Avid5 Installation and Configuration

The installation and configuration of a fully working Avid5 Media PC contains a number of steps which are largely manual. This is because it makes use of several separate components, which must all be installed and configured.

# Hardware Requirements

There are two mandatory major hardware components (in addition to appropriate speakers and a screen).

* A Yamaha AV dual-zone Receiver. Yamaha is the only manufacturer supported.
* A Media PC running either Windows (10 or 11) or a Linux distribution with KDE.

Avid5 also needs or can use some additional devices.

### Digital TV Tuner

In Windows this can be a BDA tuner card. Otherwise, for either Windows or Linux, it can be an external networked TV tuner of which the most common example is the SiliconDust HDHomeRun (<https://www.silicondust.com/>)

### USB CEC Adapter

To turn the TV screen on and off (specifically off), the best solution found has been HDMI-CEC. The HDML-CEC codes are sent by an external [Pulse-Eight USB-CEC adapter](https://www.pulse-eight.com/p/104/usb-hdmi-cec-adapter).

Note that the HDMI cable from the Pulse-Eight USB-CEC adapter is plugged directly into the TV and not via the AV receiver, to avoid conflicting handling of HDMI-CEC messages.

Turning on can often be achieved with Wake-on-Lan, but turning off requires either CEC or access to proprietary network protocols which are often encrypted and so restricted to the manufacturer’s remote app.

### Roku Streaming Box

Avid5 can view content from and control a Roku box plugged in to the Yamaha AVR.

### Chromecast

Avid5 can view content from a Chromecast device plugged in to the Yamaha AVR.

# OS Requirements

A separate document describes the necessary steps for configuring Linux – specifically on Kubuntu.

There are some non-default requirements for configuring Windows OS. In particular it requires Internet Information Services (IIS) for external access (on port 84) to the Avid web application (built on port 5000) as a reverse proxy.

# Installing and Configuring J River Media Center (JRMC) Application

J River Media Center is a very flexible and powerful media player and viewer and is used in Avid5 for playing all stored music and video, for viewing photos and for watching and recording TV. As the catalogue structure presented in Avid is much more constrained than the extreme flexibility offered by JRMC, there are several constraints on how JRMC libraries should be organized.

The first constraint is in the on-disk storage of music. Any albums which should primarily found by “Composer” rather than by “Artist” should be stored within a folder named “Classical”. Other music (to be found by Artist) can be stored outside a folder named Classical. All these folders (e.g. “Classical”, “Music” and “Photos”) should normally be set up as configured “Auto-import” paths within JRMC. Only Audio and Image folders need be imported – video files are accessed via file-system folders

As the Avid views are primarily “album focussed”, all tracks on any albums with multiple artists should be tagged with an “Album artist” value, which may be (e.g.) “Various” or may be the name of the main artist(s) on the album as appropriate.

There should be JRMC “Artist”, “Album” and “Composer” views. These will not be used directly by Avid but should be used to check the quality and “navigability” of the catalogue by those tags, and to (e.g.) add necessary “Album artist” tags and to rationalise different spellings of artists and composers. These views are also useful to present a similar structure if JRMC is used as a DLNA server as well as for Avid.

Playlists in JRMC are shown in Avid. These can be ordinary lists of tracks or smart lists. However, only those playlists under the “Avid” playlist folder will be displayed for playing.

For auto-importing folders of photographs, it can be useful to configure the “Photos” auto-import folder to add the setting to “Apply these tags:” with value “Album: FileFolder()”. This assigns the folder name as the album name for grouping of photographs, rather than the default “date taken”.

Two important JRMC options that must be set are:

* On “Startup”, to select “Run on Windows startup: Media Server”.
* On “Media Network” to enable “Use Media Network to share this library and enable DLNA”. The port number should be left at the default value of 52199.

TV should be configured for viewing and recording, selecting a few channels as favourites and hiding those not wanted.

# Avid5 Installation

The Avid5 installer simply copies all required files into a folder on the server. The parent path of the folder is not constrained, but within that parent path, the folder name should be “Updated.Avid5”.

A bash script (on Linux) or PowerShell script (on Windows) runs a loop, which looks for the existence of a non-empty Updated.Avid5 folder and safely moves it to the sibling folder “Avid5” from where it is run. So Avid5 can be updated while it is running, and when it exits, the next loop of the script will copy over the updated version and restart it.

The Avid5.Net executable is a .Net 6 DLL, run with using the “dotnet” command, with a configuration directory path as its sole parameter. By default, this folder is named “Avid5.Config” as a sibling folder to “Avid5”.

# Avid5 Configuration

The (required) parameter to the Avid5.Net executable is the path to a configuration directory. This directory must be writeable, as it will be updated with small amounts of saved and cached data.

Within the configuration directory are one or more XML files describing the configuration. It is necessary to edit these XML files with a text editor. However, the edits required are fairly simple.

The required XML file is named “Avid5Config.xml”

Example contents are:

<Config>

<Recordings>/hdd/TV Recordings</Recordings>

<OldRecordings>/hdd/Recorded TV</OldRecordings>

<!--DVD>/hdd/DVD</DVD--> <!-- DVDs don't work in JRMC on Linux -->

<Video>/hdd/Video</Video>

<ReceiverAddress>192.168.1.194</ReceiverAddress>

<RokuAddress>192.168.1.200</RokuAddress>

<TVAddress>192.168.1.192</TVAddress>

<TVMacAddress>B0:37:95:1C:28:7F</TVMacAddress>

<SpotifyMarket>GB</SpotifyMarket>

<SpotifyClientUrl>PATH TO SPOTIFY AUTHENTICATOR</SpotifyClientUrl>

<SpotifyClientId>CLIENT ID FOR SPOTIFY AUTHENTICATOR</SpotifyClientId>

<CECClientPath>/usr/bin/cec-client</CECClientPath>

</Config>

The named fields are:

* Recordings: path to the JRMC TV recordings folder
* OldRecordings: optional path to a folder containing DVBViewer TV recordings from Avid4
* DVD: optional path to a folder containing ripped DVDs (not Linux)
* Video: optional path to a folder containing other video content
* ReceiverAddress: IP address of the Yamaha AV receiver
* RokuAddress: optional IP address of a Roku streamer
* TVAddress: optional IP address of the TV screen
* TVMacAddress: optional MAC address of the TV screen
* SpotifyMarket: The geographical market for the Spotify account
* SpotifyClientUrl: The URL at which the Spotify authenticator is running (see below)
* SpotifyClientId: The Client ID for the app created with a Spotify developer account

A second optional file, named “Security.xml” configures a collection of TP Link networked lights and switches and manages a set of profiles, which give a schedule for when such devices should be on or off. And example file is given that should be enough to get working.

## Spotify

The Spotify API access within Avid5 requires authentication both of the Spotify user (who needs a paid account) and of the Avid5 software. Authenticating the software requires an authentication service to be running somewhere on the network. A suitable service can be found at <https://github.com/brianavid/Avid5.Auth>. This will be configured with the URL of the service and a Client ID (obtained from <https://developer.spotify.com/>)

It is currently unclear whether my own authentication service (and Client ID) is permitted for public use. So, for now each Avid5 deployment will need its own.

# Setting up Controller Clients

One or more touch devices, such as a smartphone or tablet, can then be set up.

For each device, in the browser open a page to the IP address and external port number (I use 84) – e.g. <http://192.168.1.64:84>. Or <http://Avid5:84>.

Once the page is opened, save it as a desktop shortcut, so that it can then be re-opened as a web application.