



OmnicRM ◇ Omnitouch ◇◇◇◇◇◇◇◇◇◇◇◇◇◇◇◇◇◇ BSS/OSS ◇◇◇◇◇◇◇◇◇◇
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- **API** 2 - 6
- 4 - 2FA 3



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Four diamonds, each containing a question mark, are arranged horizontally above a horizontal line.



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Ansible

RBAC

$\diamond \diamond$ 2FA





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API  

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- [Stripe ??](#) - ? ? ? ?
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- □□ **JWT** □□□
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- □□□□□□□□□□□□ **(RBAC)** □□□□□□□□□□
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OmniCRM □□□□□□□□□□□□□□□

- **CGRateS** -
- **Stripe** -
- **Mailjet** -
- **Google Maps** -
- **RESTful API** -

[API](#) | [Stripe](#) | [Mailjet](#)

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OmniCRM

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Ansible







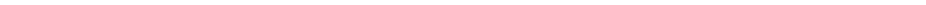
OmniCRM

CGRateS

??? **Ansible** ?? | ???







 Stripe 

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OmniCRM - 222222222 BSS/OSS

222222025-12-23



🔍🔍🔍🔍🔍🔍🔍 (2FA)

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OmniCRM 🔍🔍 🔍🔍🔍🔍🔍🔍🔍 (2FA) 🔍🔍🔍🔍🔍🔍🔍🔍🔍🔍🔍🔍 (TOTP) 🔍🔍🔍🔍🔍🔍🔍🔍🔍
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🔍🔍🔍🔍🔍 RBAC <rbac> 🔍🔍🔍 2FA 🔍🔍🔍🔍🔍 Authentication Flows
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2FA 🔍🔍🔍

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API

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API

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- AWS Secrets Manager HashiCorp Vault
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`?? API ? ?`

```
GET /crm/api-keys
Authorization: Bearer <admin-token>
```

`?? API ? ?`

```
POST /crm/api-keys
Authorization: Bearer <admin-token>
Content-Type: application/json
```

```
{
  "name": "New Integration",
  "description": "Third-party billing sync",
  "expiry_date": "2026-01-10",
  "permissions": ["view_customer", "view_service"]
}
```


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Prometheus/Grafana

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4 API

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3. 180
4. API

- concepts_api - API
- rbac -
- 2fa -



Customer Tagging & Management

Customer Tags <administration_tags>
Customers, Contacts, Sites & Services
<basics_customers>

Customer Tagging & Management



Customer Tagging & Management

1. Customer Tagging

Customer Tagging & Management API

- external_crm_id = "SF-12345" Salesforce ID
- legacy_system_id = "OLD-CRM-789" Legacy System ID
- hubspot_contact_id = "12345678" HubSpot Contact ID

2. Customer Tagging

Customer Tagging & Management

- billing_method = "quarterly" Billing Method
- auto_provision = "true" Auto Provision
- support_tier = "premium" Support Tier
- credit_limit = "10000" Credit Limit

3. Customer Tagging

Customer Tagging & Management

- gdpr_consent_date = "2025-01-01" GDPR Consent Date
- tax_exempt = "true" Tax Exempt
- regulatory_entity = "FCC-123456" Regulatory Entity

4. Customer Tagging

Customer Tagging & Management

- preferred_contact_method = "email" ? ? ? ? ?
- account_manager = "<john.smith@company.com>" ? ? ? ? ? ? ? ?
- onboarding_date = "2025-01-15" ? ? ? ? ? ? ? ? ?
- churn_risk_score = "0.23" ? ? ? ? ?

5. ? ? ? ?

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- radius_username_format = "email" ? ? ? ? RADIUS ? ? ?
- vlan_id = "100" ? ? ? ? ?
- ipv6_enabled = "true" ? ? ? ? ? ?

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 - external_crm_id
 - SF-12345
5. 







-  external_system_id ✓
-  external system id X
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API◆◆

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◆◆◆ PUT /crm/attribute/

◆◆◆◆◆ create_customer_attribute

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```
{
  "customer_id": 123,
  "attribute_name": "external_crm_id",
  "attribute_value": "SF-12345"
}
```

◆◆◆

```
{
  "attribute_id": 456,
  "customer_id": 123,
  "attribute_name": "external_crm_id",
  "attribute_value": "SF-12345",
  "created": "2025-01-04 10:30:00",
  "last_modified": "2025-01-04 10:30:00"
}
```

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◆◆◆ PATCH /crm/attribute/attribute_id/{attribute_id}

◆◆◆◆◆ update_customer_attribute

◆◆◆◆

```
{
  "attribute_value": "SF-54321"
}
```

◆◆◆ID◆◆◆◆◆

◆◆◆ GET /crm/attribute/attribute_id/{attribute_id}

???? view_customer_attribute

???

```
{
  "attribute_id": 456,
  "customer_id": 123,
  "attribute_name": "external_crm_id",
  "attribute_value": "SF-12345",
  "created": "2025-01-04 10:30:00",
  "last_modified": "2025-01-04 10:30:00"
}
```

????ID????

??? GET /crm/attribute/customer_id/{customer_id}

???? view_customer_attribute

???

```
[
  {
    "attribute_id": 456,
    "customer_id": 123,
    "attribute_name": "external_crm_id",
    "attribute_value": "SF-12345",
    "created": "2025-01-04 10:30:00",
    "last_modified": "2025-01-04 10:30:00"
  },
  {
    "attribute_id": 457,
    "customer_id": 123,
    "attribute_name": "billing_method",
    "attribute_value": "quarterly",
    "created": "2025-01-04 10:35:00",
    "last_modified": "2025-01-04 10:35:00"
  }
]
```

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??? DELETE /crm/attribute/attribute_id/{attribute_id}

???? delete_customer_attribute

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- ?snake_caseexternal_system_id ✓
- ????billing_method ✓ ? method ✗
- ?????
- ?????

2. ????

- ????150???
- ???? "true"/"false"???
- ????ISO 8601??? "2025-01-04 10:30:00"
- ????JSON?????

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```
# ??????  
PUT /crm/attribute/  
{
```


- view_customer_attribute - 4 4 4 4
- create_customer_attribute - 4 4 4 4 4
- update_customer_attribute - 4 4 4 4 4 4
- delete_customer_attribute - 4 4 4 4

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OmniCRM **crm_config.yaml** API
React UI



API

- OmniCRM-API/crm_config.yaml
- YAML
- API
-

UI

- OmniCRM-UI/.env
-
- UI
-

(crm_config.yaml)

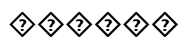
crm_config.yaml



```
database:
  username: omnitouch
  password: omnitouch2024
  server: localhost
```



- username - MySQL
- password - MySQL
- server - IP localhost



- omnictm
- 3306 MySQL
- mysql+pymysql://username:password@server/omnictm

CRM URL

```
crm:
  base_url: 'http://localhost:5000'
```

Ansible CRM API

-
- URL
- https://api.yourcrm.com

OCS

```
ocs:
  ocsApi: 'http://10.179.2.142:8080/api'
  ocsTenant: 'mnc380.mcc313.3gppnetwork.org'
  cgrates: 'localhost:2080'
```

- ocsApi - OCS REST API URL
- ocsTenant - OCS
- cgrates - CGRateS JSON-RPC

SMSC

```
smsc:
  source_msisdn: 'YourCompany'
  smsc_url: 'http://10.179.2.216/SMSc/'
  api_key: 'your_smsc_api_key'
```

- source_msisdn - SMS ID
- smsc_url - API
- api_key - SMSC API

SMS

```
cbc_url: 'http://10.179.1.113:8080'
```

CBC API

features_cell_broadcast

JWT

jwt_secret:

'2b93110f723db60172c8e9a1eaa80027a9a9c3f05b44e50dc3fcf38dba68d87e'

JWT

- openssl rand -hex 32
-
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-

Stripe

stripe:

secret_key: 'sk_test...'
publishable_key: 'pk_test...'
currency: 'usd'
statement_descriptor_suffix: 'YOURCOMPANY'

- secret_key - Stripe API sk_
- publishable_key - Stripe pk_
- currency - ISO 4217 usd gbp aud eur
- statement_descriptor_suffix -

- sk_test... pk_test...
- sk_live... pk_live...

integrations_stripe

API

api_keys:

"your-secure-api-key-minimum-32-chars":
 roles: ["admin"]
 ips: ["127.0.0.1", "::1"]
"another-api-key-for-specific-service":
 roles: ["customer_service_agent_1"]
 ips: ["10.0.1.50"]

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- ???? API 32 ??
- **roles** ? ? ? ? ? ? ? ? ? ? ? ? ? ?
- **ips** ? ? ? ? ? ? ? ? ? ? ? ? ? ? IP ? ?

?? **API** ???

```
openssl rand -base64 48
```

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- admin - ? ? ? ? ? ? ? ? ? ? ? ? ?
- ? RBAC ? ? ? ? ? ? ? ? ? ?

????? administration_api_keys ? concepts_api?

IP ???

```
ip_whitelist:
  "10.179.2.142":
    roles: ["admin"]
  "192.168.1.100":
    roles: ["provisioning"]
```

??? ???? IP ? ? ? ? ? ? ? ? ? ? ? ? ? ? API?

???

- **IP** ? ? ? ? ? ? ? ? ? ? ? ? ? ? IPv4 ? ?
- **roles** ? ? ? ? ? ? ? ? ? ? ? ? ? ? IP ? ? ? ? ? ? ? ?

?????

- ? ? ? ? ? ? ? ? ? ? ? ? ?
- ? ? ? ? ? ? ? ? IP 127.0.0.1 ::1 ?
- ? ? ? ? ? ? ? ? ? ? ? ? ? ? API ? ?
- ? ? ? ? ? ? ? ? ? ? ? ? ? ?

????? **(.env)**

React UI ? ? ? OmniCRM-UI/.env ? ? ? ? ? ? ? ? ? ?

?????

```
REACT_APP_COMPANY_NAME="YourCompany"
REACT_APP_PORTAL_NAME="YourPortal"
REACT_APP_SELF_CARE_NAME="YourCare"
```

REACT_APP_COMPANY_TAGLINE="Your Company Slogan"

???

- REACT_APP_COMPANY_NAME - ??????????????????????
- REACT_APP_PORTAL_NAME - ?????????????????
- REACT_APP_SELF_CARE_NAME - ??????
- REACT_APP_COMPANY_TAGLINE - ??????????????

???

????

REACT_APP_DEFAULT_LOCATION="London, United Kingdom"

REACT_APP_DEFAULT_COUNTRY="United Kingdom"

REACT_APP_DEFAULT_LANGUAGE="en"

REACT_APP_LOCALE="en-GB"

???

- REACT_APP_DEFAULT_LOCATION - ??????????
- REACT_APP_DEFAULT_COUNTRY - ??????
- REACT_APP_DEFAULT_LANGUAGE - UI ????ar?ch?en?fr?gr?it?ru?sp?
- REACT_APP_LOCALE - ??/??????en-GB?en-US ??

?????

- ar - ?????
- ch - ??
- en - ??????
- fr - ??
- gr - ???
- it - ?????
- ru - ??
- sp - ?????

????

REACT_APP_CURRENCY_CODE="USD"

REACT_APP_CURRENCY_SYMBOL="\$"

???

- REACT_APP_CURRENCY_CODE - ISO 4217 ?????
- REACT_APP_CURRENCY_SYMBOL - ??????£\$€ ??

?????

- USD - \$
- GBP - £
- EUR - €
- AUD - \$
- CAD - \$

crm_config.yaml stripe.currency

REACT_APP_PRIMARY_COLOR=#405189
 REACT_APP_SECONDARY_COLOR=#2bFFcf
 REACT_APP_TERTIARY_COLOR=#1a9fbf

- REACT_APP_PRIMARY_COLOR -
- REACT_APP_SECONDARY_COLOR -
- REACT_APP_TERTIARY_COLOR -
- REACT_APP_SUCCESS_COLOR - (#28a745)
- REACT_APP_INFO_COLOR - (#17a2b8)
- REACT_APP_WARNING_COLOR - (#ffc107)
- REACT_APP_DANGER_COLOR - (#dc3545)
- REACT_APP_LIGHT_COLOR - (#f8f9fa)
- REACT_APP_DARK_COLOR - (#343a40)
- REACT_APP_PRIMARY_DARK_COLOR - /

(#RRGGBB)

REACT_APP_FONT_FAMILY=Quicksand

UI

OmniCRM-UI

- -
- -
- -
- - Google Fonts Adobe Fonts CDN
- -
- -

- Inter
- Roboto
- Open Sans
- Lato
- Quicksand
- Poppins
- Nunito
- Montserrat
- Work Sans
- Source Sans Pro
- Raleway
- Ubuntu
- Josefin Sans
- HKGrotesk

Quicksand

- Merriweather
- Lora
- Playfair Display

Quicksand

- System -

Quicksand

Quicksand

Quicksand

Quicksand

1. OmniCRM-UI/src/assets/fonts/your-font-name/
 - WOFF2
 - 300 400 500 600 700
 - your-font-name-300.woff2 your-font-name-400.woff2

2. OmniCRM-UI/src/assets/scss/fonts/_google-fonts.scss
 - @font-face

```
//
//  -
//

@font-face {
```

```
font-family: 'Your Font Name';
font-style: normal;
font-weight: 400;
font-display: swap;
src: url("../fonts/your-font-name/your-font-name-400.woff2") format('woff2');
}

@font-face {
font-family: 'Your Font Name';
font-style: normal;
font-weight: 700;
font-display: swap;
src: url("../fonts/your-font-name/your-font-name-700.woff2") format('woff2');
}
```

3. `.env`

```
REACT_APP_FONT_FAMILY=Your Font Name
```

Font weights

- 300 -
- 400 -
- 500 -
- 600 -
- 700 -

CDN

API keys

```
REACT_APP_GOOGLE_API_KEY=your_google_maps_api_key
REACT_APP_STRIPE_PUBLISHABLE_KEY=pk_test_...
```

Environment variables

- REACT_APP_GOOGLE_API_KEY - Google Maps API
- REACT_APP_STRIPE_PUBLISHABLE_KEY - Stripe

Configuration files

```
REACT_APP_STRIPE_PUBLISHABLE_KEY stripe.publishable_key
stripe.publishable_key
```

Web

```
REACT_APP_WEB_APP_1_NAME="GitHub"
REACT_APP_WEB_APP_1_URL="https://github.com"
REACT_APP_WEB_APP_1_ICON_PATH="resources/webapp_icons/github.png"
```

UI 6 Web

- REACT_APP_WEB_APP_N_NAME -
- REACT_APP_WEB_APP_N_URL - URL
- REACT_APP_WEB_APP_N_ICON_PATH - public/

GitHubXeroMonday.comGmailMailJetSlack

Grafana

```
REACT_APP_GRAFANA_URLS=http://grafana1.local/d/
abc,http://grafana2.local/d/xyz
REACT_APP_GRAFANA_LABELS=Network Monitoring,Service Health
REACT_APP_GRAFANA_API_KEY=your_grafana_api_key
```

- REACT_APP_GRAFANA_URLS - Grafana URL
- REACT_APP_GRAFANA_LABELS -
- REACT_APP_GRAFANA_API_KEY - Grafana API

OmniCRM Grafana

URL

```
REACT_APP_FAQS_URL=https://support.yourcompany.com/faqs
REACT_APP_SUPPORT_URL=https://support.yourcompany.com
```

UI

```
REACT_APP_ALLOW_SOCIAL_LOGINS=yes
```

- yes - GoogleFacebook
- no -

Stripe

- publishable_key

- Mailjet ID
- Mailjet API ID

- administration_api_keys - API
- integrations_stripe - Stripe
- integrations_mailjet -
- concepts_api - API
- rbac -



OmniCRM

(.env)

OmniCRM API UI .env

API (.env)

OmniCRM CGRates

/OmniCRM/.env

```
# MySQL/MariaDB (CRM)
MYSQL_ROOT_PASSWORD=your_secure_password
MYSQL_USER=omnitouch
MYSQL_PASSWORD=your_database_password
MYSQL_DATABASE=crm
DB_SERVER=db
```

```
# PostgreSQL (CGRates)
POSTGRES_USER=cgrates
POSTGRES_PASSWORD=cgrates_password
POSTGRES_DB=cgrates_db
```

CGRates

```
# CGRates API
CGRATES_API_USER=admin
CGRATES_API_PASS=secret
CGRATES_DB_USER=cgrates
CGRATES_DB_PASS=cgrates_password
CGRATES_DB_NAME=cgrates_db
CGRATES_DB_PORT=5432
```

- .env - .env.example
- - 16
- -

- 10.10.10.10 - 10 IP 10.10.10.10

UI (.env)

OmniCRM-UI

/OmniCRM/OmniCRM-UI/.env

API

```
# Google Maps API (
  REACT_APP_GOOGLE_API_KEY=your_google_api_key
```

```
# Stripe
  REACT_APP_STRIPE_PUBLISHABLE_KEY=pk_test_xxxxx
```

```
# npm start
  BROWSER=none
```

```
#
  REACT_APP_COMPANY_NAME="ShellFone"
  REACT_APP_PORTAL_NAME="ShellManager"
  REACT_APP_SELF_CARE_NAME="ShellCare"
  REACT_APP_COMPANY_TAGLINE="Phones with Shells"
```

UI

- COMPANY_NAME -
- PORTAL_NAME - /"ShellManager"
- SELF_CARE_NAME - "ShellCare"
- COMPANY_TAGLINE -

```
#
# ar, ch, en, fr, gr, it, ru, sp
  REACT_APP_DEFAULT_LANGUAGE=en
  REACT_APP_LOCALE="en-GB"

#
  REACT_APP_DEFAULT_LOCATION="Sydney, Australia"
  REACT_APP_DEFAULT_COUNTRY="Australia"
```

```
#
  REACT_APP_CURRENCY_CODE="GBP"
  REACT_APP_CURRENCY_SYMBOL="£"
```

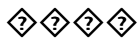


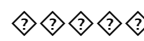
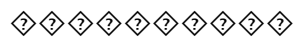
```
REACT_APP_SUPPORT_URL=https://support.yourcompany.com
```

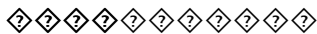
```
#  
REACT_APP_ALLOW_SOCIAL_LOGINS=yes
```

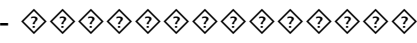
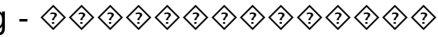


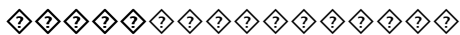
OmniCRM 

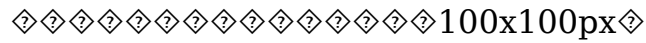
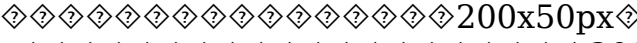
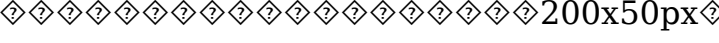


 /OmniCRM-UI/src/assets/images/omnitouch/ 

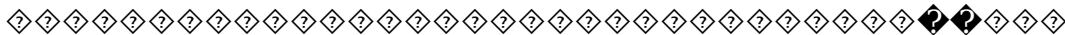


- DefaultLogoDark.png - 
- DefaultLogoLight.png - 



- logoSm.png - 100x100px
- logoDark.png - 200x50px
- logoLight.png - 200x50px

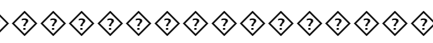
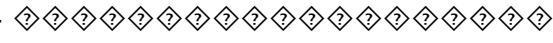
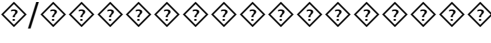




```
//  Header.js
const tryImport = (filename) => {
  try {
    return require(`../assets/images/omnitouch/${filename}`);
  } catch (err) {
    return null; // 
  }
};
```

```
const userLogoSm = tryImport("logoSm.png");
const userLogoDark = tryImport("logoDark.png");
const userLogoLight = tryImport("logoLight.png");
```



- **logoSm.png** - 
- **logoDark.png** - 
- **logoLight.png** - 



1. 📁📁📁📁📁📁📁📁

- 📁📁 PNG 📁📁📁📁📁📁📁📁
- 📁📁📁📁📁📁📁📁
- 📁📁📁📁📁📁📁📁📁📁📁📁📁📁📁📁📁📁

2. 📁📁📁 OmniCRM📁

```
# 📁📁📁📁📁📁📁📁📁 omnitouch 📁📁📁📁  
cp /path/to/your/logoSm.png OmniCRM-UI/src/assets/images/  
omnitouch/  
cp /path/to/your/logoDark.png OmniCRM-UI/src/assets/images/  
omnitouch/  
cp /path/to/your/logoLight.png OmniCRM-UI/src/assets/images/  
omnitouch/
```

3. 📁📁 UI📁

```
cd OmniCRM-UI  
npm run build
```

4. 📁📁📁📁📁

- 📁📁📁📁📁📁📁📁📁📁📁📁📁 logoDark.png📁
- 📁📁📁📁📁📁📁📁📁📁📁📁📁 logoLight.png📁
- 📁📁📁📁📁📁📁📁📁📁📁📁📁 logoSm.png📁
- 📁📁📁📁📁📁📁📁📁📁📁📁📁 logoLight.png📁

📁📁📁📁📁📁📁📁📁

- 📁📁📁 - 📁📁📁📁📁📁📁📁📁📁📁📁📁📁📁📁
- 📁📁📁 - 📁📁📁📁📁📁📁📁📁📁📁📁📁📁
- 📁📁 - 📁📁📁📁📁📁📁📁📁 PNG
- 📁📁📁 - 📁📁 DPI 📁📁📁📁📁 2 📁📁📁📁
- 📁📁📁 - 📁📁📁📁📁📁📁📁📁📁📁📁📁📁📁📁

📁📁📁📁📁📁📁📁📁📁📁

📁📁📁📁📁📁📁📁📁📁📁📁📁📁📁📁📁📁📁📁📁📁📁📁📁📁

📁📁📁 /OmniCRM-UI/src/pages/AuthenticationInner/authCarousel.js

📁📁📁📁📁

```
import logoLight from "../../assets/images/logo-light.png";
```

```
// 📁📁📁📁📁📁📁📁📁📁📁📁📁
```

```
<img src={logoLight} alt="" height="18" />
```


- [redacted]

HSS [redacted]

[redacted] HSS [redacted]

```
hss:
  hss_peers:
    - 'http://10.179.2.140:8080'
  apn_list: "1,2,3,4,5,6"
```

[redacted]

- hss_peers - [redacted] HSS [redacted]
- apn_list - [redacted] APN ID [redacted]

Mailjet [redacted]

OmniCRM [redacted] Mailjet [redacted]

```
mailjet:
  api_key: your_mailjet_api_key
  api_secret: your_mailjet_api_secret

# [redacted]
api_crmCommunicationCustomerWelcome:
  from_email: "support@yourcompany.com"
  from_name: "Your Company Support"
  template_id: 5977509
  subject: "Welcome to YourCompany"

# [redacted]
api_crmCommunicationCustomerInvoice:
  from_email: "billing@yourcompany.com"
  from_name: "Your Company Billing"
  template_id: 6759851
  subject: "Your Invoice - "

# [redacted]
api_crmCommunicationCustomerInvoiceReminder:
  from_email: "billing@yourcompany.com"
  from_name: "Your Company Billing"
  template_id: 5977570
  subject: "Invoice Payment Reminder"

# [redacted]
api_crmCommunicationUserWelcome:
  from_email: "admin@yourcompany.com"
```

```
from_name: "Your Company Admin"
template_id: 6118112
subject: "Welcome to the Team"
```

```
# 11111111
```

```
api_crmCommunicationUserPasswordReset:
  from_email: "security@yourcompany.com"
  from_name: "Your Company Security"
  template_id: 6735666
  subject: "Password Reset Request"
```

```
# 11111111
```

```
api_crmCommunicationUserPasswordResetSuccess:
  from_email: "security@yourcompany.com"
  from_name: "Your Company Security"
  template_id: 6118378
  subject: "Password Reset Successful"
```

```
# 11111111
```

```
api_crmCommunicationUserPasswordChange:
  from_email: "security@yourcompany.com"
  from_name: "Your Company Security"
  template_id: 6118423
  subject: "Password Changed"
```

```
# 11111111
```

```
api_crmCommunicationEmailVerification:
  from_email: "verify@yourcompany.com"
  from_name: "Your Company Verification"
  template_id: 6267350
  subject: "Verify Your Email Address"
```

```
# 11111111
```

```
api_crmCommunicationsBalanceExpired:
  from_email: "alerts@yourcompany.com"
  from_name: "Your Company Alerts"
  template_id: 7238252
  subject: "Service Balance Expired"
```

```
# 11111111
```

```
api_crmCommunicationsBalanceLow:
  from_email: "alerts@yourcompany.com"
  from_name: "Your Company Alerts"
  template_id: 7238263
  subject: "Low Balance Warning"
```

11 Mailjet 1111

1. 11 Mailjet 1111 (<<https://app.mailjet.com>>)

2. **Transactional → Templates**
- 3.
4. **Template ID**
5. OmniCRM
6. `crm_config.yaml` ID

- `{{customer_name}}` -
- `{{service_name}}` -
- `{{invoice_id}}` -
- `{{invoice_amount}}` -
- `{{due_date}}` -
- `{{reset_link}}` - URL
- `{{verification_link}}` - URL
- `{{balance}}` -
- `{{expiry_date}}` -

```
provisioning:
  failure_list: ['admin@yourcompany.com', 'ops@yourcompany.com']
```

- `failure_list` - Ansible
-
-

```
invoice:
  template_filename: 'yourcompany_invoice_template.html'
```

PDF Jinja2 HTML

`/OmniCRM-API/invoice_templates/`

PDF

CRM URL

```
crm:
  base_url: 'http://localhost:5000'
```

-  Ansible        API  
-               CRM   
-      API       URL          

- `http://localhost:5000`
- `https://api.yourcompany.com`
- `Docker http://omnicrm-api:5000`

OCS $\diamond$ **CGRates** $\diamond \diamond$

OCS :

```
ocsApi: 'http://10.179.2.142:8080/api'
ocsTenant: 'mnc380.mcc313.3gppnetwork.org'
cgrates: 'localhost:2080'
```

- `ocsApi` - OCS API
- `ocsTenant` - OCS
- `cgrates` - CGRates JSON-RPC API

SMSC **SMS**

smSc :

```
source_msisdn: 'YourCompany'
smsc_url: 'http://10.179.2.216/SMSc/'
api key: 'your smsc api key'
```

- `sms` - SMS
- `source_msisdn` - ID
- `smc_url` - SMSC API
- `api_key` - SMSC API

JWT

```
jwt secret:
```

```
'2b93110f723db60172c8e9a1eaa80027a9a9c3f05b44e50dc3fcf38dba68d87e'
```

● 

● 

- 64
-

JWT

```
#
python3 -c "import secrets; print(secrets.token_hex(32))"
```

Stripe

```
stripe:
  secret_key: 'sk_live_XXXXXXXXXX'
  publishable_key: 'pk_live_XXXXXXXXXX'
  currency: 'aud'
  statement_descriptor_suffix: 'YOURCOMPANY'
```

- secret_key - Stripe API
- publishable_key - Stripe
- currency - ISO 4217 audusdgbpeur
- statement_descriptor_suffix -

- "YOURCOMPANY"
- 22
-
- PDF YOURCOMPANY_12345.pdf

API IP

IP API

```
api_keys:
  "YOUR_API_KEY_1":
    roles: ["admin"]
    ips: ["127.0.0.1", "::1"]
  "YOUR_API_KEY_2":
    roles: ["customer_service_agent_1"]
    ips: ["127.0.0.1", "::1", "10.0.1.0/24"]
```

IP API

```
ip_whitelist:
  "10.179.2.142":
    roles: ["admin"]
```

- `api` API
- `ip` IP
- `api` API
- `api` API

`api`

- `api` API 32
- `ip` IP
- `api` API
- `api` API

PDF

OmniCRM Jinja2 HTML WeasyPrint PDF PDF

PDF

1. `crm_config.yaml` `invoice.template_filename`
 - `/OmniCRM-API/invoice_templates/`
2. `ID`
 - `id`
 - `id`
 - `id`
3. `Jinja2` `HTML`
 - `{{ invoice_number }}` `{{ total_amount }}`
 - `HTML` `invoice_templates/rendered/`
4. **PDF**
 - `WeasyPrint` `HTML` `PDF`
 - `PDF` `CSS` `PDF`
 - `PDF` `PDF`
5. `PDF` `Base64` `Invoice_PDF_Cache`
 - `SHA256`
 - `PDF`
6. `PDF`
 - `PDF`
 - `PDF`

`api`

`Jinja2` `HTML`

`/OmniCRM-API/invoice_templates/`

yourcompany_invoice_template.html

❖❖❖❖❖

```
{
  'invoice_number': 12345,
  'date': '2025-01-04',
  'client': {
    'name': 'John Smith',
    'address': {
      'address_line_1': '123 Main St',
      'city': 'Sydney',
      'state': 'NSW',
      'zip_code': '2000',
      'country': 'Australia'
    }
  },
  'transaction_list': [
    [
      {
        'transaction_id': 1,
        'title': 'Mobile Service - Monthly Fee',
        'retail_cost': 30.00,
        'wholesale_cost': 10.00,
        'created': '2025-01-01'
      },
      {
        'transaction_id': 2,
        'title': 'Data Addon - 5GB',
        'retail_cost': 15.00,
        'wholesale_cost': 5.00,
        'created': '2025-01-15'
      }
    ]
  ],
  'total_amount': 45.00,
  'due_date': '2025-01-31',
  'start_date': '2025-01-01',
  'end_date': '2025-01-31',
  'paid': False,
  'void': False
}
```

❖❖❖❖❖❖❖

```
<!DOCTYPE html>
<html>
<head>
  <meta charset="UTF-8">
```

```

<title>Invoice {{ invoice_number }}</title>
<style>
  body {
    font-family: Arial, sans-serif;
    margin: 40px;
  }
  .header {
    text-align: center;
    margin-bottom: 30px;
  }
  .invoice-details {
    margin-bottom: 20px;
  }
  table {
    width: 100%;
    border-collapse: collapse;
  }
  th, td {
    border: 1px solid #ddd;
    padding: 12px;
    text-align: left;
  }
  th {
    background-color: #405189;
    color: white;
  }
  .total {
    text-align: right;
    font-size: 18px;
    font-weight: bold;
    margin-top: 20px;
  }
</style>
</head>
<body>
  <div class="header">
    
    <h1>INVOICE</h1>
  </div>

  <div class="invoice-details">
    <p><strong>?????</strong> {{ invoice_number }}</p>
    <p><strong>???</strong> {{ date }}</p>
    <p><strong>?????</strong> {{ due_date }}</p>
    <p><strong>?????</strong> {{ start_date }} ? {{ end_date
}}</p>
  </div>

```

```

<div class="customer-details">
  <h3>????</h3>
  <p>{{ client.name }}</p>
  <p>{{ client.address.address_line_1 }}</p>
  <p>{{ client.address.city }}, {{ client.address.state }} {{
client.address.zip_code }}</p>
  <p>{{ client.address.country }}</p>
</div>

<table>
  <thead>
    <tr>
      <th>??</th>
      <th>??</th>
      <th>??</th>
    </tr>
  </thead>
  <tbody>
    {% for transaction in transaction_list[0] %}
    <tr>
      <td>{{ transaction.title }}</td>
      <td>{{ transaction.created }}</td>
      <td>${{ "%.2f"|format(transaction.retail_cost)
}}</td>
    </tr>
    {% endfor %}
  </tbody>
</table>

<div class="total">
  <p>?????${{ "%.2f"|format(total_amount) }}</p>
</div>

{% if paid %}
<div style="text-align: center; color: green; font-weight:
bold;">
  ???
</div>
{% endif %}

{% if void %}
<div style="text-align: center; color: red; font-weight: bold;">
  ??
</div>
{% endif %}
</body>
</html>

```


- `??PDF???`
- `??PDF???`
- `??PDF???`
- `?? 30 ??`

`???`

- Base64 `??PDF?? Invoice_PDF_Cache??`
- SHA256 `???`
- `???`

`???`

```
# ? OmniCRM API ? Python shell ?
from services.invoice_service import cleanup_old_pdf_cache,
invalidate_invoice_cache
from utils.db_helpers import get_db_session

session = get_db_session()

# ? 30 ?
result = cleanup_old_pdf_cache(session, days_old=30)
print(result) # {'status': 'success', 'deleted_count': 15}

# ?
invalidate_invoice_cache(session, invoice_id='12345')
```

API `???`

`??/??PDF?`

GET /invoice/pdf/{invoice_id}

`??PDF?? Stripe??`

`???`

- `???`
- `???`
- `??/???`

`???`

PDF `???`

- `?? WeasyPrint ??pip install weasyprint`
- `?? crm_config.yaml??`
- `?? invoice_templates/rendered/ ?? HTML??`
- `?? API ?? Jinja2 ??`

PDF

- file:///full/path/to/image.png
-
- PNG JPEG
-

- CSS
- CSS flexbox grid
-
- div

- invalidate_invoice_cache()
-
- Invoice_PDF_Cache

OmniCRM

- [] .env.example .env
- []
- [] CGRates
- [] crm_config.yaml
 - []
 - []
 - [] Mailjet API ID
 - []
 - []
 - [] CRM URL
 - [] OCS/CGRates
 - [] SMSC
 - [] JWT
 - [] Stripe
 - [] API IP

- [] OmniCRM-UI/.env.example OmniCRM-UI/.env
- [] Google Maps API
- [] Stripe
- []

- [] 4 3 2 1
- [] 3 2 1 0
- [] 4 3 2 1 0 9
- [] 4 3 2 1
- [] 4 3 2 1 0 9
 - [] 4 3 2 1
 - [] 4 3
 - [] 4 3 2 1 0 9 8 7
 - [] 4 3 2 1 0 9 8 7
- [] 4 3 2 1 0 9 8 7
- [] 4 3 Web 4 3 2 1 0 9 8 7
- [] 4 3 2 1 0 FAQ URL 4 3 2 1

4 3 2 1

- [] 4 3 2 1 0 9 logoSm.png logoDark.png logoLight.png
- [] 4 3 2 1 0 9 OmniCRM-UI/src/assets/images/omnitouch/
- [] 4 3 2 1 0 9 8 7 HTML
- [] 4 3 2 1 0 9 8 7 OmniCRM-API/invoice_templates/
- [] 4 3 crm_config.yaml 4 3 2 1 0 9 8 7 6 5
- [] 4 3 2 1 0 PDF 4 3
- [] 4 3 UI npm run build

4 3 2

- [] 4 3 2 1 0 9 8 7
- [] 4 3 2 1 0 JWT 4 3
- [] 4 3 2 1 0 9 8 7 Stripe 4 3 2 1 0 9 8 7 6 5
- [] 4 3 2 1 Mailjet API 4 3
- [] 4 3 2 1 0 9 8 7
- [] 4 3 API 4 3 2 IP 4 3 2
- [] 4 3 SSL/TLS 4 3
- [] 4 3 2 1 0 9 8 7 HTTPS
- [] 4 3 CORS 4 3
- [] 4 3 2 1 0 9 8 7
- [] 4 3 2 1 0 9 8 7 6 5

4 3

- [] 4 3 2 1 0 9 8 7
- [] 4 3 2 1 0 9 8 7 6 5 4 3 2 1
- [] 4 3 2 1 0 9 8 7 6 5 4 3 2 1 0 9 8 7
- [] 4 3 2 1 0 9 8 7 PDF 4 3
- [] 4 3 2 1 0 9 8 7 Stripe
- [] 4 3 2 1 0 9 8 7 6 5 2FA
- [] 4 3 2 1 0 9 8 7 6 5
- [] 4 3 OCS 4 3 2 1 0 9 8 7
- [] 4 3 ActionPlan 4 3 2 1 0 9

- [] ? ? ? ? ? ? ? ? ? ?

??

- [] ?? Docker ? ? ? ? ? ? ? ?
- [] ? ? ? ? ? ? ? ? MySQL ? PostgreSQL ?
- [] ?? CGRates
- [] ?? OmniCRM API
- [] ?? OmniCRM UI
- [] ? ? ? ? ? ? ? ? nginx ? traefik ?
- [] ? ? ? ? ? ? Grafana ? Prometheus ?
- [] ? ? ? ? ? ?
- [] ? ? ? ? ? ?
- [] ? ? ? ? ? ?
- [] ? ? ? ? ? ? ? ?

?? ? ? ?

- RBAC ? ? ? ? ? </rbac>
- ? ? ? ? ? </concepts_products_and_services>
- Ansible ? ? </concepts_ansible>
- ? ? ? ? ? </administration_inventory>
- ? ? ? ? ? </payments_invoices>
- ? ? ? ? ? ? ? ? </2fa>
- ? ? ? ? ? ? ? ? </customer_care>



OmniCRM

OmniCRM

IP GPON ONT
CPE

Customer Attributes <administration_attributes>
Customer Tags <administration_tags>

CPE

inventory_items_list
UI Ansible Complete Product Lifecycle
Guide - Inventory Requirements <guide_product_lifecycle>

OmniCRM

1. SIM
- 2.
- 3.
4. / GPON
CPE

SIM

Omnitouch 1000 SIM SIM
SIM

SIM
SIM -

???

?????SIM?????SIM?????
?????

?????SIM?????

GPON????

GPON?????

?????

?????

OmniCRM?????
?????

???

InventoryTemplate?????
?????

- ????MAC????itemtext1????itemtext2?
- ?????
- ????itemtext1????itemtext2?
- ????IP?????

20????itemtext1itemtext20
itemtext1_labelitemtext20_label?????
itemtext1_label???“MAC”itemtext2_label???“”?

InventoryTemplates?????
?????

????

inventory_items_list?????
?????

inventory_items_list: ["['SIM Card', 'Mobile Number']"
“SIM Card”“Mobile Number”?????

Product Lifecycle - Inventory
Requirements <guide_product_lifecycle>

OmniCRM????

UI

1. →

2.

3.

- fa-solid fa-sim-card
- inventory_items_list

-
-

- 1 " " ■ "ICCID" SIM "MAC" " "
- 2 " " ■ "IMSI" SIM " " " " "
- 3-20 ■ ■

-
- /

4.

1. 12345 → 67
2. 12345678
3. 123456
4. 12345678
5. 1234

12

123456789101112131415161718192021222324252627282930313233343536373839404142434445464748495051525354555657585960616263646566676869707172737475767778798081828384858687888990919293949596979899100
101102103104105106107108109110111112113114115116117118119120121122123124125126127128129130131132133134135136137138139140141142143144145146147148149150151152153154155156157158159160161162163164165166167168169170171172173174175176177178179180181182183184185186187188189190191192193194195196197198199200

12

123inventory_items_list456789101112131415161718192021222324252627282930313233343536373839404142434445464748495051525354555657585960616263646566676869707172737475767778798081828384858687888990919293949596979899100101102103104105106107108109110111112113114115116117118119120121122123124125126127128129130131132133134135136137138139140141142143144145146147148149150151152153154155156157158159160161162163164165166167168169170171172173174175176177178179180181182183184185186187188189190191192193194195196197198199200

123456

SIM1234

- 1234“SIM5”
- 1234562.50
- 123456710.00
- 123451678“ICCID”
- 123456789“IMSI”
- 123456789“SIM12”3456/eSIM7

1234567

- 1234“5678”
- 1234561.00
- 12345670.00
- 123451678“91011”
- 123456789“101112”
- 123456789“101112”3456/789

1234CPE567

- 1234“5678CPE”
- 1234567250.00
- 1234567450.00
- 123451678“MAC910”
- 123456789“1011”
- 123456789“101112”
- 123456789“101112”
- 123456789“1011”

GPON ONT1234

- "GPON ONT"
- 45.00
- 0.00
- 1 " "
- 2 "MAC"
- 3 "PON"
- 4 " "

OmniCRM

?

InventoryTemplate

-
-
- sold_date

OmniCRM

Ansible

OmniCRM

?

- **inventory_id** -
- **item** - "SIM" " " "
- **inventory_template_id** -

Web UI

- **google_maps_place_id** - Google Maps ID
- **plus_code** - Google Maps Plus
- **latitude** -
- **longitude** -

-
-
-
-

URL

management_url URL

- **management_url** - URL
 - Web URL https://192.168.1.1 ONT CPE
 - **eSIM** eSIM LPA LPA:1\$mdp.example.com\$ACTIVATION-CODE-HERE
 - URL

management_url

- 128x128 URL
- 64x64
-

- IP
- **eSIM** CRM eSIM
-

- **management_username** -
- **management_password** -

- **config_content** -

- `?? ? ? ? ? ? ? ? ? ? ? ? ? ? ?`
- `?? ? ? ? ? ? ? ? ? ? ? ? ? ? ? CPE ? ? ? ?`
- **config_file_path** - `?? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ?`
 - `?? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ?`
 - `?? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ?`

`?? ? ? ? ? ?`

- **inventory_notes** - `?? ? ? ? ? ? ? ? ? ? ? ? ?`
 - `?? ? ? ?`
 - `?? ? ? ?`
 - `?? ? ? ? ? ? ? ? ? ? ?`
 - `?? ? ? ? ? ?`
 - `?? ? ? ?`
- **created** - `?? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ?`
- **last_modified** - `?? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ?`

`?? ? ? ? ? ?`

`??1??SIM?`

```
{
  "inventory_id": 1001,
  "item": "SIM Card",
  "inventory_template_id": 5,
  "itemtext1": "8961234567890123456",
  "itemtext2": "310120123456789",
  "itemtext3": "Physical",
  "item_location": "Warehouse A, Shelf 3",
  "item_state": "Assigned",
  "customer_id": 456,
  "service_id": 789,
  "wholesale_cost": 2.50,
  "retail_cost": 10.00,
  "sold_date": "2025-01-15T10:30:00Z",
  "inventory_notes": "Activated on 2025-01-15"
}
```

`??2??eSIM??`

```
{
  "inventory_id": 1002,
  "item": "eSIM",
  "inventory_template_id": 6,
  "itemtext1": "8961234567890123457",
  "itemtext2": "310120123456790",
  "itemtext3": "eSIM",
  "item_location": "Virtual Inventory",
}
```

```

    "item_state": "Assigned",
    "customer_id": 457,
    "service_id": 790,
    "management_url": "LPA:1$smdp.example.com$ACTIVATION-CODE-ABC123XYZ",
    "wholesale_cost": 0.00,
    "retail_cost": 0.00,
    "sold_date": "2025-01-16T14:20:00Z",
    "inventory_notes": "eSIM profile ready for activation"
}

```

eSIM
UI
LPA
eSIM

3
CPE
-

```

{
  "inventory_id": 2001,
  "item": "Fixed Wireless CPE",
  "inventory_template_id": 10,
  "itemtext1": "AA:BB:CC:DD:EE:FF",
  "itemtext2": "FW2024-12345",
  "itemtext3": "v2.4.1",
  "itemtext4": "Ubiquiti",
  "itemtext5": "LiteBeam AC Gen2",
  "item_location": "Customer Site",
  "item_state": "Assigned",
  "customer_id": 789,
  "service_id": 1234,
  "address_line_1": "123 Main Street",
  "address_line_2": "Apt 4B",
  "city": "Sydney",
  "state": "NSW",
  "zip_code": "2000",
  "country": "Australia",
  "latitude": "-33.8688",
  "longitude": "151.2093",
  "management_url": "https://192.168.100.1",
  "management_username": "admin",
  "management_password": "encrypted_password_here",
  "config_file_path": "/configs/cpe/fw2024-12345.conf",
  "inventory_notes": "Installed 2025-01-10. Customer reports excellent signal. Pointing: Azimuth 45°, Elevation 15°"
}

```

4
GPON ONT

```

{
  "inventory_id": 3001,

```

```
"item": "GPON ONT",
"inventory_template_id": 15,
"itemtext1": "ALCL12345678",
"itemtext2": "AA:BB:CC:DD:EE:FF",
"itemtext3": "OLT-1, PON 3, ONT 42",
"itemtext4": "Nokia G-010G-A",
"item_location": "Customer Premises",
"item_state": "Assigned",
"customer_id": 321,
"service_id": 654,
"address_line_1": "456 Fiber Lane",
"city": "Melbourne",
"state": "VIC",
"zip_code": "3000",
"country": "Australia",
"google_maps_place_id": "ChIJ1234567890",
"plus_code": "4RRH+2C Melbourne VIC",
"latitude": "-37.8136",
"longitude": "144.9631",
"management_url": "https://192.168.1.1",
"management_username": "admin",
"config_content": "# ONT Configuration\nwlan-ssid: HomeNetwork\nwlan-password: encrypted...",
"wholesale_cost": 45.00,
"retail_cost": 0.00,
"inventory_notes": "Provisioned 2025-01-20. Optical power: -22dBm"
}
```

??

management_url234UI

- URLLPA
- Web URL

???

- eSIM2eSIM
- 34IP

5

```
{
  "inventory_id": 4001,
  "item": "Phone Number",
  "inventory_template_id": 20,
  "itemtext1": "+61412345678",
  "itemtext2": "Melbourne",
  "itemtext3": "Mobile",

```

```
"item_location": "Australia - VIC",
"item_state": "Assigned",
"customer_id": 555,
"service_id": 888,
"wholesale_cost": 1.00,
"retail_cost": 0.00,
"inventory_notes": "Ported from Telstra on 2025-01-05"
}
```

????????

item_state????????????????

- ? → ??? - ?????????????
- ??? → ??? - ?????????????????
- ? → ????? - ?????????????
- ??? → ?? - ?????????RMA???
- ????? → ?? - ??????????
- ????? → ?? - ??????????
- ??/? → ? - ?????????

????????????????

- ?????????
- ?????????????
- ?????????????
- ?????????
- ?????????

- 1.
- 2.
- 3.
- 4.
- -
 - URL


```
PATCH /crm/tag/tag_id/{tag_id}
{
  "tag_text": "Updated Tag Text",
  "tag_hex_color": "FF0000"
}
```

◆◆◆◆◆◆◆◆

```
GET /crm/tag/customer_id/{customer_id}
```

◆◆◆◆◆

```
DELETE /crm/tag/tag_id/{tag_id}
```



OmniCRM

 OmniCRM 



OmniCRM  BSS/OSS 



1.

OmniCRM Web UI

- React 
- 
- 
- 



- 
- 
- 
-  UI 

2. API

OmniCRM API (Flask/Python)

-  RESTful API
- OpenAPI/Swagger 
-  JWT 
- 
-  WebSocket 

 API 

- /crm/customer/* - 
- /crm/service/* - 
- /crm/product/* - 
- /crm/provision/* - 
- /crm/transaction/* - 

?? - ????????

??	??	??
site_id	?? (PK)	??????
customer_id	?? (FK)	???
site_name	???	???
address_line_1	???	???
city, state, zip_code	???	???
latitude, longitude	??	GPS ??
google_maps_place_id	???	Google Maps ??
plus_code	???	??????

??????

?? - ???????

??	??	??
service_id	?? (PK)	??????
customer_id	?? (FK)	???
product_id	?? (FK)	???
site_id	?? (FK)	???
service_name	???	???
service_uuid	???	???????
service_status	??	???
service_billed	??	???
wholesale_cost	??	????
retail_cost	??	???
bundled_parent	?? (FK)	??????

?? - ???????

??	??	??
product_id	?? (PK)	??????
product_name	???	???
product_slug	???	URL ?????
category	??	'??', '??', '??', '??'
provisioning_play	???	Ansible playbook ??
provisioning_json_vars	JSON	Playbook ??
inventory_items_list	???	???
retail_cost	??	???
retail_setup_cost	??	?????
enabled	??	????

◆◆◆◆

◆◆ - ◆◆◆◆/◆◆

	◆◆	◆◆	◆◆
transaction_id	◆◆ (PK)	◆◆◆◆◆	
customer_id	◆◆ (FK)	◆◆◆	
invoice_id	◆◆ (FK)	◆◆◆◆◆◆◆	
service_id	◆◆ (FK)	◆◆◆◆	
title	◆◆◆	◆◆◆◆	
retail_cost	◆◆	◆◆	
tax_percentage	◆◆	◆◆	
tax_amount	◆◆	◆◆◆◆	
void	◆◆	◆◆◆◆◆◆	

◆◆ - ◆◆◆◆◆◆◆◆◆◆

	◆◆	◆◆	◆◆
invoice_id	◆◆ (PK)	◆◆◆◆◆	
customer_id	◆◆ (FK)	◆◆◆	
paid	◆◆	◆◆◆◆◆◆	
void	◆◆	◆◆◆◆◆◆	
payment_reference	◆◆◆	Stripe	◆◆ ID
start_date, end_date	◆◆	◆◆◆◆	
due_date	◆◆	◆◆◆◆◆◆◆	
retail_cost	◆◆	◆◆◆	

◆◆◆◆

◆◆ - ◆◆◆◆◆◆◆◆

	◆◆	◆◆	◆◆
inventory_id	◆◆ (PK)	◆◆◆◆◆	
customer_id	◆◆ (FK)	◆◆◆◆	
service_id	◆◆ (FK)	◆◆◆◆	
inventory_template_id	◆◆ (FK)	◆◆◆◆◆◆◆	
item	◆◆◆	◆◆◆◆◆◆SIM	◆◆◆◆◆◆◆◆◆◆
item_state	◆◆	'◆', '◆◆◆', '◆◆◆' ◆	
itemtext1-20	◆◆◆	◆◆◆◆	
management_url	◆◆◆	◆◆◆◆	URL
config_content	◆◆	◆◆◆◆	

◆◆◆◆ - ◆◆◆◆◆◆◆◆◆◆

	??		??		??
inventory_template_id	?? (PK)	??	??	??	??
item	???		??	??	??
itemtext1_label	???		itemtext1	??	??
itemtext2_label	???		itemtext2	??	??

???

?? - ??

	??		??		??
provision_id	?? (PK)	??	??	??	??
product_id	?? (FK)	??	??	??	??
customer_id	?? (FK)	??	??	??	??
service_id	?? (FK)	??	??	??	??
provisioning_play	???		Ansible playbook	??	
provisioning_status	??		0=??, 1=???, 2=??		

?? - ??

	??		??		??
provision_event_id	?? (PK)	??	??	??	??
provision_id	?? (FK)	??	??	??	??
event_name	???		??	??	??
event_number	??		??	??	??
provisioning_status	??		0=??, 1=???, 2=??		
provisioning_result_json			JSON	??	??

??

?? - ??

	??		??		??
id	?? (PK)	??	??	??	??
username	???		??	??	??
email	???		??	??	??
email_verified	??		??	??	??
is_2fa_enabled	??		??	??	??
totp_secret	???		TOTP	??	??

?? - ??

	??		??		??
id	?? (PK)	??	??	??	??

name ? ?
description ? ? ? ? ? ?

?? - ? ? ? ? ?

id ? ? (PK) ? ? ? ? ?
name ? ? ? ? ? ? resource.action ?
description ? ? ? ? ? ?

?? ?

- ? ? ? ? ? ? ? ? ? ? ?
- ? ? ? ? ? ? ? ? ? ? ?
- ?

?? ?

Stripe ? ? ? ?

- ? ? ? ? ? ? ?
- ? ? PCI ? ? ? ?
- ? ? ? ? ? ? ?
- ? ? ? ? ?
- ? ? ? ? ? ?

Mailjet ? ? ? ? ? ?

- ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ?
- ? ? ? ? ? ?
- ? ? ? ? ?
- ? ? ? ? ?

Google Maps

- ? ? ? ? ? ? ?
- ? ? ? ? ? ? ? ? ? ? ? ?
- Plus Code ? ?
- ? ? ? ? ? ? ?

OCS/CGRateS

- ? ? ? ? ?
- ? ? ? ? ?
- ? ? ? ? ?

- CDR
-

- JWT
- TOTP
- RBAC
-
- Redis
- bcrypt
-
-

- Python 3.x
- Flask Web
- SQLAlchemy ORM
- Alembic
- Ansible

- React
-
- React Router
- Axios API

-
- Redis

- CGRateS/
- Stripe
- Mailjet

- Google Maps

- API
- Redis

-
-
-

-
- Ansible
-
-

- API
-
-
-
-
-

- Flask
- Ansible
-
-

- [Ansible Playbooks](#) -
- [API](#) -
- [API](#) - API
- [RBAC](#) -

2FA

2FA/2FA

1. Google AuthenticatorAuthy
2. OmniCRM
3. 6
4. 6
- 5.

1. “”
2. 3fa5b9c2
3. “”
- 4.

“”

REACT_APP_ALLOW_SOCIAL_LOGINS=yes

[Google] [• Apple] [Facebook]

“”

“”

(2FA)

2FA 2FA TOTP

2FA

2FA 2FA

1

[][]

2FA

2

[] []

- iOS Apple App Store → "Google Authenticator"
 - Android Google Play → "Google Authenticator"
 - Authy Microsoft Authenticator 1Password
- "+" " "
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 - 6 "OmniCRM" "
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□□□□□ OmniCRM □□□□□□

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1 2 3 4 5

1 2 3 4 5 6 7 8 9 10 11 12 13 14

1 2 3 4 5 6 7 8 John Smith <john@example.com> +44 123... 9 10 11 Jane Doe
<jane@example.com> +44 456... 12 13 Bob Wilson <bob@example.com> +44 789... 14 15
16 17

1 2 3 4 5

- 1 2 - 3 4 5 6 7 8 9 10 11 12 13 14
- 1 2 3 - 4 5 6 7 8 9
- 1 2 3 4 5 - 6 7 8 9 10
- 1 2 3 2FA - 4 5 6 7 2FA 8 9 10 2FA 11 12 13
- 14 15 16 17 18 19 - 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40

1 2 3 4 5 6 7 8 9

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1 2 3 4 5 6 7 8 9 10 (11)

1 2 3 4 5 6

1 2 3 4 5 6 7 8 9 10 11 12 13 14

1 2 3 John Smith (<john@example.com>)

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

[1 2] [3 4 5 6]

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1 2 "3 4 5" 6 7 8 9 10 11 12 13 14 15 16

1 2 3 4 5 6 7 8

John Smith 1 2 3 4 5

[1 2 3 4]

1 2 3 • 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 • 21 22 23 24 25 26 27 28 29 30 • 31 32 33 34 35 36 37 38 39 40
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1. [redacted]
2. [redacted]“[redacted]”[redacted]
3. [redacted]
4. [redacted]

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John Smith [redacted] 2FA [redacted]

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[redacted] (✉) [redacted]login_count = 0[redacted]

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[redacted]Bob Wilson (<bob@example.com>)

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[11][111111]

11 "111111"

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11 Mailjet 11111111

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11 11111111 (⇒) 111111111111

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11 ☒ admin ☐ customer_service_agent_1 ☐ customer

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11 111111 (1) 111111

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111John Smith (<john@example.com>)

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[11][1111]

11 "1111" 1111

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- 2fa - 2FA API API
- rbac -
- administration_configuration - Mailjet
- integrations_mailjet -
- customer_care -

2FA



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?“?” ✓ ??“?” ✓ ????“SW1A 1AA” ✓ ???51.5074 ✓ ???-0.1278 ✓ ??
“9C3XGPHC+3Q” ✓ GoogleID“ChIJdd4hrwug2EcRmSrV3Vo6lI”

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- `REACT_APP_DEFAULT_COUNTRY`
- `1211 + 1`

OmniCRM

1.

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2.

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- - Mailjet <integrations_mailjet>
- -

`SELECT * FROM Customer_Site`
`WHERE distance(latitude, longitude, 51.5074, -0.1278) < 5`

47 47

3.

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4.

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- `8C3MFJV8+2F`
- Google Maps
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OmniCRM

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WebApp Web

- Web

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???? Payment Methods <payment_methods> Transactions <payments_transaction>
Invoices <payments_invoices> Payment Processing <payments_process>

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- 1. ??? Customers → [????]
- 2. ?? Billing ???
- 3. ?????????????????????

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- Billing → Transactions - ???????
- Billing → Invoices - ???????

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?? Self-Care Portal <self_care_portal> ?????????????????????

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Customer Billing - Payment Methods
Payment Methods Card Detail

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payments_transaction

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- PDF
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- Stripe

Customer Billing - Transactions and Invoices

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payments_invoices

→

1.

- **Transactions**
-
- invoice_id null

2.

- **Invoices**
-

- invoice_id
-

3.

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→

1.

- **Payment Method** Stripe
- POS
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2.

Stripe

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- " #1234"
- -\$45.00
- invoice_id

3.

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→

Stripe

1. **Payment Methods**
2. Stripe
- 3.
4. Stripe
- 5.
6. payment_reference Stripe ID

1. /POS/
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- 3.
- 4.
- 5.

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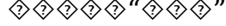
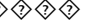
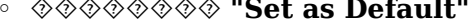
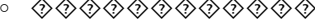
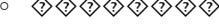
1. ?? ?? ?? ??
 - ?? ?? ?? → **Billing** ??
 - **Payment Methods** ?? → ?? "Add Payment Method"
 - ?? ?? Stripe ?? ??
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2. ?? ?? ??
 - **Transactions** ?? ?? ?? ?? ?? ??
 - ?? ?? ?? ?? ?? \$50.00
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3. ?? ?? ??
 - **Invoices** ?? → ?? "Generate Proforma Invoice"
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 - ?? #INV-2025-001234 ?? \$95.00 ??
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 - ?? ?? ?? ?? ?? "Paid"
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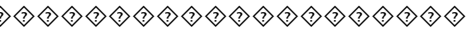
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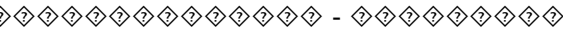
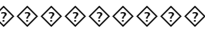
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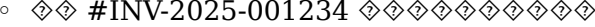
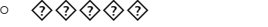
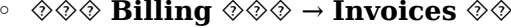
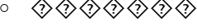
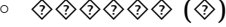
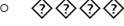
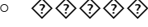
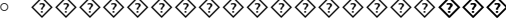
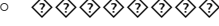
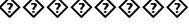
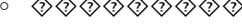
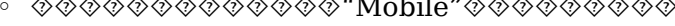
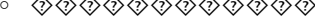
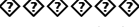
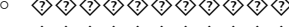
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 - ?? ?? ?? ?? ?? ?? ?? ??
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3. ?? ?? ??
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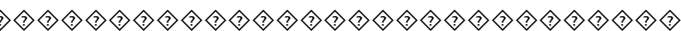
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 - Stripe  "  "
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 -  **Billing** 
 - **Payment Methods**  →  "Add Payment Method"
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 -  **"Set as Default"**
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4. 
 -  **Invoices** 
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 -  **"Pay"** 
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 -  **"Pay Invoice"**
 - Stripe 
5. 
 -  **"Paid"**
 - payment_reference  Stripe  ID

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1. 
 -  #INV-2025-001234 
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2. 
 -  **Billing**  → **Invoices** 
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3. 
 -  **Transactions** 
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4. 
 - **Invoices**  →  **"Generate Proforma Invoice"**
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 -  "Mobile" 
 -  **"Generate Invoice"**
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5. 
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6

- \$300
 - **Billing**
- Invoices** → **Paid: Not yet Paid**
 -
- #1234
 -
 - "Cash"**
 - " 2025-02-10 - #001"
 - "Pay Invoice"**
 - #1234 **"Paid"**
- #1235 " 2025-02-10 - #001"
 - #1236 " 2025-02-10 - #001"
- Transactions**
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- Invoices** → \$300.00
 - "Paid"**

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- Stripe
- Stripe

3. Stripe

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2. Stripe
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 - Stripe/Stripe
 - Stripe
 - Stripe

4. Stripe

- Stripe
- Stripe
- Stripe POS
- Stripe

5. Stripe

6. Stripe

- Stripe → B Stripe

7. Stripe

- Transactions "Not Invoiced"
- Invoices "Not yet Paid"

8. Stripe

- Stripe/Stripe
- Stripe ID

9. Stripe

- Stripe/Stripe
- Stripe (:) Stripe/Stripe

10. Stripe

- basics_payment - Stripe
- payments_transaction - Stripe
- payments_invoices - Stripe
- integrations_mailjet - Stripe
- csa_activity_log - Stripe



Playbooks

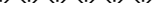
Playbooks

```

1.  playbooks/playbook provisioning_play
2.  playbooks/playbook provisioning_json_vars
3.  playbooks/playbook
4.  playbooks/playbook

```

Playbooks

- 
-  IPTV 
-  VoIP 
- 

-  CPE  playbook
-                       

- 
- 
- 

Plays Tasks

  Plays  Tasks          OmniCRM playbooks    

Play Playbook

                      Plays     OmniCRM-API/
Provisioners/plays/     playbooks            

- play_simple_service.yaml -     
- play_topup_no_charge.yaml -        
- play_prov_cpe_mikrotik.yaml -         

Task

                       plays   Tasks  task_               

- task_welcome_email.yaml -          
- task_activate_olt.yaml -   OLT  
- task_notify_ocs.yaml -         

```
# play_simple_service.yaml (  Play)
- name:     Play
  hosts: localhost
  tasks:
    - name:    
      block:
        - name:    
          uri: ...

        - name:    
          uri: ...

      #      
      - include_tasks: task_welcome_email.yaml

      #      
      - include_tasks: post_provisioning_tasks.yaml
```

Playbook

  OmniCRM playbooks                  playbooks    

crm_config.yaml

```
ocs:
  cgrates: "10.0.1.100:2080"
  ocsTenant: "default_tenant"
crm:
  base_url: "https://crm.example.com"
```

```
- name: OmniCRM product_id
  debug:
    msg: "{{ product_id }}"
```

```
- name: SIM ID
  set_fact:
    sim_card_id: "{{ hostvars[inventory_hostname]['SIM Card'] | int }}"
  when: "'SIM Card' in hostvars[inventory_hostname]"
```

API

```
- name: CRM API
  uri:
    url: "http://localhost:5000/crm/product/product_id/{{ product_id }}"
    method: GET
    headers:
      Authorization: "Bearer {{ access_token }}"
    return_content: yes
  register: api_response_product

- name:
  debug:
    msg: "{{ api_response_product.json.product_name }}"
```

Playbook

```

- name: 🎮🎮🎮🎮 Playbook
  hosts: localhost
  gather_facts: no
  become: False

  tasks:
    - name: 🎮🎮🎮
      block:

        # 1. 🎮🎮🎮🎮
        - name: 🎮🎮 crm_config 🎮🎮🎮
          ansible.builtin.include_vars:
            file: "../..//crm_config.yaml"
            name: crm_config

        # 2. 🎮🎮🎮🎮🎮🎮
        - name: 🎮 CRM API 🎮🎮🎮🎮🎮🎮
          uri:
            url: "http://localhost:5000/crm/product/product_id/{{
product_id }}"
            method: GET
            headers:
              Authorization: "Bearer {{ access_token }}"
            return_content: yes
            validate_certs: no
            register: api_response_product

        # 3. 🎮🎮🎮🎮🎮🎮
        - name: 🎮 CRM API 🎮🎮🎮🎮🎮🎮
          uri:
            url: "http://localhost:5000/crm/customer/customer_id/{{
customer_id }}"
            method: GET
            headers:
              Authorization: "Bearer {{ access_token }}"
            return_content: yes
            register: api_response_customer

        # 4. 🎮🎮🎮🎮🎮🎮🎮🎮🎮
        - name: 🎮🎮🎮🎮🎮🎮
          set_fact:
            package_name: "{{ api_response_product.json.product_name
}}"
            package_comment: "{{ api_response_product.json.comment }}"
            setup_cost: "{{ api_response_product.json.retail_setup_cost
}}"
            monthly_cost: "{{ api_response_product.json.retail_cost }}"

```

```

# 5. 1234567
- name: 12 UUID
  set_fact:
    uuid: "{{ 99999999 | random | to_uuid }}"

- name: 12345 UUID
  set_fact:
    service_uuid: "Service_{{ uuid[0:8] }}"

# 6. 123456789
- name: 1 OCS/CGRateS 12345
  uri:
    url: "http://{{ crm_config.ocs.cgrates }}/jsonrpc"
    method: POST
    body_format: json
    headers:
      Content-Type: "application/json"
    body:
      {
        "method": "ApierV2.SetAccount",
        "params": [{
          "Tenant": "{{ crm_config.ocs.ocsTenant }}",
          "Account": "{{ service_uuid }}",
          "ActionPlanIds": [],
          "ActionPlansOverwrite": true,
          "ExtraOptions": {
            "AllowNegative": false,
            "Disabled": false
          },
          "ReloadScheduler": true
        }]
      }
    status_code: 200
    register: ocs_response

- name: 12 OCS 12345
  assert:
    that:
      - ocs_response.status == 200
      - ocs_response.json.result == "OK"

# 7. 1234567
- name: 12 0 12345
  uri:
    url: "http://{{ crm_config.ocs.cgrates }}/jsonrpc"
    method: POST
    body_format: json
    body:

```

```

{
  "method": "ApierV1.AddBalance",
  "params": [{
    "Tenant": "{{ crm_config.ocs.ocsTenant }}",
    "Account": "{{ service_uuid }}",
    "BalanceType": "*monetary",
    "Categories": "*any",
    "Balance": {
      "ID": "????",
      "Value": 0,
      "ExpiryTime": "+4320h",
      "Weight": 1,
      "Blocker": true
    }
  ]
}
status_code: 200
register: balance_response

# 8. ? CRM ? ? ? ? ? ? ?
- name: ? ? ? ? ? ? ? ? ? ? ISO 8601 ? ? ?
  command: date --utc +%Y-%m-%dT%H:%M:%S%z
  register: current_date_time

- name: ? ? API ? ? ? ?
  uri:
    url: "http://localhost:5000/crm/service/"
    method: PUT
    body_format: json
    headers:
      Content-Type: "application/json"
      Authorization: "Bearer {{ access_token }}"
    body:
      {
        "customer_id": "{{ customer_id }}",
        "product_id": "{{ product_id }}",
        "service_name": "{{ package_name }} - {{ service_uuid
}}",
        "service_type": "generic",
        "service_uuid": "{{ service_uuid }}",
        "service_billed": true,
        "service_taxable": true,
        "service_provisioned_date": "{{
current_date_time.stdout }}"
        "service_status": "Active",
        "wholesale_cost": "{{
api_response_product.json.wholesale_cost | float }}"
        "retail_cost": "{{ monthly_cost | float }}"

```

```

    }
    status_code: 200
    register: service_creation_response

# 9. 22222222
- name: 22 API 22222222
  uri:
    url: "http://localhost:5000/crm/transaction/"
    method: PUT
    headers:
      Content-Type: "application/json"
      Authorization: "Bearer {{ access_token }}"
    body_format: json
    body:
      {
        "customer_id": {{ customer_id | int }},
        "service_id": {{
service_creation_response.json.service_id | int }},
        "title": "{{ package_name }} - 2222",
        "description": "2 {{ package_comment }} 222222",
        "invoice_id": null,
        "retail_cost": "{{ setup_cost | float }}"
      }
    return_content: yes
    register: transaction_response

# 10. 22222222
- include_tasks: post_provisioning_tasks.yaml

rescue:

# 22/22222
- name: 22222222222222
  debug:
    var: hostvars[inventory_hostname]

- name: 2 OCS 22222
  uri:
    url: "http://{{ crm_config.ocs.cgrates }}/jsonrpc"
    method: POST
    body_format: json
    body:
      {
        "method": "ApierV2.RemoveAccount",
        "params": [{
          "Tenant": "{{ crm_config.ocs.ocsTenant }}",
          "Account": "{{ service_uuid }}",
          "ReloadScheduler": true

```

```

    }
  }
  status_code: 200
  ignore_errors: True
  when: service_uuid is defined

- name: 0000000000 CRM 0000
  uri:
    url: "http://localhost:5000/crm/service/service_id/{{
service_creation_response.json.service_id }}"
    method: DELETE
    headers:
      Authorization: "Bearer {{ access_token }}"
    status_code: 200
    ignore_errors: True
  when: service_creation_response is defined

- name: 00000000000000000000000000
  assert:
    that:
      - action == "deprovision"

```

00/0000

00000000000000000000000000000000

```

- name: 0000 Playbook
  hosts: localhost
  gather_facts: no
  become: False

tasks:
  - name: 00 crm_config 000
    ansible.builtin.include_vars:
      file: ".././crm_config.yaml"
      name: crm_config

# 1. 00000000
- name: 0 CRM API 00000000
  uri:
    url: "http://localhost:5000/crm/service/service_id/{{
service_id }}"
    method: GET
    headers:
      Authorization: "Bearer {{ access_token }}"
    return_content: yes
  register: api_response_service

```

```

# 2. 12345678901234567890
- name: 1 CRM API 1234567890
  uri:
    url: "http://localhost:5000/crm/product/product_id/{{
product_id }}"
    method: GET
    headers:
      Authorization: "Bearer {{ access_token }}"
    return_content: yes
    register: api_response_product

# 3. 1234567890
- name: 1234567890
  set_fact:
    service_uuid: "{{ api_response_service.json.service_uuid }}"
    customer_id: "{{ api_response_service.json.customer_id }}"
    package_name: "{{ api_response_product.json.product_name }}"
    topup_value: "{{ api_response_product.json.retail_cost }}"

# 4. 123456789012345678901234567890
- name: 12345678901234567890
  uri:
    url: "http://{{ crm_config.ocs.cgrates }}/jsonrpc"
    method: POST
    body_format: json
    body:
      {
        "method": "APIerSv1.ExecuteAction",
        "params": [{
          "Tenant": "{{ crm_config.ocs.ocsTenant }}",
          "Account": "{{ service_uuid }}",
          "ActionsId": "Action_Topup_Standard"
        }]
      }
    status_code: 200
    register: action_response

- name: 12345678901234567890
  assert:
    that:
      - action_response.status == 200
      - action_response.json.result == "OK"

# 5. 12345678901234567890
- name: 12 ActionTriggers
  uri:
    url: "http://{{ crm_config.ocs.cgrates }}/jsonrpc"
    method: POST

```

```

body_format: json
body:
  {
    "method": "APIerSv1.ResetAccountActionTriggers",
    "params": [{
      "Tenant": "{{ crm_config.ocs.ocsTenant }}",
      "Account": "{{ service_uuid }}",
      "Executed": false
    }]
  }
status_code: 200

# 6. 123456789
- name: 123456789
  command: "date --utc +%Y-%m-%dT%H:%M:%S%z -d '+30 days'"
  register: new_expiry_date

- name: 1234567890123456789
  uri:
    url: "http://localhost:5000/crm/service/{{ service_id }}"
    method: PATCH
    headers:
      Authorization: "Bearer {{ access_token }}"
      Content-Type: "application/json"
    body_format: json
    body:
      {
        "service_deactivate_date": "{{ new_expiry_date.stdout
}}",
        "service_status": "Active"
      }

# 7. 123456789
- name: 123456789
  uri:
    url: "http://sms-gateway/api/send"
    method: POST
    body_format: json
    body:
      {
        "source": "1234",
        "destination": "{{ customer_phone }}",
        "message": "123456789012345678901234567890{{ new_expiry_date.stdout
}}}"

      }
    status_code: 201
    ignore_errors: True

```

CPE

ONT

```
- name: CPE Playbook
hosts: localhost
gather_facts: no
become: False

tasks:
  - name: crm_config
    ansible.builtin.include_vars:
      file: "../../crm_config.yaml"
      name: crm_config

  # 1. CPE ID
  - name: hostvars CPE ID
    set_fact:
      cpe_inventory_id: "{{ hostvars[inventory_hostname]['WiFi Router CPE'] | int }}"
    when: "'WiFi Router CPE' in hostvars[inventory_hostname]"

  # 2. CPE
  - name: CPE
    uri:
      url: "{{ crm_config.crm.base_url }}/crm/inventory/inventory_id/{{ cpe_inventory_id }}"
      method: GET
      headers:
        Authorization: "Bearer {{ access_token }}"
      return_content: yes
      register: api_response_cpe

  # 3. CPE
  - name: API
    uri:
      url: "{{ crm_config.crm.base_url }}/crm/site/customer_id/{{ customer_id }}"
      method: GET
      headers:
        Authorization: "Bearer {{ access_token }}"
      return_content: yes
      register: api_response_site

  # 4. CPE
  - name: CPE
    uri:
      url: "{{ crm_config.crm.base_url }}/crm/inventory/
```

```

inventory_id/{{ cpe_inventory_id }}"
  method: PATCH
  body_format: json
  headers:
    Authorization: "Bearer {{ access_token }}"
  body:
    {
      "address_line_1": "{{
api_response_site.json.0.address_line_1 }}",
      "city": "{{ api_response_site.json.0.city }}",
      "state": "{{ api_response_site.json.0.state }}",
      "latitude": "{{ api_response_site.json.0.latitude }}",
      "longitude": "{{ api_response_site.json.0.longitude }}"
    }
  status_code: 200

# 5.  CPE
- name: CPE
  set_fact:
    cpe_hostname: "CPE_{{ cpe_inventory_id }}"
    cpe_username: "admin_{{ cpe_inventory_id }}"

- name:
  set_fact:
    cpe_password: "{{ lookup('pipe', 'cat /dev/urandom | tr -dc
a-zA-Z0-9 | head -c 16') }}"

# 6.  WiFi
- name: WiFi SSID
  set_fact:
    wifi_ssid: "Network_{{ cpe_inventory_id }}"

- name: WiFi
  set_fact:
    word_list:
      - apple
      - cloud
      - river
      - mountain
      - ocean

- name: WiFi PSK
  set_fact:
    random_word: "{{ word_list | random }}"
    random_number: "{{ 99999 | random(start=10000) }}"

- name: WiFi PSK
  set_fact:

```

```

        wifi_psk: "{{ random_word }}{{ random_number }}"

# 7. 222222
- name: 222222
  set_fact:
    config_name: "{{ cpe_hostname }}_{{ lookup('pipe', 'date
+%Y%m%d%H%M%S') }}.cfg"
    config_dest: "/tmp/{{ cpe_hostname }}_{{ lookup('pipe', 'date
+%Y%m%d%H%M%S') }}.cfg"

- name: 222222
  template:
    src: "templates/cpe_router_config.j2"
    dest: "{{ config_dest }}"

# 8. 222222
- name: 222222
  ansible.builtin.slurp:
    src: "{{ config_dest }}"
  register: config_content

# 9. 222222
- name: 222222 CPE 22
  uri:
    url: "{{ crm_config.crm.base_url }}/crm/inventory/
inventory_id/{{ cpe_inventory_id }}"
    method: PATCH
    body_format: json
    headers:
      Authorization: "Bearer {{ access_token }}"
    body:
      {
        "itemtext3": "{{ wifi_ssid }}",
        "itemtext4": "{{ wifi_psk }}",
        "management_url": "{{ cpe_hostname }}",
        "management_username": "{{ cpe_username }}",
        "management_password": "{{ cpe_password }}",
        "config_content": "{{ config_content.content | b64decode
}}",
        "inventory_notes": "2222{{ lookup('pipe', 'date +%Y-%m-
%d') }}"
      }
    status_code: 200

# 10. 2222222222
- name: 2222222222222222
  uri:
    url: "https://api.mailjet.com/v3.1/send"

```

```

method: POST
body_format: json
headers:
  Content-Type: "application/json"
body:
  {
    "Messages": [{
      "From": {
        "Email": "provisioning@example.com",
        "Name": "?????"
      },
      "To": [{
        "Email": "support@example.com",
        "Name": "?????"
      }],
      "Subject": "CPE ?? - {{ cpe_hostname }}",
      "Attachments": [{
        "ContentType": "text/plain",
        "Filename": "{{ config_name }}",
        "Base64Content": "{{ config_content.content }}"
      }]
    }]
  }
user: "{{ mailjet_api_key }}"
password: "{{ mailjet_api_secret }}"
force_basic_auth: true
status_code: 200

```

??????

?? CGRateS ActionPlans ??????????????

?? *playbook* ??????????

1. ??? auto_renew ??

- name: ??? auto_renew ?????

set_fact:

auto_renew_bool: "{{ (auto_renew | string | lower) in ['true', '1', 'yes'] }}"

2. ??????????

- name: ??????????

uri:

url: "http://{{ crm_config.ocs.cgrates }}/jsonrpc"

method: POST

body_format: json

body:

{

```

        "method": "ApierV1.SetActions",
        "params": [{
            "ActionsId": "Action_AutoTopup_{{ service_uuid }}_{{
product_id }}",
            "Overwrite": true,
            "Actions": [
                {
                    "Identifier": "*http_post",
                    "ExtraParameters": "{{ crm_config.crm.base_url }}/crm/
provision/simple_provision_addon/service_id/{{ service_id
}}/product_id/{{ product_id }}"
                },
                {
                    "Identifier": "*cdrlog",
                    "BalanceType": "*generic",
                    "ExtraParameters":
"{{\"Category\": \"^activation\", \"Destination\": \"????\"}}",
                }
            ]
        }]
    }
    status_code: 200
    register: action_response
    when: auto_renew_bool

```

3. *???? ActionPlan*

```

- name: ???????? ActionPlan
  uri:
    url: "http://{{ crm_config.ocs.cgrates }}/jsonrpc"
    method: POST
    body_format: json
    body:
      {
        "method": "ApierV1.SetActionPlan",
        "params": [{
            "Id": "ActionPlan_Monthly_{{ service_uuid }}_{{ product_id
}}",
            "Tenant": "{{ crm_config.ocs.ocsTenant }}",
            "ActionPlan": [{
                "ActionsId": "Action_AutoTopup_{{ service_uuid }}_{{
product_id }}",
                "Years": "*any",
                "Months": "*any",
                "MonthDays": "*any",
                "WeekDays": "*any",
                "Time": "*monthly",
                "StartTime": "*now",
                "Weight": 10
            }
        ]
      }
    }

```

```

    }],
    "Overwrite": true,
    "ReloadScheduler": true
  }]
}
status_code: 200
when: auto_renew_bool

# 4.  ActionPlan
- name:  ActionPlan
  uri:
    url: "http://{{ crm_config.ocs.cgrates }}/jsonrpc"
    method: POST
    body_format: json
    body:
      {
        "method": "ApierV2.SetAccount",
        "params": [{
          "Tenant": "{{ crm_config.ocs.ocsTenant }}",
          "Account": "{{ service_uuid }}",
          "ActionPlanIds": ["ActionPlan_Monthly_{{ service_uuid }}_{{
product_id }}"],
          "ActionPlansOverwrite": true,
          "ReloadScheduler": true
        }]
      }
    status_code: 200
    when: auto_renew_bool

# 5.  ActionPlan
- name:  ActionPlan
  uri:
    url: "http://{{ crm_config.ocs.cgrates }}/jsonrpc"
    method: POST
    body_format: json
    body:
      {
        "method": "ApierV1.RemoveActionPlan",
        "params": [{
          "Tenant": "{{ crm_config.ocs.ocsTenant }}",
          "Id": "ActionPlan_Monthly_{{ service_uuid }}_{{ product_id
}}}"
        }]
      }
    status_code: 200
    ignore_errors: true
    when: not auto_renew_bool

```



```

        "Email": "{{ email_from }}",
        "Name": "{{ email_from_name }}"
    },
    "To": "{{ recipients }}",
    "Subject": "{{ email_subject }}",
    "TextPart": "??? {{ first_contact }}?????????????",
    "HTMLPart": "??? {{ first_contact }}<br/><h3>???
</h3><br/>?? {{ package_name }} ??????????<br/>?????${{
monthly_cost }}<br/>?????${{ setup_cost }}<br/>?????????
support@example.com"
    }
}
user: "{{ mailjet_api_key }}"
password: "{{ mailjet_api_secret }}"
force_basic_auth: true
status_code: 200
register: email_response

```

?????

post_provisioning_tasks.yaml - ??????????????????

```

# ?????????? playbooks ??????
# ??????????

```

```

- include_tasks: task_notify_ocs.yaml

```

task_notify_ocs.yaml ??????

```

- name: ?? OCS ???
  uri:
    url: "http://{{ crm_config.ocs.cgrates }}/jsonrpc"
    method: POST
    body_format: json
    body:
      {
        "method": "APIerSv1.ReloadCache",
        "params": [{
          "ArgsCache": "*all"
        }]
      }
    status_code: 200
    ignore_errors: true

```

◆◆◆◆

◆◆◆◆◆

◆◆◆◆◆◆◆◆

```
- name: ◆◆ SIM ◆◆◆ ID
  set_fact:
    sim_inventory_id: "{{ hostvars[inventory_hostname]['SIM Card'] |
int }}"
  when: "'SIM Card' in hostvars[inventory_hostname]"

- name: ◆◆ SIM ◆◆◆◆◆
  uri:
    url: "{{ crm_config.crm.base_url }}/crm/inventory/inventory_id/{{
sim_inventory_id }}"
    method: GET
    headers:
      Authorization: "Bearer {{ access_token }}"
    return_content: yes
  register: sim_response

- name: ◆◆ SIM ◆◆◆◆◆
  set_fact:
    iccid: "{{ sim_response.json.iccid }}"
    imsi: "{{ sim_response.json.imsi }}"
    ki: "{{ sim_response.json.ki }}"
```

◆◆◆◆◆◆◆◆

```
- name: ◆ SIM ◆◆◆◆◆
  uri:
    url: "{{ crm_config.crm.base_url }}/crm/inventory/inventory_id/{{
sim_inventory_id }}"
    method: PATCH
    headers:
      Authorization: "Bearer {{ access_token }}"
    body_format: json
    body:
      {
        "customer_id": {{ customer_id }},
        "service_id": {{ service_id }},
        "item_state": "◆◆◆"
      }
  status_code: 200
```

??????

?????/???

```
- name: ???? ? ISO 8601 ?  
  command: date --utc +%Y-%m-%dT%H:%M:%S%z  
  register: current_date_time  
  
- name: ????  
  set_fact:  
    today: "{{ lookup('pipe', 'date +%Y-%m-%d') }}"
```

?????

```
- name: ?? 30 ????  
  command: "date --utc +%Y-%m-%dT%H:%M:%S%z -d '+30 days'"  
  register: expiry_date  
  
- name: ???? 90 ????  
  command: "date --utc +%Y-%m-%d -d '+{{ days }} days'"  
  register: future_date  
  vars:  
    days: 90
```

?????

UUID ?????

```
- name: ?? UUID  
  set_fact:  
    uuid: "{{ 99999999 | random | to_uuid }}"  
  
- name: ????  
  set_fact:  
    service_uuid: "SVC_{{ uuid[0:8] }}"
```

?????

```
- name: ????  
  set_fact:  
    password: "{{ lookup('pipe', 'cat /dev/urandom | tr -dc a-zA-Z0-9  
| head -c 16') }}"
```

?????

```
- name: ????  
  set_fact:  
    words:
```

```

- alpha
- bravo
- charlie
- delta
- echo

- name: 111111
  set_fact:
    word: "{{ words | random }}"
    number: "{{ 99999 | random(start=10000) }}"

- name: 111111
  set_fact:
    passphrase: "{{ word }}{{ number }}"

```

❖ CGRateS/OCS ❖❖

11111

```

- name: 111111
  uri:
    url: "http://{{ crm_config.ocs.cgrates }}/jsonrpc"
    method: POST
    body_format: json
    body:
      {
        "method": "ApierV2.SetAccount",
        "params": [{
          "Tenant": "{{ crm_config.ocs.ocsTenant }}",
          "Account": "{{ service_uuid }}",
          "ActionPlanIds": [],
          "ActionPlansOverwrite": true,
          "ExtraOptions": {
            "AllowNegative": false,
            "Disabled": false
          },
          "ReloadScheduler": true
        }]
      }
    status_code: 200
    register: account_response

```

11111

```

- name: 111111
  uri:
    url: "http://{{ crm_config.ocs.cgrates }}/jsonrpc"
    method: POST

```

```

body_format: json
body:
  {
    "method": "ApierV1.AddBalance",
    "params": [{
      "Tenant": "{{ crm_config.ocs.ocsTenant }}",
      "Account": "{{ service_uuid }}",
      "BalanceType": "*data",
      "Categories": "*any",
      "Balance": {
        "ID": "???",
        "Value": 10737418240,
        "ExpiryTime": "+720h",
        "Weight": 10
      }
    }]
  }
status_code: 200

```

?????

```

- name: ??????
  uri:
    url: "http://{{ crm_config.ocs.cgrates }}/jsonrpc"
    method: POST
    body_format: json
    body:
      {
        "method": "APIerSv1.ExecuteAction",
        "params": [{
          "Tenant": "{{ crm_config.ocs.ocsTenant }}",
          "Account": "{{ service_uuid }}",
          "ActionsId": "Action_Standard_Charge"
        }]
      }
    status_code: 200

```

???????

```

- name: ??????
  uri:
    url: "http://{{ crm_config.ocs.cgrates }}/jsonrpc"
    method: POST
    body_format: json
    body:
      {
        "method": "ApierV2.GetAccount",
        "params": [{
          "Tenant": "{{ crm_config.ocs.ocsTenant }}",

```

```

        "Account": "{{ service_uuid }}"
    }
}
status_code: 200
register: account_info

```

◆◆◆◆◆◆◆◆◆◆

```

- name: ◆◆ AttributeProfile
  uri:
    url: "http://{{ crm_config.ocs.cgrates }}/jsonrpc"
    method: POST
    body_format: json
    body:
      {
        "method": "APIerSv1.GetAttributeProfile",
        "params": [{
          "Tenant": "{{ crm_config.ocs.ocsTenant }}",
          "ID": "ATTR_{{ service_uuid }}"
        }]
      }
    return_content: yes
    status_code: 200
    register: attr_response
    ignore_errors: true

- name: ◆◆◆◆◆
  set_fact:
    phone_number: "{{ attr_response.json.result.Attributes |
    json_query('\":[?Path=='*req.PhoneNumber'].Value[0].Rules\') | first
    }}"
  when: attr_response is defined

```

◆◆◆◆◆

◆◆◆◆◆◆◆◆◆◆

```

- name: ◆◆◆◆◆◆◆◆◆◆
  set_fact:
    monthly_cost: "{{ custom_cost | default(50.00) }}"

- name: ◆◆◆◆◆◆◆◆◆◆
  debug:
    msg: "◆◆ UUID ◆ {{ service_uuid }}"
  when: service_uuid is defined

```

◆◆◆◆◆◆

```
- name: 11111
  include_tasks: configure_cpe.yaml
  when: provision_cpe | default(false) | bool

- name: 1111111111111111
  assert:
    that:
      - action != "deprovision"
  when: action is defined
```

111111

```
- name: 1111111111111111
  uri:
    url: "{{ endpoint }}"
    method: POST
  when:
    - service_uuid is defined
    - customer_id is defined
    - action != "deprovision"
    - enable_feature | default(true) | bool
```

111111111111

111111111111

```
- name: 1111111111111111
  uri:
    url: "http://{{ crm_config.ocs.cgrates }}/jsonrpc"
    method: POST
    body_format: json
    body:
      {
        "method": "ApierV1.AddBalance",
        "params": [{
          "Account": "{{ service_uuid }}",
          "BalanceType": "{{ item.type }}",
          "Balance": {
            "Value": "{{ item.value }}"
          }
        }]
      }
  loop:
    - { type: "*voice", value: 3600 }
    - { type: "*data", value: 10737418240 }
    - { type: "*sms", value: 100 }
```

11 API 111111

```

- name: 12345678
  uri:
    url: "{{ crm_config.crm.base_url }}/crm/site/customer_id/{{
customer_id }}"
    method: GET
    headers:
      Authorization: "Bearer {{ access_token }}"
  register: sites_response

- name: 123456789
  debug:
    msg: "1 {{ item.address_line_1 }}"
  loop: "{{ sites_response.json }}"

```

1234

1 ignore_errors 1

```

- name: 123 SMS 12
  uri:
    url: "http://sms-gateway/send"
    method: POST
    body: {...}
  ignore_errors: true

```

123456789

```

- name: 12 API 12
  assert:
    that:
      - response.status == 200
      - response.json.result == "OK"
  fail_msg: "API 123456789{{ response.json }}"

```

123456789

```

- name: 123456789
  uri:
    url: "{{ crm_config.crm.base_url }}/crm/service/service_uuid/{{
service_uuid }}"
    method: GET
    headers:
      Authorization: "Bearer {{ access_token }}"
  register: service_lookup
  failed_when: false

- name: 123456789
  uri:

```

```
url: "{{ crm_config.crm.base_url }}/crm/service/"
method: PUT
body: {...}
when: service_lookup.status == 404
```

◆◆◆◆

◆◆◆◆

◆◆◆◆◆◆◆◆◆◆

```
# ◆
service_uuid: "SVC_12345"
customer_name: "John Smith"
monthly_cost: 49.99
```

```
# ◆◆
svc: "SVC_12345"
name: "John Smith"
cost: 49.99
```

◆◆◆◆◆◆◆◆◆◆

```
api_response_customer: {...}
api_response_product: {...}
cgr_account_info: {...}
```

◆◆

◆◆◆◆◆◆◆◆◆◆

```
- name: ◆◆◆◆◆◆
  debug:
    var: hostvars[inventory_hostname]

- name: ◆◆◆◆◆◆
  debug:
    msg: "◆◆ UUID: {{ service_uuid }}"

- name: ◆◆ API ◆◆
  debug:
    var: api_response_product.json
```

◆◆

◆◆◆◆◆◆ API ◆◆◆

```

- name: ????
  uri:
    url: "{{ billing_endpoint }}"
    method: POST
    body: {...}
    register: response

- name: ??????
  assert:
    that:
      - response.status == 200
      - response.json.result == "OK"
    fail_msg: "?????{{ response.json }}"

```

???

????? ? ? ? ? ?

```

# ????
- name: ??????
  uri:
    url: "{{ ocs_endpoint }}/get_account"
    method: POST
    body: {"Account": "{{ service_uuid }}" }
    register: account_check
    failed_when: false

```

```

# ????
- name: ???
  uri:
    url: "{{ ocs_endpoint }}/create_account"
    method: POST
    body: {...}
  when: account_check.status == 404

```

???

????? ? ? ? ? ?

```

# ??
mailjet_api_key: "abc123def456"

# ? - ????
mailjet_api_key: "{{ lookup('env', 'MAILJET_API_KEY') }}"

# ? - ????
mailjet_api_key: "{{ crm_config.email.api_key }}"

```

⬢⬢⬢⬢ HTTPS ⬢⬢⬢⬢⬢⬢

```
- name: ⬢⬢⬢⬢ API
  uri:
    url: "https://api.example.com/endpoint"
    method: POST
    headers:
      Authorization: "Bearer {{ access_token }}"
    validate_certs: yes
```

⬢⬢

⬢⬢⬢⬢⬢⬢⬢

```
# ⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢
# ⬢⬢⬢⬢⬢ 15 ⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢ 1 ⬢⬢
# ⬢⬢⬢⬢⬢⬢⬢⬢ 50% ⬢⬢⬢⬢⬢
- name: ⬢⬢⬢⬢⬢⬢⬢⬢
  command: "date -d 'last day of this month' +%d"
  register: days_in_month

- name: ⬢⬢⬢⬢⬢⬢
  command: "date +%d"
  register: current_day

- name: ⬢⬢⬢⬢⬢⬢⬢⬢
  set_fact:
    days_remaining: "{{ (days_in_month.stdout | int) -
(current_day.stdout | int) }}"
    pro_rata_cost: "{{ (monthly_cost | float) * (days_remaining |
float) / (days_in_month.stdout | float) }}"
```

⬢⬢ Playbooks

⬢⬢⬢⬢

1. ⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢
2. ⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢
3. ⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢ API ⬢⬢
4. ⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢
5. ⬢⬢⬢⬢⬢⬢⬢⬢⬢⬢ action: "deprovision" ⬢⬢⬢⬢⬢⬢⬢⬢⬢

⬢⬢⬢⬢ playbook⬢

```
- name: ⬢⬢⬢⬢⬢⬢⬢
  hosts: localhost
  gather_facts: no
```

```

tasks:
  - name: 11111111
    assert:
      that:
        - product_id is defined
        - customer_id is defined
        - access_token is defined
    fail_msg: "11111111"

  - name: 11 API 11
    uri:
      url: "http://localhost:5000/crm/health"
      method: GET
    register: health_check

  - name: 11111111
    assert:
      that:
        - health_check.status == 200

```

11111

11111111

```

# 11 - 11111111
customer_id: "{{ customer_id }}"

# 11 - 11111111
customer_id: {{ customer_id | int }}

```

1111111111

```

# 11 - 11111111111111
service_uuid: "{{ service_uuid }}"

# 11 - 11111111
service_uuid: "{{ service_uuid | default('') }}"

```

111111

```

# 11 - 11111111
- name: 11111
  uri: ...
  register: response

# 11 - 11111111
- name: 11111
  uri: ...

```

```
register: response
```

```
- name:   
  assert:  
    that:  
      - response.json.result == "OK"
```

?

Omnitouch

- 1.
2. Ansible playbooks
3. playbooks
- 4.

?

Ansible

Ansible playbooks

?

OmniCRM

?

SIM IP

?

OmniCRM

- product_id -
- customer_id -
- service_id -
- access_token - API JWT

?

Ansible Playbooks rescue

-
-
-
-

?? ?? ?? ?? ?? ??

Ansible **block/rescue**

concepts_provisioning

API token JSON
refresh_token

/auth/login Try it out Swagger

OmniCRM Swagger Page

Swagger "Authorize" "Value"
Bearer "Authorize"

OmniCRM Swagger Bearer Auth

API

API

-
-
-
- cron

API

API crm_config.yaml API
32 X-API-KEY

API

API crm_config.yaml

```
api_keys:
  your-secure-api-key-here-minimum-32-chars:
    roles:
      - admin
    description: "Provisioning automation system"
  another-api-key-for-monitoring-system:
    roles:
      - view_customer
      - view_service
    description: "Monitoring and alerting"
```

API

X-API-KEY API

```
curl -X GET "https://yourcrm.com/crm/customers" \
-H "X-API-KEY: your-secure-api-key-here-minimum-32-chars"
```

Python

```
import requests

crm_url = 'https://yourcrm.com'
api_key = 'your-secure-api-key-here-minimum-32-chars'

headers = {
    "Content-Type": "application/json",
    "X-API-KEY": api_key
}

# 
response = requests.get(crm_url + '/crm/customers', headers=headers)
for customer in response.json()['data']:
    print(customer)
```

- API (openssl rand -base64 48)
- API
- description API
- API
- API
- API

IP

IP IP API

-
- VLAN
- Ansible

IP

IP crm_config.yaml

```
ip_whitelist:
- 192.168.1.100
- 10.0.0.0/24
- 172.16.50.10
```

????

- ?????????? IP ???
- ????????? IP ??
- ????????? IP ??
- ????? IP ???????
- ????????? IP

?? Python ??? API ??

????? JWT ??????????

```
import requests

crm_url = 'https://yourcrm.com'
session = requests.Session()

print("?????: " + str(crm_url))

headers = {
    "Content-Type": "application/json"
}

# 
response = session.post(crm_url + '/crm/auth/login', json={
    "email": "youruser@yourdomain.com",
    "password": "yourpassword"
}, headers=headers)

print(response.status_code)
print(response.json())
assert response.status_code == 200

headers['Authorization'] = 'Bearer ' + response.json()['token']
print("???? CRM")

# 
response = session.get(crm_url + '/crm/customers', headers=headers)
for customer in response.json()['data']:
    print(customer)
```



CRM /

Ansible <guide_product_lifecycle>

"

OmniCRM —

OmniCRM

OmniCRM

OmniCRM

—

OmniCRM

IP

OmniCRM —“”

?

/

- CRM
-
- SIM SIM
- ['SIM Card', 'Phone Number'] CRM
<administration_inventory>
- Ansible Playbook Play <concepts_ansible> Ansible
service_id ICCID
MSISDN

OmniCRM

?

?

category

- standalone -
- addon -
- bundle -
- promo -

provisioning_play Ansible
playbook

- standalone - addon bundle -

/

?

service_type

FontAwesome

-

* "wifi" * *

-

- - - / /
 - -
 - - 30 365
- - -
 - -
- - ID
 -

Ansible

-

- **Play**
 - Ansible playbook .yaml
 - OmniCRM-API/Provisioners/plays/
 -
- **JSON**
 - Ansible playbook JSON
 -
 - Playbook customer_idproduct_idservice_idaccess_token
- -
 - SIM IPv4
 - /
 - ID playbook

-

- - /

- 123456789
- 123456789
- 12345
 - 12345678910/11
 - 12345678910
 - 12345678910
- 123456789
 - 12 - 12345678910
 - 1234 - 12345678910
 - 123456

1234

- 12345
 - 12 - 12345
 - 1234 - 12345678910 "clone" 12345
 - 12345 - 12345678910
- 12/12345
 - 12 - 123456789
 - 1234 - 12345678910111213141516171819

1234

123456789101112131415161718192021222324252627282930313233343536373839404142434445464748495051525354555657585960616263646566676869707172737475767778798081828384858687888990919293949596979899100

1234

- **product_id** - 12345678910
- **product_name** - 1234567891011
- **product_slug** - 12 URL 1 API 123456789101112131415161718192021222324252627282930
- **category** - 12345678910111213141516171819
 - standalone - 12345678910111213141516171819
 - addon - 12 12345678910
 - bundle - 12345678910
 - promo - 123456
- **service_type** - 123456789101112131415161718192021222324252627282930313233343536373839404142434445464748495051525354555657585960616263646566676869707172737475767778798081828384858687888990919293949596979899100
- **comment** - 123456789101112131415161718192021222324252627282930313233343536373839404142434445464748495051525354555657585960616263646566676869707172737475767778798081828384858687888990919293949596979899100
- **icon** - 123456789 FontAwesome 123456789fa-solid fa-sim-card

1234

- **retail_cost** - 123456789101112131415161718192021222324252627282930 0
- **wholesale_cost** - 12345678910111213141516171819
- **retail_setup_cost** - 12345678910111213141516171819
- **wholesale_setup_cost** - 12345678910111213141516171819
- **tax_percentage** - 12345678910111213141516171819 10 10% 12.5 12.5% 12345678910111213141516171819 012345678910111213141516171819

123456

12345

123456789101112131415161718192021222324252627282930313233343536373839404142434445464748495051525354555657585960616263646566676869707172737475767778798081828384858687888990919293949596979899100

- 12345 10% 123456789 \$50.00 → 1234 \$5.00
- 12345 0% 123456789 → 1234 \$0.00


```

"retail_cost": 0,
"retail_setup_cost": 0,
"wholesale_cost": 3,
"wholesale_setup_cost": 1,
"contract_days": 0,
"residential": true,
"business": true,
"enabled": true,
"customer_can_purchase": true,
"icon": "fa-solid fa-sim-card",
"features_list": "['04xxx)', '04xxx)', '04xxx)', '04xxx)']",
"terms": "04xxx 6 04xxx 12 04xxx",
"comment": "04xxx SIM 04xxx"
}

```

04xxx SIM 04xxx

04xxx

```

{
  "product_slug": "norfone-mobile-prepaid-mini",
  "product_name": "Norfone Mini 04",
  "category": "addon",
  "service_type": "mobile",
  "provisioning_play": "play_topup_charge_then_action",
  "provisioning_json_vars": "",
  "inventory_items_list": "[]",
  "retail_cost": 30,
  "retail_setup_cost": 0,
  "wholesale_cost": 5.84,
  "contract_days": 30,
  "residential": true,
  "business": false,
  "enabled": true,
  "customer_can_purchase": true,
  "auto_renew": "prompt",
  "icon": "fa-solid fa-sim-card",
  "features_list": "['8GB 04', '04 Norfone 04', '100 04', '100 04', '30 04']",
  "terms": "04 30 04",
  "comment": "04"
}

```

04/04

04

```

{
  "product_slug": "Bundle-Seniors",
  "product_name": "04",
  "category": "bundle",
  "service_type": "fixed",
  "provisioning_play": "play_seniors_package",
  "provisioning_json_vars": "{\"IPTV_Service_ID\": \"SeniorBundle\"}",
  "inventory_items_list": "['Modem Router']",
  "retail_cost": 30,
  "retail_setup_cost": 0,
  "wholesale_cost": 10,

```


#####

```
"provisioning_json_vars": "{\"monthly_cost\": 50, \"data_gb\": 100}"
```

API

```
{
  "product_id": 10,
  "customer_id": 456,
  "monthly_cost": 45,
  "custom_param": "value"
}
```

Ansible # extra_vars

```
{
  "monthly_cost": 45,          # #####
  "data_gb": 100,             # ## provisioning_json_vars
  "product_id": 10,           # #####
  "customer_id": 456,         # #####
  "custom_param": "value",    # #####
  "access_token": "eyJ..."  # #####
}
```

#####

#####

- access_token - ##### API ### CRM # JWT ##### g.access_token ## IP/API ###
refresh_token
- initiating_user - ##### ID#####
- #####product_id#customer_id#service_id #

####

```
#####inventory_items_list: ["SIM Card', 'Mobile Number']"#####
```

1. **UI/API** ##### - #####
2. ## **ID** ##### - ##### ID #####
3. **Playbook** ##### **ID** - ## playbook ##### CRM API #####

- SIM ##### ID#789 - ##### ID#101

playbook ##### - SIM Card: 789 - Mobile Number: 101

###playbook ##### ID # CRM API #####ICCID#IMSI#MSISDN #####

Ansible

#####extravars ### Ansible playbook# playbook #####

{{ variable_name }} ##### playbook #####{{ product_id }}#{{ customer_id }}#{{ monthly_cost }}

playbook play_seniors_package IPTV

??

OCS </glossary>
OCS CGRateS ActionPlans
ThresholdS

???

1. -
 - residential = true business = false
 - business = true
2. -
 - category = standalone bundle
 - category = addon
3. -
 - enabled = true -
 - available_from available_until -
 - customer_can_purchase = true -

??

API API

- (/crm/product/) -
- (/crm/product/paginated) -

include_disabled=true

- -
- -
- -
- -

???

1. - service_type
 - service_type = "mobile" service_type = "mobile"

- **deprovisioning_json_vars** - playbook

- **bundled_parent** - service_id
- **site_id** - /

- **service_notes** -
- **created** -
- **last_modified** -

API/UI

PATCH /crm/service/{service_id}

- service_name◇service_type◇service_status
- service_notes
- retail_cost◇wholesale_cost
- service_billed◇service_taxable
- service_visible_to_customer◇service_usage_visible_to_customer
- service_active_date◇service_deactivate_date◇contract_end_date
- icon◇promo_code◇site_id

- service_id◇customer_id◇product_id
- service_uuid
- service_provisioned_date
- provisioning_play◇provisioning_json_vars
- deprovisioning_play◇deprovisioning_json_vars
- bundled_parent
- invoiced
- created◇last_modified

Web UI◇API ◇ Ansible playbooks◇

1. API - Ansible playbooks
2. - “”
3. - /
 - relies_on_list
 - available_from/available_until
 - enabled ◇ customer_can_purchase
4. -
5. - inventory_items_list SIM


```

"service_name": "SIM - 0412345678",
"service_uuid": "generated-uuid-for-ocs",
"service_status": "Active",
"service_type": "mobile",
"retail_cost": 30,
"wholesale_cost": 5,
"provisioning_play": "play_psim_only",
"provisioning_json_vars": "{...}"
}

```

10. PATCH /crm/inventory/inventory_id/{{ inventory_id }} " "

11. -

7

playbook

- Provision.provisioning_status 0
- Provision.provisioning_status 2
- crm_config.provisioning.failure_list
- ignore_errors: true 3

CRM

category: standalone

- customer_id product_id
- SIM
- API PUT /crm/service/
- HSS OCS
- SIM

category: addon

- customer_id product_id service_id
-
- OCS
- OCS
-
-

category: bundle

-
-
- + +
-
- CRM
- + IPTV + VoIP

playbook

playbook

1. `OmniCRM-API/Provisioners/plays/{playbook_name}.yaml`
2. `Ansible extravars {{ variable_name }}`
3. `Authorization: Bearer {{ access_token }}` API
4. `rescue ignore_errors`
- 5.
- 6.
7. `fail`

Playbooks

playbook

- `customer_id` -
- `product_id` -
- `service_id` -
- `access_token` - CRM API JWT
- `initiating_user` -
- `ID{{ inventory_type }}: inventory_id`
- `provisioning_json_vars`
-

Playbooks

- `GET /crm/product/product_id/{{ product_id }}`
- `GET /crm/customer/customer_id/{{ customer_id }}`
- `GET /crm/inventory/inventory_id/{{ SIM_Card }}`
- `POST /crm/transaction/`
- `PUT /crm/service/`
- `PATCH /crm/service/{{ service_id }}`
- `PATCH /crm/inventory/inventory_id/{{ inventory_id }}`

playbook

1. Playbook `customer_id` `product_id` `service_id` `access_token`
2. `GET /crm/service/{{ service_id }}` `service_uuid`
3. `GET /crm/product/product_id/{{ product_id }}`
4. `OCS` `POST` to `CGRateS` `retail_cost`
5. `OCS` `POST` to `CGRateS`
6. `CRM` `POST` `/crm/transaction/`
- 7.

Provision Provision_Event

OCS

OCS `CGRateS` `CRM` `OCS`

- `DID`
- `MB`
- `GB`
- `$30 10GB`
-

CRM `OCS`

5. **UI** - 10
- **ServiceUsage.js** - 3
 - **UsageCard.js** - 7

1. API - GET /crm/service/{service_id} API

-
- service_uuid OCS
- get_cgrates_action_plans_by_service_uuid(service_uuid)
- cgrates_service.py
- ocs.Get_ActionPlans(service_uuid) CGRateS ActionPlans

2. ActionPlan - ActionPlan

```
{
  "ActionPlanId": "ServiceID_abc-123-def__ProductID_456__...",
  "PlanName": "...",
  "NextExecTime": "2025-02-01T00:00:00Z",
  "custom_NextExecTime_hr": "11 ",
  "ActionPlanId_split_dict": {
    "ServiceID": "abc-123-def",
    "ProductID": 456,
    "CustomerID": 789,
    ...
  }
}
```

- ActionPlanId - / /
- PlanName - playbook
- NextExecTime - ActionPlan ISO
- custom_NextExecTime_hr - "11 " " " "2025 2 1 "
- ActionPlanId_split_dict - ActionPlanId

3. - ActionPlans ActionPlansTable

- - ActionPlanId ProductID
- - retail_cost
- - custom_NextExecTime_hr
- -
 - - /
 - -

ActionPlans

- " "
-

ActionPlans

ActionPlans

ActionPlan

1. ActionPlansTable " "
2. " "
3. DELETE /crm/oam/remove_action_plan/{action_plan_id}
4. API ocs.Remove_ActionPlan() CGRateS ActionPlan
5. " {service_id} ActionPlan {ActionPlanId}"
6. ActionPlan

?? ? ? ? ? ? ? ?

- ? ? ? ? ? ? ? ? ? ? ? ? ?
- ? ? ? ? ? ? ? ? ? ? ? ? ?
- ?

?? ? ?

- ? ? ? ? ActionPlans ? ? ? " ? ? ? ? ? ? ? ? ? ? ? "
- ?

ActionPlans ? ? ? ? ? ? ?

CRM ?

GET /crm/service/expiring?threshold=7

? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ?

- ? ? ? ? ? ? ? ? ?
- ? ? ? ? ActionPlans ? ? ? ? ? ? ? ? ? ?
- ? ? ? ? ? ? ? ActionPlans ? ? ?

? ? ? ? ? ?

- ? ? ? ? ? ? ? ? ?
- ?
- ? ? ? ? ? ? ? ? ? ? ?
- ? ? ? ? ? ? ? ? ? ?




```
Ansible <guide_product_lifecycle>
```



- ◆ ◆ ◆ ◆ ◆

- `0`
- `1`
- `2`
- `3`

OmniCRM

◆ ◆ ◆ ◆ ◆ ◆ ◆ ◆ ◆

- provisioning_play - `Ansible .yaml`

- provisioning_json_vars - Ansible JSON
- inventory_items_list - ['SIM Card', 'Mobile Number']
- product_idproduct_name -

```
{
  "product_id": 1,
  "product_slug": "Mobile-SIM",
  "product_name": "Mobile SIM Only",
  "provisioning_play": "play_psim_only",
  "provisioning_json_vars": "{\"iccid\": \"\", \"msisdn\": \"\"}",
  "inventory_items_list": ["SIM Card", "Mobile Number"],
  "retail_cost": 0,
  "retail_setup_cost": 0,
  "wholesale_cost": 3,
  "wholesale_setup_cost": 1
}
```

1. provisioning_play

OmniCRM-API/Provisioners/plays/play_psim_only.yaml

2. extra_vars

1. provisioning_json_vars: {"iccid": "", "msisdn": ""}
2. : /API
3. : product_idcustomer_id
4. : access_token refresh_token

3. inventory_items_list

UI/API

- **SIM** - SIM
- -

ID extra_vars

```
extra_vars = {
  "product_id": 1,
  "customer_id": 456,
  "SIM Card": 789,          # SIM inventory_id
```

```

    "Mobile Number": 101,      # ???????? inventory_id
    "iccid": "",              # ?? provisioning_json_vars
    "msisdn": "",             # ?? provisioning_json_vars
    "access_token": "eyJ..."
}

```

4. ?? hostvars[inventory_hostname] ???????? Ansible

????????????

```

- name: Get inventory_id for SIM Card
  set_fact:
    inventory_id_sim_card: "{{ hostvars[inventory_hostname]['SIM
Card'] | int }}"
  when: "'SIM Card' in hostvars[inventory_hostname]"

```

????????????

???????? ID???? API ?????????

```

- name: Get SIM Card Details from Inventory
  uri:
    url: "{{ crm_config.crm.base_url }}/crm/inventory/inventory_id/{{
inventory_id_sim_card }}"
    method: GET
    headers:
      Authorization: "Bearer {{ access_token }}"
    return_content: yes
    register: sim_card_response

- name: Extract ICCID and IMSI from inventory
  set_fact:
    iccid: "{{ sim_card_response.json.iccid }}"
    imsi: "{{ sim_card_response.json.imsi }}"

- name: Get Phone Number Details from Inventory
  uri:
    url: "{{ crm_config.crm.base_url }}/crm/inventory/inventory_id/{{
inventory_id_phone_number }}"
    method: GET
    headers:
      Authorization: "Bearer {{ access_token }}"
    return_content: yes
    register: phone_number_response

- name: Extract MSISDN
  set_fact:
    msisdn: "{{ phone_number_response.json.msisdn }}"

```

❖❖❖❖❖❖❖❖❖❖

- ❖ HSS ❖❖❖ SIM ❖❖ IMSI
- ❖❖❖❖❖❖❖❖❖❖❖❖
- ❖❖❖❖❖❖❖❖❖❖
- ❖❖❖❖❖❖❖❖❖❖❖❖❖❖❖

❖❖❖❖❖❖❖❖ **SIM** ❖❖

❖ play_psim_only.yaml❖❖❖❖❖❖❖❖❖❖❖❖❖❖❖❖

```
- name: Get Product information from CRM API
  uri:
    url: "{{ crm_config.crm.base_url }}/crm/product/product_id/{{
product_id }}"
    method: GET
    headers:
      Authorization: "Bearer {{ access_token }}"
    return_content: yes
  register: api_response_product

- name: Set package facts from product
  set_fact:
    package_name: "{{ api_response_product.json.product_name }}"
    package_comment: "{{ api_response_product.json.comment }}"
    setup_cost: "{{ api_response_product.json.retail_setup_cost }}"
    monthly_cost: "{{ api_response_product.json.retail_cost }}"

- name: Set inventory_id_sim_card if SIM Card was selected
  set_fact:
    inventory_id_sim_card: "{{ hostvars[inventory_hostname]['SIM
Card'] | int }}"
  when: "'SIM Card' in hostvars[inventory_hostname]"

- name: Set inventory_id_phone_number if Mobile Number was selected
  set_fact:
    inventory_id_phone_number: "{{
hostvars[inventory_hostname]['Mobile Number'] | int }}"
  when: "'Mobile Number' in hostvars[inventory_hostname]"

- name: Get SIM Card details from inventory
  uri:
    url: "{{ crm_config.crm.base_url }}/crm/inventory/inventory_id/{{
inventory_id_sim_card }}"
    method: GET
    headers:
      Authorization: "Bearer {{ access_token }}"
    return_content: yes
```

```

register: sim_inventory_response

- name: Get Phone Number details from inventory
  uri:
    url: "{{ crm_config.crm.base_url }}/crm/inventory/inventory_id/{{
inventory_id_phone_number }}"
    method: GET
    headers:
      Authorization: "Bearer {{ access_token }}"
    return_content: yes
  register: phone_inventory_response

- name: Extract values from inventory
  set_fact:
    iccid: "{{ sim_inventory_response.json.iccid }}"
    imsi: "{{ sim_inventory_response.json.imsi }}"
    msisdn: "{{ phone_inventory_response.json.msisdn }}"
    ki: "{{ sim_inventory_response.json.ki }}"
    opc: "{{ sim_inventory_response.json.opc }}"

- name: Provision subscriber on HSS
  uri:
    url: "http://{{ hss_server }}/subscriber/{{ imsi }}"
    method: PUT
    body_format: json
    body:
      {
        "imsi": "{{ imsi }}",
        "msisdn": "{{ msisdn }}",
        "ki": "{{ ki }}",
        "opc": "{{ opc }}",
        "enabled": true
      }
    status_code: 200

- name: Assign inventory to customer
  uri:
    url: "{{ crm_config.crm.base_url }}/crm/inventory/inventory_id/{{
inventory_id_sim_card }}"
    method: PATCH
    headers:
      Authorization: "Bearer {{ access_token }}"
    body_format: json
    body:
      {
        "customer_id": {{ customer_id }},
        "item_state": "Assigned"
      }

```

status_code: 200

#####

1. ##### provisioning_play: "play_psim_only"
2. ##### inventory_items_list: ['SIM Card', 'Mobile Number']
3. #####
4. ## ID ## extra_vars #####
5. ##### API #####
6. #####
7. #####

#####

Ansible block rescue
##

####

play_psim_only.yaml

```
- name: OmniCore Service Provisioning 2024
  hosts: localhost
  gather_facts: no
  become: False
```

tasks:

- name: Main block
block:
--- ##### ---
- name: Get Product information
uri: ...

- name: Create account in OCS
uri: ...

- name: Provision subscriber on HSS
uri: ...

- name: Create service record
uri: ...

... ##### ...

rescue:

```
# --- ##### ---
# #####
# 1. #####
```

```
# 2. action == "deprovision"??????
```

```
- name: Get Inventory items linked to this service
  uri:
    url: "{{ crm_config.crm.base_url }}/crm/inventory/
customer_id/{{ customer_id }}"
    method: GET
    register: inventory_api_response
    ignore_errors: True

- name: Return inventory to pool
  uri:
    url: "{{ crm_config.crm.base_url }}/crm/inventory/
inventory_id/{{ item.inventory_id }}"
    method: PATCH
    body_format: json
    body:
      service_id: null
      customer_id: null
      item_state: "Used"
    with_items: "{{ inventory_api_response.json.data }}"
    ignore_errors: True

- name: Delete Account from Charging
  uri:
    url: "http://{{ crm_config.ocs.OCS }}/jsonrpc"
    method: POST
    body:
      {
        "method": "ApierV1.RemoveAccount",
        "params": [{
          "Tenant": "{{ crm_config.ocs.ocsTenant }}",
          "Account": "{{ service_uuid }}"
        }]
      }
    ignore_errors: True

- name: Delete Attribute Profile
  uri:
    url: "http://{{ crm_config.ocs.OCS }}/jsonrpc"
    method: POST
    body:
      {
        "method": "APIerSv1.RemoveAttributeProfile",
        "params": [{
          "ID": "ATTR_ACCOUNT_{{ service_uuid }}"
        }]
      }
}
```

```

    ignore_errors: True

- name: Remove Resource Profile
  uri: ...
  ignore_errors: True

- name: Remove Filters
  uri: ...
  ignore_errors: True

- name: Deprovision Subscriber from HSS
  uri:
    url: "{{ item.key }}/subscriber/{{
item.value.subscriber_id }}"
    method: DELETE
    loop: "{{ hss_subscriber_data | dict2items }}"
    ignore_errors: True
    when:
      - deprovision_subscriber | bool == true

- name: Patch Subscriber to Dormant State
  uri:
    url: "{{ item.key }}/subscriber/{{
item.value.subscriber_id }}"
    method: PATCH
    body:
      {
        "enabled": true,
        "msisdn": "9999{{ imsi[-10:] }}", # 12345
        "ue_ambr_dl": 9999999, # 12345678
        "ue_ambr_ul": 9999999
      }
    loop: "{{ hss_subscriber_data | dict2items }}"
    when:
      - deprovision_subscriber | default(false) | bool == false

# 12345678901234567890
- name: Set status to "Success" if Manual deprovision / Fail
if failed provision
  assert:
    that:
      - action == "deprovision"

```

12345678901234567890

1. 1234567890

12345678901234567890

- `block rescue`
- `action: "deprovision" rescue`

2.

- `OCS`
-
-
- `HSS`
-

`" "`

-
-
-
-

3. `ignore_errors`

`ignore_errors: True`

-
-
-

`" OCS "`

- `OCS`
-
-
- `HSS`

4.

`rescue`

```
- name: Set status to "Success" if Manual deprovision / Fail if
  failed provision
  assert:
    that:
      - action == "deprovision"
```

- ```action == "deprovision"`` 0`
- ```action`` != "deprovision" 2`


```
}
  "access_token": "eyJ..."
}
```

????????????????????????????????

??????

????????

- ??? UI ?????
- ?????????????????
- API ????? PUT /crm/provision/

?????"?"

?????"?"????????

1. UI ?????

????????????????

- provisioning_play - ??? Ansible
- inventory_items_list - ?????['SIM Card', 'Mobile Number']
- provisioning_json_vars - ???

2. ?????????

?? inventory_items_list ?????????????????????????????????
????????????????????

3. ?????

JavaScript ?? PUT /crm/provision/ ???

```
PUT /crm/provision/
Authorization: Bearer eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9...
Content-Type: application/json
```

```
{
  "product_id": 42,
  "customer_id": 123,
  "SIM Card": 5001,
  "Mobile Number": 5002
}
```

4. API ?????

?????routes/provisioning.py??

- Bearer API IP
- CREATE_PROVISION
- initiating_user
-
- OmniCRM-API/Provisioners/plays/play_psim_only.yaml

5.

```
#
product_vars = json.loads(product['provisioning_json_vars'])
#
request_vars = request.json
#
system_vars = {
    'product_id': 42,
    'customer_id': 123,
    'access_token': g.access_token, #
    'initiating_user': 7
}
#
extra_vars = {**product_vars, **request_vars, **system_vars}
```

6.

```
provision = {
    'provision_id': 456,
    'customer_id': 123,
    'product_id': 42,
    'provisioning_play': 'play_psim_only',
    'provisioning_json_vars': json.dumps(extra_vars),
    'provisioning_status': 1, #
    'task_count': 85,
    'initiating_user': 7,
    'created': '2025-01-10T14:30:00Z'
}
```

7.

```
run_playbook_in_background(
    playbook='plays/play_psim_only.yaml',
    extra_vars=extra_vars,
    provision_id=456,
    refresh_token=refresh_token #
)
```

8. API

UI provision_id

```
{
  "provision_id": 456,
  "provisioning_status": 1,
  "message": ""
}
```

9. UI

UI 3 GET /crm/provision/provision_id/456

```
{
  "provision_id": 456,
  "provisioning_status": 1,
  "task_count": 12,
  "provisioning_result_json": [
    {
      "event_number": 1,
      "event_name": "CRM API",
      "provisioning_status": 0,
      "timestamp": "2024-01-15T10:30:05"
    },
    {
      "event_number": 2,
      "event_name": "SIM",
      "provisioning_status": 1,
      "timestamp": "2024-01-15T10:30:07"
    }
  ]
}
```

10. Ansible

- Provision_Event
- 0=2=3=JSON
- UI
-

UI

1

-
-

Web UI

1. POST /crm/auth/login
2. JWT access_token 15-30 refresh_token
3. Bearer
4. API Authorization: Bearer ...
5. g.access_token Flask
6. access_token Ansible

permissions.py

```
# Bearer
auth_header = request.headers.get('Authorization', '')
if auth_header.startswith('Bearer '):
    bearer_token = auth_header[7:]
    #
    decoded_token = jwt.decode(bearer_token, secret_key,
    algorithms=['HS256'])
    #
    g.access_token = bearer_token
```

provisioning.py

```
if "access_token" in g:
    json_data['access_token'] = g.access_token
run_playbook(playbook_path, extra_vars=json_data,
provision_id=provision_id)
```

2 API X-API-KEY

API

1. PUT /crm/provision/ X-API-KEY: your-api-key...
2. API API crm_config.yaml
3. JWT
4. g.access_token
5. Ansible

API JWT API JWT

- API
- admin JWT
- ID JWT
- API

permissions.py

```
def handle_api_key_auth(f, api_key, *args, **kwargs):
    if not secure_compare_api_key(api_key):
        return {'message': 'API key invalid'}, 401

    API_KEYS = yaml_config.get('api_keys', {})
    if api_key in API_KEYS:
        if 'admin' in API_KEYS[api_key].get('roles', []):
            admin_user_id = retrieve_first_admin_user_id()
            access_token =
create_access_token(identity=str(admin_user_id))
            g.access_token = access_token
```

3 IP

1. IP 192.168.1.100
2. API IP crm_config.yaml ip_whitelist
3. JWT
4. g.access_token
5. Ansible

permissions.py

```
def handle_ip_auth(f, *args, **kwargs):
    client_ip = get_real_client_ip()
    if not is_ip_whitelisted(client_ip):
        return {'message': 'IP not whitelisted'}, 403

    admin_user_id = retrieve_first_admin_user_id()
    access_token = create_access_token(identity=str(admin_user_id))
    g.access_token = access_token
```

API

```
- name: Get Product Details
  uri:
    url: "http://localhost:5000/crm/product/product_id/{{ product_id }}"
    headers:
      Authorization: "Bearer {{ access_token }}"

- name: Create Service Record
  uri:
    url: "http://localhost:5000/crm/service/"
    method: PUT
    headers:
```



```

        return_content: yes
        validate_certs: no
        register: api_response_product

- name: Set package facts
  set_fact:
    package_name: "{{ api_response_product.json.product_name
}}}"

    setup_cost: "{{ api_response_product.json.retail_setup_cost
}}}"

    monthly_cost: "{{ api_response_product.json.retail_cost }}"

- name: Generate Service UUID
  set_fact:
    service_uuid: "Service_{{ 99999999 | random | to_uuid }}"

- name: Create account in OCS
  uri:
    url: "http://{{ crm_config.ocs.OCS }}/jsonrpc"
    method: POST
    body_format: json
    body:
      {
        "method": "ApierV2.SetAccount",
        "params": [{
          "Tenant": "{{ crm_config.ocs.ocsTenant }}",
          "Account": "{{ service_uuid }}",
          "ActionPlanIds": [],
          "ExtraOptions": { "AllowNegative": false,
"Disabled": false }
        }]
      }
    status_code: 200
    register: response

- name: Add Service via API
  uri:
    url: "http://localhost:5000/crm/service/"
    method: PUT
    body_format: json
    headers:
      Authorization: "Bearer {{ access_token }}"
    body:
      {
        "customer_id": "{{ customer_id }}",
        "product_id": "{{ product_id }}",
        "service_name": "Service: {{ service_uuid }}",
        "service_uuid": "{{ service_uuid }}",

```

```

        "service_status": "Active",
        "retail_cost": "{{ monthly_cost | float }}"
    }
    status_code: 200
    register: service_creation_response

- name: Add Setup Cost Transaction
  uri:
    url: "http://localhost:5000/crm/transaction/"
    method: PUT
    headers:
      Authorization: "Bearer {{ access_token }}"
    body_format: json
    body:
      {
        "customer_id": {{ customer_id | int }},
        "service_id": {{
service_creation_response.json.service_id | int }},
        "title": "{{ package_name }} - Setup Costs",
        "retail_cost": "{{ setup_cost | float }}"
      }
    register: api_response_transaction

rescue:
- name: Remove account in OCS
  uri:
    url: "http://{{ crm_config.ocs.OCS }}/jsonrpc"
    method: POST
    body_format: json
    body:
      {
        "method": "ApierV2.RemoveAccount",
        "params": [{
          "Tenant": "{{ crm_config.ocs.ocsTenant }}",
          "Account": "{{ service_uuid }}"
        }]
      }
    status_code: 200

- name: Fail the provision
  assert:
    that:
      - false

```

❖❖❖❖❖❖❖❖❖❖

1. ❖ CRM API ❖❖❖❖❖❖❖❖
2. ❖❖❖❖❖❖❖❖ UUID
3. ❖ OCS ❖❖❖❖❖❖❖❖

4. CRM API
- 5.
6. rescue OCS

OCS
ActionPlans

OmniCRM

- POST /crm/provision/simple_provision_addon/
service_id/<id>/product_id/<id>

- POST /crm/provision/simple_provision_addon_recharge/
service_id/<id>/product_id/<id>

IP API

- IP crm_config.yaml ip_whitelist
- crm_config.yaml api_keys API
- g.access_token

OCS ActionPlan

OCS

```
{
  "method": "ApierV1.SetActionPlan",
  "params": [{
    "Id": "ActionPlan_Service123_Monthly_Charge",
    "ActionsId": "Action_Service123_Add_Monthly_Data",
    "Timing": {
      "Years": [],
      "Months": [],
      "MonthDays": [1],
      "Time": "00:00:00Z"
    },
  },
  "Weight": 10,
```



```

package_name: "{{ api_response_product.json.product_name }}"
monthly_cost: "{{ api_response_product.json.retail_cost }}"

- name: Get Customer Payment Method
  uri:
    url: "http://localhost:5000/crm/stripe/customer_id/{{
customer_id }}"
    method: GET
    headers:
      Authorization: "Bearer {{ access_token }}"
    return_content: yes
  register: api_response_stripe

- name: Charge customer
  uri:
    url: "http://localhost:5000/crm/stripe/charge_card/{{
customer_stripe_id }}"
    method: POST
    headers:
      Authorization: "Bearer {{ access_token }}"
    body_format: json
    body:
      {
        "retail_cost": "{{ monthly_cost }}",
        "description": "{{ package_name }} topup",
        "customer_id": "{{ customer_id | int }}",
        "service_id": "{{ service_id | int }}"
      }
  register: api_response_stripe

- name: Add monetary balance to OCS
  uri:
    url: "http://{{ crm_config.ocs.OCS }}/jsonrpc"
    method: POST
    body_format: json
    body:
      {
        "method": "ApierV1.AddBalance",
        "params": [{
          "Tenant": "{{ crm_config.ocs.ocsTenant }}",
          "Account": "{{ service_uuid }}",
          "BalanceType": "*monetary",
          "Balance": {
            "Value": "{{ monthly_cost | float * 100 }}",
            "ExpiryTime": "+4320h"
          }
        }]
      }

```

```
status_code: 200
```

- name: Add Transaction to CRM

```
uri:
```

```
url: "http://localhost:5000/crm/transaction/"
```

```
method: PUT
```

```
headers:
```

```
Authorization: "Bearer {{ access_token }}"
```

```
body_format: json
```

```
body:
```

```
{
```

```
  "customer_id": {{ customer_id | int }},
```

```
  "service_id": {{ service_id | int }},
```

```
  "title": "{{ package_name }}",
```

```
  "retail_cost": "{{ monthly_cost | float }}"
```

```
}
```

- name: Send Notification SMS

```
uri:
```

```
url: "http://sms-gateway/SMS/plaintext/{{ api_key }}"
```

```
method: POST
```

```
body_format: json
```

```
body:
```

```
{
```

```
  "source_msisdn": "YourCompany",
```

```
  "destination_msisdn": "{{ customer_phone }}",
```

```
  "message_body": "????? {{ monthly_cost }}?"
```

```
}
```

```
status_code: 201
```

```
ignore_errors: True
```

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1. ? API ???? ???? ?

2. ???? ???? ?

3. ?? Stripe API ???? ?

4. ? OCS ???? ?

5. ? CRM ???? ?

6. ???? SMS??? ignore_errors: True????????????

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?????OmniCRM ?? ???? ???? ???? ???? ???? ???? ???? ???? ?

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1. ???? ???? ???? ?

2. IPTV 1 service_id
3. IP 1 service_id

- service_id
- extra_vars
- Provision

2

- API
- assert: that: response.status == 200
-
-
-
-
- OCS/OCS

3

- SMS/email
- ignore_errors: True
-

- YAML
-
-
- Ansible

- Ansible
- stdout
- stderr


```
    "event_name": "OCS ",
    "provisioning_status": 1,
    "provisioning_result_json": "{...}"
  }
]
}
```

GET /crm/provision/?page=1&per_page=20&sort=provision_id&order=desc
Authorization: Bearer <token>

GET /crm/provision/?filters={"provisioning_status": [2]}&search=Mobile
Authorization: Bearer <token>

2 "Mobile"

- block/rescue
- ignore_errors
- debug
- assert API
-

- refresh_token
- IP API
- refresh_token

- customer_id service_id
-
- Provision_Event /

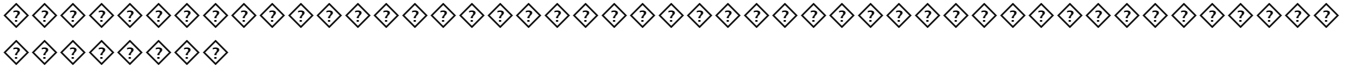
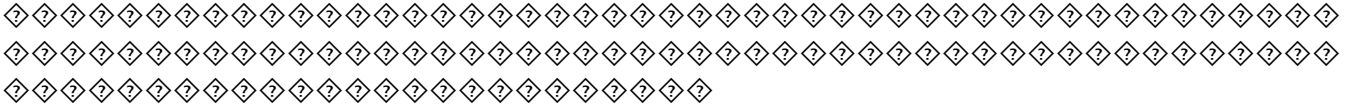
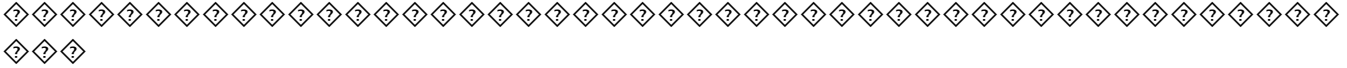
- customer_id product_id service_id
-

- [illegible]

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-  API 
-  UI  2-5 
-  Ansible 
-  

- concepts_ansible -   Ansible    
- concepts_api - CRM API       
- concepts_products_and_services -        
- administration_inventory -        





Product <concepts_products_and_services>

<basics_create_customer>

Product <concepts_products_and_services>

Product <concepts_products_and_services>

Product <concepts_products_and_services>

Product <concepts_products_and_services>

Product <concepts_products_and_services>

Product <concepts_products_and_services>



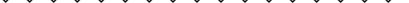
?









#####

#####[John ▼]

• John Smith#####ID#####123##### • John Doe#####ID#####456##### • Johnson Enterprises#####ID#####789#####

#####

- #####
- #####ID
- #####
- #####

#####

##

#####

3#####

#####inventory_items_list#####

#####

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SIM# *

#####SIM##### • SIM-00123 - ICCID#####8944...0001##### • SIM-00124 - ICCID#####8944...0002##### • SIM-00125 - ICCID#####8944...0003#####

*

• +44 7700 900123##### • +44 7700 900124##### • +44 7700 900125#####

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- #####*#####
- #####"#####"#####
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John SmithID123 - 20GB

• SIMSIM-00123ICCID8944...0001 • XXXX+44 7700 900123

• XXX£0.00 • XXX£15.00

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[X][XXXX]

XX**"XXXXX"**XXXXXXXX

6XXXXXXXX

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✓ XXXX ✓ XXSIMXXICCID8944...0001 ✓ XXXX+44 7700 900123 ☞ XX
OCS XXXX... XX XXX

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John Smith

ID789 XXXX - +44 7700 900123 XXXX

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??????[Jane Doe - <jane@acme.com> ▼]

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- csa_add_service - 1 1 1 1
- concepts_products_and_services - 1 1 1 1 1 1
- administration_inventory - 1 1 1 1 1
- concepts_provisioning - 1 1 1 1 1 1 1
- guide_product_lifecycle - 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1



Self-Care Portal <self_care_portal>



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✓ ✓ ⌚ ...

- 1.
2. Ansible (provisioning_play)
- 3.
- 4.
5. OCS
- 6.

Complete Product Lifecycle Guide - Adding Addons <guide_product_lifecycle>

" "

5GB 2025 1 10 2025 1 17 £5.00

WiFi 6 2024 12 1 Modem-12345 £10.00

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2. " "
3. " "
- 4.

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 - ? inventory_items_list

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 - ? auto_renew: true
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- guide_product_lifecycle - ?
- csa_add_service - ?
- concepts_products_and_services - ?
- administration_inventory - ?



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????? <csa_add_service>????? <csa_service_usage>?????
<csa_modify>????? <concepts_products_and_services>?

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- ???? - mobile, iptv, internet, voip
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2. ?? “????” ??
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3. “””

4. ActionPlan CGRateS

5.

- ActionPlan CGRateS
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-
- “N/A”

- /UUID
-
- UUID
- “N/A”

- CGRateS ActionPlan
-
-

- CRM
-
- “N/A”

-
- “3” “2”
- CGRateS

- CRM
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"/

- CGRateS UUID CRM service_uuid
- -
 - service_uuid ServiceType_UUID FixedWireless_75628fa5
 - CRM CGRateS

"

- CGRateS ID CRM
- -
 - ActionPlan product_id CRM
 -

"

- CGRateS NextRunTime
- - CGRateS ActionPlan
 - ActionTiming
 - CGRateS

"

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- -
 - Ansible
 - OCS
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- CGRateS
- - " "
 - ActionPlan CGRateS
 - CGRateS API

◀ 1 [2] 3 4 5 ▶

[10 ▼]

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CGRateS

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 CGRateS Ansible

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- $\{1, 2, 3, 4, 5, 6, 7, 8\} - \{1, 2, 3, 4\} / \{1, 2, 3, 4\}$ MaxBitrateDL/UL
- $\{1, 2, 3, 4\} - \{1\}$ QoS $\{1, 2, 3, 4, 5, 6, 7, 8, 9\}$ PcefPolicyName
- $\{1, 2, 3, 4, 5\} - \{1, 2\}$ MSISDN $\{1, 2, 3, 4, 5\}$
- $\{1, 2, 3, 4\} - \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$
- $\{1, 2, 3, 4\} - \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15\}$

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CGRateS ?

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 - ? JSON ?

CGRateS ?

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- csa_add_service -     
- csa_modify -              
- concepts_products_and_services -       
- basics_customers -    



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Self-Care Portal <self_care_portal> OCS

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```
}  
}
```

5. UI 12345678901234567890 → GB1234 → 1234
6. 123456789012
7. 1 3 123456

OCS 12345678

OCS 123456789012345678901234567890 UI 1234

- *data → 12 1234567890
- *voice → 12 1234567890
- *sms → 12 1234567890
- *monetary → 12 1234567890

1234567890123456789012345678901234567890 + 123456 + 1234567890123456789012345678901234567890

12345678

- 1234 1234 → GB1234 1024³12
- 1234 1234 → 12345678 60×10⁹12
- 1234 123456789012
- 1234 12 → 12345678 10012

12345678901234567890

12345678901234567890 OCS 123456789012

123456789012

12345678 CGRateS 123456789012345678901234567890

- 12345678901234567890
- 1234567890
- 1234567890
- 1234567890

12345678901234567890

1. 12345678

- 1234567890 auto_renew = true
- 12345678 OCS 1234567890
- 1234567890123456789012345678901234567890

2. 1234567890

1234567890

- 12 **ID** - 12 UUID
- 12 - 1234567890123456789012345678901234567890
- 12 - 12345678901234567890 1 12 00:00 UTC12
- 12 - 1234567890

3. 12345678

- OCS 12345678901234567890

- 20GB 500
- 30
-

4.

- OCS
-
-

```
{
  "ActionPlanId":
  "ProductID_MonthlyPlan_ProductName_20GB_Mobile__ActionPlan_Monthly_Renew",
  "NextExecTime": "2025-02-01T00:00:00+00:00",
  "ActionName_hr": "",
  "PlanName": "20GB ",
  "ActionFrequency_hr": "",
  "custom_NextExecTime_hr": " 22 "
}
```

- -
- - OCS
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UI

20252122 £15.00

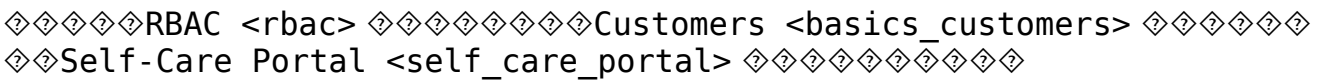
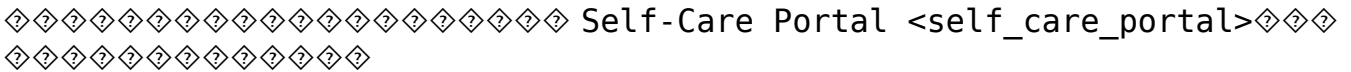
- " "
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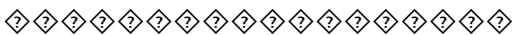
- 3 3 3 3 3 3 3 3
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3 3 3 3

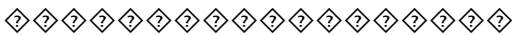
- features_topup_recharge - 3 3 3 3 3 3 3 3
- csa_service_management - 3 3 3 3
- csa_modify - 3 3 3 3 3 3 3 3 3 3
- concepts_products_and_services - 3 3 3 3



1. —
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3. —
4. —
5. —



- can_impersonate —
- admin —



1. — CRM
2. —
3. “” —
4. —
5. —

- ImpersonationLog

Web UI

1. —
2. — “”
3. —

API

POST /auth/stop_impersonation

```
{
  "success": true,
  "impersonation_end": "2025-01-04T15:45:00Z",
  "duration_seconds": 900,
  "access_token": "your_original_token",
  "refresh_token": "your_original_refresh_token"
}
```

ImpersonationLog

- **impersonating_user_id** —
- **target_user_id** —
- **impersonation_start** —
- **impersonation_end** —
- **impersonation_duration** —

- —
- —
- —
- —

API

GET /auth/
impersonation_logs?user_id={user_id}&start_date={date}&end_date={date}

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6. ? — ? can_impersonate
7. ? — ?

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- **MFA** ? — ? 2FA ?

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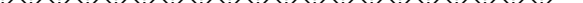
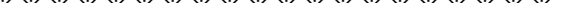
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- ? can_impersonate ? admin ?
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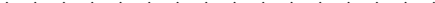
◆ ◆ ◆ ◆ ◆ ◆ ◆ ◆ ◆

- `API POST /auth/stop_impersonation`
- `cookies`



- 
-  ID



OmniCRM 
 AMBER 

Omnitouch? ? ? ? ? OWL?

Omnitouch? ? ? ? ? OWL ?

-       **CBE**  -                  **Web**    
-       **CBC**  -                    **2G/3G/4G/5G**   

OWL Web Chrome/Firefox/Safari/Edge



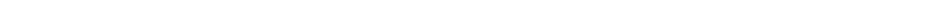
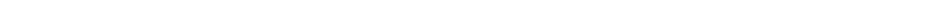
 PWS

-  - 
-  - 
-  -  500 
-  - 
-  -  CBC 
-  -  TOTP 
-  - 





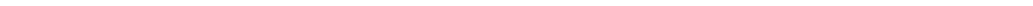
- $\Diamond_1 \Diamond_2 \Diamond_3 \Diamond_4 - \Diamond_1 \Diamond_2 \Diamond_3 \Diamond_4 \Diamond_5 \Diamond_6 \Diamond_7 \Diamond_8 \Diamond_9 \Diamond_{10} \Diamond_{11} \Diamond_{12} \Diamond_{13} \Diamond_{14} \Diamond_{15}$
- **AMBER** $\Diamond_1 \Diamond_2 \Diamond_3 - \Diamond_1 \Diamond_2 \Diamond_3 \Diamond_4 \Diamond_5$
- $\Diamond_1 \Diamond_2 \Diamond_3 \Diamond_4 - \Diamond_1 \Diamond_2 \Diamond_3 \Diamond_4 \Diamond_5 \Diamond_6 \Diamond_7 \Diamond_8 \Diamond_9 \Diamond_{10} \Diamond_{11}$
- $\Diamond_1 \Diamond_2 \Diamond_3 \Diamond_4 - \Diamond_1 \Diamond_2 \Diamond_3 \Diamond_4 \Diamond_5 \Diamond_6 \Diamond_7 \Diamond_8 \Diamond_9 \Diamond_{10} \Diamond_{11}$
- $\Diamond_1 \Diamond_2 \Diamond_3 \Diamond_4 - \Diamond_1 \Diamond_2 \Diamond_3 \Diamond_4 \Diamond_5 \Diamond_6 \Diamond_7 \Diamond_8 \Diamond_9 \Diamond_{10} \Diamond_{11} \Diamond_{12} \Diamond_{13} \Diamond_{14} \Diamond_{15} \Diamond_{16} \Diamond_{17} \Diamond_{18} \Diamond_{19} \Diamond_{20} \Diamond_{21} \Diamond_{22} \Diamond_{23} \Diamond_{24} \Diamond_{25} \Diamond_{26} \Diamond_{27} \Diamond_{28} \Diamond_{29} \Diamond_{30} \Diamond_{31} \Diamond_{32}$

 OWL
 

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 2FA
 

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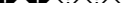




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-      -              ETWS    4370  ETWS    4371 

- 00000000000000000000000000000000
- 00000000000000000000000000000000 MCC-MNC000
- 000RAT00000000000000000000000000000000 LTE5G00
- 00000000000000000000000000000000

00000000000000000000000000000000

6. 00000000 - 00000000000000000000000000000000 "00000000"

00000000000000000000000000000000

00API0

000 PUT /crm/cbc/

00000000000000000000000000000000 CREATE_CBC_MESSAGE

00000000

```
{
  "messageIdentifier": "4370",
  "category": "emergency",
  "repetitionPeriod": 10,
  "numberOfBroadcasts": 999,
  "warningPeriodSec": 3600,
  "channelIndicator": "basic",
  "localized_messages": [
    {
      "language": "en",
      "messageBody": "EARTHQUAKE WARNING: Magnitude 6.5 earthquake detected. Take cover immediately. Drop, Cover, Hold On."
    },
    {
      "language": "es",
      "messageBody": "ADVERTENCIA DE TERREMOTO: Terremoto de magnitud 6.5 detectado. Cúbrase inmediatamente. Agáchese, Cúbrase, Agárrese."
    }
  ],
  "tracking_areas": [
    {
      "tracking_area": "12345",
      "operator": "310-410",
      "rat_type": "LTE"
    },
    {
      "tracking_area": "12346",
      "operator": "310-410",
      "rat_type": "5G"
    }
  ]
}
```

```
]
}
```

???

```
{
  "cbc_message_id": 123,
  "cbc_unique_id": "550e8400-e29b-41d4-a716-446655440000",
  "messageIdentifier": "4370",
  "category": "emergency",
  "repetitionPeriod": 10,
  "numberOfBroadcasts": 999,
  "warningPeriodSec": 3600,
  "channelIndicator": "basic",
  "initiating_user": 5,
  "approving_user": null,
  "created": "2025-01-10T14:30:00Z",
  "localized_messages": [...],
  "tracking_areas": [...]
}
```

????????????????

??????

??????

??? GET /crm/cbc/

????? VIEW_CBC_MESSAGE

????CBC????????????????

????

??? PATCH /crm/cbc/{cbc_message_id}

????? UPDATE_CBC_MESSAGE

????????????????????CBC?

?????

```
{
  "cbc_message_id": 123,
  "numberOfBroadcasts": 500,
  "localized_messages": [
    {
```


- **4356-4359** - 4356-4359
- **4360-4363** - AMBER 4360-4363
- **4364-4367** - 4364-4367
- **4368-4369** - 4368-4369
- **4380-4381** - 4380-4381

4356-4359

- **0-999** - 0-999
- **1000-4095** - 1000-4095

0-999

4356-4359 CBE 4360-4363 OWL 4364-4367 CBC 4368-4369

4380-4381

4356-4359 4360-4363 4364-4367 4368-4369 4380-4381

4356-4359 CBC 4360-4363

4364-4367 OWL 4368-4369 MNO 4380-4381 CBC 4380-4381

OWL CBC

CBC URL crm_config.yaml

cbc_url: "http://cbc.example.com:8080"

4356-4359

4360-4363 CBC 4364-4367

1. OmniCRM CBE 4356-4359
2. 4360-4363 CBC API
3. {cbc_url}/alerts/send HTTP POST
4. CBC 4364-4367 CBSP SBc-AP N50 4368-4369
5. CBC 4380-4381
6. 4380-4381

4356-4359

4360-4363 CBE 4364-4367 CBC 4368-4369

4380-4381

4356-4359 2G/3G/4G/5G 4360-4363 4364-4367 4368-4369 4380-4381

- [illegible]

- 
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VIEW_CBC_MESSAGE CREATE_CBC_MESSAGE








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-  - 
-  - 
-  -  cellSites.txt 







- [illegible]

- $\diamond \diamond \diamond \diamond - \diamond \diamond \diamond \diamond \diamond \diamond \diamond \diamond \diamond \diamond \diamond \diamond \diamond$
- $\diamond \diamond \diamond \diamond - \diamond \diamond \diamond \diamond \diamond \diamond \diamond \diamond \diamond \diamond \diamond \diamond$
- $\diamond \diamond \diamond \heartsuit - \diamond \diamond \heartsuit \diamond \diamond \heartsuit \diamond \heartsuit \diamond \heartsuit \diamond \heartsuit \diamond \heartsuit$

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- **lat/lng** - 4
- **site_name** - 3
- **sectors** - 12

2

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 -
- -
 -
 -
- -
 -
 -

3

-
-
-
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4

-
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-
-
-

???

public/cellSites.txt

```
# lat,lng,name,sector1,sector2,sector3
-33.8688,151.2093,SYD_CENTRAL,0,120,240
-33.8650,151.2070,SYD_HARBOUR,45,165,285
```

???

- ?
- ?
- GPS
- RNC

???

mapStyles.js

- ?
- ?
- ?
- ?

??

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- ?
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???

OmniTouch OWL

?

- 360
-
- “ ” “ ”
-
-

?

-
-
-
- Unicode

?

-
-
-
-

??

- 4379 4380-4381
-
- CBC
-

???

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???

2FA

- 2FA
-
- 2FA
- 2FA

- 2FA

2FA <2fa>

Omnitouch
NDMO

GIS Google Earth
Omnitouch

NDMO

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-
-
-

Omnitouch

-
-
- MNO
-

Omnitouch

- K8s - Kubernetes
- VMware Proxmox HyperV
- -
- AWS GCP
- -

CBC MNO

3

- 2 CBC /
- 1

- 50GB
- CPU 2 CPU
- RAM 8GB
- Omnitouch
- MME RNC BSC
- CBE TCP 443 TLS CBEs

OWL

1. -
2. -
3. CBE - CBE
4. / -
5. -
6. IP - NDMO MNO IP
7. VPN - Omnitouch
8. CBE NDMO -
9. CBC MNO -
10. - CBC
11. CBE CBC -
12. CBC - BSC/MME/AMF
13. NMS API -
14. -
15. / -
16. -

GSM 7

- 93
- $15 \times 93 = 1395$

Unicode UCS-2

- 41
- 15 × 41 = 615

OWL

- 500
- Web UI

-
-
-
- CBC API
-

```
SELECT * FROM cbc
WHERE created >= '2025-01-01'
ORDER BY created DESC;
```

- 2015
-
- /SMS
- SMS

-
-
-
-
-

1. 4379-4380-4381



OmniCRM

Customers <basics_customers>Inventory <administration_inventory>Service Management <csa_service_management>



CRM



1. -
2. -
3. -
4. - ICCID itemtext1 itemtext2
5. - UUID

- - "Smith" "John Smith" "Smithson"
- - "john" "John" "JOHN" "john"
- -
- - 10



- 1.
2. ** " " ** Enter

- "Acme Corp"
- "+1234567890" "1234567890"
- "john@example.com" "john"
- "ICCID8944" "8944"
- UUID "123e4567-e89b"

???

????????????????

????????????

1. ?**"?**?
2. ?**"?**

????

- ? customer_status = "Closed" ?
- ?????????????????

????????

- ?
- ?
- ?
- ?

???

???

????????

John Smith ?? ID: 123 ??: customer

John Smith (???) ?? ID: 123 ??: contact

?? - +44 7700 900123 ?? ID: 123 ??: service

?????

- ?/? - ?????
- ?? **ID** - ?????
- ?? - ?????

???

???

????????????

????

????????????

???

????????

???

???????????? customer_id????

4

• John Smith () - ID: 123

5 UUID

UUID

• - +44 7700 900123 () - ID: 456

- "Smith" "John Smith"
- - "John"
- -
- -
- **UUID** -

-

-
-
-
-

-

- itemtext1 ICCID MAC
- itemtext2 IMSI
- itemtext3-20

-
- **UUID**

-
-
-
-
-
-

- itemtext1/2

API

```
GET /utilities/
search_everything?search=Smith&page=1&per_page=10&search_closed_records=false
Authorization: Bearer <token>
```

- search -
- page - 1
- per_page - 10
- search_closed_records - false

```
{
  "data": [
    {
      "id": 123,
      "name": "John Smith",
      "customer_id": 123,
      "type": "customer"
    },
    {
      "id": 456,
      "name": "John Smith",
      "customer_id": 123,
      "type": "contact"
    },
    {
      "id": 789,
      "name": "Mobile - +44 7700 900123",
      "customer_id": 123,
      "type": "service"
    }
  ],
  "pagination": {
    "current_page": 1,
    "per_page": 10,
    "total_pages": 5,
    "total_items": 47
  }
}
```

SQL UNION

```
-- Customers
SELECT customer_id AS id,
       customer_name AS name,
       customer_id,
       'customer' AS type
```

```

FROM customer
WHERE customer_name LIKE '%Smith%'
      AND customer_status = 'Open'

UNION ALL

-- Contacts
SELECT contact_id AS id,
      CONCAT(contact_firstname, ' ', contact_lastname) AS name,
      customer_id,
      'contact' AS type
FROM customer_contact
WHERE (contact_firstname LIKE '%Smith%' OR
      contact_lastname LIKE '%Smith%' OR
      contact_email LIKE '%Smith%' OR
      contact_phone LIKE '%Smith%')

UNION ALL

-- Sites
SELECT site_id AS id,
      site_name AS name,
      customer_id,
      'site' AS type
FROM customer_site
WHERE site_name LIKE '%Smith%'

UNION ALL

-- Inventory
SELECT inventory_id AS id,
      itemtext1 AS name,
      customer_id,
      'inventory' AS type
FROM inventory
WHERE itemtext1 LIKE '%Smith%' OR
      itemtext2 LIKE '%Smith%'

UNION ALL

-- Services
SELECT service_id AS id,
      service_name AS name,
      customer_id,
      'service' AS type
FROM customer_service
WHERE service_name LIKE '%Smith%' OR
      service_uuid LIKE '%Smith%'

```

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- ◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊ LIKE ◊◊◊◊%term%◊◊
- ◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊

- 123456789>100k 1234567891011121314151617181920
- 1234567891011121314151617181920 10 1

12345

- 1234567891011121314151617181920
- 1234567891011121314151617181920
- 1234567891011121314151617181920

12345

1234567891011121314151617181920

- 1234567891011121314151617181920
- 12345
 - 123456789"+44 7700 900123"12345"07700900123"12345
 - 123456789"<john.smith@example.com>"12345"john"12345
- 1234567891011121314151617181920

12345

- 1234567891011121314151617181920
- 12345
 - 1234567891011121314151617181920
 - 1234567891011121314151617181920
 - 1234567891011121314151617181920

1234567891011121314151617181920

- 1234567891011121314151617181920
- 1234567891011121314151617181920 ID 1234567891011121314151617181920

1234567891011121314151617181920

- 1234567891011121314151617181920
- 1234567891011121314151617181920

12345

- basics_customers - 12345
- basics_navigation - 12345
- administration_inventory - 12345



OmniCRM Self-Care Portal
<self_care_portal>

- - SIM
- - WiFi USB
- -



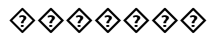
Stripe



-
- 1-30
-
- Stripe
-
-
-



URL CRM



- SMS
-
-
-

IP IMSI



4

1

- - 1 30
- -
- -
- - /

- REACT_APP_TOPUP_PRICE_PER_DAY
- \$10
- REACT_APP_CURRENCY_CODE

2

-
-
-

-
-
-
-

3

Stripe Elements

- Visa Mastercard Amex
-
- Apple Pay Google Pay Stripe

- PCI Stripe
- OmniCRM

- 3D Secure
-

1. Stripe Elements
- 2.
- 3.
- 4.
5. /

OCS

4

2025 1 17

<customer@example.com> ID TXN-123456

1.

- succeeded
- days × price_per_day
-

2.

```
- API POST /oam/topup_dongle
- service_uuid IMSI
- OCS/CGRateS
- play_topup_hotspot
```

3.

- **HotspotTopup** -
 - payment_intent_id
 - service_uuid
 - imsi
 -
 - topup_amount
 - //
- -
 - " - 7 "
 - topup_amount
 - service_id customer_id
- -
 -
 -
 - Stripe payment_intent_id
- -
 - "[]"
 - topup_amount -
 -

4.

```
playbook play_topup_hotspot
```

- OCS/CGRateS API
-
-
-
-

```
API 0.2 25
```

5.

```
if topup_provisioning_failed:
    refund = stripe.Refund.create(
        payment_intent=payment_intent_id,
        reason='requested_by_customer' #
```

```
)
status_message = "?????????..."
```

????????????????

API ??

????

```
POST /oam/topup_dongle
Content-Type: application/json
```

```
{
  "service_uuid": "123e4567-e89b-12d3-a456-426614174000",
  "imsi": "310120123456789",
  "days": 7,
  "payment_intent_id": "pi_1234567890abcdef",
  "topup_amount": 70.00
}
```

????????

```
{
  "result": "OK",
  "status": 200,
  "provision_id": 456,
  "payment_intent_id": "pi_1234567890abcdef",
  "service_uuid": "123e4567-e89b-12d3-a456-426614174000",
  "invoice_id": 789
}
```

????????

```
{
  "result": "Failed",
  "Reason": "OCS connection timeout",
  "status": 500
}
```

?????

- ??????service_uuid?imsi?days?payment_intent_id?topup_amount?
- topup_amount ? days ???topup_amount × 100 == days × 1000?????
- Stripe ??????
- ??????payment_intent.amount == topup_amount × 100
- ??????succeeded

- HotspotTopup

GET /oam/usage

```
{
  "imsi": "310120123456789",
  "service": {
    "service_uuid": "123e4567-e89b-12d3-a456-426614174000",
    "service_name": " - 0412345678",
    "service_status": ""
  },
  "balance": {
    "expiry": "2025-01-10T23:59:59Z",
    "unlimited": true
  },
  "requestingIp": "203.0.113.45"
}
```

IP

OmniCRM-UI .env

```
#
REACT_APP_TOPUP_PRICE_PER_DAY=10
REACT_APP_CURRENCY_CODE=AUD
REACT_APP_SELF_CARE_NAME="YourCompany"

# Stripe
REACT_APP_STRIPE_PUBLISHABLE_KEY=pk_live_...
```

Stripe

Stripe

1. Stripe
2. Webhook
- 3.

- Action_Balance_Expired -

" "

- Stripe
- - REACT_APP_STRIPE_PUBLISHABLE_KEY
 - Stripe
 - JavaScript

" ..."

- OCS playbook
- - GET /crm/provision/provision_id/<id>
 - OCS/CGRateS API
 - playbook play_topup_hotspot.yaml
 - Ansible

" "

-
-

" "

- UI
- - REACT_APP_TOPUP_PRICE_PER_DAY \$10
 -
 -

HotspotTopup

SELECT

```
hotspot_topup_id,
service_uuid,
days,
```

```
topup_amount,  
status,  
payment_intent_id,  
created  
FROM hotspot_topup  
WHERE status = 'Failed'  
ORDER BY created DESC;
```

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GET /crm/provision/provision_id/<provision_id>

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Stripe 🔍🔍🔍🔍

🔍🔍🔍 Stripe 🔍🔍🔍🔍🔍🔍🔍🔍🔍🔍🔍🔍🔍🔍🔍🔍🔍🔍🔍 <<https://dashboard.stripe.com>>

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- 🔍🔍🔍🔍🔍🔍 Stripe 🔍🔍🔍🔍🔍 PCI Level 1 🔍🔍🔍🔍🔍
- OmniCRM 🔍🔍🔍🔍🔍🔍🔍🔍🔍🔍🔍🔍🔍🔍
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- IP 🔍🔍🔍🔍🔍🔍🔍🔍🔍🔍🔍
- IMSI 🔍🔍🔍🔍🔍🔍🔍🔍🔍🔍🔍🔍
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- 🔍🔍🔍🔍🔍🔍🔍🔍🔍🔍🔍
- 🔍🔍🔍🔍🔍🔍🔍 CRM 🔍🔍🔍🔍🔍🔍🔍🔍🔍

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2. 🔍🔍🔍🔍🔍🔍🔍 - 🔍🔍🔍🔍🔍🔍🔍🔍🔍

3. **playbooks** - playbooks
4. **OCS** - OCS API
5. - REACT_APP_TOPUP_PRICE_PER_DAY

1. **URL** -
2. -
3. -
4. -

1. **Stripe webhooks** - webhook
2. - payment_intent_id
3. -
4. -
5. - <5

- payments_process -
- concepts_provisioning -
- integrations_stripe - Stripe
- payments_transaction -
- payments_invoices -



Omnitouch CRM

◇ OmniCRM ◇◇◇◇◇◇◇◇

Ansible playbooks











































YAML

CGRateS

 ActionPlans

 ThresholdS

 CRM


```
service uuid  OCS 
```

OmniCRM OCS

[illegible]

?? ActionPlans ??

[illegible]

ActionPlans

ThresholdS

⬡?

⬡?⬡

⬡?⬡?⬡?⬡?⬡?⬡?⬡?⬡?⬡?⬡?⬡?⬡?⬡?⬡?

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⬡?⬡

⬡?⬡?⬡?⬡?⬡?⬡?⬡?⬡?⬡?⬡?⬡?⬡?⬡?⬡?⬡?


```
"retail_setup_cost": 0.00,  
"wholesale_setup_cost": 1.00  
}
```

1

SIM

20GB SIM

1

UI →

2

```
{  
  "product_name": "20GB",  
  "product_slug": "prepaid-mobile-20gb",  
  "category": "standalone",  
  "service_type": "mobile",  
  "enabled": true,  
  "icon": "fa-solid fa-sim-card",  
  "comment": "SIM 20GB"  
}
```

- product_name -
- product_slug - API URL
- category - "standalone" /
- service_type -
- enabled - true
- icon - UI FontAwesome
- comment -

3

```
{  
  "retail_cost": 15.00,  
  "wholesale_cost": 5.00,  
  "retail_setup_cost": 0.00,  
  "wholesale_setup_cost": 1.00,  
  "contract_days": 30  
}
```



```

        "customer_id": null,
        "item_state": "In Stock"
    }
    when: service_id is defined #

```

```

"5GB"

```

```


```

```

inventory_items_list: "[]"

```

- - VPN
- -
- -

```

"5GB" inventory_items_list: "[]"

```

```


```

```

inventory_items_list

```

1. → →
2. "SIM"
3.
 - itemtext1_label: "ICCID"
 - itemtext2_label: "IMSI"
 - itemtext3_label: "PUK"
- 4.

```

<administration_inventory>

```

```


```

```

inventory_items_list ["SIM Card', 'SIM Card']" UI

```

```


```

```

1

```

```

# SIM

```

```

inventory_items_list: ['Primary SIM Card', 'Secondary SIM Card', 'Mobile Number']

```

```

"Primary SIM Card" "Secondary SIM Card"

```

```

2

```

SIM

```
inventory_items_list: ["Dual SIM Kit", 'Mobile Number']
```

“Dual SIM Kit” SIM itemtext1: ICCID itemtext2: ICCID

```
inventory_items_list: ["SIM Card", 'Mobile Number']
```

- SIM ICCID/IMSI eSIM
- MSISDN

```
inventory_items_list: ["Modem Router", 'Static IP Address']
```

- MAC CPE
- IP IPv4

```
inventory_items_list: ["Fixed Wireless CPE", 'IPv4 Address', 'IPv6 Prefix']
```

- CPE
- IPv4 IP
- IPv6 /56 /64

VoIP

```
inventory_items_list: ["DID Number"]
```

- DID

SIP

GPON/

```
inventory_items_list: ["ONT Device", 'GPON Port', 'IPv4 Address', 'Fiber Drop Cable']
```

- ONT
- GPON OLT
- IPv4 IP

?? ? ? ? ? ? ? ? ? ? ? ? ?

- ? ? ? ? ? ? ? SIM ? ? ? ? ? ? ? ?
- ? ? ? ? ? ? ? ? ? ?
- ? ? ? ? ? ? ? ? ? ? ? ?
- ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ?

?? ? ? ? ? ? ? ? ? ? ?

?? ? ? " ? ? ? ? ? ? " ? ? ? ?

?? ? ?

- ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ?
- ? ? ? ? ? ? ? ? ? ? ? ? ?
- ? ? ? ? ? ? " ? ? " ? " ? ? "
- ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ?

?? ? ? ? ?

1. ? ? ? ? ? ? ? ? ? ? ? ? ? ? → ? ? → ? ?
2. ?
3. ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? → ? ? → ? ? ? ?
4. ? ? ? ? ? ? ? ? ? " ? " ? " ? ? ? " ? ?
5. ? ? ? ? ? ? ? ? ? ? service_id ? ? NULL ?

?? ? ? ? ? ? ? ? ? ?

?? ? ?

- inventory_items_list ? ? ? "[]"
- inventory_items_list ? NULL ? ? ? ?
- ? ? ? ? ? ? " ? ? ? ? " ? ? ? ? ? ? ? ?

?? ? ? ? ?

- ? ? ? ? ? ? ? ? ? inventory_items_list: "['Type1', 'Type2']"
- ? ? ? ? ? ? ? ? ? ? ? ?
- ? ? API ? ? ? ? ? ? ? ? ? inventory_items_list

?? ? ? ? ? ? ? ? ? " ? ? ? ? ? ? "

?? ? ?

- ? ? ? ? ? ? ? ? ? ? ? ?
- ? ? ID ? ? ? ? ? ?
- ? ? ? ? ? ? ? ? ? ? ? ? ? ? ?

?? ? ? ? ? ?

- `hostvars[inventory_hostname]['SIM Card']`
- `{{ hostvars[inventory_hostname]['SIM Card'] | int }}`
-

`<administration_inventory>`

`7`

```
{
  "features_list": "20GB 30",
  "terms": "30"
}
```

`-`

1. `-`
 - `"20GB" "50GB" -`
 -
2. `-`
 - `" " "`
 - `" " "`
 -
3. `-`
 - `" " →`
 -
 -
4. `-`
 -
 -
 -
5. **SEO** `-`
 - `" " →`
 -

`-`

1. `-`

- “30” - 31
 - “” -
 -
2. -
- “” -
 - “” -
 -
3. -
- -
 - GDPR/
4. -
- “” -
 - “” -
 - “” -
5. -
- -
 -

“” 10,000

- “”
- “.....”
- “”
-

“”

-
-
-
-

UI

features_list

1

“”.

• 20GB • • • • 30

£15.00/ £0.00

[] []

4.

terms

UI

1.

2.

[]

3.

- 50
-
-

8 Ansible

```
{
  "provisioning_play": "play_local_mobile_sim",
  "provisioning_json_vars": "{
    \"days\": 30,
    \"data_gb\": 20,
    \"voice_minutes\": \"unlimited\",
    \"sms_count\": \"unlimited\"
  }"
}
```

- provisioning_play - Ansible .yaml

- provisioning_json_vars - `?????3????`
- `?????OmniCRM-API/Provisioners/plays/play_local_mobile_sim.yaml`

`??????`

```
{
  "product_name": "????? 20GB",
  "product_slug": "prepaid-mobile-20gb",
  "category": "standalone",
  "service_type": "mobile",
  "enabled": true,
  "icon": "fa-solid fa-sim-card",
  "comment": "????? SIM??? 20GB ??????????",

  "retail_cost": 15.00,
  "wholesale_cost": 5.00,
  "retail_setup_cost": 0.00,
  "wholesale_setup_cost": 1.00,
  "contract_days": 30,

  "residential": true,
  "business": false,
  "customer_can_purchase": true,
  "available_from": "2025-01-01T00:00:00Z",
  "available_until": null,

  "auto_renew": "prompt",
  "allow_auto_renew": true,

  "inventory_items_list": "['SIM Card', 'Mobile Number']",

  "features_list": "[
    '20GB ????',
    '?????',
    '?????',
    '???'
  ]",
  "terms": "??? 30 ?????????????????????????????????",

  "provisioning_play": "play_local_mobile_sim",
  "provisioning_json_vars": "{
    \"days\": 30,
    \"data_gb\": 20,
    \"voice_minutes\": \"unlimited\",
    \"sms_count\": \"unlimited\"
  }"
}
```


2. 2

“20GB” OmniCRM Ansible

→ ↓ ↓ ← ← Ansible ↓ ↓
→ OCS → → →

1.

- “”
- “20GB”
-

2.

- SIM** - SIM
 - “SIM-00123 - ICCID: 8944...”
- - “+44 7700 900123”

3.

- £0.00
- £15.00
- £15.00
- 30

- 30

4.

“” API

- “” Provision status=1

- OCS/CGRateS URL
- CRM URL
-

2

```
- name: CRM API
  uri:
    url: "{{ crm_config.crm.base_url }}/crm/product/product_id/{{ product_id }}"
    method: GET
    headers:
      Authorization: "Bearer {{ access_token }}"
    return_content: yes
  register: api_response_product
```


- GET /crm/product/product_id/42
-
- api_response_product

provisioning_json_vars

-
-
-
-

3

```
- name:
  set_fact:
    package_name: "{{ api_response_product.json.product_name }}"
    monthly_cost: "{{ api_response_product.json.retail_cost }}"
    setup_cost: "{{ api_response_product.json.retail_setup_cost }}"
```


4

```
- name: CRM API SIM
  uri:
    url: "{{ crm_config.crm.base_url }}/crm/inventory/inventory_id/{{ hostvars[inventory_hostname]['SIM Card'] }}"
    method: GET
    headers:
      Authorization: "Bearer {{ access_token }}"
  register: api_response_sim
```



```

        "DestinationIDs": "*any"
    }
}
}

```

◆◆◆◆◆◆

- ◆◆◆◆◆ 20GB ◆◆◆◆
- ◆◆21474836480 ◆◆◆20 * 1024 * 1024 * 1024◆
- ◆ 720 ◆◆◆30 ◆◆◆◆◆
- ◆◆ 10◆◆◆◆◆◆◆◆◆◆

◆◆ 8◆◆◆◆◆◆◆◆◆◆

```

- name: ◆◆◆◆◆◆
  uri:
    url: "http://{{ crm_config.ocs.cgrates }}/jsonrpc"
    method: POST
    body_format: json
    body:
      {
        "method": "ApierV1.AddBalance",
        "params": [{
          "Account": "{{ service_uuid }}",
          "BalanceType": "*voice",
          "Balance": {
            "ID": "VOICE_Unlimited",
            "Value": 999999999,
            "ExpiryTime": "+720h"
          }
        }]
      }
}

```

- ◆◆ 999,999,999 ◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆
- ◆ 30 ◆◆◆◆◆

◆◆ 9◆◆ CRM ◆◆◆◆◆◆◆◆◆◆

```

- name: ◆◆ API ◆◆◆◆◆
  uri:
    url: "{{ crm_config.crm.base_url }}/crm/service/"
    method: PUT
    body_format: json
    headers:
      Authorization: "Bearer {{ access_token }}"
    body:
      {
        "customer_id": "{{ customer_id }}",
        "product_id": "{{ product_id }}",

```


- 11111111111111111111

11 11111111111111111111

```
- name: 11111111111111111111
  uri:
    url: "{{ crm_config.crm.base_url }}/crm/transaction/"
    method: PUT
    body_format: json
    headers:
      Authorization: "Bearer {{ access_token }}"
    body:
      {
        "customer_id": "{{ customer_id }}",
        "service_id": "{{ service_creation_response.json.service_id
        }}",
        "title": "{{ package_name }} - 11",
        "description": "111111",
        "retail_cost": "{{ setup_cost }}",
        "wholesale_cost": "{{
        api_response_product.json.wholesale_setup_cost }}"
      }
```

11111111111111111111

- 11111111111111111111111111111111
- 11111111111111111111111111111111
- 11111111111111111111111111111111

12 11111111111111111111

```
rescue:
- name: 11111111111111111111 OCS 11111111111111111111
  uri:
    url: "http://{{ crm_config.ocs.cgrates }}/jsonrpc"
    method: POST
    body:
      {
        "method": "ApierV2.RemoveAccount",
        "params": [{
          "Account": "{{ service_uuid }}"
        }]
      }

- name: 11111111111111111111
  fail:
    msg: "11111111111111111111 OCS 11111111111111111111"
```

11111111111111111111

- 12345678901234567890
- 1234567890 OCS 123
- 1234567890 "1234"
- 12345678901234567890

1234

- 12 OCS 12345678
- 12345678901234
- 1234567890

12345678901234567890

12345678901234567890

1. OCS 12345678901234567890

- 12 ID12345678901234567890
- 1234567890
 - 20GB 1234567890 30 1234567890
 - 1234567890999M 1234567890 30 1234567890
 - 1234567890999M 1234567890 30 1234567890

2. CRM 1234567890

- 12 ID1234
- 1234567890 John Doe1234567890 customer_id: 1234
- 12345678901234567890 20GB1234567890 product_id: 4234
- 1234567890 "Mobile - +44 7700 900123"
- 1234567890 UUID12345678901234567890 Local_Mobile_SIM_a3f2c1d8
- 1234567890
- 1234567890£15.001234567890£5.001234567890
- 1234567890£10.00/1234

3. 1234567890

- SIM 12345678901234567890 1234567890 123
- 1234567890 50021234567890 1234567890 123

4. 1234567890

- 12345678901234567890
- 12345678901234567890

5. 12345678901234567890

- 123456789012345678901234567890
- 1234567890 20GB 1234567890
- 123456789012345678901234567890

- 3 2 2 2 2 2 2 2 2
- 2 2 2 2 2 2 2 2

3 2 2 2 2 2 2 2 2 2

2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2

2 2 2 2 2 2 2 2

2 2 2 2 2 2 20GB 2 2 2 2 18GB 2 2 2 2 2 2 "5GB 2 2 2 2" 2 2 2 2 2

1. 2 2 2 2 2 2 2

- 2 2 "Mobile - +44 7700 900123" 2 2 2 2
- 2 2 2 2 2 2 2 2 2 20GB 2 2 18GB 2 2 2 2 90% 2
- 2 2 "2 2 2 2 2 2 2" 2 "2 2"

2. 2 2 2 2 2 2 2 2 2

2 2 2 2 2 2 2 2 2 2

- category = "addon"
- service_type = "mobile" 2 2 2 2 2 2 2 2
- residential = true 2 2 2 2 2 2 2 2
- enabled = true

2 2 2 2 2 "5GB 2 2 2 2 - £5.00"

3. 2 2 2 2 2 2 2 2

- 2 2 "5GB 2 2 2 2"
- 2 2 2 2 £5.00
- 2 2 2 2 2 2 2 2

4. 2 2 2 2 2 2 2 2

2 2 2 2 play_topup_charge_then_action.yaml 2 2 2 2 2 2

```
{
  "product_id": 43, # 5GB 2 2 2 2 2 2
  "customer_id": 123,
  "service_id": 1234, # 2 2 2 2
  "access_token": "eyJ...",
  "data_gb": 5, # 2 2 provisioning_json_vars
  "days": 7 # 2 2 provisioning_json_vars
}
```

2 2 2 2 2 2 2 2 2 2 2 2

- service_id
-
-

1

```
- name: CRM API
  uri:
    url: "http://localhost:5000/crm/service/service_id/{{ service_id }}"
    method: GET
    headers:
      Authorization: "Bearer {{ access_token }}"
  register: api_response_service

- name:
  set_fact:
    service_uuid: "{{ api_response_service.json.service_uuid }}"
    customer_id: "{{ api_response_service.json.customer_id }}"
```

- service_uuid OCS
-
-

2

```
- name:
  uri:
    url: "http://localhost:5000/crm/stripe/customer_id/{{ customer_id }}"
    method: GET
    headers:
      Authorization: "Bearer {{ access_token }}"
  register: api_response_stripe

- name: ID
  set_fact:
    customer_stripe_id: "{{ api_response_stripe.json |
json_query(query) }}"
  vars:
    query: "data[?default_payment_method==`true`].customer_stripe_id
| [0]"

- name:
```

```

uri:
  url: "http://localhost:5000/crm/stripe/charge_card/{{
customer_stripe_id }}"
  method: POST
  body_format: json
  headers:
    Authorization: "Bearer {{ access_token }}"
  body:
    {
      "retail_cost": 5.00,
      "description": "5GB  ",
      "customer_id": "{{ customer_id }}",
      "service_id": "{{ service_id }}",
      "product_id": "{{ product_id }}",
      "wholesale_cost": 1.50,
      "invoice": true
    }
  register: charge_response
- name:  " "
  assert:
    that:
      - charge_response.status == 200

```

" " " " " "

- Stripe
- £5.00
- £1.50
-
-
-

" " " " " " " "

-
-
-

3 OCS

```

- name:  5GB  "
uri:
  url: "http://{{ crm_config.ocs.cgrates }}/jsonrpc"
  method: POST
  body_format: json
  body:
    {
      "method": "ApierV1.AddBalance",

```

```

    "params": [{
      "Account": "{{ service_uuid }}",
      "BalanceType": "*data",
      "Balance": {
        "ID": "DATA_5GB_Boost_{{ uuid }}",
        "Value": 5368709120,
        "ExpiryTime": "+168h",
        "Weight": 20
      }
    }]
  }
}

```

5GB 5368709120 168 7 20

- 5GB 5368709120
- 168 7
- 20

2GB 25 5GB 7 7GB

- 2GB 25
- 5GB 7
- 7GB
-

4

```

- name: 
  uri:
    url: "http://localhost:5000/crm/transaction/"
    method: PUT
    body_format: json
    headers:
      Authorization: "Bearer {{ access_token }}"
    body:
      {
        "customer_id": "{{ customer_id }}",
        "service_id": "{{ service_id }}",
        "title": "5GB ",
        "description": " 5GB  7 ",
        "retail_cost": 5.00,
        "wholesale_cost": 1.50
      }

```

£5.00 £1.50

- £5.00
- £1.50
-

????????????

1. ??????????
2. ??????
3. ????? OCS ?
4. ? CRM ?????
5. ?????????? 7GB

????

- ??????£15 ?£5 ?
- ??????£5 ?£1.50 ?

?????????

????????????????????????????????

????

```
{
  "product_name": "?? 10GB ????",
  "category": "addon",
  "retail_cost": 10.00,
  "contract_days": 30,
  "auto_renew": "true",
  "provisioning_play": "play_topup_charge_then_action"
}
```

????????

```
- name: ??????
  uri:
    url: "http://{{ crm_config.ocs.cgrates }}/jsonrpc"
    method: POST
    body:
      {
        "method": "ApierV1.SetActionPlan",
        "params": [{
          "Id": "ServiceID_{{ service_uuid }}__ProductID_{{
product_id }}__MonthlyRenewal",
          "ActionPlan": [{
            "ActionsId": "Action_{{ product_slug }}",
            "Years": "*any",
            "Months": "*any",
            "MonthDays": "*any",
            "WeekDays": "*any",
            "Time": "00:00:00",
            "Weight": 10
```


- `service_id=1234`

3. `service.deprovisioning_play`

`service.deprovisioning_play`

```
{
  "action": "deprovision",
  "service_id": 1234,
  "customer_id": 123,
  "service_uuid": "Local_Mobile_SIM_a3f2c1d8"
}
```

`service.deprovisioning_play`

4. Ansible `service.deprovisioning_play`

```
- name: service.deprovisioning_play
  hosts: localhost
  tasks:
    - name: service.deprovisioning_play
      uri:
        url: "http://{{ crm_config.ocs.cgrates }}/jsonrpc"
        method: POST
        body:
          {
            "method": "ApierV2.SetAccount",
            "params": [{
              "Account": "{{ service_uuid }}",
              "ExtraOptions": { "Disabled": true }
            }]
          }

    - name: service.deprovisioning_play
      uri:
        url: "http://{{ crm_config.ocs.cgrates }}/jsonrpc"
        method: POST
        body:
          {
            "method": "ApierV1.RemoveActionPlan",
            "params": [{
              "Id": "ServiceID_{{ service_uuid }}__*"
            }]
          }

    - name: CRM
      uri:
        url: "http://localhost:5000/crm/service/{{ service_id }}"
        method: PATCH
```

```

    body:
    {
        "service_status": "Deactivated",
        "service_deactivate_date": "{{ current_datetime }}"
    }

- name: 00000000
  uri:
    url: "http://localhost:5000/crm/inventory/inventory_id/{{
sim_card_id }}"
    method: PATCH
    body:
    {
        "service_id": null,
        "customer_id": null,
        "item_state": "Decommissioned"
    }

```

000000

1. 00 OCS 00 - 0000000000000000
2. 00000000 - 00000000
3. 00 CRM 00 - 00 "0000" 000000
4. 0000 - SIM 0000 "00" 0000000000000000000000

5. 0000

00000000

- 00000000000000000000
- 00000000 CRM 0000000000
- 0000000000000000
- 0000000000
- OCS 00000000000000

00000000

0000000000

- 000000000000
- OCS 00000000
- 0000
- 0000000000000000

```

- name: 0000
  uri:
    url: "http://{{ crm_config.ocs.cgrates }}/jsonrpc"
    method: POST

```

```
body:
{
  "method": "ApierV2.SetAccount",
  "params": [{
    "Account": "{{ service_uuid }}",
    "ExtraOptions": { "Disabled": true }
  }]
}
```

???

- ?
- OCS ?
- ?
- ?

```
- name: ?? OCS ?
uri:
  url: "http://{{ crm_config.ocs.cgrates }}/jsonrpc"
  method: POST
  body:
  {
    "method": "ApierV2.RemoveAccount",
    "params": [{
      "Account": "{{ service_uuid }}"
    }]
  }
```

???

???

???

- enabled: true - ?
- enabled: false - ?

???

- ? enabled: false ?
- ?
- ?/?
- ?

???

???

Mailjet OmniCRM

OmniCRM  **Mailjet**                          
                          



Mailjet

- 
-  Mailjet 
-  - 10  Mailjet 
- 
- 

Mailjet  OmniCRM-API/crm_config.yaml  mailjet      

```
mailjet:
  api_key: your_mailjet_api_key
  api_secret: your_mailjet_api_secret
```



1. `<https://www.mailjet.com>`
2. `→ API`
3. `API`
4. `crm_config.yaml`

[illegible]

- **from_email** - 8
- **from_name** - 6
- **template_id** - Mailjet ID 4
- **subject** - 7

??????

??????

????????

```
api_crmCommunicationCustomerWelcome:
  from_email: "support@yourcompany.com"
  from_name: "Your Company Support"
  template_id: 5977509
  subject: "????????"
```

????

- ?????????
- ???????
- ???????

??????

- {{ var:customer_name }} - ?????
- {{ var:email }} - ???????
- {{ var:company_name }} - ?????
- {{ var:login_url }} - ???????
- {{ var:support_url }} - ?????

??????

????????

```
api_crmCommunicationCustomerInvoice:
  from_email: "billing@yourcompany.com"
  from_name: "Your Company Billing"
  template_id: 6759851
  subject: "???? - "
```

????

- ?????? ? ?
- ??????
- ??????

??????

- {{ var:customer_name }} - ?????
- {{ var:invoice_number }} - ?? ID/??
- {{ var:invoice_date }} - ?????
- {{ var:due_date }} - ?????

- {{ var:total_amount }} - 1234
- {{ var:invoice_url }} - 123/4567 PDF 123
- {{ var:pay_url }} - 12345678901234

123456

12 PDF 12345678901234

12345678

12345678901234

```
api_crmCommunicationCustomerInvoiceReminder:
  from_email: "billing@yourcompany.com"
  from_name: "Your Company Billing"
  template_id: 6759852
  subject: "1234 - 123456"
```

123456

- 1234 X 12345678
- 123456789012
- 123456789012345678901234

1234567890

- {{ var:customer_name }}
- {{ var:invoice_number }}
- {{ var:due_date }}
- {{ var:days_overdue }}
- {{ var:total_amount }}
- {{ var:pay_url }}

12345678901234

123456789012345678901234

```
api_crmCommunicationUserWelcome:
  from_email: "admin@yourcompany.com"
  from_name: "Your Company Admin"
  template_id: 5977510
  subject: "1234567890"
```

123456

- 12345678901234
- 12345678901234567890123456789012345678901234

??????

- {{ var:user_name }}
- {{ var:change_date }} - ?/?/???
- {{ var:ip_address }} - ??? IP ?/?/?/?/?
- {{ var:support_email }}

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```
api_crmCommunicationUserPasswordChange:
  from_email: "noreply@yourcompany.com"
  from_name: "Your Company Security"
  template_id: 5977513
  subject: "?????"
```

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- ?/?/?/?/?/?/?/?
- ?/?/?/?/?/?/?

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- {{ var:user_name }}
- {{ var:change_date }}
- {{ var:changed_by }} - "??"?/?/?/?/?/?
- {{ var:support_email }}

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```
api_crmCommunicationEmailVerification:
  from_email: "noreply@yourcompany.com"
  from_name: "?????"
  template_id: 5977514
  subject: "?????????"
```

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- ?/?/?/?/?/?/?/?/?
- ?/?/?/?/?/?/?/?
- ?/?/?/?/?/?/?/?/?/?

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- {{ var:user_name }}

- {{ var:verification_url }} - 1234567890
- {{ var:verification_code }} - 1234567890123456

123456

1234567890/1234567890

```
api_crmCommunicationsBalanceExpired:
  from_email: "support@yourcompany.com"
  from_name: "Your Company Support"
  template_id: 5977515
  subject: "1234567890"
```

123456

- 12345678
- 12345678901234
- 1234567890

1234567890

- {{ var:customer_name }}
- {{ var:service_name }} - 1234567890
- {{ var:expiry_date }}
- {{ var:balance_type }} - "123" "456" "789" "012"
- {{ var:renewal_url }} - 123/4567890

12345678

123456789012345678901234

```
api_crmCommunicationsBalanceLow:
  from_email: "support@yourcompany.com"
  from_name: "Your Company Support"
  template_id: 5977516
  subject: "1234567890"
```

12345678

- 12345678901234567890 20%
- 1234567890 OCS 123
- 12345678901234

1234567890

- {{ var:customer_name }}
- {{ var:service_name }}
- {{ var:current_balance }}

- {{ var:threshold }}
- {{ var:balance_type }}
- {{ var:topup_url }} -

Mailjet

Mailjet

1 Mailjet

1. Mailjet
2. →
- 3.
- 4.

2

Mailjet HTML

- -
- - {{ var:customer_name }} {{ var:user_name }}
- -
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- -
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```
<!DOCTYPE html>
<html>
<head>
  <style>
    body { font-family: Arial, sans-serif; }
    .button { background-color: #4CAF50; color: white; padding:
14px 28px; }
  </style>
</head>
<body>
  

  <h2></h2>

  <p>{{ var:user_name }}</p>
```

```

<p>{{ var:expiry_time }}</p>

<a href="{{ var:reset_url }}" class="button">{{ var:button_label }}</a>

<p>{{ var:expiry_time }}</p>

<p>{{ var:expiry_time }}</p>

<hr>
<p style="font-size: 12px; color: #666;">
    {{ var:expiry_time }} | support@yourcompany.com<br/>
    123 {{ var:expiry_time }}, {{ var:expiry_time }}, {{ var:expiry_time }}
</p>
</body>
</html>

```

3 ID

1. Mailjet
2. ID 5977509
3. ID crm_config.yaml

4

1. Mailjet
- 2.
- 3.
- 4.

5 OmniCRM

crm_config.yaml

```

mailjet:
  api_key: your_api_key
  api_secret: your_secret

api_crmCommunicationUserPasswordReset:
  from_email: "noreply@yourcompany.com"
  from_name: "Your Company Security"
  template_id: 5977511
  subject: " "

```

OmniCRM API

```

cd OmniCRM-API
sudo systemctl restart omnicrm-api

```

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OmniCRM ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? Mailjet ?

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- ? ? ? ? ? ? API ? ? ? Mailjet ? ? ? ? ? ? ? ? ID ? ?
- ? ? ? ? ? ?
 - ? ? api_key ? api_secret ? crm_config.yaml ? ? ? ? ?
 - ? ? Mailjet ? ? ? ? ? ? ?
 - ? ? ? ? ID ? ? ? ? ? Mailjet
 - ? ? API ? ? ? ? ? ? ? ? ?

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- ? ? ? ? ? ? ? ? ? ? OmniCRM ? ? ? ? ?
- ? ? ? ? ? ?
 - ?
 - ? ? {{ var:variable_name }} ? ?
 - ? ? OmniCRM ? ? ? API ? ? ? ? ? ? ? ? ? ?
 - ? Mailjet ? ? ? ? ? ? ? ? ? ? ?

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- ? ? ? PDF ? ? ? ? ? ? ? ? ? ?
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-       PDF  

Mailjet

-     API           
-     
 -   Mailjet API          200    
 -   OmniCRM-API         
 -              
 -           

- administration_configuration -    Mailjet    
- payments_invoices -         
- authentication_flows -           
- customer_care -           

- Mailjet    <<https://dev.mailjet.com/>>
- Mailjet API    <<https://dev.mailjet.com/email/reference/>>



Stripe

OmniCRM **Stripe**

Payment Methods <payment_methods> Billing Overview <billing_overview>
Invoices <payments_invoices> Transactions <payments_transaction>



OmniCRM **Stripe**
OmniCRM

Stripe Integration <integrations_stripe> Billing Overview
<billing_overview> Payment Processing <payments_process> Invoices
<payments_invoices>



- - Stripe OmniCRM
- -
- -
- -
- -
- - Self-Care Portal <self_care_portal>
- -

- Visa Mastercard American Express Discover
-
-

OmniCRM

Stripe OmniCRM

- Visa Mastercard
-
- /
- /
- Stripe



1. Customers → [Select Customer]
2. Billing
3. Payment Methods

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□□ "Add Payment Method" □□ Stripe □□□□□□

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Stripe Elements □□□□□□

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Stripe Elements □□□□

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- OmniCRM □□□□□□□□□□□□
- PCI DSS □□□□ Stripe □□
- □□□□□□□□□□□□

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□□□□ "Add Payment Method" □□

1. □□□□□
 - Stripe □□□□□
 - □□□□□□□□□□
 - □□ CVC □□
2. □□□□
 - □□□□□□□□□□ Stripe□□□□ OmniCRM□
 - Stripe □□□□□□□□□□pm_1A2B3C4D□
 - □□□□□ OmniCRM
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 - OmniCRM □□□□□□□□□□
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 - □□□□□□□□□□□□□□□□ OmniCRM □□□

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□□ Visa □□□□ 1234□□□□□□□□□□

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3. □□ "Set as Default"
4. □□□□□□

Visa □□ 5678 □□□□□□□□□□□□

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2. ??????
3. ??? **Billing → Payment Methods**
4. ?? **"Add Payment Method"**
5. ??????????
6. ??????
7. ???/????

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1. ??????
2. ??? **Billing → Payment Methods**
3. ??????????
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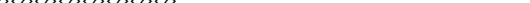
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2. 1234
3. 12345678901234
4. 1234567890123456
5. 123456789012345678

12345678

123

OmniCRM 12 Stripe 123456789012

1. 12345678 → 12345678 Stripe 123
2. **Stripe** 12345678 → 12345678
3. 12345678 **OmniCRM** 12 → 123456789012
4. 123456 → 12345678 StripeStripe 123456

OmniCRM 12345678

```
{
  "customer_stripe_id": "pm_1A2B3C4D5E6F",
  "brand": "visa",
  "last4": "1234",
  "exp_month": 12,
  "exp_year": 2026,
  "name": "John Smith",
  "nickname": "Personal Card",
  "is_default": true
}
```

OmniCRM 12345678

- 123456
- CVV/CVC 12
- 1234
- PIN 12

PCI 123

1234 Stripe Elements

- 12 **PCI** 12 - 123456789012 OmniCRM 123
- **Stripe** 12345678 - 123456789012 Stripe 12 iframe 12
- 12345678 - 1234567890123456789012
- 123456 - 123456789012 HTTPS/TLS

123 integrations_stripe 123 Stripe 1234567890

12345678

12345678 **1** 1234567890123456789012

1234 123456789012

1. 123456
2. 123456
3. 1234567890123456
4. 1 Stripe 1234567890123456
5. 1234567890
6. 12345678
7. 1234
8. 12345678

1234 2123456789012345

123 12345678

1. 1234567890123456 60 12
2. 1234 1234
3. 123 Billing → Payment Methods
4. 1234567890 12/2025
5. 12 "Add Payment Method"
6. 123456 12/2028 1234
7. 12345678
8. 1234
9. 12345678

1234 3123456789012345

123 12345678 "12345678"

1. 12345678
2. 1234567890123456
3. 1234567890123456 01/2025
4. 123 "1234567890123456"
5. 1234567890123456
6. 12345 Customers → [Customer] → Billing
7. 12 "Add Payment Method"
8. 1234567890123456
9. 12345678
10. 12345678
11. 12345678
12. 12345678 "1234567890123456"

1234 4123456789012345

123 1234567890123456

1. 1234567890123456 Visa 12 1111
2. 1234567890123456
3. 1234567890 Mastercard 12 2222123456
4. 1234567890 Amex 12 333312345678
5. 12345678901234567890 Mastercard
6. 123 Visa 123456789012

123 512345678901234567890123456

123 12345678

1. 12345678 Billing → Expiring Cards
2. 12345 "12345 30 12"

3. 15
4. 3 → "Send Reminder Emails"
5. Mailjet
- 6.
- 7.
- 8.
- 9.

- Stripe
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- Stripe API
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 - Stripe .env
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Stripe

- Stripe.js API
- -

- `REACT_APP_STRIPE_PUBLISHABLE_KEY` `.env`
- `Stripe.js`
- `/`

- `Mailjet`
- `Mailjet` `crm_config.yaml`
- `Mailjet`
- `Mailjet`

- `2`
- `30`
- `/`
- `“Visa” “Amex”`
- `£0.01`

- `60/30/7`
- `Stripe`
- `Mailjet`
- `Stripe`
- `CVC`

- `Stripe`
- `HTTPS`
- `Stripe`
- `Stripe`
- `CVC`

- `Stripe`
- `HTTPS`
- `Stripe`
- `Stripe`
- `CVC`

- `integrations_stripe` - `Stripe`
- `payments_process` - `Stripe`
- `payments_invoices` - `Stripe`

- features_topup_recharge -
- basics_payment -
- customer_care -

Stripe Stripe

Stripe

OmniCRM Stripe OmniCRM Stripe

OmniCRM Stripe Stripe

API </concepts_api> OmniCRM Stripe

Stripe

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Stripe

<<https://dashboard.stripe.com/>>

Stripe



OmniCRM 50



OmniCRM **Stripe** OmniCRM

Stripe Integration <integrations_stripe> Billing Overview
<billing_overview> Payment Processing <payments_process> Invoices
<payments_invoices>



- - **Stripe** OmniCRM
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- - Self-Care Portal <self_care_portal>
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- Visa Mastercard American Express Discover
-
-

OmniCRM

Stripe OmniCRM

- Visa Mastercard
-
- /
- /
- Stripe



1. **Customers** → [
2. **Billing**
3. **Payment Methods**

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□□ "□□□□□□□" □□□ Stripe □□□□□□

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Stripe Elements □□□□□□

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- □□□□ - □□□□□□□□CVC□□ Stripe □□□
- □□□□□ - □□□□□
- □□/□□ - □□□□

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Stripe Elements □□□□

- □□□□□□□□□□ Stripe □□□ iframe □
- OmniCRM □□□□□□□□□□□□
- PCI DSS □□□□ Stripe □□
- □□□□□□□□□□

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□□□□ "□□□□□□□" □□

1. □□□□□□
 - Stripe □□□□□□
 - □□□□□□□□□□□□
 - □□ CVC □□
2. □□□□

- Stripe Stripe OmniCRM
- Stripe pm_1A2B3C4D
- OmniCRM

3.

- OmniCRM
-
- OmniCRM

3

Visa 1234

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2. :

3. "

4.

Visa 5678

1. 
2. 
3. 
4. 

5. 1234567890123456

1234567

123

OmniCRM 12 Stripe 123456789012

1. 1234567 → 123456 Stripe 123
2. **Stripe** 1234567 → 1234567
3. 123456 **OmniCRM** → 123456789012
4. 12345 → 123456 Stripe Stripe 123456

OmniCRM 1234567

```
{
  "customer_stripe_id": "pm_1A2B3C4D5E6F",
  "brand": "visa",
  "last4": "1234",
  "exp_month": 12,
  "exp_year": 2026,
  "name": "John Smith",
  "nickname": "Personal Card",
  "is_default": true
}
```

OmniCRM 12345678

- 1234
- CVV/CVC 12
- 1234
- PIN 12

PCI 123

1234 Stripe Elements

- 12 **PCI** 12 - 1234567890 OmniCRM 123
- **Stripe** 12345 - 123456789 Stripe 12 iframe 12
- 1234567 - 12345678901234567890
- 12345 - 123456789 HTTPS/TLS

123 integrations_stripe 123 Stripe 123456789

1234567

12345 **1** 1234567890123456789

123 123456789

1. 1234567
2. 1234567
3. 1234567890123456789
4. 1 Stripe 1234567890123456789
5. 123456789
6. 1234567

7. 3333
8. 3333333

3333 2333333333333333

333 3333333

1. 3333333333333333 60 33
2. 333333333
3. 333 **Billing → Payment Methods**
4. 333333333 12/2025
5. 33 "3333333"
6. 333333 12/2028 33333
7. 333333333
8. 33333
9. 333333333

3333 3333333333333333

333 33333333 "3333333"

1. 333333333
2. 3333333333333333
3. 3333333333333333 01/2025
4. 333 "3333333333333333"
5. 33333333333333333
6. 33333 **Customers → [Customer] → Billing**
7. 33 "3333333"
8. 3333333333333333
9. 333333333
10. 3333333
11. 3333333
12. 333333 "333333333333"

3333 4333333333333333

333 33333333333333333

1. 333333333333 Visa 3333 1111
2. 3333333333333333
3. 333333 Mastercard 3333 2222333333
4. 333333 Amex 3333 333333333333
5. 33333333333333333 Mastercard
6. 333 Visa 333333333333

3333 5333333333333333

333 3333333

1. 333333 **Billing → Expiring Cards**
2. 3333 "3333 30 3"
3. 33 15 333333333333
4. 33 → "3333333333"
5. Mailjet 33333333333333333
6. 3333333333333333
7. 333333333333
8. 333333333333

- `Mailjet` `crm_config.yaml`
- `Mailjet` `crm_config.yaml`
- `Mailjet` `crm_config.yaml`
- `Mailjet` `crm_config.yaml`

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- `2` `30` `Visa` `Amex`
- `2` `30` `Visa` `Amex`
- `2` `30` `Visa` `Amex`
- `2` `30` `Visa` `Amex`
- `2` `30` `Visa` `Amex`
- `2` `30` `Visa` `Amex`

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- `/SMS/` `£0.01`
- `/SMS/` `£0.01`
- `/SMS/` `£0.01`
- `/SMS/` `£0.01`
- `/SMS/` `£0.01`
- `/SMS/` `£0.01`

?

- `60/30/7` `Stripe` `Mailjet`
- `60/30/7` `Stripe` `Mailjet`
- `60/30/7` `Stripe` `Mailjet`
- `60/30/7` `Stripe` `Mailjet`
- `60/30/7` `Stripe` `Mailjet`

?

- `Stripe` `HTTPS` `Stripe` `Stripe` `CVC`
- `Stripe` `HTTPS` `Stripe` `Stripe` `CVC`
- `Stripe` `HTTPS` `Stripe` `Stripe` `CVC`
- `Stripe` `HTTPS` `Stripe` `Stripe` `CVC`
- `Stripe` `HTTPS` `Stripe` `Stripe` `CVC`

?

- `integrations_stripe` - `Stripe`
- `payments_process` - `Stripe`
- `payments_invoices` - `Stripe`
- `features_topup_recharge` - `Stripe`
- `basics_payment` - `Stripe`
- `customer_care` - `Stripe`

?



Transactions </payments_transaction>

Mailjet <integrations_mailjet>



OmniCRM HTML Jinja2

OmniCRM-API/invoice_templates/

- norfone_invoice_template.html -
- cifi_invoice_template.html -

OmniCRM-API/crm_config.yaml

```
invoice:
  template_filename: 'norfone_invoice_template.html'
```

Jinja2

- {{ invoice_number }} - ID INV-2025-001234
- {{ date }} - ISO 2025-01-10T12:00:00
- {{ due_date }} - 2025-02-10
- {{ start_date }} -
- {{ end_date }} -
- {{ total_amount }} -
- {{ total_tax }} -

- {{ client.name }} -

- {{ client.address.address_line_1 }} - 1
- {{ client.address.address_line_2 }} - 2
- {{ client.address.city }} -
- {{ client.address.state }} - /
- {{ client.address.zip_code }} -
- {{ client.address.country }} -

```
{% for sub_transaction in transactions %}
  <tr>
    <td>{{ sub_transaction.transaction_id }}</td>
    <td>{{ sub_transaction.created.split("T")[0] }}</td>
    <td>{{ sub_transaction.title }}</td>
    <td>{{ sub_transaction.description }}</td>
    <td>${{ "%.2f"|format(sub_transaction.retail_cost) }}</td>
  </tr>
{% endfor %}
```

- sub_transaction.transaction_id - ID
- sub_transaction.created - /
- sub_transaction.title -
- sub_transaction.description -
- sub_transaction.retail_cost -
- sub_transaction.tax_percentage - 10 10%
- sub_transaction.tax_amount -

```
<td>
  {% if sub_transaction.tax_amount and sub_transaction.tax_amount > 0 %}
    ${{ "%.2f"|format(sub_transaction.tax_amount) }} ({{
sub_transaction.tax_percentage }}%)
  {% else %}
    -
  {% endif %}
</td>
```

1

```
cd OmniCRM-API/invoice_templates/
cp norfone_invoice_template.html your_company_invoice_template.html
```

2 HTML/CSS

your_company_invoice_template.html

1.

```
<!-- URL -->
```

```


<!-- 🍷🍷🍷🍷 -->
<h1>🍷🍷🍷🍷🍷</h1>
```

2. 🍷🍷🍷🍷

```
<style>
  /* 🍷🍷🍷🍷🍷 */
  .navbar {
    background: linear-gradient(to bottom right, #your-color-1, #your-
color-2);
  }

  /* 🍷🍷 */
  .table thead th {
    background-color: #your-brand-color !important;
    color: white !important;
  }

  /* 🍷🍷🍷🍷🍷 */
  .btn-primary {
    background-color: #your-brand-color;
  }
</style>
```

3. 🍷🍷🍷🍷🍷

```
<footer>
  <p>🍷🍷🍷🍷🍷</p>
  <p>123 🍷🍷🍷🍷🍷🍷</p>
  <p>🍷🍷🍷+1-555-123-4567 | 🍷🍷🍷🍷billing@yourcompany.com</p>
  <p>ABN/🍷🍷🍷12345678900</p>
</footer>
```

4. 🍷🍷🍷🍷

```
<div class="payment-info">
  <h3>🍷🍷🍷</h3>
  <p><strong>🍷🍷</strong> 🍷 https://yourcompany.com/pay 🍷</p>
  <p><strong>🍷🍷🍷🍷</strong></p>
  <ul>
    <li>🍷🍷🍷🍷Your Company Ltd</li>
    <li>BSB🍷123-456</li>
    <li>🍷🍷🍷🍷987654321</li>
    <li>🍷🍷🍷{{ invoice_number }}</li>
  </ul>
</div>
```

5. 🍷🍷🍷🍷

```
<div class="terms">
  <h4>🍷🍷🍷</h4>
  <p>🍷🍷🍷 30 🍷🍷🍷🍷🍷</p>
  <p>🍷🍷🍷🍷🍷🍷 2%</p>
  <p>🍷🍷🍷🍷🍷billing@yourcompany.com</p>
</div>
```

3

OmniCRM-API/crm_config.yaml

```
invoice:
  template_filename: 'your_company_invoice_template.html'
```

4 API

```
cd OmniCRM-API
sudo systemctl restart omnicrm-api
```

5

-
-
- PDF
-

Jinja2

```
{% if total_amount > 1000 %}
  <div class="high-value-notice">
    <p><strong></strong> - </p>
  </div>
{% endif %}

{% if client.address.country == "Australia" %}
  <p>< GST$ {{ "%.2f"|format(total_amount * 0.10) }}</p>
{% endif %}
```

```
invoice_template_en.html
invoice_template_es.html
invoice_template_fr.html
```

```
<!-- -->
<tr>
  <td colspan="4" class="text-right"><strong></strong></td>
  <td>{{ "%.2f"|format(total_amount) }}</td>
</tr>
<tr>
  <td colspan="4" class="text-right"><strong></strong></td>
  <td>{{ "%.2f"|format(total_tax) }}</td>
</tr>
<tr>
  <td colspan="4" class="text-right"><strong></strong></td>
```

```
<td>${{ "%.2f"|format(total_amount + total_tax) }}</td>
</tr>
```

```
total_tax tax_amount tax_percentage 0%
```

```
<div class="qr-payment">
  
  <p></p>
</div>
```

PDF

OmniCRM WeasyPrint HTML PDF

CSS

- CSS 2.1
- CSS3flexbox
- @font-face

- JavaScript
- CSS
-
- CSS

```
@page {
  size: A4;
  margin: 1cm;
}

body {
  font-family: Arial, sans-serif;
  font-size: 10pt;
}
```

```
@media print {
  .no-print {
    display: none;
  }

  .page-break {
    page-break-after: always;
  }
}
```


???

()

-
-

- 1.
- 2.
- 3.

- void = true
- invoice_id null
- " "
-
- " "
-
- " "

-
- = " " "
- = " " "

???

()

-
- **Stripe**
- payment_reference Stripe ID
-

1. Stripe
2. ()
- 3.

4. " "
5. Stripe
 - Stripe API
 - Stripe
 - refund_reference

?? ?? ?? ??

?? ?? 1?? ?? ?? ??

1. ?? ?? ?? ?? 1 ? 31 ??
2. ?? ?? ?? → ??
3. ?? "+ ? ? ? ? ? ? ?"
4. ?? ?? ?? ?? ?? ?? ?? ?? ?? ?? ?? ?? ??
5. ?? ?? ??
 - ?? ?? ?? 2025-01-01
 - ?? ?? ?? 2025-01-31
 - ?? ?? 2025-02-15 ?? ?? ?? 15 ??
 - ?? ?? "2025 ? 1 ?? ?" ?? ??
6. ?? ?? ?? ?? ?? ?? ?? ?? 1 ?? ?? ?? ?? ?? ??
7. ?? ?? ??
 - ?? ?? ?? ?? ??
 - ?? ?? ?? ?? ?? ?? ?? ?? ??
 - ?? ?? ?? ?? ?? ??
8. ?? "?? ?? ?" ?? ?? ?? ?? ?? ?? ?? ?? "?? ?? (15)" ?
9. ?? ?? ?? ?? ?? ?? ?? ??
10. ?? ?? ?? ?? ?? ?? ?? ?? ?? ?? ??
11. ?? ?? ?? ?? ?? ?? ?? "?? ?? ?? ?" ?? ?? ?? ?? ?? ?? ?? ??
12. ?? ?? ?? ?? PDF ?? ?? ?? ?? ?? ?? ?? ??

?? ?? 2?? ?? ?? ??

1. ?? ?? ?? ?? ?? ?? + ?? ?? ?? ?? ?? ??
2. ?? ?? ?? ?? ?? ?? ?? ?? ??
3. ?? ?? ?? ?? ?? ?? ?? ?? ??
 - ?? "+ ? ? ? ? ? ? ?"
 - ?? ?? "?? ?? - 2025 ? 1 ?"
 - ?? / ?? ?? 1 ? 1 ? - 31 ?
 - ?? ?? 2 ? 15 ?
 - ?? ?? ?? ?? ?? ?? ?? ?? ?? ??
 - ?? ?? ?? ?? ?? ?? X ??
 - ?? ?? ?? ?? ?? ?? X ??
 - ?? ?? ?? ?? ?? ??
 - ?? ?? ?? ?? ?? ?? ??
 - ?? "?? ?? ?" ?? ?? ?? ?? ?? ?? ??
4. ?? ?? ?? ?? ?? ?? ?? ?? ?? ??
 - ?? ?? "+ ? ? ? ? ? ? ?"
 - ?? ?? "?? ?? ?? - 2025 ? 1 ?"
 - ?? / ?? ?? 1 ? 1 ? - 31 ?? ?? ?? ?? ??
 - ?? ?? ?? ?? ??
 - ?? ?? ?? ?? ?? ?? ?? ??
 - ?? X ?? ?? ?? ?? ??
 - ?? ?? ?? ?? ?? ?? ??
 - ?? "?? ?? ?"
5. ?? ?? ?? ?? ?? ?? ?? ?? ?? ??
 - ?? ?? "+ ? ? ? ? ? ? ?"
 - ?? ?? "?? ?? ?? - 2025 ? 1 ?"
 - ?? ?? ?? ?? ?? ?? ?? ?? ?? ??
 - ?? "?? ?" ?? ?? ??
 - ?? "?? ?? ?"
6. ?? ?? ?? ?? ?? ?? ?? ?? ?? ?? ?? ??

3

1.
2.
3. "+
4.
5. 20
6.
7.
 - " "
 - X**
 - " "
 - X**
 - " 18 "
 -
8.
9. "(18)"
10.
11.

4

1.
2.
3.
 -
 - X**
 -
 - X**
4.
5.
6. " "
7. /
8.

5

1.
2.
3.
4. "+
5.
 -
 -
 - + 7
 - " "
6.
7.
8. **X**
9. " "
10.
11. Stripe

6

1.
2.

???

-

-
-

PDF

- WeasyPrint
- HTML API

Stripe

- Stripe API
- Stripe

-
- Stripe

- Mailjet API
- `crm_config.yaml` Mailjet

- /POS/ Stripe
- Stripe

PDF

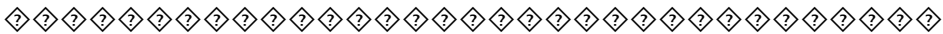
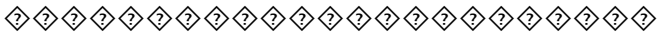
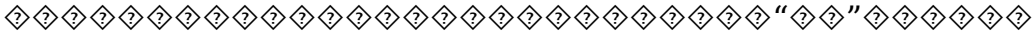
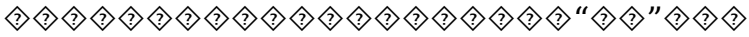
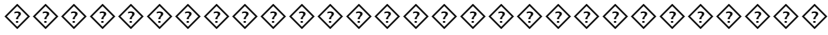
- PDF
- PDF DELETE FROM Invoice_PDF_Cache WHERE invoice_id = X;

-
-

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-

-
-

-
-





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????????? <payments_invoices>????????

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1. ???? → [????]
2. ?? ??
3. ?????????

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1. ???? → ?????
2. ?????

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- ???? - ?????????
- ????? - ?????
- ????? - ?????
- ????? - ?????

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- 1,000,000,000 "k" \$1.5k
- 1,000,000,000 "M" \$2.3M
- 1,000,000,000 "B" \$1.1B

???

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???

- **ID** - ?ID
- - ?
- - ?
- - ?
- - ?
- - ?
- - ?ID
- - ?

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- - ?
- **PDF** - PDF
- - ?

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?"?"

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- **ID** - ???ID????/?
- ?? - ?????
- ?? - ?????
- ?? - ??????/?
- ?? - ???ID??

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???

- ?????
- ?????????

????

1. ?????
2. ?????? :
3. ?? "???"
4. ?????

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- ????? void = true
- ?????
- ?????
- ????? "???"
- ?"?????"

??? ??????????????"?????"?????"

???

????????????????

????

????

- ????? - ?????
 - ????? - ?????
 - ????? - ?????
 - ?? - retail_cost × (tax_percentage / 100)
 - ????? - ?????\$10.00 (10%)
- ?????/? - ?
 - ?????
 - ?????0%
 - ?????

#####

- #####10%\$50.00#####
- #####\$50.00 × 0.10 = \$5.00
- #####\$5.00 (10%)

#####NIL/#####

- #####0#####
- #####0%
- #####“_”

#####

#####

#####

#####

#####

- #####
- #####
- #####
- #####“#####”#####
- #####-#

#####

- #####
- #####
- #####ID#####
- #####✓#
- #####

#####

#####

1. #####
2. #####
3. #####
4. ## invoice_id #####
5. #####“###”

payments_invoices

#####

1#####

1. #####“#####2#”
2. #####£10#####
3. ##### ##
4. ## “+ #####”

5. 1 2 3 4 5 6
6. 1 2 3 4 5 6 7 8
7. 1 2 3 4 5 "6 7 8 9"
8. 1 2 3 4 5 "6 1 8-9 10 11 12 13"
9. 1 2 3 4 5 6 7 10.00
10. 1 2 3 4 5 6 7 8 9 10 11 12 13
11. 1 2 "3 4 5 6"
12. 1 2 3 -£10.00 4 5 6 7
13. 1 2 3 4 5 6 7 8 9 10 11 12 13

1 2 3 4 5 6 7 8 9 10 11 12 13 14

1. 1 2 3 4 5 6 7 8 9
2. 1 2 3 4 5 6 £75 7 8 9 10 11
3. 1 2 3 4 5 6 7 8
4. 1 2 "+ 3 4 5 6"
5. 1 2 3 4 5 6 7 8
6. 1 2 3 4 5 "6 7 8 9"
7. 1 2 3 4 5 "6 7 8 9 10 11 12 13 14 15 16 17"
8. 1 2 3 4 5 6 7 75.00
9. 1 2 3 4 5 6 7 45.00 8 9 10 11 12 13 14 15 16 17 18 19
10. 1 2 3 4 5 6 7 8
11. 1 2 3 4 5 6
12. 1 2 "3 4 5 6"
13. 1 2 3 4 5 6 7 8 9 10 11
14. 1 2 3 4 5 6 7 8 9

1 2 3 4 5 6 7 8 9 10 11 12 13 14

1. 1 2 3 4 5 6 7 8 9
2. 1 2 3 4 5 6 7 8
3. 1 2 3 4 5 6 7 8 9 10 11 12 13 : 14
4. 1 2 "3 4 5 6"
5. 1 2 3 4 5 6
6. 1 2 3 4 5 6 7 8
7. 1 2 3 4 5 6 7 8 9

1 2 3 4 5 6 7 8 9 10 11 12 13 14

1. 1 2 3 4 5 6 7 8
2. 1 2 3 4 5 6 7 "8 9 10"
3. 1 2 3 4 5 6 7
4. 1 2 3 4 5 6 7 8
5. 1 2 3 4 5 6 7 8 9
6. 1 2 3 4 5 6 7
7. 1 2 3 4 5 6 7 8 9 1-31 10 11
8. 1 2 3 4 5 6 7 8 9 10 11 12 13

1 2 3 4 5 6 7 8 9 10 11 12 13 14

1 2 3 4 5 6 7 8 9 10 11 12 13 14

- 1 2 3 4 5 6 7 8 9
- 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

1 2 3 4 5 6 7 8 9 10 11 12 13 14



OmniCRM

OmniCRM RBAC Users Roles
Permissions view_customer
create_inventory



RBAC

1. —
2. —
3. —
4. — “...”/

RBAC Permissions



- — OmniCRM
- — view_customer delete_product
- — Admin Support Finance
- —

RBAC Permissions

JWT API IP/



OmniCRM



- “”

- Admin Support Finance
CRM


```
"email": "john.smith@company.com",
"password": "TempP@ssw0rd!",
"first_name": "John",
"middle_name": "D",
"last_name": "Smith",
"phone_number": "+61412345678",
"role": "Support"
}
```

???

```
{
  "id": 123,
  "username": "john.smith",
  "email": "john.smith@company.com",
  "first_name": "John",
  "last_name": "Smith",
  "roles": ["Support"],
  "created": "2025-01-04T10:30:00Z"
}
```

??????

????????????????????????????????????

????????????????????

```
{
  "username": "jane.doe",
  "email": "jane.doe@company.com",
  "password": "TempP@ssw0rd!",
  "first_name": "Jane",
  "last_name": "Doe",
  "role": "Support, Finance"
}
```

????????????????

POST /auth/roles/{role_id}/users/{user_id}

??????

????????

GET /auth/users

????????????????

?????

1. `GET /api/roles/{role_id}` → `GET /api/roles/{role_id}`
2. `GET /api/roles/{role_id}`
3. `GET /api/roles/{role_id}`
4. `GET **"/api/roles/{role_id}"**`

Editing Role Details

API

PUT /auth/roles/{role_id}

```
{
  "name": "Senior_Support",
  "description": "Senior support team with full customer access"
}
```

API

DELETE /auth/roles/{role_id}

API

DELETE /auth/roles/{role_id}

DELETE /auth/roles/{role_id}

DELETE /auth/roles/{role_id}

DELETE /auth/roles/{role_id}

DELETE /auth/roles/{role_id}

DELETE /auth/roles/{role_id}

Web UI

1. `GET /api/roles/{role_id}` → `GET /api/roles/{role_id}`
2. `GET /api/roles/{role_id}`
3. `GET /api/roles/{role_id}`
4. `GET **"/api/roles/{role_id}"**`

Editing User Roles

API

PUT /auth/users/{user_id}

PUT /auth/users/{user_id}

```
{
  "role": "Support, Finance"
}
```


❖❖❖ POST /auth/roles/{role_id}/users/{user_id}








◆ ◆ ◆ ◆ ◆ ◆ ◆ ◆ ◆

GET /auth/roles/{role_id}/users



```
GET /auth/users/{user_id}
```

roles

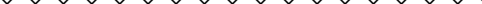







[illegible]





1. ? ? ? ? ? ? ? ? " ? ? ? ? "
2. ? ? ? ? ? ? ? ? - ? ? ? ? ? ? ? ? ? ? ?
3. ? ? ? ? ? ? ? - ? 1 ? ? ?
4. ? ? ? ? ? - ? ? ? ? ? ? ? ? ?
5. ? ? ? ? ? ? - ? ? ? ? ? ? ? ? ? ? ? ? ?
 - o ? ? 8 ? ? ?
 - o ? ? ? ? ? ? ? ?
 - o ? ? ? ? ? ? ? ?
 - o ? ? ? ? ? ? ?
 - o ? ? ? ? ? ? ? ?
6. ? ? - ?

API

1.     
   POST /auth/forgot_password

```
{
  "email": "user@example.com"
}
```

????????????????

2. ?????

??? POST /auth/reset_password

```
{
  "token": "abc123...",
  "new_password": "NewSecureP@ssw0rd!"
}
```

??????

??

??Web UI?

1. ?? → ??
2. ?????**"?????"**??
3. ?????
4. ??**"?"**
5. ?????????????????
6. ?????????????

??API?

??? POST /auth/users/{user_id}/admin_reset_password

????? admin

???

```
{
  "new_password": "TempP@ssw0rd!",
  "force_change": true
}
```

???

- new_password - ??????
- force_change - ????true????????

??????

????????????????????

???

- ◆◆◆◆◆◆◆◆◆◆**2FA**◆

[illegible]

◆◆◆◆◆**2FA**

◆◆Web UI◆

- OmniCRM 2FA enrollment page

◆◆API◆

1. **??TOTP???**

❓❓❓ POST /2fa/enable/user/{user_id}

```
{
  "totp_secret": "JBSWY3DPEHPK3PXP",
  "qr_code_url": "otpauth://totp/
OmniCRM:user@example.com?secret=JBSWY3DPEHPK3PXP&issuer=OmniCRM",
  "backup_codes": [
    "12345678",
    "23456789",
    "34567890",
    ...
  ]
}
```

❖❖❖ POST /2fa/verify-setup/user/{user_id}

```
{
  "code": "123456"
}
```

2FA

1. 
2. 
3.  2FA 
4. 
5. 
6. 

- 2FA 10
-
-
-

❓❓❓ POST /2fa/verify/user/{user_id}

{

```
"code": "123456"
}
```


- **TOTP** 
-  **8** 










??Web UI??

1. 
2. 
3. 
4. 

◆◆API◆

🔐🔐🔐 POST /2fa/backup-codes/regenerate/user/{user_id}

???

```
{
  "backup_codes": [
    "98765432",
    "87654321",
    "76543210",
    ...
  ]
}
```

◆◆◆2FA◆◆◆

??Web UI??

1. $\diamond \diamond \diamond \diamond \diamond \diamond \diamond \diamond \rightarrow \diamond \diamond$
2. $\diamond \diamond \diamond \diamond$
3. $\diamond ? ** " \diamond \diamond 2FA " ** \diamond ?$
4. $\diamond \diamond \diamond \diamond$
5. $2FA \diamond \diamond \diamond \diamond \diamond \diamond \diamond \diamond \diamond \diamond \diamond \diamond \diamond \diamond \diamond \diamond$
6. $\diamond \diamond \diamond \diamond \diamond \diamond \diamond \diamond 2FA \diamond \diamond \diamond \diamond \diamond \diamond$

OmniCRM 2FA Reset

API

POST /2fa/admin/disable/user/{user_id}

admin

2FA

- TOTP
-
- is_2fa_enabled false

2FA

2FA

POST /2fa/reset-for-new-device/user/{user_id}

```
{  
  "backup_code": "12345678"  
}
```

TOTP

2FA

- 2FA
-
-
- Google Authenticator Authy Microsoft Authenticator
- 2FA
- 2FA - 2FA

Web UI

1. →
- 2.
3.
 -
 -
 -

4. $\diamond ? \diamond ? ** " \diamond ? \diamond ? " **$

◆◆API◆

??? PUT /auth/users/{user_id}

```
{
  "first_name": "Jane",
  "last_name": "Doe-Smith",
  "email": "jane.doesmith@newcompany.com",
  "phone_number": "+61498765432",
  "role": "Support, Finance"
}
```









- pending_email????????
- ????????
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- email?????
- email_verified???true






OmniCRM  -                       

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◆◆Web UI◆

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◆◆API◆

❖❖❖ DELETE /auth/users/{user_id}

◆◆◆◆◆ admin

- deleted True
- deleted_at
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GET /auth/users/search?filters={"deleted":[true]}

PUT /auth/users/{user_id}

```
{
  "deleted": false
}
```

deleted

UI GDPR

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CRUD

- view_* — /
- create_* — /

- update_* — ?/?/?
- delete_* — ?/?/?

*****“...”***/

RBAC Permissions

/?/?

- admin —
- can_impersonate —

/?/?/?/?/?/?

- - view_customer create_customer update_customer delete_customer
 -
- - view_customer_site create_customer_site update_customer_site delete_customer_site
 -
- - view_customer_contact create_customer_contact update_customer_contact delete_customer_contact
 -
- Customer Attributes <administration_attributes>
 - view_customer_attribute create_customer_attribute update_customer_attribute delete_customer_attribute
 -
- Customer Tags <administration_tags>
 - view_customer_tag create_customer_tag update_customer_tag delete_customer_tag
 -
- - view_customer_service create_customer_service update_customer_service delete_customer_service
 -
- - view_customer_activity create_customer_activity update_customer_activity delete_customer_activity
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- **Stripe**
 - view_customer_stripe_card create_customer_stripe_card

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admin	can_impersonate	CRUD
view_customer	view_customer_service	
view_communication	view_provision	
view_customer_invoice		
view_customer_transaction	view_product	
create_customer_invoice		
“.....”		
view_*		

.....

API

admin

GET /auth/permissions

POST /auth/permissions

```
{
  "name": "view_example",
  "description": "Read-only access to example objects"
}
```

GET /auth/roles

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◆◆◆ POST /auth/roles

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```
{  
  "name": "Support",  
  "description": "Tier-1 support team"  
}
```

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◆◆◆ POST /auth/roles/{role_id}/permissions

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```
{  
  "permission_id": 123  
}
```

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◆◆◆ DELETE /auth/roles/{role_id}/permissions/{permission_id}

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◆◆◆ POST /auth/users

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```
{  
  "username": "sara",  
  "email": "sara@example.com",  
  "password": "TempP@ssw0rd!",  
  "first_name": "Sara",  
  "last_name": "Ng",  
  "phone_number": "+61...",  
  "role": "Support"  
}
```

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◆◆◆ PUT /auth/users/{user_id}



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- ???? <billing_overview> - ?????
- ???? <authentication_flows> - ?????
- 2FA <2fa> - ?????
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