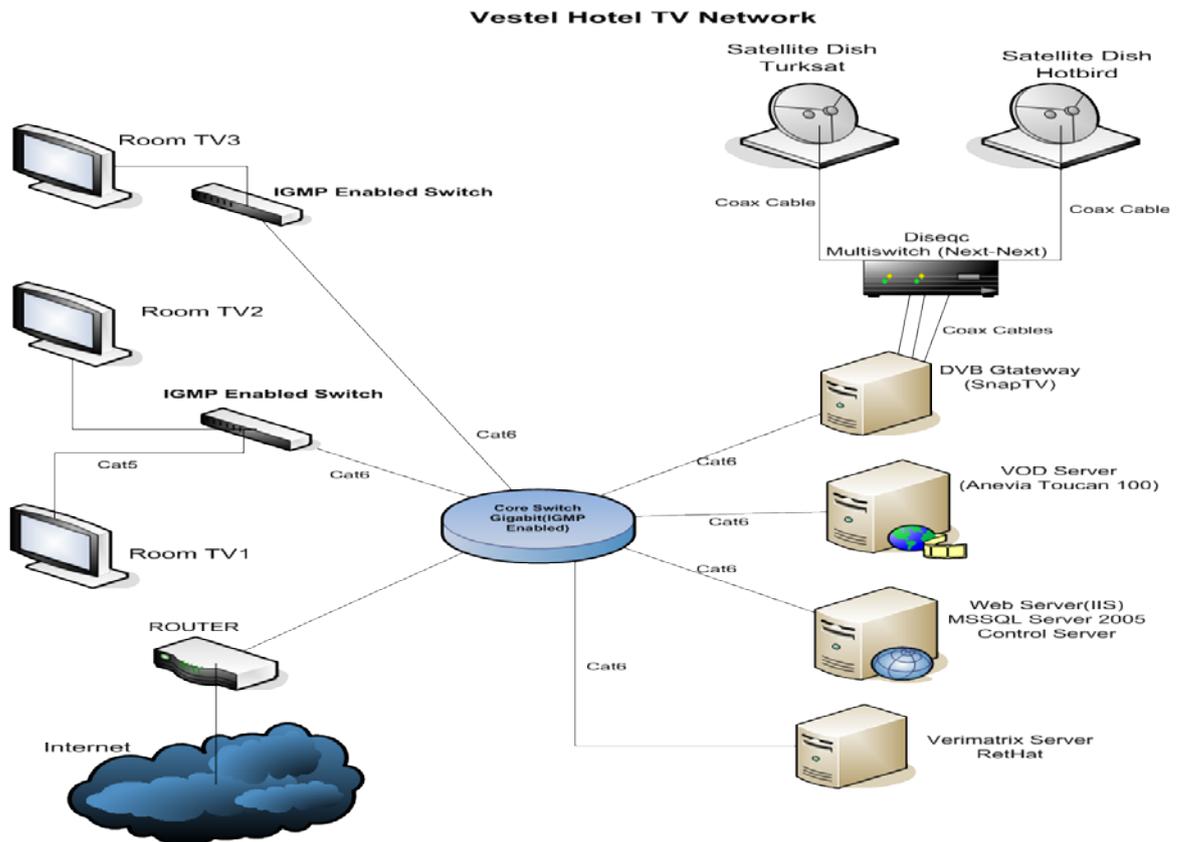


Figure 5-1: HotelTV system architecture

Every element in this figure has different jobs;

- **HotelTV Control Server:** Main application server of HotelTV, all visual items for menus, customers' information, rooms' information and databases placed on this server.
- **Anevia Server:** VOD server, responsible for serving videos on demand using RTSP protocol. Contains TS encapsulated MPEG2 - H264 coded standard definition "SD" and high definition "HD" videos. You can upload video or music contents by using ftp protocol. This server can be configured by web interface.
- **SNAPT V Server:** Responsible for streaming DVB channels to network through

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internet protocols. Contains streaming cards which we can connect cables coming from antennas and sometimes CI module interfaces.

SNAP TV streams DVB channels through UDP protocol, for every channel a different UDP address. We need to enter these addresses to database in order to let them to be listed in channel list.

- **VERIMATRIX Server:** This server encrypts video streams used in HotelTV so they can be watched only by Vestel IPTVs. On every startup client TVs / boxes request a global key from this server for handshaking and also Verimatrix server can send specific keys that belong to specific movies.

## 6. Control Server Release Setup

All HotelTV / Phantom Server releases are named as “HotelTVServerP\_X.YY.Z.zip” which major release numbers represented by X and minor release numbers represented by Y. We put all Phantom releases into “C:\Masters” folder, so first step in setup operation is to extract release (zip file) into “C:\Masters” folder.

Following chapters describes how to setup HotelTV server releases on to control server. You can either choose automatic or manual setup.

### 6.1. Prerequisites

Before starting setup process we must ensure that these programs must be installed on server machine. Also if server machine contains Windows 2008 server, please read “Appendix B – Windows 2008 Server Setup Hints” first.

- .Net3.5 Framework
- SQL Express (SQL 2008 for WS2008) and Management Studio
- IIS 7.0

### 6.2. Automatic Setup

Automatic setting up a HotelTV / Phantom release to a machine contains two easy steps. We will invoke bunch of scripts to automatically perform setup process.

#### Initial Setup

Initial setup contains three main stages; IIS configuration, adding necessary applications under scheduled tasks and setting up a time server. For accomplishing these steps we need to run three scripts which are located under “C:\Masters\HotelTVServerP\_0.xy.z\Setup” folder. (The scripts are required to run administrator privileges). On Windows 2008 setups we should switch system from IPv4 to IPv6 before starting the process. For more information please refer to “Appendix B – Windows 2008 Server Setup Hints”.

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- WebsiteSetup.vbs - for IIS configuration
- ServiceSetup.vbs - for scheduled tasks
- TimeServerSetup.vbs - for time server setup

When you invoke “WebsiteSetup.vbs” script, a window will be popped-up to allow you for changing initial configuration of server, such as IP address of server, PMS system configuration, etc.

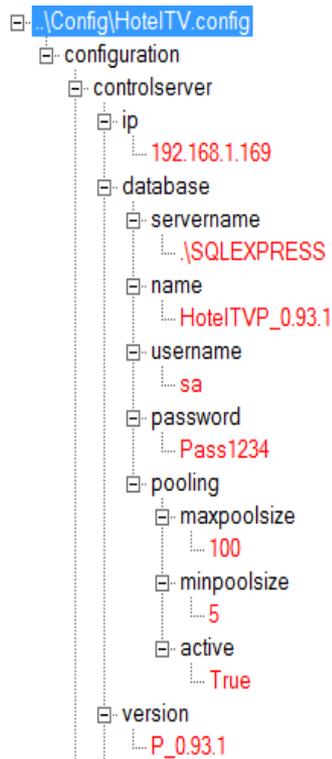


Figure 6-1: Initial configuration window

For basic configuration we should edit as least 3 fields, “<ip>”, “<name>” and “<servername>”.

- “<ip>192.168.1.169</ip>” with IP address of the Ethernet interface that is in same subnet with all TVs (there are two Ethernet interfaces one for serving to TVs and one for communicating with PMS server. For more details please refer to “Section 8 – PMS Integration”).
- “<name>HotelTVP\_0.xy.z</name>” field with database name in SQL server (basically renaming default name to “HotelTVP\_0.xy.z” will be enough, for more information please refer to “Section 6.1.2 – Database Setup”).
- “<servername>.</servername>” field with SQL manager login name. For setup WS2008 setup this field should be set as “<servername>.\SQLEXPRESS</servername>”

Figure 6-1 represents initial configuration window, which is the contents of the “HotelTV.config” file. After successful execution of the script, we should control results by opening “ISS Manager” and by checking existence of these entries (“HotelTVClient”, “HotelTVWebApp” and “Update”). For more detail please refer to “Section 6.2.1 Internet Information Service Setup”.

On Windows 2008 Servers we need to make a few more configurations in ISS Manager.

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For the items “HotelTVClient”, “HotelTVWebApp” and “Update” choose “AdvancedSettings” from right menu as shown in the figure 6-2

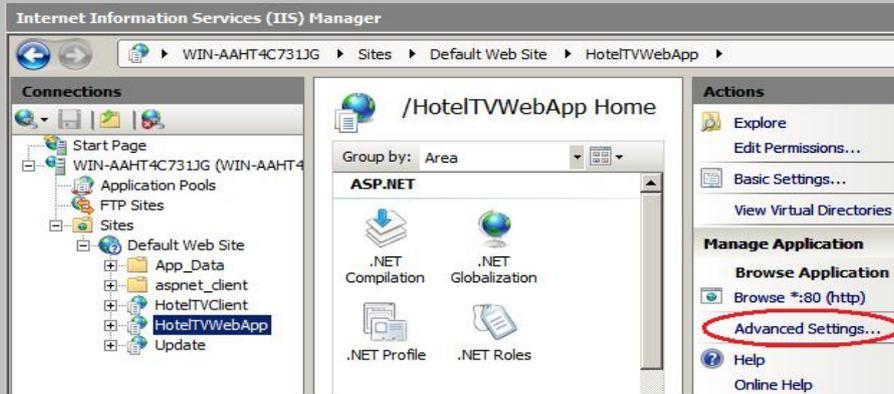


Figure 6-2: Windows 2008 IIS manager window

Select “Classic .NET AppPool” for “ApplicationPool” instead of “DefaultAppPool” as shown in figure 6-3.

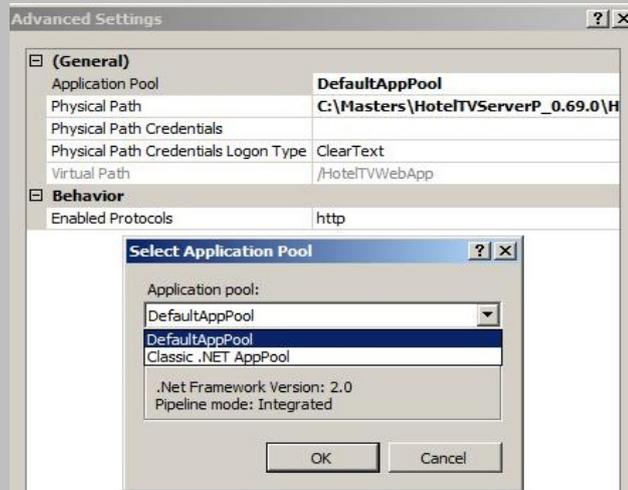


Figure 6-3 : Advanced settings menu in IIS manager window

Next we are going to setup HotelTV services which are very important for daily execution of specific tasks. There are 9 services, some of them are optional to hotel and some of them are mandatory (first 6 service) to every hotel.

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- **HotelTV Alarm Service:** Responsible of alarm services in HotelTV, alarm can be setup by using TVs in rooms or by using admin panel.
- **HotelTV News XML:** Responsible of downloading news papers every day.
- **HotelTV Weather XML:** Responsible of downloading weather status every day.
- **HotelTV Currency XML:** Responsible of downloading exchange rates every day.
- **VOD Load Checker:** Controls VOD server capacity and reports from TV screen if it is overloaded.
- **Fidelio Communicator:** Responsible of communicating hotel PMS systems with using Fidelio or OnQ protocols. For more information please refer to “Section 8: PMS Integration”.
- **HotelTV Ping Service:** Analyses connected TVs and reports their working status.
- **HotelTV House Keeper Service:** IF the room is occupied, then sets room status to dirty after midnight.
- **HotelTV Listener Service:** Responsible for exchanging important information between control server and TVs on every startup such as TV’s IP and MAC address, server IP address, etc.

In order to setup proper services under “Scheduled Tasks”, invoking “ServiceSetup.vbs” script in required. During invocation it will prompt for username (also password) that you want to run with, using Administrator account & password will be safest. For more details please refer to “Section 6.3 Services Setup”.

Lastly we will invoke “TimeServerSetup.vbs” script in order to install NTP server. This is an important step because every client TV/STB connects to server for “NTP date” operation on every hour. If NTP server wouldn’t installed then TVs can display wrong time on their menus and there can be problems on wakeup alarms.

### Database Setup

Database setup & update process will be achieved by installation scripts; by running “Setup.vbs” script under “C:\Masters\HotelTVServerP\_0.xy.z\Database\scripts” folder. After completion of operation we will be free open “SQL Server Management Studio” program by using parameters given below. (Server name field should be set to “.\SQLEXPRESS” for WS 2008 setup)

<b>Server name</b>	.
<b>Login</b>	sa
<b>Password</b>	Pass1234

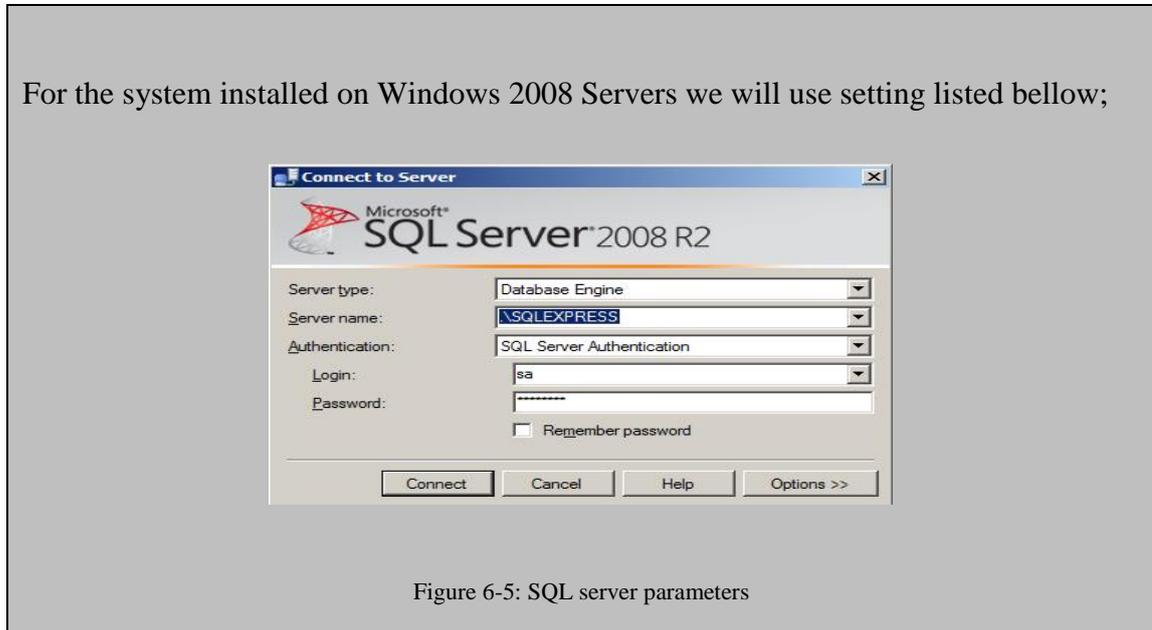
Figure 6-4: SQL server connection parameters

We should be able to see “HotelTVNewRelease” under “Databases” tab. (Also if an old version of HotelTV release exists and if we want to copy old customer, billing, etc. data’s from old database we only need to run “Update.vbs” script located under same “scripts”

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folder.). Before running “Update.vbs” we need to change the name of the old release as “HotelTV” then we can run “Update.vbs” script. After this installation we can change “HotelTVNewRelease” as “HotelTVServerP\_0.xy.z”.



### 6.3. Manual Setup

This section describes how to setup HotelTV / Phantom releases manually to server, steps are easy to follow and very straight forward.

```
<?xml version="1.0" encoding="utf-8"?>
<configuration>
  <controlserver>
    <ip>192.168.1.97</ip>
    <database>
      <servername>.</servername>
      <name>HotelTVP_0.69.0</name>
      .....
    </database>
  </controlserver>
</configuration>
```

Figure 6-6: Example HotelTV.config file

All project configuration files are located under “Config” directory (as an example “C:\Masters\HotelTVServerP\_0.69.0\Config”). Figure 6-6 represents main configuration

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file, “HotelTV.config”, which is in XML format. First we should edit this file and enter IP address of server and database name.

## Internet Information Service Setup

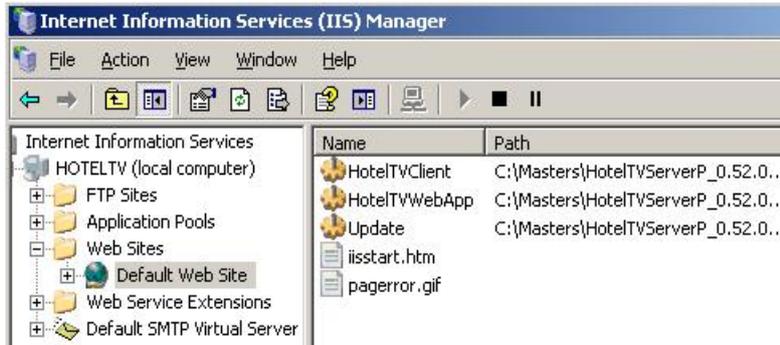


Figure 6-7: IIS Manager Window

Figure 6-7 represents a snapshot of IIS manager. For a clean setup we need to delete entries “HotelTVClient”, “HotelTVWebApp” and “Update” located under “Default Web Site” tab (They exist if there is already installed version of HotelTV / Phantom server release. If there is no previously installed HotelTV / Phantom release you can skip this

Our aim is to create these entries with correct links, so first we give full control for the users (Right click -> Properties -> Security). Then we share “HotelTVClient”, “HotelTVWebApp” and “Update” folders from “Web Sharing” tab on right click & “Properties”.

After this step we re-open ISS Manager and click “Default Web Site” tab. We should control that entries “HotelTVClient” and “HotelTVWebApp” are pointing to correct paths. Then we press right click and select properties and choose “Directory Security” tab from opening window. Press Edit button in “Authentication and access control” group and click on

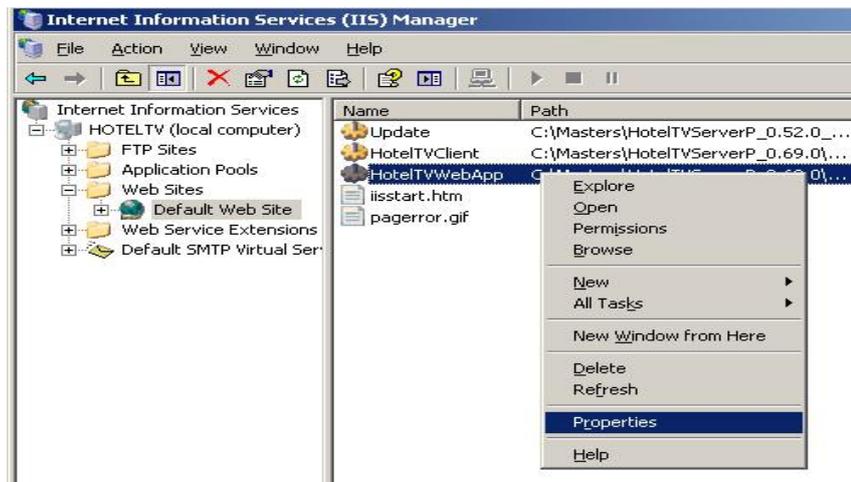


Figure 6-8: IIS Manager Window

## Services Setup

There are six services running under scheduled tasks in current HotelTV releases (ex: v0.70.0). In order to complete manual setup we have to create these services with scheduling times shown in Figure 6.9.

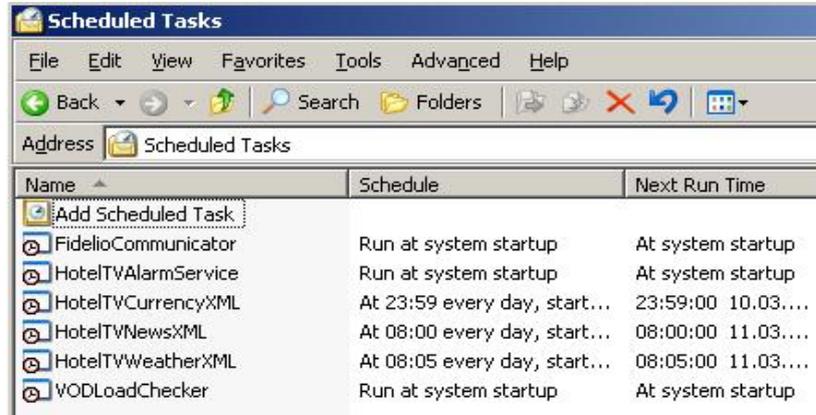


Figure 6-9 : Scheduled tasks

Each executable is located in the same folder. As an example “HotelTVAlarmService” is located under “C:\Masters\HotelTVServerP\_0.xy.z\ HotelTVAlarmService” folder.

## Database Setup

This section is completely same with “Section 6.1.2 Database Setup”. Please refer to this section for more details.

### 6.4. Setup Control

After successful installation we should try to connect

“<http://localhost/hoteltvwebapp/>” with Mozilla web browser and see the admin panel.

If web browser displays an error page instead of HoteTVWebApp page (figure 6-11), it is better to control & re-execute setup steps with given error on error page.

```
<webapp>
.....
<username>admin</username>
<password>vestek</password>
.....
</webapp>
```

Figure 6-10: Sample HotelTV.config part

The username and password combination can be defined by “<username>” and “<password>” fields under “<webapp>” field.

After entering webapp with correct username & password combination, we should control database access by clicking “Rooms -> View Rooms”.



Figure 6-11: HotelTVWebApp page

By default there is no defined room so you should see an empty page. If you get an error page, it means there is problem on accessing database. Please refer to “Appendix A: Known Installation Problems”.

## 7. Client Release Setup

There are two different client releases for TV and STB hardware all named as “version\_X.YY.Z.zip”, major release numbers represented by X and minor release numbers represented by Y.

Following sections describes how to setup HotelTV client releases on TVs/STBs by using USB update or Ethernet update.

### 7.1. USB Update

This section explains how to perform update operation by using USB which is very easy to use and highly recommended to recover problematic situations. Basically system has two stages, writing “USB update images” to and USB stick (min. 512MB) and rebooting TVs / STBs with using this USB stick.

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The USB update image is designed specifically to perform update operation and contains actual release images in side. The USB update image is in EXT3 format, so we should not format USB disk by windows formats such as FAT32, NTFS, etc.

There are two different ways to prepare USB update image based on your operating system; using windows tools or using Linux. You are free to choose one of them.

### Writing Images Using Linux

Naturally preparing an USB is easy in Linux by using its own console tools. You can follow listed steps bellow;

1. Extract “version\_X.YY.Z.zip” file and get “version\_X.YY.Z.ext3” file.
2. Plug USB stick to your host PC and learn its mount point (as an example /dev/sdb1)
3. Write image to USB by using a simple “cat” command shown bellow

```
root@bora-laptop:/USBUPGRADE# cat version_1.10.0.ext3 > /dev/sdb1
```

Figure 7-1: Image writing command in Linux

### Writing Images Using Windows

We are going to prepare an executable program to update USB by using the application “ImageWriter”. You can download application from our FTP Servers. Basically main steps are shown bellow;

1. Download the latest version of ImageWriter and run ImageWriter.exe
2. Select one of “version\_X.YY.Z.zip” and “version\_X.YY.Z.ext3” file (both are able to be executable by the program).
3. Select USB Device drive
4. Start writing update image to USB stick

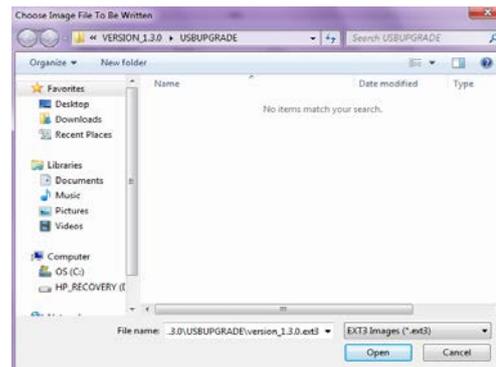


Figure 7-2: Image writer for windows

**Compatible Operating Systems:** ImageWriter executable is compatible with the following operation systems

- Windows Server 2003 & Windows Server 2008
- Windows XP SP1, SP2, SP3
- Windows 7

### Updating TVs/STBs

Update operation is simple, you just need to plug update USB into TV/STB and restart it. On TV screen, you will see the image (figure 7.3) showing update operation progress and at the end the notification image.



Figure 7-3: Update images

## 7.2. Ethernet Update

This method is very easy and useful. Firstly, get access to HotelTV Admin Tool and log in. At Administration menu, TV Management can be chosen under TV button that it give access to select the TVs which are upgraded. After choosing TVs, clicking Upgrade button as seen Figure 7.4 will do everything and TVs will restart automatically after update.

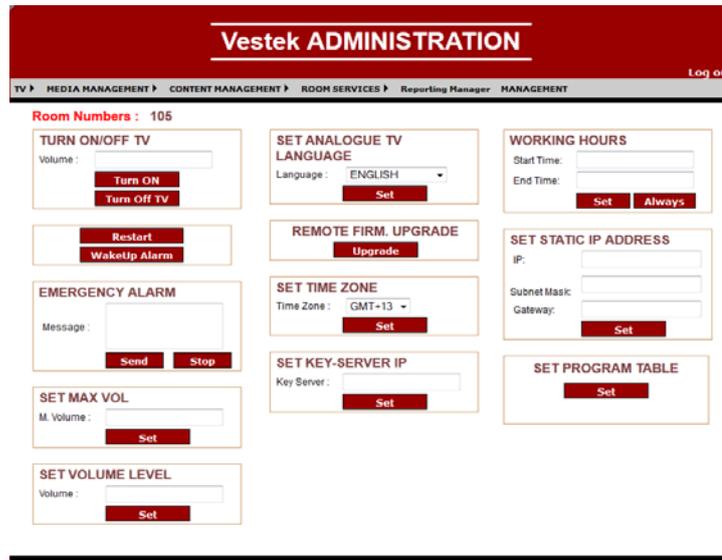


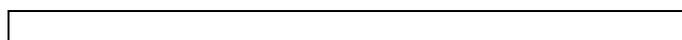
Figure 7-4: TV Management screen on Administration menu

## 8. PMS Integration

The purpose of this section is to briefly explain the prerequisites for integration Vestel HotelTV system with Hotel PMS systems. Vestel HotelTV requires minimum Hilton OnQ LIMS version 6.02.3 dot net or minimum Fidelio V7 version. Communication between HotelTV servers and hotel PMS system, regardless of whether using OnQ or Fidelio, is achieved with an application called "Fidelio Communicator".

This application runs with server restart (under scheduled tasks) and listens to the commands through a designated TCP port. Once Vestel HotelTV server establishes a TCP connection to that port, Hotel's PMS system reports every update (guest check-in, messaging, etc) to the Vestel HotelTV system. At any time, Vestel HotelTV can make inquiries such as billing info etc. through the same communication port.

For basic setup we have to enter IP address and connection port of the hotel PMS system in "HotelTV.config" file and not change remaining. Current HotelTV servers has two ethernet ports, one for inner network which stays in same network with all TVs with "10.0.0.252" static IP and other port only communicate with hotel PMS servers which also has a static IP address. The IP address that will be assigned for this port must be given by hotel.



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```
<pms>
  <active>>false</active>
  <ip>192.168.1.94</ip>
  <port>5002</port>
  <syncperiod>120</syncperiod>
  <commanddelay>200</commanddelay>
  <salesoutlet>
    <paytv>1</paytv>
    <vod>2</vod>
    <game>3</game>
    <roomservice>4</roomservice>
    <minibar>5</minibar>
  </salesoutlet>
</pms>
```

Figure 8-1: PMS configuration part of HotelTV.config file

Basically these 3 main items required for configuration;

- IP address and port of PMS server
- IP address and subnet mask to assign the ethernet interface of HotelTV servers that is in same subnet with PMS server
- Static route for this addresses

After configuring server ethernet interface and editing “HotelTV.config” file with correct values we are free to activate PMS communication with “<active>>true</active>” field under “<pms>” field.

Now we can restart servers or “Fidelio Communicator” from scheduled tasks and let the two systems talk to each other starting with database sync operation. “Fidelio Communicator”.

If you write “<active>>false</active>” the communication with PMS will still be established by “Fidelio Communicator” but none of the data’s will be transferred to HotelTV database.

Best way is to set this field to true and restart “Fidelio Communicator” or server. Then HotelTV system connects hotel PMS and establishes communication starting with “DS” database sync.

## Appendix A: Known Installation Problems

### Web browser does not display HotelTVWebApp page

There could be several reasons and several solutions for this error. Please control error output for correct solution.

**Error output # 1:** If web browser displays following error page instead of HoteTVWebApp page, then we should control existence of .NET Framework 3.5. HotelTV releases require .NET Framework 3.5 installed target machine.

#### Configuration Error

**Description:** An error occurred during the processing of a configuration file required to service this request. Please review the specific error details below and modify your configuration file appropriately.

**Parser Error Message:** Could not load file or assembly 'System.Net, Version=3.5.0.0, Culture=neutral, PublicKeyToken=b03f5f7f11d50a3a' or one of its dependencies. The system cannot find the file specified.

**Error output # 2:** If web browser displays following error page instead of HoteTVWebApp page, then we should control IIS Manager Settings (especially on 64 bit machines don't forget to choose "enable 32-bit application" on Websites in IIS Manager)

#### HTTP Error 403.14 - Forbidden

The Web server is configured to not list the contents of this directory.

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### Web browser does not display HotelTVClient page

This kind of error generally happens on Windows 2008 server. When we try to display “HotelTVClient” page following error page comes instead of “HotelTVClient” page then we should check “Application Pool” of “HotelTVClient” in ISS Manager. “Application Pool” must be set to “Classic .NET AppPool”

#### **HTTP Error 500.22 - Internal Server Error**

An ASP.NET setting has been detected that does not apply in Integrated managed pipeline mode.

### HotelTVWebApp page does not list hotel rooms

These kinds of errors are basically because of access problems to database. If web browser displays following error page instead of listing hotel rooms, then it is better to control database name in SQL Express and “<name>HotelTVP\_0.69.0</name>” field under “<database>” field in “HotelTV.config” file. If they are not matching you should re-invoke “WebSiteSetup.vbs” script (detailed under “Section 6.1.1 – Initial Setup”) and set correct database name.

*Cannot open database "HotelTVP\_0.69.0" requested by the login. The login failed.*

*Login failed for user 'sa'.*

**Description:** An unhandled exception occurred during the execution of the current web request. Please review the stack trace for more information about the error and where it originated in the code.

**Exception Details:** System.Data.SqlClient.SqlException: Cannot open database "HotelTVP\_0.69.0" requested by the login. The login failed. Login failed for user 'sa'.

## Appendix B: Windows 2008 Server Setup Hints

In order to install HotelTV / Phantom releases to Windows 2008 server the following items must be considered.

1. Windows 2008 Server comes with IPv6 by default; we have to change it to IPv4. Steps are listed below;
  - Comment out (with “#” character) line starting with “::1” in “C:\Windows\system32\drivers\etc\hosts” file.
  - In registry editor we have to add a DWORD “DisabledComponents” with “FFFFFFFF” value in “HKLM\SYSTEM\CurrentControlSet\Services\Tcpip6\Parameters”.
2. After invoking “webSiteSetup.vbs” script IIS manager should be opened and for “HotelTVClient” entry the application pool setting must be turned from “Default application pool” to “Classic application pool” in advanced settings menu.
3. Windows 2008 Server contain “SQL Express”, the “<servername>.</servername>” field under “<database>” field in “HotelTV.config” file must be set to “<servername>.\SQLEXPRESS</servername>”.
4. Service setup should be checked, manual setup must be performed if needed.