Solution overview

M4B WAVE2 Professional is a proprietary solution of M4B S.A. designed for servicing large companies and retail chains whose goals are to reach their customers and effectively provide them with advertising content via all kinds of digital media.

The ability to diversify content depending on the location and the management of multimedia content via network and Internet communication makes WAVE Professional a simple and functional marketing tool with high efficiency. It is used in such places as chains and shopping centers, gas stations and wherever there is a large number of recipients.

The undoubted advantage of the WAVE2 Professional software is the reporting module that allows generation and presentation of multimedia emission statistics, taking into account location, type of content, broadcast time and many other parameters. This allows gathering of reliable information that can be used to support calculation and evaluation of costs and effectiveness of marketing campaigns.
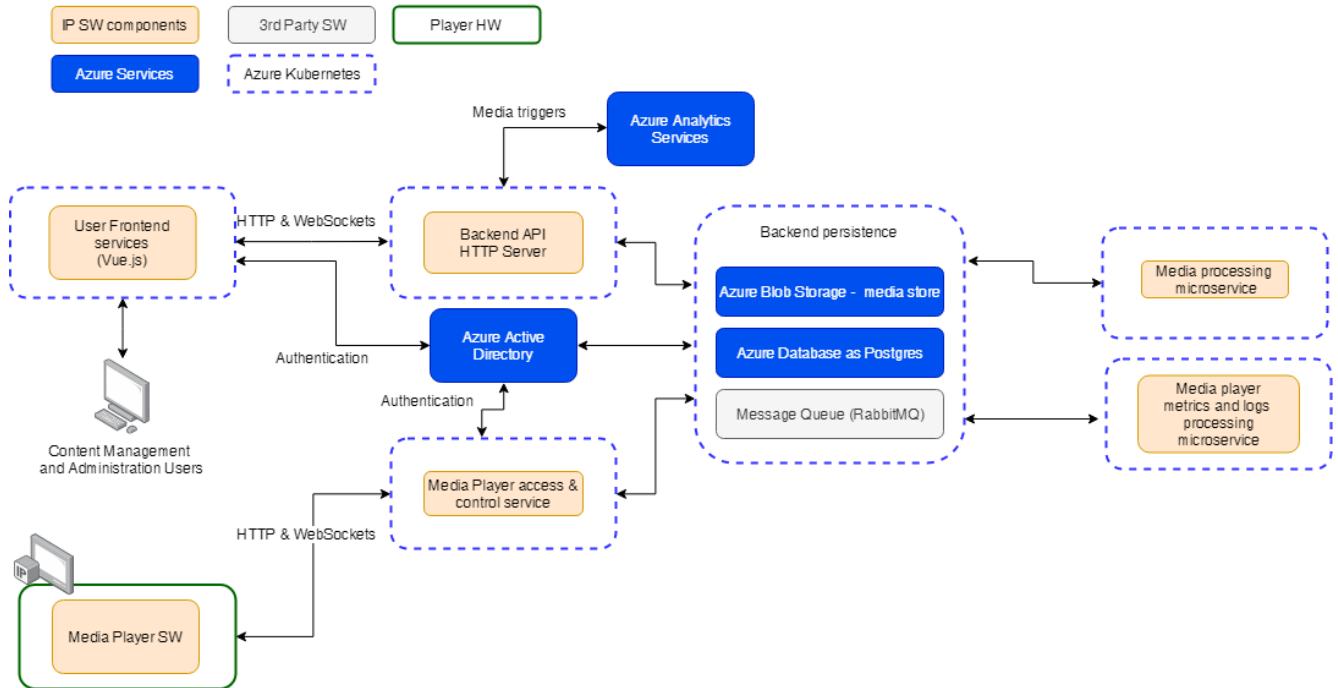
In addition, WAVE2 Professional has a module responsible for monitoring of availability and activity of monitors in the managed network. This allows for on-going acquisition of information about the service status and proactive response of service agents in case of any issue.

The WAVE2 Professional solution has an API interface that allows integration with external systems in the scope of triggering presentation of the indicated multimedia content depending on external conditions such as weather changes, external temperature, profile of people within the range of selected advertising media etc. Triggering is based on decisions made in the external decision module and passed through the API to WAVE2. This type of mechanism allows for effective response to external conditions, personalization of advertising messages and increase effectiveness of marketing campaigns and leverage sales in an ultimate way.

WAVE2 Professional

Digital signage player and content management system.

All backend service components are deployed using containers.

| IP SW components | 3rd Party SW | Player HW |
| Azure Services | Azure Kubernetes | |

Media triggers → Azure Analytics Services

User Frontend services (Vue.js)

HTTP & WebSockets

Backend API HTTP Server

Backend persistence

Azure Blob Storage - media store

Azure Database as Postgres

Message Queue (RabbitMQ)

Media processing microservice

Media player metrics and logs processing microservice

Azure Active Directory

Authentication

Authentication

Content Management and Administration Users

Media Player access & control service

HTTP & WebSockets

Media Player SW

M4B WAVE Professional architecture uses (supports) following Azure services:

- Azure Database as Postgres for database,
- Azure Blob Storage for media storage,
- Azure Active Directory for authentication,
- Azure Analytics Services for analyzing external conditions to trigger personalized media content,
- Azure Kubernetes Services for microservices deployment.

WAVE2 Professional's functionality includes:

- dynamic presentation of the product and service offer,
- creating your own advertising and information channels based on photos, videos, animations and text information,
- centralized and intuitive management of the digital media network and multimedia content,
- the possibility of granting rights depending on the role assigned,
- possibility of grouping equipment (buildings, towns, etc.),
- the ability to display different content in each group,

- the ability to define a display schedule divided into days of the week and hour,
- supporting PPT presentations,
- supporting PDF documents,
- the ability to display websites,
- Flash support,
- RSS feeds,
- supporting widgets,
- division of the screen into independent zones,
- the ability to change the layout / content over time,
- remote switching on / off of monitors,
- real-time monitoring of screens and playback of multimedia content,
- reports and view statistics,
- support for popular video, audio and photo formats,
- preview on the console of the presentation schedule for the next days,
- encryption of communication between the management system and carriers,
- integration of user account management with PAM / PIM systems, Active Directory,
- support for any number of locations,
- support for monitors of any resolutions in vertical and horizontal layout,
- handling of active content such as: weather, exchange rates, stock quotes, etc.
- ensuring the possibility of using QoS when transferring multimedia content to digital advertising media,
- Integration with external systems via API,
- remote management via web,
- GIU available in the following languages: Polish, English, Russian, Czech, German, Dutch.

Multimedia files and its metadata are stored in a central multimedia database in the WAVE2 Professional server environment divided into operational database and blob storage. Currently displayed content is stored on disks of local player devices (Players).

While using external data (such as external temperature, weather, websites, RSS feeds, media streams) external connection to the resources is required. Depending on the external data used, the connection may be required for both WAVE2 server (weather data, websites) and Players (weather data, RSS, streaming media, websites).

According to Customers' needs and requirements WAVE2 Professional platform is available in 3 different delivery models:

- **SaaS**: multitenant production instance encompassing all components of the architecture presented above and deloyed in Azure cloud and managed by M4B,
- **PaaS**: single-tenant instance encompassing selected components of the architecture presented above and deloyed in Azure cloud, dedicated for a particular Customer and fully managed by himself.
- **On-premise**: an instance deployed according to precise Customer's requirements on Customer's infrastructure and fully managed by the Customer.

WAVE2 Professional is ready to deploy in a fully automatic way. It takes only minutes to run a new instance in cloud and start its configuration and operation.