

# Video Processing Server (Local Server)

We propose to use Red5 as video streaming server.

<http://red5.org/>



As streaming require high speed and stable bandwidth, Server is recommend to be installed in local intranet.

- High speed CPU on Windows base server.
- 64 bit OS
- 32G Ram at least
- Support 1000M network

Remark:

1. For security and support, please provide VPN server (e.g. Fortinet) and Firewall
2. UPS is required

# Administration Server (Cloud)

## AMAZON AWS (SINGAPORE)

We propose to use Amazon AWS EC2 + S3 + RDS MySQL Database

### ■ EC2 – For Web CMS & API & Websocket

- Suggest size: T2.Small (vcpu:2, cpu credit: 24 hour, memory: 4GB)

### ■ S3- For Data Storage

### ■ RDS MySQL – Single Instance, db.m3.large & **RDS Auto Backup Services**

### ■ Route 53 – DNS Services

Remark:

We need a Domain Name for WebCMS and API

We need SSL Certificate

(Same set of server for Mobile App Backend)

# Amazon AWS Setup Cost (Singapore)

## EC2 + S3 + RDS MySQL Database Combination

- > E2 – For Web CMS & API & Websocket
- > S3- For Data Storage
- > RDS MySQL – Single Instance, db.m3.large
- > Route 53 - DNS Service

### EC2 Estimate Yearly Cost

Suggest size: T2.Small (vcpu:2, cpu credit: 24 hour, memory: 4GB)

- Running Cost & Transfer Cost: USD\$1100 (Around HKD\$8,700)

### S3 Estimate Yearly Cost

- Storage Cost & Running Cost: USD\$100 (HKD\$800)

RDS MySQL Estimate Yearly Cost - Running Cost: USD\$2700 (Around HKD\$21,500)

### Route 53 – DNS Service Estimate Yearly Cost

- Running Cost: USD\$6 (Around HKD\$50)

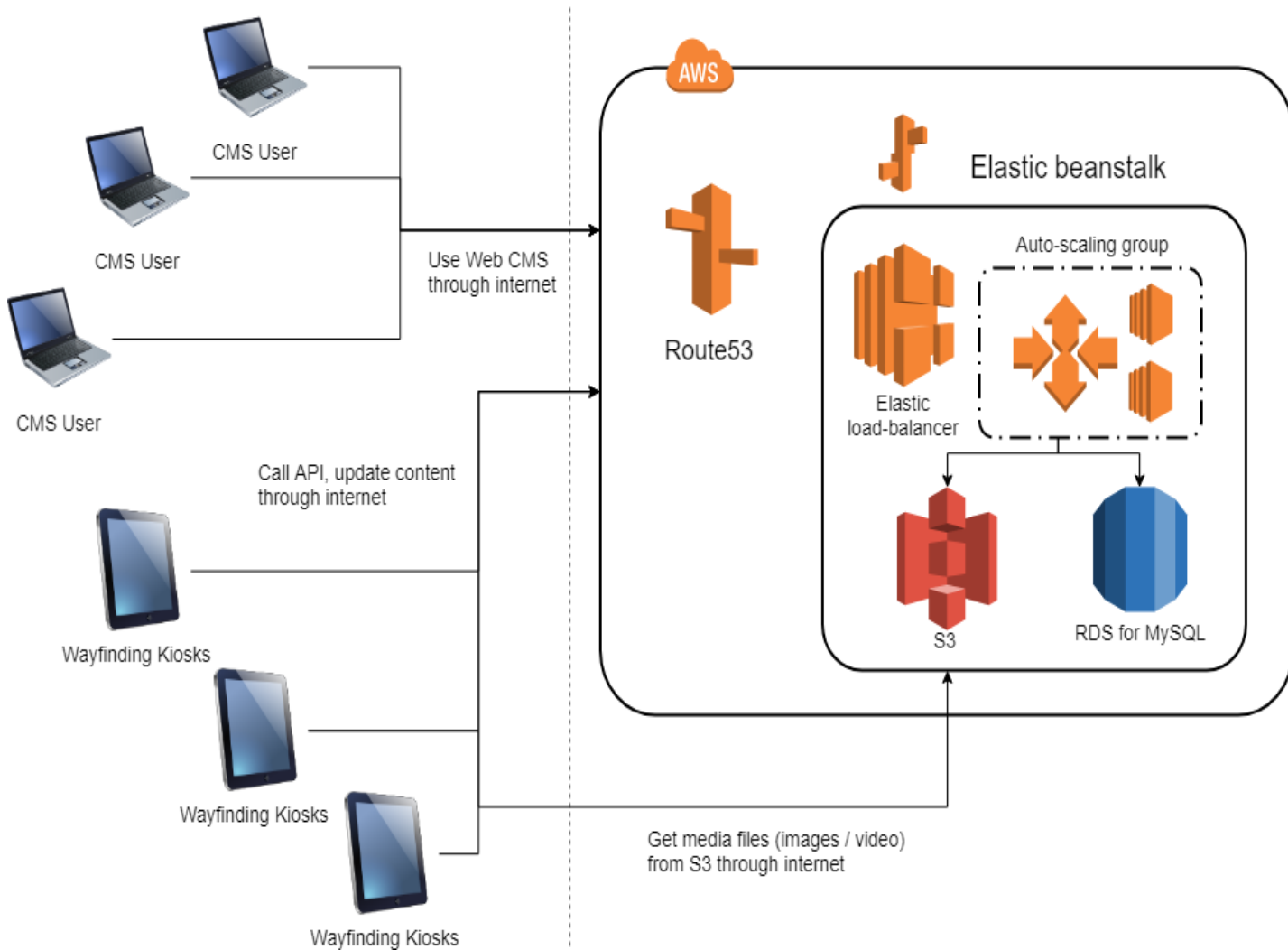
### RDS Auto Backup

Free of Charge for less than limitation

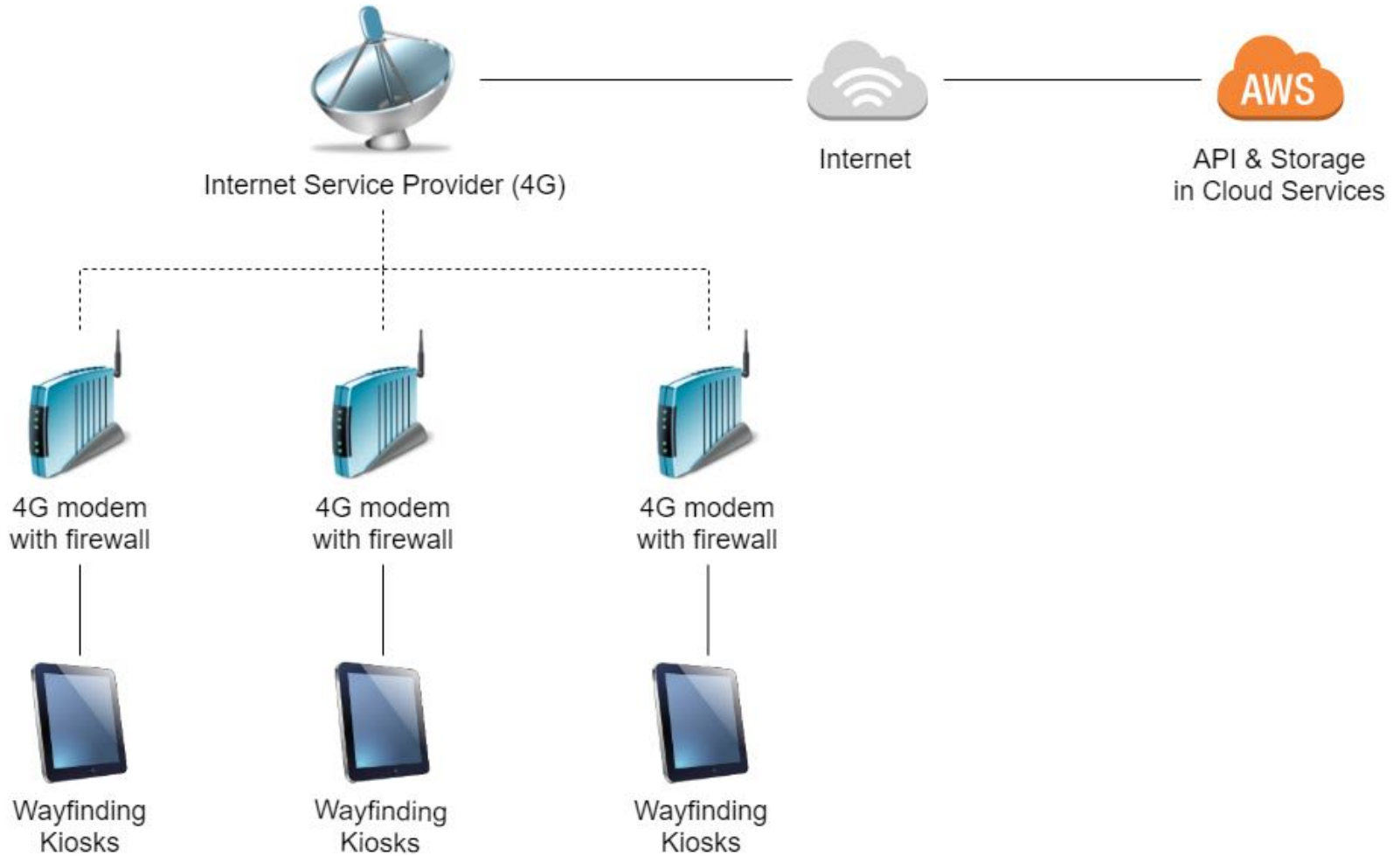
### Remark: Additional Cost:

- 1) We need a Domain Name for WebCMS and API
- 2) We need SSL Certificate

# AWS ARCHITECTURE



# SYSTEM ARCHITECTURE



# **INTERACTIVE WAYFINDING FRONTEND**

Interactive Wayfinding Frontend Software which built by our custom-made in-house Unity3D software

Benefit of using Unity3D to build a custom made frontend

- Most popular Game Engine with well developed libraries and supports
- Flexible to adapt various designs
- Fancy animation support
- Embed fonts
- Support 3D and support our 3D map Engine
- .NET compatible

## 2D to 3D MAP GENERATOR

Our Solution come with exclusive Map Generator Engine supports conversion of 2D map to 3D Floor Plan

### Benefits:

- Easy to build directional floor plan  
(3D floor plan allow rotate according to actual direction)
- Save cost for 3D rendering
- Quick and Easy to update map
- Vector object allow resizing without distortion

## 2D to 3D MAP GENERATOR





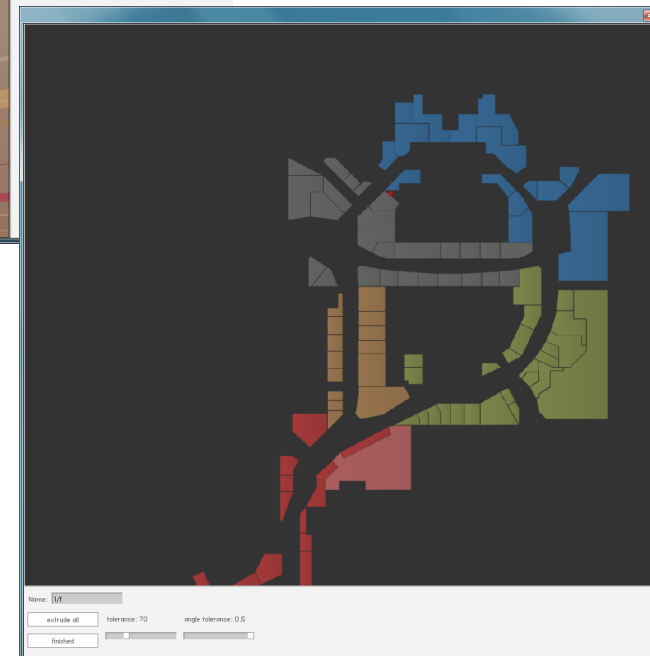
# WAYFINDING ROUTE GENERATOR

- An interface to draw the paths on the map
- Support multiple weights with different routes (by stairs, lift)
- Export data and import by CMS to update the route
- Could update map by update new map data to CMS, kiosks will download new map data when start up

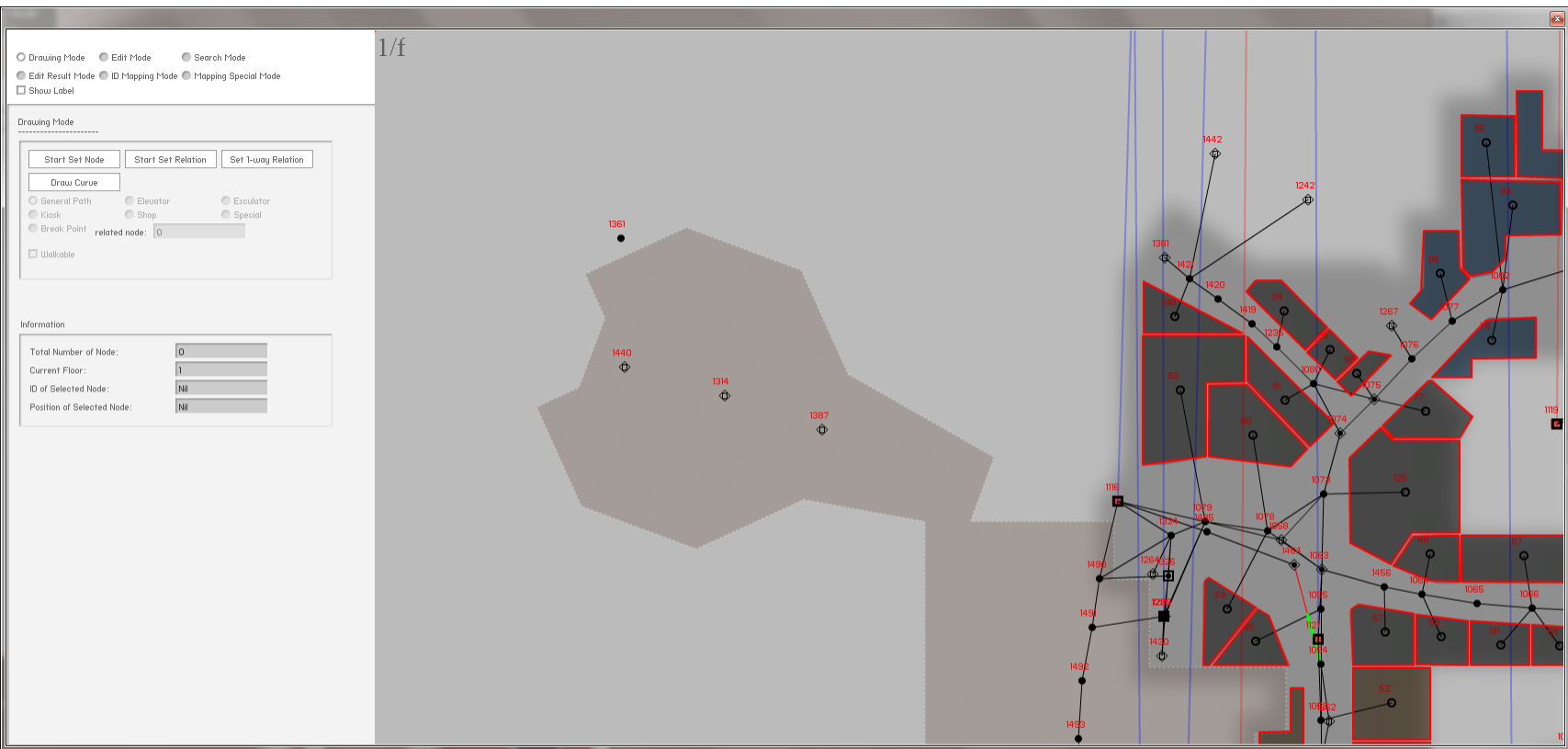
# WAYFINDING ROUTE GENERATOR



- Select Floor to Edit
- Add, Delete, Merge or Divide Shops



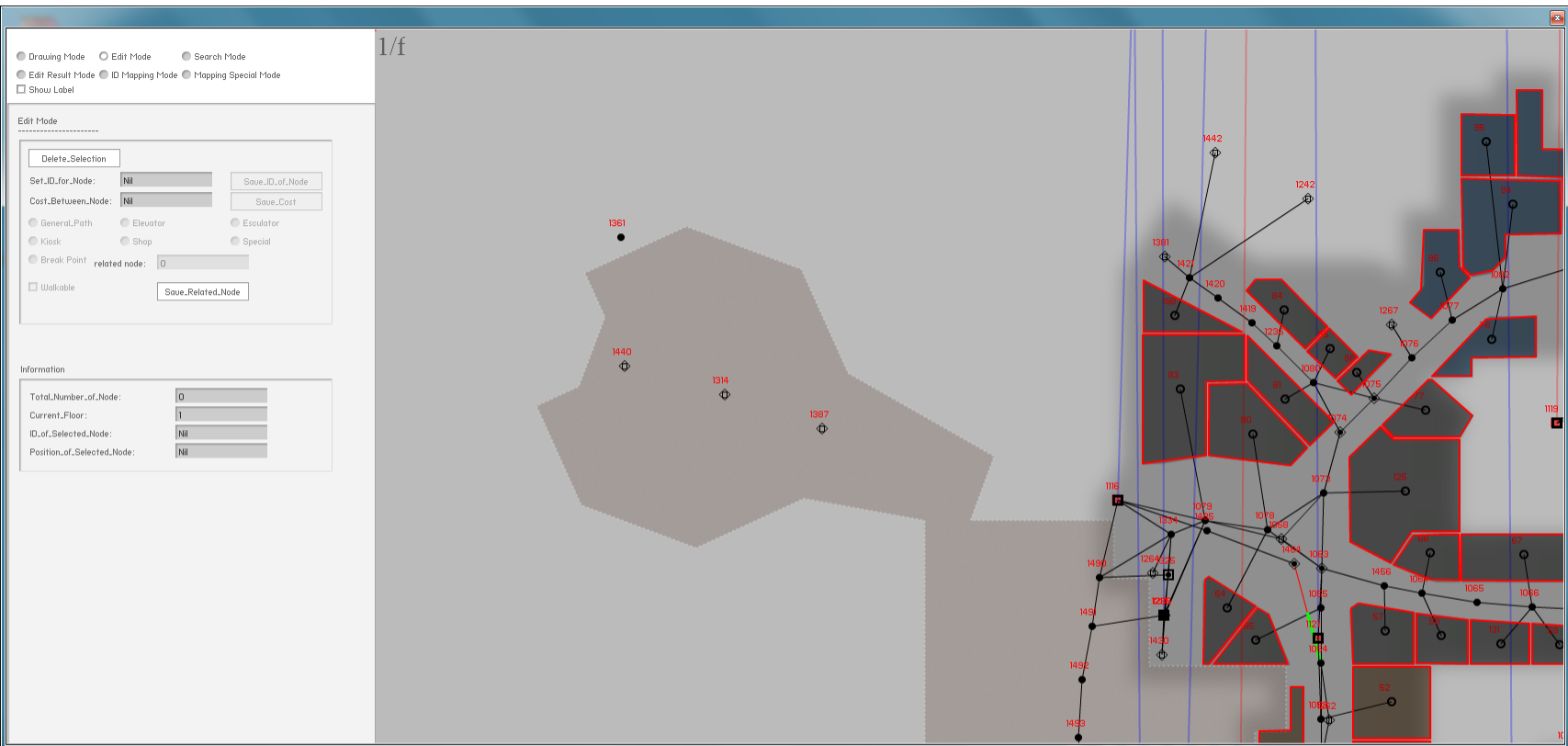
# WAYFINDING ROUTE GENERATOR



■ Create Nodes (Shop Node, Route Node or Key Node)

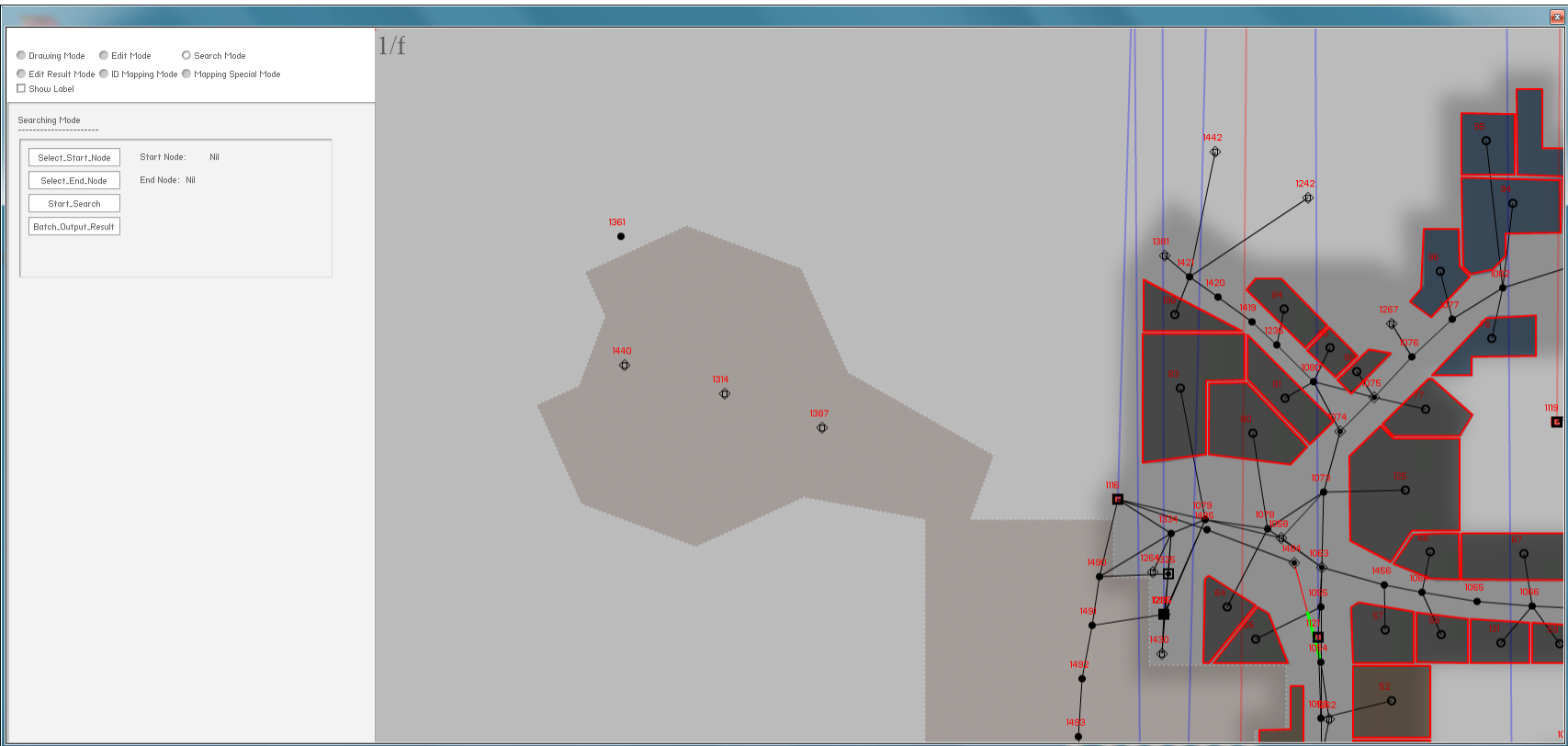
■ Create Relationship of nodes

# WAYFINDING ROUTE GENERATOR



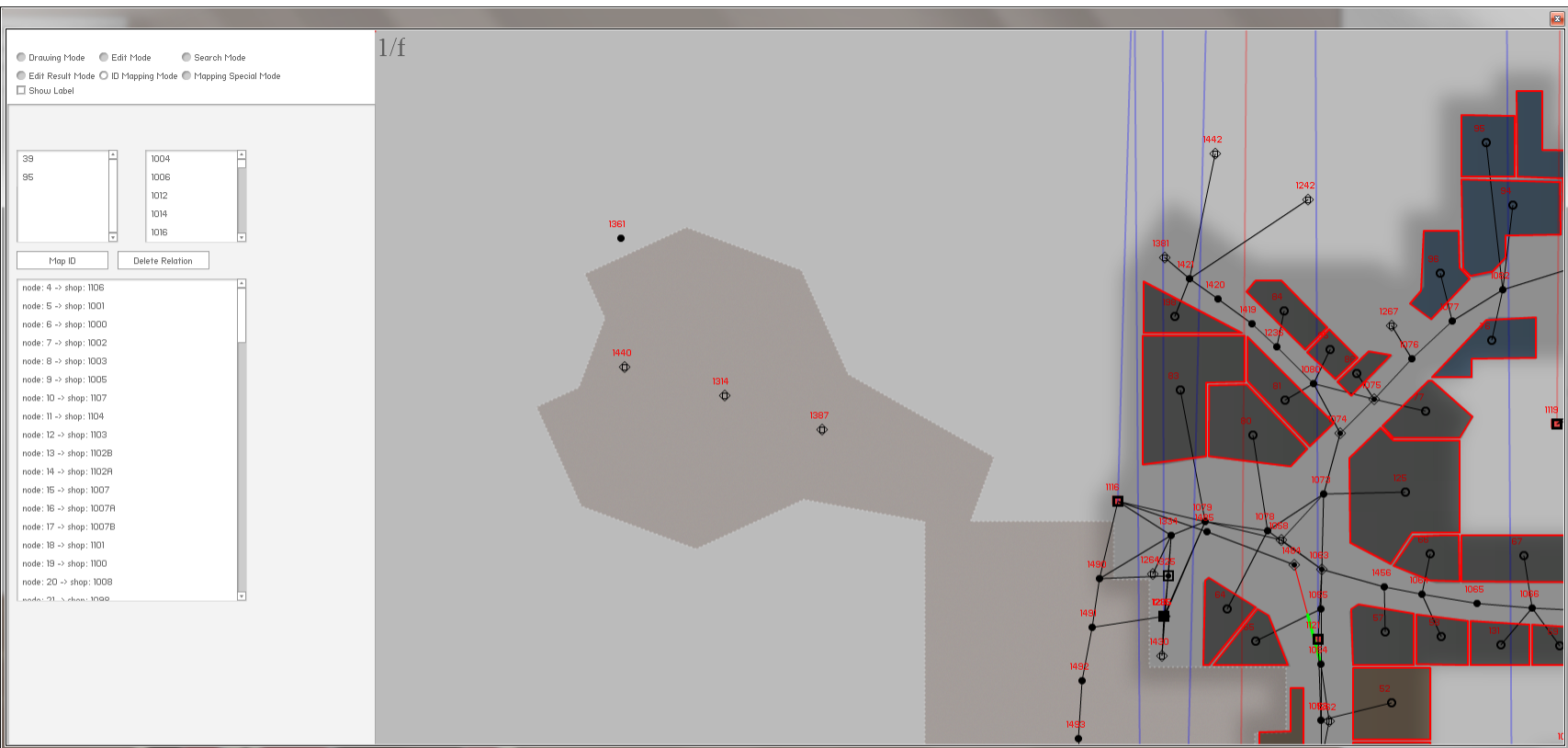
- Edit nodes (Shop Node, Route Node or Key Node)
- Remove nodes
- Remove nodes relationship

# WAYFINDING ROUTE GENERATOR



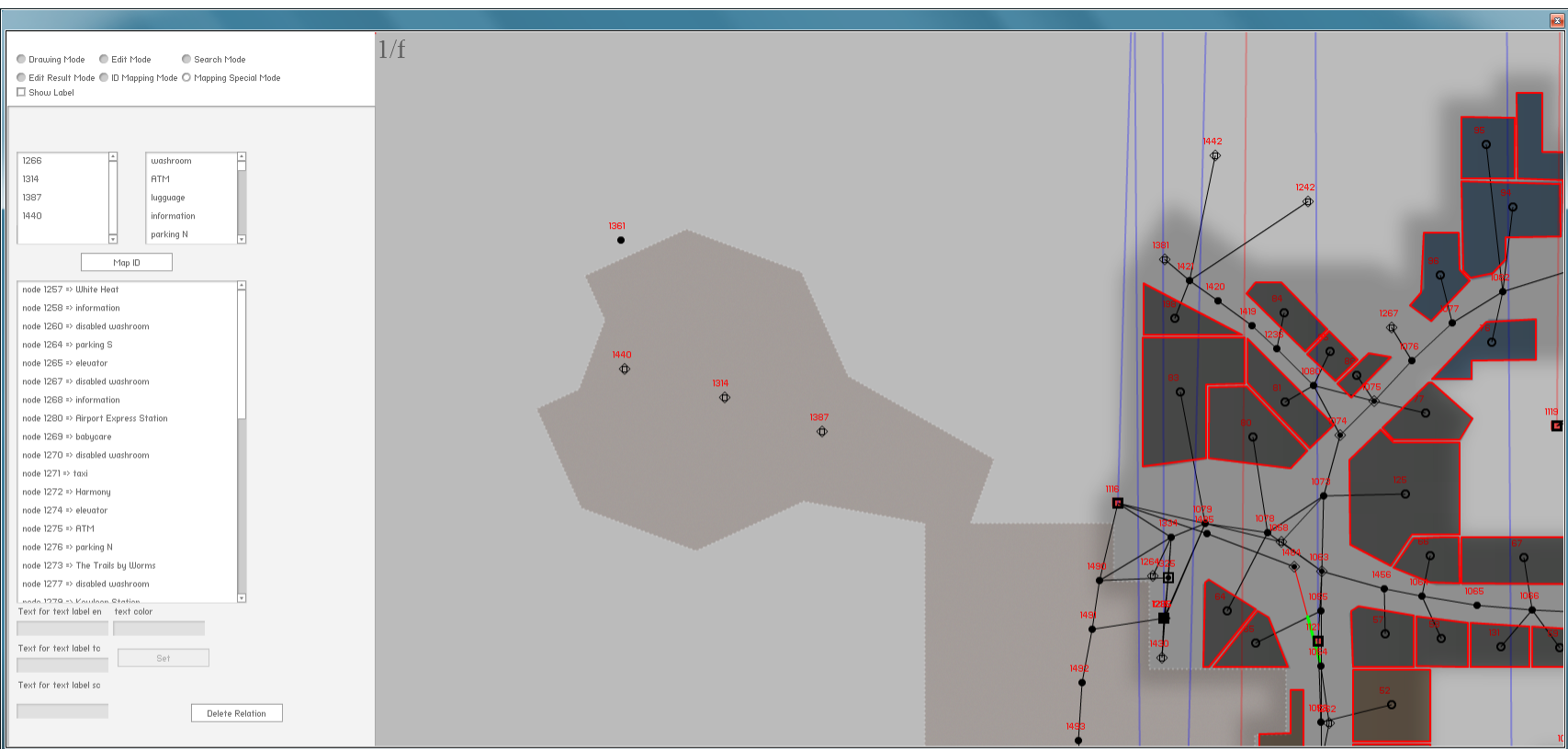
Calculate routes

# WAYFINDING ROUTE GENERATOR



Map shop to CMS database

# WAYFINDING ROUTE GENERATOR



Map facilities to CMS database

## **CMS FEATURES**

Our CMS is a Custom Tailor Made Cloud Base CMS, which allow users to access anytime and anywhere

- Update Way-finding facilities information
- Update Way-finding map & routes
- Update shuttle bus schedule
- Update facilities booking status (optional)
- Update swimming pool temperature (optional)
- Update Static Kiosk contents (advertising videos or pictures) and layout
- Generate scheduled reports
- Administration like user & schedule management



## HOW KIOSK UPDATE CONTENTS?

- Regular data version check when system start up
- All text & media files are downloaded to Kiosks
- Support offline mode
  - Weather & other real time data will be hidden during offline mode
- Able to push urgent message to Kiosks on the fly
- Able to force Kiosks to update data immediately
  - Update map floor data require restart the App

## CMS SECURITY

- Use SSL & https, all communications are under security channel
- Hosted in AWS behind firewall, robust to DDoS attack
- Software could apply IP address or MAC ADDRESS filter if needed
- Apply SQL injection blocking libraries
- Custom security protocol is applied to API call:
  - Kiosks require to provide extra security salt (generated by with time + private key)
  - If salt is not correct, will not allow to load data from CMS

## **SYSTEM DATA USAGE**

- Capture usage data of Interactive Kiosks for future analysis
  - Number of user per day
  - Number of impression by the promotion
  - Number of views of each facilities detail
  - Number of users of each route
  - Do not include privacy data
- Could apply to other data platforms

## JOB REFERENCE

# Elements

## Nature: Interactive Way-Finding

Job Duty:  
Supply and Setup



# JOB REFERENCE

## Windsor House

Nature:  
Digital Signage

Job Duty:  
Design& Build



# JOB REFERENCE

## K11 – Tsim Sha Tsui

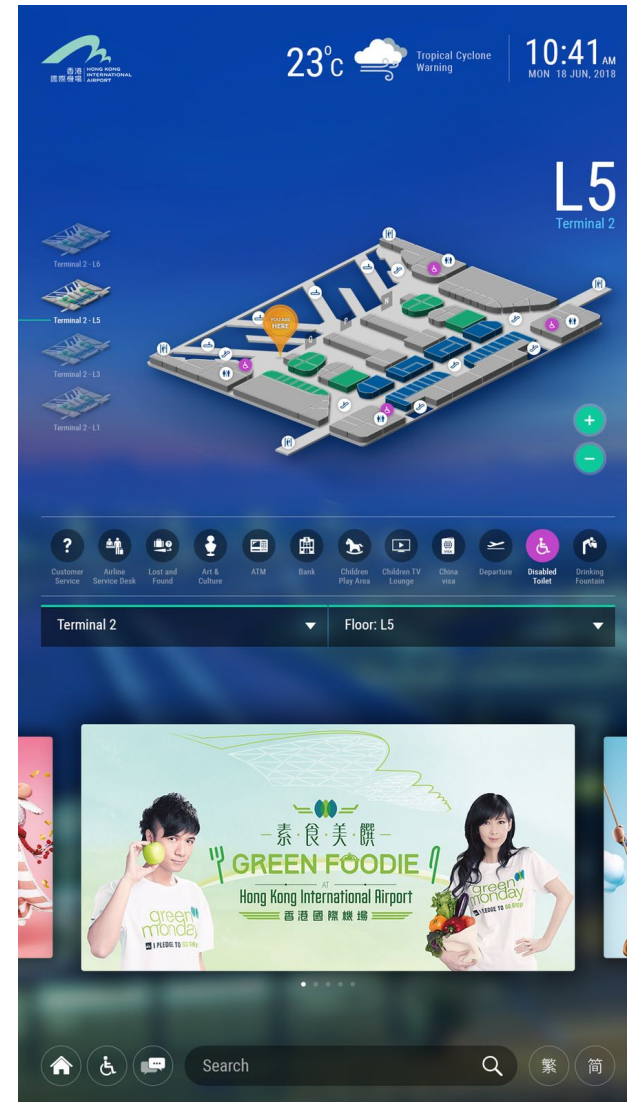
Nature:  
Digital Signage

Job Duty:  
Design and supply  
By developer team





# Design reference for job pitching



# Design reference for job pitching

