



Capacity Plan

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A. Purpose

This capacity plan provides an analysis and overview of existing MENU Platform services architecture and auto-scaling capabilities. The analysis and overview is based on trends of the existing support resources, current and expected SLA.

B. AWS Architecture Overview

MENU Platform is using [AWS \(Amazon Web Services\)](https://aws.amazon.com/) as the main Cloud Infrastructure services provider

AWS Global Cloud Infrastructure overview: <https://infrastructure.aws/>

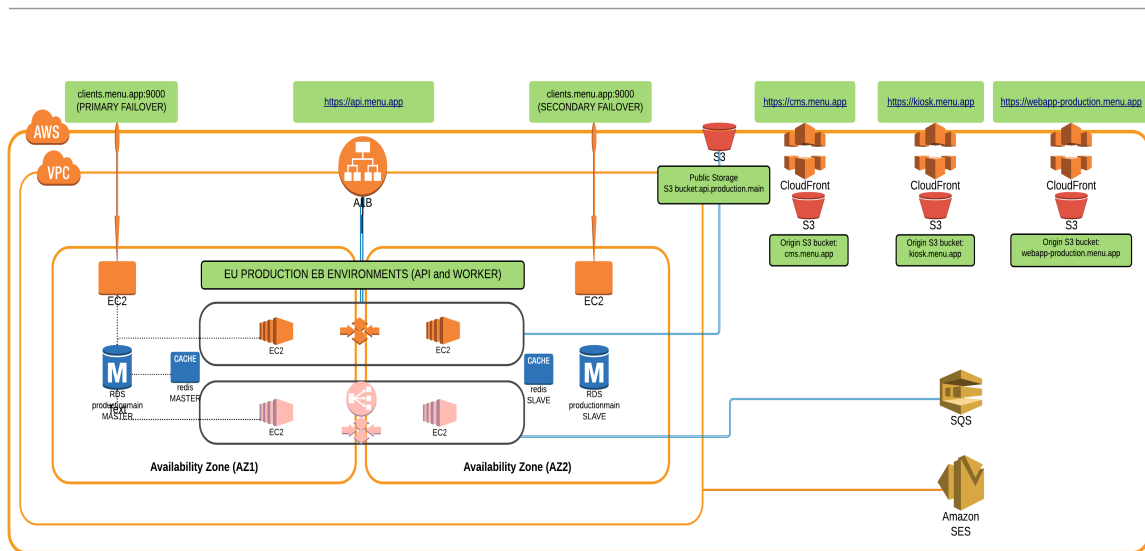
MENU Platforms Regions follow AWS Regions,

at the moment the active ones are: **EU(Frankfurt)**, **US(Virginia)**, and **LAC (Sao Paolo)** with Pilot Light recovery environment in EU2 (Ireland).

AWS Architecture Diagram EU (Frankfurt Region)

MENU(V3) - AWS EU PRODUCTION ARCHITECTURE (FRANKFURT)

Aleksandar Nenov | March 29, 2020



C. Capacity Analysis

1. MENU Frontend Endpoints

MENU CMS, Kiosk and Web App are using [AWS CloudFront Service](#) with private [S3 buckets](#) as origin for secure code storing and distribution.

Amazon CloudFront is a fast content delivery network (CDN) service that securely delivers data, videos, applications, and APIs to customers globally with low latency, high transfer speeds. CloudFront is integrated with AWS – both physical locations that are directly connected to the AWS global infrastructure, as well as other AWS services. CloudFront works seamlessly with services including AWS.

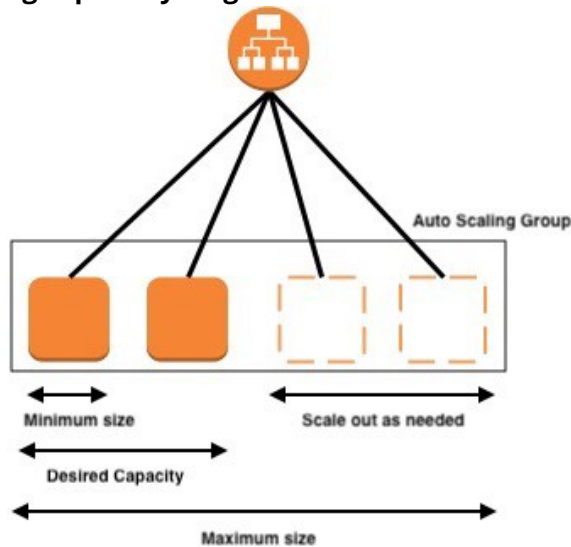
Capacity of MENU Frontend Endpoints is not limited.

2. MENU Backend Endpoints

MENU API is using the following AWS services:

- **Network:** [AWS VPC](#) (Virtual Private Cloud) – the Capacity is not limited
- **Compute:** [AWS Elastic Beanstalk](#) service with **predefined compute instances pool and auto-scaling**
 - **scale-out, and scale-in CPU usage based triggers and auto-recovery capabilities** all behind the [ALB \(Application Load Balancer\)](#)
 - Defined Capacity of ALB and Compute service is not hard limited, and can be increased on demand immediately if required, based on monitoring data and alerts (see below).

Auto-Scaling capability diagram



- **Database:** [AWS RDS MySQL](#) and [AWS ElastiCache](#) Services

- Capacity of RDS MySQL and ElastiCache Services is not hard limited, and can be increased on demand immediately if required, based on monitoring data and alerts (see below).
- **Message Queuing:** [AWS SQS](#) – the Capacity is not limited
- **SMTP:** [AWS SES](#)
 - Capacity of AWS SES is not hard limited, and can be increased on demand immediately if required, based on monitoring data and alerts (see below).

MENU Socket Servers are using [EC2 service](#) with auto-recovery capability and redundant dual AWS availability zones configuration, and with DNS auto-failover capability. Capacity of AWS EC2 is not hard limited, and can be increased on demand immediately if required, based on monitoring data and alerts (see below).

D. Monitoring Data & Alerts

1. Monitoring Data

[AWS CloudWatch](#) service is used to provides data and actionable insights to monitor the applications, respond to system-wide performance changes, optimize resource utilization, and get a unified view of operational health, to collects monitoring and operational data in the form of logs, metrics, and events, providing an unified view of AWS resources, applications, and services that run on AWS.

Metrics monitored :

- Elastic Beanstalk Compute : CPU/RAM/Network usage, Availability, and Instances Health
- Databases : CPU/RAM/Network usage/IOPS
- Caching : CPU/RAM/Network usage
- SMTP : Hard and Soft Bounces rates
- EC2 : CPU/RAM/Network usage, Availability, and Instances Health

2. Alerts

AWS CloudWatch detect anomalous behavior in the MENU Platform environments, visualize logs and metrics side by side, take automated actions, troubleshoot issues, and discover insights to keep the MENU Platform running smoothly, and [AWS SNS](#) (Simple Notifications Service) is used to send out **immediate Alert notifications by email and SMS** to the responsible AWS Infrastructure Manager, so any services capacity issue or any services health issue are handled immediately upon receipt.