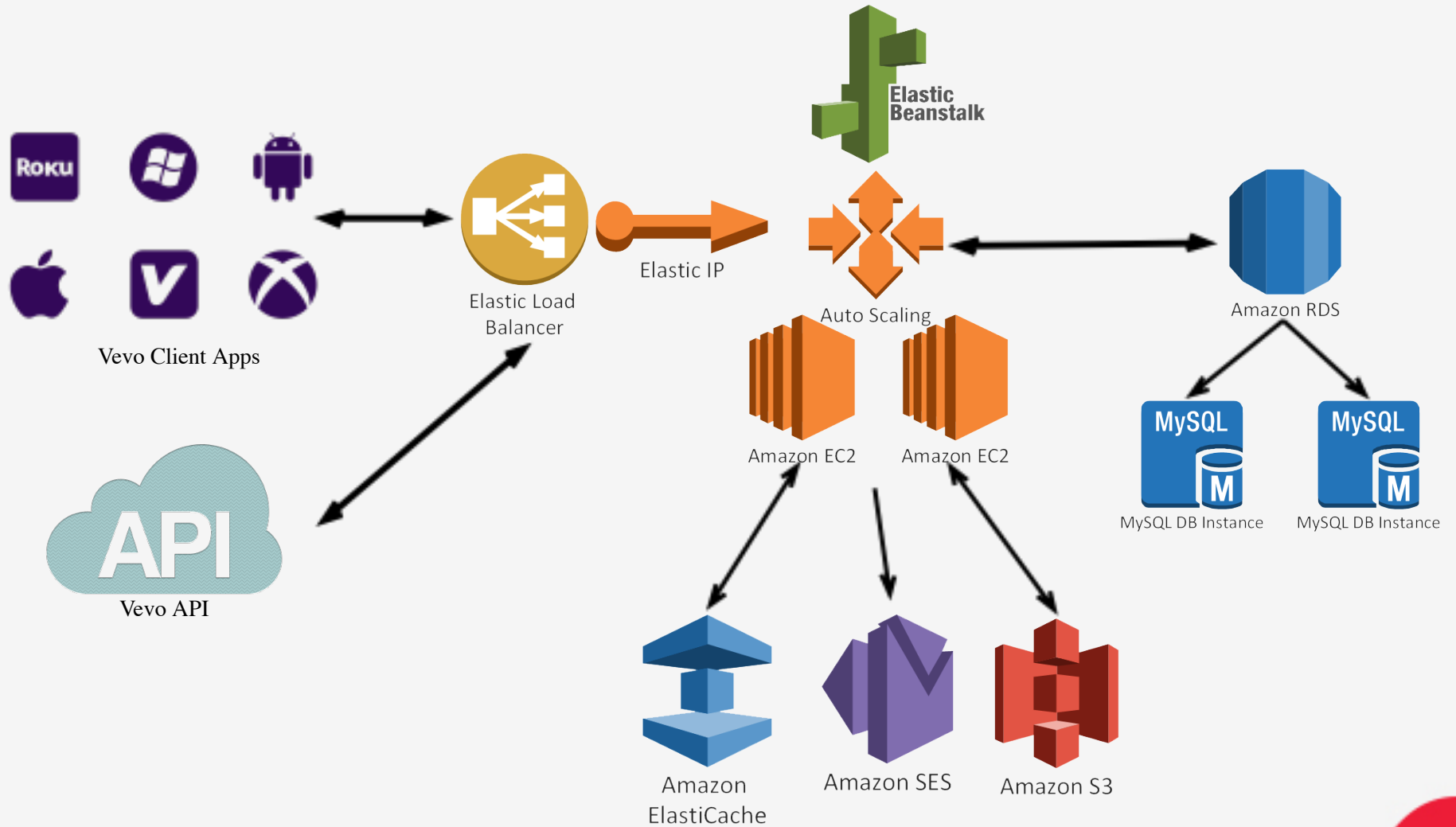


**vevo**

# CMS Technical Specs

## CMS Architecture Overview



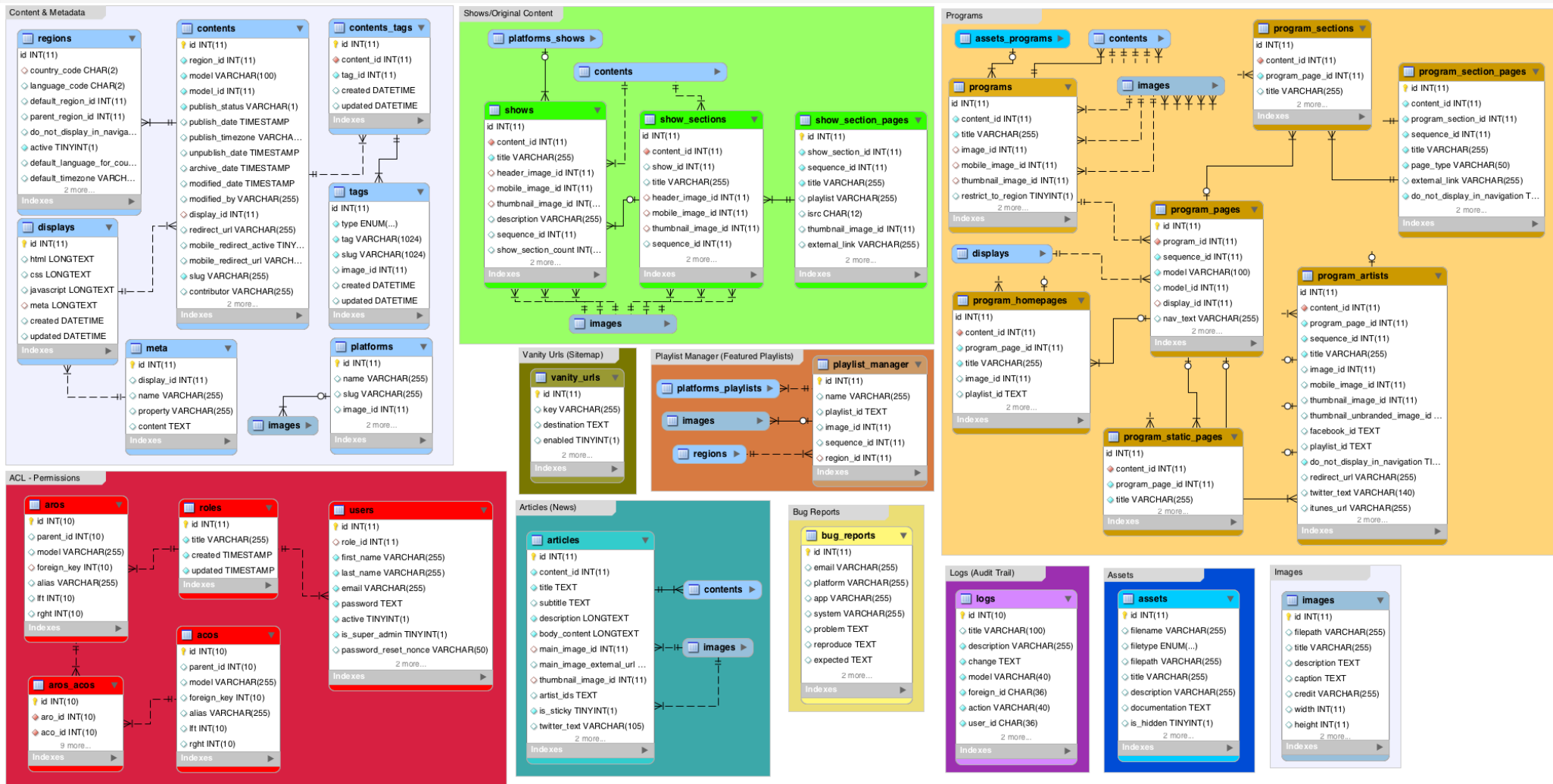
## CMS Architecture Components

- Elastic Load Balancing (<http://aws.amazon.com/elasticloadbalancing/>)
  - Elastic Load Balancing automatically distributes incoming application traffic across multiple Amazon EC2 instances in the cloud.
- Elastic Beanstalk (<http://aws.amazon.com/documentation/elastic-beanstalk/>)
  - Quickly deploy and manage apps in the AWS cloud without worrying about the infrastructure.
  - Automatically handles the details of capacity provisioning, load balancing, scaling, and application health monitoring.
- Apache HTTP 2.4.10 (<http://httpd.apache.org/>)
  - Open-source HTTP server, provides secure, efficient and extensible standard compliant server.
- PHP 5.5 (<http://php.net/>)
  - A popular general-purpose scripting language that is especially suited to web development.
- APC (<http://php.net/manual/en/book.apc.php>)
  - Alternative PHP Cache - a free and open opcode cache for PHP, optimizes PHP intermediate code.
  - Cached intermediate code allows for faster script load times.
- RDS/MySQL (<http://aws.amazon.com/rds/>)
  - Relational Database Service running MySQL, the world's most popular open source database.
- ElastiCache/Memcache (<http://aws.amazon.com/elasticache/>)
  - ElastiCache is a web service that makes it easy to deploy, operate, and scale an in-memory cache in the cloud.
  - Memcached is a widely adopted memory object caching system.

## Code Overview

- CakePHP v2.6.1 (<http://cakephp.org/>)
  - Designed to make common web-development tasks simple, and easy by providing an all-in-one toolbox to get you started.
  - **Integrated CRUD/ORM** tools for easy data management within the application.
  - **Model-View-Controller** (MVC) architecture separates concerns to allow for a cleaner codebase.
  - **Forms & Form Validation** tools provide easy ways to create, display and validate forms.
  - Tools for managing **Email, Cookies, Security/Auth, Sessions, Requests and Routing**
  - **Access Control Lists** (ACL) allow fine-grained control over who has access to what tools.
  - **Data sanitization** prevents malicious user-inputted data from harming the system.
  - **Caching engine** allows for multiple caching strategies for data anywhere in the app.
  - **Localization** tools allow for translations of application strings on the fly.
  - **Request dispatcher** with custom routing gives us control over the formatting of URLs.
- User Sessions
  - Sessions are handled by CakePHP using a secure cookie to hold an encrypted session ID. Session data is stored in Elasticache/Memcache via Cake's caching engine. Sessions are valid for one hour.

# Database Entity-Relationship Diagram



## Database Tables Overview

- **Content & Metadata**

- Contains tables used by multiple models.
- Contents stores metadata for a number of areas of the site, including Articles, Programs, and Shows.

- **ACL (Permissions)**

- Users tracks the login and profile data for CMS users.
- Roles allow a high-level/generic control over access to parts of the CMS.
- Access Request Object (AROs) – entities requesting access to tools in the CMS (eg, users or roles).
- Access Control Object (ACOs) – entities specifying what is being accessed (eg, pages, tools, methods).

- **Shows/Original Content**

- Shows contain multiple Seasons (show\_sections) which in turn contain multiple Episodes (show\_section\_pages).
- Shows contain multiple Images and are filterable by Platform.

- **Programs**

- Not all connections are fully displayed in the EER diagram for Programs because there are a lot of relationships here.
- Programs contain one or more Pages, each containing a specific display paradigm.

## Database Tables Overview - 2

- **Vanity Urls**
  - Stores key-value pairs for the Vanity URL tool.
- **Playlist Manager**
  - Playlists managed by the Playlist Manager/Featured Playlists tool.
- **Articles (News)**
  - Contains custom fields used by News articles, such as `artist_ids` for artists related to the article.
- **Bug Reports**
  - Tracks submissions to the `/bug_report` form, which relays inputted data to the HipChat Bug Reports room.
- **Logs (Audit Trail)**
  - Table for the Change Logs tool.
  - Transactions in the CMS (create, edit, delete) are tracked here in an audit trail.
- **Images**
  - CMS Images are stored in S3. This table tracks their URLs for use elsewhere in the CMS where they can be referenced by the ID of this table.
- **Assets**
  - Non-image assets (eg, CSS, HTML, zip files, etc) can also be stored in S3 and linked to either directly or through reference to this table.



## CMS Controllers

- **API**

- Provides miscellaneous data endpoints, such as a list of the Platforms available in the CMS, a health check endpoint used by the load balancer to see if the server is operational, and a proxy to the Vevo API for CMS JavaScript files.

- **Archives**

- Provides tools for managing data that was marked as 'Archived' via the Contents table.

- **Articles**

- Tools for managing News articles.

- **Assets**

- Tools for managing non-image (HTML, CSS, Text, File) assets that are stored in S3.

- **Change Logs**

- Gives a readable table of recent changes to CMS content

- **Content API**

- Provides data endpoints (JSON) for Programs, Articles and Playlists.

- **Images**

- Tools for managing image assets that are stored in S3.

- **Login**

- Manages user logins, logouts, check ins, forgotten passwords, and changing passwords.
- Also contains code for the Bug Reports form (which doesn't require a login)

## CMS Controllers - 2

- **Now**
  - Management tools for Now Feed Posts which are stored in the API.
- **Platforms**
  - Management tools for Platforms/applications content is available on.
- **Playlist Manager**
  - Allows for custom lists of playlists by region and Platform.
- **Programs**
  - Allows for the creation of on-the-fly publishing and editing of new pages across Vevo platforms.
- **Program Artists**
  - A program page customized to allow for the detailed display of an individual artist.
  - Allows for a Program-wide Artist page template to control the output of all artist pages.
- **Program Homepages**
  - Controls the display of the default/index page of Programs.
- **Program Sections**
  - Provides a logical/URL separator for Program Pages (eg, /legal/**eula**).
- **Program Section Pages**
  - Similar to Program Static Pages but organized under a section (eg, /legal/eula/**general**)
- **Program Static Pages**
  - Single pages organized under the same Program

## CMS Controllers - 3

- **Regions**

- Language/Country tuples, allows for controlling what content (Programs, Shows, etc) are available in what regions.
- Multiple languages can be set for a country and a particular language/region can be set as the default.
- Regions can fall back on a 'parent' region, allowing us to display content that is relevant for the requested region (eg, Canada (en-CA) displays US (en-US) content by default).

- **Rough Cuts**

- Developed by Osvaldo Mendoza. Allows content programmers to upload video edits for preview by third-party partners for previewing and feedback.

- **Shows**

- Organizes Original Content ISRCs and Playlist IDs into Seasons and Episodes for consumption by apps and Platforms.

- **Show Sections**

- Show Seasons – allows for multiple seasons to be set up for better hierarchical display of show data.

- **Show Section Pages**

- Show Episodes – can refer to an individual ISRC or Playlist ID.

- **Sitemaps**

- Outputs a JSON formatted list of all published CMS routes.
- Used by Portal to correctly direct traffic to CMS hosted pages.
- Allows for on-the-fly publishing without need to release code for new routes.

## CMS Controllers - 4

- **Tags**

- Allows for adding metadata tags to various content.
- Ad tags are added for marking which ads should be displayed by Freewheel.
- Editorial and Hashtags are used for filtering content by the displayed tag.

- **Users**

- Tools for managing CMS Users and the Role that they have access to.
- Currently only supports one role per user.

- **Vanity Urls**

- Used by the Sitemap script to produce a list of key-value pairs for URL shortcuts.
- Allows for users to create marketing friendly links on the vevo.com domain that deep-link to content on the site or elsewhere.

## Other Libraries

- **AclManager** (<https://github.com/FMCorz/AclManager>)
  - Provides an interface for managing CakePHP's native ACL implementation.
- **AWS SDK** (<https://github.com/aws/aws-sdk-php>)
  - Provides tools for interacting with AWS servers and services (eg, saving files to S3).
- **Composer** (<https://getcomposer.org/>)
  - Dependency for PHP libraries. Updates and autoloads all of the libraries listed here.
- **DebugKit** ([https://github.com/cakephp/debug\\_kit](https://github.com/cakephp/debug_kit))
  - Profiling and logging tool used in local development for debugging, timing and logging.
- **Guzzle** (<https://github.com/guzzle/guzzle>)
  - HTTP client for making HTTP requests within the app (eg, calls to API).
- **Hipchat PHP**
  - Client library used to send Bug Reports form data to the HipChat Bug Reports room.
- **PHPUnit**
  - Unit Testing framework that is integrated with CakePHP.
- **Tools** (<https://github.com/dereuromark/cakephp-tools>)
  - Logable Behavior is used for creating Change Logs.

## Front End Assets/Libraries

- **CSS**

- Bootstrap 3.1.1 (<http://getbootstrap.com/>)
- Font Awesome 4.0.3 (<http://fontawesome.github.io/Font-Awesome/>)
- SB Admin 2 Theme (<http://startbootstrap.com/template-overviews/sb-admin-2/>)

- **Javascript**

- CKEditor 4.4.5 (<http://ckeditor.com/>)
- Codemirror 3.1.4 (<https://codemirror.net/>)
- Image Picker (<https://github.com/rvera/image-picker>)
- imgareaselect (<https://github.com/odyniec/imgareaselect>)
- jQuery 1.11.1 (<http://jquery.com/>)
- jQuery UI 1.11.1 (<https://jqueryui.com/>)
- jquery-ui-timepicker-addon (<https://github.com/trentrichardson/jquery-Timepicker-Addon>)
- jQuery-cookie (<https://github.com/carhartl/jquery-cookie>)
- Moment (<http://momentjs.com/>)
- Plupload 2.1.2 (<http://www.plupload.com/>)
- Rrule (<https://github.com/jakubroztocil/rrule>)
- Select2 3.4.3 (<https://select2.github.io/>)
- Tagit (<https://github.com/hailwood/jQuery-Tagit>)