



# **Vbrick Multi-Format Set Top Box**

vbrick mf-stb v2.2.9

Quick Start Guide



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## About Vbrick Systems

Founded in 1998, Vbrick Systems is a privately held company that has enjoyed rapid growth by helping our customers successfully introduce mission critical video applications across their enterprise networks. Since our founding, Vbrick has been setting the standard for quality, performance and innovation in the delivery of live and stored video over IP networks—LANs, WANs and the Internet. With thousands of video appliances installed world-wide, Vbrick is the recognized leader in reliable, high-performance, easy-to-use networked video solutions.

Vbrick is an active participant in the development of industry standards and continues to play an influential role in the Internet Streaming Media Alliance (ISMA), the MPEG Industry Forum, and Internet2. In 1998 Vbrick invented and shipped the world's first MPEG Video Network Appliance designed to provide affordable DVD-quality video across the network. Since then, Vbrick's video solutions have grown to include Video on Demand, Management, Security and Access Control, Scheduling, and Rich Media Integration. Vbrick solutions are successfully supporting a broad variety of applications including distance learning and training, conferencing and remote office communications, security, process monitoring, traffic monitoring, business and news feeds to the desktop, webcasting, corporate communications, collaboration, command and control, and telemedicine. Vbrick serves customers in education, government, healthcare, and financial services markets among others. Vbrick products are manufactured in an ISO certified manufacturing facility.

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# Multi-Format STB v2.2.9 Quick Start

## Preface

When you want to distribute high-definition IP video in cost-sensitive applications, the Vbrick Multi-Format Set Top Box (STB) is the solution. This unit is ideal for large-scale deployment to plasmas, LCDs, projectors and other large format displays. It supports the leading compression protocols, so it fits into most applications. And, it's designed to be low-cost and easy to deploy, so it fits into most budgets. Part of Vbrick's end-to-end enterprise solution, the Multi-Format STB works seamlessly with the Vbrick Enterprise Media System (VEMS), delivering live and on-demand programming in a user-friendly format for a rich and customized viewer experience.

**Important Note** The Multi-Format Set Top Box can be used with VEMS 5.x systems and with VEMS 6.x systems. These systems are architected differently and as a result, the interaction with the set top box is slightly different. When using this guide, be sure to note whether the text applies to VEMS 5.x or to VEMS 6.x. If not specifically stated, the feature or function works the same for both versions of VEMS.

## Organization

**This online help system provides access to Multi-Format Set Top Box documentation.** If you find errors or omissions in this manual, click the e-mail icon in the upper-right corner of this window or send your feedback to [documentation@vbrick.com](mailto:documentation@vbrick.com). The information in this document is arranged as follows:

1. Getting Started	explains how to install the set top box and the differences between Local Mode and Fullscreen Mode.
2. Configuration	explains how to configure the Video and Output Settings to match the requirements at your site.
3. Creating a Channel Guide	explains how to configure a local channel guide and FTP it to the set top box.
4. Managing the Set Top Box	summarizes the various management tools available to configure and manage the unit.
5. Software Upgrade	explains how to update the software when an upgrade is available.
6. Using the Remote Control	explains how to use the remote control in Local Mode and Portal Server Mode.
7. Editing Config.txt	explains how to manually edit the config.txt file.

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## Getting Help

If you can't find the information you need in this document, or from your reseller, you can contact Vbrick Support Services on the [web](#), by [e-mail](#), or by calling 1-203 303-0222. For faster service, be sure to have your Vbrick product serial number or support contract number. Support Services can usually answer your technical questions in 24 business hours or less. Note that all Vbrick documentation is on the web. For more information about any Vbrick product, go to [www.vbrick.com/documentation](http://www.vbrick.com/documentation)

## Font Conventions

**Arial bold** is used to describe dialog boxes and menu choices, for example: **Start > All Programs > Vbrick**

`Courier fixed-width font` is used for scripts, code examples, or keyboard commands.

**Courier bold fixed-width font** is used for user input in scripts, code examples, or keyboard commands.

**This bold black font** is used to strongly emphasise important words or phrases.

Folder names and user examples in text are displayed in this sans serif font.

User input in text is displayed in this bold sans serif font.

*Italics are used in text* to emphasize specific words or phrases.

When used in file names or other strings, a percent20 "%20" indicates a space.

## Environmental Considerations

At Vbrick, we believe that running our company with a "green" conscience is good for the environment and good for business and that environmental awareness is an important part of the value we deliver to our customers. We recognize our responsibilities to our customers, partners, and employees, and also to the communities in which we live and work. We believe that the same ethics and principles that guide our daily business decisions should be applied to the environment as well. We design superior quality, high performance, and energy-efficient products and are continually looking for ways to conserve energy and reduce waste. As a company, we look for ways to be environmentally friendly in designing our products and operating our facilities, and by choosing partners and suppliers who are committed to sustainable development. You can help by recycling batteries and other consumables and by finding new and better ways to protect and preserve our environment. If you have ideas or suggestions that will help to reinforce our commitment to these goals, please let us know.

## Getting Started

### Topics in this chapter

Overview .....	1
Installation .....	2
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### Overview

This document describes the Vbrick Multi-Format Set Top Box. It's called "multi-format" because it plays most of the video codecs commonly in use today. **It plays live or stored streams—it records streams in VEMS Server Mode only.** It delivers both Standard Definition and High Definition output at resolutions up to 1080p30. These pages explain how to connect and configure the Multi-Format set top box. There is no software installation required—simply connect and configure the device as explained in this document and you are done. The Multi-Format STB decodes and plays the streams shown in Table 1. These streams can be sourced from Vbrick encoding appliances or from Vbrick VOD-W (MPEG), VOD-WM (Windows Media), VOD-D (Darwin), and DME (Distributed Media Engine) VOD servers.



**Figure 1.** Multi-Format Set Top Box (front)

### Creating STB Users

In a VEMS Mystro environment, each STB must be associated with a VEMS user and each VEMS STB user must be unique. In large-scale deployments with hundreds of boxes, creating these users is a time-consuming and error-prone manual process. The STB Users Utility is a program that automates this process and automatically creates users and assigns them to each STB in your environment. For an explanation of how to install and use this utility, see the "STB Users Utility" topic in the *Portal Server Admin Guide*.

**Table 1.** Supported Stream Formats

Format	Description
H.264	RTSP Interleaved, RTSP (Transport Stream and RTP)
Windows Media	HTTP and RTSPU (ASF Format)
MPEG-2	Multicast, Unicast (Transport Stream)
MPEG-4	RTSP, RTSP Interleaved (RTP)

---

## Hardware Specifications

**Table 2.** Hardware Specifications

Video Decoder and Transport Protocols	<ul style="list-style-type: none"><li>• Windows Media in ASF over HTTP</li><li>• H.264 in RTP and MPEG-2 Transport Stream</li><li>• MPEG-4 part 2 over RTP</li><li>• MPEG-2 over Transport Stream</li></ul>
Network Connectivity	10/100 Base T
Video Outputs	<ul style="list-style-type: none"><li>• NTSC 720x480 @ 30fps</li><li>• PAL 720x576 @ 25fps</li><li>• HD Outputs: 720p and 1080i</li><li>• HDMI, Component Video, S-Video, and Composite Video</li><li>• Resolutions up to 1920x1080</li></ul>
Audio Outputs	<ul style="list-style-type: none"><li>• Stereo audio</li><li>• Embedded audio on the HDMI interface</li></ul>
Front Panel Display	<ul style="list-style-type: none"><li>• IR Window</li><li>• LAN connectivity monitor LED</li></ul>
Rear Panel	<ul style="list-style-type: none"><li>• CVBS composite out (RCA jack yellow)</li><li>• Component out (RCA jacks green, blue, and red)</li><li>• Audio out port (RCA jack white, red)</li><li>• RJ-45 LAN port</li><li>• USB port for keyboard</li><li>• HDMI</li></ul>
IR Interface	Yes
Dimensions	L 9.4in x D 6in x H 2.2in (L 23.9cm x D 15.2cm x H 5.6cm)
Power Supply	18W
Weight	1.8 lbs
Regulatory Approvals	FCC Part 15, CE
Operating Range	<ul style="list-style-type: none"><li>• Temperature from 0 to 40C</li><li>• Humidity 5% ~ 95%</li></ul>

## Installation

The Multi-Format Set Top Box is shipped with Audio/Video, S-Video, Ethernet, and power cables. It also has a handheld IR remote control unit with batteries. Connect the STB to a standard or high definition TV as explained below. Check the components for damage as you unpack the device and contact Vbrick if anything is missing or damaged. *Use common sense when installing the set top box.* Do not expose the unit to direct sunlight, high humidity or wet conditions. Do not block the air vents or impede the airflow in any way.





**Figure 2.** Multi-Format Set Top Box (rear)

▼ To setup and connect the Multi-Format STB:

1. Place the device in a suitable location.
2. Connect the device to your network using the provided Ethernet cable with an RJ-45 connector.
3. Connect the STB to the display device(s). You can output to multiple standard or high definition devices using the composite, component, or HDMI connectors.
4. Connect the audio outputs as necessary.
5. Connect the power supply to the STB and install two AAA batteries in the remote control.

**Table 3.** Rear Panel Connectors

Connector	Description
USB port	Use to connect a USB keyboard.
IR	Supports an IR extender for the remote control.
A/V Output	<ul style="list-style-type: none"> <li>• Y, Pb, Pr – component connectors.</li> <li>• SPDIF – used with 5-in-1 audio cable.</li> <li>• VIDEO – composite connector.</li> <li>• R-AUDIO-L – left/right audio out.</li> <li>• S-VIDEO – S-Video connector.</li> </ul>
Optical	Not used.
HDMI	HDMI output. Connect to an HDMI-compatible TV.
LAN1/LAN2	Use LAN 1 to connect to your Ethernet network. LAN 2 can be used as a second network connection but may impact performance.
DC12V	Connect to power supply.

**Table 4.** Front Panel LEDs (left to right)

LED	Color	Description
Standby	Red	Flashes red when power is applied.
Power	Green	Steady green when power is applied.
Link	Green	Steady green when power is applied.
IR Remote	Red	Flashes red when using IR remote control.

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## Start Mode

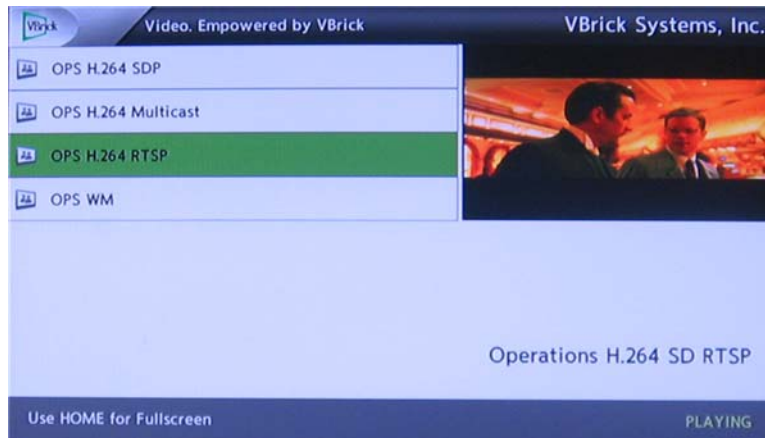
The Start Mode indicates how the set top box is populated with channel content. It determines the look-and-feel of the interface and controls which channels are displayed and available for viewing. [STB Configuration](#) on page 10 explains how to configure the Start Mode.

**Table 5.** STB Start Modes

Start Mode	Description
Local	Host the channel guide directly on the set top box using <code>channels.xml</code> .
Server	Populate the channel guide from VEMS. Enter the IP address or hostname of the VEMS server. Use <code>https</code> in the URL to configure for SSL.
Other	Host the channel guide on local PC using the IIS server. Enter the IP address/URL pointing to the location of the pages.

## Local Mode

In Local Mode the Multi-Format STB plays "channels" that are hard-coded in an `.xml` file and FTPed to the STB. The box will then display a "channel guide" as shown in Figure 3. Local Mode (or Local Fullscreen Mode) is configured in the `channels.xml` file. See "Configuring `channels.xml`" on page 17 for details.



**Figure 3.** Local Mode

## Local Fullscreen Mode

In Local Fullscreen Mode the set top box plays one channel that fills the entire screen. A set top box configured for Full Screen Mode is shown in Figure 4. Local Fullscreen Mode is configured in the `channels.xml` file.



**Figure 4.** Local Fullscreen Mode

## Portal Server Mode (VEMS 5.x)

**Note** As noted in the Preface, there are important differences in behavior depending on whether you are using the set top box with a VEMS 5.x system or with a VEMS 6.x system. Whenever there is a difference in behavior, it will be noted in the text.

In Portal Server Mode the set top box has a complete "channel guide" populated by the VEMS Portal Server. The channel guide displays both live streams and stored streams from a VOD server. You will typically use the handheld Remote Control to navigate through various menu options (see "Using the Remote Control" on page 41 for more about using this device). You can also connect and use a USB keyboard.



**Figure 5.** Portal Server Mode (VEMS 5.x)

**Note** In Portal Server Mode you may be prompted for a PIN when the set top box is powered on or rebooted. PIN numbers are enabled by default and are assigned to each user in VEMS. To change or disable the PIN, see Users > Add /Modify User Information in the **Portal Server Admin Guide**.

In Portal Server Mode all live and stored content is hosted from the Portal Server and the **MENU** button provides a subset of Portal Server functionality. **To display menu options,**

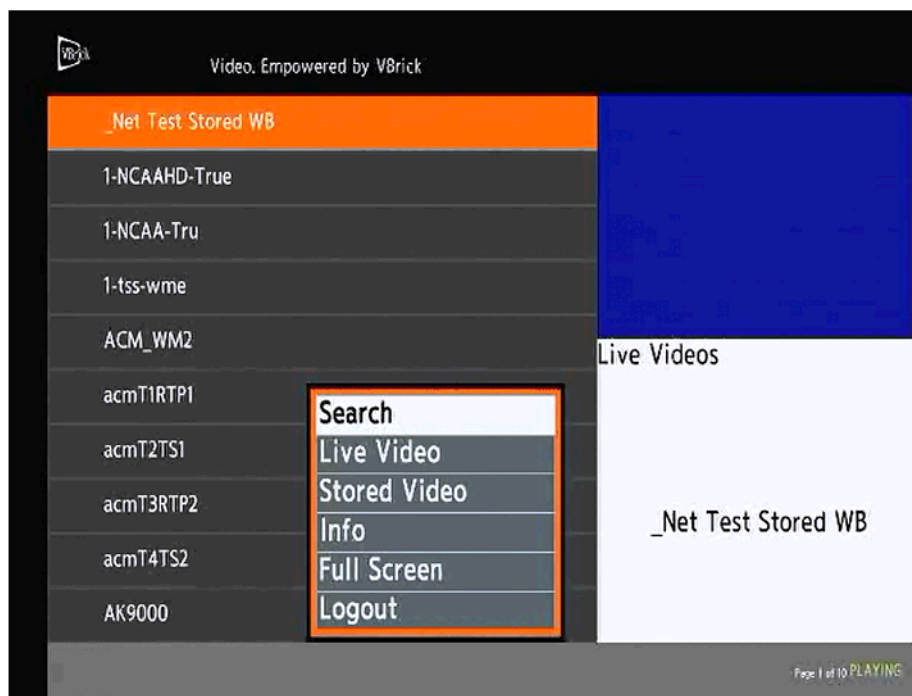
click the **MENU** button on the remote control. Click **MENU** again to hide menu options. Note that the items shown on the menu vary depending on which page is currently displayed.



Live Media	Goes to the top level of the Live Media pages.
Scheduled	Displays any scheduled programs currently available for viewing.
Media Library	Goes to the top (root) level of the Media Library. Click on any folder to display the contents of the folder. Click Up to return to previous display.
Search	Lets you search for media by Title, Tags, Description, or Custom Fields created by a VEMS administrator.
Status	Displays status info for any video ingestions currently in progress.
Bookmark	Media Library. Use to bookmark any point in a stream. Click once to start and once to stop and save.
Info	Media Library. Displays Title, Description, and Keywords for any stored stream in the library.
Full Screen	Go to full screen. Click Full Screen on remote to exit.
Logout	Stops streams, exits application, and displays login page.

### Portal Server Mode (VEMS 6.x)

The set top box has different features and functionality when used with VEMS 6.x systems. In VEMS 6.x you navigate and search using the labeled buttons on the remote control device. These buttons are explained in detail in [Using the Remote Control](#) on page 41 and summarized below in Table 6. You may be prompted for a PIN number when the set top box is powered on or rebooted. PIN numbers are assigned to each user in VEMS. To change or disable the PIN, see Access Control > Users in the *Portal Server Admin Guide*.



**Figure 6.** Portal Server Mode (VEMS 6.x)

In VEMS 6.x you perform a search using the **Search** button on the remote control. You can filter by category, type, or keyword (Figure 7) and any stream currently in progress will continue to play when the search results are displayed. When paging through live or stored video, press the **Live** or **VOD** button to return to page one of the respective live or stored pages.

**Table 6.** Remote Control Navigation (VEMS 6.x)

Button	Description
Search	Search for live or stored content.
Live Video	Go to the Live Video page.
Stored Video	Go to the Stored Video page.
Info	Displays information about the currently selected stream.
Full Screen	Go to full screen or exit full screen.
Logout	Logout from the STB



**Figure 7.** Search Live or Stored Content (VEMS 6.x)

## Configuration

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STB Configuration .....	10
Upgrade, Reset, Change Password .....	16

### Displaying the Setup Page

The Setup pages are used to set various configuration options such as IP Address and Start Mode. As shown in Table 7, different setup pages are displayed depending on the password you enter.

▼ To launch the Setup pages:

1. Connect the STB to the display device.
2. Power the STB off and on with the red power button on the remote control.
3. Wait until the Vbrick logo is replaced by a black screen.
4. When the animated "Starting" circle is displayed, start pressing the **Help (?)** button on the remote and continue until the Password page is displayed.



5. Enter the password corresponding to the pages you wish to edit.

**Table 7.** Setup Program Passwords

Password	Use To ...
1234	Set IP Address, Start Mode, Video & Audio Output Setting, etc.
5678	Upgrade, Reset Factory Defaults, change Password.

### Changing the IP Address

By default, the set top box is configured for DHCP (Dynamic Host Configuration Protocol) and will automatically retrieve an IP address from a DHCP server if present. If a DHCP server is not present or unavailable, you can configure the set top box with a static IP address and other network options. If you have the VBDirectory management program installed you easily find any networked Vbrick devices. See "VBDirectory" on page 30 for more information.

To find the IP address launch the Setup program as explained below or in Local Mode use the remote control (use the unlabeled third button down on the right). Then move the cursor to the Information icon in the lower left area of any page and click on the Info icon This will display the IP Address, MAC Address, Firmware Version, and other data (see Figure 8). The set top box is configured for DHCP by default and will automatically acquire an IP address when plugged in if your network is DHCP-enabled.

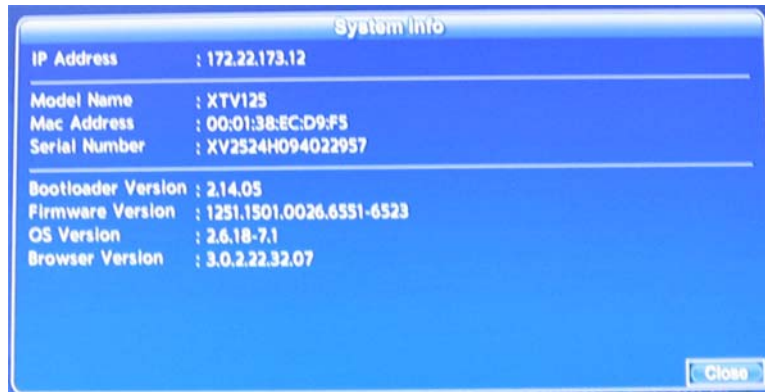


Figure 8. System Info page.

### Setting a Static IP Address

▼ To set a static IP address:

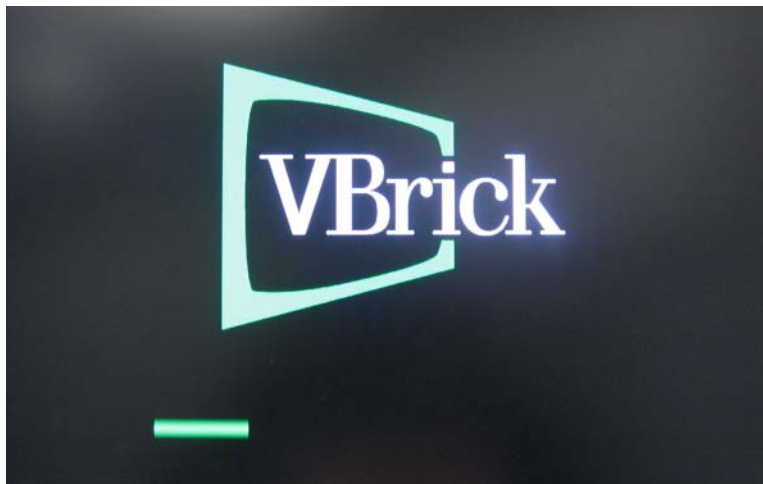
1. Launch the setup program (see below) to display the **IPv4 Network Setting** page.
2. Use the remote control to enter a static **IP Address** as well as **Netmask, Default Gateway,** and **DNS** information. If in doubt, get this information from your system administrator.
3. When done navigate to **Finish** and click **OK** on the remote control.

## STB Configuration

This topic explains how to configure various STB parameters such as start mode and SD or HD Output resolution.

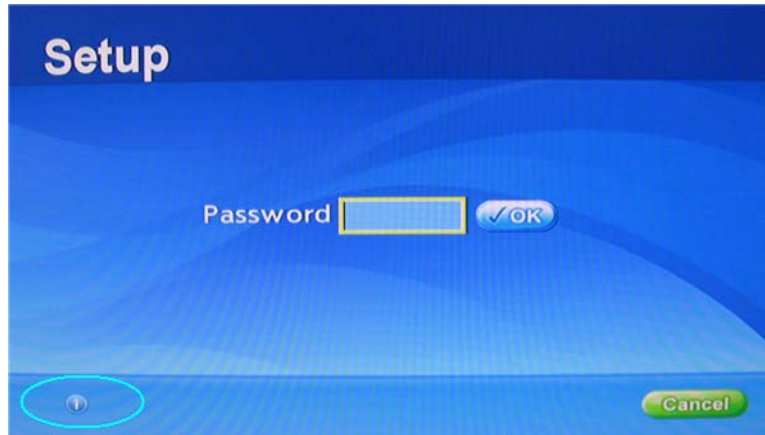
▼ To configure the set top box using the remote control:

1. Power up the box and wait for screen that looks like this.



2. When the animated "Starting" circle is displayed, start pressing the Help (?) button on the remote and continue until the Password page is displayed. (For more details see [Displaying the Setup Page](#) on page 9.)



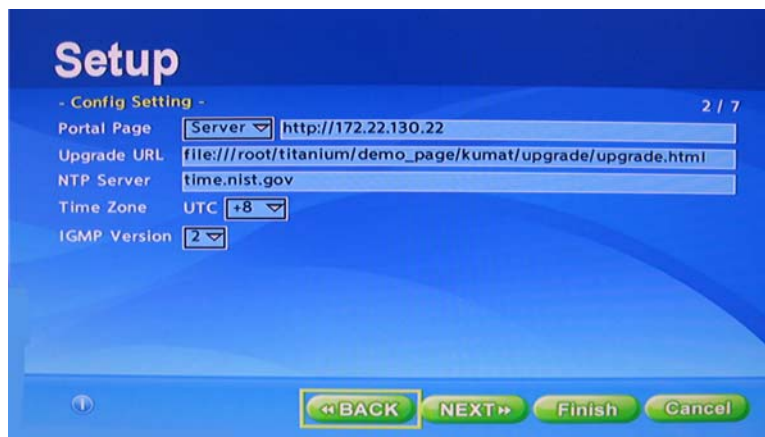


Note: Click the Info icon in the lower left area of the page to display the MAC address and other information (see Figure 8) without entering a password.

3. Enter the default password 1234, move the cursor to the **OK** button, and press the **OK** button on the remote.



4. When the page shown above is displayed, move the cursor to **Next** and press the **OK** button on the remote control to continue. (Note that DHCP is enabled by default.)



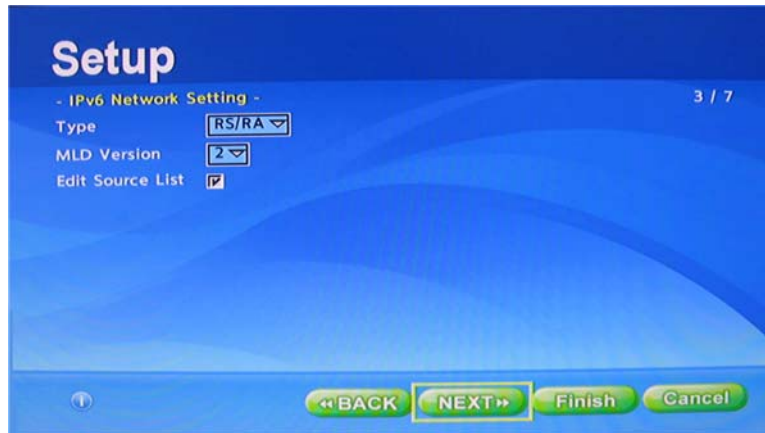
5. **Portal Page** – Use this field to select the Start Mode (**Local**, **Server**, **Other**). See Table 5 on page 4 for more about these options. Use <https> in the URL to configure the STB for SSL. SSL applies when the STB is in Portal Server Mode only. When configured for SSL, all management communication between the Portal Server and the STB is encrypted. To

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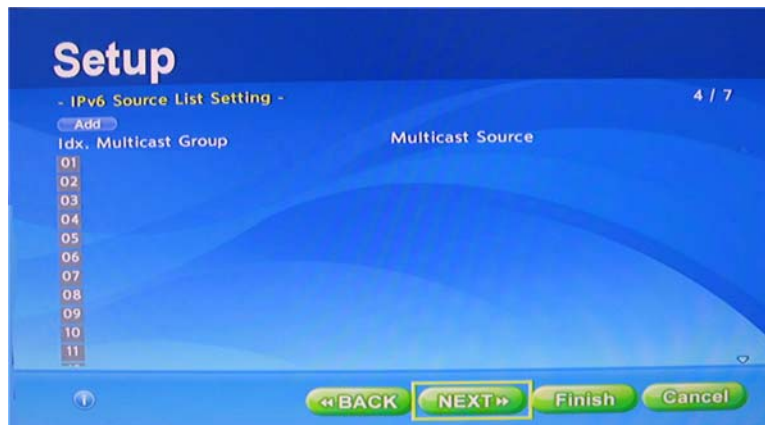
implement SSL you will also need to configure SSL on the Portal Server. If SSL is enabled and there is no root certificate, you can disable validation (and eliminate the warning pop-up) in the `config.txt` file. See [Setting Configuration Parameters](#) on page 49 for more about this.

**Upgrade URL** – 6.x only. Use this field to take advantage of the upgrade server. Each time the unit starts it checks this location for software updates. If you do not have an upgrade server (and do not plan to have one), leave this field blank. If this field is populated by an offline server, the unit will make 5 attempts to connect and then bypass the upgrade step.

- Set UTC to your local time zone. (U.S. Eastern Time = -5)
- Click **Next** to continue.



- Click **Next** to continue.



- Click **Next** to continue.



10. Click **Next** to continue. (Note: the Display Region is used for Channel Guide graphics—not the video resolution. The 640x480 setting may not work properly on some screens.)



11. Click **Next** to continue.



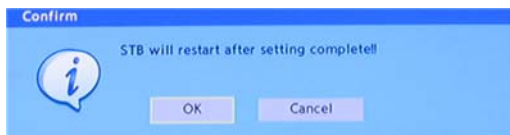
12. On the **Video & Audio Output Setting** page, set **HD Output** and **SD Output** to match the display device(s) you have connected to the set top box. You can have multiple devices (for example composite and HDMI) but the HD and SD outputs must match; that is they must both be NTSC or must both be PAL. Refer to the table below; do not mix and match modes. (If necessary you can also fine tune the display area for set top boxes; see "Adjusting the Display Area of Output Devices (VEMS 5.x)" on page 14 for details.)

		NTSC	PAL
HD Output	1080P30	x	
	1080P24	x	
	1080i	x	
	1080i50		x
	720P *	x	
	720P50		x
	576P		x
SD Output	480i	x	
	576i		x

\* Default

You can also set the display area and other parameters by modifying the `config.txt` file, either manually or via Telnet (see "Setting Configuration Parameters" on page 49). For example, the Video/Audio Output Setting section lets you modify saturation, contrast, hue, brightness, and aspect ratio.

13. Click **Finish** and then **OK** to save your changes and reboot.



**Note** At STB startup, HDMI output format is based on the EDID signalling between the TV and the STB. If the TV does not report that it supports 1080P, the STB will fall back to a lower resolution. In some cases you may wish to force 1080P regardless of the EDID signalling. This will support TVs that play 1080P but do not perform EDID signalling correctly. To force output to 1080p, set the following parameter in `/root/data/config.txt`: `stb.hdmi.validate_edid_format: 0` (This parameter is in the "Video/Audio Output Setting" section. See "Config.txt File" on page 50.)

## Adjusting the Display Area of Output Devices (VEMS 5.x)

*VEMS 5.4 or higher.* If necessary, you can fine tune the channel guide graphics display area for output devices (i.e. monitors) connected to each set top box in your network. You can shrink the display area of the output by up to 20 per cent to match the unique specifications of each monitor. This does not affect the full screen size of the video—it only affects the channel listing and VEMS page display.

### Portal Server Mode

You can adjust the display area of output devices by modifying the `adjust.xml` file in VEMS. This file is located in the following folder on the VEMS Portal Server:

```
C:\Program Files\Vbrick\MCS\VEMSPisces\adjust.xml
```

- ▼ To fine tune the display area for connected devices:
  1. Open `adjust.xml` in a text editor such as Notepad.
  2. Add one line for each Multi-Format Set Top Box you wish to fine tune. This line must contain an XML tag containing the MAC address of the box and an adjustment value in the range of 1–20 per cent. For example if the set top box has an MAC address of `00-01-38-EC-D9-D1` and requires a screen adjustment (shrinkage) of 5 per cent, the tag entry for that device would be:
 

```
<MAC00-01-38-EC-D9-D1>5</MAC00-01-38-EC-D9-D1>
```

The MAC address format is six groups of two digit hexadecimal numbers separated by either hyphens ("-") as above or by colons (":"). If colons were used as a separator in the above address it would be written `00:01:38:EC:D9:D1`

The XML document specification does not allow multiple sequential colons to be used in an XML tag. To use a colon-separated MAC address as an adjustment tag simply replace the colons with hyphens when forming the tag so that it looks like the example above.
  3. Add one tag for each additional set top box that needs adjustment.
  4. Reboot the server when done.

## Local Mode

You can adjust the channel guide graphics display area of an output device so that the entire output is shown on the monitor by modifying the `adjust.xml` file. This file, found in the `data` folder, lets you scale the channel listing graphic to match the size of your TV. On certain TV sets, the image can be chopped off by the bezel, causing a loss of graphic imagery. You can adjust the value in terms of screen percentage. The default is 10, meaning that the graphic image will be reduced by 10%. Be aware that all TV's are not alike. Values that work on some TV's may not work well on others, even the same brand. A setting of 0 is maximum size. Valid ranges are from 0 to 20. Please note that this setting does not affect the size of full screen video. Depending on how your system is configured, this file is located on the set top box or on a VEMS server.

- ▼ To modify the display area of an output device:
  1. Navigate to `root\data\adjust.xml` using Telnet or FTP. (See [Updating channels.xml](#) on page 22 for instructions that explain how to access this file.)
  2. Open the file in Notepad or a similar editor.
  3. Enter a percentage value for the amount of shrinkage (range = 0–20). For example, set to 5 to shrink the display area by 5 percent.
 

```
<STBLocalParms>
  <Adjust>5</Adjust>
</STBLocalParms>
```
  4. Save the file and exit when done.

## Adjusting the Display Area of Output Devices (VEMS 6.x)

If necessary, you can fine tune the channel guide graphics display area for output devices (i.e. monitors) connected to each set top box in your network. You can shrink the display area of the output by up to 20 per cent to match the unique specifications of each monitor. *Note that to use this procedure, the STB must be configured in VEMS as explained in the Portal Server Admin Guide.*

---

## Portal Server Mode

- ▼ To adjust the display area of an output device.
  1. Login to the VEMS 6.x Admin interface:
  2. Go Devices > STB and modify the **Screen Adjustment** parameter as necessary. The range is 1–20. A value of 5 will shrink the display area by 5 percent.

## Local Mode

See Local Mode above. The instructions are the same for VEMS 5.x and VEMS 6.x.

## Upgrade, Reset, Change Password

Use the setup pages to perform standard housekeeping tasks. These include Reset, Upgrade, Change Password, etc. To reboot, simply power the device off/on with the **Power** button on the remote control.

- ▼ To reset, upgrade, change password, etc.
  1. Power the device off/on with the **Power** button on the remote control.
  2. When the animated "Starting" circle is displayed, start pressing the **Help (?)** button on the remote and continue until the Password page is displayed
  3. Enter the default password **5678**, move the cursor to the **OK** button (using the arrow keys on the remote control), and press the **OK** button on the remote.



Image URL	Upgrade the set top box. Enter the path to upgrade image file (using FTP or HTTP) and press <b>Start</b> . For more about using this option, see "Software Upgrade" on page 33.
Reset Factory Default	Reset box to factory defaults. Click <b>Reset</b> .
Password	Change "basic" Setup password. Default = 1234. See note below.
Advanced Password	Change "advanced" Setup password. Default = 5678

**Note** After changing the password, be sure to save the new password in a safe and accessible location. If you lose the password your warranty may not cover the cost of shipping the unit to Vbrick for repair and unlocking.

# Creating a Channel Guide

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## Overview

A local channel guide like the one in Figure 9 is created by configuring an .xml file with the desired channels and FTPing it to the set top box. You can also host the required STB files on a PC. To host the files on a PC you will need to configure Windows for IIS and then use your PC to host the STB files with a URL similar to this: [http://local\\_pc\\_ipaddr/home.htm](http://local_pc_ipaddr/home.htm)

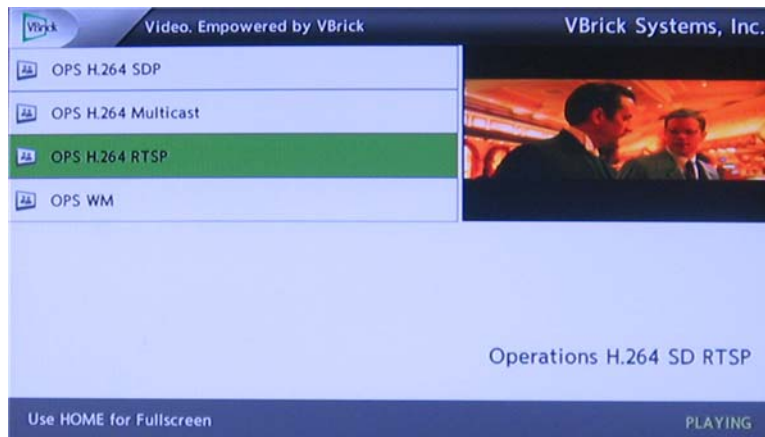


Figure 9. Local Mode Channel Guide

## Configuring channels.xml

The following code shows the `channels.xml` file that is used to create the channel guide. There is a file header and separate section for each stream. Modify this file so that the IP addresses, port numbers, and messages reflect the actual streams you have available at your site. Cut and paste as necessary to add new streams and be sure to delete any unused streams. Note that no extra spaces are allowed and there is only one blank line between channel definitions. **This file has a limit of 99 defined channels.** As a best practice, it is always a good idea to make a backup copy of this file.

**Table 8.** Channels.xml File Entries

Parameter	Description
Title	Company title on upper right screen. See Figure 9.
GlobalMsg	Message displayed under preview window.
Fullscreen	<b>Set to 0 for Local Mode and 1 for Local Fullscreen Mode.</b> Launches the default stream (see below).
ProgramName	Stream title (and number) displayed in the program guide for each channel and/or full screen window.
Message	Text displayed in lower-right message area under the preview window.
URL	RTSP – Real Time Streaming Protocol. Commonly used with streaming media servers. RTSPU – RTSP with UDP. HTTP – point to a live or stored stream. MCAST – multicast address using an .nsc file.
tv	Used with H.264 or MPEG2 Transport Streams.
DfltStrm	<b>Set to x to specify the default stream.</b> See example below. This is the stream that will play in the specified mode (Local or Local Fullscreen) when the set top box is powered on.

## Sample Channels File

The following code shows a sample `channels.xml` file. This file contains multiple "paragraphs" and each is used to define a specific encoding and stream type. The idea is to find the paragraph that matches your stream type and to copy and paste that paragraph multiple times to create as many menu line items as you need. Be sure to delete any unnecessary paragraphs. *Any extra paragraphs that reference nonexistent or inoperative streams will still appear in the local channel guide but will fail to start a working stream.* Note below that the **Windows Media HTTP Live** channel definition uses the `DfltStrm` parameter to define to the default channel.

```
<?xml version="1.0" encoding="utf-8"?>
<STBLocalUI>
<!-- this is general information -->
  <Title>Vbrick Systems, Inc.</Title>
  <GlobalMsg></GlobalMsg>
  <FullScreen>0</FullScreen>

<!-- RTSP MPEG4 Interleave -->
  <Stream>
    <ProgramName>RSTP MPEG4 Interleave (server session based)</ProgramName>
    <Message>rtsp://172.22.123.116/unit116s2?tcp=1</Message>
    <URL>rtsp://172.22.123.116/unit116s2?tcp=1</URL>
  </Stream>

<!-- RTPS MPEG4 Live -->
  <Stream>
```



```

    <ProgramName>RSTP MPEG4 Live (server session based)</ProgramName>
    <Message>rtsp://172.22.123.116/unit116s2</Message>
    <URL>rtsp://172.22.123.116/unit116s2</URL>
</Stream>

<!-- MPEG4 Multicast SDP -->
<Stream>
    <ProgramName>MPEG4 Multicast SDP</ProgramName>
    <Message>http://172.22.123.116/vbs2d1.sdp</Message>
    <URL>http://172.22.123.116/vbs2d1.sdp</URL>
</Stream>

<!-- MPEG2 Multicast Live -->
<Stream>
    <ProgramName>MPEG2 Multicast Live</ProgramName>
    <Message>tv://239.16.2.180:4444</Message>
    <URL>tv://239.16.2.180:4444</URL>
</Stream>

<!-- H.264 RTP RTSP -->
<Stream>
    <ProgramName>H.264 RTP RTSP</ProgramName>
    <Message>rtsp://172.22.128.1/vbStream1S1</Message>
    <URL>rtsp://172.22.128.1/vbStream1S1</URL>
</Stream>

<!-- H.264 TS Multicast -->
<Stream>
    <ProgramName>H.264 TS Multicast</ProgramName>
    <Message>tv://239.22.128.1:4444</Message>
    <URL>tv://239.22.128.1:4444</URL>
</Stream>

<!-- H.264 TS Unicast -->
<Stream>
    <ProgramName>H.264 TS Unicast</ProgramName>
    <Message>tv://<local_ip_address>:4444</Message>
    <URL>tv://<local_ip_address>:4444</URL>
</Stream>

<!-- H.264 TS RTSP -->
<Stream>
    <ProgramName>H.264 TS RTSP</ProgramName>
    <Message>rtsp://172.22.128.1/vbStream1S2</Message>
    <URL>rtsp://172.22.128.1/vbStream1S2</URL>
</Stream>

<!-- Windows Media RTSPU -->
<Stream>
    <ProgramName>WM RTSPU</ProgramName>
    <Message>rtspu://172.22.2.171/vbrickvideo1</Message>
    <URL>rtspu://172.22.2.171/vbrickvideo1</URL>
</Stream>

<!-- Windows Media HTTP -->

```

---

```
<Stream>
  <ProgramName>WM HTTP</ProgramName>
  <Message>http://172.22.2.171:8080/vbrickvideo1</Message>
  <URL>http://172.22.2.171:8080/vbrickvideo1</URL>
</Stream>

<!-- Windows Media Multicast NSC -->
<Stream>
  <ProgramName>WM Multicast NSC</ProgramName>
  <Message>mcast://172.22.2.171/vbsimulti.nsc</Message>
  <URL>mcast://172.22.2.171/vbsimulti.nsc</URL>
</Stream>

<!-- Windows Media HTTP Live -->
<Stream>
  <ProgramName>OPS WM</ProgramName>
  <Message>http://172.17.120.111:8080/vbrickvideo1</Message>
  <URL>http://172.17.120.111:8080/vbrickvideo1</URL>
  <DfltStrm>x<DfltStrm>
</Stream>

<!-- H.264 VODW TS RTSP -->
<Stream>
  <ProgramName>H.264 VODW TS RTSP</ProgramName>
  <Message>rtsp://172.22.2.119/CD-H264.mp4</Message>
  <URL>rtsp://172.22.2.119/CD-H264.mp4</URL>
</Stream>

<!-- H.264 VODW RTP RTSP -->
<Stream>
  <ProgramName>H.264 VODW RTP RTSP</ProgramName>
  <Message>rtsp://172.22.2.119/Bob-H264-RTP.mp4</Message>
  <URL>rtsp://172.22.2.119/Bob-H264-RTP.mp4</URL>
</Stream>

<!-- MPEG4 VODW RTSP -->
<Stream>
  <ProgramName>MPEG4 VODW RTSP</ProgramName>
  <Message>rtsp://172.22.2.119/CD-MPEG4.mp4</Message>
  <URL>rtsp://172.22.2.119/CD-MPEG4.mp4</URL>
</Stream>

<!-- MPEG2 VODW RTSP -->
<Stream>
  <ProgramName>MPEG2 VODW RTSP</ProgramName>
  <Message>rtsp://172.22.2.119/AndyM-MP2.mpg</Message>
  <URL>rtsp://172.22.2.119/AndyM-MP2.mpg</URL>
</Stream>

<!-- Windows Media VODWM RTSPT -->
<Stream>
  <ProgramName>WM VODWM RTSP</ProgramName>
  <Message>rtspt://172.17.2.44/PublishingPoint34</Message>
  <URL>rtspt://172.17.2.44/PublishingPoint34</URL>
</Stream>
```

```

<!-- Windows Media VODWM RTSPU -->
<Stream>
  <ProgramName>WM VODWM RTSPU</ProgramName>
  <Message>rtspu://172.17.2.44/PublishingPoint34</Message>
  <URL>rtspu://172.17.2.44/PublishingPoint34</URL>
</Stream>

<!-- Windows Media VODWM HTTP -->
<Stream>
  <ProgramName>WM VODWM HTTP</ProgramName>
  <Message>http://172.17.2.44/VBP/bobWM-LAN-1M.wmv</Message>
  <URL>http://172.17.2.44/VBP/bobWM-LAN-1M.wmv</URL>
</Stream>

<!-- MPEG4 Darwin RTSP -->
<Stream>
  <ProgramName>MPEG4 Darwin RTSP</ProgramName>
  <Message>rtsp://172.22.2.117/Acacia/ACM%20H264_12_29_10_11_24_29.mp4</Message>
  <URL>rtsp://172.22.2.117/Acacia/ACM%20H264_12_29_10_11_24_29.mp4</URL>
</Stream>

<!-- MPEG2 or H.264 Transport Stream file playback -->
<Stream>
  <ProgramName>Playback .mpg Transport stream file from my PC 172.16.2.204</
  ProgramName>
  <Message>Playing content via httpvtv://172.16.2.204/mpeg2test.mpg</Message>
  <URL>httpvtv://172.16.2.204/mpeg2test.mpg</URL>
</Stream>

</Stream>
</STBLocalUI>

```

## Sample URLs

The following table shows sample URLs for different encoding formats and transport types.

**Table 9.** Sample URLs

MPEG2 Multicast Live	tv://239.16.2.180:4444
MPEG2 VOD-W RTSP	rtsp://172.22.2.119/AndyM-MP2.mpg
RTSP MPEG-4 Interleave (server session based)	rtsp://172.22.123.116/unit116s2?tcp=1
RTSP MPEG-4 Live (server session based)	rtsp://172.22.123.116/unit116s2
MPEG4 Multicast SDP	http://172.22.123.116/vbs2d1.sdp
MPEG4 VOD-W RTSP	rtsp://172.22.2.119/CD-MPEG4.mp4
MPEG-4 Darwin RTSP	rtsp://172.22.2.117/Acacia/ ACM%20H264_12_29_10_11_24_29.mp4
H.264 RTP RTSP	rtsp://172.22.128.1/vbStream1S1 (where vbStream1S1 points to RTP)
H.264 TS Multicast	tv://239.22.128.1:4444

H.264 TS Unicast	tv://172.22.2.19:4444
H.264 TS RTSP	rtsp://172.22.128.1/vbStream1S2 (where vbStream1S2 points to TS)
H.264 SDP RTP (multicast or unicast)	http://172.22.123.116/vbStream1S1.sdp
H.264 VOD-W TS RTSP	rtsp://172.22.2.119/CD-H264.mpg
H.264 VOD-W RTP RTSP	rtsp://172.22.2.119/Bob-H264-RTP.mp4
Window Media RTSPU	rtspu://172.22.2.171/vbrickvideo1
Window Media HTTP	http://172.22.2.171:8080/vbrickvideo1
Window Media Multicast NSC	mcast://172.22.2.171/vbs1multi.nsc
Window Media VOD-WM RTSPT	rtspt://172.17.2.44/PublishingPoint34
Window Media VOD-WM RTSPU	rtspu://172.17.2.44/PublishingPoint34
Window Media VOD-WM HTTP	http://172.17.2.44/VBP/bobWM-LAN-1M.wmv
MPEG2 or H.264 Transport Stream file playback	httpstv://172.16.2.204/mpeg2test.mpg

## Updating channels.xml

There are basically two ways to change the `channels.xml` file. First, if you have created a valid `channels.xml` file and placed it onto an accessible FTP server, you can go to the STB and `wget` the file from the FTP server. Second, you can Telnet into the box and edit the text file in place using `vi`.

### Using wget

This method requires an FTP server. You can start by editing `channels.xml` file, creating the desired list of channels, and saving it as `my_channels.xml`. Then FTP the file to the VEMS Portal Server for example, or to another FTP server.

▼ To `wget` the file from an FTP server:

1. Telnet or SSH into the STB. When logging in, the user name is `iptv`; the password is `settopbox`.

```
# cd /root/data
# mv channels.xml YYYYMMDDchannels.xml (to rename file to today's date as a backup)
```

or

```
# rm channels.xml (to simply delete the existing channels.xml file)
# wget ftp://<portal_server_ip_address>/My_channels.xml
# mv My_channels.xml channels.xml
# sync ; sleep 2 ; reboot
```

### Using vi

This method explains how to edit the `channels.xml` file directly on the set top box using `vi` (a screen-based Unix editor). For a list of `vi` commands go to <http://www.cs.colostate.edu/helpdocs/vi.html>.

- ▼ To edit the file in place with vi:
  1. Telnet or SSH into the STB. When logging in, the user name is `iptv`; the password is `settopbox`).
 

```
# cd /root/data
# cp channels.xml YYYYMMDDchannels.xml (to rename file to today's date as a backup)
# vi channels.xml
```
  2. Navigate and edit the file using vi.
  3. After editing the file, save and quit the vi session:
    - a. Press **Esc** `:wq`
    - b. To quit without saving type `:q!`
  4. Reboot the STB:
 

```
# sync ; sleep 2 ; reboot
```

## Hosting channels.xml on a PC

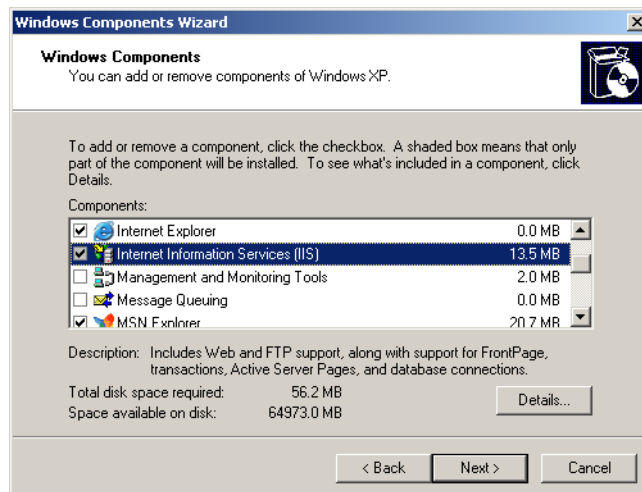
In order to greatly simplify changes to `channels.xml` on all of the set top boxes in your network, you may want to host the required STB files on a PC. To do this you will need to configure Windows for IIS and then use your PC to host the STB files. When the channels file changes (for example if you add or change streams), you simply update the file in `c:\inetpub\wwwroot` as explained below and reboot the set top box(es). The set top boxes will then read the channels file from the PC.

### Configuring a PC as a Web Server

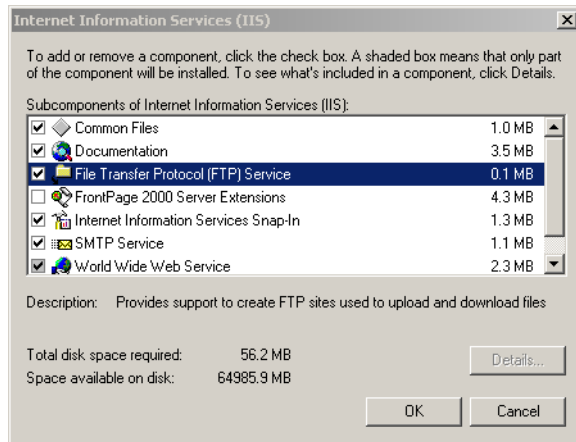
In order to host the set top box files on a PC, it must be configured as a web server. Use the following steps to configure a PC as a web server or to verify that it's configured properly.

**Note** The following steps show how to configure a PC running Windows Server 2003 or Windows XP. If your PC has Windows Server 2008 or Windows 7 the steps will be similar but slightly different.

- ▼ To configure your PC as a web server:
  1. Go to **Start > Control Panel > Add or Remove Programs**.
  2. Select **Add/Remove Windows Components** in the left navigation pane.



3. Check **Internet Information Services (IIS)** and then **Details**.



4. Check **File Transfer Protocol (FTP) Service** and **World Wide Web Service**, then **OK**, **Next**, and **Finish**. (Initially when the FTP service is added, the user name and password is anonymous.)

## Putting the Files on a PC

▼ To put the STB files on a PC:

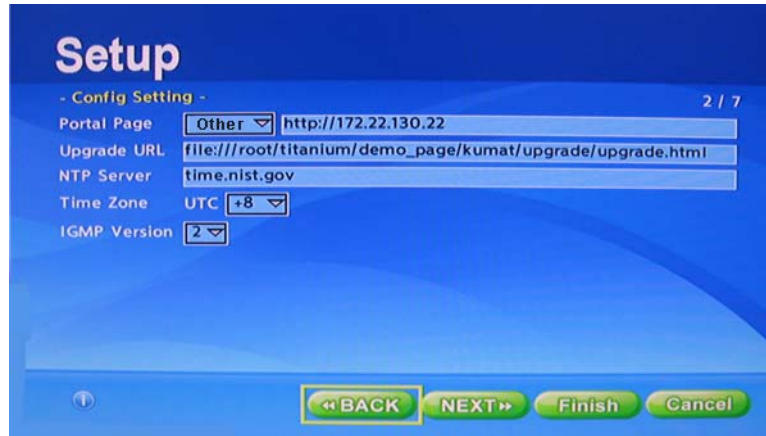
1. Telnet to the set top box as explained below and `ftp`put the required files into your PC's IIS **Home Directory**. By default, the home directory for the **Default Web Site** is `c:\inetpub\wwwroot`. For syntax information type `ftp`put and press Enter.
2. Login with `userid = iptv`, `password = settopbox`
3. On the set top box, type:
  - a. `cd titanium/demo_page/kumat/vbrick`
  - b. `ftp`put `<FTPServer_IP_address> -u <pc_ftp_username> -p <pc_ftp_password> channels.xml channels.xml`
  - c. Repeat this `ftp`put for all files in `titanium/demo_page/kumat/vbrick`
4. During transfer the file will be automatically copied to `c:\inetpub\ftproot`.
5. After transfer, manually copy all of the files from `ftproot` to `c:\inetpub\wwwroot`.
6. After you have configured the set top boxes to point to the PC as explained in the next section, reboot the set top box(es) and you are done.
7. If you subsequently need to change the channels file, you simply modify or replace the file in `c:\inetpub\wwwroot` and reboot the set top box(es).

## Configuring the STB Home Page

**Caution** Perform this step carefully. If you enter an invalid URL you will be unable to communicate with any of the set top boxes in your network.

▼ To configure the STB Home Page to point to a PC:

1. On the STB, navigate to the **Config Setting** page in the Setup program.
2. Go to **Portal Page > Other** and enter the IP address of a Windows PC.
3. When done, enter a password and click **Save Changes**.
4. Then repeat for each set top box.



## Using Multiple channel.xml Files

You can create multiple channel.xml files which can allow you to switch your local channel listing remotely. For example, a central control system may want to push a particular channel to one or more set top boxes, to send an announcement or tune device to a particular event. In the example below, we will set up a default channel file and three alternate channel files.

### Configuring Multiple Channel Files

You will create multiple channel.xml files and store them on the set top box in the /data folder, where the original channels.xml file is stored. You need a channel.xml file to provide the default, power-up channel listing. Then you will create three additional channel files, for example: channel1.xml, channel2.xml and channel3.xml. Your default channel file could look like the one in the users' manual or any other setup of your choice:

#### Default Channel

This channel file starts up in channel listing mode and sets up a power-on default channel to play:

```
<?xml version="1.0" encoding="utf-8"?>
<STBLocalUI>
  <!-- this is general information -->
  <Title>Vbrick Systems, Inc.</Title>
  <GlobalMsg>Test enviroment.</GlobalMsg>
  <FullScreen>0</FullScreen>

  <!-- Multicast stream -->
  <Stream>
    <ProgramName>OPS H.264 SDP</ProgramName>
    <Message>Operations H.264 Multicast Brick SDP</Message>
    <URL>http://172.17.2.17/vbStream1T1.sdp</URL>
  </Stream>

  <!-- RTSP -->
  <Stream>
    <ProgramName>OPS H.264 RTSP</ProgramName>
    <Message>Operations H.264 SD RTSP</Message>
    <URL>rtsp://172.17.2.17/vbStream1S1</URL>
  </Stream>

  <!-- Windows Media -->
  <Stream>
    <ProgramName>OPS WM</ProgramName>
    <Message>Operations WM http</Message>
```

```

        <URL>http://172.17.120.111:8080/vbrickvideo1</URL>
        <DfltStrm>x<DfltStrm>
    </Stream>
</STBLocalUI>

```

## Channel 1

The first channel file will play a live video telecast from a Vbrick encoder. It will start up in full screen mode. The file is rather simple since there is only one channel.

```

<?xml version="1.0" encoding="utf-8"?>
<STBLocalUI>
    <!-- this is general information -->
    <Title>News Update from Company </Title>
    <GlobalMsg>News special broadcast</GlobalMsg>
    <FullScreen>1</FullScreen>

    <!--h.264 Typical multicast stream from Vbrick encoder, in RTP mode -->
    <Stream>
        <ProgramName>News Channel x , Company y</ProgramName>
        <Message>What you want to say in the full screen top banner</Message>
        <URL>http://172.17.2.17/vbStream1T1.sdp</URL>
    </Stream>
</STBLocalUI>

```

## Channel 2

The second channel is more or less the same. The source could be from a different Vbrick encoder. In this example we will use an Mpeg2 encoder which is sending multicast

```

<?xml version="1.0" encoding="utf-8"?>
<STBLocalUI>
    <!-- this is general information -->
    <Title>Video presentation from Company </Title>
    <GlobalMsg>regular telecast</GlobalMsg>
    <FullScreen>1</FullScreen>

    <!--Mpeg2 multicast stream from Vbrick encoder, Transport Stream mode IP
239.33.14.77 UDP port 4444-->
    <Stream>
        <ProgramName>Morning announcements , Company name</ProgramName>
        <Message>Morning announcement</Message>
        <URL>tv://239.33.14.77:4444</URL>
    </Stream>
</STBLocalUI>

```

## Channel 3

The third case is more or less the same again. This time we will play a stored file from the VOD-W server

```

<?xml version="1.0" encoding="utf-8"?>
<STBLocalUI>
    <!-- this is general information -->
    <Title>Training video, Company x</Title>
    <GlobalMsg>recorded training material</GlobalMsg>
    <FullScreen>1</FullScreen>

    <!--Play recorded content from the Vbrick VOD-W server-->
    <Stream>
        <ProgramName>HR Training session 1 , Company name</ProgramName>
        <Message>Training video, HR session 1</Message>
        <URL>rtsp://VOD-Server hostname or IP/ContentResourceName.mpg</URL>
    </Stream>
</STBLocalUI>

```



## Testing the Configuration

Once these files have been created and stored on the STB, and the encoder's / VOD content is available, testing can be done.

▼ To test the system:

1. Log into the STB using Telnet.
2. At the # prompt, type the following:

```
# gotourl file:///root/titanium/demo_page/kumat/vbrick/  
home.htm?CXML=channel3.xml
```

This will load the new channel file. So in the above example, `channel3.xml` will go to the third channel file (training recorded video) as shown above. Repeat this step to test `channel1.xml` and `channel2.xml`.

3. To go back to the default channel file which loads at power-up type:

```
#gotourl file:///root/titanium/demo_page/kumat/vbrick/home.htm
```



## Managing the Set Top Box

### Topics in this chapter

Overview .....29

### Overview

Table 10 shows the tools you can use to manage the set top box. Each tool is best suited for specific tasks. For example, use the Setup program to configure DHCP settings or Telnet for an upgrade.

**Table 10.** Management Tools

Tool	Use to ...	User Name   Password
Telnet	Upgrade STB firmware.	iptv   settopbox
Web Interface	Change Telnet password.	iptv   settopbox
Setup	Set DHCP and Video & Audio Output Setting.	1234
	Reset factory defaults, change password.	5678
VBDirectory	Check IP address or software version.	n/a

### Telnet

To get the `channels.xml` file or the `config.txt` file you will need to use Telnet, SSH, or a similar tool. Telnet is particularly important if you are unable to access the device through other means. For example the box can lock up, freeze, or hang if you enter erroneous or incompatible setup parameters. If this happens, Telnet may be the only way to recover. To change the Telnet password see "Web Interface" on page 31.

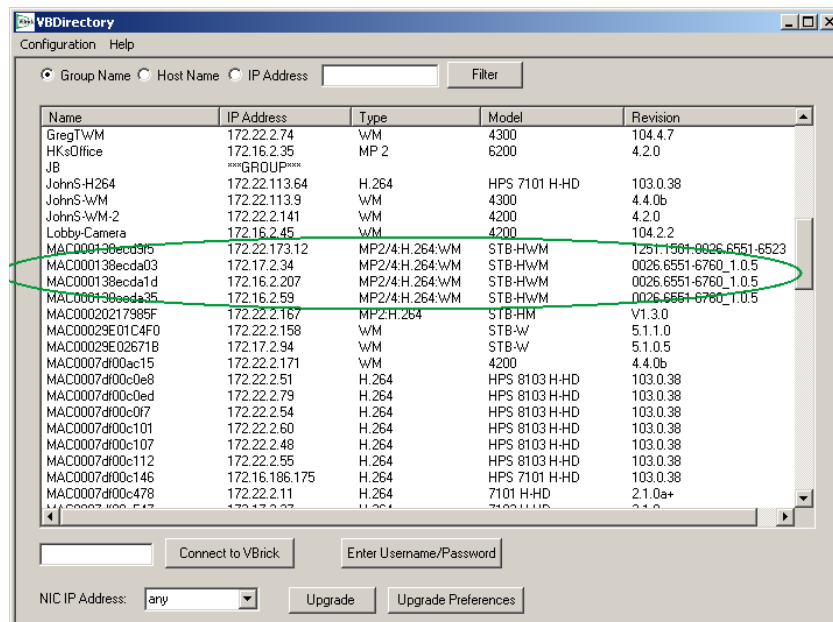
```

(none) login: iptv
Password:
#
# upgrade ftp://172.22.2.53/XTU125_1251.1501.0026.6551-6523-vbrick-1.0.2.img
upgrade version : 1.6.0
Flash type is NOR
username = anonymous
password = stb
host = 172.22.2.53
port = 21
220-FileZilla Server version 0.9.27 beta
220-written by Tim Kosse (Tim.Kosse@gmx.de)
220 Please visit http://sourceforge.net/projects/filezilla/
331 Password required for anonymous
230 Logged on
DEBUG:upg_common.c:604
200 Type set to I
227 Entering Passive Mode (172.22.2.53,5,40)
port_data = 1320
213 26214400
filesize is 26214400 bytes
350 Rest supported. Restarting at 0
150 Connection accepted
Progress= 9% - received 26214400 bytes
226 Transfer OK
Disconnecting...done.
  imageFilename = XTU125_1251.1501.0026.6551-6523-1.0.2.img
    tagMagic = 0x69705456
    tagVersion = 0x00020001
    tagLength = 256 bytes
    boardID = 740530125
    imageAge = 0
    imageCrc32 = 0x9144F593
imageCompression = 1
  imageLength = 26083328 bytes
  kernelOffset = 0x00020000
  kernelLength = 2359296 bytes

```

## VBDirectory

VBDirectory shows all networked Vbrick devices at your site. Multi-Format STBs are identified in the **Model** column as **STB-HWM**. You can install VBDirectory from the Vbrick Support [Downloads](#) site.



## Setup

The Setup program is the recommended method for configuring the set top box. See [STB Configuration](#) on page 10 for complete details.



## Web Interface

You typically use the Web Interface to change the Telnet password. To display this interface, open a browser and enter the IP address of the set top box. After logging in, click on the **Account** tab to change the Telnet password; click on the **Status** tab to display the IP Address, Firmware Version, and other data. To launch the Web Interface, open a browser and enter the IP address of the set top box.



## Disabling the Web Interface

In some cases you may wish to disable access to the Web Interface so that external browsers cannot connect to the internal web server. Normally the page associated with this web server allows you to view certain STB information and also allows you to set the Telnet password. For internet security reasons, you may not want this page to appear or the port to be opened. This can be accomplished by editing the `config.txt` file. Open the file and search for `stb.webserver.enable: 1` in the **Web service setting** section (see [Editing Config.txt](#) on page 49). Simply change the 1 to a 0 and save the file back to the STB. Now nothing will be returned when a user attempts to browse to the set top box using http.

```
# Set 0 to disable stb web server
stb.webserver.enable: 1
```

---

## Setting the Password via Telnet

If you have disabled the Web Interface as explained above, you can still change the Telnet password using Telnet.

▼ To set the Web Interface password using Telnet:

1. Telnet to the STB, and login. Wait for the # prompt and type in the following command and Enter: `passwd iptv`
2. The unit will respond with the following:  
Changing password for iptv. Enter the new password (minimum of 5, maximum of 8 characters). Please use a combination of upper and lower case letters and numbers. Enter new password:
3. Enter a new password of your choice, obeying the min/max character rules as explained. Press Enter and retype to confirm.
4. Once you logoff Telnet you will subsequently need to enter the new password. Be sure to save the new password in an accessible location. Lost passwords cannot be recovered and will require factory intervention.

## Software Upgrade

### Topics in this chapter

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### Overview

From time to time Vbrick may make new STB software available. This topic explains how to upgrade the STB software when a new image is available. As explained below, there are multiple ways to upgrade the set top box. You can use the Setup pages; you can use Telnet; you can host the files on a local PC that has an IIS server; or use an use the mass upgrade feature on the VEMS server. **The method you use depends on which scenario it most likely to meet the requirements at your site.**

If you have Gold Plus technical support, or you purchased your STB from Vbrick within the last 90 days, you are entitled to receive Multi-Format STB v2.0.1 firmware free of charge. If you do not qualify with either of these options you can update/renew your support contract to become eligible to use this firmware. **Contact Vbrick Support Services to obtain the upgrade image password.**

### Using the Setup Program

**Note** You can connect to the upgrade utility page via HTTPS in order to perform an upgrade. You cannot connect directly to the upgrade image via HTTPS.

To upgrade using the Setup program, press the Help key during a reboot and login with the default password **5678**. In the **Upgrade Image** field, enter the path to upgrade image using FTP, HTTP, or HTTPS as in the following example. This example assumes that the `<server_ip_address>` is that of an anonymous FTP server that has the `.img` file of the new software release you want to load on the STB (see Step 4 on page 35).

**Format:** `ftp://<server_ip_address>/<upgrade_image_filename>`

**Example:** `ftp://172.22.2.53/XTV125_1251.1501.0026.6551-6523-vbrick-1.0.2.img`



Reset Factory Default	Use this option after a software upgrade is complete to return a unit to its original factory condition. If you do this, be sure to note <u>all</u> existing settings. Also backup any information in the <code>root/data</code> folder, especially <code>config.txt</code> and <code>channels.xml</code> .
-----------------------	---

## Using Telnet

To upgrade box using Telnet, open a Telnet session with login name = `iptv` and password = `settopbox`. Then enter Telnet commands as shown in the examples below. The format of the `upgrade` command is shown below. For syntax information type `upgrade` and press Enter.

**Format:** `upgrade ftp://<server_ip_address>/<upgrade_image_filename> <upgrade command line option>`

**Example:** `upgrade ftp://172.22.2.53/XTV125_1251.1501.0026.6551-6523-vbrick-1.0.2.img 3`

## Telnet Examples

**Notes** Be sure to backup your files including `config.txt`, `channels.xml`, `adjust.xml` and any files you may have stored in `/root/data` (such as alternate `channel.xml` files).  
Note that if you fail to include the command line option (see below) the unit will replace the `config.txt` file and not reboot when done.

```
# rm /root/data/rc.d/rc80.user
# upgrade ftp://172.16.1.244/XTV125_1251.1501.0026.6551-6760_1.0.5.img 3
```

If you wish to set the unit to the factory defaults, use the following command (instead of previous command) with care:

```
# rm /root/data/* -rf
```

### Upgrade Command Line Options

```
# upgrade ftp://<ipaddress>/filename.img 1
```

This will replace the `config.txt` file with the new version. Note that any configuration changes will be lost with this option.

```
# upgrade ftp://<ipaddress>/Filename.img 3
```

This will keep the old `config.txt` file.



## Using an IIS Server

You can also upgrade your set top boxes by using an IIS web server (to host the upgrade files) and an FTP server (to serve those files). You can use a VEMS server (if present) or you can use a PC configured with IIS (see [Configuring a PC as a Web Server](#) on page 23). The web server can host a set of pages (located in `UPG.zip` as part of the MF-STB software download) that are used during the STB's initial boot process. The actual upgrade code image is available separately from Vbrick [Support Services](#).

The STB has a configuration parameter (see [Upgrade, Reset, Change Password](#) on page 16) which specifies the upgrade **Image URL**. This URL is a link to a page, hosted on your web server. When you configure the STBs to point to that page, they will be automatically upgraded after a reboot if the image file is newer. *The steps are basically the same if you are using a VEMS server or a PC configured as a web server.*

▼ To use a web server (and an FTP server) to upgrade STBs:

1. Go to the web server and unzip the files in `UPG.zip` into the `wwwroot` folder.
2. Go to the STB and edit the `config.txt` file to point to the web server used in Step 1. You can use Telnet and `vi` to do this (see [Editing Config.txt](#) on page 49 for more details); you can also use the remote control to edit the **Upgrade URL** on the **Config Setting** page.
  - a. Open a Telnet session and edit `config.txt`.
  - b. Go to the **Page Setting** section and modify the following line to point to the web server used in Step 1:

```
stb.url.fwupg: http://<web_server_ip_address>/upg/upgrade/upgrade.html
```

3. Repeat Step 2 for each STB.
4. Go to the FTP server, set up an anonymous FTP account and subfolder, and copy the upgrade `.img` file to the subfolder in `ftproot`. (Optionally you can use the same IIS server and serve the file using HTTP: see Step 5.)
5. Go to the web server and edit the following line in `wwwroot/UPG/upgrade/upgrade_path.xml` to point to the FTP server name and folder location. (This example assumes an anonymous FTP server with the anonymous home account containing the `.img` file). Optionally you can perform an HTTP transfer by uncommenting the corresponding xml line and modifying the location and file name.

```
<upgPath>ftp://anonymous@<ftp_server_ip_address>/<image_file_name.img</upgPath>
<!--OR Use HTTP as option
<upgPath>http://<ftp_server_ip_address>/<image_file_name.img</upgPath-->
```

6. This completes the initial configuration. Now you can now test the setup to verify the upgrade is configured properly using the following steps:
  - a. Verify the FTP server is working properly and reboot the STB.
  - b. If you do not have a new version of software to test with, simply rename the file (i.e. increment the last digit) and edit the `upgrade_path.xml` file name to be the next version. For example if `xxxxx_1.0.6.img` is the current version, rename it to `xxxx_1.0.7.img` making sure you (1) edit the file name and (2) put the image file in the appropriate folder.
  - c. Reboot the STB. Since you only renamed the file (and did not change the actual version embedded in the code), the STB will prompt you for an upgrade every time it boots up. This will not happen once you place a newer version in `ftproot`.

- d. After the reboot you are prompted to **Cancel** or **Upgrade**. Click **Upgrade** to run the upgrade even though you are replacing the image file with the same version (only the filename has changed).
- e. When done, rename the file back to its original name and edit the `upgrade_path.xml` to the same name. Now when you reboot the STB, you will not be prompted with the upgrade page.

## Mass Upgrade Using a VEMS Server

If you will be upgrading multiple set top boxes, VEMS Mystro (6.2.1 or higher) has a mass upgrade feature that will simplify this process. This topic explains how to upgrade multiple set top boxes at the same time using built-in functionality on the VEMS server. This built-functionality uses a configuration parameter that defines the **Upgrade Server Page URL**. When the STB boots up, it branches to this page to check whether the STB needs to update its firmware. This decision is based on a value in a configurable xml file hosted on the upgrade server. If an upgrade is required (determined by comparing the current version of the STB with the xml file on the upgrade server page), you will have the option to upgrade or not upgrade. After five minutes the upgrade will automatically begin (thus allowing for unattended upgrades).

- **The upgrade image is password-protected.** Before performing an upgrade you will need to contact Vbrick [Support Services](#) for the password.
- The steps explained here assume that you have added the set top boxes to the VEMS configuration and created a unique user for each one (see [STB](#) and [Auto-Discover STB](#) respectively in the *Portal Server Admin Guide*).
- The following procedure explains how to upgrade STBs using the VEMS Scheduler. If you do not have a Scheduler license you will need to set the Portal Server URL manually following the steps in *Multi-Format STB Quick Start Guide*.

### 1. Unlock the Upgrade Image

If you will be using the VEMS server to upgrade multiple STBs, you can find the password-protected upgrade image on the VEMS server after the VEMS (6.2.1 or higher) software is installed. **Before unzipping the file you will need to contact Vbrick Support Services for the password.**

▼ To unlock the image:

1. Navigate to folder containing the upgrade image. The folder path (see below) is slightly different depending on whether the VEMS server is running on a 32 or 64-bit machine.

Server	Path to Upgrade Image
32-bit	C:\Program Files\Vbrick\Maduro\STB\MFSTB_Upgrade\XTV125D_1255.1501.0026.8066_2.0.1.zip
64-bit	C:\Program Files (x86)\Vbrick\Maduro\STB\MFSTB_Upgrade\XTV125D_1255.1501.0026.8066_2.0.1.zip

2. Right-click on the zip file and select **Extract Here**. When prompted, enter the 12-digit password (with no spaces or other characters) you received from Vbrick Support Services. **Make sure you unzip the file into the specified folder.** If you change the folder the upgrade will fail.

## 2. Configure the Global Setting

The next step is to enable the Set Upgrade Server Page functionality (which is disabled by default). To enable this feature go to **System Settings > Global Settings** on the Mystro server and check the **Set Upgrade Server Page URL on MFSTB** box. The **Upgrade Server Page URL** (as explained below) defines the path to the default upgrade server. If you ever need to replace the **Upgrade Server Page URL** the default is:

```
http://myMFSTBUpgradeServer/STB/MFSTB_Upgrade/UPG/upgrade/upgrade.html
```

MFSTB Upgrade Server Page Configuration	
Set Upgrade Server Page URL on MFSTB	<input type="checkbox"/>
Upgrade Server Page URL	<input type="text" value="http://myMFSTBUpgradeServer/ST"/>

## 3. Configure the Upgrade Server URL in VEMS

After enabling the upgrade server functionality, you will need to configure the upgrade server URL. There are two ways to proceed: you can (1) configure a DNS entry to point to your VEMS server (using `myMFSTBUpgradeServer`) or you (2) can manually set the upgrade server URL and path.

### Configuring a DNS Entry

The VEMS Mystro 6.x software includes an STB upgrade server configured for use in an environment where there is a DNS entry (`myMFSTBUpgradeServer`) that points to the VEMS Mystro server. If you configure a DNS entry for `myMFSTBUpgradeServer` that points to your VEMS server you can go to Step 2a below and set the file name.

### Configure the Upgrade Server URL and Path

If you don't have a DNS server (or don't make a DNS entry for `myMFSTBUpgradeServer`) you will have to modify the STB configuration in two different places:

1. You will need to modify the **Upgrade Server Page URL** parameter (shown in bold) on the Global Settings page to point to the VEMS server URL. For example:

```
http://myMFSTBUpgradeServer/STB/MFSTB_Upgrade/UPG/upgrade/upgrade.html
```

2. You will also need to edit the `upgrade_path.xml` file on the VEMS server so that the value in the `<upgPath>` tag points to the STB image file installed on the VEMS server. On a 64-bit server, the file path is: `C:\Program Files (x86)\Vbrick\Maduro\STB\MFSTB_Upgrade\UPG\upgrade\upgrade_path.xml`

- a. Right-click on `upgrade_path.xml`, select **Open with** Notepad, and note the following code:

```
<!-- The HTTP transfer option is used here, the ftp is commented out -->
<upgPath>http://myMFSTBUpgradeServer/STB/MFSTB_Upgrade/
XTV125_1251.1501.0020.6553_1.0.7.img</upgPath>
```

- b. Replace `myMFSTBUpgradeServer` with the IP address or DNS host name of the VEMS server.
- c. Replace `XTV125_1251.1501.0020.6553_1.0.7.img` with `XTV125D_1255.1501.0026.8066_2.0.1.img` (or the latest MF STB name/version).

Note XTV125D\_1255.1501.0026.8066\_2.0.1.img is the latest STB code image. To perform future upgrades you will need to replace this file and modify upgrade\_path.xml

## 4. Configure the STB with the VEMS Upgrade Server URL

Each STB has a configuration setting which stores the location of Upgrade URL and the STB needs to know where the upgrade server pages are located. This setting can be configured manually using the STB setup pages, or automatically using one of the methods outlined below.

### STB in VEMS Mode

If the STB is already in VEMS mode and you want to add automatic upgrade capability you are almost done. In this scenario the STB, upon reboot, will reconnect to VEMS. The Global Settings in VEMS will determine if the automatic upgrade feature is enabled, and if so, will automatically configure the STB's Upgrade URL using the **Upgrade Server Page URL** entry you entered in the previous step.

### STB in Local Mode

If you have a new STB, or one which has not been configured for VEMS mode, you can use the following steps to set the STB to VEMS mode and configure the Upgrade URL using the VEMS Scheduler feature. As explained below, the easiest way to accomplish this is to create a schedule in VEMS that will automatically reset the upgrade URL when the STB reboots.

▼ To configure the VEMS Upgrade URL:

1. Launch the VEMS admin interface and go to **Devices > STB**.

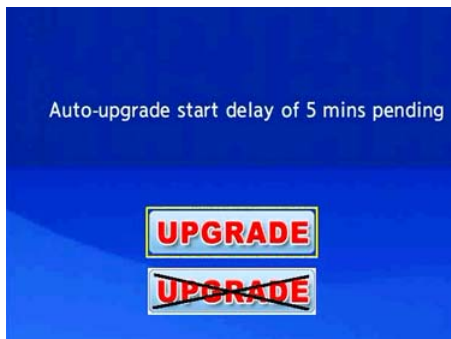
The screenshot displays the 'STB Device Administration' web interface. It is divided into several sections: 'STB Information' with fields for HostName (MAC000138ecd9f5) and IP Address (172.22.173.12); 'Model' with fields for STB Model (Multi Format STB), Software Revision (0026.6551-6760\_1.0.5), Part Number (8000-0188-000X), Screen Adjustment% (10), Default Language (EN-US), and STB Mode After (VEMS Mystro Channel Guide, which is circled in green); 'Management' with fields for User Name (root) and Password (masked); and 'VEMS Login' with a dropdown for VEMS User (set to -- None --). A note at the bottom right states: 'Please note that each VEMS User can only be associated with one STB. Selecting a VEMS User with a STB already associated will clear the previous STB association.' At the bottom of the form are four buttons: 'Back to List', 'Auto-Discovery Check', 'Save', and 'Clear'.

2. For each set top box, set the **STB Mode after Schedule** parameter to **VEMS Mystro Channel Guide**.

3. Open the VEMS Mystro *client* interface and create a schedule, for example a **Rebroadcast Content**.
4. Set the schedule for **Now** with a **Duration** of 1 minute. **When selecting destination output devices, be sure to select all of the STBs you will be upgrading.**
5. After the schedule runs the VEMS **Upgrade Server Page URL** will be written to each STB. If the current **Upgrade Server Page URL** value has changed, you will see the following message. This is normal behavior and no user action is required.



6. After the reboot, if a firmware upgrade is required, you can choose to run the upgrade or not run the upgrade. If you run the upgrade, the STB will reboot, load new firmware, and you are done. If you do nothing, the upgrade will automatically begin after five minutes.



If a STB needs to upgrade but the firmware image file is not on the server, the failure page below is displayed. This page will display every time the STB logs into VEMS, including after a schedule runs. (See Cancelling the Upgrade below to disable this functionality.)



## Cancelling the Upgrade

If you choose to cancel an upgrade by clicking on one of the images above, the cancellation is only temporary and you will see the same image prompt every time the STB reboots. If you have trouble upgrading or do not want the STB checking for an upgrade at startup, you can cancel upgrade checking permanently.

- 
- ▼ To cancel upgrade checking:
    1. Make sure the **Set Upgrade Server Page URL on MFSTB** is checked in Global Settings.
    2. Delete the string in **Upgrade Server Page URL** and leave the field blank.
    3. Reboot the STB. This can only be done by power cycling the unit or using Telnet.
    4. When the STB reboots, it will no longer attempt to contact the upgrade server.

# Using the Remote Control

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## Overview

The IR Remote Control is a handheld "infrared" device you can use to control live and stored streams running on the Multi-Format set top box. You can select and play streams by pointing the unit at the infrared sensor on the front in the lower-right corner. *Only those buttons described on the following pages are active.* Do not press any other buttons on the remote. **Note that the Remote Control buttons behave differently depending on whether you are in Local Mode or Portal Server Mode.** (If your screen has a Menu option as shown in Figure 10, you are in Portal Server Mode 6.x.) Be aware that the Multi-Format set top box does not enforce copyright restrictions on stored content.



**Figure 10.** Portal Server Mode (VEMS 6.x)

# Using the Remote Control (VEMS 5.x)

## Portal Server Mode

Button	Function
Info	Portal Server mode only. Displays information about the currently selected stream. Press Back when done.
Red	Use to power the device on/off. Same as reset.
Mute	Mute/unmute volume. Use the volume controls on the display device to set volume.
0–9	Portal Server mode. Enter a PIN, or enter a search string using the number keypad for text entry.
Enter	Press when input complete.
Clear	Deletes the previous digit or character when entering search parameters or a PIN.
Page	Move to top, bottom, next, or previous page.
Menu	Toggle the Menu on or off.
Back	Return to previous screen.
Vol	Adjust the audio up or down.
CH	Advance channel up or down.
OK	Select and play the highlighted channel. Initiate an action or select an option depending on cursor focus.
Arrows	Change focus to next item; select previous stream.
Prev	Go to previous page.
Next	Go to next page.
RW	VOD content only: Rewind the current stream.
Play/Pause	Play/Pause the selected stream
FF	VOD content only: fast forward the current stream
Help	Press repeatedly during power-up to display setup pages.
Full Screen	Go to fullscreen; exit fullscreen.
Rec	Record stream. During recording, a red indicator is shown in lower right area of window.
Stop	Stop a recording in progress.
Search	Display the search window. Press Search again to exit window.
Live	Go to Live Video page.
VOD	Go to Stored Video page.
Sched	Display scheduled streams available for viewing.
Mark	VOD content only: Create a bookmark.





## Local Mode

Button	Function
Info	Portal Server mode only.
Red	Use to power the device on/off. Same as reset.
Mute	Mute/unmute volume. Use the volume controls on the display device to set volume.
0–9	Portal Server mode. Enter a PIN, or enter a search string using the number keypad for text entry.
Enter	Press when input complete.
Clear	Deletes the previous digit or character when entering search parameters or a PIN.
Page	Move to top, bottom, next, or previous page.
Menu	Portal Server mode only.
Back	Return to previous screen.
Vol	Adjust the audio up or down.
CH	Advance channel up or down.
OK	Select and play the highlighted channel. Initiate an action or select an option depending on cursor focus.
Arrows	Change focus to next item; select previous stream.
Prev	Go to previous page.
Next	Go to next page.
RW	VOD content only: Rewind the current stream.
Play/Pause	Play/Pause the selected stream
FF	VOD content only: fast forward the current stream
Help	Press repeatedly during power-up to display setup pages.
Full Screen	Go to fullscreen; exit fullscreen.
Rec	Portal Server mode only.
Stop	Portal Server mode only.
Search	Portal Server mode only.
Live	Portal Server mode only.
VOD	Portal Server mode only.
Sched	Portal Server mode only.
Mark	Portal Server mode only.



# Using the Remote Control (VEMS 6.x)

## Portal Server Mode

Button	Function
Info	Portal Server mode only. Displays information about the currently selected stream. Press Info to again to exit.
Red	Press once to put the unit in standby (the screen will be blank but the unit can still be scheduled to play streams). Press a second time to reboot the unit.
Mute	Mute/unmute volume. Use the volume controls on the display device to set volume.
Caption	Show or hide closed captions. Not supported on all TVs.
0-9	Portal Server mode. Enter a PIN, or enter a search string using the number keypad for text entry.  You may also enter a channel number directly to switch the channel (live channels only). See: Using the Remote Control to Change the Channel.
Enter	Press when input complete.
Clear	Deletes the previous digit or character when entering search parameters or a PIN.
Page	Move to top, bottom, next, or previous page.
Menu	Toggle the Menu on or off.
Back	Not active.
Vol	Adjust the audio up or down.
CH	Advance channel up or down. Works only on Full Screen Live Video page.
OK	Select and play the highlighted channel. Initiate an action or select an option depending on cursor focus.
Arrows	Change focus to next item; select previous stream.
Prev	Not active.
Next	Not active.
RW	VOD content only: Rewind the current stream.
Play/Pause	Play/Pause the selected stream
FF	VOD content only: fast forward the current stream
Help	Press repeatedly during power-up to display setup pages.
Full Screen	Go to fullscreen; exit fullscreen.
Rec	Starts or stops a recording. During recording, a red indicator is shown in lower right area of window.
Stop	If playing an RTSP stream, this button will stop the stream.
Search	Display the search window. Press Search again to exit window.
Live	Go to Live Video page.



Button	Function
VOD	Go to Stored Video page.
Sched	Not active.
Mark	Not active.

## Local Mode

Button	Function
Info	Portal Server mode only.
Red	Use to power the device on/off. Same as reset.
Mute	Mute/unmute volume. Use the volume controls on the display device to set volume.
Caption	Show or hide closed captions. Not supported on all TVs.
0–9	Portal Server mode. Enter a PIN, or enter a search string using the number keypad for text entry.
Enter	Press when input complete.
Clear	Deletes the previous digit or character when entering search parameters or a PIN.
Page	Move to top, bottom, next, or previous page.
Menu	Portal Server mode only.
Back	Return to previous screen.
Vol	Adjust the audio up or down.
CH	Advance channel up or down.
OK	Select and play the highlighted channel. Initiate an action or select an option depending on cursor focus.
Arrows	Change focus to next item; select previous stream.
Prev	Go to previous page.
Next	Go to next page.
RW	VOD content only: Rewind the current stream.
Play/Pause	Play/Pause the selected stream
FF	VOD content only: fast forward the current stream
Help	Press repeatedly during power-up to display setup pages.
Full Screen	Go to fullscreen; exit fullscreen.
Rec	Portal Server mode only.
Stop	Portal Server mode only.
Search	Portal Server mode only.
Live	Portal Server mode only.
VOD	Portal Server mode only.
Sched	Portal Server mode only.
Mark	Portal Server mode only.



## Using the Remote Control to Change the Channel

With VEMS 6.x, you may also use the remote control to change the channel for live content

that is associated to a channel. The following is specifically supported:

- Live content
- Server mode (only)
- Guide mode and full screen mode

Live content channels will be listed in the guide by channel number and then in alphabetical order; the channel number will be displayed instead of the fixed live content icon. This is seen in the image below.



When a channel on the remote control is pressed, the following may occur:

1. The STB will wait two seconds and then switch to the channel entered. The channel number is displayed in the lower left portion of the screen or in the center of the screen if in full screen mode, seen below).



- 
2. If another number is entered during the wait period, the STB will combine the two numbers and display the new channel number. The wait period restarts.
  3. If a non-number key is pressed, the STB assumes the channel switch is canceled.
  4. If the channel is not found, a “Channel Not Found” message is displayed in the lower right portion of the screen (or the center of the screen if in full screen mode) and the STB does nothing further.



---

**Note** When in Search mode, the channel number entered must match the search criteria or a “Channel Not Found” message will display.

---

## Editing Config.txt

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### Overview

If for some reason you cannot directly access the Setup pages, you can use the `config.txt` file that resides on the set top box to set various configuration parameters. To do this you will need to login to the device, via Telnet for example, to get the file. Then make any changes and put the file back on the STB. Before you can do this you will need to setup an accessible FTP server. These steps are briefly outlined below.

▼ To modify the `config.txt` file:

1. Open a Telnet session, login to the STB, and put the file on your FTP server:

```
login: iptv
Password: settopbox
#
# cd data
# ftpput <local_pc_ip_address> -u anonymous -p password config.txt config.txt
```

2. The config file will typically be copied to `C:\Inetpub\ftproot\config.txt` (Alternately you can login and edit the file in place using `vi`.)
3. Modify the specific parameters as necessary and save the file.

4. When done open a Telnet session, login to the STB, and get the file from your local machine:

```
login: iptv
Password: settopbox
#
# cd data
# ftpget <local_pc_ip_address> -u anonymous -p password config.txt config.txt
```

5. When done reboot the STB to read the file.

### Setting Configuration Parameters

The following table shows the settings in `config.txt` you will likely need to modify. To avoid problems, enter your changes carefully and do not change anything else except as directed by Vbrick [Support Services](#).

**Table 11.** Notable Configurable Settings in `config.txt`

Setting	Description
Page Setting	<ul style="list-style-type: none"><li>• Use to set the Start Mode to VEMS Portal Server IP address.</li></ul>
Display Setting	<ul style="list-style-type: none"><li>• Use to match display area of output device.</li><li>• Use to enable or disable Close Captions.</li></ul>

Setting	Description
Video/Audio Output Setting	Use to set Saturation, HD Output, SD Output, Aspect Ratio, etc.
STB Web Service Setting	Used configure VEMS control of the STB.
STB SAP Setting	Used for Vbrick-specific options.
STB serpassthru Setting	Used to set Passthrough options.
Web Service Setting	Used to prevent http access to the Web Interface.
Certificate Setting	In Portal Server mode you will get a pop-up warning message if you are using SSL and there is no root certificate available. Set this parameter to zero (disable validation) to eliminate message.
Remote Controller Setting	In Portal Server mode, used to dictate specific settings on the remote control and how they behave when used.

## Config.txt File

`config.txt` is used to store much of the user configuration. You can edit this file to change a variety of settings. At the top of the `config.txt` file you will see a version as shown below:

```
# This can help you to identify different STB configuration files.
stb.config.version: v2.5.1-vbk
```

When upgrading between releases, new features are added and new settings will appear in this file. The version will also change. If you have made changes to the configuration, you will want to make sure that you have saved those changes. In order to take advantage of the newer `config.txt` file, you will want to merge your file into the new one. CAUTION: Performing a factory default will guarantee that you get the very latest `config.txt` file but will overwrite your changes. You should always have a copy of your `config.txt` saved elsewhere.

```
*****
#*                config.txt -- Configuration file for STB                *
*****

#-----
#-                config.txt version                                     -
#-----

# You may set "config.txt" version here and retrieve it by a JavaScript API.
# This can help you to identify different STB configuration files.
stb.config.version: v2.5.1-vbk

#-----
#-                Page Setting                                           -
#-----

# Portal page URL
browser.document.default: file:///root/titanium/demo_page/kumat/vbrick/home.htm

# Set Vbrick server portal page url
# Note: It is the reference value of portal type in booting setup page.
#     If setup this value manually, please modify browser.document.default to the
#     same URL.
```



```

stb.vbrick.server.url: http://MyVbrickServerHostname_OR_IPAddress

# Upgrade page URL
# Upgrade page with UI for display upgrade progress,information,etc...
# It can use at bootup and schedule upgrade
stb.url.fwupg: http://172.17.1.5/upg/upgrade/upgrade.html
#stb.url.fwupg=file:///root/titanium/demo_page/kumat/upgrade/upgrade.html
# Help page URL
stb.url.help:

#-----
#-                               Language Setting                               -
#-----

# Set language tag to use if neither the HTTP(S) server, document, or element
# attributes specify one. Language tags are explained in RFC-1766
# en - English
# ja - Japanese
# zh-tw - Chinese Traditional
# ru - Russian
document.language.default: en

# Secondary encoding, the number corresponding to the character encoding to use
# 4 - ISO-Latin-1
# 17 - Shift-JIS
# 18 - EUC-JP
# 39 - ISO-2022-JP
# 2026 - Big5
# 8 - ISO-Cyrillic
# 2084 - KOI8-R
# 2251 - Windows-1251
document.encoding.user: 4

#-----
#-                               Video/Audio Output Setting                               -
#-----

# HD/SD output format
# 1080p30, 720p, 720p50, 1080i, 1080i50, 576p, 480p, 576i/pal, 480i/ntsc - HD
# 576i/pal, 480i/ntsc - SD
stb.hd.outputformat: 720p
stb.sd.outputformat: ntsc

# HD/SD saturation from 0 to 100
stb.hd.saturation: 50
stb.sd.saturation: 50

# HD/SD contrast from 0 to 100
stb.hd.contrast: 50
stb.sd.contrast: 50

# HD/SD hue from 0 to 100
stb.hd.hue: 50
stb.sd.hue: 50

```

---

```

# HD/SD brightness from 0 to 100
stb.hd.brightness: 50
stb.sd.brightness: 50

# HD/SD aspect ratio
# 16:9
# 4:3
# Full_screen
stb.hd.ar: Full_screen
stb.sd.ar: Full_screen

# Set to 1 to enable component(D4) output display
stb.component.enable: 1

# Set to 1 to enable HDMI output display
stb.hdmi.enable: 1

# While HDMI is plugged, it will determine whether EDID preferred output format
# is used. When this option is set to "0", it will force output the format you
# set regardless of EDID data.
stb.hdmi.validate_edid_format: 1

# Set HDMI output mode
# pcm
# pass-through
stb.hdmi.audio.output: pass-through

# Set S/PDIF output mode
# auto
# pcm
# pass-through
stb.spdif.output: auto

# Setup the default behavior of the decoder health monitor
# The monitor will check the health of decoder(audio/video) status periodically.
# This setting will determine which source, audio and video, should be monitored.
# auto - decide by audio and video PID. If video PID is existed, monitor video
#       status. If audio PID is existed, monitor audio status.
# av - force to check both video and audio status periodically.
# a - force to check audio status periodically.
# v - force to check video status periodically.
# n - disable health check of decoder, both video and audio.
stb.stm.check_av: auto

# Set to 1 to enable HD and SD deinterlace
stb.stm.deinterlace: 0

# Enable/Disable chromakey color
stb.chromakey.enable: 1

# Set chromakey color
stb.chromakey: #010101

#-----
#-                                     Display Setting                                     -

```

```
#-----  
  
# Adjust display region  
# 1920,1280,720,640 - width  
# 1080,720,480,576 - height  
stb.ui.width: 1280  
stb.ui.height: 720  
  
# The set of pages always displayed in a single redraw ("one-shot rendering")  
# rather than progressively as data is retrieved.  
# 0 - disable one-shot rendering  
# 1 - enable one-shot rendering for URIs where no network access is required.  
# 2 - enable one-shot rendering for all URIs.  
browser.display.oneshot.mode: 0  
  
# For URIs configured to display using one-shot rendering, the time (centiseconds)  
# after which one-shot rendering is cancelled and the page is rendered as data is  
# retrieved.  
browser.display.oneshot.timeout: 200  
  
# Default background color of browser, format is BGRA  
browser.colour.back: dddddd00  
  
# The opacity (0-255) of the highlight shown when an element has focus. The  
# highlight colour is determined by the -ant-highlight-color CSS property.  
browser.highlight.opacity: 255  
  
# The thickness of the highlight outline. If set to 0, the highlight is not  
# drawn as an outline, but instead fills the highlighted element's box.  
browser.highlight.thickness: 3  
  
# The minimum space(pixels) between a dialog box and the edge of the viewport.  
browser.dbox.margins: 80  
  
# Set to 1 to enable throbber  
controller.gif.throbber.enable: 1  
  
# Throbber type from 0 to 3  
controller.gif.throbber.index: 0  
  
# The minimum size, in pixels, for a font. Any request for a smaller font size  
# uses this size.  
font.min_char_size: 14  
  
# Set to 1 to enable Close Caption  
stb.closecaption.enable: 1  
  
#-----  
#-                               Remote Controller Setting                               -  
#-----  
  
# Set the remote controller device. Each one may support different IR protocol  
# and/or prefix code.  
# 0 - RCU with GI protocol  
# 1 - RCU with NEC protocol
```

---

```

# 2 - RCU with Philips RC-5 protocol
stb.remote: 1

# Set power key behavior on the remote control
# 0 - reboot immediately
# 1 - display countdown message on screen and mute AV after 3 secs/unmute AV
# immediately
# 2 - power saving/reboot
# 3 - mute/unmute AV immediately
stb.remote.power: 0

# Set to 1 to turn off front-panel LEDs (power and ether-link) while in standby
# mode
stb.remote.standby.ledoff: 0

# Set the second address code of remote controller. Default 0xffff means don't
# accept second address code
stb.remote.address2: 0xffff

# Set to 1 to enable second power key on remote controller unit
stb.remote.power2.enable: 0

# Set to 1 to enable key repeat
stb.remote.repeat.enable: 1

# Set the threshold for repeat clicking from 400~2000
# Unit: ms
stb.remote.repeat.threshold: 600

# Set the interval for repeat clicking from 400~2000
# Unit: ms
stb.remote.repeat.interval: 400

# Set the response time for tv channel switch from 500~2100
# Unit: ms
stb.switch.channel.response: 700

# Set IR blaster mode
# 0 - Disable IR blaster
# 1 - Enable IR blaster with forwarding IR input
# 2 - Enable IR blaster without forwarding IR input
stb.irblaster.mode: 0

# Set IR blaster forward protocol
# RC5 - forward Philips RC-5/RC-5 Extension protocol
stb.irblaster.forward.protocol:

#-----
#-                               Network Setting                               -
#-----

# Set to 1 to enable IPv6 DNS query
net.ipv6.enable: 0

#-----

```

```

#-                               UDP meaaage Setting                               -
#-----

#Set the port number that listening to UDP message
stb.udpmessage.port: 7121

#Set the group IP address that multicasting UDP message
stb.udpmessage.multicast.ip: 225.1.1.1

#-----
#-                               Decode Setting                               -
#-----

# For transport stream STB need to get stream information from PAT and PMT first,
# thus stream can be decoded correctly. If no PAT data is detected during a time
# interval of PAT timeout set by this, STB will result in failure on decoding
# stream.
# Unit: ms
stb.stm.pattimeout: 600

# For transport stream STB need to get stream information from PAT and PMT first,
# thus stream can be decoded correctly. If no PMT data is detected during a time
# interval of PMT timeout set by this, STB will result in failure on decoding
# stream.
# Unit: ms
stb.stm.pmttimeout: 600

#-----
#-                               Schedule Upgrade Setting                       -
#-----

# Schedule upgrade quick check URL.
# It's a hidden and simple page that for quick check if upgrade is necessary or
# not. STB connect to this URL when current time is stb.schedule.upgrade.time.
# This page MUST as simple as it can for reduce STB loading and speed check time.
stb.schedule.upgrade.quickcheck.url:

# Schedule upgrade check time
# Schedule upgrade procedure starts when current time is this value.
# The format is hh:mm and 24 hour clock
stb.schedule.upgrade.time:

#-----
#-                               PVR, Time-shift Setting                       -
#-----

# Set the mount point's path of storage's partition for PVR function.
# Recording file will be saved to stb.pvr.realpath .
# /mnt/usb/usbXX - For usb flash stick, usb hard disk.
# /mnt/hd/hddXX - For SATA hard disk.
stb.pvr.realpath: /mnt/usb/usb11

# Set the windows interval of time-shift mode. Valid from 10(MIN) to 180(MIN)
# For every 10 minutes, the disk usage is around 2.2G Bytes
stb.timeshift.windowospace: 30

```

```

#-----
#-                               Download Manager Setting                               -
#-----

# Set the mount point's path of storage's partition for Download and Play function.
# Downloaded file will be saved to stb.downloadmgr.realpath.
# /mnt/usb/usbXX - For usb flash stick, usb hard disk.
# /mnt/hd/hddXX - For SATA hard disk.
stb.downloadmgr.realpath: /mnt/usb/usb11

#-----
#-                               ezController Setting                               -
#-----

# Set the ezcontroller multicast remote control enable.
stb.ezcontroller.multicast.enable: 1

# Set the IP address of ezcontroller multicast remote control
stb.ezcontroller.multicast.addr: 224.1.1.1

# Set the first port of ezcontroller multicast remote control.ezController
multicast
# remote control need 4 ports.If set 9091 as a first port, 9092, 9093, 9094 will be
# used for multicast remote control.
stb.ezcontroller.multicast.port: 9091

# Set the ezcontroller unicast remote control enable.
stb.ezcontroller.unicast.enable: 1

# Set the port of ezcontroller unicast remote control
stb.ezcontroller.unicast.port: 9095

# Set the upgrading progress page URL of ezController
stb.ezcontroller.url.fwupg: file:///root/titanium/demo_page/kumat/upgrade/
upgrade_progress.html

#-----
#-                               SAP Setting                               -
#-----

# Set to 1 to enable SAP transmit
stb.sap.transmit.enable: 1

# Set the unit number of STB SAP from 0~2147483647
stb.sap.unitnumber: 1

# Set the timeout of SAP from 1~3153600
# Unit: sec
stb.sap.packet.timeout: 90

# Set the retransmit time of SAP from 1~3153600
# Unit: sec
stb.sap.packet.retransmittime: 10

```

```
# Set the TTL of SAP
stb.sap.packet.ttl: 32

# Set the ToS of SAP
stb.sap.packet.tos: 0

# Set the address of SAP
stb.sap.packet.addr: 224.2.133.134

# Set the port of SAP
stb.sap.packet.port: 9876

# Set the host name of SAP
stb.sap.hostname:

# Set the group name of SAP
stb.sap.groupname:

#-----
#-                               Web Service Setting                               -
#-----

# Set 1 to enable stb web service
stb.webservice.enable: 1

# Set the port of STB Web Server
stb.webservice.httpd.port: 80

# The max session number that are allowed to login to stb web service
# Valid value is 1~32
stb.webservice.login.maxsessionnumber: 1

# The auto-logout time of stb web service
# Valid value is 10~86400 (in seconds)
stb.webservice.login.autologouttime: 20

# Set 0 to disable stb web server
stb.webserver.enable: 1

#-----
#-                               Serial pass-through Setting                               -
#-----

# Set to 1 to enable serial pass-through transmit
stb.serpassthru.enable: 0

# Set the baudrate of serial pass-through
# 110, 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200
stb.serpassthru.serial.baudrate: 9600

# Set the stop bits of serial pass-through
# 1, 2
stb.serpassthru.serial.stopbits: 1

# Set the parity of serial pass-through
```

---

```

# 0 - NONE
# 1 - EVEN
# 2 - ODD
stb.serpassthru.serial.parity: 0

# Set the DTR control of serial pass-through
# 0 - FORCE-OFF
# 1 - FORCE-ON
# 2 - AUTOMATIC
stb.serpassthru.serial.dtrcontrol: 1

# Set the RTS control of serial pass-through
# 0 - FORCE-OFF
# 1 - FORCE-ON
# 2 - AUTOMATIC
stb.serpassthru.serial.rtscontrol: 1

# Set the protocol port of serial pass-through
stb.serpassthru.protocol.port: 4439

#-----
#-                                     -
#-                                     -
#-----

# The template string to use for the HTTP header User-Agent, included as part of
# every HTTP or HTTPS request. To form the value sent with the request, %p is
# replaced with the program name, %v with the program version, and %o with the
# operating system name.
browser.header.useragent: Mozilla/5.0 (compatible; ANT%p/%v; %o Pisces/00)

# Set true or false to turn on
# When set to true, the browser will not allow a self redirection.
object.loop.detection.enabled: false

#-----
#-                                     -
#-                                     -
#-----

# The ident of the file path in which to store error page
transports.err.path:about:/

# Set to 1 to enable retry at error page
transports.err.retry.enabled: 0

# Set the interval of retry
# Unit: ms
transports.err.retry.interval: 0

# Set different mode of error page
# 1 - The location information is hidden.
# 2 - The location information is visible and un-controlable
# 3 - The location information is visible and controlable (Retry must disable)
transports.err.location.mode: 3

#-----

```



```

#-                               Control Setting                               -
#-----

# Set to 1 to disable watch dog
stb.wdt.disable: 0

# Set the timeout of watch dog, min: 60, max: 159
stb.wdt.timeout: 60

# Set to 1 to enable remote management function
stb.remotemgmt.gotourl.enable: 1

# Set to 1 to enable IR key simulation
stb.remotemgmt.irsim.enable: 1

# Set to 1 to enable debug message
browser.ecmascript.errors.alert: 0

# For how long script may run before the end user is given the option to terminate
it.
# Unit: secs
browser.ecmascript.watchdog.timeout: 120

# displayed syslog level. syslog level under or equal to this value will be shown.
# Current 8 levels and their meaning are provided:
# 0 - LOG_EMERG      - system is unusable
# 1 - LOG_ALERT      - action must be taken immediately
# 2 - LOG_CRIT       - critical conditions
# 3 - LOG_ERR        - error conditions
# 4 - LOG_WARNING    - warning conditions
# 5 - LOG_NOTICE     - normal but significant condition
# 6 - LOG_INFO       - informational
# 7 - LOG_DEBUG      - debug-level messages
stb.log.syslog.level: 5

#-----
#-                               Certificate Setting                               -
#-----

# Set to 1 to enable certificate validation
# 1 - Use 1 (recommended) to validate an HTTPS server's X.509 certificate.
# 0 - Use 0 (not recommended) to disable validation.
transports.ssl.certs.verify: 1

#####CUT LINE#####
#####Do not modify anything after this line#####
#####

#-----
#-                               Other Setting                               -
#-----

browser.ecmascript.extensions.enable: 1
browser.ecmascript.extensions.data: 1

dom.compatibility.document.all: 1

```

---

```
transports.cookie.uptodate: 1
transports.files.cookie: /root/data/cookies.txt

webimage.animation.buffer.size: 1500000

window.overflow.ignore.negative: 1
window.caret.block: 0
window.caret.colour: 00000000

object.cache.ram.size: 4196
```