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OmniCRM □□ □□□□□ **(2FA)**□□□□□□□□□□□□□ (TOTP)□□□

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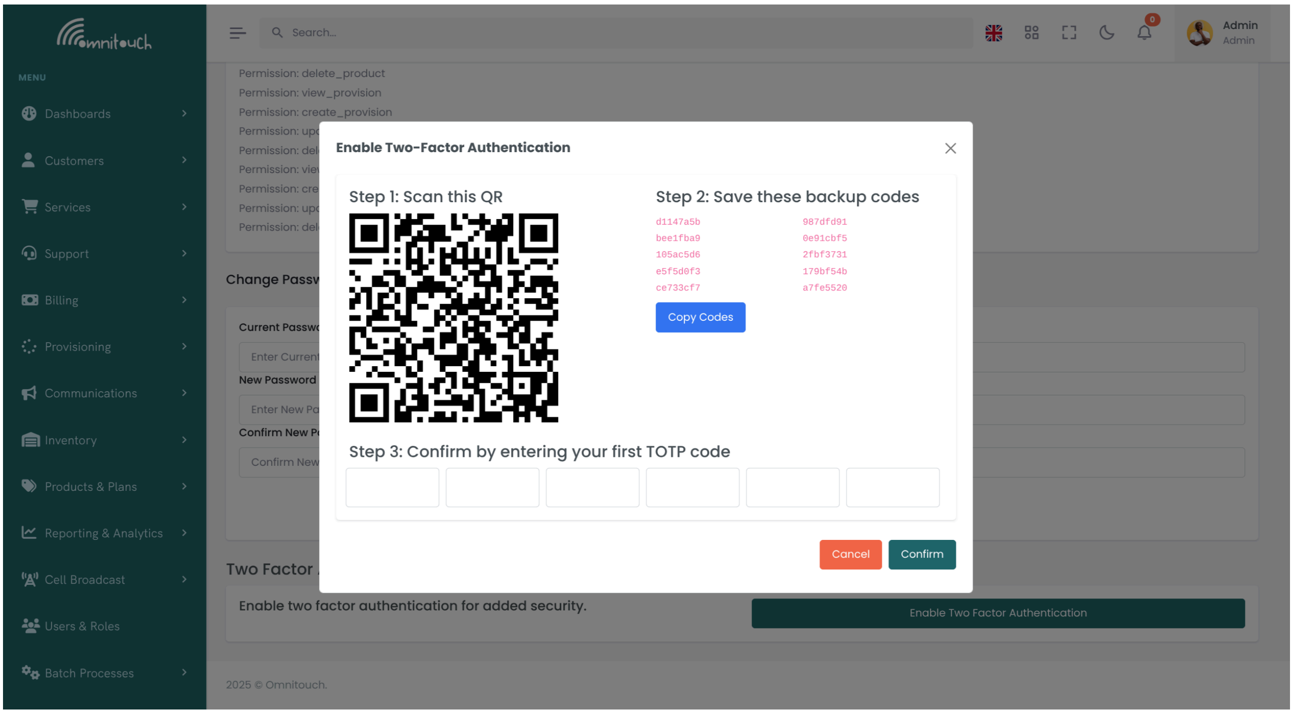

Permission: delete_product
Permission: view_provision
Permission: create_provision
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Change Passw
Current Passw
Enter Current
New Password
Enter New Pa
Confirm New P
Confirm New

Two Factor
Enable two factor authentication for added security.
Enable Two Factor Authentication

Enable Two-Factor Authentication

Step 1: Scan this QR

Step 2: Save these backup codes

```
d1147a5b    987dfd91
bee1fba9    0e91cbf5
105ac5d6    2fbf3731
e5f5d0f3    179bf54b
ce733cf7    a7fe5520
```

Copy Codes

Step 3: Confirm by entering your first TOTP code

Cancel Confirm

2025 © Omnitouch.

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POST /2fa/enable/user/{user_id}

```json
{
  "password": "current_password"
}
```

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POST /2fa/verify-setup/user/{user_id}

```json
{
  "code": "123456"
}
```

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POST /2fa/verify/user/{user_id}

```json
{
  "code": "123456"
}
```

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POST /2fa/backup-codes/regenerate/user/{user_id}

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```
curl -X GET "https://yourcrm.com/crm/customers" \
  -H "X-API-KEY: sk_live_a1b2c3d4e5f6g7h8i9j0k1l2m3n4o5p6q7r8s9t0"
```

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```
export
CRM_API_KEY="sk_live_a1b2c3d4e5f6g7h8i9j0k1l2m3n4o5p6q7r8s9t0"
```

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

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```
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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```
{
  "api_key_id": 123,
  "name": "New Integration",
  "api_key": "sk_live_a1b2c3d4e5f6g7h8i9j0",
  "status": "active",
  "created": "2025-01-10T10:00:00Z",
  "expiry_date": "2026-01-10T23:59:59Z"
}
```

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```
DELETE /crm/api-keys/{api_key_id}
Authorization: Bearer <admin-token>
```

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```
PATCH /crm/api-keys/{api_key_id}
Authorization: Bearer <admin-token>
Content-Type: application/json

{
  "name": "Updated Name",
  "expiry_date": "2026-12-31"
}
```

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6. □□□□□□□□ Ansible `crm_config.yaml`

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1. □□□“□□□□ - QuickBooks”
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- `concepts_api` - API □□□□□□□
- `rbac` - □□□□□□□□□□□□
- `2fa` - □□□□□□□□□□□

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

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- `external_crm_id` = "SF-12345"□Salesforce□□ID□
- `legacy_system_id` = "OLD-CRM-789"□□□□□□
- `hubspot_contact_id` = "12345678"□HubSpot□□□

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- `billing_method` = "quarterly"□□□□□□□□□□□
- `auto_provision` = "true"□□□□□□□□□□
- `support_tier` = "premium"□□□□□□□□□
- `credit_limit` = "10000"□□□□□□□□□□□

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- `gdpr_consent_date` = "2025-01-01"□□□□□□□□
- `tax_exempt` = "true"□□□□□□

- `regulatory_entity` = "FCC-123456"□□□□□□□

4. □□□□□

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- `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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   - □□□□□□□□□□□□□□□□□`SF-12345`□
5. □□ □□□□

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- □□□□□□□□□□□`external_system_id` ✓
- □□□□□`external system id` ✗
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- □□□□□□□□□□□□□□□□□□□□□

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□□□ `PUT /crm/attribute/`

□□□□□ `create_customer_attribute`

□□□□

```
{
  "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"
}
```

□□□□□□

□□□ `PATCH /crm/attribute/attribute_id/{attribute_id}`

□□□□□ `update_customer_attribute`

□□□□

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

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□���□ `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`

□□□

```
{
  "result": "success"
}
```

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```
import requests

customer_id = 123
attributes = [
    {"attribute_name": "external_crm_id", "attribute_value": "SF-12345"},
    {"attribute_name": "billing_method", "attribute_value": "quarterly"},
    {"attribute_name": "support_tier", "attribute_value": "premium"}
]

for attr in attributes:
    attr["customer_id"] = customer_id
    requests.put(
        "https://api.example.com/crm/attribute/",
        json=attr,
        headers={"Authorization": "Bearer YOUR_TOKEN"}
    )
```

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```
# □□□□□□□□□□□□□□□□□□□□□□
customers = requests.get("https://api.example.com/crm/customer/").jsc

for customer in customers:
    attributes = requests.get(

f"https://api.example.com/crm/attribute/customer_id/{customer['custom
    ).json()

    # □□□□□□□□□□□
    for attr in attributes:
        if attr['attribute_name'] == 'support_tier' and
attr['attribute_value'] == 'premium':
            print(f"Premium customer: {customer['customer_name']}")
```

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- □□□□□□□□`external_system_id` ✓
- □□□□□`billing_method` ✓ □ `method` ✗
- □□□□□□□□□□□□
- □□□□□□□□□□□□□□

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

3. [illegible]

- [illegible]
- [illegible]
- [illegible]

4. [illegible]

- [illegible]
- [illegible]/[illegible]
- [illegible]

5. [illegible]

- [illegible]
- [illegible]
- [illegible]`api_key_v2`[illegible]

[illegible]

[illegible]

[illegible]

```
# □□□□□□□□□□□□□
PUT /crm/attribute/
{
  "customer_id": 123,
  "attribute_name": "legacy_crm_id",
  "attribute_value": "OLD-12345"
}

# □□□□□□
PUT /crm/attribute/
{
  "customer_id": 123,
  "attribute_name": "migrated_date",
  "attribute_value": "2025-01-04"
}
```

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```
# □□□□□□
PUT /crm/attribute/
{
  "customer_id": 123,
  "attribute_name": "billing_cycle",
  "attribute_value": "quarterly"
}

# □□□□□□□□□□□□□□□□□□
attributes = GET /crm/attribute/customer_id/123
billing_cycle = next(
    (a['attribute_value'] for a in attributes if
a['attribute_name'] == 'billing_cycle'),
    'monthly'  # □□
)
```

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```
# □□IPv6□□
PUT /crm/attribute/
{
  "customer_id": 123,
  "attribute_name": "feature_ipv6_enabled",
  "attribute_value": "true"
}
```

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- `view_customer_attribute` - □□□□
- `create_customer_attribute` - □□□□□
- `update_customer_attribute` - □□□□□□
- `delete_customer_attribute` - □□□□

□□□ `rbac` □□□□□□□□□□□□□□□

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- □□□□□□□□□□□□API□□□
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- □□□□□□□□ `view_customer_attribute` □□

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- □□□□□ `update_customer_attribute` □□
- □□ attribute_id □□□□
- □□□□□□□□□□□□

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[illegible]

[illegible] OmniCRM [illegible]

[illegible]

OmniCRM [illegible]

[illegible]

- [illegible] `OmniCRM-API/crm_config.yaml`
- [illegible] YAML
- [illegible] [illegible] API
- [illegible] [illegible]

[illegible]

- [illegible] `OmniCRM-UI/.env`
- [illegible] [illegible]
- [illegible] [illegible] UI
- [illegible] [illegible]

[illegible] (crm_config.yaml)

`crm_config.yaml` [illegible]

[illegible] `/OmniCRM/OmniCRM-API/crm_config.yaml`

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

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- `username` - MySQL □□□□□□
- `password` - MySQL □□□□□
- `server` - □□□□□□□□□□ IP□□□□localhost□

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- □□□□□□□□□ `omnicrm`
- □□□□□3306□MySQL □□□
- □□□□□□`mysql+pymysql://username:password@server/omnicrm`

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□□□ □□□□□□ `.env` □□□□□□□□□□□□□□□□□□□□□□ `db`□Docker □□□□□□

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```
service_types:
  - omnicharge
  - mobile
  - fixed
  - fixed-voice
  - hotspot
  - dongle
```

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- [illegible]
- [illegible]
- [illegible]

[illegible]

HSS [illegible]

[illegible] HSS [illegible]

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

[illegible]

- `hss_peers` - [illegible] HSS [illegible]
- `apn_list` - [illegible] APN ID [illegible]

[illegible] [illegible]

Mailjet [illegible]

OmniCRM [illegible] Mailjet [illegible]

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

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

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

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

  # □□□□□□□□□/□□□□
  api_crmCommunicationUserWelcome:
    from_email: "admin@yourcompany.com"
    from_name: "Your Company Admin"
    template_id: 6118112
    subject: "Welcome to the Team"

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

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

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

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

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

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

□□ Mailjet □□□

1. □□ Mailjet □□□ (<https://app.mailjet.com>)
2. □□□ **Transactional → Templates**
3. □□□□□□□□□□□□
4. □□ **Template ID**□□□□□
5. □□□ OmniCRM □□□□□□□□□□□
6. □□ `crm_config.yaml` □□□□ ID

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

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

□□□

- `failure_list` - □ Ansible □□□□□□□□□□□□□□
- □□□□□□□□□□□□□□□□□□□□
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```yaml
invoice:
  template_filename: 'yourcompany_invoice_template.html'
```

□□□

□□□□ PDF □□□□□ Jinja2 HTML □□□

□□□□□ `/OmniCRM-API/invoice_templates/`

□□□□□□□□□□□□□□□□□□□□□ □□ **PDF** □□ □□□

CRM □□ URL

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

□□□

- □ Ansible □□□□□□ API □□
- □□□□□□□□□□□□□□ CRM □□□
- □□□□□ API □□□□□□ URL□□□□□□□□□□□

□□□

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

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- □□□□□□□□□□□□□□□□□□□□□□ URL
- □□□□□□□□

OCS □ CGRates □□

```yaml
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 □□□□□□□□□

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SMSC □□□□□□□□

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

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- □□□□□ SMS □□□□□□□□□□□□□2FA □□□
- `source_msisdn` - □□□□□□□□□□ ID□□□□□□□□□□□
- `smsc_url` - SMSC □□ API □□
- `api_key` - SMSC API □□□□□

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

□□□ □□□□□□□CBC□API □□□□□□□□□□

□□□□□□□□□□□□ `features_cell_broadcast`□

JWT □□

```yaml
jwt_secret: 'CHANGE_ME_ON_DEPLOYMENT'  # □ Ansible □□□□
```

□□□□

- □□□□□□□□□□□□□□JWT□
- □□□□□□□□□□□ - □□□□□□□
- □□□□/□□□□□□□□□□□
- □□□□□□□□□□□□□□

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□□ Ansible □□□□JWT □□□□□□□□

1. □□□□□□□ Ansible □□□□□□□ 64 □□□□□□□□□□256 □□□
2. □□□□□ Ansible □□□□□□□□□□□
3. □□□□□□□□□□□□□□ - □□□□□□□□□□□□□

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- Git □□□□□□□□□□□
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□□□□ Ansible □□□□□□□□□□□□□□□□

```
# □□□□□□□□□□□□□
python3 -c "import secrets; print(secrets.token_hex(32))"
# □
openssl rand -hex 32
```

□□□□ `crm_config.yaml`□

```yaml
jwt_secret: 'your_generated_secret_here'
```

□□□

- □□□□□□□□□□□□□□□ `CHANGE_ME_ON_DEPLOYMENT`
- □□□□□□□ - □□□□□□□□□□□□□□□□□□□
- □□□□□□□□□□□□□□□□□□□□□□□□□□
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Stripe □□□□

```yaml
stripe:
  secret_key: 'sk_live_xxxxxxxxxx'
  publishable_key: 'pk_live_xxxxxxxxxx'
  currency: 'aud'
  statement_descriptor_suffix: 'YOURCOMPANY'
```

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- `secret_key` - Stripe □□ API □□□□□□□□□□□
- `publishable_key` - Stripe □□□□□□□□□□□□□□□
- `currency` - ISO 4217 □□□□□aud□usd□gbp□eur □□
- `statement_descriptor_suffix` - □□□□□□□□□□□□□□

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- □□□□□`sk_test_...` □ `pk_test_...`□□□□□□
- □□□□□`sk_live_...` □ `pk_live_...`□□□□□□

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

□□□□□□□□□□□□ `Payment Vendor Integrations <integrations_payment_vendors>`□

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 □□□□□□□□
- □ IP □□□□□□
- □□ API □□□□□□□
- □□□□□□□□□□□□□□□□□□□□□

□□ **API** □□□

```
openssl rand -base64 48
```

□□□

- `admin` - □□□□□□□□□□
- □ RBAC □□□□□□□□□□□

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- □□□□□□□ API □□□□□ 32 □□□□
- □ IP □□□□□□□
- □□□□□□□□
- □□□□ API □□
- □□□□□□ API □□□□□□

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- [illegible] IP [illegible]
- [illegible] IP[illegible]127.0.0.1[illegible]::1[illegible]
- [illegible] API [illegible]
- [illegible]

[illegible] `administration_api_keys` [illegible] `concepts_api`[illegible]

[illegible] (.env)

React UI [illegible] `OmniCRM-UI/.env` [illegible]

[illegible] `/OmniCRM/OmniCRM-UI/.env`

API [illegible]

```
# Google Maps API[illegible]
VITE_GOOGLE_API_KEY=your_google_api_key

# Stripe [illegible]
VITE_STRIPE_PUBLISHABLE_KEY=pk_test_xxxxx

# [illegible] npm start [illegible]
BROWSER=none
```

[illegible]

`VITE_STRIPE_PUBLISHABLE_KEY` [illegible] `crm_config.yaml` [illegible] `stripe.publishable_key` [illegible]

□□□□□□□

```
# □□□□
VITE_COMPANY_NAME="ShellFone"
VITE_PORTAL_NAME="ShellManager"
VITE_SELF_CARE_NAME="ShellCare"
VITE_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
VITE_DEFAULT_LANGUAGE=en
VITE_LOCALE="en-GB"

# □□□□□□□□□□□□□□
VITE_DEFAULT_LOCATION="Sydney, Australia"
VITE_DEFAULT_COUNTRY="Australia"

# □□□□
VITE_CURRENCY_CODE="GBP"
VITE_CURRENCY_SYMBOL="£"
```

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- `ar` - □□□□
- `ch` - □□
- `en` - □□□□□□
- `fr` - □□
- `gr` - □□□

- `it` - □□□□
- `ru` - □□
- `sp` - □□□□

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

□□□ □□□ `crm_config.yaml` □□ `stripe.currency` □□□

□□□□□□

```
# □□□□□□□□□□□□
VITE_PRIMARY_COLOR=#405189

# □□□□□□□□□□□□
# VITE_SECONDARY_COLOR=#2bFFcf
# VITE_TERTIARY_COLOR=#1a9fbf
# VITE_SUCCESS_COLOR=#28a745
# VITE_INFO_COLOR=#17a2b8
# VITE_WARNING_COLOR=#ffc107
# VITE_DANGER_COLOR=#dc3545
```

□□□□□

- `VITE_PRIMARY_COLOR` - □□□□□□□□□□□□□□□□
- `VITE_SECONDARY_COLOR` - □□□□
- `VITE_TERTIARY_COLOR` - □□□□□□
- `VITE_SUCCESS_COLOR` - □□□□□#28a745□
- `VITE_INFO_COLOR` - □□□□□#17a2b8□
- `VITE_WARNING_COLOR` - □□□#ffc107□
- `VITE_DANGER_COLOR` - □□□#dc3545□
- `VITE_LIGHT_COLOR` - □□□□□#f8f9fa□

- `VITE_DARK_COLOR` - □□□□□#343a40□
- `VITE_PRIMARY_DARK_COLOR` - □□□□□□□□□

□□□ □□□□□□□□□#RRGGBB□

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- □□□□
- □□□□

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```
# □□□□□□
# □□□□Inter□Roboto□Open Sans□Lato□Quicksand□Poppins□Nunito□
Montserrat□Work Sans□Source Sans Pro□Raleway□Ubuntu□Josefin Sans□
HKGrotesk
# □□□Merriweather□Lora□Playfair Display
# □□□System□□□□□□□□
# □□□Quicksand
VITE_FONT_FAMILY=Quicksand
```

□□□ □□□□□□□ **OmniCRM-UI** □□□□□□□□□□□□□□□□

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

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

□□□□□

- Merriweather□Lora□Playfair Display

□□□□□

- System - □□□□□□□□□□□□□□□□□□□□□□□

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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** □□□□□□

```
VITE_FONT_FAMILY=Your Font Name
```

□□□□□□□

- 300 - □□□□□□□□□□□□
- 400 - □□□□□□□□□□□
- 500 - □□□□□□□□□
- 600 - □□□□□□���□□□□
- 700 - □□□□□□□□□□□□□

Web □□□□□□

□□□□ 6 □□□□□□ Web □□□□□□□□□□□□□□□□□□□□□□

```
# Web □□ 1□GitHub
VITE_WEB_APP_1_NAME="GitHub"
VITE_WEB_APP_1_URL="https://github.com"
VITE_WEB_APP_1_ICON_PATH="resources/webapp_icons/github.png"

# Web □□ 2□Xero
VITE_WEB_APP_2_NAME="Xero"
VITE_WEB_APP_2_URL="https://go.xero.com/"
VITE_WEB_APP_2_ICON_PATH="resources/webapp_icons/xero.png"

# Web □□ 3-6□□□□□
# □□□ NAME□URL □ ICON_PATH □□□□□□□
```

□□□

- `VITE_WEB_APP_N_NAME` - □□□□
- `VITE_WEB_APP_N_URL` - □□ URL
- `VITE_WEB_APP_N_ICON_PATH` - □□□□□□□□□□ public/□

□□□□□ GitHub□Xero□Monday.com□Gmail□MailJet□Slack

Grafana □□□□□

OmniCRM □ Grafana □□□□□□□□□□□□□ `grafana_access` □□□□□□□□ `/grafana` □□ Grafana □□□□□□□□□□□□□□□□□□□ OmniCRM □□□□

```
# Grafana □□□□□
# □□□ ID□□□□□□□ - □ /grafana/d/ID/name URL □□
VITE_GRAFANA_DASHBOARD_IDS=abc123,def456,ghi789

# □□□□□□□□□□□□□□ ID □□□□□□
VITE_GRAFANA_DASHBOARD_LABELS=System Metrics,User
Analytics,Network Performance
```

□□□

- `VITE_GRAFANA_DASHBOARD_IDS` - □ URL □□□□□□ Grafana □□□ ID □□□□□□□
- `VITE_GRAFANA_DASHBOARD_LABELS` - □□□□□□□□□□□□□□□□□□ ID □□□□□□

□□□□□□□ ID□

□ Grafana □□□□□□□□URL □□□□ `/grafana/d/abc123/dashboard-name`□□□□ ID □ `/d/` □□□□□□□□□□□□□□□□□ `abc123`□□

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□□□□□□□□□□□□□ OmniCRM □□□□“□□□”□□□□□□□□□□□□□□□□□□□□□□□ OmniCRM □□□□□

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□□□□□□□ URL □ `http://your-server/grafana/d/system-overview-123/system-metrics`□□□□

- □□□ ID□`system-overview-123`
- □□□□□□□□□□□□□□□□□□“□□□□”

□□□

- ID □□□□□□□□□□□□□
- □□□□□□□□□□□□□□□□
- □□□□ `grafana_access` □□□□□□□□□□□□
- □□□□□□□□ UI

□□□□□ URL

```
# □□□□□□□ URL
VITE_FAQS_URL=https://support.yourcompany.com/faqs
VITE_SUPPORT_URL=https://support.yourcompany.com
```

□□□ □ UI □□□□□□□□□□□□

□□□□

```
# □□□□□□□yes|no□
VITE_ALLOW_SOCIAL_LOGINS=yes
```

□□□

- `yes` - □□□□□□□□□Google□Facebook □□
- `no` - □□□□□□

□□□ □□□□□□□□□□□□□□

□□□□□

```
# Google Analytics 4 □ Google Tag Manager□□□□
# □□ GA4□□□□□□G-XXXXXXXXXX
# □□ GTM□□□□□□GTM-XXXXXXX
VITE_GOOGLE_TAG_ID=G-XXXXXXXXXX
```

□□□ □□ Google Analytics 4□GA4□□ Google Tag Manager□GTM□□□□□□□□□□□□□□□□ □□□□□

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- **GA4 □□ ID□** `G-XXXXXXXXXX` - □□ Google Analytics 4 □□
- **GTM □□ ID□** `GTM-XXXXXXX` - □□ Google Tag Manager
- □□□ □□□□□□□□□□

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□□□□□ ID □□□□□□□□□□□

- □ `G-` □□□ ID □□□ Google Analytics 4
- □ `GTM-` □□□ ID □□□ Google Tag Manager
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- □□□□□□ - □□□□□□□□□□□ UI

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1. **□□□□□□ ID**□

   □□ Google Analytics 4□

   - □□ Google Analytics
   - □□□□□□□ GA4 □□
   - □□ **Admin → Data Streams**
   - □□□□ Web □
   - □□ **Measurement ID**□□□□`G-XXXXXXXXXX`□

   □□ Google Tag Manager□

   - □□ Google Tag Manager
   - □□□□□□□□□
   - □□ **Container ID**□□□□`GTM-XXXXXXX`□

2. **□□□ .env □□□**

   ```
   VITE_GOOGLE_TAG_ID=G-XXXXXXXXXX
   ```

3. □□ **UI**□

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

4. □□□□□

   - □□□□□□□□□□□□□
   - □□□□□□□□□□□□□□□□
   - □□ Google Analytics □□□□□□□□□□

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```
import { trackEvent } from './utils/googleAnalytics';

// □□□□□□
const handleCheckout = () => {
  trackEvent('checkout_initiated', {
    cart_value: 99.99,
    item_count: 3,
    page: '/cart'
  });
  // □□□□□□
};
```

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```
import { trackEvent } from './utils/googleAnalytics';

const handleFormSubmit = (formType) => {
  trackEvent('form_submission', {
    form_type: formType,
    timestamp: new Date().toISOString()
  });
};
```

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```
import { trackPageView } from './utils/googleAnalytics';

// □□□□□□□□□□□□□□□□□□□□□□□
trackPageView('/virtual/page-path', 'Page Title');
```

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`initializeGoogleTracking()`	□□□□□□□□□□□	□□□□□□□
`trackEvent(eventName, eventParams)`	□□□□□□□	□□□□□□□□□□□□□□□□
`trackPageView(path, title)`	□□□□□□□□	□□□□□□□□□□□□□□□

□□□□□□□

Google Analytics □□□□□□□□□□□□□□□□□□□□□□

- **GDPR**□□□□ - □□□□□□□□□□□□□□□□□□□□
- **CCPA**□□□□□□□ - □□□□□□□□□□□□
- □□□□ - □□□□□□□□□□□□ Google Analytics
- **Cookie** □□ - □□□□□□□□□□□ Cookie □□□□
- □□□□ - □ Google Analytics □□□□□□□□□□□□□□

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GA □□□□□□□□	□□ ID □□□	□□ ID □□□□□□ G-XXXXXXXXXX □ GTM-XXXXXXX
□□□□□□□□□□	□□□□□ ID	□□ .env □□□□□□□□
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- □□□□□□□□□< 50KB □□□□□
- □□□□□□□□□□□□□□
- □□ `VITE_GOOGLE_TAG_ID` □□□□□□□□□□

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- □□□□□`OmniCRM-UI/src/utils/googleAnalytics.js`
- □□□□□□□`OmniCRM-UI/src/utils/usePageTracking.js`
- □□□□□ `App.js` □ `index.js` □□□□□

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```
VITE_TOPUP_PRICE_PER_DAY=10
```

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- `VITE_TOPUP_PRICE_PER_DAY` - □□□□□□□□□□□□□

□□□ □□���□□ `10`□□□□□ USD□□□□□ $10 □□□□□□□□

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OmniCRM □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□

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

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- `DefaultLogoDark.png` - □□□□□□□□□□□□□□□□
- `DefaultLogoLight.png` - □□□□□□□□□□□□□□□□

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

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```
// □□ 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** - □□/□□□□□□□□□□□□□□□□□□

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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`□

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- □□ - □□□□□□□□ PNG
- □□□ - □□ DPI □□□□□ 2 □□□□
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□□□ `/OmniCRM-UI/src/pages/AuthenticationInner/authCarousel.js`

□□□□□

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

// □□□□□□□□□□□□□
<!-- ![Company Logo](../absolute/path/to/your-logo.png) -->
        <h1>INVOICE</h1>
    </div>

    <div class="invoice-details">
        <p><strong>Invoice Number:</strong> {{ invoice_number }}
</p>
        <p><strong>Date:</strong> {{ date }}</p>
        <p><strong>Due Date:</strong> {{ due_date }}</p>
        <p><strong>Billing Period:</strong> {{ start_date }} to {{
end_date }}</p>
    </div>

    <div class="customer-details">
        <h3>Bill To:</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>Description</th>
                <th>Date</th>
                <th>Amount</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>Total Amount Due: ${{ "%.2f"|format(total_amount) }}
</p>
    </div>

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

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

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- □□□□□□□□□ - `file:///absolute/path/to/image.png`
- □□ **CSS** - WeasyPrint □□□□□□□□□□□
- □□□□□□□□□□ - □□ `invoice_templates/rendered/` □□ HTML
- □□□□ - □□ `<div style="page-break-after: always;"></div>` □□□□□□
- □□□□□ - □□ `@page` CSS □□□□□□
- □□□□□ - □□ Jinja2 ���□□□`{{ "%.2f"|format(amount) }}`

□□□□□□□□□□

1. □□□□□□□

   ```
   cd /OmniCRM/OmniCRM-API/invoice_templates
   cp norfone_invoice_template.html
   yourcompany_invoice_template.html
   ```

2. □□□□□

   - □□□□□□□□□□□□□□
   - □□□□□□□□□□□□□□□□□□□
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3. □□□□□

   □□ `crm_config.yaml`□

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

4. □□□□□□□

   - □ CRM □□□□□□□
   - □□ PDF □□□□□
   - □□ `invoice_templates/rendered/{invoice_id}.html` □□□□□

5. □□□□□□□□□□□□□

   □□□□□□□□□□□□□□□□□□□□

   ```sql
   -- □□□□□□□ PDF□□□□□□□□
   DELETE FROM Invoice_PDF_Cache;
   ```

PDF □□□□

□□□□□□□OmniCRM □□□□□ PDF□

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- □□□□□ - □□ PDF□□□□□□
- □□□□ - □□□□□□□ PDF□□□□□□□
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- Base64 □□□ PDF □□□ `Invoice_PDF_Cache` □□
- SHA256 □□□□□□□□□□□
- □□□□□□□□□□□□□□□□□□□

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```
# □ 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 □□□□□

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- □□□□/□□□□□□□□□□

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□□ (crm_config.yaml)

1. □□ `OmniCRM-API/crm_config.yaml`
2. □□□□
3. □□ API □□□

```
cd OmniCRM-API
sudo systemctl restart omnicrm-api
# □
./restart_api.sh
```

□□□□□□□□□□□□

□□ (.env)

1. □□ `OmniCRM-UI/.env`
2. ��□□□
3. □□ UI□

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

4. □□ UI □□□ Web □□□

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□□□ `npm start` □□□□□□□□□□□□□□□□□□□□

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- □□□□□□□ - □□□□□□□□□□□□□ `.gitignore`
- □□□□□ - □□ 16 □□□□□□□□□□□□□□□
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- □□□□□□□□□□ - □□□□/□□□/□□□□
- □□ **API** □□□□ - □□□□□□□□
- □□□□ **IP** □□□ - □□□□ API □□□□□□□□

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- □□ **Grafana** - □□□□□□□□□□

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- □□□□ - □□ UI □□□□□□□□□
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- □□□ □□□□□□ UI □□□
- □□□ □□□□□□□□ API/UI □□

YAML □□□□

- □□□ □□□ YAML □□□□□□□□□□
- □□□ □□□□ YAML □□□ `yamllint crm_config.yaml`

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Stripe □□□□□

- □□□ □□□□□□□□□□□□□
- □□□ □□□□□□□□ `publishable_key` □□

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- □□□ □□□ Mailjet □□□□□ ID
- □□□ □□ Mailjet API □□/□□□□□□□ ID □□□□

PDF □□□□□

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

□□□□□□ PDF □□

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

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- □□ CSS □□□□□□□□□□□□□□
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- □□□□□□□□□□□□□ `invalidate_invoice_cache()`
- □□□□□□□□□□□□□□
- □□□□□□□□ `Invoice_PDF_Cache` □□□□

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- ☐ □□ `.env.example` □ `.env`
- ☐ □□□□□□□□
- ☐ □□ CGRates □□
- ☐ □□ `crm_config.yaml` □□□□□□□□
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  - ☐ Mailjet API □□□□□ ID
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  - ☐ CRM □□ URL□□□□□□□

  - ☐ OCS/CGRates □□
  - ☐ SMSC □□
  - ☐ □□□□ JWT □□
  - ☐ Stripe □□□□□□□□□□□
  - ☐ API □□□ IP □□□

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- ☐ □□ `OmniCRM-UI/.env.example` □ `OmniCRM-UI/.env`
- ☐ □□ Google Maps API □□
- ☐ □□ Stripe □□□□□
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- ☐ □□ Google Analytics/Tag Manager □□ ID□□□□

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- ☐ □□□□□□□logoSm.png□logoDark.png□logoLight.png□
- ☐ □□□□□□ `OmniCRM-UI/src/assets/images/omnitouch/`
- ☐ □□□□□□□□□ HTML
- ☐ □□□□□□□□ `OmniCRM-API/invoice_templates/`
- ☐ □□ `crm_config.yaml` □□□□□□□□□□
- ☐ □□□□ PDF □□

- □ □□ UI□`npm run build`

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- □ □□□□□ JWT □□
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- ☐ □□□□□□□nginx□traefik□
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- `RBAC □□□□□ </rbac>`
- `□□□□□ </concepts_products_and_services>`
- `Ansible □□ </concepts_ansible>`
- `□□□□ </administration_inventory>`
- `□□□□ </payments_invoices>`
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- `□□□□□□□ </customer_care>`
- `□□□□□□□ <integrations_payment_vendors>`
- `administration_api_keys` - API □□□□
- `integrations_mailjet` - □□□□□□
- `concepts_api` - API □□□□

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- □□□□□□□□MAC□□□`itemtext1`□□□□□□`itemtext2`□□
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    - □□□□**2**□□□□□□□□□□□□□□□□□□□□□□□“□□□”□
        - □□□□□“IMSI”□□SIM□□“□□□”□□□□□“□□□□”□□□□
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SIM□□□□

- □□□“SIM□”
- □□□□□2.50
- □□□□□10.00
- □□□□1□□□“ICCID”
- □□□□2□□□“IMSI”
- □□□□3□□□“SIM□□”□□□/eSIM□

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- ���□□“□□□□”
- □□□□□1.00
- □□□□□0.00
- □□□□1□□□“□□□□”
- □□□□2□□□“□□□□”
- □□□□3□□□“□□□□”□□□/□□□□□

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- □□□“□□□□CPE”
- □□□□□250.00
- □□□□□450.00
- □□□□1□□□“MAC□□”
- □□□□2□□□“□□□”
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- □□□□□45.00
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- [illegible]1[illegible]“[illegible]”
- [illegible]2[illegible]“MAC[illegible]”
- [illegible]3[illegible]“PON[illegible]”
- [illegible]4[illegible]“[illegible]”

[illegible]

[illegible]**InventoryTemplate**[illegible]

- [illegible]
- [illegible]
- [illegible]`sold_date`[illegible]

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- **inventory_id** - □□□□□□□□□□□□□□□□
- **item** - □□□□□□□□□□□□□□□□□□□“SIM□”□“□□□□□”□“□□□□”□
- **inventory_template_id** - □□□□□□□□□□□□□□□
- **customer_id** - □□□□□□□□□□□□□ID□□□□□
- **service_id** - □□□□□□□□□□□□□□ID□□□□□
- **item_location** - □□□□□□□□□□□
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- **item_state** - □□□□□□□□□□□□□□□
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- **itemtext1** - □□□□□□□□□□□□□□□□□□□`itemtext1_label`□□□
  - □□□□□□□□□□□□□□“MAC□□”
  - □□□□□SIM□□□□□“ICCID”
  - □□□□□□□□□□□□□“□□□□”
- **itemtext2□itemtext20** - □□□□□□□□□□□□□□□□□□□□□
  - □□□□□□□□□itemtext2□□□“□□□”
  - □□□SIM□□itemtext2□□□“IMSI”

    - □□□□□□□□□itemtext3□□□“□□□□”

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- **wholesale_cost** - □□□/□□□□□□□□□□□□
- **retail_cost** - □□□□□□□□□□□□□□□□
- **sold_date** - □□□□□□□□□□□□□□

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- **address_line_1** - □□□□□□□□□□□□□□□
- **address_line_2** - □□□□□□□□□□□□□□□□□
- **city** - □□□□□
- **state** - □□□□□□
- **zip_code** - □□□□/□□□□
- **country** - □□□□

□□□□□□**Web UI**□□□□□

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- **google_maps_place_id** - □□□Google□□□□ID
- **plus_code** - Google□□□□□□□��□□□□□□□□□□□□□
- **latitude** - □□□□□□□□□□
- **longitude** - □□□□□□□□□□

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□□□□□□□URL

`management_url`□□□□□□□□□□□□□□□URL□

- **management_url** - □□□□□□□URL
  - □□□□□Web□□URL□□□□`https://192.168.1.1`□□□□□□□□□□ONT□CPE□
  - **eSIM**□□□eSIM□□□□□□LPA□□□□□□□□□□□□`LPA:1$smdp.example.com$ACTIVATION-CODE-HERE`□
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  - **eSIM**□□□□□□□CRM□□□□□□□□eSIM□□
  - □□□□□□□□□□□□□□□□□□□□□□□□□
- **management_username** - □□□□□□□□□□□
- **management_password** - □□□□□□□□□□□□□□□□

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- **config_content** - □□□□□□□□□□□□□□□□□□
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- **config_file_path** - □□□□□□□□□□□□□□□□
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- **inventory_notes** - □□□□□□□□□□□□□
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- **created** - □□□□□□□□□□□□□□□□□□□□
- **last_modified** - □□□□□□□□□□□□□□□□□□

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□□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"
}
```

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□□3□□□□□□□□CPE□ - □□□□

```json
{
  "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"
}
```

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□□□□□`management_url`□□□□□□□□□2□3□4□□□UI□□□□□□

- □□□□URL□LPA□□□□□□□□□
- □□□□□□□□□□□□Web URL□

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- **eSIM**□□□□□2□□□□□□□□□□□□□□□□□eSIM□□

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```
{
  "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"
}
```

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`item_state`□□□□□□□□□□□□□□

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[illegible]

[illegible]“[illegible]”[illegible]“[illegible]”[illegible]“[illegible]”[illegible]

[illegible] `Customer Attributes <administration_attributes>`[illegible]

[illegible]

[illegible]

[illegible] API [illegible]

[illegible]

[illegible]

[illegible]

1. [illegible]
2. [illegible] [illegible] [illegible]
3. [illegible]
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API □□

□□□□□□□ API □□□□□□□□□□

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```
PUT /crm/tag/
{
  "tag_text": "VIP Customer",
  "tag_hex_color": "FFD700",
  "tag_link": "https://example.com/vip",
  "tag_active_date": "2025-01-01 00:00:00",
  "tag_deactivate_date": "2099-12-31 23:59:59",
  "customer_id": 12
}
```

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

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

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

OmniCRM □□□□

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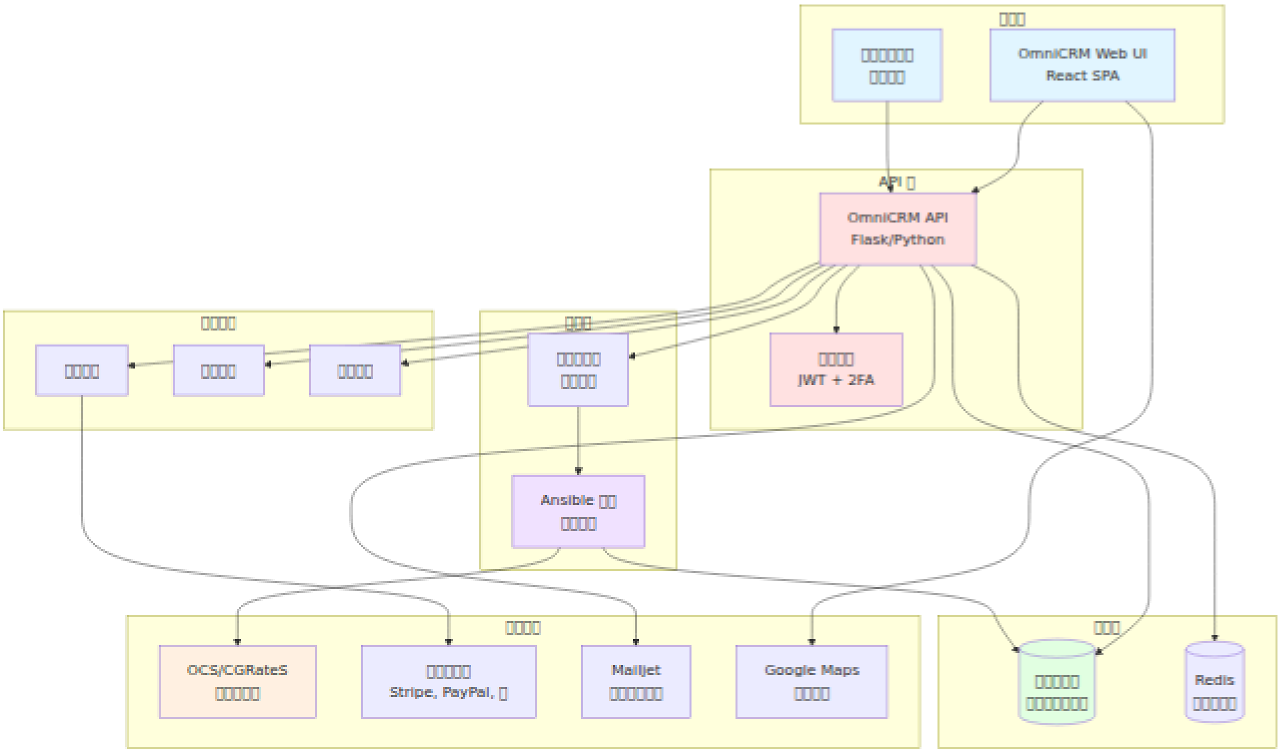
OmniCRM □□□□□□ BSS/OSS □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□



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1. □□□□

OmniCRM Web UI

- React □□□□
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- □□□ UI □□□□□□□□□□

2. API □

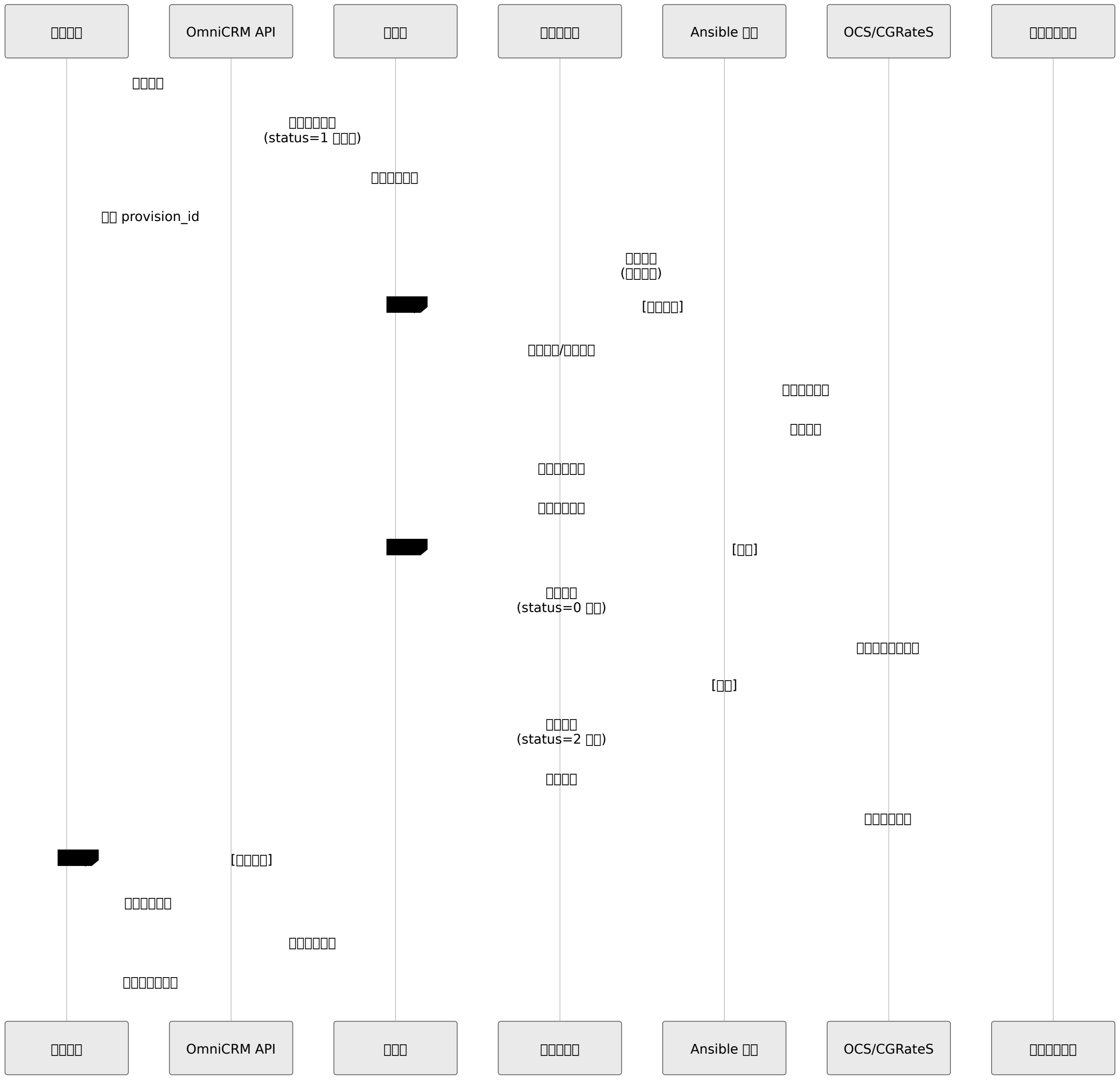
OmniCRM API (Flask/Python)

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

□□ API □□:

- `/crm/customer/*` - □□□□
- `/crm/service/*` - □□□□
- `/crm/product/*` - □□□□
- `/crm/provision/*` - □□□□
- `/crm/transaction/*` - □□□□
- `/crm/invoice/*` - □□□□

3. ���□□□



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OCS/CGRateS □□

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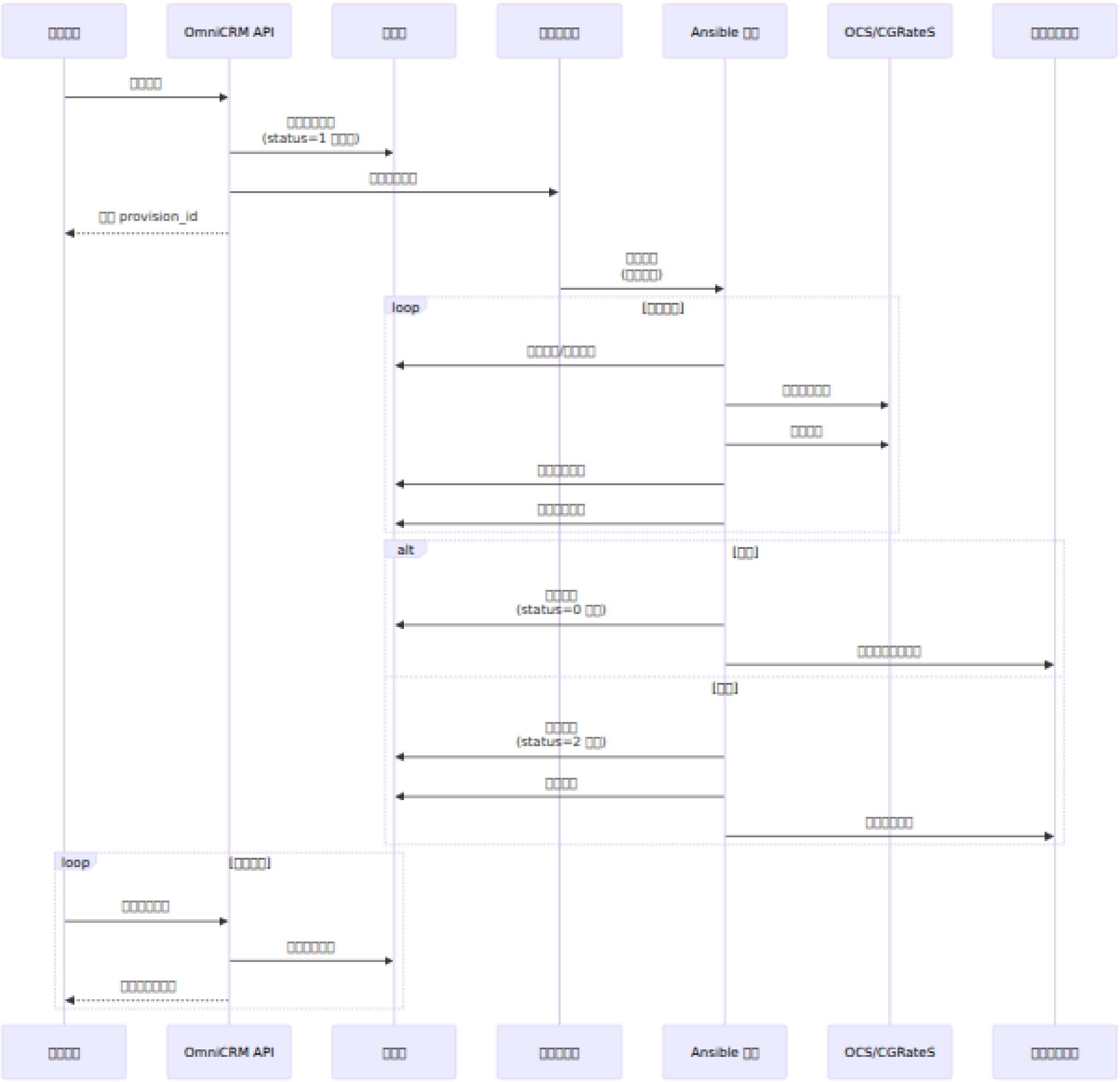
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OmniCRM API
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Ansible □□
OCS/CGRateS
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(status=1 □□□)
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5. □□□□

OmniCRM □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□ □□□□□□□□□□□□□

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customer_id	□□ (PK)	□□□□□
customer_name	□□□	□□□□□□□
customer_account_type	□□	'□□' □ '□□'
customer_status	□□	'□□', '□□', '□□', '□□'
customer_payment_type	□□□	'□□' □ '□□'
customer_enabled	□□	□□□□□□
tax_identifier	□□□	VAT/GST □□
contract_start_date	□□□□	□□□□
contract_end_date	□□□□	□□□□

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□□	□□	□□
contact_id	□□ (PK)	□□□□□
customer_id	□□ (FK)	□□□
contact_firstname	□□□	□□
contact_lastname	□□□	□□
contact_email	□□□	□□□□□□
contact_phone	□□□	□□□□
contact_types	□□□	'□□', '□□', '□□'

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□□	□□	□□
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	□□□	□□□□□□

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□□	□□	□□
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)	□□□□□□□□

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product_id	□□ (PK)	□□□□□
product_name	□□□	□□□□
product_slug	□□□	URL □□□□
category	□□	'□□', '□□', '□□', '□□'
provisioning_play	□□□	Ansible □□□□
provisioning_json_vars	JSON	□□□□
inventory_items_list	□□□	□□□□
retail_cost	□□	□□□
retail_setup_cost	□□	□□□□□
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transaction_id	□□ (PK)	□□□□□
customer_id	□□ (FK)	□□□
invoice_id	□□ (FK)	□□□□□□□
service_id	□□ (FK)	□□□□
title	□□□	□□□□
retail_cost	□□	□□
tax_percentage	□□	□□
tax_amount	□□	□□□□
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invoice_id	□□ (PK)	□□□□□
customer_id	□□ (FK)	□□□
paid	□□	□□□□
void	□□	□□□□□
payment_reference	□□□	Stripe □□ ID
start_date, end_date	□□	□□□□
due_date	□□	□□□□□□
retail_cost	□□	□□□

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

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

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

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

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id	□□ (PK)	□□□□□
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email	□□□	□□□□□□
email_verified	□□	□□□□□□□
is_2fa_enabled	□□	□□□□□□□
totp_secret	□□□	TOTP □□

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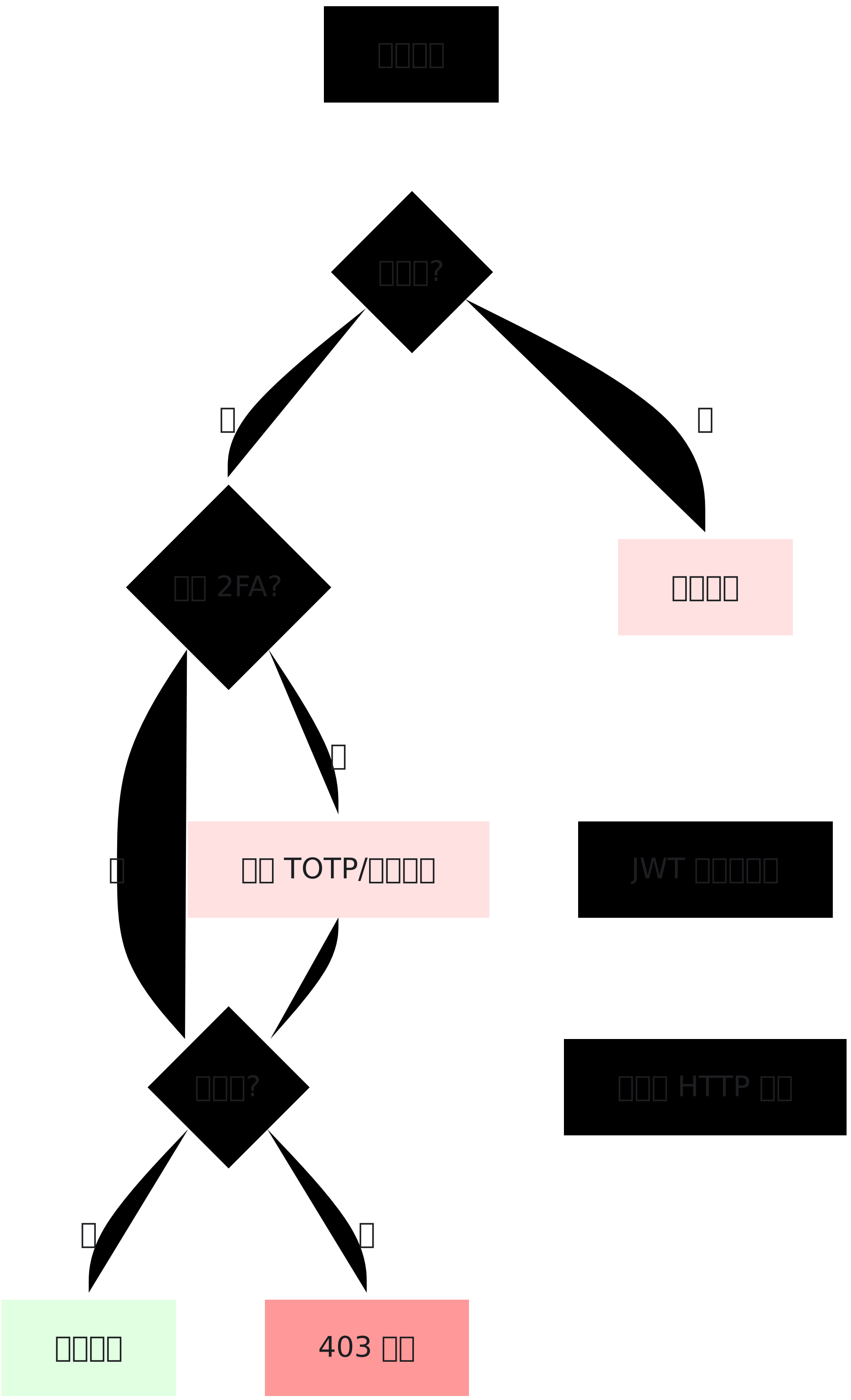

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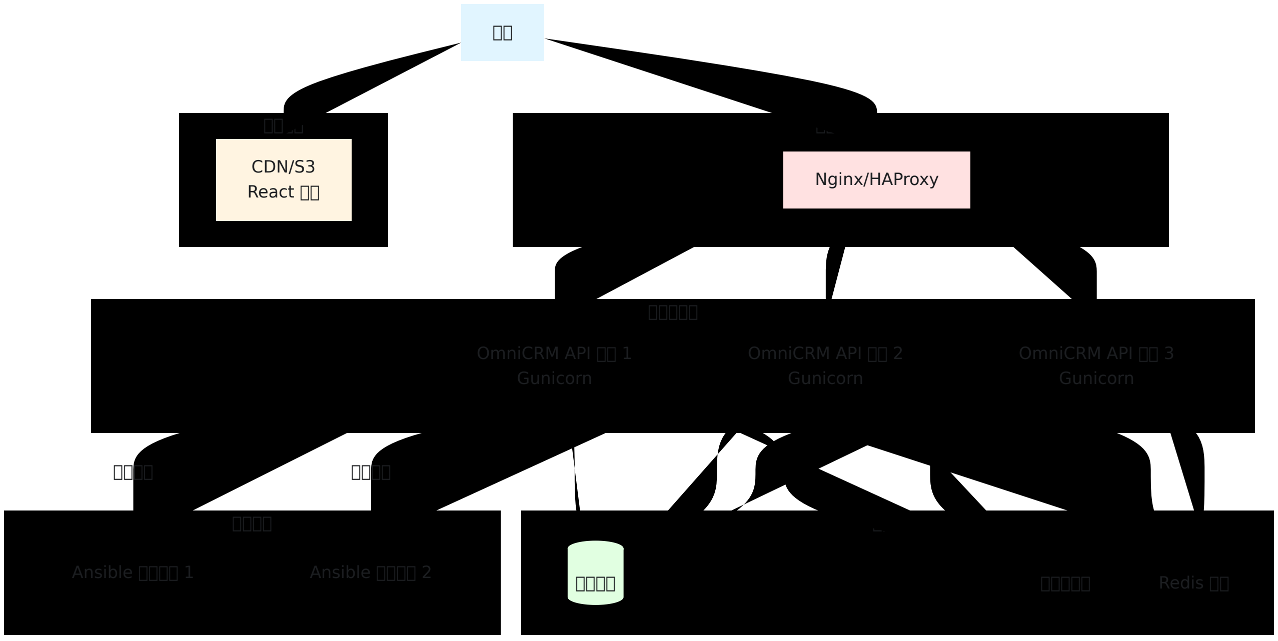

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- Python 3.x
- Flask □□□□
- SQLAlchemy ORM
- Alembic □□

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  - **□□** → □□□□□□ (`/self-care`)
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   - Android□Google Play → “Google Authenticator”
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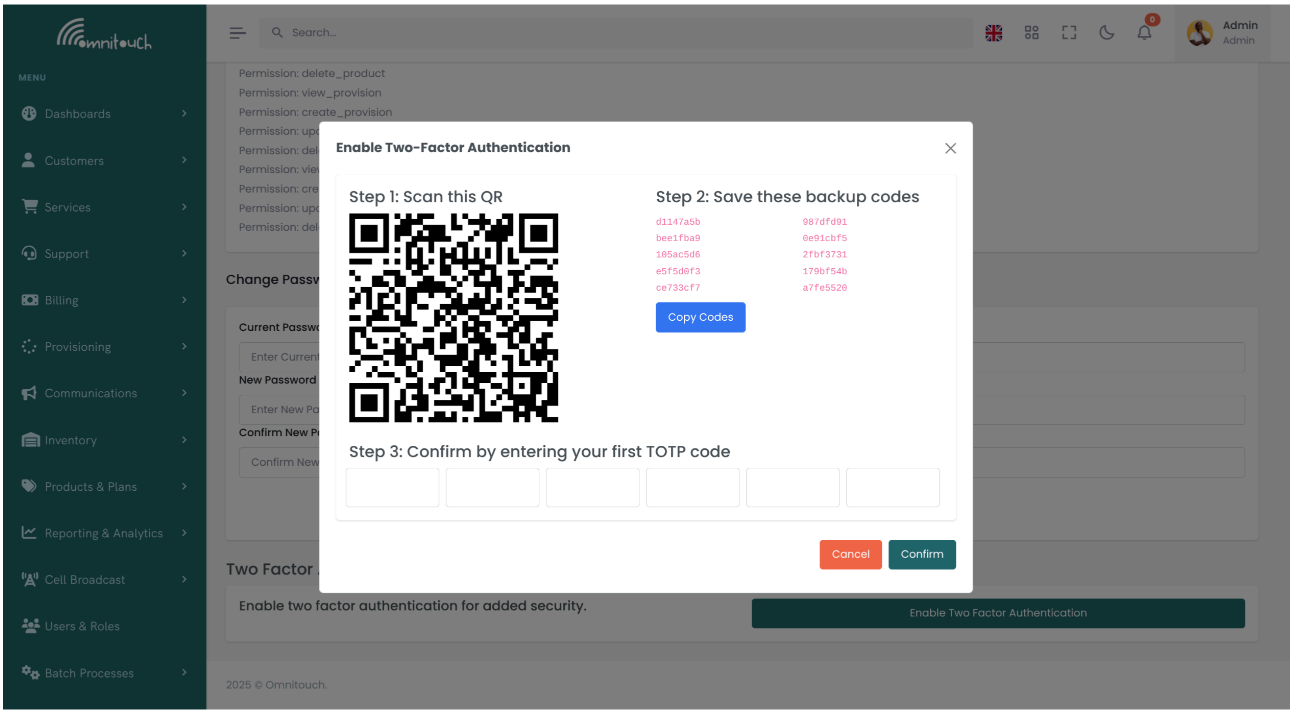

Permission: delete_product
Permission: view_provision
Permission: create_provision

Change Passw
Current Passw
Enter Current
New Password
Enter New Pa
Confirm New P
Confirm New

Enable Two-Factor Authentication

Step 1: Scan this QR

Step 2: Save these backup codes

d1147a5b	987dfd91
bee1fba9	0e91cbf5
105ac5d6	2fbf3731
e5f5d0f3	179bf54b
ce733cf7	a7fe5520

Copy Codes

Step 3: Confirm by entering your first TOTP code

Cancel Confirm

Two Factor

Enable two factor authentication for added security.

Enable Two Factor Authentication

2025 © Omnitouch.

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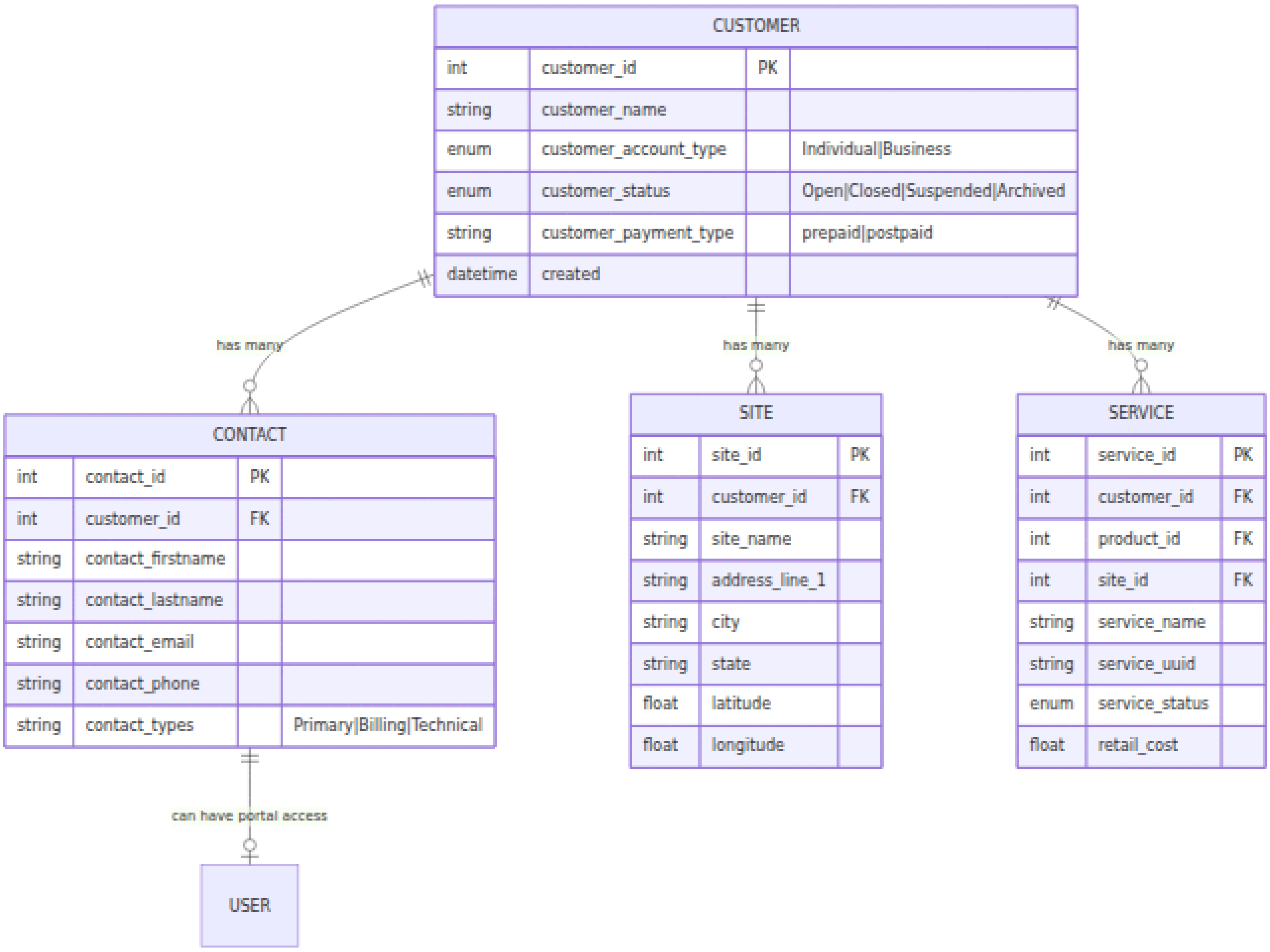

CUSTOMER			
int	customer_id	PK	
string	customer_name		
enum	customer_account_type		Individual|Business
enum	customer_status		Open|Closed|Suspended|Archived
string	customer_payment_type		prepaid|postpaid
datetime	created		

CONTACT			
int	contact_id	PK	
int	customer_id	FK	
string	contact_firstname		
string	contact_lastname		
string	contact_email		
string	contact_phone		
string	contact_types		Primary|Billing|Technical

SITE		
int	site_id	PK
int	customer_id	FK
string	site_name	
string	address_line_1	
string	city	
string	state	
float	latitude	
float	longitude	

SERVICE		
int	service_id	PK
int	customer_id	FK
int	product_id	FK
int	site_id	FK
string	service_name	
string	service_uuid	
enum	service_status	
float	retail_cost	

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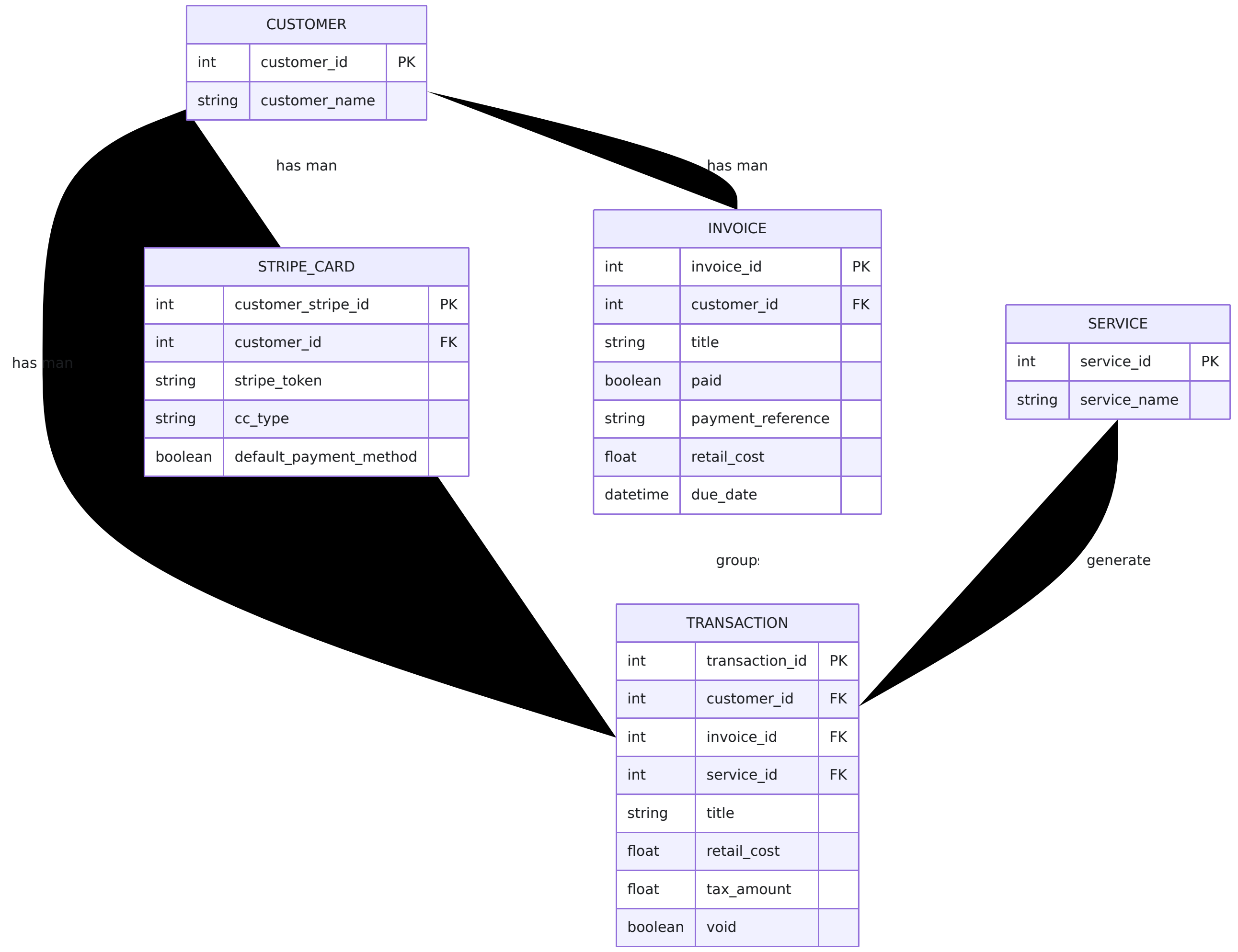

CUSTOMER		
int	customer_id	PK
string	customer_name	

STRIPE_CARD		
int	customer_stripe_id	PK
int	customer_id	FK
string	stripe_token	
string	cc_type	
boolean	default_payment_method	

INVOICE		
int	invoice_id	PK
int	customer_id	FK
string	title	
boolean	paid	
string	payment_reference	
float	retail_cost	
datetime	due_date	

SERVICE		
int	service_id	PK
string	service_name	

TRANSACTION		
int	transaction_id	PK
int	customer_id	FK
int	invoice_id	FK
int	service_id	FK
string	title	
float	retail_cost	
float	tax_amount	
boolean	void	

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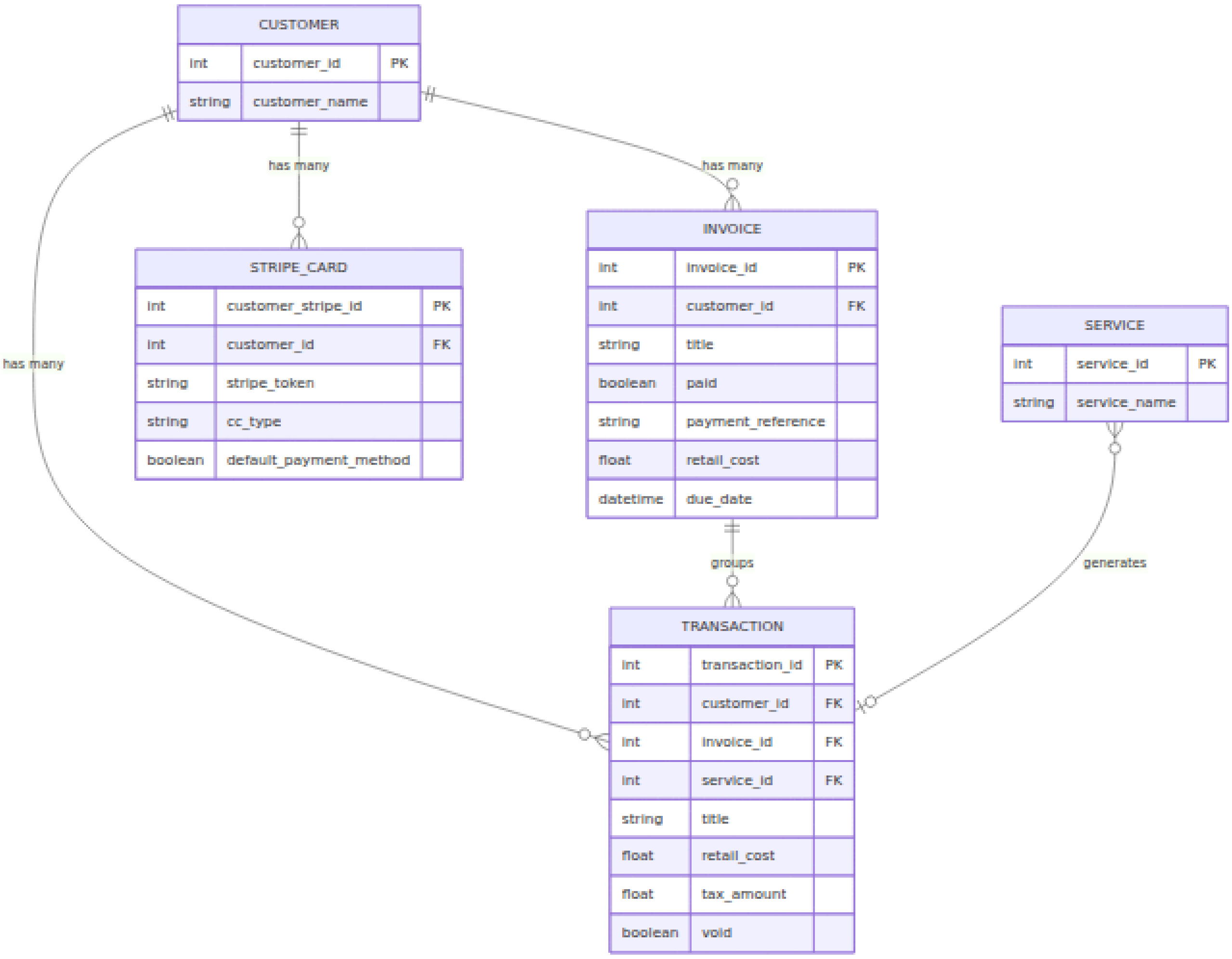

CUSTOMER		
int	customer_id	PK
string	customer_name	

STRIPE_CARD		
int	customer_stripe_id	PK
int	customer_id	FK
string	stripe_token	
string	cc_type	
boolean	default_payment_method	

INVOICE		
int	invoice_id	PK
int	customer_id	FK
string	title	
boolean	paid	
string	payment_reference	
float	retail_cost	
datetime	due_date	

SERVICE		
int	service_id	PK
string	service_name	

TRANSACTION		
int	transaction_id	PK
int	customer_id	FK
int	invoice_id	FK
int	service_id	FK
string	title	
float	retail_cost	
float	tax_amount	
boolean	void	

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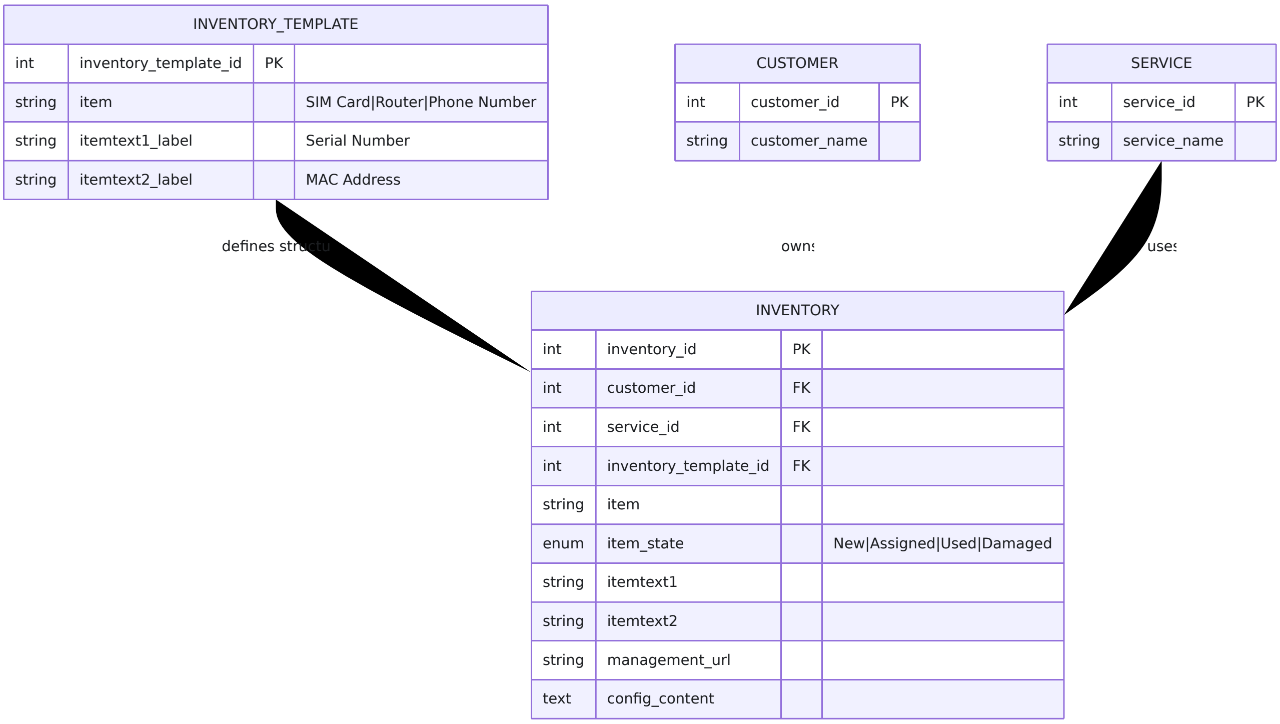

INVENTORY_TEMPLATE			
int	inventory_template_id	PK	
string	item		SIM Card|Router|Phone Number
string	itemtext1_label		Serial Number
string	itemtext2_label		MAC Address

CUSTOMER		
int	customer_id	PK
string	customer_name	

SERVICE		
int	service_id	PK
string	service_name	

INVENTORY			
int	inventory_id	PK	
int	customer_id	FK	
int	service_id	FK	
int	inventory_template_id	FK	
string	item		
enum	item_state		New|Assigned|Used|Damaged
string	itemtext1		
string	itemtext2		
string	management_url		
text	config_content		

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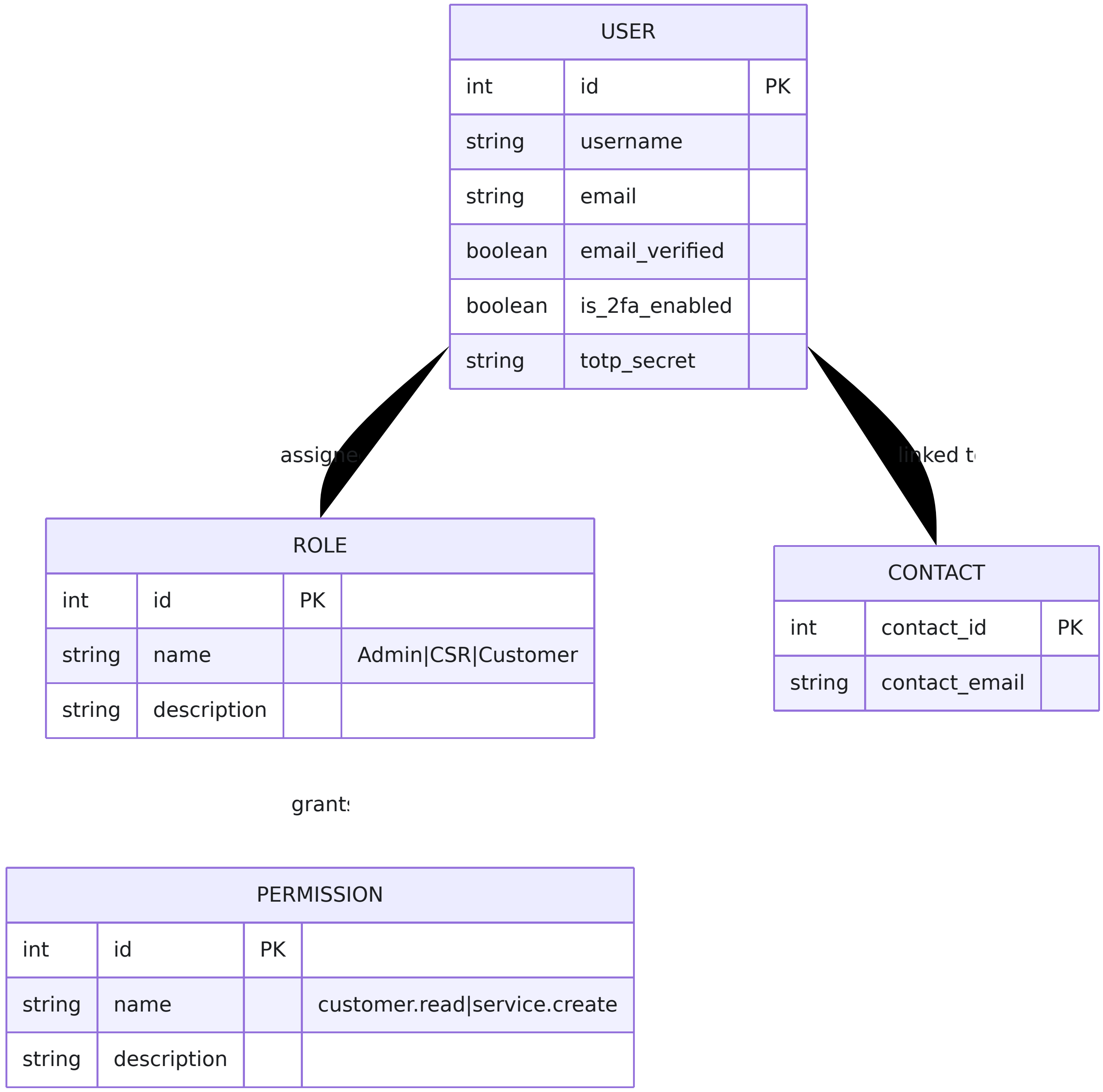

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int	id	PK
string	username	
string	email	
boolean	email_verified	
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string	name		Admin|CSR|Customer
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7. [illegible]1[illegible]1[illegible]31[illegible]
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- `payments_invoices` - [illegible]
- `payments_process` - [illegible]
- `basics_payment` - [illegible]
- `csa_activity_log` - [illegible]

[illegible]

`[illegible] </payments_transaction>` [illegible]

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[illegible]

[illegible] `Mailjet <integrations_mailjet>` [illegible]PDF[illegible]

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□□□□□□ `OmniCRM-API/invoice_templates/`

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- `norfone_invoice_template.html` - □□□□□□
- `cifi_invoice_template.html` - □□□□□□

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□□□□□□ `OmniCRM-API/crm_config.yaml` □□□□

```yaml
invoice:
  template_filename: 'norfone_invoice_template.html'
```

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- `{{ 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 }}` - □□□□□□□□□□□□□□□

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- `{{ 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 }}` - □□

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```
{% 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 %}
```

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- `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` - □□□□□□□□

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```
<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>
```

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```
cd OmniCRM-API/invoice_templates/
cp norfone_invoice_template.html
your_company_invoice_template.html
```

□□2□□□□HTML/CSS

□□ `your_company_invoice_template.html` □□□□□□□□

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1. □□□□□□□

   ```
   <!-- □□□□□URL□□ -->
   ![□□□□□](https://yourcompany.com/logo.png)

   <!-- □□□□□□ -->
   <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. □□□□

```html
<div class="payment-info">
    <h3>□□□□</h3>
    <p><strong>□□□</strong> □ https://yourcompany.com/pay □□
</p>
    <p><strong>□□□□□</strong></p>
    <ul>
        <li>□□□□□□□□□□□□□</li>
        <li>BSB□123-456</li>
        <li>□□□□□987654321</li>
        <li>□□□{{ invoice_number }}</li>
    </ul>
</div>
```

5. □□□□□

```html
<div class="terms">
    <h4>□□□□</h4>
    <p>□□□□□30□□□□□□□</p>
    <p>□□□□□□□□□□□□□2%□</p>
    <p>□□□□□□□billing@yourcompany.com</p>
</div>
```

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□□ `OmniCRM-API/crm_config.yaml`□

```yaml
invoice:
  template_filename: 'your_company_invoice_template.html'
```

□□4□□□API

```
cd OmniCRM-API
sudo systemctl restart omnicrm-api
```

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```
{% 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 %}
```

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```
invoice_template_en.html
invoice_template_es.html
invoice_template_fr.html
```

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```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` □□□□□□□□□□□□ `tax_percentage` □0%□□□□□□□□

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```html
<div class="qr-payment">
    ![□□□□](https://api.qrserver.com/v1/create-qr-code/?
size=150x150&data={{ payment_url }})
    <p>□□□□□□□□□□□□</p>
</div>
```

PDF□□□□□

OmniCRM□□ **WeasyPrint** □HTML□□□PDF□□□□□□□□

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- □□□CSS 2.1□□
- □□□CSS3□flexbox□□□□□□
- □□ `@font-face` □□□□□□

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- JavaScript
- CSS Grid□□□□□□□□
- □□□□
- □□□□CSS□□

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```css
@page {
    size: A4;
    margin: 1cm;
}

body {
    font-family: Arial, sans-serif;
    font-size: 10pt;
}
```

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```css
@media print {
    .no-print {
        display: none;
    }

    .page-break {
        page-break-after: always;
    }
}
```

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```css
.table {
    table-layout: fixed;
    width: 100%;
}

.table th, .table td {
    word-wrap: break-word;
    padding: 4px;
}
```

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```css
@font-face {
    font-family: 'YourFont';
    src: url('https://yourcompany.com/fonts/yourfont.woff2')
format('woff2');
}

body {
    font-family: 'YourFont', Arial, sans-serif;
}
```

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```
curl -X GET "http://localhost:5000/crm/invoice/{invoice_id}/pdf" \
     -H "Authorization: Bearer YOUR_TOKEN" \
     --output test_invoice.pdf
```

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```sql
-- □□□□□□□□□PDF□□MySQL□□□□
DELETE FROM Invoice_PDF_Cache;
```

□□□ `crm_config.yaml` □□□□□□□□□□□□□□□

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{
  "vendor": "stripe",
  "vendor_payment_method_id": "pm_1A2B3C4D5E6F",
  "payment_type": "card",
  "brand": "visa",
  "last4": "1234",
  "exp_month": 12,
  "exp_year": 2026,
  "name": "John Smith",
  "nickname": "□□□",
  "is_default": true
}
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- `basics_payment` - □□□□□□□□□□□□□
- `payment_system_guide` - □□ API □□□□□□□□
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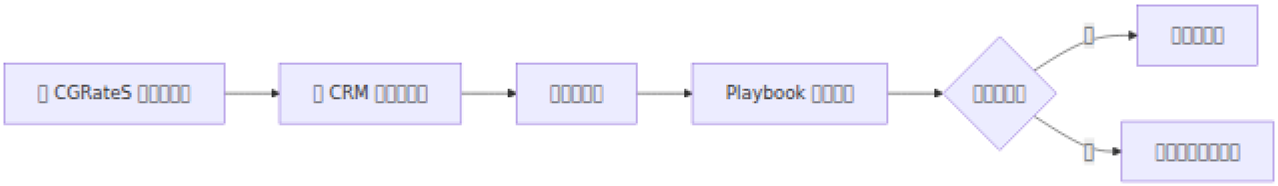

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- **CGRateS □□□** `ActionsId = "Action_50gb-data-pack"`
- **CRM □□□** `product_slug = "50gb-data-pack"`
- □ **Playbook □□** `cgr_action_name = "Action_" + product_slug`

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```
import cgrateshttpapi

OCS_Obj = cgrateshttpapi.CGRateS("ocs.example.com", "2080")
tenant = "your_tenant"

# □□ 1□□□□ CGRateS □□□□□
Action_50GB_Data_Pack = {
    "method": "ApierV1.SetActions",
    "params": [{
        "ActionsId": "Action_50gb-data-pack",
        "Tenant": tenant,
        "Actions": [
            {
                "Identifier": "*topup",
                "BalanceType": "*data",
                "Units": 50 * 1024 * 1024 * 1024,
                "ExpiryTime": "+720h",
                "Weight": 10
            }
        ]
    }]
}

result = OCS_Obj.SendData(Action_50GB_Data_Pack)
assert result['error'] is None or result['error'] == "EXISTS"

# □□ 2□□□□ CRM □□□□□
# (product_slug = "50gb-data-pack" □□□□ Action_50gb-data-pack)
```

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# □ Playbook □
- name: □□□□
  uri:
    url: "http://{{ crm_config.ocs.cgrates }}/jsonrpc"
    method: POST
    body:
      {
        "method": "APIerSv1.ExecuteAction",
        "params": [{
          "ActionsId": "Action_50gb-data-pack"
        }]
      }
  register: response

# □□□□□□□□□□□
# response.json.error = "SERVER_ERROR: □□□□□"
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  ID: "Data_10GB_30days_uuid_def456"
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  ID: "Data_Package__5368709120"
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  OriginalValue: 5368709120  # □□□□□□ 5GB
  Value_hr: "6 GB"
  OriginalValue_hr: "5 GB"
  Remaining_hr: "6 GB of 5 GB (1 GB rolled over)"
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*topup_reset - □□□□

`*topup_reset` □□ □□□□□□□□□□□□□□ ID□

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- □□□□□□ ID □□□□□

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```
# □□□□□
□□□
  ID: "Data_Package__5368709120"
  □: 1073741824  # □□ 1GB
  □□: 2024-12-24□□□ 1 □□

# □□ *topup_reset □□□
□□□
  □□□: "*topup_reset"
  □□□
    ID: "Data_Package__5368709120"  # □□ ID - □□□□
    □: 5368709120  # 5GB
    ExpiryTime: "+5d"

# *topup_reset □□□□□
□□□
  ID: "Data_Package__5368709120"
  □: 5368709120  # 5GB□□□ 1GB □□□□
  OriginalValue: 5368709120
  Value_hr: "5 GB"
  Remaining_hr: "5 GB of 5 GB"
  PercentUsed: 0
  □□: 2024-12-29□□□□□ 5 □□
```

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OmniCRM □□□□□□□ ID □□□□□□□□□□□□□□□□□□□□□□□□ API □□□□□□ Web UI □□□□□□

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```
{□□□□□}__{□□□□□□□□□□}
```

□□□□ ID□

```
# □□□□□100GB
"AU_Data_Domestic__107374182400"
# □□□□
# - □□□□□"AU_Data_Domestic"□□□□□ - □□/□□□□
# - □□□□"__"□□□□□□
# - □□□□□"107374182400"□100GB □□□□□□□
# - UI □□□"AU Data Domestic - 100 GB"

# □□□□□3000□□
"AU_Voice_Domestic__180000000000000"
# - □□□□□"AU_Voice_Domestic"□□□□ "AU_Voice_Domestic_3000min"□
# - □□□□□"180000000000000"□3000□□□□□□□□□
# - UI □□□"AU Voice Domestic - 3000 min"

# □□□□□3000□□□
"AU_SMS_Domestic__3000"
# - □□□□□"AU_SMS_Domestic"
# - □□□□□"3000"□□□□
# - UI □□□"AU SMS Domestic - 3000 msgs"
```

□□□ □□□□□□□□□□□□□□ - □□□□□□□□□□□ `__` □□□□API □□□□□□□□□□□□□

API □□□□□□□□□

□ OmniCRM API □ CGRateS □□□□□□□□□□□□□□□□ ID □□□ `_hr`□□□□□□□□□

```
{
  "BalanceMap": {
    "*data": [
      {
        "ID": "AU_Data_Domestic__107374182400",
        "Value": 53687091200,
        "ExpiryTime": "2025-01-25T23:59:59Z",
        "Weight": 1200,

        // □□□□□□□□□□□□
        "ID_hr": "AU Data Domestic",
        "OriginalValue": 107374182400,
        "OriginalValue_hr": "100 GB",
        "Value_hr": "50 GB",
        "Remaining_hr": "50 GB of 100 GB",
        "PercentUsed": 50,
        "ExpiryTime_hr": "2025□1□25□□22□□"
      }
    ]
  }
}
```

API □□□□□

1. □□□□ **ID**□

```
balance_id = "AU_Data_Domestic__107374182400"
parts = balance_id.split("__")

descriptive_name = parts[0]  # "AU_Data_Domestic"
original_size = int(parts[1]) if len(parts) > 1 else None  # 107374182400
```

2. □□□□□□□□□□□

```
# □□□□□□□□
id_hr = descriptive_name.replace("_", " ")  # "AU Data Domestic"
```

3. □□□□□□□□□□□□□

```
# □□□□□□□□□□
if balance_type == "*data":
    original_value_hr = convert_bytes_to_gb(original_size)  #
"100 GB"

# □□□□□□□□□□
elif balance_type == "*voice":
    original_value_hr = convert_ns_to_minutes(original_size)  #
"3000 min"

# □□□□□□□□□□
elif balance_type == "*sms":
    original_value_hr = f"{original_size} msgs"  # "3000 msgs"
```

4. □□□□□□□□

```
if original_size and original_size > 0:
    percent_used = ((original_size - current_value) /
original_size) * 100
```

5. □□□□□□□□

```
remaining_hr = f"{current_value_hr} of {original_value_hr}"
# "50 GB of 100 GB"
```

Web UI □□□

□□□□□□ `_hr` □□□□□□□□□□□□□□□

```
// □□□□□□□□□
// ID: "AU_Data_Domestic__107374182400"
// □: 53687091200

// □□□□□□□
<BalanceCard>
  <Title>{balance.ID_hr}</Title>           {/* "AU Data Domestic" 
*/}
  <Progress value={balance.PercentUsed}>   {/* 50% */}
    {balance.Remaining_hr}                 {/* "50 GB of 100 GB" 
*/}
  </Progress>
  <Expiry>{balance.ExpiryTime_hr}</Expiry> {/* "2025□1□25□□22□□" 
*/}
</BalanceCard>
```

□□□□□□□□

1. □□□□□□ - □□□□□□□□□UI □□□□□ "50 GB of 100 GB"□□□□□□ "50 GB □□"

2. □□□□□ - □□□□□□□□□□□□□□□□

3. □□□□□ - □□□ ID □□□□□□□□□□□□□□□□□□□□□□

4. □□□□ - □□□ `*topup`□□□□□□□□□□□ 70 GB □□□□□ 100 GB□
   - □□ ID □□□□□`"AU_Data_Domestic__107374182400"`□□□ 100 GB□
   - □□□□□□170 GB
   - UI □□□ "170 GB (70 GB rolled over + 100 GB new)"

□□□□ - □□□□ ID□

□□□ `__` □□□□□□□□□□□□□ UI □□□□□□□□□□□□□□□□□□

```
# □ - □□□□ + □□□□□□□□
Action_Data_100GB = {
    "Actions": [
        {
            "BalanceId": f"AU_Data_Domestic__{100 * 1024 * 1024 *
1024}",
            "Units": 100 * 1024 * 1024 * 1024
        }
    ]
}

# □ - □□□□□□□□□
Action_Data_100GB = {
    "Actions": [
        {
            "BalanceId": f"AU_Data_Domestic_100GB__{100 * 1024 *
1024 * 1024}",  # □□□
            "Units": 100 * 1024 * 1024 * 1024
        }
    ]
}

# □ - □□□□□□□UI □□□□□□□□
Action_Data_100GB = {
    "Actions": [
        {
            "BalanceId": "AU_Data_Domestic",  # □□ __size
            "Units": 100 * 1024 * 1024 * 1024
        }
    ]
}
```

□□□□ - □□□□□

□□□□□□□□□□□□□□□□□□□□□□□□□□□□

```
# □□□□□□□□□□□
{
    "BalanceId": "PAYG_Monetary_Balance",
    "BalanceType": "*monetary",
    "Units": 5000  # $50.00
}

# UI □□□□□□□□□□□□□□□
# "□□□$50.00"
```

□□ 1□□□ ID□□□□□□

□□□□ ID□□□□□□ UUID□□□□□□□□□□□□□□□□□□□□□□□□

□□□□□

```
- name: □□□□□□□□□
  set_fact:
    uuid: "{{ 99999999 | random | to_uuid }}"
    balance_id: "Data_5days__5368709120_{{ uuid[0:8] }}"

- name: □□ *topup □□□□□□
  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",
          "Balance": {
            "ID": "{{ balance_id }}",
            "Value": 5368709120,
            "ExpiryTime": "+5d",
            "Weight": 10
          }
        }]
      }
```

□□□ □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□

```
# □□□□ "5 □□□□□□□" □□□
□□ 1:
  ID: "Data_5days__5368709120_a1b2c3d4"
  □: 5368709120
  Value_hr: "5 GB"
  OriginalValue_hr: "5 GB"
  Remaining_hr: "5 GB of 5 GB"
  □□: 2024-12-29

□□ 2:
  ID: "Data_5days__5368709120_e5f6g7h8"
  □: 5368709120
  Value_hr: "5 GB"
  Remaining_hr: "5 GB of 5 GB"
  □□: 2024-12-30

□□ 3:
  ID: "Data_5days__5368709120_i9j0k1l2"
  □: 5368709120
  Value_hr: "5 GB"
  Remaining_hr: "5 GB of 5 GB"
  □□: 2024-12-31

# □□□□15GB□□□□□□□□□
# □□□ UI □□□□ "Data 5days - 5 GB of 5 GB"
```

□□ 2□□□ ID □ *topup□□□□

□□□□□□□ ID □ `*topup` □□□□□□□□□□□□□□□

□□□□□

```
- name: □□□□□□ ID
  set_fact:
    balance_id: "Data_5days__5368709120"

- name: □□ *topup □□□□□□□□
  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",
          "Balance": {
            "ID": "Data_5days__5368709120",
            "Value": 5368709120,
            "ExpiryTime": "+5d",
            "Weight": 10
          }
        }]
      }
```

□□□ □□□□□□□□□□□□□□□□□□

```
# □ 1 □□□□□□ "5 □□□□□□□"□
□□□
  ID: "Data_5days__5368709120"
  □: 5368709120
  Value_hr: "5 GB"
  Remaining_hr: "5 GB of 5 GB"
  PercentUsed: 0
  □□: 2024-12-29

# □ 3 □□□□□□ 1GB□□□□□□□□□□□□□□□
□□□
  ID: "Data_5days__5368709120"
  □: 9663676416  # 4GB □□ + 5GB □□
  Value_hr: "9 GB"
  OriginalValue_hr: "5 GB"
  Remaining_hr: "9 GB (4 GB rolled over + 5 GB new)"
  PercentUsed: -80  # □□□□□□
  □□: 2024-12-27□□□□□ +5 □□
```

□□ 3□□□ ID □ *topup_reset□□□□□□

□□□□□□□ ID □ `*topup_reset` □□□□□□□□□□□□□

□□□□□

```yaml
- name: □□□□□□ ID
  set_fact:
    balance_id: "Monthly_Plan__32212254720"

- name: □□ *topup_reset □□□□□□□□□
  uri:
    url: "http://{{ crm_config.ocs.cgrates }}/jsonrpc"
    method: POST
    body_format: json
    body:
      {
        "method": "ApierV1.SetActions",
        "params": [{
          "ActionsId": "Action_Reset_Monthly_Plan",
          "Actions": [{
            "Identifier": "*topup_reset",
            "BalanceType": "*data",
            "Units": 32212254720,  # 30GB
            "ExpiryTime": "*monthly",
            "DestinationIds": "*any",
            "BalanceId": "Monthly_Plan__32212254720",
            "Weight": 10
          }]
        }]
      }
```

□□□ □□□□□□□□□□□□ 30GB□□□□□□□□□

```
# □ 1 □□□□ 1 □□
□□□
  ID: "Monthly_Plan__32212254720"
  □: 32212254720
  Value_hr: "30 GB"
  Remaining_hr: "30 GB of 30 GB"
  PercentUsed: 0
  □□: 2024-12-31

# □ 1 □□□□ 25 □□□□□□□ 28GB
□□□
  ID: "Monthly_Plan__32212254720"
  □: 2147483648
  Value_hr: "2 GB"
  Remaining_hr: "2 GB of 30 GB"
  PercentUsed: 93
  □□: 2024-12-31

# □ 2 □□□□ 1 □□ActionPlan □□ *topup_reset
□□□
  ID: "Monthly_Plan__32212254720"
  □: 32212254720  # □□□□□□□□□□ 2GB □□
  Value_hr: "30 GB"
  Remaining_hr: "30 GB of 30 GB"
  PercentUsed: 0
  □□: 2025-01-31
```

□□□□□

□□□□□ □ CGRateS □□□□□□□□□□□ □□

□□□□□□□□□

□□□□��� `Blocker: true` □□

1. □□□□□□□ → □□□□□□□□□□□□
2. □□□□□□□□ → □□□□□□□□□□□□□□□
3. □□□□ → `INSUFFICIENT_CREDIT_BALANCE_BLOCKER` □□□□

□□□□□

- □□□□□□□□□□□□□□□ □□□□□□□□□□□□□□□□□□□□
- □□□□□□□□□□□□□□□□□CGRateS □□□□ □□□□□
- □□□□□□□□□□□□□`*voice`□`*data`□`*sms`□`*monetary`

□□□□□□

1. □□□□

□□□□□□□□□□□□□□□□□□□□□□

```
Action_Suspend_Account = {
    "id": "0",
    "method": "ApierV1.SetActions",
    "params": [{
        "ActionsId": "Action_suspend-account",
        "Overwrite": True,
        "Tenant": tenant,
        "Actions": [
            # □□□□□□□□□□□□□□
            {
                "Identifier": "*topup",
                "BalanceId": "Suspension_Blocker",
                "BalanceType": "*monetary",
                "DestinationIDs": "*any",
                "Units": 0,  # □□
                "BalanceWeight": 9999,  # □□□□□ - □□□□
                "Blocker": True,  # □□□□□□
                "Weight": 10
            }
        ]
    }]
}

result = OCS_Obj.SendData(Action_Suspend_Account)
```

□□□ □□□□/□□/SMS □□□□□□□□□□□□□

2. □□□□

□□□□□□□□□□□□□□

```
Action_Monthly_Plan_With_Cap = {
    "id": "0",
    "method": "ApierV1.SetActions",
    "params": [{
        "ActionsId": "Action_monthly-with-cap",
        "Overwrite": True,
        "Tenant": tenant,
        "Actions": [
            # 10GB □□□□
            {
                "Identifier": "*topup_reset",
                "BalanceId": f"Included_Data__{10 * 1024 * 1024 *
1024}",
                "BalanceType": "*data",
                "DestinationIDs": "Dest_PLMN_OnNet",
                "Units": 10 * 1024 * 1024 * 1024,
                "ExpiryTime": "*month",
                "BalanceWeight": 1200,  # □□□□
                "Weight": 95
            },
            # $50 □□□□□□□□□
            {
                "Identifier": "*topup_reset",
                "BalanceId": "Overage_Cap",
                "BalanceType": "*monetary",
                "DestinationIDs": "*any",
                "Units": 5000,  # $50.00 □□□□
                "ExpiryTime": "*month",
                "BalanceWeight": 1000,  # □□□□□□
                "Blocker": True,  # □ $50 □□□□□□□
                "Weight": 90
            }
        ]
    }]
}
```

□□□

1. □□□□ 10GB □□ → □□□□□ Included_Data_10GB□
2. □□□□□□□ 5GB → □ Overage_Cap □□□□ PAYG □□□

3. □ Overage_Cap □□ $0 → □□□□□□□□□□□□□□□

3. □□□□□□

□□□□□□□□□□□□□□□

```
Action_Trial_Account = {
    "id": "0",
    "method": "ApierV1.SetActions",
    "params": [{
        "ActionsId": "Action_trial-100-minutes",
        "Overwrite": True,
        "Tenant": tenant,
        "Actions": [
            # 100 □□□□□□□□ - □□□□□□
            {
                "Identifier": "*topup",
                "BalanceId": f"Trial_Voice__{100 * 60 *
1000000000}",
                "BalanceType": "*voice",
                "DestinationIDs": "Dest_Domestic_All",
                "Units": 100 * 60 * 1000000000,  # 100□□
                "ExpiryTime": "+720h",  # 30□
                "BalanceWeight": 1200,
                "Blocker": True,  # □□ 100 □□□□□□□
                "Weight": 10
            }
        ]
    }]
}
```

□□□ □□□□ 100 □□□□□□□□□□□□□□□□□□□□□□□□

4. □□□□□□□

□□□□□□□□□□□□□□□□□□□

```
Action_Block_Premium_Numbers = {
    "id": "0",
    "method": "ApierV1.SetActions",
    "params": [{
        "ActionsId": "Action_block-premium",
        "Overwrite": True,
        "Tenant": tenant,
        "Actions": [
            # □□□□□□
            {
                "Identifier": "*topup_reset",
                "BalanceId": "Regular_Usage",
                "BalanceType": "*monetary",
                "DestinationIDs": "*any",
                "Units": 10000,  # $100
                "ExpiryTime": "*month",
                "BalanceWeight": 1000,
                "Weight": 20
            },
            # □□□□□□□0900 □□
            {
                "Identifier": "*topup",
                "BalanceId": "Premium_Blocker",
                "BalanceType": "*monetary",
                "DestinationIDs": "Dest_Domestic_Premium",
                "Units": 0,  # □□
                "BalanceWeight": 2000,  # □□□□ - □□□□□□
                "Blocker": True,
                "Weight": 10
            }
        ]
    }]
}
```

□□□

- □□□□ → □□ Regular_Usage □□
- □□□□□□ → □□ Premium_Blocker□□□ 2000 > 1000□ → □□□

□□□□□□□□□□□

□□□ `Blocker` □ `Disabled` □□□

□□	□□□	□□
□□	□□□□□□□□□□	□□□□□□
□□ **> 0**	□□□□□□	□□□□□/□□
□□ **= 0**	□□□□□□□□□	□□□□□□□□□□□□□□
□□	□□□□□□□□□□□□	□□□□□□□□

```
# □□□□□□ 10GB□□□□□□□□□
{
    "BalanceId": f"Data_Cap__{10 * 1024 * 1024 * 1024}",
    "Units": 10 * 1024 * 1024 * 1024,
    "Blocker": True  # □ 10GB □□□□□
}

# □□□□□□□□□□□□□□□□
{
    "BalanceId": f"Bonus_Data__{5 * 1024 * 1024 * 1024}",
    "Units": 5 * 1024 * 1024 * 1024,
    "Disabled": True  # □□□□□□□□□
}
```

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□□□□□□□□□□□□□□□□□□

```
Action_Safe_Hybrid_Plan = {
    "id": "0",
    "method": "ApierV1.SetActions",
    "params": [{
        "ActionsId": "Action_safe-hybrid-plan",
        "Overwrite": True,
        "Tenant": tenant,
        "Actions": [
            {
                "Identifier": "*reset_account",
                "Weight": 700
            },
            # 500 □□□□□□
            {
                "Identifier": "*topup_reset",
                "BalanceId": f"Domestic_Voice__{500 * 60 *
1000000000}",
                "BalanceType": "*voice",
                "DestinationIDs": "Dest_Domestic_All",
                "Units": 500 * 60 * 1000000000,
                "ExpiryTime": "*month",
                "BalanceWeight": 1200,
                "Weight": 95
            },
            # $20 □□□□
            {
                "Identifier": "*topup_reset",
                "BalanceId": "Overage_Allowance",
                "BalanceType": "*monetary",
                "DestinationIDs": "*any",
                "Units": 2000,  # $20.00
                "ExpiryTime": "*month",
                "BalanceWeight": 1000,
                "Weight": 90
            },
            # $50 □□□□□□□□
            {
                "Identifier": "*topup_reset",
                "BalanceId": "Hard_Spending_Cap",
                "BalanceType": "*monetary",
                "DestinationIDs": "*any",
                "Units": 5000,  # $50.00 □□□□
                "ExpiryTime": "*month",
                "BalanceWeight": 500,  # □□□□ - □□□□
                "Blocker": True,  # □□□□□□□
                "Weight": 85
            }
        ]
    }]
}
```

□□□□□

1. **0-500**□□□ □□ Domestic_Voice_500min□□□□
2. **500-700**□□□ □□ Overage_Allowance□□□□ $0.10 = $20□200□□□
3. **700-1200**□□□ □□ Hard_Spending_Cap□□□□ $0.10 = $50□500□□□
4. □**1200**□□□□ Hard_Spending_Cap □□ → □□□□□□□

□□□□□□ 1200 □□□□□□□□ $50□

□□□□□□□□

1. □□□□□□□□□

   ```
   "BalanceWeight": 9999  # □□□□□□□□□□
   ```

2. □□□□□□□□□□□□

   ```
   "Units": 0,  # □□□□
   "Blocker": True
   ```

3. □□□□□□□□□□□□

   - □□ ActionTriggers □ 80%□90%□100% □□□□□□□□□□
   - □□□□□□□□□□□□□□□□□

4. □□□□□□□□□□□

```
# □□ *remove_balance □□□��□
{
    "Identifier": "*remove_balance",
    "BalanceId": "Suspension_Blocker"
}
```

5. □□□□□□□

   - □□□□□□□ `INSUFFICIENT_CREDIT_BALANCE_BLOCKER` □□
   - □□ CDR □□□□ = -1.0 □□□□□
   - □□□□□□□□□□□□□□□□□

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□□□□□

1. □□□□□□□□□□□□□□□□□
2. DestinationIDs □□□□□□□□
3. □□□□□□□□□ `True`

□□□□□

```
# □□□□□□□
OCS_Obj.SendData({
    'method': 'ApierV2.GetAccount',
    'params': [{"Tenant": tenant, "Account": "service_uuid"}]
})

# □□□
# - Blocker: true
# - BalanceWeight □□□□□□□□9999□
# - DestinationIDs □□□□□□□
# - □ = 0
```

□□□□□□□□□

□□□□□ □□□□□□□□□□□□□□

□□□□□ □□□□□□□□□ `Blocker: true`□□□□□□□□□□□□□□□

□□□□□□

□□ 1□□□□□□□□

□□ □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□

```
# □□□□ +44-20-1234-5678□□□□□□□

□□ 1:
  DestinationIDs: "Dest_UK_London"  # □□□"4420"□□□□4□
  □: 100□□
  □□: 10

□□ 2:
  DestinationIDs: "Dest_UK_All"     # □□□"44"□□□□2□
  □: 200□□
  □□: 10

# □□ 1 □□□□□□□□ 4 > □□ 2□
# □□□□□□□□□□□
```

□□□ □□□□□□□□□□□□□□□□□□□□□□□

□□ 2□□□□□□□□□□□

□□□□□□□□□□□□ □□□□ □□□□□□□□□

```
□□ 1:
  ID: "Premium_Data"
  □: 5GB
  □□: 20

□□ 2:
  ID: "Standard_Data"
  □: 10GB
  □□: 10

# □□ 1 □□□□□□□□ 20 > □□ 10□
# □□□□ 2 □□□□□
```

□□□ □□□□□□□□□□□□□□□□□□□□

□□ 3□□□□□

□□□□□□□□□□□□□□□□□□

```
□□ 1:
  ID: "Data_Package_A"
  □: 5GB
  □□: 2024-12-25
  □□: 10

□□ 2:
  ID: "Data_Package_B"
  □: 10GB
  □□: 2025-01-15
  □□: 10
```

□□□□□□□□□□□□□□□□□

```
# □□□□□□□□□□□□□□□□□□□□□□
□□ 1:
  ID: "Data_Package_A"
  □: 5GB
  ��□: 2024-12-25
  □□: 11  # □□□□□ = □□□□

□□ 2:
  ID: "Data_Package_B"
  □: 10GB
  □□: 2025-01-15
  □□: 10  # □□□□□ = □□□□

# □□ 1 □□□□□□□□ 11 > □□ 10□
```

□□□□□ □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□

□□□□

□□ 1□□□□□□□□□□□□□

□□□ □□□□□□□□“5GB 5□”□□□□□□□□□□□□□□□□□

□□□

```yaml
- name: □□ UUID □□□□□□
  set_fact:
    uuid: "{{ 99999999 | random | to_uuid }}"

- name: □□□□□ 5GB □□
  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": "Data_5GB_{{ uuid[0:8] }}",
            "Value": 5368709120,
            "ExpiryTime": "+120h",  # 5□
            "Weight": 10
          }
        }]
      }
```

□□□□□

- □ 12 �� 24 □□□□□□□ → □□ 5GB□2024 □ 12 □ 29 □□□
- □ 12 □ 25 □□□□□□□ → □□ 5GB□2024 □ 12 □ 30 □□□
- □□□□□□□□□□□□□□□□□□□□□□□□□ 10□□□□□□□□□

□□ 2□□□□□□

□□□ “□□ 50GB □□”□□□□□□□□□□□□□□□□□□

□□□

```yaml
- name: □□□□□□□□
  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",
          "Balance": {
            "ID": "Rollover_Monthly_50GB",
            "Value": 53687091200,  # 50GB
            "ExpiryTime": "+720h",  # 30□
            "Weight": 10
          }
        }]
      }
```

□□□□□ □□□□□ `*topup` □□□□□□□□

□□□□□

- □ 1 □□□□ 50GB□30 □□□□
- □ 20 □□□□ 30GB□□□ 20GB
- □ 20 □□□□□□ → □□ 70GB□20GB + 50GB□□□□□□□□ 20 □□ +30 □

□□ 3□□□□□□□□□□□���

□□□ “□□ 100GB □□”□□□□□□□□□□□ 100GB□□□□□

□□□

```
- name: □□□□□□□□
  uri:
    url: "http://{{ crm_config.ocs.cgrates }}/jsonrpc"
    method: POST
    body_format: json
    body:
      {
        "method": "ApierV1.SetActions",
        "params": [{
          "ActionsId": "Action_Monthly_100GB_Reset",
          "Overwrite": true,
          "Actions": [{
            "Identifier": "*topup_reset",
            "BalanceType": "*data",
            "Units": 107374182400,  # 100GB
            "ExpiryTime": "*monthly",
            "BalanceId": "Monthly_Plan__107374182400",
            "Weight": 10
          }]
        }]
      }

- name: □□□□ ActionPlan
  uri:
    url: "http://{{ crm_config.ocs.cgrates }}/jsonrpc"
    method: POST
    body_format: json
    body:
      {
        "method": "ApierV1.SetActionPlan",
        "params": [{
          "Id": "ActionPlan_Monthly_100GB",
          "ActionPlan": [{
            "ActionsId": "Action_Monthly_100GB_Reset",
            "Time": "*monthly",
            "Weight": 10
          }],
          "Overwrite": true,
          "ReloadScheduler": true
        }]
      }

- name: □ ActionPlan □□□□□
```

```
    uri:
      url: "http://{{ crm_config.ocs.cgrates }}/jsonrpc"
      method: POST
      body_format: json
      body:
        {
          "method": "ApierV2.SetAccount",
          "params": [{
            "Account": "{{ service_uuid }}",
            "ActionPlanIds": ["ActionPlan_Monthly_100GB"],
            "ReloadScheduler": true
          }]
        }
```

□□□□□

- □ 1 □□□□ 1 □□□□ 100GB□□□ 95GB□□□ 5GB
- □ 2 □□□□□□□□ 100GB□□□□□ 5GB □□□
- □ 2 □□□□□ 20GB□□□ 80GB
- □ 3 □□□□□□□□ 100GB□□□□□ 80GB □□□

□□ 4□□□□□□□□□□

□□□ □□□□“□□□□”□□□□□□□“□□□□”□□□□□□□□□□□□□□□□

□□□

```
# □□□□□□□□□□
- name: □□□□□□□□
  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": "Bonus_Data",
            "Value": 5368709120,  # 5GB
            "ExpiryTime": "+240h",  # 10□
            "Weight": 20
          }
        }]
      }

# □□□□□□□□□□□
- name: □□□□□□□□
  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": "Regular_Data",
            "Value": 53687091200,  # 50GB
            "ExpiryTime": "+720h",  # 30□
            "Weight": 10  # □□□□□
          }
        }]
      }
```

□□□□□

- □□ 5GB □□□□□□□ 20□+ 50GB □□□□□□□ 10□
- □□□□□□ 5GB □□□□
- □□□ 50GB □□□□□□□□
- □□□□□□□□□□

□□□□□□□

CGRateS □□□□□□□□□□□□□□□□□

□□□□

***topup** - □□□□□□□□□□□

***topup_reset** - □□□□□□□□□□□□□

***debit** - □□□□□□

***debit_reset** - □□□□□□□□

***reset_account** - □□□□□□

□□□□□□

□ OmniCRM □□□□□□□□□□□���□□□□□

□□ 1□□□□□□□□□

□□□□□ → □□□□□□ ID□□ UUID□
□□□□□ → □□□□□□ ID □ `*topup_reset`
□□□□□ → □□□□□□ ID □ `*topup`

□□ 2□□□□□□□□□□□□□

□□ → □□ `*topup` □□
□□ → □□ `*topup_reset` □□
□□□ → □□□□□□ ID

□□ 3□□□□□□□□□□

□□□□ → □□□□□□□□□□□/□□□□□□□□□□□□□□□

□□□□ → □□□□□□□□□□□ = □□□□□□□

□□□□ → □□□□□30□□□□□20□□□□□10□□□□

□□/□□□ → □□□□□□□□□□□□□□□□

□□ 4□□□□□□□□□

□□□□□□ → □□□□□□□`+720h` □ 30 □□

□□ → □ ActionPlan □□□ `*monthly`

□□□□ → □□ `*unlimited` □□□□□□□□□

CGRateS □□□□□ Playbooks □

□□□□□□□□□□□□□

```
- name: □□ CGRateS □□
  uri:
    url: "http://{{ crm_config.ocs.cgrates }}/jsonrpc"
    method: POST
    body_format: json
    body:
      {
        "method": "ApierV1.SetActions",
        "params": [{
          "ActionsId": "Action_Name_Here",
          "Overwrite": true,  # □□□□□□□
          "Actions": [
            {
              "Identifier": "*topup",  # □ *topup_reset
              "BalanceType": "*data",  # *data□*voice□*sms□*monetary
              "Units": 5368709120,  # □□□□□
              "ExpiryTime": "+120h",  # +Xh□*unlimited□*monthly
              "DestinationIds": "*any",  # □□□ *any
              "BalanceId": "Balance_Name",  # □□□□□
              "Weight": 10,  # □□□□□□ = □□□□□
              "Blocker": false,  # □□□ true□□□□□□□
              "Disabled": false,  # □□□ true□□□□□□□
              "SharedGroups": ""  # □□□□□□□□□
            },
            {
              "Identifier": "*cdrlog",  # □□□□□□□ CDR
              "BalanceType": "*generic",
              "ExtraParameters": "{\"Category\":\"^activation\",\"Destination\":\"Addon Name\"}"
            }
          ]
        }]
      }
```

□□□□

ActionsId - □□□□□□□□□□

Identifier - □□□□□`*topup`□`*topup_reset`□`*cdrlog` □□

BalanceType - □□□□□

- `*data` - □□□□□□□□
- `*voice` - □□□□□□□
- `*sms` - □□□□□□□□
- `*monetary` - □□□□□□□□□□
- `*generic` - □□□□

Units - □□/□□□□□□□□□□□□□□□□□□□□□□

ExpiryTime - □□□□□□□

- `+Xh` - □□□□□□`+720h` = 30 □□
- `*unlimited` - □□□□
- `*monthly` - □□
- `2024-12-31T23:59:59Z` - □□□□□

BalanceId - □□□□□□□□□□ ID = □□□□□ ID = □□□

Weight - □□□□□□□□□ = □□□□□□□□□□□□

Blocker - □□□ true□□□□□□□□□□

Disabled - □□□ true□□□□□□□□□□□

□□ Python □□□□□□□□□□

□□□□□□□□□□□□□□□ Python □□□□ `cgrateshttpapi` □□□□□□□□□□□□□□□ `OCS_Obj.SendData()` □□□□□

□□□□

```python
import cgrateshttpapi
import time

OCS_Obj = cgrateshttpapi.CGRateS("ocs.example.com", "2080")
tenant = "your_tenant_name"
tpid = str(tenant) + "_" + str(int(time.time()))
```

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- □□□□□ - □□/SMS □□□□□□□□□`Dest_International_UK`□
- **PLMN** □□□ - □□□□□□□□□□□□`Dest_PLMN_OnNet`□`Dest_PLMN_US_Verizon`□

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- **□□/SMS □□** → □□□□□□□□□□□□□ TO□
- □□□□ → □□ PLMN □□□□□□□□□□□ FROM□

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- □□□□□□□□□□□□□□□□□□□□
- PLMN □□□□□□□□□□□□□□□
- PLMN □□□□□□□□□
- □□□□□□□□□

□□□□**CGRateS □□□□□**

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```
# □□□□□□□□□□□□
1_GB = 1 * 1024 * 1024 * 1024  # 1073741824 □□
100_GB = 100 * 1024 * 1024 * 1024

# □□□□□□□□□□□□
1_minute = 60 * 1000000000  # 60 □□□
3000_minutes = 3000 * 60 * 1000000000

# □□□□□□□□□□□□
3000_sms = 3000
```

□□ 1□□□□□□□□□Python□

□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□

```
Action_AU_Premium_Plan_1 = {
    "id": "0",
    "method": "ApierV1.SetActions",
    "params": [{
        "ActionsId": "Action_au-premium-plan-1",
        "Overwrite": True,
        "Tenant": str(tenant),
        "Actions": [
            # □□□□□□□□□□□□
            {
                "Identifier": "*reset_account",
                "Weight": 700
            },
            # □□ 100GB □□□□
            # □□□□□□□□□ PLMN □□□□□□□□□□□□
            # □□□□□□□□□□□□□□□ PLMN□
            {
                "Identifier": "*topup_reset",
                "BalanceId": "AU_Data_Domestic__" + str(100 * 1024
* 1024 * 1024),
                "BalanceType": "*data",
                "DestinationIDs": "Dest_PLMN_OnNet",  # □□□□ PLMN
□mcc505.mnc057□
                "Units": 100 * 1024 * 1024 * 1024,
                "ExpiryTime": "*month",
                "BalanceWeight": 1200,
                "Weight": 90
            },
            # □□ 3000 □□□□□□
            {
                "Identifier": "*topup_reset",
                "BalanceId": "AU_Voice_Domestic__" + str(3000 * 60
* 1000000000),
                "BalanceType": "*voice",
                "DestinationIDs":
"Dest_AU_Mobile;Dest_AU_Fixed;Dest_AU_TollFree;",
                "Units": 3000 * 60 * 1000000000,
                "ExpiryTime": "*month",
                "BalanceWeight": 1200,
                "Weight": 89
            },
            # □□ 3000 □□□□
            {
                "Identifier": "*topup_reset",
                "BalanceId": "AU_SMS_Domestic__" + str(3000),
                "BalanceType": "*sms",
                "DestinationIDs": "Dest_AU_Mobile;",
                "Units": 3000,
                "ExpiryTime": "*month",
                "BalanceWeight": 1200,
                "Weight": 88
            },
            # □□ 6GB □□□□
            {
                "Identifier": "*topup_reset",
                "BalanceId": "AU_Roaming_Data__" + str(6 * 1024 *
1024 * 1024),
                "BalanceType": "*data",
                "DestinationIDs": "Dest_Roaming_All",
                "Units": 6 * 1024 * 1024 * 1024,
                "ExpiryTime": "*month",
                "BalanceWeight": 1100,
                "Weight": 87
            },
            # □□□□□□□ CDR
            {
                "Identifier": "*cdrlog",
                "BalanceType": "*generic",
                "ExtraParameters": "
{\"Category\":\"^activation\",\"Destination\":\"AU Premium Plan
1\"}"
            }
        ]
    }]
}

# □□□□□□□□ CGRateS
result = OCS_Obj.SendData(Action_AU_Premium_Plan_1)
assert result['error'] is None or result['error'] == "EXISTS"
print("□□□□□Action_au-premium-plan-1")
```

□□□□

- □□ `*reset_account` □□□□□□□
- □□ `*topup_reset` □□□□□□□□□□□□□□

- BalanceWeight □□□□□□□□□ 1200 > □□ 1100□
- Weight □□□□□□□□□□□
- □□ `*cdrlog` □□□□□□

□□ 2□□□□□□□□□□Python□

□□□□□ 20GB □□□□□□□□□□□□□

```
Action_AU_Data_Addon_20GB = {
    "id": "0",
    "method": "ApierV1.SetActions",
    "params": [{
        "ActionsId": "Action_au-data-addon-20gb",
        "Overwrite": True,
        "Tenant": str(tenant),
        "Actions": [
            # □□□□□□
            {
                "Identifier": "*reset_account",
                "Weight": 700
            },
            # □□ 20GB □□
            # □□□□□□ PLMN □□□□□□□□□□□□
            {
                "Identifier": "*topup_reset",
                "BalanceId": "AU_Data_Domestic__" + str(20 * 1024
* 1024 * 1024),
                "BalanceType": "*data",
                "DestinationIDs": "Dest_PLMN_OnNet",  # □□□□ PLMN
□mcc505.mnc057□
                "Units": 20 * 1024 * 1024 * 1024,
                "ExpiryTime": "*month",
                "BalanceWeight": 1200,
                "Weight": 90
            }
        ]
    }]
}

result = OCS_Obj.SendData(Action_AU_Data_Addon_20GB)
assert result['error'] is None or result['error'] == "EXISTS"
print("□□□□□Action_au-data-addon-20gb")
```

□□ 3□□□□□□□□□□Python□

□□□□□□□□□□□□□□□□

```
Action_AU_International_Voice_100min = {
    "id": "0",
    "method": "ApierV1.SetActions",
    "params": [{
        "ActionsId": "Action_au-international-voice-100min",
        "Overwrite": True,
        "Tenant": str(tenant),
        "Actions": [
            {
                "Identifier": "*reset_account",
                "Weight": 700
            },
            # □□ 100 □□□□□□
            {
                "Identifier": "*topup_reset",
                "BalanceId": "AU_Voice_International__" + str(100
* 60 * 1000000000),
                "BalanceType": "*voice",
                "DestinationIDs": "Dest_International_All",
                "Units": 100 * 60 * 1000000000,
                "ExpiryTime": "*month",
                "BalanceWeight": 1000,
                "Weight": 90
            }
        ]
    }]
}

result = OCS_Obj.SendData(Action_AU_International_Voice_100min)
assert result['error'] is None or result['error'] == "EXISTS"
print("□□□□□Action_au-international-voice-100min")
```

□□□ □□/SMS □□□□□□□□□□□□□□□□□□□□ PLMN □□□□□□□□□□□□□□□□ □□□□ □□□□□□□□□

Python □□□□□□

□□□□□□□

- **ActionsId**□□□□ - □□□□□□□□□□□□□□ CRM □□ product_slug □□□□□
- **Overwrite** - □□□ True□□□□□□□□ ID □□□□□
- **Tenant** - CGRateS □□□□

- **Actions** - □□□□□□□□□□□

□□□□□□□

- **Identifier** - □□□□□`*topup`□`*topup_reset`□`*cdrlog` □□
- **BalanceId** - □□□□□□□□□□□□□□□□□□□
- **BalanceType** - □□□□□`*data`□`*voice`□`*sms`□`*monetary`□
- **DestinationIDs** - □□□□□□□□□□□□
  - □□ **□□/SMS**□□□□□□□□□□ □□`"Dest_AU_Mobile"`□`"Dest_International_UK"`□
  - □□ □□□□□ PLMN □□□□□ □□`"Dest_PLMN_OnNet"`□`"Dest_PLMN_US_Verizon"`□
- **Units** - □□□□□□□□□□□□□□□□□□□
- **ExpiryTime** - □□□□□□□`*month`□`+720h`□`2024-12-31` □□
- **BalanceWeight** - □□□□□□□□ = □□□□□
- **Weight** - □□□□□□□□□□□□ = □□□□□
- **Blocker**□□□□ - □□□ `True`□□□□□□□□□□
- **Disabled**□□□□ - □□□ `True`□□□□□□□□/□□

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```yaml
- 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_Name_Here"
        }]
      }
```

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□ CGRateS □□□

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□□	□□□	□□□□PAYG□	□□
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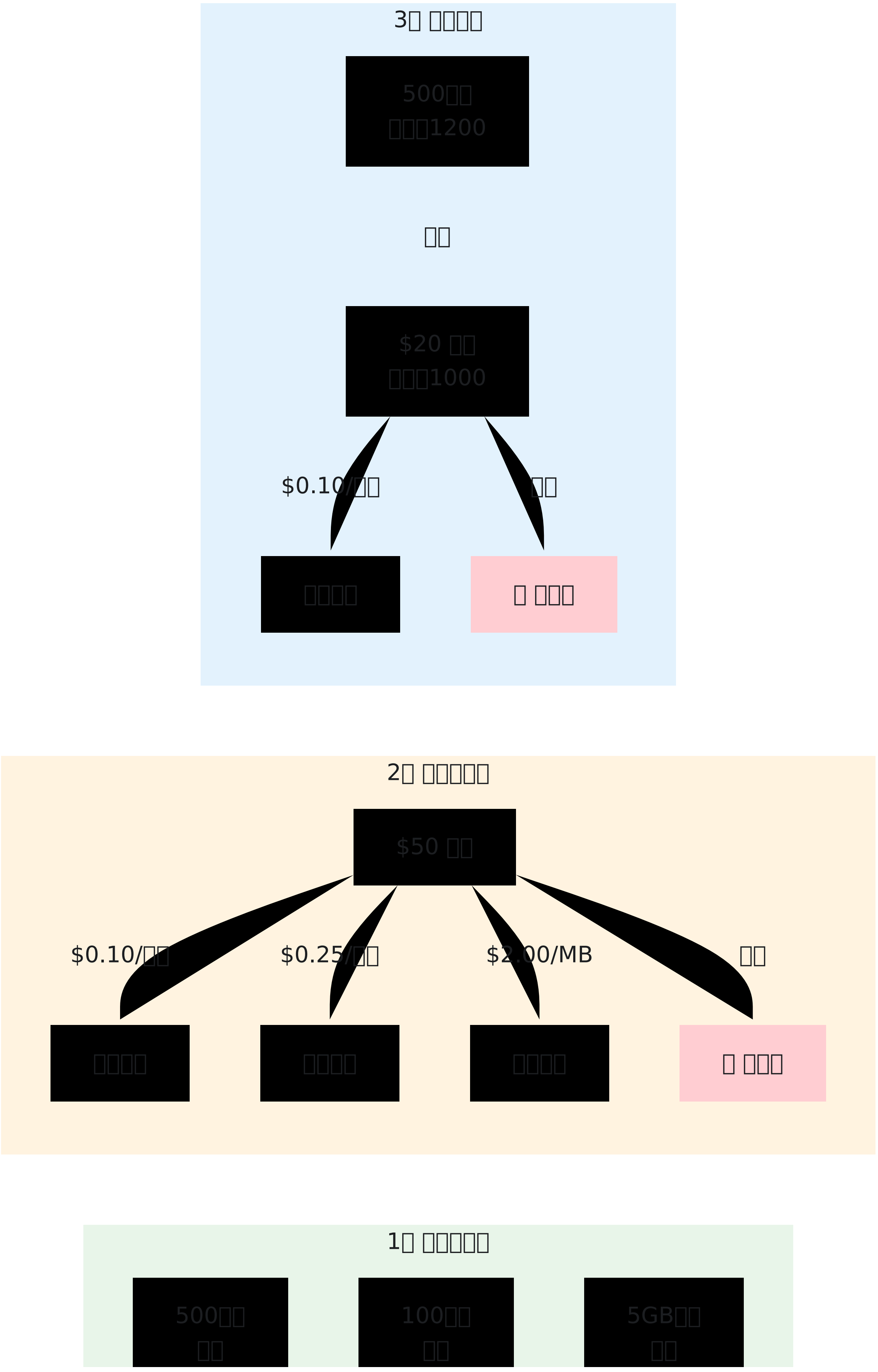
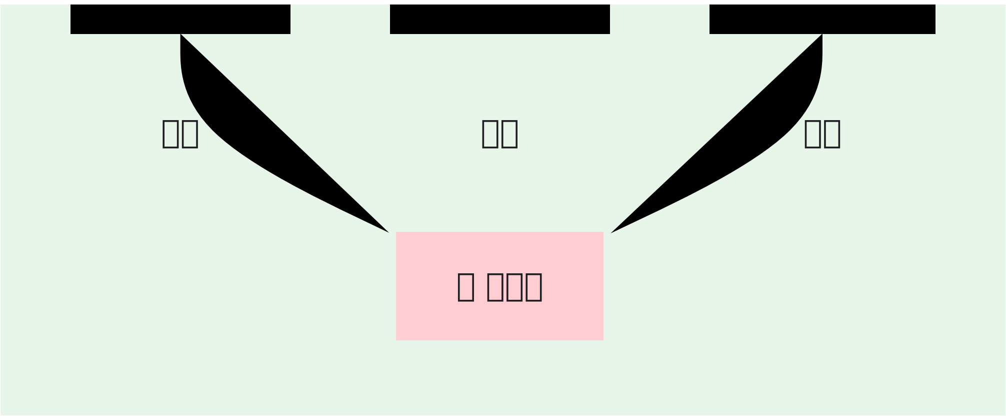

3
500
1200
$20
1000
$0.10/
2
$50
$0.10/
$0.25/
$2.00/MB
1
500
100
5GB



[illegible] 1[illegible]

[illegible] [illegible]GB[illegible]

[illegible]

```
Action_Domestic_Plan = {
    "id": "0",
    "method": "ApierV1.SetActions",
    "params": [{
        "ActionsId": "Action_domestic-plan",
        "Overwrite": True,
        "Tenant": tenant,
        "Actions": [
            {
                "Identifier": "*reset_account",
                "Weight": 700
            },
            # 500□□□□□□
            {
                "Identifier": "*topup_reset",
                "BalanceId": f"Domestic_Voice__{500 * 60 *
1000000000}",
                "BalanceType": "*voice",
                "DestinationIDs": "Dest_Domestic_All",  # □□□□
                "Units": 500 * 60 * 1000000000,  # 500□□□□□□□□□□
                "ExpiryTime": "*month",
                "BalanceWeight": 1200,
                "Weight": 90
            },
            # 1000□□□□□
            {
                "Identifier": "*topup_reset",
                "BalanceId": "Domestic_SMS__1000",
                "BalanceType": "*sms",
                "DestinationIDs": "Dest_Domestic_All",
                "Units": 1000,
                "ExpiryTime": "*month",
                "BalanceWeight": 1200,
                "Weight": 89
            },
            # 10GB □□□□
            {
                "Identifier": "*topup_reset",
                "BalanceId": f"Domestic_Data__{10 * 1024 * 1024 *
1024}",
                "BalanceType": "*data",
                "DestinationIDs": "Dest_PLMN_OnNet",  # □□□□ PLMN
                "Units": 10 * 1024 * 1024 * 1024,
                "ExpiryTime": "*month",
                "BalanceWeight": 1200,
                "Weight": 88
            },
            {
                "Identifier": "*cdrlog",
                "BalanceType": "*generic",
                "ExtraParameters": "
{\"Category\":\"^activation\",\"Destination\":\"Domestic Plan\"}",
                "Weight": 80
            }
        ]
    }]
}

result = OCS_Obj.SendData(Action_Domestic_Plan)
assert result['error'] is None or result['error'] == "EXISTS"
```

□□□□□

- □□□□□1-555-1234□ → □□ 500 □□□□
- □□□□□44-20-xxx□ → □□□□□□□□□□□□□□□□□□□□□□
- □□□□ → □□ 1000 □□□□
- □□□□□□ → □□ 10GB □□
- □□□□ → □□□□□□□□□□□□□□□□□□□

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□□ 2□□□□□PAYG□

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□□□ PAYG □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□ PAYG/□□□□□□□□□□□ □□□□□□□□

□□□$50 PAYG □□

```
Action_PAYG_Credit = {
    "id": "0",
    "method": "ApierV1.SetActions",
    "params": [{
        "ActionsId": "Action_payg-50-credit",
        "Overwrite": True,
        "Tenant": tenant,
        "Actions": [
            # $50 □□□□
            {
                "Identifier": "*topup",
                "BalanceId": "PAYG_Monetary_Balance",
                "BalanceType": "*monetary",
                "DestinationIDs": "*any",  # □□□□□□□□
                "Units": 5000,  # $50.00□□□□□□□□
                "ExpiryTime": "+2160h",  # 90□
                "BalanceWeight": 1000,  # □□□□□□□
                "Weight": 90
            },
            {
                "Identifier": "*cdrlog",
                "BalanceType": "*generic",
                "ExtraParameters": "
{\"Category\":\"^activation\",\"Destination\":\"$50 PAYG
Credit\"}",
                "Weight": 80
            }
        ]
    }]
}

result = OCS_Obj.SendData(Action_PAYG_Credit)
```

PAYG □□□□□□

□□ 1□□□□□□10□□

- □□□$0.10/□□
- □□□10 × $0.10 = $1.00
- □□□$49.00

□□ 2□□□□□□□□5□□

- □□□$0.25/□□ + $0.05 □□□
- □□□□5 × $0.25□ + $0.05 = $1.30
- □□□$47.70

□□ 3□□ Verizon □□□□□ 100MB □□

- □□

CGRateS □□□□□

□□□□□□□□□ CGRateS □□ OmniCRM □□□□□□□□□□□□□□□□□□□□□ - □□□□□□□□□□□□□□□ □□□□□□□□□□/□□□PLMN□□

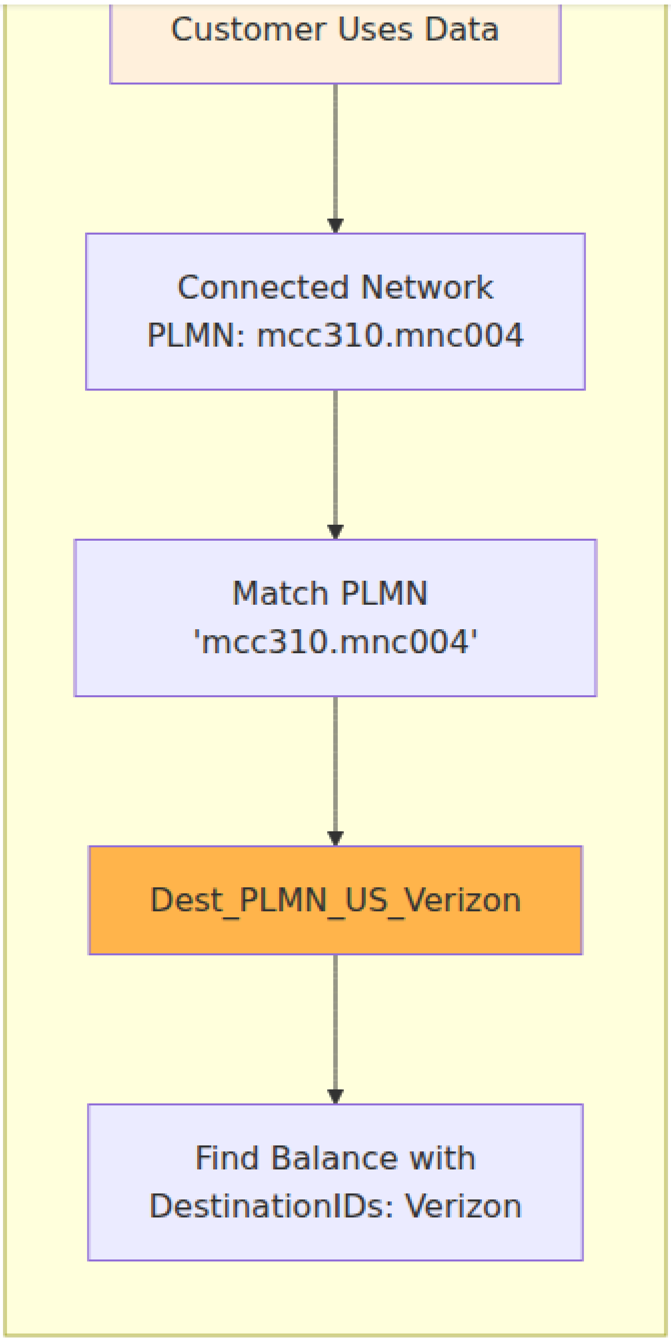
□□

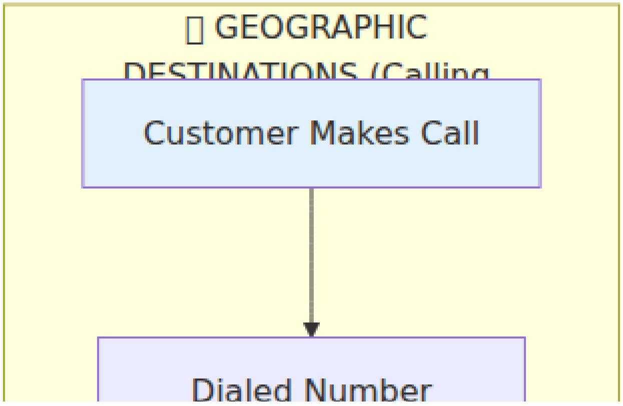
CGRateS □□ □□□ □□□□□□□□□□□□□□□□□□

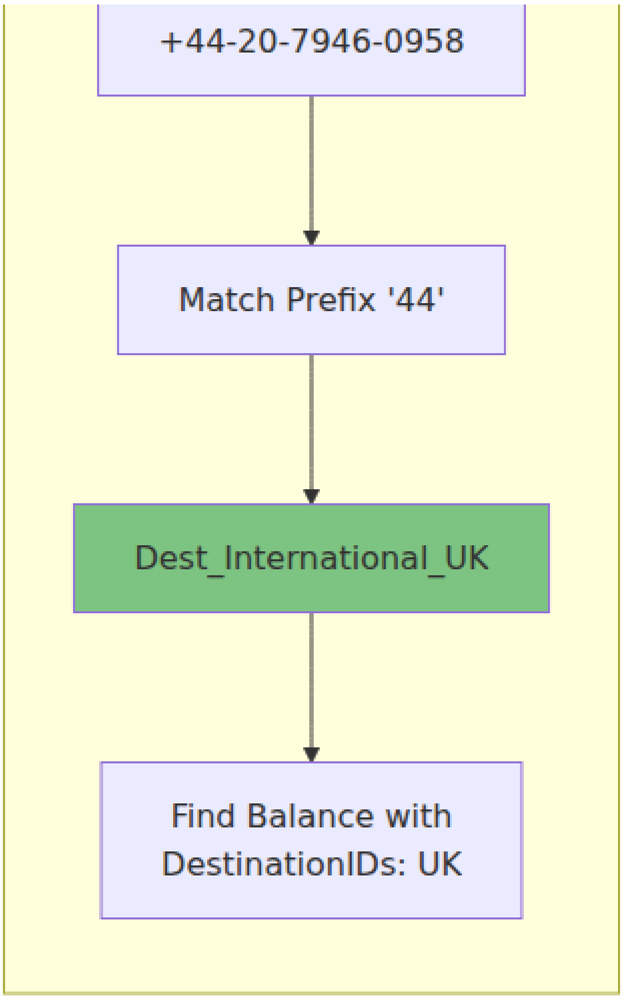
- □□□□□ - □□□□□□□□□/SMS □□□□□□□□□□□□□□□□□□□□□
- **PLMN** □□□ - □□□□□□□□□□□□□□□□□□□□□□□Verizon□Vodafone UK□

□□□□□□□□□CGRateS □□□

- □□**/SMS**□□□□□□□□ → □□□□□
- □□□□□ PLMN □□ → PLMN □□□


Customer Uses Data
Connected Network PLMN: mcc310.mnc004
Match PLMN 'mcc310.mnc004'
Dest_PLMN_US_Verizon
Find Balance with DestinationIDs: Verizon


GEOGRAPHIC DESTINATIONS (Calling
Customer Makes Call
Dialed Number



□□□□

- **□□/SMS □□** → □□□□□□□□□□□□□□
- □□□□ → □□ PLMN □□□□□□□□□□□□

□□□□

```
import cgrateshttpapi
import time

OCS_Obj = cgrateshttpapi.CGRateS("ocs.example.com", "2080")
tenant = "your_tenant_name"
tpid = str(tenant) + "_" + str(int(time.time()))
```

[illegible] 1 [illegible]

[illegible] SMS [illegible]

□□□□□

```
#
===================================================================
# DOMESTIC DESTINATIONS (US/Canada - NANP)
#
===================================================================

# US/Canada Mobile & Fixed (share area codes)
OCS_Obj.SendData({
    'method': 'ApierV2.SetTPDestination',
    'params': [{
        "TPid": tpid,
        "ID": "Dest_Domestic_All",
        "Prefixes": ["1"]  # NANP (US/Canada)
    }]
})

# US Toll-Free
OCS_Obj.SendData({
    'method': 'ApierV2.SetTPDestination',
    'params': [{
        "TPid": tpid,
        "ID": "Dest_Domestic_TollFree",
        "Prefixes": ["1800", "1888", "1877", "1866", "1855",
"1844", "1833"]
    }]
})

# US Premium Rate
OCS_Obj.SendData({
    'method': 'ApierV2.SetTPDestination',
    'params': [{
        "TPid": tpid,
        "ID": "Dest_Domestic_Premium",
        "Prefixes": ["1900"]
    }]
})
```

□□□□□

```
#
===================================================================
# INTERNATIONAL DESTINATIONS (By Country)
#
===================================================================

# United Kingdom
OCS_Obj.SendData({
    'method': 'ApierV2.SetTPDestination',
    'params': [{
        "TPid": tpid,
        "ID": "Dest_International_UK",
        "Prefixes": ["44"]
    }]
})

# China
OCS_Obj.SendData({
    'method': 'ApierV2.SetTPDestination',
    'params': [{
        "TPid": tpid,
        "ID": "Dest_International_China",
        "Prefixes": ["86"]
    }]
})

# Australia - Mobile
OCS_Obj.SendData({
    'method': 'ApierV2.SetTPDestination',
    'params': [{
        "TPid": tpid,
        "ID": "Dest_AU_Mobile",
        "Prefixes": ["614"]  # Australian mobiles (04xx dialed as
614xx)
    }]
})

# Australia - Fixed Line
OCS_Obj.SendData({
    'method': 'ApierV2.SetTPDestination',
    'params': [{
        "TPid": tpid,
        "ID": "Dest_AU_Fixed",
        "Prefixes": [
            "612",  # NSW (Sydney)
            "613",  # VIC (Melbourne)
            "617",  # TAS (Hobart)
            "618"   # SA, WA, NT (Adelaide, Perth, Darwin)
        ]
    }]
})

# Australia - Toll-Free
OCS_Obj.SendData({
    'method': 'ApierV2.SetTPDestination',
    'params': [{
        "TPid": tpid,
        "ID": "Dest_AU_TollFree",
        "Prefixes": [
            "611800",  # Toll-free
            "611300"   # Local rate
        ]
    }]
})

# Australia - Premium Rate
OCS_Obj.SendData({
    'method': 'ApierV2.SetTPDestination',
    'params': [{
        "TPid": tpid,
        "ID": "Dest_AU_Premium",
        "Prefixes": ["6119"]  # Premium rate services
    }]
})

# Europe (grouped)
OCS_Obj.SendData({
    'method': 'ApierV2.SetTPDestination',
    'params': [{
        "TPid": tpid,
        "ID": "Dest_International_Europe",
        "Prefixes": [
            "33",  # France
            "49",  # Germany
            "39",  # Italy
```

```
                "34",  # Spain
                "31",  # Netherlands
                "32",  # Belgium
                "41"   # Switzerland
            ]
        }]
    })

    # International - All (catch-all, excludes domestic)
    OCS_Obj.SendData({
        'method': 'ApierV2.SetTPDestination',
        'params': [{
            "TPid": tpid,
            "ID": "Dest_International_All",
            "Prefixes": ["2", "3", "4", "5", "6", "7", "8", "9"]  # All except "1" (NANP)
        }]
    })
```

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- □□□□□“□□□□□□/□□□□□” → `Dest_Domestic_All`
- □□□□□□□□“100□□□□□□” → `Dest_International_UK`
- □□□□□□□“3000□□□□□□□□□□□□□□□” → `Dest_AU_Mobile`, `Dest_AU_Fixed`, `Dest_AU_TollFree`
- □□□□□“50□□□□□□□□□□” → `Dest_International_All`

□ 2 □□□PLMN □□□□□□□□□□□ - □□/□□□□□

PLMN □□□□□□□□□□□□□□□□□□□□□□□□ `mccXXX.mncYYY`□□□□

- **MCC** = □□□□□□□3 □□□□
- **MNC** = □□□□□□□2-3 □□□□

PLMN □□□□

- □□□□□`"mcc310.mnc004"` → □ Verizon □□ 004
- □□□□□□□□`"mcc310"` → □□□□□□

- □□□`mcc310.mnc004`□`mcc234.mnc015`□`mcc505.mnc057`

□□□□□□□□□□

□□□□□□□□□□□□□□ SIM □□□□□□□□□□

```
# On-Net (Your Home Network)
# This is YOUR operator's PLMN - the network where YOUR customers' SIMs are active
# All domestic on-net data balances should use this destination

OCS_Obj.SendData({
    'method': 'ApierV2.SetTPDestination',
    'params': [{
        "TPid": tpid,
        "ID": "Dest_PLMN_OnNet",
        "Prefixes": ["mcc505.mnc057"]  # Example: MCC 505, MNC 57 if this is your home network
    }]
})
# Replace mcc505.mnc057 with YOUR actual operator's PLMN code
# All domestic on-net data balances should use the prefixes set out here
# Otherwise they're considered roaming
```

□□□□ PLMN □□□

```
#
===================================================================
# US ROAMING PLMN DESTINATIONS
#
===================================================================

# Verizon Wireless
OCS_Obj.SendData({
    'method': 'ApierV2.SetTPDestination',
    'params': [{
        "TPid": tpid,
        "ID": "Dest_PLMN_US_Verizon",
        "Prefixes": [
            "mcc310.mnc004", "mcc310.mnc010", "mcc310.mnc012",
"mcc310.mnc013",
            "mcc311.mnc480", "mcc311.mnc481", "mcc311.mnc482",
"mcc311.mnc483"
        ]
    }]
})

# All US PLMNs (catch-all)
OCS_Obj.SendData({
    'method': 'ApierV2.SetTPDestination',
    'params': [{
        "TPid": tpid,
        "ID": "Dest_PLMN_US_All",
        "Prefixes": ["mcc310", "mcc311", "mcc312", "mcc313",
"mcc316"]
    }]
})
# Note: This matches ANY network with these MCCs (310, 311, etc.)
# Customer on mcc310.mnc004 (Verizon), mcc310.mnc410 (AT&T),
mcc311.mnc580 (US Cellular)
# would ALL match this destination
```

□□□□ PLMN □□□

```
#
=============================================================================
# UK ROAMING PLMN DESTINATIONS
#
=============================================================================

# Vodafone UK
OCS_Obj.SendData({
    'method': 'ApierV2.SetTPDestination',
    'params': [{
        "TPid": tpid,
        "ID": "Dest_PLMN_UK_Vodafone",
        "Prefixes": ["mcc234.mnc015"]
    }]
})

# EE (Everything Everywhere)
OCS_Obj.SendData({
    'method': 'ApierV2.SetTPDestination',
    'params': [{
        "TPid": tpid,
        "ID": "Dest_PLMN_UK_EE",
        "Prefixes": ["mcc234.mnc030", "mcc234.mnc033"]
    }]
})

# All UK PLMNs
OCS_Obj.SendData({
    'method': 'ApierV2.SetTPDestination',
    'params': [{
        "TPid": tpid,
        "ID": "Dest_PLMN_UK_All",
        "Prefixes": ["mcc234"]
    }]
})
```

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```
#
===================================================================
# ROAMING ZONES (Multi-Country Groups)
#
===================================================================

# Zone 1: North America
OCS_Obj.SendData({
    'method': 'ApierV2.SetTPDestination',
    'params': [{
        "TPid": tpid,
        "ID": "Dest_PLMN_Zone_NorthAmerica",
        "Prefixes": [
            "mcc310", "mcc311", "mcc312", "mcc313", "mcc316",  #
USA
            "mcc302", "mcc334"  # Canada
        ]
    }]
})
# Using MCC-only prefixes provides coverage on ANY network in these
countries
# Great for "North America roaming" packages that work on all
carriers

# Zone 2: Europe
OCS_Obj.SendData({
    'method': 'ApierV2.SetTPDestination',
    'params': [{
        "TPid": tpid,
        "ID": "Dest_PLMN_Zone_Europe",
        "Prefixes": [
            "mcc234",  # United Kingdom
            "mcc208",  # France
            "mcc262",  # Germany
            "mcc222",  # Italy
            "mcc214",  # Spain
            "mcc228"   # Switzerland
        ]
    }]
})

# Zone 3: Asia Pacific
OCS_Obj.SendData({
    'method': 'ApierV2.SetTPDestination',
    'params': [{
        "TPid": tpid,
        "ID": "Dest_PLMN_Zone_AsiaPacific",
        "Prefixes": [
            "mcc505",  # Australia
            "mcc460",  # China
            "mcc454",  # Hong Kong
            "mcc440",  # Japan
            "mcc520",  # Thailand
            "mcc525",  # Singapore
            "mcc530"   # New Zealand
        ]
    }]
})

# Catch-all for any roaming (use with caution)
OCS_Obj.SendData({
    'method': 'ApierV2.SetTPDestination',
    'params': [{
        "TPid": tpid,
        "ID": "Dest_Roaming_All",
        "Prefixes": ["mcc"]  # Matches ANY PLMN (very broad)
    }]
})
```

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- □□□□□□□“□□ Verizon □□□ 5GB” → `Dest_PLMN_US_Verizon`
- □□□□□“□□□□□□□□□□□ 10GB” → `Dest_PLMN_US_All`
- □□□□□“□□□□ 15GB” → `Dest_PLMN_Zone_Europe`
- □□□□□“□□□□□□□ 1GB” → `Dest_Roaming_All`

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□□	□□/□□□□□□□	“100□□□□□□□□”	□□□SMS
□□ **PLMN**	□□□□□□□□□□□□	“100GB □□□□”	□□
□□ **PLMN**	□□□□□□□□□□□□	“□□ Verizon □□□ 5GB”	□□□□□□□□/SMS□
□□ **PLMN**	□□□□□□□□□□	“□□□□□□□□□□□□ 5GB”	□□□□□□□□/SMS□
□□ **PLMN**	□□□□□□	“10GB □□□□”	□□□□□□□□/SMS□

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□□□□□ CGRateS □□□□□□ □□ **ID** □□□□□□□□□□□□□□□□□□□□ PLMN □□□ □ **TarifPlan** □□ □□□□ □□□□□□□□□□□□□□□□□□□□□□□

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```
# Initial configuration - Only 3 countries
OCS_Obj.SendData({
    'method': 'ApierV2.SetTPDestination',
    'params': [{
        "TPid": tpid,
        "ID": "Dest_PLMN_Zone_Europe",
        "Prefixes": [
            "mcc262",  # Germany
            "mcc208",  # France
            "mcc222"   # Italy
        ]
    }]
})
```

□□□□□□□ □□ `Dest_PLMN_Zone_Europe` □□□□□□□□□□□□□□□

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```
# Updated configuration - Now 5 countries
OCS_Obj.SendData({
    'method': 'ApierV2.SetTPDestination',
    'params': [{
        "TPid": tpid,
        "ID": "Dest_PLMN_Zone_Europe",
        "Prefixes": [
            "mcc262",  # Germany
            "mcc208",  # France
            "mcc222",  # Italy
            "mcc214",  # Spain (NEW)
            "mcc234"   # UK (NEW)
        ]
    }]
})

# Load the tariff plan to make changes active
OCS_Obj.SendData({
    'method': 'ApierV1.LoadTariffPlanFromStorDb',
    'params': [{
        "TPid": tpid,
        "DryRun": False,
        "Validate": True
    }]
})

# Reload the destination cache
OCS_Obj.SendData({
    'method': 'CacheSv1.ReloadCache',
    'params': [{
        "DestinationIDs": ["Dest_PLMN_Zone_Europe"]
    }]
})
```

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```
# Remove Germany from Europe zone
OCS_Obj.SendData({
    'method': 'ApierV2.SetTPDestination',
    'params': [{
        "TPid": tpid,
        "ID": "Dest_PLMN_Zone_Europe",
        "Prefixes": [
            "mcc208",  # France
            "mcc222",  # Italy
            "mcc214",  # Spain
            "mcc234"   # UK
            # Germany (mcc262) REMOVED
        ]
    }]
})

# Load the tariff plan to make changes active
OCS_Obj.SendData({
    'method': 'ApierV1.LoadTariffPlanFromStorDb',
    'params': [{
        "TPid": tpid,
        "DryRun": False,
        "Validate": True
    }]
})

# Reload cache
OCS_Obj.SendData({
    'method': 'CacheSv1.ReloadCache',
    'params': [{
        "DestinationIDs": ["Dest_PLMN_Zone_Europe"]
    }]
})
```

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```
# Add Canada to "Domestic" calling
OCS_Obj.SendData({
    'method': 'ApierV2.SetTPDestination',
    'params': [{
        "TPid": tpid,
        "ID": "Dest_Domestic_All",
        "Prefixes": [
            "1",  # Already includes USA (and previously Canada)
            # No change needed - "1" prefix already covers both
        ]
    }]
})

# Or create separate North America destination
OCS_Obj.SendData({
    'method': 'ApierV2.SetTPDestination',
    'params': [{
        "TPid": tpid,
        "ID": "Dest_North_America",
        "Prefixes": [
            "1"  # USA + Canada
        ]
    }]
})
```

□□□ □□□□ `DestinationIDs: "Dest_Domestic_All"` □□□□□□□□□□□□□□□□□□□□□□□□□□□□□“1”□□

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```
# Customer has balance:
{
    "BalanceId": "Europe_Data_5GB",
    "BalanceType": "*data",
    "DestinationIDs": "Dest_PLMN_Zone_Europe",  # Only France, Germany, Italy
    "Units": 5 * 1024 * 1024 * 1024
}

# Customer roams on network in Spain (mcc214.mnc001)
# Spain is NOT in Dest_PLMN_Zone_Europe
```

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□□□ □□□□���□□ `Dest_PLMN_Zone_Europe` □□□□□□□□ `DestinationIDs: "*any"` □□□□□□□□□□

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```
# Customer has two balances:
{
    "BalanceId": "UK_Voice_100min",
    "BalanceType": "*voice",
    "DestinationIDs": "Dest_International_UK",  # Only prefix "44"
    "Units": 100 * 60 * 1000000000
}
# NO monetary balance with "*any" destination

# Customer calls Australia (+61)
```

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□□□ □□□□ `DestinationIDs: "*any"` □□□□□□□□□□□□□□□□□□□□□□□□□□

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```
# Customer has:
# Balance 1: UK minutes
{
    "BalanceId": "UK_Voice_100min",
    "BalanceType": "*voice",
    "DestinationIDs": "Dest_International_UK",
    "Units": 100 * 60 * 1000000000,
    "BalanceWeight": 1200
}

# Balance 2: Monetary with wildcard
{
    "BalanceId": "PAYG_Credit",
    "BalanceType": "*monetary",
    "DestinationIDs": "*any",  # Matches ANYTHING
    "Units": 5000,  # $50
    "BalanceWeight": 1000  # Lower priority
}

# Customer calls Australia (+61)
```

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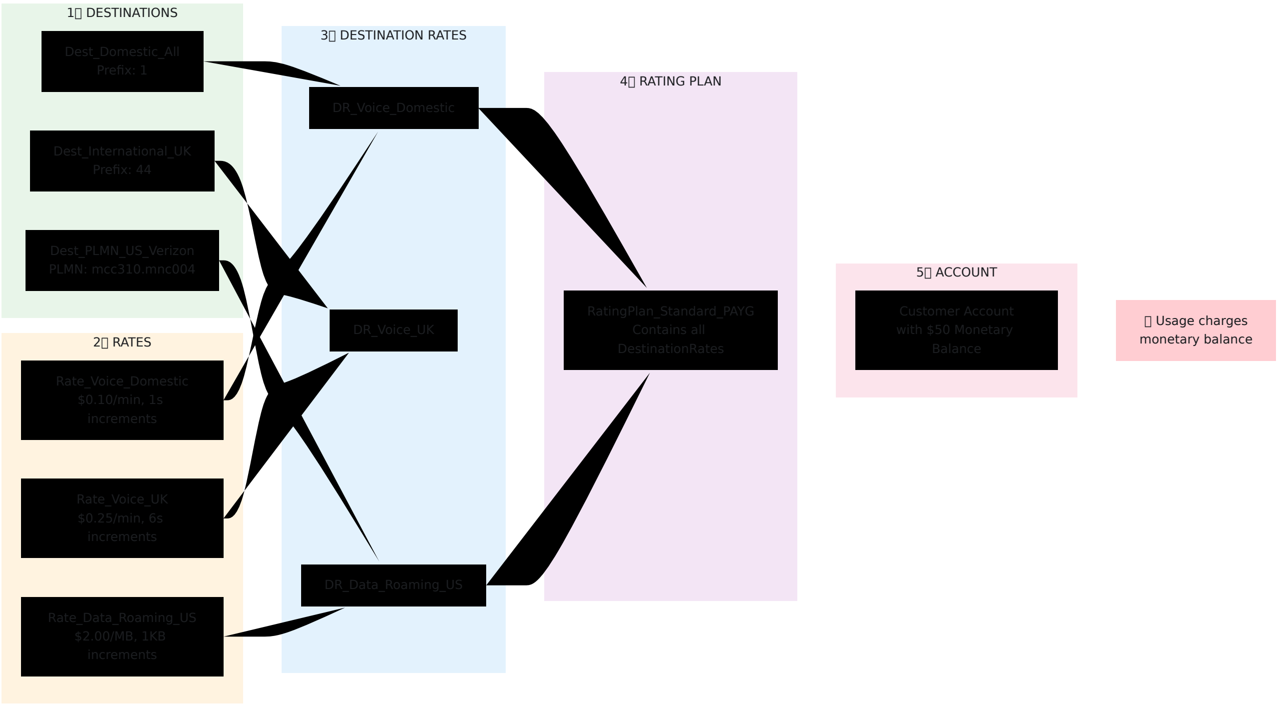
□□□□□□□□ PLMN □□□□□□□□□□□□□□□ **CRM** □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□ □□□□□ CGRateS □□□□□□□□□□□ CRM □□□□□□□□

[illegible]


1□ DESTINATIONS
Dest_Domestic_All
Prefix: 1
Dest_International_UK
Prefix: 44
Dest_PLMN_US_Verizon
PLMN: mcc310.mnc004
2□ RATES
Rate_Voice_Domestic
$0.10/min, 1s
increments
Rate_Voice_UK
$0.25/min, 6s
increments
Rate_Data_Roaming_US
$2.00/MB, 1KB
increments
3□ DESTINATION RATES
DR_Voice_Domestic
DR_Voice_UK
DR_Data_Roaming_US
4□ RATING PLAN
RatingPlan_Standard_PAYG
Contains all
DestinationRates
5□ ACCOUNT
Customer Account
with $50 Monetary
Balance
□ Usage charges
monetary balance

[illegible]

[illegible]SMS [illegible]

```
#
===================================================================
# VOICE RATES (Per Minute)
#
===================================================================

# Domestic voice: $0.10/minute
OCS_Obj.SendData({
    'method': 'ApierV2.SetTPRate',
    'params': [{
        "TPid": tpid,
        "ID": "Rate_Voice_Domestic",
        "RateSlots": [{
            "ConnectFee": 0,
            "Rate": 0.10,
            "RateUnit": "60s",        # 1 minute
            "RateIncrement": "1s",    # Per-second billing
            "GroupIntervalStart": "0s"
        }]
    }]
})

# UK voice: $0.25/minute
OCS_Obj.SendData({
    'method': 'ApierV2.SetTPRate',
    'params': [{
        "TPid": tpid,
        "ID": "Rate_Voice_UK",
        "RateSlots": [{
            "ConnectFee": 0.05,       # $0.05 connection fee
            "Rate": 0.25,
            "RateUnit": "60s",
            "RateIncrement": "6s",    # 6-second blocks
            "GroupIntervalStart": "0s"
        }]
    }]
})

#
===================================================================
# SMS RATES (Per Message)
#
===================================================================
# Domestic SMS: $0.05/message
OCS_Obj.SendData({
    'method': 'ApierV2.SetTPRate',
    'params': [{
        "TPid": tpid,
        "ID": "Rate_SMS_Domestic",
        "RateSlots": [{
            "ConnectFee": 0,
            "Rate": 0.05,
            "RateUnit": "1",          # 1 SMS
            "RateIncrement": "1",     # Per message
            "GroupIntervalStart": "0s"
        }]
    }]
})

#
===================================================================
# DATA RATES (Per MB) - For Roaming
#
===================================================================

# Roaming on US Premium Networks (Verizon, AT&T): $2.00/MB
OCS_Obj.SendData({
    'method': 'ApierV2.SetTPRate',
    'params': [{
        "TPid": tpid,
        "ID": "Rate_Data_Roaming_US_Premium",
        "RateSlots": [{
            "ConnectFee": 0,
            "Rate": 2.00,
            "RateUnit": "1048576",    # 1 MB in bytes
            "RateIncrement": "1024",  # Per KB
            "GroupIntervalStart": "0s"
        }]
    }]
})
```

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- **ConnectFee** - □□□□□□□□□□
- **Rate** - □□ RateUnit □□□

- **RateUnit** - □□□□□□□□□60s□1MB□1 □□□
- **RateIncrement** - □□□□□□□□□
- **GroupIntervalStart** - □□□□□□□□□□□□□

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□□□□□□□□□□□□□□□□□□□□□□□ DestinationRates□

```
# Link Domestic destination to Domestic voice rate
OCS_Obj.SendData({
    'method': 'ApierV2.SetTPDestinationRate',
    'params': [{
        "TPid": tpid,
        "ID": "DR_Voice_Domestic",
        "DestinationRates": [{
            "DestinationId": "Dest_Domestic_All",
            "RateId": "Rate_Voice_Domestic",
            "RoundingMethod": "*up",
            "RoundingDecimals": 4
        }]
    }]
})

# Link UK destination to UK voice rate
OCS_Obj.SendData({
    'method': 'ApierV2.SetTPDestinationRate',
    'params': [{
        "TPid": tpid,
        "ID": "DR_Voice_UK",
        "DestinationRates": [{
            "DestinationId": "Dest_International_UK",
            "RateId": "Rate_Voice_UK",
            "RoundingMethod": "*up",
            "RoundingDecimals": 4
        }]
    }]
})

# Link Verizon PLMN to roaming data rate
OCS_Obj.SendData({
    'method': 'ApierV2.SetTPDestinationRate',
    'params': [{
        "TPid": tpid,
        "ID": "DR_Data_Roaming_US_Premium",
        "DestinationRates": [{
            "DestinationId": "Dest_PLMN_US_Verizon",
            "RateId": "Rate_Data_Roaming_US_Premium",
            "RoundingMethod": "*up",
            "RoundingDecimals": 4
        }]
    }]
})
```

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□□□ DestinationRates □□□□□□□□□□□

```
OCS_Obj.SendData({
    'method': 'ApierV2.SetTPRatingPlan',
    'params': [{
        "TPid": tpid,
        "ID": "RatingPlan_Standard_PAYG",
        "RatingPlanBindings": [
            # Voice rates (higher weight = more specific)
            {"DestinationRatesId": "DR_Voice_UK", "TimingId":
"*any", "Weight": 40},
            {"DestinationRatesId": "DR_Voice_Domestic",
"TimingId": "*any", "Weight": 20},

            # SMS rates
            {"DestinationRatesId": "DR_SMS_Domestic", "TimingId":
"*any", "Weight": 20},

            # Data roaming rates
            {"DestinationRatesId": "DR_Data_Roaming_US_Premium",
"TimingId": "*any", "Weight": 50}
        ]
    }]
})
```

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□□□□□□□□□□□ CGRateS □□

```python
# Load tariff plan
OCS_Obj.SendData({
    'method': 'ApierV1.LoadTariffPlanFromStorDb',
    'params': [{
        "TPid": tpid,
        "DryRun": False,
        "Validate": True
    }]
})

# Reload cache
OCS_Obj.SendData({
    'method': 'CacheSv1.ReloadCache',
    'params': [{
        "Tenant": tenant,
        "DestinationIDs": ["*all"]
    }]
})
```

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- CGRateS □□□□□□□ - □□□□□□□□□□□□□

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1. □□□□□□□□□

```python
# Good - specific home network
"DestinationIDs": "Dest_PLMN_OnNet",  # mcc505.mnc057

# Bad - too broad, matches competitors
"DestinationIDs": "Dest_PLMN_AU_All",  # mcc505 (all AU operators)
```

2. □□□□□□□□□□□

```
# Good - self-documenting
Dest_PLMN_US_Verizon
Dest_International_UK
Dest_PLMN_Zone_Europe

# Bad - unclear
Dest_Data_1
Dest_Voice_Package
```

3. □□□□□□□□□□

```
# Good - logical grouping
Dest_Domestic_All
Dest_Domestic_TollFree
Dest_Domestic_Premium

# Bad - too granular
Dest_Area_Code_212
Dest_Area_Code_213
Dest_Area_Code_214
```

4. □□ PLMN □□

□□ PLMN □□□□□□□□□□□□ MCC/MNC □□□□□□

```
# Verizon Wireless
# Source: https://www.mcc-mnc.com/ (verified 2024-12)
OCS_Obj.SendData({
    'method': 'ApierV2.SetTPDestination',
    'params': [{
        "TPid": tpid,
        "ID": "Dest_PLMN_US_Verizon",
        "Prefixes": [
            "mcc310.mnc004",  # Verizon - Nationwide
            "mcc310.mnc010",  # Verizon - East
            ...
        ]
    }]
})
```

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```
# 1. □□□□□□□□□□
OCS_Obj.SendData({
    'method': 'ApierV2.GetTPDestination',
    'params': [{
        "TPid": tpid,
        "ID": "Dest_PLMN_US_Verizon"
    }]
})

# 2. □□□□ DestinationIDs □□
# □□□□□□□□□ "*any"

# 3. □□ PLMN□□□□□□□□□□□□��□
# □□ Diameter CCR □□□□ Visited-PLMN-Id AVP
```

[illegible]

[illegible] [illegible]

[illegible] [illegible] PLMN [illegible] `Dest_PLMN_OnNet` [illegible]

[illegible]

```
# [illegible] PLMN[illegible] Diameter CCR[illegible]
# [illegible] PLMN[illegible]

OCS_Obj.SendData({
    'method': 'ApierV2.GetTPDestination',
    'params': [{
        "TPid": tpid,
        "ID": "Dest_PLMN_OnNet"
    }]
})
# [illegible] PLMN
# [illegible]["mcc505.mnc057"] [illegible] SIM [illegible]
```

[illegible]

[illegible] [illegible]“[illegible]”[illegible]

[illegible]

1. [illegible]
   - [illegible] +44-20-xxxx → [illegible]“44”
2. [illegible] **DestinationIDs**[illegible]
   - [illegible] `"DestinationIDs": "Dest_International_UK"` [illegible] `"Dest_International_All"`
3. [illegible] `ExpiryTime`
4. [illegible] `Units > 0`

[illegible]

- CGRateS [illegible] - [illegible]

- [illegible] - [illegible]

Ansible Playbooks: □□□□

OmniCRM □□□□□ **Ansible** □□□

□□□□□□`SIM Card Provisioning <concepts_sim_provisioning>` □□□□□□ Ansible □□□□□□□□□□□□□□□□□□□□ SIM □□ eSIM□

Playbooks □□□□□□□□□

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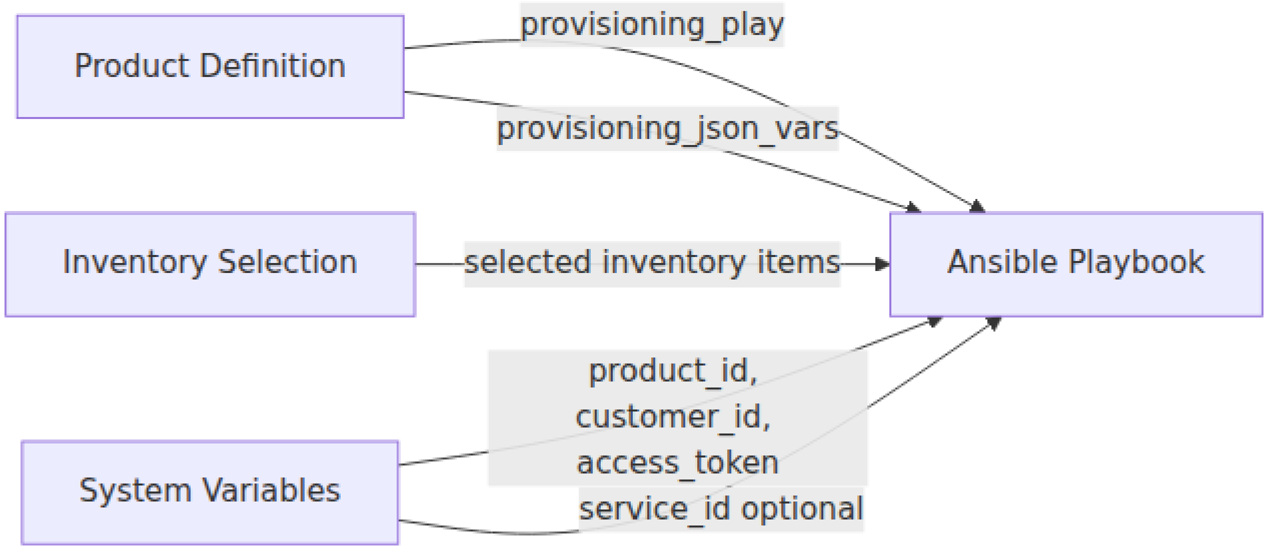
□□□□ Playbooks

□□□□□ OmniCRM □□□□□□□

1. □□□□□□□□□□□□ playbook□□□□ `provisioning_play` □□□
2. □□□□□□□□□□ playbook□□□□ `provisioning_json_vars` □□□□□□□
3. playbook □□□□□□□□□□□□□
4. playbook □□□□□□□□□□□□□□□□



Playbooks □□□□□

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□□□□□□ Playbook □□

```
# □□ 1□□□ SIM □□□□□ 1 □□□□
# provisioning_play: play_simple_service
- □ CRM □□□□□□□
- □ OCS □□□□□□□
- □□ SIM □□□□□□□□
- □□□□□□□□

# □□ 2□□□□□□□□□□ 3 □□□□
# provisioning_play: play_bundle_internet_tv_voice
- □□□□□□□□□
- □□ IPTV □□□□
- □□ VoIP □□□□
- □□□□□□□□□□□□
- □□□□□□□□□□□□

# □□ 3□□□□□□□□□ 0 □□□□
# provisioning_play: play_topup_no_charge
- □□ service_id □□□□□□
- □□□ OCS □□□□□□□□
- □□□□□□□□
- □□□□□□

# □□ 4□CPE □□□□□ 0 □□□□
# provisioning_play: play_prov_cpe_mikrotik
- □□□□□□□
- □□□□□□□□□
- □□□□□□□□□□□□□□□□
- □□□□□□□□□□□□
```

□□□□playbook □□□□□□□□□□□□□

Plays □ Tasks

□□ Plays □ Tasks □□□□□□□□□ OmniCRM playbooks □□□□□

Play□Playbook□

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- `play_simple_service.yaml` - □□□□□□
- `play_topup_no_charge.yaml` - □□□□□□□□□
- `play_prov_cpe_mikrotik.yaml` - □□□□□□□□

Task□□□□□□□

□□□□□□□□□□□□□□□□□□□ plays □□□ Tasks □ `task_` □□□□□□□□□□□□□

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- `task_welcome_email.yaml` - □□□□□□□□□□□
- `task_activate_olt.yaml` - □□ OLT □□
- `task_notify_ocs.yaml` - □□□□□□□□□

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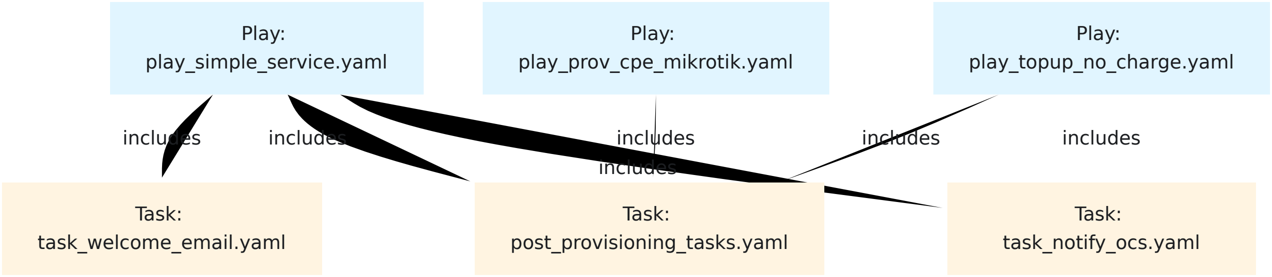

```yaml
# play_simple_service.yaml (A Play)
- name: Simple Provisioning Play
  hosts: localhost
  tasks:
    - name: Main provisioning block
      block:
        - name: Create service
          uri: ...

        - name: Configure billing
          uri: ...

        # Include reusable task
        - include_tasks: task_welcome_email.yaml

        # Include post-provisioning tasks
        - include_tasks: post_provisioning_tasks.yaml
```

Playbook □□□□□

□□ OmniCRM playbooks □□□□□□□□□□□□□□□□□□□□□ playbooks □□□□□

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□□ playbook □□□□□□□□□□

```yaml
- name: Descriptive Name of the Playbook
  hosts: localhost           # □□□ localhost
  gather_facts: no           # □□□□□□
  become: False              # □□□□□

  tasks:
    - name: Main block
      block:
        # □□□□□□□

      rescue:
        # □□/□□□□□□□
```

□□□□

name
□□□□□□ UI □□□□□□□□□□□□□□□□□□□□ `playbook_description`□

hosts: localhost
□□ OmniCRM playbooks □□ localhost □□□□□□□□□□ API □□□□□□□□□□□□□ SSH□

gather_facts: no
Ansible □□□□□□□□□□□□

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- □□□□□□□□□□
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become: False
□□□□□□□□ API □□□□□□□□□□□□□□□□□□□□□□□

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□□ playbook □□□□□□□□□□□

```yaml
tasks:
  - name: Include vars of crm_config
    ansible.builtin.include_vars:
      file: "../../crm_config.yaml"
      name: crm_config
```

□□□□□□□□□ `crm_config.ocs.cgrates`□`crm_config.crm.base_url` □□

`crm_config.yaml` □□□□□

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

□□□□□□

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```yaml
- name: Access product_id passed by OmniCRM
  debug:
    msg: "Provisioning product {{ product_id }}"
```

□□□□□□□

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

□□ API □□□

```yaml
- name: Get Product information from 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: Use the product name
  debug:
    msg: "Product name is {{
api_response_product.json.product_name }}"
```

□□ Playbook □□

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

  tasks:
    - name: Main block
      block:

      # 1. □□□□
      - name: Include vars of crm_config
        ansible.builtin.include_vars:
          file: "../../crm_config.yaml"
          name: crm_config

      # 2. □□□□□□
      - name: Get Product information from 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: Get Customer information from 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 package facts
        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. □□□□□□□
      - name: Generate UUID
        set_fact:
          uuid: "{{ 99999999 | random | to_uuid }}"

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

      # 6. □□□□□□□□□□
      - name: Create account in OCS/CGRateS
        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: Verify OCS account creation
        assert:
```

```
        that:
          - ocs_response.status == 200
          - ocs_response.json.result == "OK"

    # 7. □□□□□□
    - name: Add 0 Monetary Balance
      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": "Initial Balance",
                    "Value": 0,
                    "ExpiryTime": "+4320h",
                    "Weight": 1,
                    "Blocker": true
                }
            }]
          }
        status_code: 200
      register: balance_response

    # 8. □ CRM □□□□□□□
    - name: Get current date and time in ISO 8601 format
      command: date --utc +%Y-%m-%dT%H:%M:%S%z
      register: current_date_time

    - name: Add Service via 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. □□□□□□□□
      - name: Add Setup Cost Transaction via API
        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 }} - Setup Costs",
              "description": "Setup costs for {{ package_comment
}}",
              "invoice_id": null,
              "retail_cost": "{{ setup_cost | float }}"
            }
          return_content: yes
        register: transaction_response

      # 10. □□□□□□□
      - include_tasks: post_provisioning_tasks.yaml
      rescue:

      # □□/□□□□
      - name: Print all vars for debugging
        debug:
          var: hostvars[inventory_hostname]

      - name: Remove account in OCS
        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: Delete Service from CRM if it was created
        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: Fail if not intentional deprovision
        assert:
          that:
            - action == "deprovision"
```

Topup/Recharge [illegible]

[illegible]

```
- name: Service Topup Playbook
  hosts: localhost
  gather_facts: no
  become: False

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

    # 1. □□□□□□
    - name: Get Service information from CRM API
      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. □□□□□□□□□□□□□□
    - name: Get Product information from 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

    # 3. □□□□□□□□
    - name: Set service facts
      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. □□□□□□□□□□□□□□□□
- name: Execute Action to add credits
  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: Verify action executed successfully
  assert:
    that:
      - action_response.status == 200
      - action_response.json.result == "OK"

# 5. □□□□□□□□□
- name: Reset 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. □□□□□□
- name: Calculate new expiry date
  command: "date --utc +%Y-%m-%dT%H:%M:%S%z -d '+30 days'"
```

```
      register: new_expiry_date

    - name: Update Service with new expiry
      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. □□□□□□□
    - name: Send Notification SMS
      uri:
        url: "http://sms-gateway/api/send"
        method: POST
        body_format: json
        body:
          {
            "source": "CompanyName",
            "destination": "{{ customer_phone }}",
            "message": "Your service has been topped up. New expiry: {{ new_expiry_date.stdout }}"
          }
        status_code: 201
      ignore_errors: True
```

CPE □□□□

□□□□□□□□□□□□□□□□□□□□□ONT□□

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

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

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

    # 2. □□□□□□ CPE □□□□
    - name: Get Inventory data for 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. □□□□□□□□
    - name: Get Site info from 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: Patch CPE inventory item with location
      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. □□□□
    - name: Set CPE hostname
      set_fact:
        cpe_hostname: "CPE_{{ cpe_inventory_id }}"
        cpe_username: "admin_{{ cpe_inventory_id }}"

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

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

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

    - name: Create WiFi PSK
```

```
      set_fact:
        random_word: "{{ word_list | random }}"
        random_number: "{{ 99999 | random(start=10000) }}"

    - name: Combine WiFi PSK
      set_fact:
        wifi_psk: "{{ random_word }}{{ random_number }}"

    # 7. □□□□□□
    - name: Set config filename
      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: Create config from template
      template:
        src: "templates/cpe_router_config.j2"
        dest: "{{ config_dest }}"

    # 8. □□□□□□□
    - name: Read config file
      ansible.builtin.slurp:
        src: "{{ config_dest }}"
      register: config_content

    # 9. □□□□□□□
    - name: Patch CPE inventory with config
      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": "Provisioned: {{ lookup('pipe',
'date +%Y-%m-%d') }}"
          }
        status_code: 200

    # 10. □□□□□□□□□□
    - name: Email configuration to support
      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": "Provisioning System"
              },
              "To": [{
                "Email": "support@example.com",
                "Name": "Support Team"
              }],
              "Subject": "CPE Config - {{ 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: Normalize auto_renew to boolean
  set_fact:
    auto_renew_bool: "{{ (auto_renew | string | lower) in ['true',
'1', 'yes'] }}"

# 2. □□□□□□□□□
- name: Create Action for AutoRenew
  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\":\"Auto Renewal\"}"
            }
          ]
        }]
      }
    status_code: 200
  register: action_response
  when: auto_renew_bool

# 3. □□□□ ActionPlan
- name: Create ActionPlan for Monthly Renewal
```

```
  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: Assign ActionPlan to account
  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: Remove ActionPlan from account
  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
```

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□□□□□□□□

`task_welcome_email.yaml` - □□□□□□□□□□□□□□□□□

```
# □□□□□□□□□□□ play □□□
# - api_response_customer (□□□□□□)
# - package_name (□□□□)
# - monthly_cost (□□□□)
# - setup_cost (□□□□□)

- name: Set email configuration
  set_fact:
    mailjet_api_key: "{{ lookup('env', 'MAILJET_API_KEY') }}"
    mailjet_api_secret: "{{ lookup('env', 'MAILJET_SECRET') }}"
    email_from: "noreply@example.com"
    recipients: []

- name: Set email subject and sender name
  set_fact:
    email_subject: "Welcome to our service!"
    email_from_name: "Customer Service Team"

- name: Prepare list of recipients from customer contacts
  loop: "{{ api_response_customer.json.contacts }}"
  set_fact:
    recipients: "{{ recipients + [{'Email': item.contact_email,
'Name': item.contact_firstname ~ ' ' ~ item.contact_lastname}] }}"

- name: Get first contact name
  set_fact:
    first_contact: "{{
api_response_customer.json.contacts[0].contact_firstname }}"

- name: Send welcome email
  uri:
    url: "https://api.mailjet.com/v3.1/send"
    method: POST
    body_format: json
    headers:
      Content-Type: "application/json"
    body:
      {
        "Messages": [{
          "From": {
            "Email": "{{ email_from }}",
            "Name": "{{ email_from_name }}"
          },
          "To": "{{ recipients }}",
          "Subject": "{{ email_subject }}",
          "TextPart": "Dear {{ first_contact }}, welcome! Your service is ready.",
          "HTMLPart": "Dear {{ first_contact }},<br/><h3>Welcome!</h3><br/>Your {{ package_name }} service is now active.<br/>Monthly cost: ${{ monthly_cost }}<br/>Setup fee: ${{ setup_cost }}<br/>If you have any questions, contact 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` □□□□□

```yaml
- name: Notify OCS of provisioning completion
  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
```

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

- name: Get SIM Card details
  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: Extract SIM details
  set_fact:
    iccid: "{{ sim_response.json.iccid }}"
    imsi: "{{ sim_response.json.imsi }}"
    ki: "{{ sim_response.json.ki }}"
```

□□□□□□□□□

```yaml
- name: Assign SIM to customer
  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": "Assigned"
      }
    status_code: 200
```

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```yaml
- name: Get current date and time in ISO 8601 format
  command: date --utc +%Y-%m-%dT%H:%M:%S%z
  register: current_date_time

- name: Get today's date only
  set_fact:
    today: "{{ lookup('pipe', 'date +%Y-%m-%d') }}"
```

□□□□□□□

```yaml
- name: Calculate expiry date 30 days from now
  command: "date --utc +%Y-%m-%dT%H:%M:%S%z -d '+30 days'"
  register: expiry_date

- name: Calculate date 90 days in future
  command: "date --utc +%Y-%m-%d -d '+{{ days }} days'"
  register: future_date
  vars:
    days: 90
```

□□□□□

UUID □□□□□

```yaml
- name: Generate UUID
  set_fact:
    uuid: "{{ 99999999 | random | to_uuid }}"

- name: Generate service identifier
  set_fact:
    service_uuid: "SVC_{{ uuid[0:8] }}"
```

□□□□□

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

□□□□□□□□□

```
- name: Set word list
  set_fact:
    words:
      - alpha
      - bravo
      - charlie
      - delta
      - echo

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

- name: Combine into passphrase
  set_fact:
    passphrase: "{{ word }}{{ number }}"
```

□ CGRateS/OCS □□

□□□□□

```
- name: Create billing account
  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
```

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```
- name: Add data balance
  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": "Data Package",
            "Value": 10737418240,
            "ExpiryTime": "+720h",
            "Weight": 10
          }
        }]
      }
    status_code: 200
```

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```
- name: Execute charging action
  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
```

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```
- name: Get account details
  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
```

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

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```yaml
- name: Use custom value or default
  set_fact:
    monthly_cost: "{{ custom_cost | default(50.00) }}"

- name: Only run if variable is defined
  debug:
    msg: "Service UUID is {{ service_uuid }}"
  when: service_uuid is defined
```

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

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

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

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```
- name: Create multiple balances
  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 }
```

□□ API □□□

```
- name: Get all customer sites
  uri:
    url: "{{ crm_config.crm.base_url }}/crm/site/customer_id/{{
customer_id }}"
    method: GET
    headers:
      Authorization: "Bearer {{ access_token }}"
  register: sites_response

- name: Configure equipment at each site
  debug:
    msg: "Configuring site at {{ item.address_line_1 }}"
  loop: "{{ sites_response.json }}"
```

□□□□

□□ ignore_errors□

```yaml
- name: Optional SMS notification
  uri:
    url: "http://sms-gateway/send"
    method: POST
    body: {...}
  ignore_errors: true
```

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```yaml
- name: Verify API response
  assert:
    that:
      - response.status == 200
      - response.json.result == "OK"
    fail_msg: "API call failed: {{ response.json }}"
```

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```yaml
- name: Try to get existing service
  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: Create service if it doesn't exist
  uri:
    url: "{{ crm_config.crm.base_url }}/crm/service/"
    method: PUT
    body: {...}
  when: service_lookup.status == 404
```

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```yaml
# □
service_uuid: "SVC_12345"
customer_name: "John Smith"
monthly_cost: 49.99

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

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

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```yaml
- name: Print all variables
  debug:
    var: hostvars[inventory_hostname]

- name: Print specific variable
  debug:
    msg: "Service UUID: {{ service_uuid }}"

- name: Print API response
  debug:
    var: api_response_product.json
```

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□□□□□□ API □□□

```yaml
- name: Create account
  uri:
    url: "{{ billing_endpoint }}"
    method: POST
    body: {...}
  register: response

- name: Verify account creation
  assert:
    that:
      - response.status == 200
      - response.json.result == "OK"
    fail_msg: "Failed to create account: {{ response.json }}"
```

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```yaml
# □□□□□□□□□□
- name: Check if account exists
  uri:
    url: "{{ ocs_endpoint }}/get_account"
    method: POST
    body: {"Account": "{{ service_uuid }}"}
  register: account_check
  failed_when: false

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

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```yaml
# □
mailjet_api_key: "abc123def456"

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

# □ - □□□□□□
mailjet_api_key: "{{ crm_config.email.api_key }}"
```

□□□□ HTTPS □□□□□□

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

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```
# □□□□□□□□□□□□
# □□□□□ 15 □□□□□□□□ 1 □□
# □□□□□□□□ 50% □□□
- name: Calculate days until end of month
  command: "date -d 'last day of this month' +%d"
  register: days_in_month

- name: Get current day
  command: "date +%d"
  register: current_day

- name: Calculate pro-rata amount
  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

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1. □□□□□□□□□□□□□□□□□
2. □□□□□□□□□□□□□□□□□□□□□□□
3. □□□□□□□□□□□□ API □□
4. □□□□□□□□□□□□□□□□□□□□
5. □□□□□□□□ `action: "deprovision"` □□□□□□□

□□□□ playbook□

```yaml
- name: Test Service Provisioning
  hosts: localhost
  gather_facts: no

  tasks:
    - name: Verify required variables
      assert:
        that:
          - product_id is defined
          - customer_id is defined
          - access_token is defined
        fail_msg: "Missing required variables"

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

    - name: Verify health check
      assert:
        that:
          - health_check.status == 200
```

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```yaml
# □□ - □□□□□□
customer_id: "{{ customer_id }}"

# □□ - □□□□□
customer_id: {{ customer_id | int }}
```

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```yaml
# □□ - □□□□□□□□
service_uuid: "{{ service_uuid }}"

# □□ - □□□□□
service_uuid: "{{ service_uuid | default('') }}"
```

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```yaml
# □□ - □□□□□
- name: Create account
  uri: ...
  register: response

# □□ - □□□□
- name: Create account
  uri: ...
  register: response

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

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□□□Omnitouch □□□□□□□□□

1. □□□□□□
2. □□□□□ Ansible playbooks □□□□□□□□
3. □□□□□□□□ playbooks
4. □□□□□

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Ansible □□

□□□ Ansible playbooks □□□□□□

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□□ OmniCRM □□□□□□□□□□□□□□□

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□ OmniCRM □□□□□

- `product_id` - □□□□□□□
- `customer_id` - □□□□□□□
- `service_id` - □□□□□□□□□□□□/□□□
- `access_token` - □□ API □□□□□ JWT

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□□□□□□□□□**Ansible Playbooks** □□□□□ `rescue` □□□□□□□□□□□

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1. □□□□□□□□□□
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2. □□□□□
□□□ playbook □□□ `action: "deprovision"`□□□□□□□□□□□□□□

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□□ OmniCRM playbooks □□□□□□□□□□□

```yaml
- name: Service Provisioning Playbook
  hosts: localhost
  gather_facts: no
  become: False

  tasks:
    - name: Main block
      block:
        # □□□□□□□□□
        - name: Create OCS account
          uri: ...

        - name: Create service record
          uri: ...
          register: service_creation_response

        - name: Add transaction
          uri: ...

      rescue:
        # □□□/□□□□□□□
        - name: Print all vars for debugging
          debug:
            var: hostvars[inventory_hostname]

        # □□□□□□□□□□□
        - name: Remove account in OCS
          uri: ...

        - name: Delete Service from CRM
          uri: ...

        - name: Fail if not intentional deprovision
          assert:
            that:
              - action == "deprovision"
```

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□□□ `play_simple_service.yaml` □□□□□□

```
rescue:
  # 1. □□□□
  - name: Print all vars for Deprovision/Rollback
    debug:
      var: hostvars[inventory_hostname]

  - name: Get today's date
    set_fact:
      today: "{{ lookup('pipe', 'date +%Y-%m-%d') }}"

  # 2. □□□□□□□□□□□
  - name: Try to get Service information from CRM API to
Deprovision
    uri:
      url: "http://localhost:5000/crm/service/service_id/{{
service_creation_response.json.service_id }}"
      method: GET
      headers:
        Authorization: "Bearer {{ access_token }}"
      return_content: yes
    register: api_response_service
    ignore_errors: True
    when: service_creation_response is defined and
service_creation_response.json is defined and
service_creation_response.json.service_id is defined

  - name: Print api_response_service
    debug:
      var: api_response_service
    when: api_response_service is defined

  # 3. □□□□□ service_uuid
  - name: Set service_uuid facts for Deprovision
    set_fact:
      service_uuid: "{{ api_response_service.json.service_uuid }}"
    when:
      - service_uuid is not defined
      - api_response_service is defined
      - api_response_service.json is defined

  # 4. □□ OCS □□
  - name: Remove account in OCS
    uri:
      url: "http://{{ crm_config.ocs.cgrates }}/jsonrpc"
      method: POST
      body_format: json
      headers:
        Content-Type: "application/json"
        Authorization: "Bearer {{ access_token }}"
      body:
        {
          "method": "ApierV2.RemoveAccount",
          "params": [{
            "Tenant": "{{ crm_config.ocs.ocsTenant }}",
            "Account": "{{ service_uuid }}",
            "ReloadScheduler": true
          }]
        }
      status_code: 200
    register: response
    ignore_errors: True
    when: service_uuid is defined

  - name: Print response from OCS account removal
    debug:
      var: response
    when: response is defined

  # 5. □ CRM □□□□□□
  - name: Delete Service from CRM if it was created
    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
    register: delete_service_response
    ignore_errors: True
    when: service_creation_response is defined and
service_creation_response.json is defined and
service_creation_response.json.service_id is defined

  - name: Print delete service response
    debug:
      var: delete_service_response
    when: delete_service_response is defined
```

```yaml
  # 6. □□□□□□□□□□□□
  - name: Set status to "Success" if Manual deprovision / Fail if
failed provision
    assert:
      that:
        - action == "deprovision"
      fail_msg: "Provisioning failed and was rolled back"
      success_msg: "Service deprovisioned successfully"
```

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ignore_errors: True

□□□□□□□□□□ `ignore_errors: True`□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□

□□□□
□□ `when` □□□□□□□□□□□□□

```yaml
when: service_creation_response is defined
```

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1. □□□□□□□□□□□□□□□□□□
2. □□□□□□
3. □□ OCS/□□□□
4. □□□□□□□□□□□

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- □□□□□ (`action == "deprovision"`) → □□
- □□□□□□□□□□□□ → □□

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OCS/CGRateS □□□

```
- name: Remove account in OCS
  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
```

CRM □□□□□

```
- name: Delete Service from CRM
  uri:
    url: "http://localhost:5000/crm/service/service_id/{{
service_id }}"
    method: DELETE
    headers:
      Authorization: "Bearer {{ access_token }}"
    status_code: 200
  ignore_errors: True
  when: service_id is defined
```

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```
- name: Release SIM card back to inventory pool
  uri:
    url: "http://localhost:5000/crm/inventory/inventory_id/{{
sim_inventory_id }}"
    method: PATCH
    headers:
      Authorization: "Bearer {{ access_token }}"
    body_format: json
    body:
      {
        "customer_id": null,
        "service_id": null,
        "item_state": "Available"
      }
    status_code: 200
  ignore_errors: True
  when: sim_inventory_id is defined
```

ActionPlans□□□□□□□

```
- name: Remove ActionPlan from account
  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
```

□□□□□

```
- name: Release payment authorization
  uri:
    url: "http://localhost:5000/crm/payments/release/{{
authorization_id }}"
    method: POST
    headers:
      Authorization: "Bearer {{ access_token }}"
    body_format: json
    body:
      {
        "metadata": {
          "release_reason": "provisioning_failed"
        }
      }
    return_content: yes
  ignore_errors: True
  when: authorization_id is defined
```

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1. □□□□□□□□
2. □□□□□ playbook□□□ `action: "deprovision"`
3. Playbook □□□□□□
4. □□□□□□□
5. □□□□□□□

□□ API □□□

```
POST /crm/provision/run_playbook
{
  "product_id": 123,
  "customer_id": 456,
  "service_id": 789,
  "action": "deprovision"
}
```

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□□ 1□OCS □□□□□□□□□□□□

- OCS □□□□
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- OCS □□□□
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- OCS □□□□
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1. □□□□ ignore_errors
□□□□□ - □□□□□□□□□□□□□

2. □□ when □□□□□□□□□□
□□□□□□□□□□□□□

```
when: service_creation_response is defined
```

3. □□□□□□

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```yaml
- name: Print all vars for debugging
  debug:
    var: hostvars[inventory_hostname]
```

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□□□ OCS □□□□□□ `ReloadScheduler: true` □□□ CGRateS □□□□□

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[illegible]

Ansible [illegible] **block/rescue** [illegible]

[illegible]

```
- name: Main block
  block:
    - name: Step 1: Create account
      uri: ...
      register: response

    - name: Verify step 1
      assert:
        that:
          - response.status == 200

    - name: Step 2: Create service
      uri: ...

  rescue:
    # [illegible]
    # 1. [illegible]
    # 2. [illegible]
    # 3. Playbook [illegible]
    - name: Cleanup partial changes
      uri: ...
```

[illegible] `concepts_provisioning`[illegible]

OmniCRM API

OmniCRM □□□□□□□□□□□ API □□ - □□□□ UI □□□□□□□

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API □□□ RESTful API□□□□□□□□□□□□□□□□□□□□□ JWT □□□API □□□ IP □□□□

API □□ Swagger □□□□□□□□□□□□□□□□□□□□□□□ API □□□□□□

API □□□□□□ URL □□□

> <https://yourcrm/crm/docs/>

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OmniCRM □□□□□□□□□□□□□□□□□□□□□□□□□□

1. **JWT Bearer** □□ - □□□□□□□□□□Web UI□□□□□□

2. **API □□** - □□□□□□□□□□□□□□□□□□
3. **IP □□□** - □□□□□□□□□□□□□□□□□□□□□□

JWT Bearer □□□□□□

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```json
{
    "email": "youruser@yourdomain.com",
    "password": "yourpassword"
}
```

API □□□□□□□ `token` □□□ JSON □□□□□□□□□□□□□□□□□□□□□□□□□□□□ `refresh_token`□□□□□□□□□□□□□□□□□□□□□□□□□□□

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`Bearer`□□□□□“Authorize”□

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API □□□ `crm_config.yaml` □□□□□□□□□□□□□□□□□□□□□ API □□□□□□□□□□□□□□□□□ 32 □□□□□□□□ `X-API-KEY` □□□□□□□□□□□

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API □□□□□□□□□□□□□□□□□□□□□ `crm_config.yaml` □□

```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"
```

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

Python □□□

```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)
```

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□□ **IP** □□□□

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

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```python
import requests

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

print("Provisioning data to server: " + 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("Authenticated to CRM successfully")

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

API □□□□

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□□□□□ Prometheus □□□ `/crm/metrics` □□□□□□□□□□□

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- System Architecture - □□□□□□□□□□□□
- Monitoring & Metrics - □□□□□□□□□□□ API□□□□□□□□□□
- Authentication Flows - □□□□□□□□□□□□□
- RBAC - □□□□□□□□□□□□□

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- □□ **JSON** □□□
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- **product_id** - □□□□□□□□□□□□
- **product_name** - □ UI □□□□□□□□□□□□
- **product_slug** - □□ URL □ API □□□□□□□□□□□□□□□□□□□□□□
- **category** - □□□□□□ UI □□□□□□□
    - `standalone` - □□□□□□□□□□□□□□□□
    - `addon` - □□□□□□□□□□□
    - `bundle` - □□□□□□□□□□
    - `promo` - □□□□□□
- **service_type** - □□□
- **comment** - □□□□□□□□□□□□□□□□□□□□□□□□
- **icon** - □ UI □□□□ FontAwesome □□□□□□□`fa-solid fa-sim-card`□

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- **retail_cost** - □□□□□���□□□□□□□□□□□□□□□□□□□□□□□ 0□
- **wholesale_cost** - □□□□□□□□□□□□□□□□□□
- **retail_setup_cost** - □□□□□□□□□□□□□□□□
- **wholesale_setup_cost** - □□□□□□□□□□□□
- **tax_percentage** - □□□□□□□□□□□□□10 □□ 10%□12.5 □□ 12.5%□□□□□□□□□□ 0□□□□□□□□□□□□□□□□□□□□

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- □□□□□ 10%□□□□□□ $50.00 → □□□□□ $5.00
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- **enabled** - □□□□□□□□□□□□□□□□□□□□ false □□□□□□□□
- **residential** - □□□□□□□□□□□□□□□□□□
- **business** - □□□□□□□□□□□□□□□□□
- **customer_can_purchase** - □□□□□□□□□□□□□□□true□□□□□□□□□□false□
- **available_from** - □□□□□□□□□□/□□□□□□
- **available_until** - □□□□□□□□□□□□/□□□□□□□□□□□□□□

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- **contract_days** - □□□□□□□□□□□□□□□□□30 □□□□□365 □□□□□0 □□□□□□□□
- **auto_renew** - □□□□□□□
  - `prompt` - □□□□□□□□□□
  - `true` - □□□□□□□□□
  - `false` - □□□□□□

- **allow_auto_renew** - □□□□□□□□□□□□□□□□□□□□□□ false□

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- **terms** - □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□
- **features_list** - □□□□□□□□□□□□□□□□Python □□□□□`['Feature 1', 'Feature 2']`□

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- **provisioning_play** - □□□□□□ Ansible playbook □□□□□ .yaml □□□□□□□□□□ `OmniCRM-API/Provisioners/plays/` □□□□
- **provisioning_json_vars** - □□ JSON □□□ Ansible playbook □□□□□□□□□□□□□□□□□□playbook □□□□□□□□ `customer_id`□`product_id`□`service_id` □ `access_token`□
- **inventory_items_list** - □□□□□□□□□□□□□□□□`['SIM Card', 'Mobile Number']`□□□□□□□□□□□□□□□□��□□□□□□□□□□□□□□□□ ID □□□□□□□□□□□□□□□□□ playbook□
- **relies_on_list** - □□□□□□□□□□□□□□□ ID □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□

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- **created** - □□□□□□□□□□□□□□
- **last_modified** - □□□□□□□□□□□□□□□□

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```
{
  "product_id": 1,
  "product_slug": "Mobile-SIM",
  "product_name": "Mobile SIM Only",
  "category": "standalone",
  "service_type": "mobile",
  "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,
  "contract_days": 0,
  "residential": true,
  "business": true,
  "enabled": true,
  "customer_can_purchase": true,
  "icon": "fa-solid fa-sim-card",
  "features_list": "['Australian Phone Number (04xxx)', 'Fastest speeds', 'Best coverage', 'Roaming on the Mainland']",
  "terms": "Must be activated within 6 months. All credit lost if service is not used for 12 months.",
  "comment": "Physical SIM card for use with Mobile Phones"
}
```

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```
{
  "product_slug": "norfone-mobile-prepaid-mini",
  "product_name": "Norfone Mini Plan",
  "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 of Ultra fast data', 'Unlimited Calls & Texts to Norfone users', '100 Minutes of Talk to Australia', '100 SMS to Australia', '30 Day Expiry']",
  "terms": "Credit expires after 30 days. Once data, voice or sms is used up, you will need to top up to continue using the service.",
  "comment": "Our smallest plan for light users"
}
```

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```
{
  "product_slug": "Bundle-Seniors",
  "product_name": "Seniors Bundle",
  "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,
  "wholesale_setup_cost": 11,
  "contract_days": 180,
  "residential": true,
  "business": false,
  "enabled": true,
  "icon": "fa-solid fa-person-walking-with-cane",
  "features_list": "['20Mbps Download', '5Mbps Upload', 'Unlimited Data', 'Home Voice', 'TV: Extra +£5 per month', '£60 Installation Fee']",
  "terms": "6 Month Contract, must show senior citizen's card to qualify",
  "comment": "20Mbps/2Mbps GPON Service + IPTV + Phone"
}
```

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```
{
  "product_slug": "Mobile-Topup-5",
  "product_name": "PAYG £5 Topup",
  "category": "addon",
  "service_type": "mobile",
  "provisioning_play": "play_topup_monetary",
  "provisioning_json_vars": "{\"service_id\": \"\"}",
  "inventory_items_list": "[]",
  "retail_cost": 5,
  "retail_setup_cost": 0,
  "wholesale_cost": 0,
  "contract_days": 0,
  "residential": true,
  "business": false,
  "enabled": true,
  "customer_can_purchase": true,
  "icon": "fa-solid fa-coins",
  "features_list": "['£5 credit', 'Valid for 180 days']",
  "terms": "Valid for 180 days or until all credit is used. See
our website for full rates",
  "comment": "£5 to use for Calls, SMS & Data"
}
```

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1. □□□ **provisioning_json_vars** - □□□□□□□□□□□
2. □□□ - □ API □□□□□□□□□□□□□□□□□□□
3. □□□□□□□ - □□□□□□□□□

4. □□□□ - □□□□□□□ ID□□□ `inventory_items_list` □□□□

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

□□□ API □□□□□

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

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

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- `access_token` - □□□ API □□□□□ CRM □ JWT □□□□□□□□□ IP/API □□□□□□□□ `refresh_token` □□□□□□□□

- `initiating_user` - □□□□□□□□ ID□□□□□□□□□□□□□□□□
- □□□□□□□□□□□`product_id`□`customer_id`□`service_id` □□

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□□□□□□□□□□□□□□□□`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 □□□□□□

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□□□□ `{{ variable_name }}` □□□□□ playbook □□□□□□□□□□□□`{{ product_id }}`□`{{ customer_id }}`□`{{ monthly_cost }}` □□

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- `product_id` - □□□□□□□□□□ ID
- `customer_id` - □□□□□□□□
- `service_id` - □□□□□□□□□□□□□□ ID□□□□□□□□□���□
- `access_token` - □□ API □□□□□□□
- □□ `provisioning_json_vars` □□□□□
- □□ API □□□□□□□□□

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□□□□“£5 □□”□□□□□□□□□□□□□□□service_id: 123□□□playbook □□□□□□□□□

- `product_id`: 45□□□□□□
- `customer_id`: 456□□□□
- `service_id`: 123□□□□□□□□□□
- `access_token`: □□□□
- □□□□□□□ `provisioning_json_vars` □□□□□

Playbook □□□□□□□□□

1. □ **CRM API** □□□□□□□□□□□ `service_id`
2. □□□□□□□□□□ **UUID** □□□□□
3. □□□□□□**OCS**□□□□□□□□□□ UUID
4. □ **CRM** □□□□□□□□□□□□

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- `product_id` - □□□□□□□
- `customer_id` - □□□□□□□
- □□□□□□□□□□□□□□□□□ ID□□□□`SIM Card`□`Mobile Number`□
- `access_token` - □□ API □□

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- `product_id` - □□□□□□□□□
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- `service_id` - □□□□□□□□□ **ID**□□□□□□□□
- `access_token` - □□ API □□

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- `product_id` - □□□□
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- □□□□□□□□□□□ ID□□□□`Modem Router`□
- `access_token` - □□ API □□

□□ playbook□□□□`play_seniors_package`□□□□□□□□□□□□□□□□IPTV□□□□□□□□□□□□□□

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□□□□□□□□□□□UI □□□□□□□□□□□

1. □□□□ - □□□□□□□
   - □□□□□□□`residential = true` □ `business = false` □□□
   - □□□`business = true` □□□
2. □□ - □□□□□
   - □□□□□`category` = `standalone` □ `bundle` □□□
   - □□□□□`category` = `addon` □□□□□□□□□□□□□□
3. □□□ - □□□□□□□□□□□□

  - `enabled = true` - □□□□□□□□□□□□
  - □□□□□ `available_from` □ `available_until` □□ - □□□□□□□□□
  - `customer_can_purchase = true`□□□□□□□□□□ - □□□□□□□□□□

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API □□□□□API □□□□□□□□□□□□□□□□□□□□□□□

- □□/□□□□ (`/crm/product/`) - □□
- □□□□ (`/crm/product/paginated`) - □□□

□ `include_disabled=true` □□□□□□□□□□□□□□□□□□□□□□□

UI □□□□□□□□

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1. □□□□□□ - □□□□□ `service_type` □□□□□□
   - □□□□□□□ `service_type = "mobile"`□□□□□ `service_type = "mobile"` □□□□□
   - □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□
2. □□□□ - □□□□□□□ `relies_on_list`□
   - □□□□□□□□□□□□□□□/□□
   - □□□□□□□□□□□□□□
3. □□□□□□□□ - □□□□□□ `residential` □ `business` □□□□□□□□□□□□

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□□□□□□□□□□□`service_type = "mobile"`□□□□□□□

- □□□□□□□□□□□□□/□□□□`business = true`��`category != "addon"`□
- □□□□□□□□□□□□□□□□`business = true`□`category = "addon"`□`service_type = "mobile"`□
- □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□

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- **service_id** - □□□□□□□□□□□□□□
- **customer_id** - □□□□□□□□□□□□□□□□
- **product_id** - □□□□□□□□□□□□□□□□
- **service_name** - □□□□□□□□□□□□
- **service_type** - □□□□□□□□□□□VoIP□IPTV□□□□□□□□
- **service_uuid** - □□ OCS/CGRateS □□□□□□□□□□□□□□□
- **icon** - □□□□□□□□□□□□ FontAwesome □□□□□□□

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- **service_status** - □□□□□□□□□□□□□□□□□□
- **service_provisioned_date** - □□□□□□□□□□□□□□□□
- **service_active_date** - □□□□□□□□□□□□□
- **service_deactivate_date** - □□□□□□□□□□□□□□□
- **contract_end_date** - □□□□□□□□□□□□

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- **retail_cost** - □□□□□□□□□□□□□□□□
- **wholesale_cost** - □□□□□□□□□□
- **service_billed** - □□□□□□□□□□□□□□□□true□
- **service_taxable** - □□□□□□□□□□□□□□□true□
- **invoiced** - □□□□□□□□□□□□□□□□□□
- **promo_code** - □□□□□□□□□□□□□□□

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- **service_visible_to_customer** - □□□□□□□□□□□□□□□□□□□□□□□□□□□true□
- **service_usage_visible_to_customer** - □□□□□□□□□□□□/□□□□□□□□□□□□□□true□

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- **provisioning_play** - □□□□□□□□ Ansible playbook□□□□□□□□□□
- **provisioning_json_vars** - □□□□□ playbook □□□□□□□□□□□□□
- **deprovisioning_play** - □□□□□□□□□□ Ansible playbook□□□□
- **deprovisioning_json_vars** - □□□ playbook □□□□□□□

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- **bundled_parent** - □□□□□□□□□□□□□□□□□□□ service_id□□□□
- **site_id** - □□□□���□□□□□□□/□□□□□□□

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

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□□ 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

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- 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□□□□□□

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

□□□ API □ Ansible □□□□

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API □□□□□□□□□□□□□□□□□□□□

- `provisioning_play` - Ansible playbook □□□□□□□`play_psim_only`□
- `provisioning_json_vars` - □□□□□□□□□□□□□□ JSON □□□
- `customer_id` - □□□□□□□ ID
- `product_id` - □□□□□□□ ID
- `service_id` - □□□□□□□□□□□□□□□ ID
- □□□□ - □□□□□□□ ID

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1. □□□ `provisioning_json_vars`□□□□□□□□□□□□
2. □□□□□□□□□□□□□□□□
3. □□□□□□□□
   - `access_token` - □□ API □□□ CRM □ JWT □□
   - `initiating_user` - □□□□□□□ ID
   - `customer_id`□`product_id`□`service_id`
4. □□□□ - □□ `{inventory_type: inventory_id}` □□□

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```
{
    "customer_id": 123,
    "product_id": 456,
    "service_id": 789,          # □□□□□□□□
    "SIM Card": 1001,           # □□□□□□
    "Mobile Number": 1002,      # □□□□□□
    "monthly_cost": 30,         # □□ provisioning_json_vars
    "data_gb": 50,              # □□ provisioning_json_vars
    "access_token": "eyJ...",   # □□□□□□□ API □□
    "initiating_user": 5        # □□□□□
}
```

□□ 3□□□□□□□

□□□□□□□□□ `Provision` □□□□□□

- `provision_id` - □□□□□□□□□□
- `provisioning_play` - playbook □□□
- `provisioning_json_vars` - □□□□□□□ JSON □□□
- `task_count` - playbook □□□□□□□□ YAML □□□□
- `provisioning_status` - □□□□□□□□□□ 1 = □□□□□□□□ 0 = □□□2 = □□□□□□□□□□□□□□□ 1□
- `product_id`□`customer_id`□`service_id` - □□□□□

□□ 4□□□ playbook □□

API □□□□□□□□□

1. □ `OmniCRM-API/Provisioners/plays/{playbook_name}.yaml` □□ playbook YAML
2. □□ `ansible_runner.run()`□□□□□□
   - `playbook` - □□□ YAML □□□□□
   - `extravars` - □□□□□□□□□□□ Ansible□
   - `inventory` - □□□ `'localhost,'`□□□□□□
   - `event_handler` - □□□□□□□□□□□□□□□□□□
3. □□□□ playbook □□

□□ 5□□□□□□□□□□□`ProvisioningEventHandler`**□**

□□ Ansible □□□□□□□□□□□□□□□□ `Provision_Event` □□□

- `event_name` - □□ playbook □□□□□
- `event_number` - □□□
- `provisioning_status` - □□□□□□□□□□□□
   - **0** = □□ - □□□□□□
   - **1** = □□□ - □□□□□□
   - **2** = □□ - □□□□□□□□□□□
   - **3** = □□□���□□□ - □□□□□□□□□□□`ignore_errors: true` □ playbook □□
- `provisioning_result_json` - □□□□□□□□□□□□□

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□□ 6□Ansible playbook □□□`Provisioners/plays/*.yaml`□

Ansible playbook □□□□□□□□□□□□□□□□

1. □□□□□□ - □□ `{{ access_token }}` □ `/crm/product/product_id/{{ product_id }}` □□ GET □□

2. □□□□□□ - □ `/crm/customer/customer_id/{{ customer_id }}` □□ GET □□

3. □□□□□□□□□□□□ - □□□□□□□□□ GET □□ `/crm/inventory/inventory_id/{{ inventory_id }}` □□□□□□□□□□ICCID□MSISDN□□□□□□

4. □□□□□□ - □□ API □□□□

   - HSS□□□□□□□□□□□□□□□
   - IMS□IP □□□□□□□□□□□□□
   - CGRateS/OCS □□□□□□□□□□□□□□
   - ENUM □□□□□□□□□□□
   - □□□□□□□□□□□□□□

5. □□□□□□□□□□□□ - □ `/crm/transaction/` □□ POST □□□□□□□□□□

6. □□□□□ - □ OCS/CGRateS □□ POST □□□□□ retail_setup_cost□□□□□□

7. **□□ OCS □□** - □ OCS/CGRateS □□ POST □□□□□ UUID □□□□□□

8. □□□□□□□ - □ OCS/CGRateS □□□□□□□□□□□ Actions □ ActionPlans

9. □□□□□□ - □ `/crm/service/` □□ PUT/POST □□□□ CRM □□□□□□□□

```
{
  "customer_id": 123,
  "product_id": 456,
  "service_name": "Mobile 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. □□□□ - □ `/crm/inventory/inventory_id/{{ inventory_id }}` □□ PATCH □□□ □□□□□□□“□□”□□□

11. □□□□□□□□ - □□□□□□□□□□□□□□□□□□□□□□

□□ **7**□□□□□□□□

□ playbook □□□□

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

□□□□□□□□□ CRM □□□□□□□□□□□□□□□□□□□□□□□□

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□□□□□`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`□□

- □□□□□□□□□□□□□□□
- □□□□□□□□□□□□□□□□□□□□□□□□□□□
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- □□□□��□□□□□□□□
- □ 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 □□

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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 □□□□□□□□□□□□□

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CRM □□□□□□□□□□□□□□□□□□□□□□□□□□□□□ OCS □□□□□□□□□□□□□□□□□□□□□□

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□□□□□□□ OCS/CGRateS □□□□□□□□□□□□□□□

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□□□□□□□□□□□□□□ UI □ API□□□□□□□□□

1. **API □□** - □□□□ `GET /crm/service/{service_id}` □□ UI □□□□□□□□□
2. □□□□ - API □□□□□□□□□□□□□□ `service_uuid`
3. **CGRateS API □□** - □□□ CGRateS □□□□□□□
    i. **Get_Balance(service_uuid)** - □□□□□□□□□ `BalanceMap`
    - □□□□□□□□□□□□□□□□□□□□□□□□��□□□□
    - □□□□□□□ID□□□□□□□□□□□□□ ID
    - □□□□□□□□□□□`custom_Name_hr`□`custom_Expiration`□`custom_Description_String`

    ii. **Get_ActionPlans(service_uuid)** - □□□□□□□□□□□□□□□□□□□□□□□
4. □□□□ - CGRateS □□□□□□□□□□□

```
{
  "service_id": 123,
  "service_name": "Mobile Service",
  "service_uuid": "abc-123-def",
  "cgrates": {
    "BalanceMap": {
      "DATA": [{
        "ID": "DATA_10GB",
        "Value": 5368709120,
        "ExpirationDate": "2025-02-01T00:00:00Z",
        "custom_Name_hr": "10GB Data Pack",
        "custom_Expiration": "Feb 1, 2025",
        "custom_Description_String": "5 GB remaining"
      }],
      "VOICE": [{
        "ID": "VOICE_UNLIMITED",
        "Value": 999999999,
        "custom_Name_hr": "Unlimited Calls",
        "custom_Description_String": "Unlimited minutes"
      }],
      "MONETARY": [{
        "ID": "PREPAID_CREDIT",
        "Value": 25.50,
        "custom_Description_String": "$25.50 credit"
      }]
    },
    "ActionPlans": [...]
  }
}
```

5. **UI □□** - □□□□□□□□□□□

   - **ServiceUsage.js** - □□□□□□□□□□ 3 □□□□□
   - **UsageCard.js** - □□□□□□□□□□
   - **UsageProgress.js** - □□□□/□□□□□□□□□
   - □□□□□□□□□□□□□□□□□

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`BalanceMap` □□□□□□□□□

CGRateS □□□□□

- `ID` - □□□□□□□□□□□□“DATA_10GB_2025_01”□
- `Value` - □□□□□
  - □□□□□□□□5368709120 = 5 GB□
  - □□□□□□□3600 = 1 □□□
  - □□□□□□□□100 = 100 □□□□
  - □□□□□□□□□□25.50 = $25.50□
- `ExpirationDate` - □□□□□ ISO 8601 □□□
- `Weight` - □□□□□□□□□□□□□□□□□□□
- `DestinationIDs` - □□□□□□□□□□□□["AU", "INTERNATIONAL"]□

□□□□□□□□ CRM □□□□

- `custom_Name_hr` - □ ID □□□□□□□□□
- `custom_Expiration` - □□□□□□□□□□□□“2025 □ 1 □ 15 □”□“11 □□”□
- `custom_Description_String` - □□□□□□□□□□
  - □□□“5 GB □□”□“10 GB □□”
  - □□□“60 □□□□”□“□□□”
  - □□□“50 □□□□□”
  - □□□“$25.50 □□”

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- **service_visible_to_customer** - □□□ false□□□□□□□□□□□□□□□□□□□
- **service_usage_visible_to_customer** - □□□ false□□□□□□□□□/□□□□□□□□□□□□ □□□□□□□□□□□□□□□□□□□

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Web UI □□□□□□□□□

- □□□□ 3 □□□ ServiceUsage □□□□□□□
- □□□□□ `GET /crm/service/{service_id}`□□ CGRateS □□□□□□
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□□□□ $60 □ GPON □□□□□ 1TB □□□□□Action □□□□□□□□□

`Action_kj49-adsf-1234-9742_60_GPON_1TB_MonthlyExpiry`

1. □□□□□□□□ $0
2. □ CRM □□ HTTP POST □□□□□□□□□
3. □□ 1TB □□□□□□□□□□□□ 1 □□

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□□ Actions □ `ActionPlans` □□□□□□□□□□□□□□□□□□□□□□□□□□

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□□□ `ActionPlans` □□□□□□□□□□□□□□□□□□ Ansible □□□□□□□ Action □ `ExecuteAction` □□□

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□□□□□□□□□□□□ $10 PAYG □□□□□□□□□□□□□□□□□□□□□

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`ThresholdS` □□□□□□□□□□□□□□□□□□□□□□

□□ PAYG / □□□□□□□□ $0□

□□ CRM □ OCS □□

□□□□□□□□□□□□ CRM API □□□□□ `OCS` □ `Balances` □ `ActionPlans`□`Actions` □ `ThresholdS`□

□□□□□□□ CRM API □□□ `ActionPlans`□□□ Ansible Playbooks □□□□□□□□□□□□□□□□□ CRM □ □□ `ActionPlans`□□□□□□□□□/□□□□□□ Ansible Playbooks □□□□□

□□□□ `OCS` □□□□□□□ `ActionPlans` □□□□□□□□□□□□

□□□□□□□□□□□□□□□ `ThresholdS` □□

□ CRM □□□□□□ ActionPlans

ActionPlans□□□□□□□□□□ CRM □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□

□□□□□□□ ActionPlans

□ CRM □□□□□□□ActionPlans □□□□□□□□□

1. **API □□** - □□□ `GET /crm/service/{service_id}` □□API□
   - □□□□□□□□□□□
   - □□ `service_uuid`□OCS □□□□□□
   - □□ CGRateS API □□□□ UUID □□ ActionPlans
   - □□□□□ `Get_ActionPlans(service_uuid)` □ CGRateS □
2. **ActionPlan □□□□** - □□□□□ ActionPlan □□□

   ```
   {
       "ActionPlanId": "ServiceID_abc-123-def__ProductID_456__...",
       "PlanName": "Monthly_Renewal_Plan",
       "NextExecTime": "2025-02-01T00:00:00Z",
       "custom_NextExecTime_hr": "in 11 days",
       "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. **UI □□** - ActionPlans □ **ActionPlansTable** □□□□□□

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   - □□□□ - □□□ ActionPlanId □□□ `ProductID` □□
   - □□ - □□□□□□□□□ `retail_cost`
   - □□□□ - □□ `custom_NextExecTime_hr`□□□□□□
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□□□□□□□□□ UI □□ 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 □□□□□

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1. □□ ActionPlansTable □□“□□□□”□□
2. □□□□□□□“□□□□□□□□□□□”
3. □□□□□□□
   - □ ActionPlanId □□□ product_id
   - □□□□□□□□□□□□
   - □□□□□□□□□□□□□ playbook□
   - □□□□□□□□□□□□□□□□□□□□□□□
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□□□□□□ `auto_renew` □□□□□□□□□□□□□□□

- `auto_renew = "true"` □□□ - □□□□□□□□□ ActionPlans

- `auto_renew = "prompt"` □□□ - □□□□□□□□□□□□□□□□□□□
- `auto_renew = "false"` □□□ - □□□□ ActionPlans□□□□□□□

□□ playbook □ CGRateS □□□ ActionPlan□□□□

- □□□□□□□□□□ ID □□□ ActionPlanId
- □□□□□□□□□□□□□□□□□
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ActionPlan □□□□

ActionPlans □□□□□□□□□□□□□□□□□□□

□□□

```
ServiceID_{service_uuid}__ProductID_{product_id}__CustomerID_{custome
```

□□□

```
ServiceID_abc-123-
def__ProductID_456__CustomerID_789__MonthlyRenewal
```

□□□□□ CRM□

- □□ ActionPlan □□□□□□
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- □□□□□□□
- □□□□□□□□□

CRM □□□□□□□□□□□ `ActionPlanId_split_dict`□□□□□□□

□□□□□□ ActionPlans

□ CRM □□□□□□□ActionPlans □□□□□□□□□□□□

□□□□□`ServiceView.js`□□

- □□□□□ ActionPlans □□□□□□□□□□
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- □□□□ ActionPlans□“□□□□□□□□□□”
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ActionPlans □□□□□□□□

CRM □□□□□□□□□□□□□□□□□□□□□□□□

`GET /crm/service/expiring?threshold=7`

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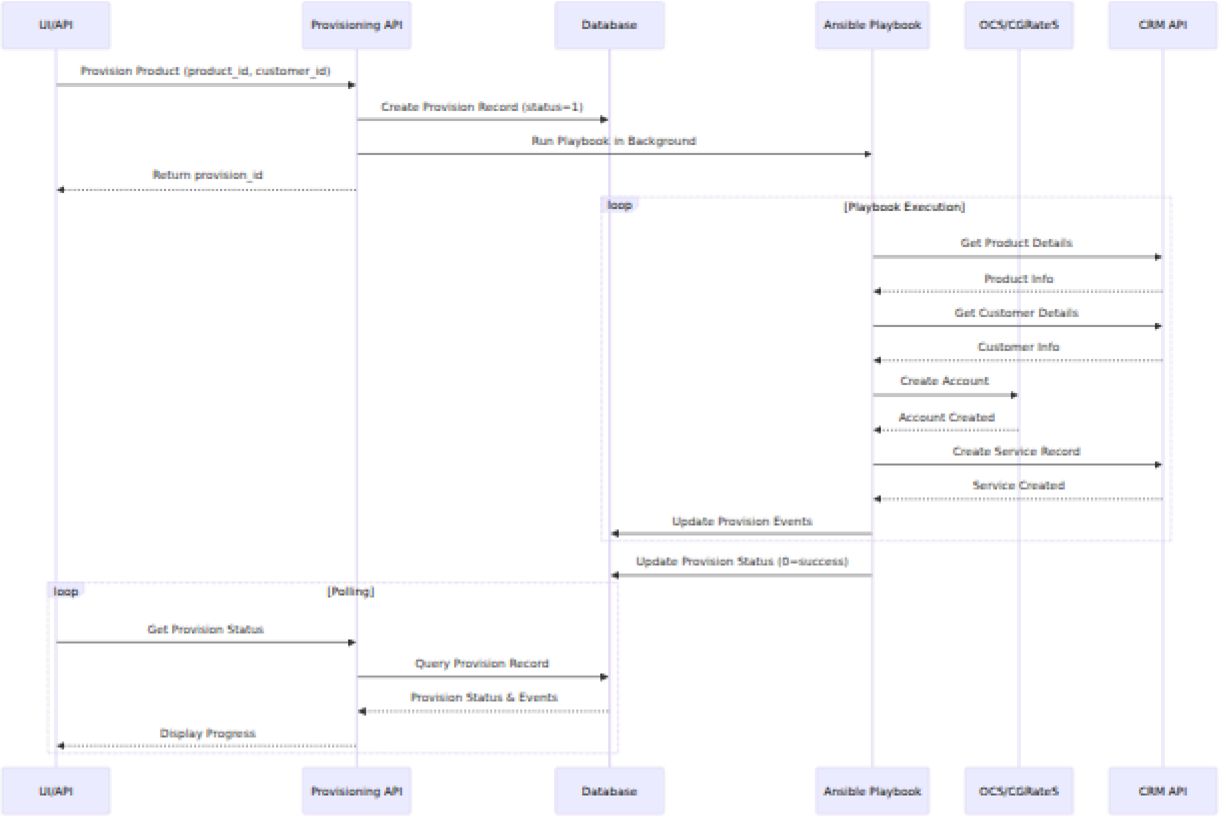
OmniCRM □□ **Ansible** □□

□□□□□`SIM □□□ <concepts_sim_provisioning>`□□□□□□□ SIM □□□□□□□□□□□ SIM □ eSIM□



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1. □□□□ - □□ UI/API □□□□□□□□
2. □□□□ - □ OCS □□□□□□□□□□□□□□□

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- □□ **3**□□□ **-** □□□□ - □□□□□□□□ `ignore_errors: true`□□□□□□□

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- `provisioning_play` - □□□□ Ansible □□□□□□□□ .yaml □□□□

- `provisioning_json_vars` - □□□□□□ Ansible □□□□□□ JSON □□□
- `inventory_items_list` - □□□□□□□□□□□□□□□`['SIM Card', 'Mobile Number']`□
- `product_id`□`product_name`□□□□□ - □□□□□□□

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```json
{
  "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
}
```

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1. □□ **`provisioning_play`** □□□□□□

   □□□□ `OmniCRM-API/Provisioners/plays/play_psim_only.yaml`

2. □□□□□□□□□□□ **`extra_vars`** □□

   i. □□ **`provisioning_json_vars`**□ `{"iccid": "", "msisdn": ""}`
   ii. □□□□□□□□/API □□□□□□□□□
   iii. □□□□□□□`product_id`□`customer_id` □
   iv. □□□□□□□`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]"
    ```

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□□□□□□□□ 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 }}"
```

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- □ HSS □□□ SIM □□ IMSI
- □□□□□□□□□□□□
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□□□□□□□□□ 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
```

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

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□□□□□□□□□□□□□□□ Ansible □ `block` □ `rescue` □□□□□□□□□□□□□□□□□□□

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□□ `play_psim_only.yaml`□

```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:] }}",  # □□□□
                "ue_ambr_dl": 9999999,              # □□□□□□
                "ue_ambr_ul": 9999999
              }
          loop: "{{ hss_subscriber_data | dict2items }}"
          when:
            - deprovision_subscriber | default(false) | bool ==
false

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

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

2. □□□□□□□

□□□□□□□□□□`rescue` □□□□□

- □□□□□ OCS □□□□□
- □□□□□□□□□□□□□□
- □□□□□□□□□□
- HSS □□□□□□□□□□□□
- □□□□□□□□□□□□□□

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3. □□ ignore_errors □□□□□□��□□

□□□□□□□□□□□ `ignore_errors: True`□□□□□□□□□□

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□□□□□□□□“□□ OCS □□”□□□□□□□□□□

- □□ OCS □□□□□□□□□□□□
- □□□□□□□□□□□□□□□□□□
- □□□□□□□□
- □□ HSS □□□□□□□□□□□□□□

4. □□□□□□□□

`rescue` □□□□□□□□□□□

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

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

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5. □□□□□□□□□□□

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```yaml
- name: Deprovision Subscriber from HSS
  uri: ...
  when:
    - deprovision_subscriber | bool == true

- name: Patch Subscriber to Dormant State
  uri: ...
  when:
    - deprovision_subscriber | default(false) | bool == false
```

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- □□□□□□ SIM □□□□□□□`deprovision_subscriber: true`□
- □□□□□□ SIM □□□□□□□□ HSS □□□`deprovision_subscriber: false`□

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```json
{
  "product_id": 1,
  "customer_id": 456,
  "provisioning_play": "play_psim_only"
}
```

[illegible] `rescue` [illegible]

[illegible]

```json
{
  "service_id": 123,
  "service_uuid": "Service_abc123",
  "action": "deprovision",
  "provisioning_play": "play_psim_only"
}
```

[illegible] `rescue` [illegible]

[illegible]

[illegible] `action: "deprovision"` [illegible]

[illegible]

[illegible]

`provisioning_json_vars` [illegible]

```json
{
  "provisioning_json_vars": "{\"monthly_cost\": 50, \"data_limit_gb\": 100}"
}
```

[illegible]

```
{
  "product_id": 1,
  "customer_id": 456,
  "monthly_cost": 45,
  "data_limit_gb": 150
}
```

□□□ `extra_vars` □□□□□□□□□□□□

- □□□□□□□□□□□□
- □□□□□□□□□□□
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```
{
  "product_id": 10,
  "product_name": "Extra 10GB Data",
  "provisioning_play": "play_local_data_addon",
  "provisioning_json_vars": "{\"data_gb\": 10}",
  "inventory_items_list": "[]"
}
```

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```
extra_vars = {
    "product_id": 10,
    "customer_id": 456,
    "service_id": 123,  # □□□□□□□□
    "data_gb": 10,
    "access_token": "eyJ..."
}
```

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[illegible]

[illegible]

- [illegible] UI [illegible]
- [illegible]
- API [illegible] `PUT /crm/provision/`

[illegible]“[illegible]”[illegible]

[illegible]“[illegible]”[illegible]

1. UI [illegible]

[illegible]

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

2. [illegible]

[illegible] `inventory_items_list` [illegible]

3. [illegible]

JavaScript [illegible] `PUT /crm/provision/` [illegible]

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

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

4. API □□□□

□□□□□

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

5. □□□□

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

6. □□□□□□

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```
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. □□□□□□

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- □□□`play_psim_only.yaml`
- □□□□□□ extra_vars
- □□ ID□456□□□□□□□□
- □□□□□□□□□□□□□□□□□□□

8. API □□□□

□□□□□ UI□□□ `provision_id`□

```
{
  "provision_id": 456,
  "provisioning_status": 1,
  "message": "Provisioning job created"
}
```

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": "Get Product information from CRM API",
      "provisioning_status": 0,
      "timestamp": "2024-01-15T10:30:05"
    },
    {
      "event_number": 2,
      "event_name": "Assign SIM Card from inventory",
      "provisioning_status": 1,
      "timestamp": "2024-01-15T10:30:07"
    }
  ]
}
```

10. Ansible □□□□□

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

□ UI □□□□

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✓ □ CRM API □□□□□□ ✓ □□□□□□□□ ✓ □□□□□□ SIM □□ICCID: 8991101200003204510□ ✓ □□□□□□□555-0123□ ⟳ □ OCS/CGRateS □□□□□□□□□…□ □ □□□□□□ □ □□□□□□ …

11. □□□□

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- `provisioning_status: 0` - □□
- `provisioning_status: 2` - □□□□□□□□

UI □□□□□□□□□□

- □□□□□□□□□□□□□□□□□□□□□□□□□□□□□
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- □□□□□□□□□□□□□□□□□□□□□□□□ `provisioning.failure_list`

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- □□□□□`initiating_user` □□□□□□ JWT □□□□□□ ID
- **API** □□□□□□□□□□□□□□□□□ ID
- **IP** □□□□□□□□□□□□□□□□□□ ID

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- □□□□ `CREATE_PROVISION` □□
- □□□□□□□□□□□□□□□`VIEW_OWN_PROVISION` □□□

Ansible □□□□ CRM API □��□□□□

Ansible □□□□□□□□□□□□□ API □□□ CRM□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□ **Bearer □□** □□□

`access_token` □□□□□□□□□□□□ API □□□□□□□□

□□ 1□□□□□□Bearer □□□

□□□□□ Web UI □□□□

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

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□□□ Authorization □□□□ Bearer □□□ □□□□□□ API □□□□□□□□□

□□ 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. □□□□□□□□□□
5. □□□ Ansible

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API □□□□□□□□□□ JWT□□□□□ API □□□□□ JWT □□□□□□□□

- □□ API □□
- □□□□□□□ `admin` □□□□□□□□ JWT
- □□□□□□□□□□□ ID □□ JWT □□
- □□□□□□□□□□□□□□□ API □□

□□□□□

□□□□ API □□ JWT□□□□□□□□□□□□

□□ 3□IP □□□

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1. □□□□□□ IP□□□□192.168.1.100□□□□□
2. □□ API □□□□□ IP □□□ `crm_config.yaml` □□ `ip_whitelist` □□
3. □□□□□□□□□□□□□□□□□□□□□ **JWT** □□
4. □□□□□□□□□□
5. □□□ Ansible

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□□□□□□□ IP □□□□□□□□□□□□□□□□□□□□□□□ JWT □□□□□□□□□□

□□□□□□□□

□□□□□□ API □□□□□□□□

```yaml
- 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:
      Authorization: "Bearer {{ access_token }}"
    body:
      customer_id: "{{ customer_id }}"
      service_name: "Mobile Service"
```

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□□□□□□□□□5-10 □□□□□□□□ `access_token`□15-30 □□□□□□□□□□□□□□□□□□□□ `access_token` □ `refresh_token`□

```
refresh_token = request.cookies.get('refresh_token')
run_playbook(playbook_path, extra_vars, provision_id,
refresh_token=refresh_token)
```

□□ `access_token` □□□□□□□□□□□

1. □□□ 401 □□□□□
2. □□ `refresh_token` □□ `POST /crm/auth/refresh`
3. □□□□ `access_token`
4. □□□□□□□

□□ API □□/IP □□□□□□□□□□□□□□□□□□□□□□□□□□1-2 □□□□□□□□□□□□□□□□□□□

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1. □□□□

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   - □□□□□□□□□
   - □□□□□□□□□□ Ansible □□
   - □□□□□□□□□□ 1□□□□□□ `Provision` □□
   - □□□□□□□□□□□□□□
   - □□□□ API □���□□□□□□□

2. □□□□

   Ansible □□□□□□ CRM API □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□

   - **Bearer □□□JWT□**□□□□□□□□□□□□□□□□□ `refresh_token` □□□□□□□□□□□□□□□□
   - **API □□/IP** □□□□□□□□□□□□□□□`access_token` □□□□□□□

3. □□□□

□□□□□□□□□□□□□□ API □□□□□□□□□□□□□□

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- □□□□□□□/□□□□□□□□ `Provision_Event` □□
- □□□□□□□□□□□□□□□□□□□
- □□□□□□□□□□□
- UI □□□□ `GET /crm/provision/provision_id/<id>` □□□□

4. □□□□

   Ansible □□□□□□□□□□□

   - □ API □□□□□□
   - □ API □□□□□□
   - □□□□□□□SIM □□IP □□□□□□□□□
   - □ OCS/OCS □□□□□
   - □□□□□□
   - □ CRM API □□□□□□□
   - □□□□□□□□
   - □□□□□□□□□□□/SMS

5. □□□□

   Ansible □□□□ `block` □ `rescue` □□□□□□□

   - □□□□□□□□□`rescue` □□□□□□□□□
   - □□□□□ 3 □□□ `ignore_errors: true` □□□□□□□□□□□
   - □□□□□YAML □□□□□□□□□□□□□□□□□□□□□□□□□□□

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□□□□□ `play_simple_service.yaml` □□□□

```
- name: Simple Provisioning Play
  hosts: localhost
  gather_facts: no
  become: False

  tasks:
    - name: Main block
      block:
      - name: Get Product information from 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

      - 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
```

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1. □ CRM API □□□□□□□□□
2. □□□□□□□□ UUID
3. □ OCS □□□□□□□□
4. □□ CRM API □□□□□□□
5. □□□□□□□□□
6. □□□□□□□□□□`rescue` □□□□□□ OCS □□

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OmniCRM □□□□□□□□□□□□

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

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

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□□□□□□□□ **IP** □□□ □ **API** □□ □□□□□□□

- □□□□ IP □□□□□□ `crm_config.yaml` □□ `ip_whitelist` □□
- □□□□□□□□ `crm_config.yaml` □□ `api_keys` □ API □□
- □□□□□□□□□□□□

□□□**OCS ActionPlan** □□

OCS □□□□□□□□□□□□□□□□□□□□□□

```json
{
  "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,
    "ActionTriggers": [
      {
        "ThresholdType": "*min_event_counter",
        "ThresholdValue": 1,
        "ActionsID": "Action_Service123_HTTP_Callback"
      }
    ]
  }]
}
```

□□□□□□ HTTP POST □□

□□□□□□□□□□□□□`play_topup_no_charge.yaml`□□□□□□□□□□□□/□□□

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□□ `play_topup_monetary.yaml`□

```yaml
- name: Mobile Topup Monetary - 2024
  hosts: localhost
  gather_facts: no
  become: False

  tasks:
    - name: Get Product information from 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: Get Service information from CRM API
      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

    - name: Set service facts
      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 }}"
        monthly_cost: "{{ api_response_product.json.retail_cost }}"

    - name: Get Customer Payment Method
      uri:
        url: "http://localhost:5000/api/payments/methods/default?customer_id={{ customer_id }}"
        method: GET
        headers:
          Authorization: "Bearer {{ access_token }}"
        return_content: yes
      register: api_response_payment_method

    - name: Charge customer
      uri:
        url: "http://localhost:5000/api/payments/charge"
        method: POST
        headers:
          Authorization: "Bearer {{ access_token }}"
        body_format: json
        body:
          {
            "customer_id": "{{ customer_id | int }}",
            "amount": "{{ monthly_cost }}",
            "currency": "USD",
            "metadata": {
              "description": "{{ package_name }} topup",
              "service_id": "{{ service_id | int }}"
            }
          }
      register: api_response_payment

    - 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",
            "destinatination_msisdn": "{{ customer_phone }}",
            "message_body": "Thanks for topping up {{ monthly_cost }}!"
          }
        status_code: 201
      ignore_errors: True
```

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- [illegible] `service_id`
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- API [illegible]
- [illegible]`assert: that: response.status == 200`[illegible]
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```
GET /crm/provision/provision_id/<id>
Authorization: Bearer <token>
```

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```
{
  "provision_id": 123,
  "customer_id": 456,
  "customer_name": "John Smith",
  "product_id": 10,
  "provisioning_status": 0,
  "provisioning_play": "play_psim_only",
  "playbook_description": "OmniCore Service Provisioning 2024",
  "task_count": 85,
  "provisioning_result_json": [
    {
      "event_number": 1,
      "event_name": "Get Product information from CRM API",
      "provisioning_status": 1,
      "provisioning_result_json": "{...}"
    },
    {
      "event_number": 2,
      "event_name": "Create account in OCS",
      "provisioning_status": 1,
      "provisioning_result_json": "{...}"
    }
  ]
}
```

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

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

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- `concepts_api` - CRM API □□□□□□□
- `concepts_products_and_services` - □□□□□□□
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CGRateS [illegible] **cgrates_api_access** [illegible] `rbac` [illegible]

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CGRateS [illegible]

[illegible]

[illegible] **ID** [illegible] `ATTR_ACCOUNT_{service_uuid}`

[illegible] [illegible] UUID [illegible] `Mobile_SIM_c2880638` [illegible] ID [illegible] `ATTR_ACCOUNT_Mobile_SIM_c2880638`

[illegible]

1. [illegible]
2. [illegible] **“CGRateS [illegible]”** [illegible]
3. ���[illegible] **“**[illegible]**”** [illegible]
4. [illegible]/[illegible]/[illegible]
5. [illegible] **“**[illegible]**”**

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    - `*constant` - □□□□
    - `*variable` - □□ RSRParser □□□□□□
    - `*composed` - □□□□□□
    - `*usage_difference` - □□□□□□□□□□
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    - `*value_exponent` - □□□□□□
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```
{
  "Path": "*req.Account",
  "Type": "*constant",
  "Value": [{"Rules": "Mobile_SIM_474a380a"}]
}
```

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□□□ **ID** □□□ `FLTR_ACCOUNT_{service_uuid}`

□□□ □□ UUID □ `Mobile_SIM_c2880638` □□□□□□ ID □ `FLTR_ACCOUNT_Mobile_SIM_c2880638`

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  - `*string` - □□□□□□□
  - `*prefix` - □□□□□□
  - `*suffix` - □□□□□□
  - `*empty` - □□□□
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  - `*notexists` - □□□□□
  - `*timings` - □□□□/□□□□
  - `*destinations` - □□□□□□□
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```json
{
  "Element": "~*req.Account",
  "Type": "*string",
  "Values": ["Mobile_SIM_474a380a"]
}
```

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CGRateS API □□

□□ CGRateS □□□□□□□□□□□□□□□ OmniCRM API □□□□□

□□□ `POST /crm/ocs/proxy`

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- `method` - CGRateS API □□□□□□`APIerSv1.GetAttributeProfile`□
- `params` - □□□□□□□
- `customer_id` - □□ ID□□□□□□□□□□
- `service_id` - □□ ID□□□□□□□□□□

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- `tenant` - CGRateS □□□□□□□□□□

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```
{
  "method": "APIerSv1.GetAttributeProfile",
  "params": [{"ID": "ATTR_ACCOUNT_Mobile_SIM_c2880638"}],
  "customer_id": 123,
  "service_id": 456
}
```

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3. API □□□□ UUID □□ OCS
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{
  "BalanceMap": {
    "*data": [
      {
        "ID": "monthly_data_20GB",
        "Value": 13421772800,
        "ExpiryTime": "2025-01-25T23:59:59Z",
        "Weight": 10
      }
    ],
    "*voice": [
      {
        "ID": "monthly_voice_500min",
        "Value": 7500000000000,
        "ExpiryTime": "2025-01-25T23:59:59Z",
        "Weight": 10
      }
    ],
    "*sms": [
      {
        "ID": "monthly_sms_250",
        "Value": 250,
        "ExpiryTime": "2025-01-25T23:59:59Z",
        "Weight": 10
      }
    ],
    "*monetary": [
      {
        "ID": "prepaid_credit",
        "Value": 1550,
        "ExpiryTime": "2025-02-25T23:59:59Z",
        "Weight": 10
      }
    ]
  }
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```
{
  "ActionPlanId":
"ProductID_MonthlyPlan__ProductName_20GB_Mobile__ActionPlan_Monthly_F
  "NextExecTime": "2025-02-01T00:00:00+00:00",
  "ActionName_hr": "□□□□",
  "PlanName": "20GB □□",
  "ActionFrequency_hr": "□□□□",
  "custom_NextExecTime_hr": "□ 22 □□"
}
```

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- CGRateS Actions and Topup Behaviors - □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□
- CGRateS Destinations - □□□ PLMN □□□□□□□□□□□□
- `features_topup_recharge` - □□□□□□□□□
- `csa_service_management` - □□□□
- `csa_modify` - □□□□□□□□□□□
- `concepts_products_and_services` - □□□□

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[illegible]

[illegible]

[illegible] `Self-Care Portal <self_care_portal>`[illegible]

[illegible]`RBAC <rbac>` [illegible] `Customers <basics_customers>` [illegible] `Self-Care Portal <self_care_portal>` [illegible]

[illegible]

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1. [illegible] — [illegible]
2. [illegible] — [illegible]
3. [illegible] — [illegible]
4. [illegible] — [illegible]
5. [illegible] — [illegible]

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[illegible]

- `can_impersonate` — [illegible]��[illegible]
- `admin` — [illegible]

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□□ Web UI□

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□□□ `POST /auth/impersonate`

□□□□□ `can_impersonate` □ `admin`

□□□

```
{
  "user_id": 42
}
```

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```json
{
  "success": true,
  "impersonating_user_id": 1,
  "target_user_id": 42,
  "impersonation_start": "2025-01-04T15:30:00Z",
  "access_token": "new_token_for_impersonated_user",
  "refresh_token": "new_refresh_token"
}
```

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  - `impersonating_user_id` — □□□□□□ ID
  - `target_user_id` — □□□□□□□□
  - `impersonation_start` — □□□□□□□
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  - □ `ImpersonationLog` □□□□□□□□□□□

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□□ Web UI□

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□□□ `POST /auth/stop_impersonation`

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

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

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[illegible] API [illegible]

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

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1. [illegible] — [illegible]
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4. [illegible] — [illegible]
5. [illegible] — [illegible]
6. [illegible] — [illegible] `can_impersonate`
7. [illegible] — [illegible]

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1. **CGRateS/OCS** - □□□□□□□□□□□□□□□□□□□□□□
2. **OmniCRM** - □□□□□□□□□□□□□□□□□□□□□□

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□□ 1□□ CRM API □□□□□□

```python
import requests
import json

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

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

# □□□□□□□□
response = session.post(crm_url + '/crm/auth/login', json={
    "email": "admin@example.com",
    "password": "your_password"
}, headers=headers)

assert response.status_code == 200
headers['Authorization'] = 'Bearer ' + response.json()['token']
print("□ CRM □□□□□□")
```

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```
inventory_list_new = []

# □□ SIM □□□□□
inventory_list_new.append({
    "item": "SIM Card",
    "itemtext1_label": "ICCID",
    "itemtext2_label": "IMSI",
    "wholesale_cost": 0.2,
    "retail_cost": 1,
    "allow_dropdown_staff": True,
    "allow_dropdown_customer": True,
    "icon": "fa-solid fa-sim-card"
})

# □□□□□□□□□□
inventory_list_new.append({
    "item": "Mobile Number",
    "itemtext1_label": "E.164 Mobile Number",
    "itemtext2_label": "Type",
    "wholesale_cost": 0.2,
    "retail_cost": 3,
    "icon": "fa-solid fa-phone"
})

# □□□□□□□□□□□□□□□□
for inventory_template in inventory_list_new:
    # □□□□□□
    inventory_list_existing = session.get(
        crm_url + '/crm/inventory/item_template/',
        headers=headers
    )

    # □□□□□□□□□
    if inventory_template['item'] in [x['item'] for x in
inventory_list_existing.json()]:
        # □□□□□□
        inventory_template_id = [
            x['inventory_template_id']
            for x in inventory_list_existing.json()
            if x['item'] == inventory_template['item']
        ][0]

        response = session.patch(
            crm_url + '/crm/inventory/item_template/' +
str(inventory_template_id),
            json=inventory_template,
            headers=headers
        )
        assert response.status_code == 200
        print(f"□□□□□□□: {inventory_template['item']}")
    else:
        # □□□□□
        response = session.put(
            crm_url + '/crm/inventory/item_template',
            json=inventory_template,
            headers=headers
        )
        assert response.status_code == 200
        print(f"□□□□□□□: {inventory_template['item']}")
```

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- **item□□□□** - □□□□
- **itemtext1_label** - □□□□□□□□□□□
- **itemtext2_label** - □□□□□□□□□□□
- **wholesale_cost** - □□□□
- **retail_cost** - □□□□□□□
- **allow_dropdown_staff** - □□□□□□□□□□
- **allow_dropdown_customer** - □□□□□□□□□□
- **icon** - Font Awesome □□□

□□ 3□□□□ CGRateS

```
import cgrateshttpapi
import time

OCS_Obj = cgrateshttpapi.CGRateS("ocs.example.com", "2080")

tenant = "your_tenant_name"
tpid = str(tenant) + "_" + str(int(time.time()))
```

□□ 4□□ CGRateS □□□□□□

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2. **PLMN** □□□ - □□□□□□□□□□□□□□□□`Dest_PLMN_OnNet`□`Dest_PLMN_US_Verizon`□

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- PLMN □□□□□□□□□□□□□
- PLMN □□□□□`mccXXX.mncYYY`□
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□□□□CGRateS □□ - □□□□□

□□ 5□□□ CGRateS □□

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- □□□□ Python □□□□□`OCS_Obj.SendData`□
- □□ `*topup` □ `*topup_reset`□□□□□□
- □□□□□□□□□□□□□□□□□SMS □□□□
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- `*topup` - □□□□□□□□□□□□□□□□□□□□□□□□□□□□
- `*topup_reset` - □□□□□□□□□□□□□□□□□□□□□□□□□□□□

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□□□□□ SIM □□

```
product_list_new = []

product_list_new.append({
    "category": "standalone",
    "provisioning_play": "play_psim_only",
    "relies_on_list": "",
    "contract_days": 0,
    "retail_cost": 0,
    "retail_setup_cost": 0,
    "product_slug": "Mobile-SIM",
    "product_name": "□□□□ SIM",
    "comment": "□□□□□□□ SIM □",
    "provisioning_json_vars": "{\"iccid\" : \"\", \"msisdn\" :
\"\"}",
    "terms": "□□□ 6 □□□□□□□□□□□ 12 □□□□□□□□□□□□□□□□",
    "service_type": "mobile",
    "residential": True,
    "business": True,
    "enabled": True,
    "inventory_items_list": "['SIM Card', 'Mobile Number']",
    "icon": "fa-solid fa-sim-card",
    "features_list": "['□□□□□□□□ (61xxx)', '□□□□', '□□□□']",
    "wholesale_cost": 3,
    "wholesale_setup_cost": 1,
    "customer_can_purchase": True
})
```

□□□□□□□□

```
product_list_new.append({
    "category": "addon",
    "provisioning_play": "play_topup_charge_then_action",
    "relies_on_list": "",
    "contract_days": 30,
    "retail_cost": 59.00,
    "retail_setup_cost": 0,
    "product_slug": "au-premium-plan-1",  # □□□ Action_au-premium-
plan-1
    "product_name": "AU □□□□ 1",
    "comment": "□□□□□ 100GB □□□3000 □□□□□3000 □ SMS□□□□□□ 6GB □□□
□",
    "provisioning_json_vars": "",
    "terms": "□□□□□□□ 30 □□□□□□",
    "service_type": "mobile",
    "residential": True,
    "business": True,
    "enabled": True,
    "icon": "fa-solid fa-mobile",
    "features_list": "['□□□□□ 100GB □□', '□□□□□ 3000 □□', '□□□□□
3000 □ SMS', '6GB □□□□']",
    "wholesale_cost": 45.00,
    "wholesale_setup_cost": 0,
    "auto_renew": "True",
    "customer_can_purchase": True
})
```

□□□□□□□□□□

```
product_list_new.append({
    "category": "addon",
    "provisioning_play": "play_topup_charge_then_action",
    "relies_on_list": "",
    "contract_days": 0,
    "retail_cost": 30,
    "retail_setup_cost": 0,
    "product_slug": "au-data-addon-20gb",  # □□□ Action_au-data-addon-20gb
    "product_name": "AU □□□□ 20GB",
    "comment": "□□□□□ 20GB □□",
    "provisioning_json_vars": "",
    "terms": "□□□□□□□□□□□□□",
    "service_type": "mobile",
    "residential": True,
    "business": True,
    "enabled": True,
    "icon": "fa-solid fa-mobile",
    "features_list": "['□□□□□ 20GB □□']",
    "wholesale_cost": 22,
    "wholesale_setup_cost": 0,
    "auto_renew": "False",
    "customer_can_purchase": True
})
```

□□□□□□□

- **category□□□□** - □□□□□
    - `standalone` - □□□□□□□□□□□□□□
    - `addon` - □□□□□□□□
    - `bundle` - □□□□□□□
- **provisioning_play□□□□** - □□□□ Ansible playbook□□□□ `play_topup_charge_then_action`□`play_simple_service`□
- **relies_on_list** - □□□□□□□ product_slugs □□□□□□□□
- **contract_days** - □□□□□□□□0 = □□□□30 = □□□
- **retail_cost□□□��** - □□□□□□□□/□□□□
- **retail_setup_cost** - □□□□□□□□□□□□□□□
- **product_slug□□□□** - □□□ **CGRateS** □□□□□□□□□□□□□□`Action_{product_slug}`□
- **product_name□□□□** - □□□□

- **comment** - □□□□
- **provisioning_json_vars** - □□□ playbook □□□□ JSON □□□
- **terms** - □□□□□□□
- **service_type** - □□□□□□□□□□□□□□□□
- **residential** - □□□□□□□□
- **business** - □□□□□□□□
- **enabled** - □□□□□□□□□□□□
- **inventory_items_list** - □□□□□□□ Python □□□□□
- **icon** - Font Awesome □□□
- **features_list** - □□□□□ Python □□□□□
- **wholesale_cost** - □□□□□□
- **wholesale_setup_cost** - □□□□□□□
- **auto_renew** - □□□□□ "True" □ "False" □□□
- **customer_can_purchase** - □□□□□□□□□□□□□□

□□□□□□□□□□□

□□ 7□□□ API □□□□□□□

```python
# □□□□□□
product_list_existing = session.get(crm_url + '/crm/product',
headers=headers)
existing_products = product_list_existing.json()

# □□□□□□
for product in product_list_new:
    print(f"□□□□: {product['product_slug']}")

    # □□□□□□□□□□
    if product['product_slug'] in [x['product_slug'] for x in
existing_products]:
        print(f"□□□□□: {product['product_slug']}")

        # □□□□□□□ product_id
        product_id = [
            x['product_id']
            for x in existing_products
            if x['product_slug'] == product['product_slug']
        ][0]

        product['product_id'] = product_id

        # □□□□□□
        response = session.patch(
            crm_url + '/crm/product/' + str(product_id),
            json=product,
            headers=headers
        )
        print(f"□□: {response.status_code}")
        assert response.status_code == 200
        print(f"□□□□: {product['product_slug']}")
    else:
        # □□□□□
        print(f"□□□□□: {product['product_slug']}")
        response = session.put(
            crm_url + '/crm/product',
            json=product,
            headers=headers
        )
        print(f"□□: {response.status_code}")
        assert response.status_code == 200
        print(f"□□□□: {product['product_slug']}")
```

□□□□□□□□

CRM □□□ CGRateS □□□□□□□□□□ □□□□□

```
# □ CGRateS □
ActionsId = "Action_au-premium-plan-1"

# □ CRM □
product_slug = "au-premium-plan-1"

# □ playbook □□□□□□□
cgr_action_name = "Action_" + product_slug
# □□: "Action_au-premium-plan-1"
```

Playbooks □□□□□□

□□□ □□ `ExecuteAction` □□□□□□□□□□□□□□□□□□□ playbook □□□ `SetBalance` □□□ CGRateS API□□□□`OmniCRM-API/Provisioners/plays/play_topup_charge_then_action.yaml` □□ ExecuteAction □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□Playbooks□□□□

□□□□□□□□□□□□playbook □ product_slug □□□□□□□

```
# □ play_topup_charge_then_action.yaml □
- name: □□ cgr_action_name □□
  set_fact:
    cgr_action_name: "Action_{{
api_response_product.json.product_slug }}"

# □□□□
- name: □□ CGRateS □□
  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": "{{ cgr_action_name }}"
        }]
      }
```

□□□□□□□ □□ □□□ **CGRateS** □□□□□□□□□□□□□ "□□□□□" □□□

□□□□□Ansible Playbooks □□

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□□□□□□□□□□□□□□□ "50GB □□□"□

1. □ CGRateS □□□□□

□□□□□ 5 □□ □□□□□□ □□□□□□□□□□□□□□□□□□□□□ 50GB □□□□□□□□□□□□□□□□□□□□

- **ActionsId**: `"Action_50gb-data-pack"`□□□□□ product_slug □□□
- **BalanceType**: `"*data"`
- **DestinationIDs**: `"Dest_PLMN_OnNet"`□□□□□□□□□□
- **Units**: `50 * 1024 * 1024 * 1024`□50GB □□□□□□□

- **Identifier**: `"*topup"`□□□□□□

2. □ CRM □□□□□

```
product_50gb_data = {
    "category": "addon",
    "provisioning_play": "play_topup_charge_then_action",
    "relies_on_list": "",
    "contract_days": 0,
    "retail_cost": 25.00,
    "retail_setup_cost": 0,
    "product_slug": "50gb-data-pack",  # □□□ ActionsId □□□□□
"Action_"
    "product_name": "50GB □□□",
    "comment": "□□□ 30 □□ 50GB □□□□",
    "provisioning_json_vars": "",
    "terms": "□□□ 30 □□□□□□□□□□□□□□□□□□□□□□□□□□□",
    "service_type": "mobile",
    "residential": True,
    "business": True,
    "enabled": True,
    "icon": "fa-solid fa-database",
    "features_list": "['50GB □□□□', '30 □□□□', '□□□□']",
    "wholesale_cost": 20.00,
    "wholesale_setup_cost": 0,
    "auto_renew": "False",
    "customer_can_purchase": True
}

# □ CRM □□□
response = session.put(
    crm_url + '/crm/product',
    json=product_50gb_data,
    headers=headers
)
assert response.status_code == 200
print("□□□□□□: 50gb-data-pack")
```

3. □□□□

□□□□□□□□□

1. □□□□ "50GB □□□"□product_slug: `50gb-data-pack`□
2. Playbook `play_topup_charge_then_action` □□
3. Playbook □□□□□□□`Action_50gb-data-pack`
4. Playbook □□ `APIerSv1.ExecuteAction`□□□ ActionsId `Action_50gb-data-pack`
5. CGRateS □□□□□□□
6. □□□□ 50GB □□

□□□□□□ Playbooks □□□□□□□

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□□□□□□□□□□ CRM □□□□□□□ CGRateS □□□□□□□□□□□□□□□□□□��� CGRateS □□□□□□□□

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□□□ □□□□□□□□□□□□□□□SMS□□□

CRM □□□

```
{
    "product_slug": "premium-monthly-plan",  # □□□ Action_premium-monthly-plan
    "product_name": "□□□□□□□",
    "category": "addon",
    "retail_cost": 59.00,
    "auto_renew": "True",
    "contract_days": 30,
    "provisioning_play": "play_topup_charge_then_action",
    "features_list": "['100GB □□', '5000 □□', '5000 □ SMS', '□□□□']"
}
```

□□□ □□ `*topup_reset` □□□□□□□□□□□□ □□ 1□□□□□□□□□Python□□

□□ 2□□□□□□□□□□□

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CRM □□□

```
{
    "product_slug": "10gb-addon",  # □□□ Action_10gb-addon
    "product_name": "10GB □□□□",
    "category": "addon",
    "retail_cost": 15.00,
    "auto_renew": "False",  # □□□□□
    "contract_days": 0,
    "provisioning_play": "play_topup_charge_then_action",
    "features_list": "['10GB □□□□□□□', '30 □□□□']"
}
```

□□□ □□ `*topup` □□□□□□□□□□□ CGRateS □□ - □□□

□□ 3□□□□□□□□□□□□

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CRM □□□

```
{
    "product_slug": "fixed-50gb-monthly",  # □□□ Action_fixed-50gb-monthly
    "product_name": "□□ 50GB □□□□",
    "category": "addon",
    "retail_cost": 35.00,
    "auto_renew": "True",
    "contract_days": 30,
    "provisioning_play": "play_topup_charge_then_action",
    "features_list": "['50GB □□', '□□□□', '□□□']"
}
```

□□□ □□ `*topup_reset` □□□□□□□□□ CGRateS □□ - □□□□□

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- □□□□□□□□□□□ MO □ MT □□/SMS □□□□□
- □□□□□□□□□ 2G/3G □ CAMEL□MO-MT SMS□USSD□□□□ 4G/5G □ Diameter
- □□□□□□□□□□□□□□□□□□□□□□□□□□□□
- ���□□□□□□□□□□□□□□□□□□□□□□□

□□□□□□□□□□□□ OmniCRM □□□□□□□□□□□ PAYG □□□

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□□□□□□□□□□□□□□SMS□□□

1. CGRateS □□□□□□□□□□□□□□□□□□□ GB□
2. □□□□□□□□□□□□□□□□□
3. □□□□□□□□□□□□□□CGRateS □□□□□□□□
4. □□□□ □□□□□□□□$0.10 □ MB□
5. □□□□□□□□□□□□□□□□□

□□□□□□□□□□□□□□□

```
# 1. □□□□□□□□□□□
OCS_Obj.SendData({
    "method": "ApierV2.SetTPDestinationRate",
    "params": [{
        "TPid": tpid,
        "ID": "DR_DATA_PAYG",
        "DestinationRates": [{
            "DestinationId": "Dest_PLMN_OnNet",
            "RateId": "RT_DATA_$0_10_PER_MB",
            "RoundingMethod": "*up",
            "RoundingDecimals": 4,
            "MaxCost": 0,
            "MaxCostStrategy": ""
        }]
    }]
})

# 2. □□□□□□
OCS_Obj.SendData({
    "method": "ApierV2.SetTPRate",
    "params": [{
        "TPid": tpid,
        "ID": "RT_DATA_$0_10_PER_MB",
        "RateSlots": [{
            "ConnectFee": 0,          # □□□□□
            "Rate": 0.10,             # □□□ $0.10
            "RateUnit": "1048576",    # 1 MB□1024 * 1024 □□□
            "RateIncrement": "1048576", # □ MB □□
            "GroupIntervalStart": "0s"
        }]
    }]
})

# 3. □□□□□□□□□□□□
OCS_Obj.SendData({
    "method": "ApierV2.SetTPRatingPlan",
    "params": [{
        "TPid": tpid,
        "ID": "RP_PAYG_DATA",
        "RatingPlanBindings": [{
            "DestinationRatesId": "DR_DATA_PAYG",
                "TimingId": "*any",
                "Weight": 10
            }]
        }]
})

# 4. □□□□□□□□□□□□□□□□□□□□□□
OCS_Obj.SendData({
    "method": "ApierV2.SetTPRatingProfile",
    "params": [{
        "TPid": tpid,
        "Tenant": tenant,
        "Category": "data",
        "Subject": "*any",  # □□□□□□□□
        "RatingPlanActivations": [{
            "ActivationTime": "2024-01-01T00:00:00Z",
            "RatingPlanId": "RP_PAYG_DATA",
            "FallbackSubjects": ""
        }]
    }]
})

# 5. □□□□□□
OCS_Obj.SendData({
    "method": "APIerSv1.LoadTariffPlanFromStorDb",
    "params": [{
        "TPid": tpid,
        "DryRun": False,
        "Validate": True,
        "APIOpts": {}
    }]
})
```

□□□□□□

- □□□□□□□□□□□□□□□□□□□□□□□ **$0.10 □ MB**
- □□□□□□□□□□□□□□`*monetary`□
- □□□□□ 1 MB□□□□□□

□□□□□□□□□

```
# □□□□□□□□□□□□□
OCS_Obj.SendData({
    "method": "ApierV2.SetTPRate",
    "params": [{
        "TPid": tpid,
        "ID": "RT_VOICE_DOMESTIC_$0_30_PER_MIN",
        "RateSlots": [{
            "ConnectFee": 0.15,           # $0.15 □□□□
            "Rate": 0.30,                 # □□□ $0.30
            "RateUnit": "60s",            # □□□□□
            "RateIncrement": "60s",       # □□□□□□□□
            "GroupIntervalStart": "0s"
        }]
    }]
})

OCS_Obj.SendData({
    "method": "ApierV2.SetTPRate",
    "params": [{
        "TPid": tpid,
        "ID": "RT_VOICE_INTL_$1_50_PER_MIN",
        "RateSlots": [{
            "ConnectFee": 0.25,           # $0.25 □□□□
            "Rate": 1.50,                 # □□□ $1.50
            "RateUnit": "60s",
            "RateIncrement": "1s",        # □□□□□□□□□
            "GroupIntervalStart": "0s"
        }]
    }]
})
```

□□□□□□□□□□□

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```
OCS_Obj.SendData({
    "method": "APIerSv1.SetChargerProfile",
    "params": [{
        "Tenant": tenant,
        "ID": "Charger_Default",
        "FilterIDs": [],
        "AttributeIDs": ["*constant:*req.RequestType:*none"],
        "Weight": 999
    }]
})
```

□□□□□

- CGRateS □□□□□□□ - □□□□□□□□□□□□□□□□□□□□□
- CGRateS □□□ - □□□□□□□ PLMN □□□

□□□□

1. □□□□□□□□□

```
# □ - □□□□□
ActionsId = "Action_premium-plan-100gb"
product_slug = "premium-plan-100gb"

# □ - □□□□□□□
ActionsId = "Action_Plan_A"
product_slug = "premium_100"
```

2. □□□□□□□□□

□□□□□ CRM □□□□□□ CGRateS □□□□□□□□□□□□□□□□□□ playbook □□□□

3. □□ CDR □□□□

□□□□ `*cdrlog` □□□□□□□□□□

```
{
    "Identifier": "*cdrlog",
    "BalanceType": "*generic",
    "ExtraParameters": "
{\"Category\":\"^activation\",\"Destination\":\"Product Name\"}",
    "Weight": 80
}
```

4. □□□□□□□ ID

```
# □
"BalanceId": "Premium_Data_100GB"
"BalanceId": "AU_Voice_Domestic__" + str(units)

# □
"BalanceId": "data1"
"BalanceId": "balance"
```

5. □□□□□□□

```
# □ - □□□□
Units = 100 * 1024 * 1024 * 1024  # 100GB □□□□□□
Units = 3000 * 60 * 1000000000    # 3000 □□□□□□□□

# □ - □□□□
Units = 107374182400
```

6. □□□□□□□□

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```
# □□□□□□□□□□ = □□□□□
{"Identifier": "*reset_account", "Weight": 700}
{"Identifier": "*topup_reset", "Weight": 90}
{"Identifier": "*cdrlog", "Weight": 80}

# □□□□□□□□□□ = □□□□□
"BalanceWeight": 1200  # □□/□□□□
"BalanceWeight": 1100  # □□□□
"BalanceWeight": 1000  # □□□□
```

7. □□□□□□□□□□

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```
# □□
Units = 100 * 1024 * 1024  # 100MB □□□□

# □□
Units = 100 * 1024 * 1024 * 1024  # 100GB
```

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- □ `Identifier` □ `*topup_reset` □□□ `*topup`
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□□□ `PUT /crm/cbc/`

□□□□□ `CREATE_CBC_MESSAGE`

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```
{
  "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"
    }
  ]
}
```

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```
{
  "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": [...]
}
```

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□□□ `GET /crm/cbc/`

□□□□□ `VIEW_CBC_MESSAGE`

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□□□ `PATCH /crm/cbc/{cbc_message_id}`

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```
{
  "cbc_message_id": 123,
  "numberOfBroadcasts": 500,
  "localized_messages": [
    {
      "language": "en",
      "messageBody": "UPDATED: Earthquake warning still in effect. Aftershocks possible."
    }
  ]
}
```

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□□□ `DELETE /crm/cbc/{cbc_message_id}`

□□□□□ `DELETE_CBC_MESSAGE`

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- **4370** - ETWS□□□□
- **4371** - ETWS□□□□
- **4372** - ETWS□□□□□□□□□
- **4373-4378** - ETWS□□□□□□
- **4379** - ETWS□□□□

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- **4352** - □□□□
- **4353-4355** - □□□□
- **4356-4359** - □□□□
- **4360-4363** - AMBER□□
- **4364-4367** - □□□□□□
- **4368-4369** - □/□□□□
- **4380-4381** - □□□□

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

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CBC URL□`crm_config.yaml`□□□□

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

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1. OmniCRM CBE□□□□□□□□□□□
2. □□□□□□CBC API
3. □`{cbc_url}/alerts/send`□□HTTP POST□□
4. CBC□□□□□□□□CBSP□SBc-AP□N50□□□□□□□□
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CBSP - 2G/3G - □□□□□□BSC□

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SBc-AP - 4G/5G□□□ - MME/IWF

SBc-AP□□□OWL CBC□□□4G□5G eNodeB/gNodeBs□MME□□□□□□□□□□□

- □□4G LTE□□
- □□□□□□5G□□□2025□□□□□□□
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□□□□□ `VIEW_CBC_MESSAGE`□`CREATE_CBC_MESSAGE`

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- **lat/lng** - □□□□
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```
[
  {
    "area": "Coastal Region",
    "polygon": [
      {
        "coord": [
          {"lat": -33.8688, "lng": 151.2093},
          {"lat": -33.8650, "lng": 151.2070},
          {"lat": -33.8600, "lng": 151.2150},
          {"lat": -33.8688, "lng": 151.2093}
        ]
      }
    ]
  }
]
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Google Maps API□

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```
REACT_APP_GOOGLE_API_KEY=your_google_maps_api_key_here
```

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

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

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`DELETE /crm/cbc/{cbc_message_id}`

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> John Smith □□ ID: 123 □□: customer
>
> John Smith (□□□) □□ ID: 123 □□: contact
>
> Mobile - +44 7700 900123 □□ ID: 123 □□: service

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- `/customers/{customer_id}` - □□□□
- `/customers/{customer_id}#4` - □□□□□□ 4□
- `/customers/{customer_id}#2` - □□□□□ 2□
- `/customers/{customer_id}#8` - □□□□□ 8□
- `/customers/{customer_id}#3` - □□□□□ 3□
- `/inventory-items-list` - □□□□□

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

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

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```
{
  "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
  }
}
```

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```sql
-- 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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```
- API □□□POST /oam/topup_dongle
- □□ service_uuid □ IMSI
- □□ OCS/CGRateS □□□□
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- **HotspotTopup** □□ - □□□□□□
    - payment_intent_id

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- □□ `days` □□
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```
- name: Top up hotspot service
  hosts: localhost
  tasks:
    - name: Add balance to OCS
      uri:
        url: "{{ ocs_api_url }}/add_balance"
        method: POST
        body:
          imsi: "{{ imsi }}"
          days: "{{ days }}"
          service_uuid: "{{ service_uuid }}"
```

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- `Action_Balance_Low` - □□□□□□□□□□□□ 2 □□
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  - □□ OCS/CGRateS API □□□□□
  - □□ playbook `play_topup_hotspot.yaml` □□□□□
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□□ `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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- OmniCRM □□□□□□□□□□□□□
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- □□□□□□□□□□□□□□
- IP □□□□□□□□□□□□

- IMSI □□□□□□□□□□□□
- □□□□□□□□□□

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- □□□□□□□□□□□□□□IP □ IMSI□
- □□□□□□□□□□□□
- □□□□□□□ CRM □□□□□□□□□□

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1. □□□□□□ - □□□□□□□□□□□□□□□
2. □□□□□□□ - □□□□□□□□□
3. □□ **playbook** □□ - □□ playbook □□□□□□
4. □□ **OCS** □□ - □□ OCS API □□□□□
5. □□□□ - □□□□□□ `REACT_APP_TOPUP_PRICE_PER_DAY`

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

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1. □□ **Stripe webhooks** - □□ webhook □□□□□□□□□□□□□
2. □□□□□ - □□□□□□□□□ payment_intent_id
3. □□□□ - □□□□□□□□□□□□□□□
4. □□□□□□ - □□□□□□□□□□□□□
5. □□□□ - □□□□□□ &lt;5 □□□□

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- `payments_process` - □□□□□□
- `concepts_provisioning` - □□□□□□
- `Payment System Guide <payment_system_guide>` - □□□□□□□□□□□
- `payments_transaction` - □□□□
- `payments_invoices` - □□□□

[illegible]

[illegible] OmniCRM [illegible] Ansible [illegible]

[illegible]

OmniCRM [illegible]

1. [illegible] - [illegible]
2. [illegible] - [illegible]
3. [illegible] - [illegible]/[illegible]
4. [illegible] - [illegible]

[illegible]

OmniCRM [illegible]

[illegible]

[illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

- `wholesale_setup_cost` - □□□□□□
- `retail_setup_cost` - □□□□□□□□□□

□□□

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

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□□□□ SIM □□

□□□□□□□□□□□ 20GB □□□□□□□□ SIM □□□

□□ 1□□□□□□□□

□□□□ UI□□□ □□ → □□□□□

□□ 2□□□□□□□

```json
{
  "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` - □□□□□□□□□���

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

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- □□□□□□□□□£15.00
- □□□□□□□£5.00
- □□□□□□£10.00□200% □□□67% □□□□
- □□□□□-£1.00□□□□□□□□□
- □□□□□30 □□□□□□□

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

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- □□□□□□□□□□□□□□
- □□□□□□□
- □ 2025 □ 1 □ 1 □□□□
- □□□□□□□□□□□□

□□ 5□□□□□□□

```json
{
  "auto_renew": "prompt",
  "allow_auto_renew": true
}
```

- `"prompt"` - □□□□□□□□□□□□□□□□
- `"true"` - □□□□□□□□□
- `"false"` - □□□□□□□□□□□□□
- `allow_auto_renew: true` - □□□□□□□□/□□□□□□

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

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□□□□□□□□ OmniCRM □□□□□□□□□□□□□□□□□□□

- □□ - □□□□□□□□□□□“SIM □”□“□□□□”□“□□□□□”□
- □□□□ - □□□□MAC □□□□□□□□
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`inventory_items_list` □□□□□□□□□□□□ Python □□□□□□□□□□□□□□□□□□□□□□□ `□□□□ <administration_inventory>` □□□

□□□□□□□

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

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

# □□□□□□□□□□□□
inventory_items_list: "[]"

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

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1. □□□□□□

□□□□□□□□□□“□□”□□□□□□ `inventory_items_list`□□□□□□□□□

2. □□□□□□□□□□

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3. □□□□□□

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- □□□□ - □□□□□□□□□□
- □□□□ - `item_state` □ "New" □ "In Stock"□□□□ "Assigned" □ "Damaged"□
- □□□ - `service_id` □ `customer_id` □ NULL
- □□□□□□□□ - □□□□□□/□□□□□□

□□□□□□□

□□“SIM □”□□□□□□□□□□□□□□

□□□□□□□

- □□ ID □□□□□
- □□□□□□`itemtext1` - □□□SIM □ ICCID□□□□□□□
- □□□□□`item_location`□

4. □□□□□□□□

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- “□□”□□□□□□□□□□□□□□□□□□
- □□□□□□□□□□□□□□□□□
- □□□□□□□□□□□

5. □□□□□□□□ Ansible

□□□□□□“□□”□□□□□ ID □□□□□□□□ Ansible □□□

```
# □□□□□
# - SIM □ inventory_id: 5001
# - □□□□ inventory_id: 5002

# □□□ Ansible □□□□
{
    "product_id": 42,
    "customer_id": 123,
    "SIM Card": 5001,           # □□ ID
    "Mobile Number": 5002,       # □□ ID
    "access_token": "eyJ..."
}
```

□□□ □□□□□□□□□□□□□□□□□□ `hostvars[inventory_hostname]['SIM Card']` □□□□ ID□

6. □□□□□□□□□□□□

Ansible □□□□□□ ID □□□□□□□□□

```
- name: □□□□□ 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

- name: □□ ICCID □ IMSI
  set_fact:
    iccid: "{{ api_response_sim.json.itemtext1 }}"
    imsi: "{{ api_response_sim.json.itemtext2 }}"
```

□□□□□□□□ SIM □□□□□ICCID□IMSI □□□□ HSS □□□□□□

7. □□□□□□□“□□□”

□□□□□□□□□□□□□□□□□□□□□□□□

```
- name: □ SIM □□□□□□
  uri:
    url: "{{ crm_config.crm.base_url
}}/crm/inventory/inventory_id/{{ hostvars[inventory_hostname]['SIM
Card'] }}"
    method: PATCH
    body:
      {
        "service_id": "{{
service_creation_response.json.service_id }}",
        "customer_id": "{{ customer_id }}",
        "item_state": "Assigned"
      }
```

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- □□□□□□□□□□“□□”□□□□□□□□□□□□□□□□□□□□□□□□□□□□
- □□□□□□□□□□□□□□□□□□□□□□□□□□□
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1. □□□□ **ID**□□□□□□□□□□□□`service_id` □□□
2. □□□□□□□□□□□□□□□□□□OCS □□□□□□□□□□□□□□□
3. □□□□□□□□□□□□□□□□□□□□□□

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```
rescue:
  - name: □□□□□□□
    uri:
      url: "{{ crm_config.crm.base_url
}}/crm/inventory/inventory_id/{{ hostvars[inventory_hostname]['SIM
Card'] }}"
      method: PATCH
      body:
        {
          "service_id": null,
          "customer_id": null,
          "item_state": "In Stock"
        }
    when: service_id is defined  # □□□□□□□□
```

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□□ `inventory_items_list: "[]"`□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□

- □□□□ - □□□□□□VPN □□
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□□□ “5GB □□□□”□□□□□□ `inventory_items_list: "[]"`□□□□□□□□□□□□□□□□□□□□□□□

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□ `inventory_items_list` □□□□□□□□□□□□□□□□□□□□

1. □□□ □□ → □□ → □□
2. □□□□□□□□□□□□□□□“SIM □”□
3. □□□□□
   - `itemtext1_label`: "ICCID"
   - `itemtext2_label`: "IMSI"
   - `itemtext3_label`: "PUK Code"
4. □□□□□□□□□□□□□□□

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

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□□ 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 □□□

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```
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 □□

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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
- □□□□□□□□□□□□□□□□□□□□□□□□□□

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```
inventory_items_list: "['Rental Modem']"
```

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- □□□□□□□□□□

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- □□□□ IP □□□□□□□□□
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- `inventory_items_list` □□□`"[]"`
- `inventory_items_list` □ NULL □□□□
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- □□□□□□□□□□ `inventory_items_list: "['Type1', 'Type2']"`
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- □□ API □□□□□□□□□ inventory_items_list

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- □□□□□□□□□□□□ `hostvars[inventory_hostname]['SIM Card']`
- □□□□□□□□□□ `{{ hostvars[inventory_hostname]['SIM Card'] | int }}`
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```json
{
  "features_list": "20GB □□□□□□□□□□□□□□□□□□□□□□□□30 □□□",
  "terms": "□□□ 30 □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□"
}
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```
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□□ 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` - □□□□□□□□□□
- □□□□□□□□ `OmniCRM-API/Provisioners/plays/play_local_mobile_sim.yaml`

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```
{
  "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 □□□□',
    '□□□□□□□',
    '□□□□□□',
    '□□□',
    '30 □□□'
  ]",
  "terms": "□□□ 30 □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□",

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

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```
{
  "product_name": "5GB □□□□",
  "product_slug": "5gb-data-boost",
  "category": "addon",
  "service_type": "mobile",
  "enabled": true,
  "icon": "fa-solid fa-plus",
  "comment": "□□□□□□□□□ 5GB □□□□",

  "retail_cost": 5.00,
  "wholesale_cost": 1.50,
  "retail_setup_cost": 0.00,
  "wholesale_setup_cost": 0.00,
  "contract_days": 0,

  "residential": true,
  "business": true,
  "customer_can_purchase": true,

  "auto_renew": "false",
  "allow_auto_renew": false,

  "inventory_items_list": "[]",
  "relies_on_list": "",

  "features_list": "5GB □□□□□□□□ 7 □",
  "terms": "□□□ 7 □□□□□□□□□□□□□□",

  "provisioning_play": "play_topup_charge_then_action",
  "provisioning_json_vars": "{
    \"data_gb\": 5,
    \"days\": 7
  }"
}
```

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```
{
  "product_name": "WiFi 6 □□□□□□□",
  "product_slug": "wifi6-modem-rental",
  "category": "addon",
  "service_type": "internet",
  "enabled": true,
  "icon": "fa-solid fa-router",
  "comment": "□□□□□□□ WiFi 6 □□□□□ - □□",

  "retail_cost": 10.00,
  "wholesale_cost": 3.00,
  "retail_setup_cost": 0.00,
  "wholesale_setup_cost": 45.00,
  "contract_days": 30,

  "residential": true,
  "business": true,
  "customer_can_purchase": true,

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

  "inventory_items_list": "['Rental Modem']",
  "relies_on_list": "",

  "features_list": "WiFi 6 (802.11ax)□□□ 2.4GHz + 5GHz□□□□□ 40 □□
□□□□□□",
  "terms": "□□□□□□□□□□□□□□□□□□□□□ £150 □□□□□□□□□□□□□□□□□",

  "provisioning_play": "play_addon_assign_modem",
  "provisioning_json_vars": "{
    \"device_type\": \"modem_router\",
    \"requires_configuration\": true
  }"
}
```

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- `category: "addon"` - □□□□□□□□□□□□□□
- `contract_days: 0`□□□□□ `30`□□□□□□ - □□□□
- `inventory_items_list: "[]"`□□□□□ `"['Rental Modem']"`□□□□ - □□□□

- `auto_renew: "false"`[illegible] `"true"`[illegible] - [illegible]
- `relies_on_list: ""` - [illegible] `service_type` [illegible]

[illegible]

[illegible] `inventory_items_list`[illegible]

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2. [illegible] - [illegible]
3. [illegible] - [illegible]
4. [illegible] - [illegible]
5. [illegible] - [illegible]
6. [illegible] - [illegible]

[illegible]

[illegible]“WiFi 6 [illegible]”[illegible]

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2. [illegible] - [illegible]
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4. [illegible] - [illegible]
   - `service_id`[illegible]
   - `customer_id`[illegible]
   - `item_state`[illegible] "Assigned"
5. [illegible] - [illegible]
6. [illegible] - [illegible] ONT
7. [illegible] - [illegible] £10[illegible]

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3. □□□□□
    - □□□□□`item_state` = "In Stock"□□□□□□□
    - □ `item_state` = "Damaged"□□□□□□□
    - □□□□□□□□□□□□□
4. □□□□
    - 14 □□□□□ £150 □□□□□
    - □□□□□`item_state` = "Lost"
    - □□□□□□□£45□+ □□□□

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- □□□□□□□□□□□□□□□□□□
- □□□□□□□□□□ `contract_days` □□□□□□

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□□□□□“□□□□□ 20GB”□□□□OmniCRM □□ Ansible □□□□□

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□□□□ → □□□□ → □□□□□□ ↓ ↓ □□□□ ← □□□□ ← □□ Ansible □□ ↓ ↓ □□□□□□ → OCS □□ □□ → □□□□ → □□□□

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- □□□□“□□□□”
- □□□□□□□□“□□□□□ 20GB”
- □□□□□□□□□□□

2. □□□□

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

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3. □□□□

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- □□□□□£0.00□□□□□□
- □□□□□£15.00
- □□□□□£15.00□□□□□□
- □□□□□□□□□ 30 □

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☐ □ 30 □□□□□□□□

4. □□□□□□

□□□“□□”□□API□

- □□□□□“□□”□status=1□□ `Provision` □□
- □□□□□□ + □□ + □□□□□□□
- □□□□□□□□□ Ansible □□
- □□ provision_id □□ UI □□□□

5. □□□□

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```
{
  "days": 30,
  "data_gb": 20,
  "voice_minutes": "unlimited",
  "sms_count": "unlimited"
}
```

□□□□□

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

□□□□□

```
{
  "access_token": "eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9...",
  "initiating_user": 7
}
```

□□□□□ Ansible □□□□

```
{
    "product_id": 42,
    "customer_id": 123,
    "SIM Card": 5001,
    "Mobile Number": 5002,
    "days": 30,
    "data_gb": 20,
    "voice_minutes": "unlimited",
    "sms_count": "unlimited",
    "access_token": "eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9...",
    "initiating_user": 7
}
```

6. □□ Ansible □□

□□ `play_local_mobile_sim.yaml` □□□□□□□□□

□□ Ansible □□□□

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□□ SIM □□□□□□

□��□ `OmniCRM-API/Provisioners/plays/play_local_mobile_sim.yaml`

□□□□□

```yaml
- name: □□ SIM □□
  hosts: localhost
  gather_facts: no
  become: False

  tasks:
    - name: □□
      block:
        # 1. □□□□
        # 2. □ API □□□□□□□□
        # 3. □ API □□□□□□□□
        # 4. □ API □□□□□□□□
        # 5. □ OCS □□□□□□CGRateS□
        # 6. □ OCS □□□□□□□
        # 7. □ CRM □□□□□□□
        # 8. □□□□□□□□
        # 9. □□□□
        # 10. □□□□□□

      rescue:
        # □□□□□
        # - □□ OCS □□
        # - □□□□
        # - □□□□
```

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

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- OCS/CGRateS URL □□□
- CRM □□ URL
- □□□□

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```
- 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
```

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

□□□□ □□□□□□□□□□□ `provisioning_json_vars`□□□□□□□��□□□□□□□□

- □□□□□□□□□□□□□□□□□
- □□□□□□□□□□□
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```
- 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
}}"
```

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```
- 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

- name: □□□□□□□□ IMSI
  set_fact:
    imsi: "{{ api_response_sim.json.itemtext2 }}"
    iccid: "{{ api_response_sim.json.itemtext1 }}"
```

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- □□ SIM □□□ ID 5001
- □□ SIM □□□□□
  - `itemtext1` = ICCID□SIM □□□□
  - `itemtext2` = IMSI□□□□□□
- □□□□□□□□□□□□□□□□□□□□□

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- IMSI □□□ HSS□□□□□□□□□□□□□□
- ICCID □□□□□□□□□□□□□□□
- □□□□□MSISDN□□□□□□□□□□□

□□ 5□□□□□ UUID

```
- name: □□ UUID □□
  set_fact:
    uuid: "{{ 99999999 | random | to_uuid }}"

- name: □□□□ UUID
  set_fact:
    service_uuid: "Local_Mobile_SIM_{{ uuid[0:8] }}"
```

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- □□□□ UUID
- □□□□ `Local_Mobile_SIM_a3f2c1d8` □ service_uuid

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- □□ UUID □ OCS/CGRateS □□□□□□□
- □□□□□□□□
- □□□□□□□□□□□□

□□ 6□□ OCS □□□□□

```yaml
- name: □ OCS □□□□□
  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": [],
          "ExtraOptions": {
            "AllowNegative": false,
            "Disabled": false
          },
          "ReloadScheduler": true
        }]
      }
  register: ocs_create_response
```

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- □□ CGRateS JSON-RPC API
- □□ service_uuid □□□□□
- □□□□□□□□□□□□□□□
- □□□□□□□□□□□□

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- OCS □□□□□□□□□□□□
- □□□□□□□□□□□□□□□□□□□□
- □□□□□□□□□□□

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```yaml
- name: □□□□□ 20GB □□□□
  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",
          "Balance": {
            "ID": "DATA_20GB_Monthly",
            "Value": 21474836480,
            "ExpiryTime": "+720h",
            "Weight": 10,
            "DestinationIDs": "*any"
          }
        }]
      }
```

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- □□□□□ 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 □□□□□□□

```yaml
- 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 }}",
        "service_name": "Mobile - {{ phone_number }}",
        "service_type": "mobile",
        "service_uuid": "{{ service_uuid }}",
        "service_status": "Active",
        "service_provisioned_date": "{{ provision_datetime }}",
        "retail_cost": "{{ monthly_cost }}",
        "wholesale_cost": "{{
api_response_product.json.wholesale_cost }}",
        "icon": "fa-solid fa-sim-card"
      }
  register: service_creation_response
```

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- □□□□□□□□□□
- □□ `service_uuid` □□□ OCS
- □□□□□□□□□
- □□□□□□“□□”
- □□ `service_id` □□□□□□

□□ 10□□□□□□□□□

```yaml
- name: □ SIM □□□□□□
  uri:
    url: "{{ crm_config.crm.base_url
}}/crm/inventory/inventory_id/{{ hostvars[inventory_hostname]['SIM
Card'] }}"
    method: PATCH
    body_format: json
    headers:
      Authorization: "Bearer {{ access_token }}"
    body:
      {
        "service_id": "{{
service_creation_response.json.service_id }}",
        "customer_id": "{{ customer_id }}",
        "item_state": "Assigned"
      }
```

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- □□ SIM □□□□□
- □ `service_id` □□□□ SIM □□□□□
- □□□□“□□□”□□□“□□□”
- □□□□□□□□□□□□

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- □□□□ SIM □□□□□□□
- □□□□□□□□□
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□□ 11□□□□□□□□□

```
- name: □□□□□□□□
  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 }} - □□",
        "description": "□□□□",
        "retail_cost": "{{ setup_cost }}",
        "wholesale_cost": "{{
api_response_product.json.wholesale_setup_cost }}"
      }
```

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- □□ £0.00 □□□□□□□□□□□□
- □□ £1.00 □□□□□
- □□□□□□□□□□□

□□ 12□□□□□□□□□□

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

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

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- □□□□□□□□□□□□□□
- □□□□□□□ OCS □□
- □□□□□□“□□□”
- □□□□□□□□□□□□□□

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- □□ OCS □□□□□□
- □□□□□□□□□□
- □□□□□□□

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1. OCS □□□CGRateS□□

- □□ ID□`Local_Mobile_SIM_a3f2c1d8`
- □□□
  - 20GB □□□□ 30 □□□□□

    - □□□□□999M □□□□□ 30 □□□
    - □□□□□999M □□□□□□□ 30 □□□

2. CRM □□□□□

- □□ ID□1234
- □□□John Doe□customer_id: 123□
- □□□□□□□□ 20GB□product_id: 42□
- □□□□□“Mobile - +44 7700 900123”
- □□ UUID□`Local_Mobile_SIM_a3f2c1d8`
- □□□□□
- □□□□□£15.00□□□□□£5.00□□□□
- □□□£10.00/□

3. □□□□□

- SIM □ 5001□□□□□□ 1234□□□ 123
- □□□□ 5002□□□□□□ 1234□□□ 123

4. □□□□□

- □□□□□□□□
- □□□□□□□□

5. □□□□□□□

- □□□□□□□□□□□□
- □□ 20GB □□□□
- □□□□□□□□□
- □□□□□□□□□
- □□□□□□□□

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□□□□□□□ 20GB □□□□ 18GB□□□□□□“5GB □□□□”□□□□□

1. □□□□□□□

- □□“Mobile - +44 7700 900123”□□□□
- □□□□□□□□□20GB □□ 18GB□90%□
- □□“□□□□□□□”□“□□”

2. □□□□□□□□□□

□□□□□□□□□□

- `category = "addon"`
- `service_type = "mobile"`□□□□□□□□□
- `residential = true`□□□□□□□□□□□
- `enabled = true`

□□□□□“5GB □□□□ - £5.00”

3. □□□□□□□□

- □□“5GB □□□□”
- □□□□ £5.00
- □□□□□□□□

4. □□□□□□□□

□□□□ `play_topup_charge_then_action.yaml`□□□□□□

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

□□□□□□□□□□□

- □□ `service_id`□□□□□□□□□
- □□□□□
- □□□□□□□□□□□□□

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```yaml
- 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 □□□□□□
- □□□□□□□□□□□□□□□
- □□□□□□□□

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```
- name: □□□□□□□□□□□
  uri:
    url: "http://localhost:5000/api/payments/methods/default?
customer_id={{ customer_id }}"
    method: GET
    headers:
      Authorization: "Bearer {{ access_token }}"
  register: api_response_payment_method

- name: □□□□□□□□ ID
  set_fact:
    payment_method_id: "{{
api_response_payment_method.json.data.payment_method_id }}"

- name: □□□□□
  uri:
    url: "http://localhost:5000/api/payments/charge"
    method: POST
    body_format: json
    headers:
      Authorization: "Bearer {{ access_token }}"
    body:
      {
        "customer_id": "{{ customer_id | int }}",
        "amount": 5.00,
        "currency": "USD",
        "payment_method_id": "{{ payment_method_id }}",
        "metadata": {
          "description": "5GB □□□□",
          "service_id": "{{ service_id | int }}",
          "product_id": "{{ product_id | int }}",
          "invoice": true
        }
      }
  register: charge_response

- name: □□□□□□
  assert:
    that:
      - charge_response.json.success == true
```

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- □□□□□□□ Stripe □□□□
- □□□□ £5.00
- □□□□□□ £1.50 □□□□□□□
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□□ 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
          }
        }]
      }
```

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- □□□□□ 5GB□5368709120 □□□
- □ 168 □□□7 □□□□□

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- □□□□5GB□□ 7 □□□□□
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□□ **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
      }
```

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- □□ £5.00 □□□□□□
- □□ £1.50 □□□□□
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4. □ CRM □□□□□
5. □□□□□□□□□□□□□□ 7GB

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

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```yaml
- 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
          }],
          "Overwrite": false,
          "ReloadScheduler": true
        }]
      }
```

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- □ OCS □□□□□□□
- □ 30 □□□ `Action_{{ product_slug }}`
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```json
{
    "action": "deprovision",
    "service_id": 1234,
    "customer_id": 123,
    "service_uuid": "Local_Mobile_SIM_a3f2c1d8"
}
```

□□□ `service.deprovisioning_play` □□□□□□□□□□□□□□□□

4. Ansible □□□□□□

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

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

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1. □□ **OCS** □□ - □□□□□□□□□□□
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3. □□ **CRM** □□ - □□□“□□□”□□□□□
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- OCS □□□□□□□□□□□

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

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

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- `enabled: true` - □□□□□□□□
- `enabled: false` - □□□□□□□□□□□□

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- □□□□□□ `enabled: false` □□□□□□
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- `In Stock` - □□□□□
- `Assigned` - □□□□□□□
- `Decommissioned` - □□□□□□□
- `Damaged` - □□□□□□□

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- SIM □□□□□□□□“□□□”
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Mailjet □ OmniCRM □□

OmniCRM □ **Mailjet** □□

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Mailjet □ `OmniCRM-API/crm_config.yaml` □ `mailjet` □□□□□

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

□□ API □□□

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

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OmniCRM □□ **10** □□□□□□□□□□□□□ □□□□□□□□□□□□□□□□□□□

- **from_email** - □□□□□□□□□
- **from_name** - □□□□□□□
- **template_id** - Mailjet □□ ID□□□□
- **subject** - □□□□□□□

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

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- `{{ var:customer_name }}` - □□□□□
- `{{ var:email }}` - □□□□□□□□□
- `{{ var:company_name }}` - □□□□□□
- `{{ var:login_url }}` - □□□□□□□□
- `{{ var:support_url }}` - □□□□□□

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

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- `{{ var:customer_name }}` - □□□□□
- `{{ var:invoice_number }}` - □□ ID/□□
- `{{ var:invoice_date }}` - □□□□□□
- `{{ var:due_date }}` - □□□□□
- `{{ var:total_amount }}` - □□□□□
- `{{ var:invoice_url }}` - □□/□□□□ PDF □□□
- `{{ var:pay_url }}` - □□□□□□□□□

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

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

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

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- □□□□□□□□“□□□□□□”□□

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- `{{ var:user_name }}` - □□□□□□□
- `{{ var:email }}` - □□□□□□□□□
- `{{ var:role }}` - □□□□□
- `{{ var:login_url }}` - □□□□□□□□
- `{{ var:temp_password }}` - □□□□□□□□□

- `{{ var:support_email }}` - IT □□□□

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

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- `{{ var:user_name }}`
- `{{ var:reset_url }}` - □□□□□□□□□□□□□□□□ 1 □□□
- `{{ var:expiry_time }}` - □□□□□□□□

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```
api_crmCommunicationUserPasswordResetSuccess:
  from_email: "noreply@yourcompany.com"
  from_name: "Your Company Security"
  template_id: 5977512
  subject: "□□□□□□□"
```

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- `{{ 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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- `{{ 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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- `{{ var:user_name }}`
- `{{ var:verification_url }}` - □□□□□□□□□
- `{{ var:verification_code }}` - □□□□□□□□□□□□□

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

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- `{{ var:customer_name }}`
- `{{ var:service_name }}` - □□□□□□□□

- `{{ var:expiry_date }}`
- `{{ var:balance_type }}` - “□□”□“□□”□“□□”□
- `{{ var:renewal_url }}` - □□/□□□□□

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

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- □□□□□□ OCS □□□
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- `{{ var:customer_name }}`
- `{{ var:service_name }}`
- `{{ var:current_balance }}`
- `{{ var:threshold }}`
- `{{ var:balance_type }}`
- `{{ var:topup_url }}` - □□□□□□□

□□ Mailjet □□□□□□□

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□ 1 □□□ Mailjet □□□□□

1. □□ Mailjet □□□

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3. □□ □□□□□
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□ 2 □□□□□□

□□ Mailjet □□□□□□□ HTML □□□□□□□□□□□□

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- □□ - □□□□□□□
- □□□ - □□ `{{ var:customer_name }}` □ `{{ var:user_name }}` □□□
- □□ - □□□□□□
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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>
    ![Logo](https://yourcompany.com/logo.png)

    <h2>□□□□□□</h2>

    <p>□□ {{ var:user_name }}□</p>

    <p>□□□□□□□□□□□□□□□□□□□□□□□□□□□□</p>

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

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

    <p>□□□□□□□□□□□□□□□□□□□□</p>

    <hr>
    <p style="font-size: 12px; color: #666;">
        □□□□ | support@yourcompany.com<br/>
        123 □□□□□□□□□
    </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`□

```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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- [illegible]

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- [illegible]/[illegible]
- [illegible]

[illegible]

[illegible]

- [illegible] [illegible] API [illegible]Mailjet [illegible] ID [illegible]
- [illegible]
  - [illegible] `crm_config.yaml` [illegible] `api_key` [illegible] `api_secret`
  - [illegible] Mailjet [illegible]
  - [illegible] ID [illegible] Mailjet
  - [illegible] API [illegible]

[illegible]

- [illegible] [illegible] OmniCRM [illegible]
- [illegible]
  - [illegible]
  - [illegible] `{{ var:variable_name }}` [illegible]
  - [illegible] OmniCRM [illegible] API [illegible]
  - [illegible] Mailjet [illegible]

[illegible] **PDF** [illegible]

- [illegible] PDF [illegible]
- [illegible]
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  - [illegible]

  - [illegible] PDF [illegible] 15MB[illegible]Mailjet [illegible]
  - [illegible] PDF [illegible]

[illegible] Mailjet

- [illegible] [illegible] API [illegible]
- [illegible]
  - [illegible] Mailjet API [illegible] 200 [illegible]
  - [illegible] OmniCRM-API [illegible]
  - [illegible]
  - [illegible]

[illegible]

- `administration_configuration` - [illegible] Mailjet [illegible]
- `payments_invoices` - [illegible]
- `authentication_flows` - [illegible]
- `customer_care` - [illegible]
- [illegible] - Mailjet API [illegible]

[illegible]

- Mailjet [illegible] <https://dev.mailjet.com/>
- Mailjet API [illegible] <https://dev.mailjet.com/email/reference/>

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OmniCRM API □□□□□□□ Prometheus □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□ `/crm/metrics` □□□ Prometheus □□□□□□□

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- □□□□ - OCS/CGRateS□Stripe□Mailjet API □□
- □□□□ - □□□□□□□□□
- **HTTP** □□ - API □□□□□□□□□□□□□□□□□

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URL: `http://your-omnicrm-api:5000/crm/metrics`

□□: Prometheus □□□□

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1. □□□□

□□□□□□□□ Ansible □□□ Provisioning System □ Ansible Playbooks□

omnicrm_provision_jobs_total

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□□:

- `status` - □□□□□□: `success`, `failed`, `running`

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omnicrm_provision_job_duration_seconds

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□□:

- `playbook` - □□□ Ansible □□□□
- `status` - □□□□□□: `success`, `failed`

□: `[1, 5, 10, 30, 60, 120, 180, 300, 600]` □□1□□10□□□

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omnicrm_provision_jobs_active

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omnicrm_provision_tasks_total

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- `playbook` - Ansible □□□□
- `status` - □□□□: `ok`, `failed`, `ignored`

□□: □□□□□□□ Ansible □□□□□□□□□□□□□□□□□□□□□□□□

omnicrm_provision_errors_total

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- `error_type` - □□□□: `fatal`, `task_failed`, `timeout`
- `playbook` - Ansible □□□□

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2. □□□□□

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omnicrm_db_query_duration_seconds

□□: □□□

□□:

- `operation` - SQL □□□□: `SELECT`, `INSERT`, `UPDATE`, `DELETE`
- `table` - □□□□□□□

□: `[0.001, 0.005, 0.01, 0.05, 0.1, 0.5, 1.0, 5.0, 10.0]` □

□□: □□□□□□□□□□□□□□ SQLAlchemy □□□□□□□□□□□□□□□□□□□

omnicrm_db_pool_size

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omnicrm_db_pool_overflow

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omnicrm_db_pool_connections_checked_out

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omnicrm_db_errors_total

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- `error_type` - □□□□□□□
- `operation` - □□□□□□□: `connection_error`, `query_error`, □□□

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3. OCS/CGRateS □□

OCS□□□□□□□□□□□□□ CGRateS □□□□□□□□□□□□□□□□□□□□ Billing Overview □ CGRateS Integration□

omnicrm_ocs_api_calls_total

□□: □□□

□□:

- `method` - OCS API □□: `GetBalance`, `SetBalance`, `SetAccount`, `RemoveAccount`, □□□
- `status` - □□□□: `success`, `failed`

□□: OCS/CGRateS API □□□□□□□□□□ API □□□ OCS □□□□□□

omnicrm_ocs_api_duration_seconds

□□: □□□

□□:

- `method` - OCS API □□: `GetBalance`, `SetBalance`, `GetAccount`, □□□

□: `[0.1, 0.25, 0.5, 1.0, 2.0, 5.0, 10.0, 30.0]` □

□□: OCS/CGRateS API □□□□□□□□□□□ API □□□□□□□□□□□□□□□

omnicrm_ocs_api_errors_total

□□: □□□

□□:

- `method` - □□□ OCS API □□
- `error_type` - □□□□: `timeout`, `connection_error`, `json_error`, `http_error`, □□□

□□: OCS/CGRateS API □□□□□□□ OCS API □□□□□□□□□□□□□□□

omnicrm_ocs_balance_queries_total

□□: □□��

□□:

- `query_type` - □□□□□□: `single_account`, `multiple_accounts`

□□: □ OCS □□□□□□□□□□□□□□□□□□□□□□□□

omnicrm_ocs_action_plan_operations_total

□□: □□□

□□:

- `operation` - □□□□□□: `create`, `remove`, `query`

□□: □□□□□□□□□□□□□□□□□□□□ CGRateS □□□□□□□□□□□□□□□□□□□□□□

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4. Stripe □□□□

Stripe □□□□□□□□□□□□□□□□□□□□□□□ Payment System Guide □ Payment Methods□

omnicrm_stripe_api_calls_total

□□: □□□

□□:

- `operation` - Stripe □□: `create_customer`, `charge`, `refund`, `update_payment_method`, □□□
- `status` - □□□□: `success`, `failed`

□□: Stripe API □□□□□□□□□□□□□□□□□□

omnicrm_stripe_api_duration_seconds

□□: □□□

□□:

- `operation` - Stripe □□□□

□: `[0.1, 0.5, 1.0, 2.0, 5.0, 10.0, 30.0]` □

□□: Stripe API □□□□□□□□□□□□□□

omnicrm_stripe_api_errors_total

□□: □□□

□□:

- `operation` - □□□ Stripe □□
- `error_type` - □□□□: `card_declined`, `network_error`, `api_error`, □□□

□□: Stripe API □□□□□□□□□□□□□□□□□

omnicrm_stripe_payment_amount_cents

□□: □□□

□□:

- `payment_type` - □□□□: `charge`, `refund`

□□: □□ Stripe □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□

omnicrm_stripe_payment_failures_total

□□: □□□

□□:

- `reason` - □□□□: `card_declined`, `insufficient_funds`, `expired_card`, □□□

□□: □□□□□□□□ Stripe □□□□□□□

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5. Mailjet □□□□

Mailjet □□□□□□□□□□□□□□□□□□□□□□□□□□ Mailjet Integration□

omnicrm_mailjet_api_calls_total

□□: □□□

□□:

- `email_type` - □□□□□□: `welcome`, `user_welcome`, `invoice`, `notification`
- `status` - □□□□: `success`, `failed`

□□: Mailjet API □□□□□□□□ `@track_mailjet_call` □□□□□□

omnicrm_mailjet_api_duration_seconds

□□: □□□

□□:

- `email_type` - □□□□□□

□: `[0.1, 0.5, 1.0, 2.0, 5.0, 10.0, 30.0]` □

□□: Mailjet API □□□□���□□□□ Mailjet API □□□□□□□□□□□□□□□□□□□□□□

omnicrm_mailjet_api_errors_total

□□: □□□

□□:

- `email_type` - □□□□□□
- `error_type` - □□□□

□□: Mailjet API □□□□□□□□□□□□□□□□□□□

omnicrm_mailjet_emails_sent_total

□□: □□□

□□:

- `email_type` - □□□□□□
- `template_id` - Mailjet □□ ID

□□: □□ Mailjet □□□□□□□□□□□□□ API □□□□□□□□□□□□□□□□□□□□□□

omnicrm_mailjet_email_recipients_total

□□: □□□

□□:

- `email_type` - □□□□□□

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6. □□□□□□

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omnicrm_background_jobs_total

□□: □□□

□□:

- `job_type` - □□□□: `playbook_single`, `playbook_chain`, `periodic_task`

□□: □□□□□□□□□□□□ `BackgroundJobTimer` □□□□□□□□□

omnicrm_background_jobs_active

□□: □□

□□:

- `job_type` - □□□□

□□: □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□

omnicrm_background_job_duration_seconds

□□: □□□

□□:

- `job_type` - □□□□
- `status` - □□□□: `success`, `failed`

□: `[1, 5, 10, 30, 60, 120, 180, 300, 600, 1800, 3600]` □□1□□1□□□

□□: □□□□□□□□□□□□□□□□□□□□□□□□

omnicrm_background_job_errors_total

□□: □□□

□□:

- `job_type` - □□□□
- `error_type` - □□□□

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7. Flask HTTP □□□□□□□□

□□□□□ `prometheus-flask-exporter` □□□□□□□□□□□ API □ HTTP □□□

flask_http_request_duration_seconds

□□: □□□

□□:

- `method` - HTTP □□: `GET`, `POST`, `PUT`, `DELETE`, □□□
- `endpoint` - Flask □□□□
- `status` - HTTP □□□

□□: □□ API □□□ HTTP □□□□□□□□□□□□□

flask_http_request_total

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□□:

- `method` - HTTP □□
- `endpoint` - Flask □□□□
- `status` - HTTP □□□

□□: □□□□□□□□□□□□□□ HTTP □□□□

flask_http_request_exceptions_total

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□□:

- `method` - HTTP □□
- `endpoint` - Flask □□□□

□□: HTTP □□□□□□□□□□□□□□□□□□□□□

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8. API □□□□□□□□

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omnicrm_api_errors_total

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- `endpoint` - API □□
- `error_type` - □□□□
- `status_code` - HTTP □□□

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omnicrm_api_auth_failures_total

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- `auth_method` - □□□□: `jwt`, `api_key`, `ip_whitelist`
- `reason` - □□□□

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9. □□□□□□□□

omnicrm_api

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- `version` - API □□□□□
- `environment` - □□□□: `production`, `staging`, `development`

□□: OmniCRM API □□□□□□□□□□□□□□□□□□□□□□□□□□□□

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update_db_pool_metrics(engine)

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Prometheus □□

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□ OmniCRM □□□□□ `prometheus.yml`□

```yaml
scrape_configs:
  - job_name: 'omnicrm-api'
    scrape_interval: 15s
    scrape_timeout: 10s
    static_configs:
      - targets: ['omnicrm-api:5000']
    metrics_path: '/crm/metrics'
```

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```yaml
- alert: HighProvisionFailureRate
  expr: |
    (
      rate(omnicrm_provision_jobs_total{status="failed"}[5m]) /
      rate(omnicrm_provision_jobs_total[5m])
    ) > 0.1
  for: 5m
  labels:
    severity: warning
  annotations:
    summary: "□□□□□□□□"
    description: "{{ $value | humanizePercentage }} □□□□□□□"
```

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```yaml
- alert: DatabasePoolExhausted
  expr: omnicrm_db_pool_overflow > 0
  for: 2m
  labels:
    severity: critical
  annotations:
    summary: "□□□□□□□□□□□"
    description: "□□□□□□□□□□□□□□□□□□□□□"
```

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```yaml
- alert: SlowDatabaseQueries
  expr: |
    histogram_quantile(0.99,
      rate(omnicrm_db_query_duration_seconds_bucket[5m])
    ) > 1.0
  for: 5m
  labels:
    severity: warning
  annotations:
    summary: "□□□□□□□□□"
    description: "□ 99 □□□□□□□□ {{ $value }}s"
```

OCS API □□□

```yaml
- alert: OCSAPIDown
  expr: |
    (
      rate(omnicrm_ocs_api_calls_total{status="failed"}[5m]) /
      rate(omnicrm_ocs_api_calls_total[5m])
    ) > 0.5
  for: 2m
  labels:
    severity: critical
  annotations:
    summary: "OCS API □□□□□"
    description: "{{ $value | humanizePercentage }} □ OCS API □□□□"
```

Stripe □□□□

```yaml
- alert: StripePaymentFailures
  expr: rate(omnicrm_stripe_payment_failures_total[5m]) > 5
  for: 5m
  labels:
    severity: warning
  annotations:
    summary: "Stripe □□□□□□□"
    description: "{{ $value }} □□□□□□"
```

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    - □□□□□ > 10%
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    - OCS/CGRateS API □□
    - Stripe □□□□□□

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   - □□ Stripe □□□□□
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Prometheus □□□□:

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```
curl http://localhost:5000/crm/metrics
```

□□ Prometheus □□□□□□:

```
# □□ Prometheus □□□□
http://prometheus:9090/targets
```

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- Stripe □□□□□□□□□□
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count by (__name__) ({__name__=~".+"})
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- OCS/CGRateS: 5 □□□
- Stripe: 5 □□□
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- HTTP/Flask: 3 □□□
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- System Architecture - □□□□□□□□□□□
- Provisioning System - □□□□□□□□□□
- Ansible Playbooks - □□□□□□□
- API Documentation - API □□□□□
- Billing Overview - □□□□□□□
- Payment System Guide - Stripe □□□□□□□
- Mailjet Integration - □□□□□□□□
- Administration Configuration - □□□□□□

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□□□□□ `Payment System Guide <payment_system_guide>`□ `Billing Overview <billing_overview>`□ `Payment Processing <payments_process>`□ `Invoices <payments_invoices>`□

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2. □□ **Billing** □□
3. □□□ **Payment Methods** □□

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□□ **"Add Payment Method"** □□□□□□□□□□

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3. [illegible] **"Set as Default"**

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   Visa [illegible] 5678 [illegible]

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3. □□□ **Billing → Payment Methods**
4. □□ **"Add Payment Method"**
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OmniCRM □□□□□□

```json
{
  "vendor": "stripe",
  "vendor_payment_method_id": "pm_1A2B3C4D5E6F",
  "payment_type": "card",
  "brand": "visa",
  "last4": "1234",
  "exp_month": 12,
  "exp_year": 2026,
  "name": "John Smith",
  "nickname": "Personal Card",
  "is_default": true
}
```

OmniCRM □□□□□□□

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- CVV/CVC □□
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- PIN □□

PCI □□□

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□□□ `Payment System Guide <payment_system_guide>` □□□□□□□□□□□□□□□

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3. □□□ **Billing → Payment Methods**
4. □□□□□□□□□□□□□□□ 12/2025
5. □□ **"Add Payment Method"**

6. □□□□ 12/2028 □□□□
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6. □□□□□ **Customers → [Customer] → Billing**
7. □□ **"Add Payment Method"**
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4. □□□□ → **"Send Reminder Emails"**
5. Mailjet □□□□□□□□□□□□□□
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- `Payment System Guide <payment_system_guide>` - □□□□□ API □□□□□
- `payments_process` - □□□□□□□□□□□□
- `payments_invoices` - □□□□□□□□□□□□□
- `features_topup_recharge` - □□□□□□□□□□□
- `basics_payment` - □□□□□□□□□
- `customer_care` - □□□□□□□□□□□□□□□□□

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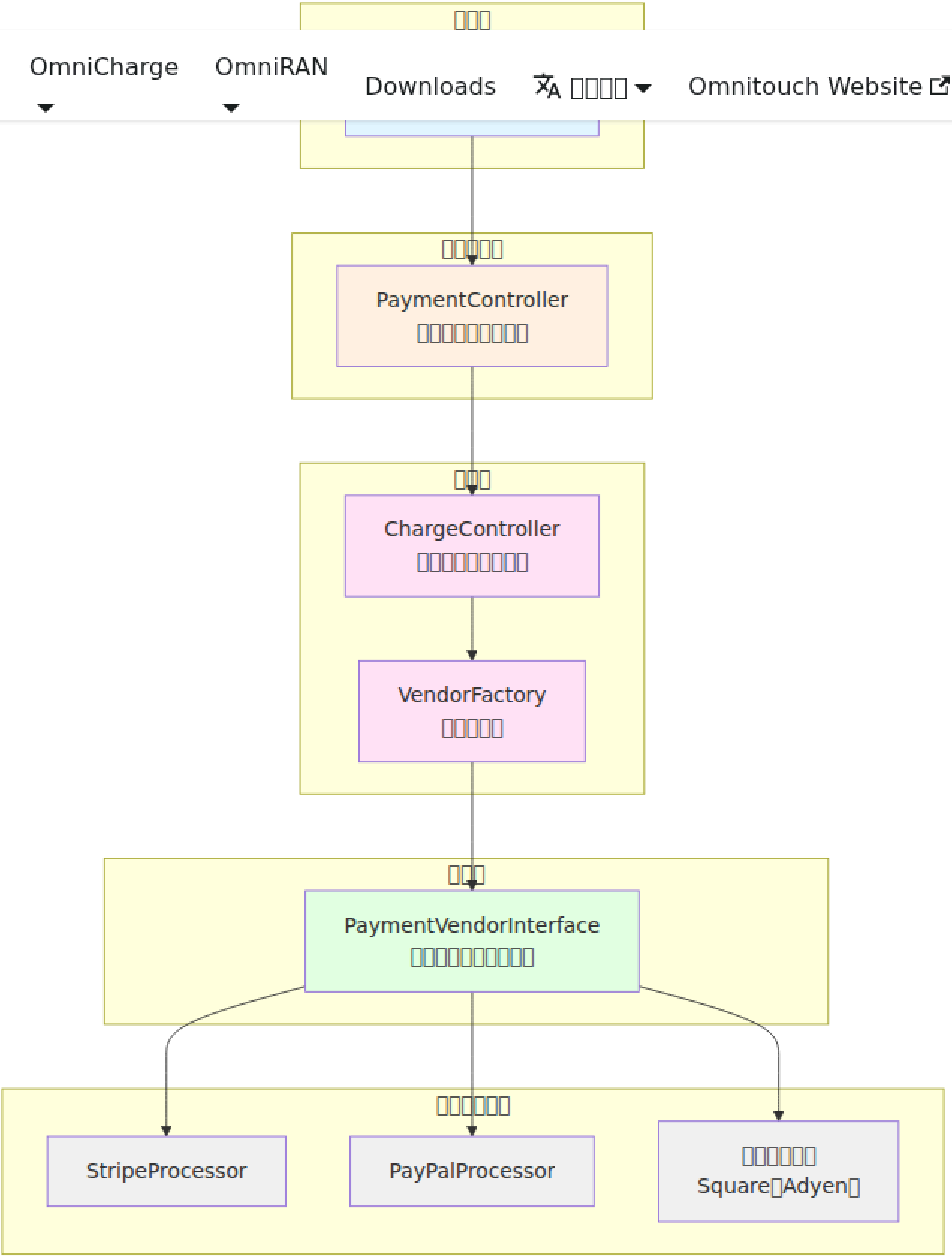
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PaymentController
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ChargeController
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VendorFactory
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PaymentVendorInterface
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StripeProcessor
PayPalProcessor
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Square□Adyen□

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1. □□□□□□□□□□□□□`PaymentVendorInterface`□□□□□□□□□□□□□□□□□
2. □**VendorFactory**□□□□□□□□□□□□□□□
3. □□□□□□□□□□□□□□□
4. □□ - □□□□API□□□□□□□□

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```
# □□Square□□□□
curl -X POST /api/payments/methods \
  -H "Content-Type: application/json" \
  -H "Authorization: Bearer YOUR_API_KEY" \
  -d '{
    "customer_id": 123,
    "vendor": "square",
    "payment_token": "sq_xxxxx"
  }'
```

□□□□API□□□□□□□□□□□□□□□□□□□□

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Stripe□□

Stripe□□□□□□□□□□□□□□3D□□□□□□□□□

1. □□Stripe API□□

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- □□□□□□□□□□□□pk_live_/sk_live_□
- □□□□API□□□□□□□□□□

2. □□□□

□□□`crm_config.yaml`□

```yaml
payment_vendors:
  stripe:
    api_key: "sk_live_YOUR_SECRET_KEY_HERE"
    publishable_key: "pk_live_YOUR_PUBLISHABLE_KEY_HERE"
```

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```
export STRIPE_SECRET_KEY="sk_live_YOUR_SECRET_KEY_HERE"
export STRIPE_PUBLISHABLE_KEY="pk_live_YOUR_PUBLISHABLE_KEY_HERE"
```

3. □□□□

□□□`.env`□

```
REACT_APP_STRIPE_PUBLISHABLE_KEY=pk_live_YOUR_PUBLISHABLE_KEY_HERE
```

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PayPal□□

PayPal□□□□□□□PayPal□□□□□

□□

□□□`crm_config.yaml`□

```yaml
payment_vendors:
  paypal:
    client_id: "AXx_YOUR_CLIENT_ID_HERE"
    client_secret: "ELx_YOUR_CLIENT_SECRET_HERE"
    mode: "live"  # □ "sandbox" □□□□
```

PCI□□□

OmniCRM□□□□PCI□□□□

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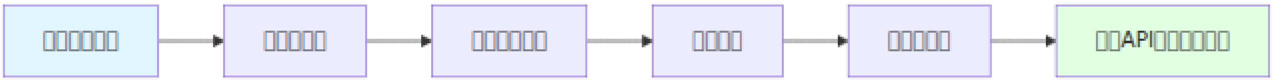

□□ - □□Square□□

```
{
  "vendor": "square",
  "vendor_payment_method_id": "sq_card_abc123",
  "payment_type": "card"
}
```

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PaymentMethod

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```
{
  "payment_method_id": 789,
  "customer_id": 123,
  "vendor": "stripe",                    // 'stripe', 'paypal'□□□□□□□□□
  "vendor_payment_method_id": "pm_xxx", // □□□□□□ID
  "payment_type": "card",                // 'card', 'paypal', 'ach'□
  "is_default": true,
  "card_brand": "visa",
  "card_last4": "4242",
  "card_exp_month": 12,
  "card_exp_year": 2025,
  "card_nickname": "My Visa Card",
  "status": "active"
}
```

PaymentAuthorization

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```
{
  "authorization_id": 301,
  "customer_id": 123,
  "payment_method_id": 789,
  "vendor": "stripe",                    // □□□□□□□
  "vendor_authorization_id": "auth_xxx", // □□□□□□ID
  "amount": 200.00,
  "currency": "USD",
  "status": "authorized",                // 'authorized',
'captured', 'released'
  "authorized_at": "2025-12-27T10:00:00Z",
  "expires_at": "2026-01-03T10:00:00Z",
  "meta": {}
}
```

PaymentCapture

□□□/□□□□□□

```
{
  "capture_id": 103,
  "authorization_id": 301,
  "customer_id": 123,
  "payment_method_id": 789,
  "vendor": "stripe",
  "vendor_transaction_id": "ch_xxx",     // □□□□□□ID
  "amount": 200.00,
  "currency": "USD",
  "status": "succeeded",                 // 'succeeded', 'failed',
'refunded'
  "captured_at": "2025-12-27T10:30:00Z",
  "vendor_response": {},                 // □□□□□□□□
  "meta": {}
}
```

WalletAccount

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```
{
  "wallet_account_id": 456,
  "customer_id": 123,
  "balance": 150.50,
  "currency": "USD",
  "auto_recharge_enabled": true,
  "auto_recharge_amount": 100.00,
  "auto_recharge_threshold": 10.00,
  "low_balance_warning_threshold": 10.00
}
```

WalletLedger

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```
{
  "ledger_id": 501,
  "customer_id": 123,
  "wallet_account_id": 456,
  "transaction_type": "credit",          // 'credit', 'debit',
'refund', 'adjustment'
  "amount": 100.00,
  "balance_before": 150.50,
  "balance_after": 250.50,
  "currency": "USD",
  "description": "Card top-up",
  "reference_type": "payment_capture",   // □□□□□□□
  "reference_id": 103,
  "meta": {},
  "created_at": "2025-12-27T10:35:00Z"
}
```

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```
{
  "invoice_id": 12345,
  "invoice_number": "INV-2025-000001",   // □□□□□INV-YYYY-NNNNNN
  "customer_id": 123,
  "title": "□□□□□□",
  "paid": true,                          // □□□□
  "void": false,                         // □□□□
  "payment_reference": "ch_xxxxx",       // □□/□□□□ID
  "payment_type": "stripe_capture",      // □□□□□□
  "payment_time": "2025-12-27T10:30:00",
  "start_date": "2025-12-01",
  "end_date": "2025-12-31",
  "due_date": "2026-01-15",
  "retail_cost": 500.00,                 // □□□□□
  "wholesale_cost": 250.00
}
```

□□□□□□□□□□`INV-YYYY-NNNNNN`□□□□□□□□□□□□□□□□□□□□1□1□□□□

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□□`retail_cost`□□□□□□□

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- □□□□□□□□□□□□“□□”
- □□□□□□□□□□□□□□□□□□□□□□
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```
// 1. □□□□□□□□
{
  "transaction_id": 7001,
  "invoice_id": 12345,
  "retail_cost": 100.00,                 // □□ = □□□□
  "title": "□□□"
}

// 2. □□□□□□□□
{
  "transaction_id": 7002,
  "invoice_id": 12345,
  "retail_cost": -100.00,                // □□ = □□□□
  "title": "□□□□□□□□□12345□",
  "payment_type": "stripe_capture",
  "payment_reference": "ch_xxxxx"
}

// □□□□$0□□ → □□□□□□□□
```

□□□□□□□□□□□□□□□□□□□□□□□□□□`payment_reference`□`payment_type`□`payment_time`□□□□□□□□□□□

- □□□□□□□`invoice_id`□□□□□□□□Hayden□□□□
- □□□□□□□□□□□□□□/□□□□□□□
- □□□□□□□□□□□□□□□□□□□□

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□□Stripe□□□□Stripe□□□□□□□□

□□□□API

□□□□□□□□URL□`/api/payments/`

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□□□`POST /api/payments/methods`

□□□

```
curl -X POST https://your-domain.com/api/payments/methods \
  -H "Content-Type: application/json" \
  -H "Authorization: Bearer YOUR_API_KEY" \
  -d '{
    "customer_id": 123,
    "vendor": "stripe",
    "payment_token": "pm_xxxxx",
    "is_default": false,
    "card_nickname": "My Visa Card"
  }'
```

□□□□

```
{
  "customer_id": 123,
  "vendor": "stripe",                   // 'stripe', 'paypal'□□□□
□□□□□
  "payment_token": "pm_xxxxx",          // □□SDK□□□□□□□□
  "is_default": false,                  // □□□□□□□□□□
  "card_nickname": "My Visa Card"       // □□□□□□□
}
```

□□□201□□□□□

```
{
  "success": true,
  "message": "□□□□□□□□",
  "data": {
    "payment_method_id": 789,
    "customer_id": 123,
    "vendor": "stripe",
    "payment_type": "card",
    "card_brand": "visa",
    "card_last4": "4242",
    "card_exp_month": 12,
    "card_exp_year": 2025,
    "card_nickname": "My Visa Card",
    "is_default": false,
    "status": "active"
  }
}
```

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□□□`GET /api/payments/methods?customer_id={id}`

□□□

```
curl -X GET "https://your-domain.com/api/payments/methods?
customer_id=123" \
  -H "Authorization: Bearer YOUR_API_KEY"
```

□□□200 OK□□

```
{
  "success": true,
  "data": [
    {
      "payment_method_id": 789,
      "customer_id": 123,
      "vendor": "stripe",
      "payment_type": "card",
      "card_brand": "visa",
      "card_last4": "4242",
      "is_default": true
    },
    {
      "payment_method_id": 790,
      "customer_id": 123,
      "vendor": "paypal",
      "payment_type": "paypal",
      "paypal_email": "user@example.com",
      "is_default": false
    }
  ]
}
```

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□□□`GET /api/payments/methods/default?customer_id={id}`

□□□

```
curl -X GET "https://your-domain.com/api/payments/methods/default?
customer_id=123" \
  -H "Authorization: Bearer YOUR_API_KEY"
```

□□□200 OK□□

```
{
  "success": true,
  "data": {
    "payment_method_id": 789,
    "vendor": "stripe",
    "payment_type": "card",
    "card_brand": "visa",
    "card_last4": "4242",
    "is_default": true
  }
}
```

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□□□`PUT /api/payments/methods/set-default`

□□□

```
curl -X PUT https://your-domain.com/api/payments/methods/set-default \
  -H "Content-Type: application/json" \
  -H "Authorization: Bearer YOUR_API_KEY" \
  -d '{
    "customer_id": 123,
    "payment_method_id": 790
  }'
```

□□□200 OK□□

```
{
  "success": true,
  "message": "□□□□□□□□□",
  "data": {
    "payment_method_id": 790,
    "is_default": true
  }
}
```

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□□□`DELETE /api/payments/methods/{payment_method_id}?customer_id={id}`

□□□

```
curl -X DELETE "https://your-domain.com/api/payments/methods/789?customer_id=123" \
  -H "Authorization: Bearer YOUR_API_KEY"
```

□□□200 OK□□

```
{
  "success": true,
  "message": "□□□□□□□□"
}
```

□□□□API

□□□□□□□□□□□□□□□□□□□□□□

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□□□`POST /api/payments/charge`

□□□

```
curl -X POST https://your-domain.com/api/payments/charge \
  -H "Content-Type: application/json" \
  -H "Authorization: Bearer YOUR_API_KEY" \
  -d '{
    "customer_id": 123,
    "amount": 50.00,
    "currency": "USD",
    "payment_method_id": 789,
    "metadata": {
      "order_id": "12345"
    }
  }'
```

□□□□

```
{
  "customer_id": 123,
  "amount": 50.00,
  "currency": "USD",                     // □□□USD
  "payment_method_id": 789,              // □□ - □□□□□□□□□
  "vendor": "stripe",                    // □□□□payment_token□□□
  "payment_token": "pm_xxxxx",           // □□ - □□□□□
  "save_method": false,                  // □□□□□□□□□□□□□
  "metadata": {
    "order_id": "12345"
  }
}
```

□□□200 OK□□

```json
{
  "success": true,
  "message": "□□□□",
  "data": {
    "transaction_id": "ch_xxxxx",
    "capture_id": 101,
    "amount": 50.00,
    "currency": "USD",
    "status": "succeeded"
  }
}
```

2. □□□□□□□□□□□□

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□□□`POST /api/payments/invoice`

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5. □□□□□□□□□□□□

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```
curl -X POST https://your-domain.com/api/payments/invoice \
  -H "Content-Type: application/json" \
  -H "Authorization: Bearer YOUR_API_KEY" \
  -d '{
    "customer_id": 123,
    "amount": 200.00,
    "payment_method_id": 789,
    "metadata": {
      "invoice_id": 12345,
      "description": "□□□□"
    }
  }'
```

□□□200 OK□□

```
{
  "success": true,
  "message": "□□□□□□□□",
  "data": {
    "customer_id": 123,
    "service_amount": 200.00,
    "routing_mode": "hybrid",
    "initial_balance": 150.00,
    "wallet_portion_used": 150.00,       // □□□□□□□□
    "card_portion_used": 50.00,          // □□□□□□□
    "charged_amount": 50.00,
    "wallet_credited": 50.00,
    "wallet_debited": 200.00,
    "final_balance": 0.00,
    "payment_method_used": true
  }
}
```

3. □□□□□□□□□□

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> □ **Playbook**□□□□□□□□□□□□□Ansible playbook□□□□□□□□□□□□□

□1□□□□□□□□

□□□`POST /api/payments/authorize/hold`

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□□□

```
curl -X POST https://your-domain.com/api/payments/authorize/hold \
  -H "Content-Type: application/json" \
  -H "Authorization: Bearer YOUR_API_KEY" \
  -d '{
    "customer_id": 123,
    "amount": 200.00,
    "payment_method_id": 789,
    "use_wallet": true,
    "metadata": {
      "reservation_id": "RES-001"
    }
  }'
```

□□□□

```
{
  "customer_id": 123,
  "amount": 200.00,
  "currency": "USD",
  "payment_method_id": 789,                // □□ - □□□□□□□□□
  "vendor": "stripe",                      // □□□□payment_token□□□
  "payment_token": "pm_xxxxx",             // □□ - □□□□□
  "save_method": false,
  "use_wallet": true,                      // □□□□□□□□□□□□□□true□
  "metadata": {
    "reservation_id": "RES-001"
  }
}
```

□□□200 OK□□

```
{
  "success": true,
  "message": "□□□□□□□□□□□□",
  "data": {
    "authorization_id": 301,
    "vendor_authorization_id": "auth_xxxxx",
    "amount": 200.00,
    "currency": "USD",
    "status": "authorized",
    "wallet_balance": 150.00,
    "wallet_to_use": 150.00,             // □□□□□□□□
    "card_amount": 50.00,                // □□□□□□
    "message": "□□□$50□□□□□□□□□□□□□□$200□□□□"
  }
}
```

□2□□□□□□

□□□`POST /api/payments/capture/{authorization_id}`

□□□□□□□□□□□

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3. □□□□□□□□□□□□
4. □□□□/□□□□□□□

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```
curl -X POST https://your-domain.com/api/payments/capture/301 \
  -H "Content-Type: application/json" \
  -H "Authorization: Bearer YOUR_API_KEY" \
  -d '{
    "amount": 200.00,
    "metadata": {
      "invoice": true,
      "title": "□□□□",
      "description": "3□□□",
      "wholesale_cost": 100.00,
      "contract_days": 3,
      "send_email": true
    }
  }'
```

□□□□

```
{
  "amount": 200.00,                      // □□ - □□□□□□□□□
  "metadata": {
    "invoice": true,                     // □□□□□□□□□□
    "create_transaction": true,          // □□□□□□□
    "title": "□□□□",
    "description": "3□□□",
    "wholesale_cost": 100.00,
    "contract_days": 3,
    "send_email": true                   // □□□□□□□□□
  }
}
```

□□□200 OK□□

```
{
  "success": true,
  "message": "□□□□□",
  "data": {
    "capture_id": 103,
    "transaction_id": "ch_xxxxx",
    "authorization_id": 301,
    "amount": 200.00,
    "currency": "USD",
    "status": "succeeded",
    "wallet_credit": {                   // □□□□□
      "ledger_id": 401,
      "amount": 50.00
    },
    "wallet_debit": {                    // □□□□□□□□
      "ledger_id": 402,
      "amount": 200.00
    },
    "transaction": {                     // □□invoice=true□□□
      "transaction_id": 7001
    },
    "invoice": {                         // □□invoice=true□□□
      "invoice_id": 12345,
      "invoice_number": "INV-2025-000001"
    }
  }
}
```

□3□□□□□□□□□□

□□□`POST /api/payments/release/{authorization_id}`

□□□□□□□□□□□□□□□□□□□□

□□□

```
curl -X POST https://your-domain.com/api/payments/release/301 \
  -H "Authorization: Bearer YOUR_API_KEY"
```

□□□200 OK□□

```
{
  "success": true,
  "message": "□□□□□",
  "data": {
    "authorization_id": 301,
    "vendor_authorization_id": "auth_xxxxx",
    "status": "released",
    "released_at": "2025-12-27T10:45:00Z"
  }
}
```

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□□□`POST /api/payments/topup`

□□□□□ → □□□□ → □□

□□□

```
curl -X POST https://your-domain.com/api/payments/topup \
  -H "Content-Type: application/json" \
  -H "Authorization: Bearer YOUR_API_KEY" \
  -d '{
    "customer_id": 123,
    "amount": 30.00,
    "payment_method_id": 789,
    "service_uuid": "svc-uuid-123",
    "imsi": "123456789012345",
    "days": 30,
    "metadata": {
      "is_rental": false
    }
  }'
```

□□□□□□/□□□□□□□□□□□□

```
curl -X POST https://your-domain.com/api/payments/topup \
  -H "Content-Type: application/json" \
  -H "Authorization: Bearer YOUR_API_KEY" \
  -d '{
    "customer_id": 1,
    "amount": 5.00,
    "vendor": "stripe",
    "payment_token": "pm_xxxxx",
    "service_uuid": "hotspot-uuid",
    "imsi": "123456789012345",
    "days": 1,
    "metadata": {
      "is_rental": true,
      "billing_email": "user@example.com"
    }
  }'
```

□□□200 OK□□

```
{
  "success": true,
  "message": "□□□□□□□□",
  "data": {
    "transaction_id": "ch_xxxxx",
    "authorization_id": 302,
    "capture_id": 104,
    "amount": 30.00,
    "status": "succeeded",
    "provision_result": {
      "success": true,
      "topup_result": {...},
      "service_uuid": "svc-uuid-123",
      "imsi": "123456789012345",
      "days": 30
    },
    "payment_method_saved": false        // □□/□□□false
  }
}
```

5. □□□□□□□□□

□□□□□□□□□□□□□□□□□□□□□□□□

□□□`POST /api/payments/rental`

□□□

```
curl -X POST https://your-domain.com/api/payments/rental \
  -H "Content-Type: application/json" \
  -H "Authorization: Bearer YOUR_API_KEY" \
  -d '{
    "beneficiary_customer_id": 456,
    "charge_customer_id": 123,
    "amount": 75.00,
    "payment_method_id": 789,
    "service_description": "□□□□□□",
    "metadata": {
      "rental_agreement_id": "RA-001"
    }
  }'
```

□□□□□□□□□□□□□□□□□

```
curl -X POST https://your-domain.com/api/payments/rental \
  -H "Content-Type: application/json" \
  -H "Authorization: Bearer YOUR_API_KEY" \
  -d '{
    "beneficiary_customer_id": 456,
    "amount": 75.00,
    "vendor": "stripe",
    "payment_token": "pm_xxxxx",
    "service_description": "□□□□□□",
    "metadata": {
      "billing_email": "renter@example.com"
    }
  }'
```

□□□200 OK□□

```
{
  "success": true,
  "message": "□□□□□□□□",
  "data": {
    "transaction_id": "ch_xxxxx",
    "amount": 75.00,
    "payment_method_saved": false        // □□□□□□□□
  }
}
```

6. □□□□

□□□`POST /api/payments/refund`

□□□

```
curl -X POST https://your-domain.com/api/payments/refund \
  -H "Content-Type: application/json" \
  -H "Authorization: Bearer YOUR_API_KEY" \
  -d '{
    "transaction_id": "ch_xxxxx",
    "vendor": "stripe",
    "amount": 50.00,
    "reason": "customer_request"
  }'
```

□□□□

```
{
  "transaction_id": "ch_xxxxx",          // □□□□□ID
  "vendor": "stripe",                    // 'stripe', 'paypal'□
  "amount": 50.00,                       // □□ - □□□□□□□□□
  "reason": "customer_request"           // □□□□□□
}
```

□□□200 OK□□

```
{
  "success": true,
  "message": "□□□□□□",
  "data": {
    "refund_id": "re_xxxxx",
    "amount": 50.00,
    "status": "succeeded"
  }
}
```

□□API

□□□□□□□□□□URL□`/api/wallet/`

□□□□□□

□□□`GET /api/wallet/balance?customer_id={id}`

□□□

```
curl -X GET "https://your-domain.com/api/wallet/balance?
customer_id=123" \
  -H "Authorization: Bearer YOUR_API_KEY"
```

□□□200 OK□□

```
{
  "customer_id": 123,
  "balance": 150.50,
  "currency": "USD"
}
```

□□□□□□

□□□□□□□□□□□□□□□□□□□□□□

□□□`GET /api/wallet/info?customer_id={id}`

□□□

```
curl -X GET "https://your-domain.com/api/wallet/info?
customer_id=123" \
  -H "Authorization: Bearer YOUR_API_KEY"
```

□□□200 OK□□

```
{
  "customer_id": 123,
  "wallet": {
    "wallet_account_id": 456,
    "balance": 150.50,
    "currency": "USD",
    "auto_recharge_enabled": true,
    "auto_recharge_amount": 100.00,
    "auto_recharge_threshold": 10.00,
    "low_balance_warning_threshold": 10.00
  }
}
```

□□□□

□□□□□□□□□□□□□□

□□□`POST /api/wallet/topup`

□□□□□□/PayPal → □□□□

□□□

```
curl -X POST https://your-domain.com/api/wallet/topup \
  -H "Content-Type: application/json" \
  -H "Authorization: Bearer YOUR_API_KEY" \
  -d '{
    "customer_id": 123,
    "amount": 100.00,
    "payment_method_id": 789
  }'
```

□□□□

```
{
  "customer_id": 123,
  "amount": 100.00,
  "currency": "USD",                     // □□□USD
  "payment_method_id": 789               // □□ - □□□□□□□□□
}
```

□□□200 OK□□

```
{
  "success": true,
  "payment": {
    "transaction_id": "ch_xxxxx",
    "amount": 100.00
  },
  "wallet": {
    "ledger_id": 503,
    "balance_after": 250.50
  },
  "message": "□□□□100.00□□□□"
}
```

□□□□□□

□□□□□□□□□□□□□

□□□`GET /api/wallet/transactions?customer_id={id}&limit={n}&offset={n}&type={type}`

□□□

```
curl -X GET "https://your-domain.com/api/wallet/transactions?
customer_id=123&limit=50&offset=0&type=credit" \
  -H "Authorization: Bearer YOUR_API_KEY"
```

□□□□□

- `customer_id`□□□□□□□ID
- `limit`□□□□□□□□□□□□□50□
- `offset`□□□□□□□□□□□□□0□
- `type`□□□□□□□□□□□□□'credit'□'debit'□'refund'□'adjustment'□

□□□200 OK□□

```json
{
  "customer_id": 123,
  "count": 2,
  "transactions": [
    {
      "ledger_id": 501,
      "transaction_type": "credit",
      "amount": 100.00,
      "balance_before": 150.50,
      "balance_after": 250.50,
      "description": "□□□",
      "reference_type": "payment_capture",
      "reference_id": 103,
      "created_at": "2025-12-27T10:35:00Z"
    },
    {
      "ledger_id": 502,
      "transaction_type": "debit",
      "amount": 50.00,
      "balance_before": 250.50,
      "balance_after": 200.50,
      "description": "□□□□",
      "reference_type": "service_charge",
      "reference_id": 789,
      "created_at": "2025-12-27T11:00:00Z"
    }
  ]
}
```

API□□□□

□□□□□

□□	□□	□□
POST	`/api/payments/methods`	□□□□□□
GET	`/api/payments/methods?customer_id={id}`	□□□□□□□□
GET	`/api/payments/methods/default?customer_id={id}`	□□□□□□□□
PUT	`/api/payments/methods/set-default`	□□□□□□□□
DELETE	`/api/payments/methods/{id}?customer_id={id}`	□□□□□□

□□□□□

□□	□□	□□
POST	`/api/payments/charge`	□□□□□□□□
POST	`/api/payments/invoice`	□□□□□□□□□□□□
POST	`/api/payments/topup`	□□□□□
POST	`/api/payments/authorize/hold`	□□□□□□
POST	`/api/payments/capture/{id}`	□□□□
POST	`/api/payments/release/{id}`	□□□□
POST	`/api/payments/rental`	□□/□□□□□
POST	`/api/payments/refund`	□□□□

□□□□

□□	□□	□□
GET	`/api/wallet/balance?customer_id={id}`	□□□□□□
GET	`/api/wallet/info?customer_id={id}`	□□□□□□ + □□
POST	`/api/wallet/topup`	□□□□□□□□□□□
GET	`/api/wallet/transactions?customer_id={id}`	□□□□□□

PayPal□□□□

��� □	□□	□□
POST	`/api/payments/paypal/vault/setup-token`	□Card Fields SDK□□PayPal□□□□
POST	`/api/payments/paypal/vault/finalize`	□□PayPal□□□□□□□□□
POST	`/api/payments/paypal/vault/update-setup-token`	□□3DS/SCA□□□□□□□

□□□□

□□1□□□□□□□□□□

□□□□□□□□□□□□□□□□□30□□□□□

```
# □□□□□□□□□□□□□□□□□□□□
curl -X POST https://your-domain.com/api/payments/invoice \
  -H "Content-Type: application/json" \
  -H "Authorization: Bearer YOUR_API_KEY" \
  -d '{
    "customer_id": 123,
    "amount": 99.99,
    "metadata": {
      "service_id": 456,
      "contract_days": 30,
      "description": "30□□□□□"
    }
  }'
```

□□□

```
{
  "success": true,
  "message": "□□□□□□□",
  "data": {
    "service_amount": 99.99,
    "wallet_portion_used": 50.00,        // □□□$50
    "card_portion_used": 49.99,          // □□□$49.99
    "final_balance": 0.00
  }
}
```

□□2□□□□□□□□□□□

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```
# □□□□□□□□□
curl -X POST https://your-domain.com/api/payments/topup \
  -H "Content-Type: application/json" \
  -H "Authorization: Bearer YOUR_API_KEY" \
  -d '{
    "customer_id": 123,
    "amount": 149.99,
    "payment_method_id": 789,
    "service_uuid": "fiber-svc-uuid",
    "imsi": "123456789012345",
    "days": 30,
    "metadata": {
      "service_type": "fiber_internet"
    }
  }'
```

□□□

1. □□□□□$149.99
2. □□□□□□□□□
3. □□□□□□ → □□□□
4. □□□□□□ → □□□□□□□□□

□□3□□□□□□□

□□□□□□□□□WiFi□□□□□□□□□□□□□□□□□□□□□□□□

```
# □□□□□□
curl -X POST https://your-domain.com/api/payments/topup \
  -H "Content-Type: application/json" \
  -H "Authorization: Bearer YOUR_API_KEY" \
  -d '{
    "customer_id": 1,
    "amount": 5.00,
    "vendor": "stripe",
    "payment_token": "pm_xxxxx",
    "service_uuid": "hotspot-downtown",
    "imsi": "999999999999999",
    "days": 1,
    "metadata": {
      "is_rental": true,
      "billing_email": "user@example.com",
      "hotspot_location": "□□□□□□"
    }
  }'
```

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- □□□□□□□ □

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```
# □1□□□□ - □□□□
curl -X POST https://your-domain.com/api/payments/authorize/hold \
  -H "Content-Type: application/json" \
  -H "Authorization: Bearer YOUR_API_KEY" \
  -d '{
    "customer_id": 123,
    "amount": 500.00,
    "use_wallet": true,
    "metadata": {
      "reservation_id": "RES-2025-001"
    }
  }'

# □□□{"authorization_id": 301, "status": "authorized"}

# □2a□□□□□□ - □□
curl -X POST https://your-domain.com/api/payments/capture/301 \
  -H "Content-Type: application/json" \
  -H "Authorization: Bearer YOUR_API_KEY" \
  -d '{
    "metadata": {
      "invoice": true,
      "title": "□□□□ - 3□",
      "description": "302□□□12□27□□30□",
      "send_email": true
    }
  }'

# □2b□□□□□□ - □□□□
curl -X POST https://your-domain.com/api/payments/release/301 \
  -H "Authorization: Bearer YOUR_API_KEY"
```

□□5□□□□□□□□Stripe□

□□□□□□□□□□□□□Visa□□

```
# □1□□□□□□Stripe.js□□Stripe□□
# const {token} = await stripe.createToken(cardElement);

# □2□□□□□□□□□□
curl -X POST https://your-domain.com/api/payments/methods \
  -H "Content-Type: application/json" \
  -H "Authorization: Bearer YOUR_API_KEY" \
  -d '{
    "customer_id": 123,
    "vendor": "stripe",
    "payment_token": "pm_xxxxx",
    "is_default": true,
    "card_nickname": "□□Visa"
  }'
```

□□6□□□□□

□□□□□□□□□□□□□□□□□□□□$100□

```
curl -X POST https://your-domain.com/api/wallet/topup \
  -H "Content-Type: application/json" \
  -H "Authorization: Bearer YOUR_API_KEY" \
  -d '{
    "customer_id": 123,
    "amount": 100.00
  }'
```

□□□

```
{
  "success": true,
  "payment": {
    "transaction_id": "ch_xxxxx",
    "amount": 100.00
  },
  "wallet": {
    "balance_after": 250.50
  },
  "message": "□□□□100.00□□□□"
}
```

□□□□

□□□□□□

□□□□□400□□□□□□

```
{
  "error": "□□□□□□□□□□50.00□□□□200.00"
}
```

□□□□□400□□□□□□

```
{
  "error": "□□□□□□□□□□□"
}
```

□□□□□400□□□□□□

```
{
  "error": "customer_id□amount□□□□"
}
```

□□□□404□□□□□

```json
{
  "error": "□□999□□□"
}
```

□□□□□□500□□□□□□□□□

```json
{
  "error": "□□□□□□□□□□□"
}
```

□□□□□□□□□

□□□□

□□□□□□□□□□□□□□□□□□□□□□□

1. □□□□□□□□（Stripe/PayPal）

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□□□□□□□□□□□□□□□□□PayPal□□□□□

□□□`POST /api/payments/refund`

□□□

```
curl -X POST https://your-domain.com/api/payments/refund \
  -H "Content-Type: application/json" \
  -H "Authorization: Bearer YOUR_API_KEY" \
  -d '{
    "transaction_id": "ch_xxxxx",
    "vendor": "stripe",
    "amount": 100.00,
    "reason": "customer_request"
  }'
```

□□□

- Stripe/PayPal□□□□□□□□□□□
- □□□5-10□□□□□□□□□/PayPal□□□□□
- □□□□□□□
- □`PaymentCapture`□□□□□□□□□□□

□□□□□

- □ □□□□□□
- □ □□□□□
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2. □□□□□

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- □□□□
- □□□□□□□
- □`WalletLedger`□□□□□□□□□□□

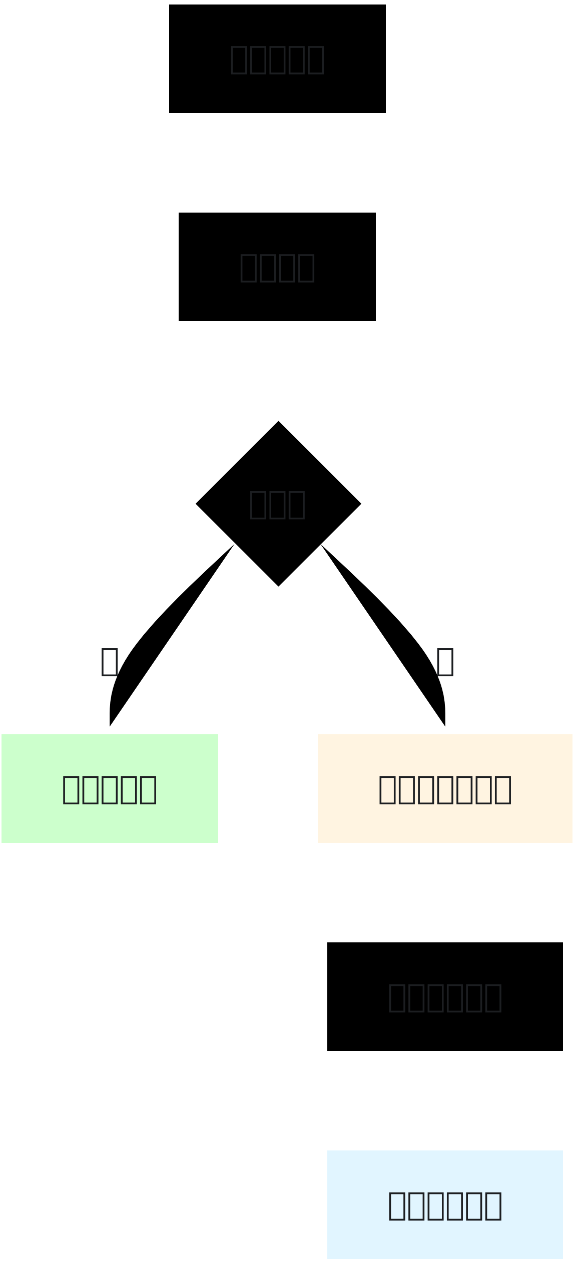
□□□□□

- [illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible]

[illegible]

[illegible]



[illegible]

1. □□□□$100□□□□□
2. □□□□□
3. □□□□
4. □□□$100□□□5-10□ + □□□□□□
   - □□□□$100□□□
   - □□□□□□□□□□
   - □□□���□
   - □□□□□□□

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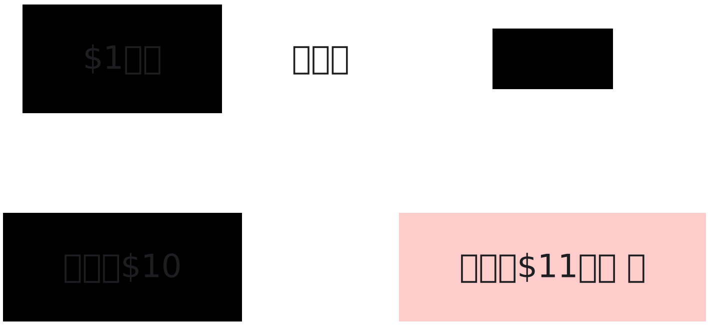
□□1□$1□□□□ + $10□□

□□□□□□□□$1□□□□$10□□□□□□

□□□□□□□□□□□□□□□□□□□



[redacted]

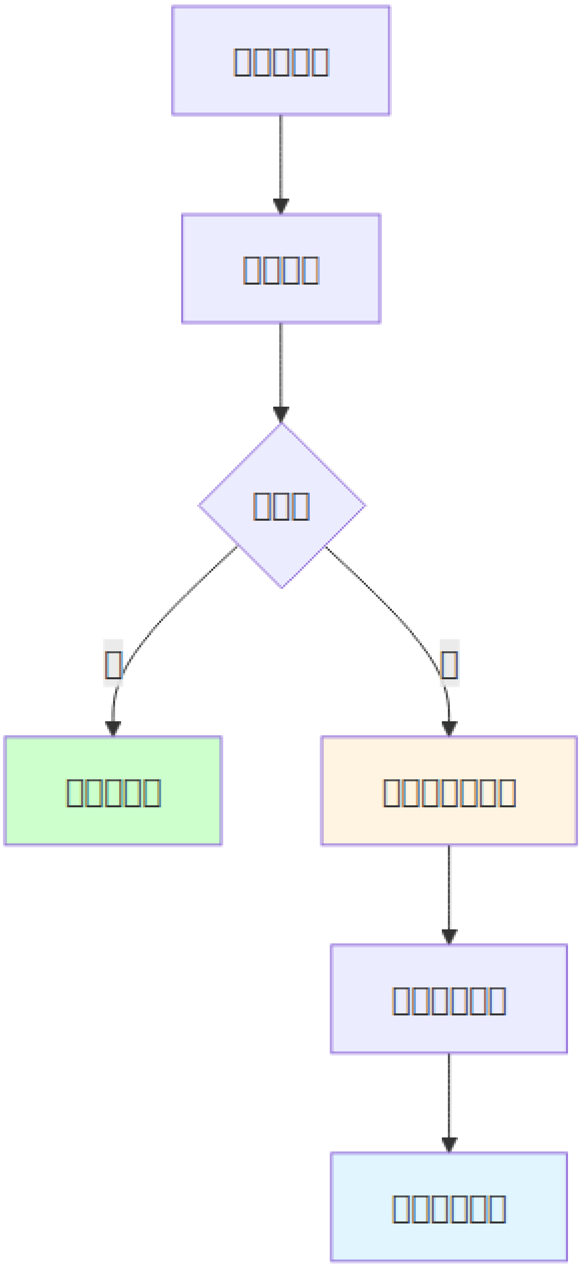
□□□

[redacted]

[redacted]

□□□$11□□ □

OmniCRM□□□□□□□□□



API[illegible]

```
curl -X POST https://your-domain.com/api/payments/invoice \
  -H "Content-Type: application/json" \
  -H "Authorization: Bearer YOUR_API_KEY" \
  -d '{
    "customer_id": 123,
    "amount": 10.00,
    "metadata": {
      "addon_id": 456
    }
  }'
```

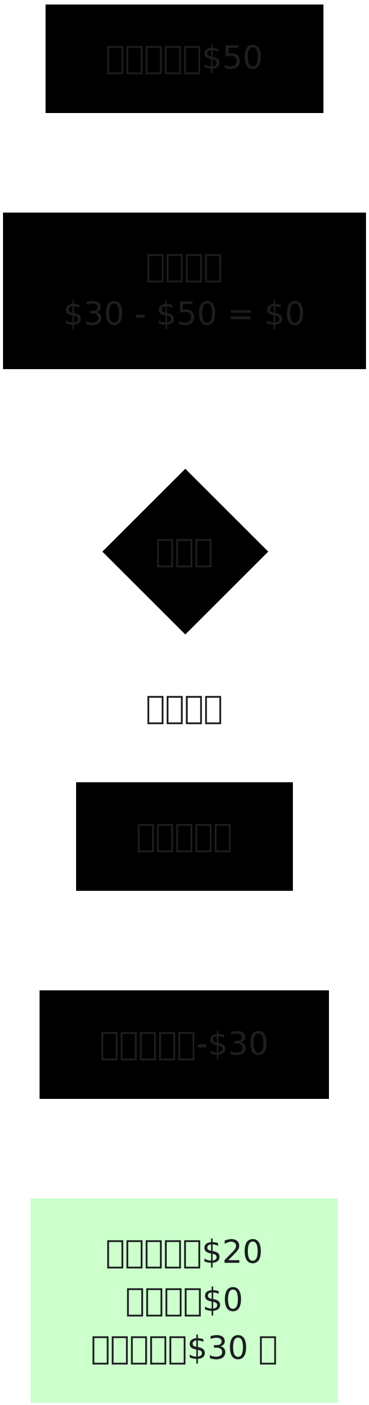
API□□□

```
{
  "success": true,
  "message": "□□□□□□□",
  "data": {
    "customer_id": 123,
    "service_amount": 10.00,
    "routing_mode": "hybrid",
    "initial_balance": 1.00,
    "wallet_portion_used": 1.00,     // □□□□□$1
    "card_portion_used": 9.00,       // □□□$9□□
    "charged_amount": 9.00,          // ← □□□
    "wallet_credited": 9.00,         // ← □□□□
    "wallet_debited": 10.00,         // ← □□□□
    "final_balance": 0.00
  }
}
```

□□2□$50□□□□ + $30□□

□□□□□□□□$50□□□□□□$30□

□□□□□□□□□



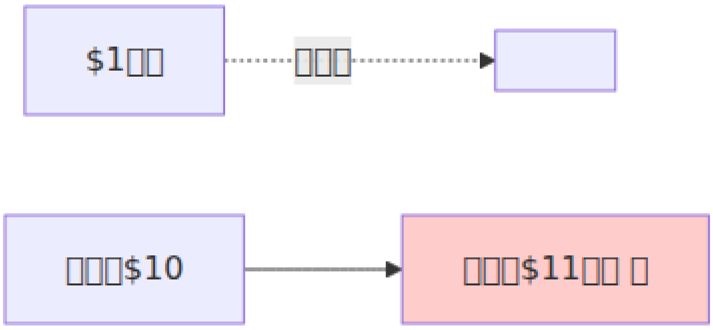
API□□□

```
{
  "success": true,
  "data": {
    "service_amount": 30.00,
    "initial_balance": 50.00,
    "charged_amount": 0,              // ← □□□□
    "wallet_debited": 30.00,
    "final_balance": 20.00,
    "payment_method_used": false      // ← □□□□
  }
}
```

□□3□□□□□□□□□□

□□□□□□□$500□□□□□□□□□$150□

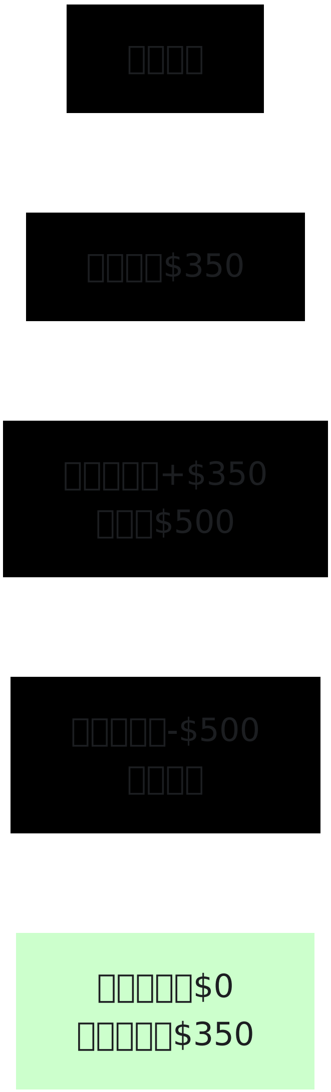
□1□□□□□`POST /api/payments/authorize/hold`□□



API□□□

```
{
  "authorization_id": 301,
  "amount": 500.00,
  "status": "authorized",
  "wallet_balance": 150.00,
  "wallet_to_use": 150.00,
  "card_amount": 350.00,
  "message": "□□□$350□□□□□□□□□□□□□□$500□□□□"
}
```

□2□□□□□`POST /api/payments/capture/301`□□



□□□□

□□□□$350

□□□□□+$350
□□□$500

□□□□□-$500
□□□□

□□□□□$0
□□□□□$350

□□□□□

- □ □□□□□□□□$350□□□□$500
- □ □□□□□□□□□□□
- □ □□□□□□□□
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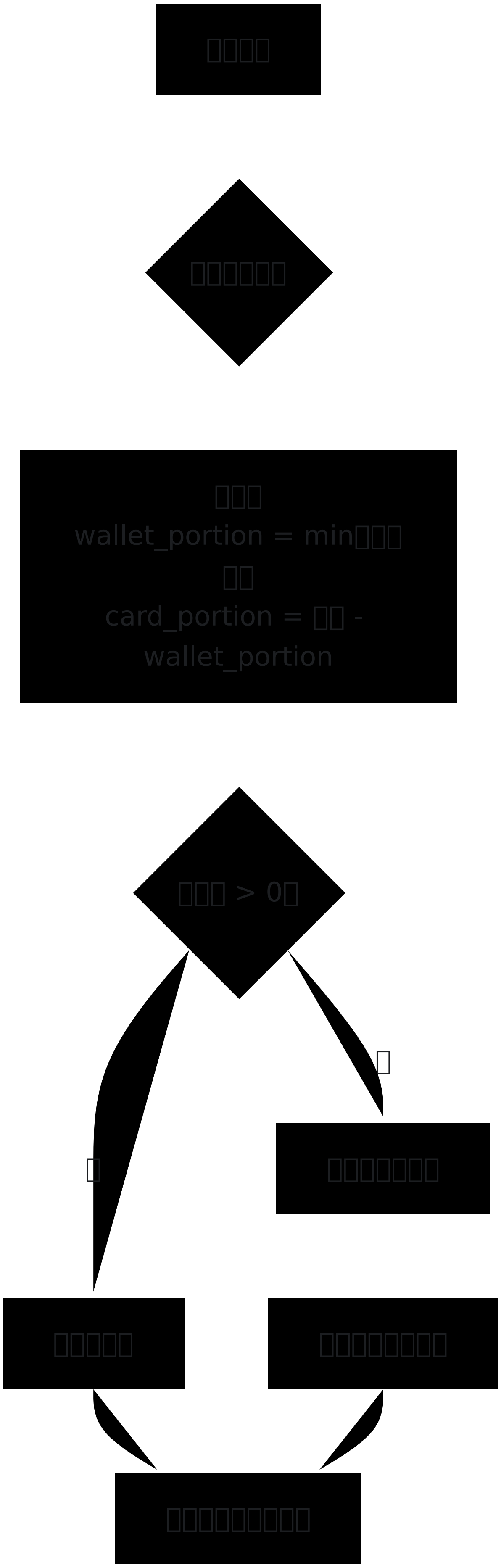
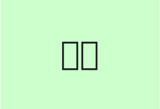

wallet_portion = min
card_portion =
-
wallet_portion
> 0



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```
curl -X POST https://your-domain.com/api/payments/charge \
  -H "Content-Type: application/json" \
  -H "Authorization: Bearer YOUR_API_KEY" \
  -d '{
    "customer_id": 123,
    "amount": 100.00,
    "metadata": {
      "routing_mode": "bypass"
    }
  }'
```

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Playbook□□□□□□

□Ansible playbook□□□□□□□□□

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□□API□□□□□□□API□□□□□□□□□□□□□□`Authorization`□□□

```
Authorization: Bearer YOUR_API_KEY
```

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- **Stripe** - □□□□□□□ACH□
- **PayPal** - □□□□□PayPal□□□□□Card Fields SDK□□□

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> □ **API** □□□□□□□□□□ API □□□□□□□□□□ **□□□□ API □□**

`Transactions </payments_transaction>` □□□□□□□□□□□□□□□□□□□□□□□

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OmniCRM □□ HTML □□□ Jinja2 □□□□□□□□□□□□□□□□□□□□□□□□□□□□□

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□□□□□□□ `OmniCRM-API/invoice_templates/`

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- `norfone_invoice_template.html` - □□□□□□
- `cifi_invoice_template.html` - □□□□□□

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□□□□□□□ `OmniCRM-API/crm_config.yaml` □□□□

```yaml
invoice:
  template_filename: 'norfone_invoice_template.html'
```

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- `{{ 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 }}` - □□□□□□□□□□□□□□□

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- `{{ 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 }}` - □□

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```
{% 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 %}
```

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- `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` - □□□□□□□□

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```
<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>
```

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```
cd OmniCRM-API/invoice_templates/
cp norfone_invoice_template.html
your_company_invoice_template.html
```

□□ 2□□□□ HTML/CSS

□□ `your_company_invoice_template.html` □□□□□□□□

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1. □□□□□□□

```
<!-- □□□□□□□ URL -->
![□□□□](https://yourcompany.com/logo.png)

<!-- □□□□□□ -->
<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. □□□□

```html
<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. □□□□□

```html
<div class="terms">
    <h4>□□□□</h4>
    <p>□□□□□ 30 □□□□□□□</p>
    <p>□□□□□□□□□□□□□ 2%□</p>
    <p>□□□□□□□billing@yourcompany.com</p>
</div>
```

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□□ `OmniCRM-API/crm_config.yaml`□

```yaml
invoice:
  template_filename: 'your_company_invoice_template.html'
```

□□ 4□□□ API

```
cd OmniCRM-API
sudo systemctl restart omnicrm-api
```

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```
{% 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 %}
```

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```
invoice_template_en.html
invoice_template_es.html
invoice_template_fr.html
```

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```
<!-- □□□□□□□□□ -->
<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` □□□□□□□□□□□□□□□□□□□ `tax_percentage` □ 0%□

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```
<div class="qr-payment">
    ![□□□□](https://api.qrserver.com/v1/create-qr-code/?
size=150x150&data={{ payment_url }})
    <p>□□□□□□□□□□</p>
</div>
```

PDF □□□□□□

OmniCRM □□ **WeasyPrint** □ HTML □□□ PDF□□□□□□□□□

□□□ CSS□

- □□□ CSS 2.1 □□
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- □□ `@font-face` □���□□□□

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- JavaScript
- CSS □□□□□□□□□
- □□□□
- □□□□ CSS □□

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```
@page {
    size: A4;
    margin: 1cm;
}

body {
    font-family: Arial, sans-serif;
    font-size: 10pt;
}
```

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```
@media print {
    .no-print {
        display: none;
    }

    .page-break {
        page-break-after: always;
    }
}
```

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```css
.table {
    table-layout: fixed;
    width: 100%;
}

.table th, .table td {
    word-wrap: break-word;
    padding: 4px;
}
```

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```css
@font-face {
    font-family: 'YourFont';
    src: url('https://yourcompany.com/fonts/yourfont.woff2')
format('woff2');
}

body {
    font-family: 'YourFont', Arial, sans-serif;
}
```

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□□□□□ API □□□□□□□

```
curl -X GET "http://localhost:5000/crm/invoice/{invoice_id}/pdf" \
     -H "Authorization: Bearer YOUR_TOKEN" \
     --output test_invoice.pdf
```

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- □□□ □□□□□□□□`table-layout: fixed`

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[illegible]

- `payments_invoices` - [illegible]
- `payments_process` - [illegible]
- `basics_payment` - [illegible]
- `csa_activity_log` - [illegible]

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OmniCRM Ansible Playbooks □□□□□□□□□□□□□□□□□□□□□□□□□□ CRM □ API □□□□

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```yaml
# □□ retail_cost □ $99.00□□□□□□ $79.00 □□□□□□□
- name: □□□□□□□□□□□□ retail_cost□
  set_fact:
    charge_amount: 79.00

- name: □□□□□□
  uri:
    url: "http://localhost:5000/crm/payments/authorize/hold"
    method: POST
    body_format: json
    body:
      customer_id: "{{ customer_id | int }}"
      amount: "{{ charge_amount | float }}"  # □□□□□□□□□□□
retail_cost
      # ...
```

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```yaml
# □□□□□□□□□□
- name: □□□□□□
  uri:
    url: "http://localhost:5000/crm/customer/{{ customer_id }}"
    # ...
  register: customer_info

- name: □□□□□□
  set_fact:
    base_price: "{{ api_response_product.json.retail_cost | float
}}"
    discount_percent: >-
      {% if customer_info.json.tier == 'gold' %}20
      {% elif customer_info.json.tier == 'silver' %}10
      {% else %}0{% endif %}

- name: □□□□□□□□□□
  set_fact:
    final_price: "{{ (base_price | float) * (1 - (discount_percent
| float / 100)) | round(2) }}"
```

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```yaml
# □□□□□□□□ wholesale_cost □□□ retail_cost
- name: □□□□□□□□□□
  set_fact:
    charge_amount: >-
      {% if customer_info.json.is_wholesale_partner %}
      {{ api_response_product.json.wholesale_cost | float }}
      {% else %}
      {{ api_response_product.json.retail_cost | float }}
      {% endif %}
```

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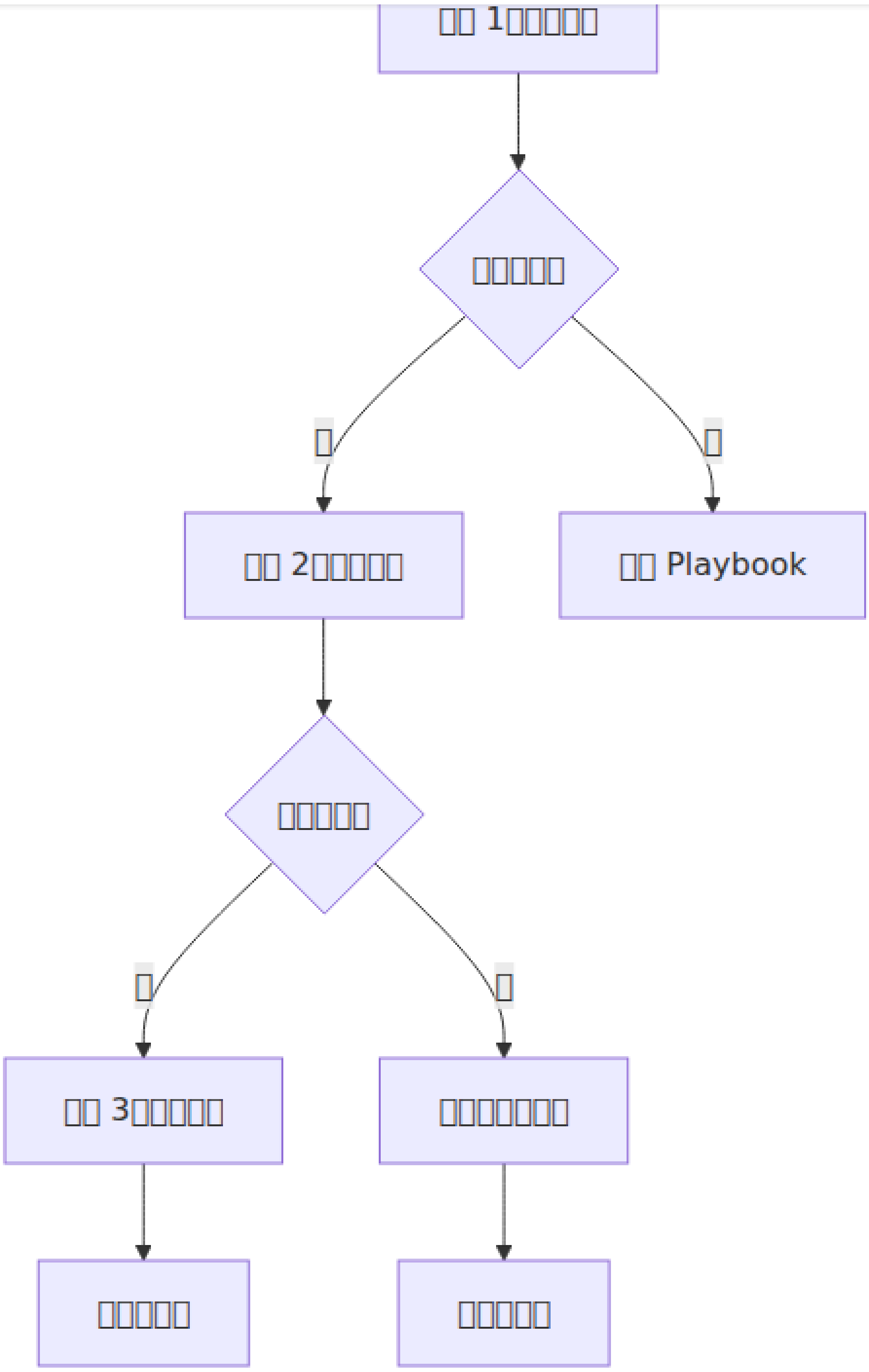

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□□□□□ `play_topup_charge_then_action.yaml` □□□□□□

```
- name: Play Topup - Charge card then action the Topup
  hosts: localhost
  gather_facts: no
  become: False

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

    # □□□□□□□□□
    - 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

    - name: □ CRM API □□□□□□
      uri:
        url: "http://localhost:5000/crm/service/service_id/{{
service_id }}"
        method: GET
        headers:
          Authorization: "Bearer {{ access_token }}"
        return_content: yes
        validate_certs: no
      register: api_response_service

    - name: □□□□□□□□□
      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
}}"
        monthly_cost: "{{ api_response_product.json.retail_cost
}}"
```

```
        wholesale_cost: "{{
api_response_product.json.wholesale_cost }}"

    # □□□□□□□□□□□
    - name: □□□□□□□□□□□□□□
      uri:
        url: "http://localhost:5000/crm/payments/methods?
customer_id={{ customer_id }}"
        method: GET
        headers:
          Authorization: "Bearer {{ access_token }}"
        return_content: yes
        validate_certs: no
      register: api_response_payment_methods

    - name: □□□□□□□□ payment_method_id
      set_fact:
        payment_method_id: "{{ api_response_payment_methods.json |
json_query(query) }}"
      vars:
        query: "data[?is_default==`true`].payment_method_id | [0]"

    # ============================================================
    # □□□□□□□□□
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    - name: "□□ 1□□□□□□□□□□□"
      uri:
        url: "http://localhost:5000/crm/payments/authorize/hold"
        method: POST
        headers:
          Content-Type: "application/json"
          Authorization: "Bearer {{ access_token }}"
        body_format: json
        body:
          {
            "customer_id": "{{ customer_id | int }}",
            "amount": "{{ monthly_cost | float }}",
            "currency": "{{ crm_config.currency | default('AUD')
}}",
            "payment_method_id": "{{ payment_method_id | int }}",
            "metadata": {
              "description": "{{ package_name }} on {{
api_response_service.json.service_name }}",
              "service_id": "{{
api_response_service.json.service_id | int }}",
              "site_id": "{{ api_response_service.json.site_id |
int }}",
              "product_id": "{{ product_id }}",
              "user_id": "{{ (initiating_user | int) if
(initiating_user is defined and initiating_user is not none) else
omit }}",
              "title": "{{ package_name }}",
              "wholesale_cost": "{{ wholesale_cost | float }}",
              "invoice": true,
              "contract_days": "{{ days | int }}",
              "send_email": true
            }
          }
        return_content: yes
      register: api_response_authorization

    - name: □□□□□□
      assert:
        that:
          - api_response_authorization.status == 200
          - api_response_authorization.json.success == true

    - name: □□ authorization_id □□□□/□□
      set_fact:
        authorization_id: "{{
api_response_authorization.json.data.authorization_id }}"

    # □□ 2□OCS □□□□□□□□□□□□□□□□
    - block:
        - name: "□□ 2□□□ CGRateS □□"
          uri:
            url: "http://{{ crm_config.ocs.cgrates }}/jsonrpc"
            method: POST
            body_format: json
            headers:
              Content-Type: "application/json"
              Authorization: "Bearer {{ access_token }}"
            body:
              {
                "id": "{{ 999999999 | random }}",
                "method": "APIerSv1.ExecuteAction",
                "params": [{
                  "Tenant": "{{ crm_config.ocs.ocsTenant }}",
                  "Account": "{{ service_uuid }}",
                  "ActionsId": "{{ cgr_action_name }}"
                }]
              }
            status_code: 200
          register: action_execute_response

        - name: □□□□□□□□ OK
          assert:
            that:
              - action_execute_response.status == 200
              - action_execute_response.json.result == "OK"

        # □□ 3□□□□□ - □□□□□□□□□□
        - name: "□□ 3□□□□□□□"
          uri:
            url: "http://localhost:5000/crm/payments/capture/{{
authorization_id }}"
            method: POST
            headers:
              Content-Type: "application/json"
              Authorization: "Bearer {{ access_token }}"
            body_format: json
            body:
              {
                "metadata": {
                  "provisioning_status": "success",
                  "cgr_action": "{{ cgr_action_name }}"
                }
              }
            return_content: yes
          register: api_response_capture

        - name: □□□□□□
          assert:
            that:
              - api_response_capture.status == 200
              - api_response_capture.json.success == true

      rescue:
        # □□□□□□□□□□□□□□□□□
        - name: "□□□□□□□□□"
          uri:
            url: "http://localhost:5000/crm/payments/release/{{ authorization_id }}"
            method: POST
            headers:
              Content-Type: "application/json"
              Authorization: "Bearer {{ access_token }}"
            body_format: json
            body:
              {
                "metadata": {
                  "release_reason": "provisioning_failed",
                  "cgr_action": "{{ cgr_action_name }}"
                }
              }
            return_content: yes
          register: api_response_release

        - name: □□□□□□□ playbook □□
          fail:
            msg: "OCS □□□□□□□□□□□ {{ authorization_id }} □□□□□□□□□□□□"
```

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□□□ `POST /crm/payments/authorize/hold`

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```
{
  "customer_id": 123,
  "amount": 49.99,
  "currency": "AUD",
  "payment_method_id": 456,
  "metadata": {
    "description": "□□□□□□□",
    "service_id": 789,
    "site_id": 12,
    "product_id": "34",
    "user_id": 5,
    "title": "□□□□",
    "wholesale_cost": 25.00,
    "invoice": true,
    "contract_days": 30,
    "send_email": true
  }
}
```

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- **customer_id**□□□□ - □□□□□□ ID
- **amount**□□□□ - □□□□□□□□□□□□□
- **currency**□□□□ - □□□□□□□□□□□□□□
- **payment_method_id**□□□□ - □□□□□□□□
- **metadata**□□□□ - □□□□□□□□□□
  - **description** - □□□□
  - **service_id** - □□□□□□
  - **site_id** - □□□□□□□□□
  - **product_id** - □□□□□□□
  - **user_id** - □□□□□□□□□□□
  - **title** - □□□□
  - **wholesale_cost** - □□□□□□□□□□□□
  - **invoice** - □□□ `true`□□□□□□□□□□□
  - **contract_days** - □□□□
  - **send_email** - □□□ `true`□□□□□□□□□

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```
{
  "success": true,
  "message": "□□□□□□□□□□□□",
  "data": {
    "authorization_id": 301,
    "vendor_authorization_id": "auth_xxxxx",
    "amount": 500.00,
    "currency": "USD",
    "status": "authorized",
    "wallet_balance": 150.00,
    "wallet_to_use": 150.00,
    "card_amount": 350.00,
    "message": "□□□□ $350□□□□□□□□□□□□□□ $500 □□□□□□"
  }
}
```

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- □□ `authorization_id` □□□□□□□□□□□□□
- □□ `card_amount` □□□□□□□□□
- □□□□□□□□□□□□□□□□□□

2. □□□□

□□□ `POST /crm/payments/capture/{authorization_id}`

□□□□□□□□□□□□□□□□□□□□□□□□□□□□ `invoice: true`□□□□□□□□□□

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```
{
  "metadata": {
    "provisioning_status": "success",
    "cgr_action": "Action_Topup_Standard",
    "additional_info": "□□□□□□□□"
  }
}
```

□□□

```json
{
  "success": true,
  "data": {
    "payment_id": "pay_xyz789",
    "transaction_id": 1234
  }
}
```

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   - □□□□□□□□□□ = □□□
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5. □□□□□□□□□□
6. □□ `send_email: true`□□□□□□□□□□□□

□□□$500 □□□ $150 □□□□□

- □□□□$350
- □□□□□+$350□□□□□□ $500□
- □□□□□-$500□□□□□□
- □□□□□$0

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3. □□□□□□

□□□ `POST /crm/payments/release/{authorization_id}`

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```json
{
  "metadata": {
    "release_reason": "provisioning_failed",
    "error_details": "OCS □□□□□□"
  }
}
```

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```json
{
  "success": true,
  "message": "□□□□□"
}
```

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□□ API □□□□

□□□ `PUT /crm/transaction/`

□□ **`play_simple_service.yaml`** □□□□

```
- name: □□ API □□□□□□□□
  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 }} - □□□□",
        "description": "□ {{ package_comment }} □□□□□",
        "invoice_id": null,
        "wholesale_cost": {{
api_response_product.json.wholesale_setup_cost | float }},
        "retail_cost": "{{
api_response_product.json.retail_setup_cost | float }}"
      }
    return_content: yes
  register: api_response_transaction

- name: □□□□□□□□
  assert:
    that:
      - api_response_transaction.status == 200
```

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- **customer_id**□□□□ - □□ ID
- **service_id**□□□□ - □□□□□□□□□ ID
- **title**□□□□ - □□□□□
- **description**□□□□ - □□□□
- **invoice_id**□□□□ - □□□□□□□□□□ ID□□□□ null□
- **wholesale_cost**□□□□ - □□□□
- **retail_cost**□□□□ - □□□□□□□
- **site_id**□□□□ - □□□□□□□□□ ID

- **tax_percentage□□□□** - □□□□□

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```
pro_rata_charge = (monthly_cost × days_remaining) / days_in_month
```

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□□□□ playbook □□□□□□□□□□□□

```yaml
# □□��□□□□□□□□□
# □□□□□ 15 □□□□□□□□ 1 □□
# □□□□□□□□□□

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

- name: □□□□□□□□□□
  command: "date -d 'last day of this month' +%d"
  register: days_in_month

- name: □□□□□□□□□
  command: "date -d 'last day of this month' +%Y-%m-%d"
  register: last_day_of_month

- name: □□□□□□□□
  set_fact:
    days_remaining: "{{ (days_in_month.stdout | int) -
(current_day.stdout | int) + 1 }}"

- name: □□□□□□□
  set_fact:
    pro_rata_cost: "{{ ((monthly_cost | float) * (days_remaining |
float) / (days_in_month.stdout | float)) | round(2) }}"

- name: □□□□□□
  debug:
    msg:
      - "□□□□□${{ monthly_cost }}"
      - "□□□□□{{ days_in_month.stdout }}"
      - "□□□□□{{ days_remaining }}"
      - "□□□□□□${{ pro_rata_cost }}"

# □□□□□□□□□□□ pro_rata_cost
- name: "□□□□□□□"
  uri:
    url: "http://localhost:5000/crm/payments/authorize/hold"
    method: POST
    headers:
      Content-Type: "application/json"
      Authorization: "Bearer {{ access_token }}"
    body_format: json
    body:
      {
        "customer_id": "{{ customer_id | int }}",
        "amount": "{{ pro_rata_cost | float }}",
        "currency": "{{ crm_config.currency | default('AUD') }}",
        "payment_method_id": "{{ payment_method_id | int }}",
        "metadata": {
          "title": "{{ package_name }} (□□□ {{ days_remaining }}
□)",
          "description": "□ {{ days_remaining }}/{{
days_in_month.stdout }} □□ {{ package_name }} □□□□□□□",
          "service_id": "{{ service_id | int }}",
          "invoice": true
        }
      }
```

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```yaml
- name: □□□□□□□□□□□□□□
  set_fact:
    service_start_date: "2024-01-15"
    next_billing_date: "2024-02-01"

- name: □□□□□□□□□
  shell: |
    echo $(( ( $(date -d "{{ next_billing_date }}" +%s) - $(date -
d "{{ service_start_date }}" +%s) ) / 86400 ))
  register: days_until_billing

- name: □□□□□□□□□□□□□ 30□
  set_fact:
    billing_period_days: 30

- name: □□□□□□□
  set_fact:
    pro_rata_cost: "{{ ((monthly_cost | float) *
(days_until_billing.stdout | float) / (billing_period_days |
float)) | round(2) }}"

- name: □□□□
  debug:
    msg:
      - "□□□□□{{ service_start_date }}"
      - "□□□□□□{{ next_billing_date }}"
      - "□□□□□□□□{{ days_until_billing.stdout }}"
      - "□□□□□□${{ pro_rata_cost }}"
```

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- □□□ 1 □ 15 □□□
- □□□□□$60.00
- 1 □□□□□31
- □□□□□17□□□ 15 □□ 31 □□
- □□□□□□`$60.00 × 17 ÷ 31 = $32.90`

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- □□□□□□□□□ 10 □□□
- □□□□$30/□
- □□□□$50/□
- □□□□□□□30
- □□□□□21
- □□□$20/□
- □□□□□□`$20.00 × 21 ÷ 30 = $14.00`

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```
- block:
    # □□□□
    - name: □□□□
      uri: ...

    # □□□□□□□□□
    - name: □□□□
      uri: ...

  rescue:
    # □□□□□□□□□□□□□□
    - name: □□□□□□
      uri: ...

    - name: □□ playbook
      fail:
        msg: "□□□□□□□□□□"
```

2. □□□□ API □□

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```yaml
- name: □□□□
  uri: ...
  register: api_response_authorization

- name: □□□□□□
  assert:
    that:
      - api_response_authorization.status == 200
      - api_response_authorization.json.success == true
    fail_msg: "□□□□□□□{{ api_response_authorization.json }}"
```

3. □□□□ ID

□□□□ authorization_id □□□□/□□□□□

```yaml
- name: □□ authorization_id □□□□/□□
  set_fact:
    authorization_id: "{{
api_response_authorization.json.data.authorization_id }}"
```

4. □□□□□□□

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```yaml
metadata:
  description: "□□□□□□□□□□□"
  service_id: "{{ service_id | int }}"
  product_id: "{{ product_id }}"
  user_id: "{{ initiating_user | int }}"
  title: "□□□□□□□□"
  wholesale_cost: "{{ wholesale_cost | float }}"
  invoice: true  # □□□□□□□□□□
  send_email: true  # □□□□□□
```

5. □□□□□□□

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```
- name: □□□□□□□□□□
  set_fact:
    final_cost: "{{ (base_cost | float * multiplier | float) |
round(2) }}"
```

6. □□□□□□□□□

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```
- name: □□□□□��□□
  set_fact:
    payment_method_id: "{{ api_response_payment_methods.json |
json_query(query) }}"
  vars:
    query: "data[?is_default==`true`].payment_method_id | [0]"

- name: □□□□□□□□□□
  assert:
    that:
      - payment_method_id is defined
      - payment_method_id != ""
      - payment_method_id != None
    fail_msg: "□□□□□ {{ customer_id }} □□□□□□□"
```

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3. □ OCS/CGRateS □□□□□
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□□□ `play_simple_service.yaml` □□ 202-232 □□□□□□□□

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1. □□□□ `*http_post` □□□□□□□□□□
2. □□□□ `*monthly` □□□ ActionPlan
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1. □□□□□□□ - □□□□□□□□/PayPal

```
- name: □□□□□□□
  uri:
    url: "http://localhost:5000/crm/payments/refund"
    method: POST
    headers:
      Content-Type: "application/json"
      Authorization: "Bearer {{ access_token }}"
    body_format: json
    body:
      {
        "transaction_id": "{{ vendor_transaction_id }}",
        "vendor": "stripe",
        "amount": "{{ refund_amount | float }}",
        "reason": "customer_request"
      }
```

2. □□□□□ - □□□□□□□□□□□□□□□□□□□□□□□□

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□□□□□□ playbooks □□□□□□□□□□□□□□Square□Adyen□Braintree □□□

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- □□□□□ - Stripe/PayPal □□□ API □□

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□□□ **Playbook** □□□

- `concepts_ansible.md` - □□ playbook □□□□□
- `concepts_provisioning.md` - □□□□□□

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- **□□□□ API □□** - □□□ API □□□□□□□□□□
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- `payments_transaction.md` - □□□□□□□□□
- `payments_process.md` - □□□□□□□
- `basics_payment.md` - □□□□□□□□□

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OmniCRM[illegible]

OmniCRM[illegible]**RBAC**[illegible]view_customer[illegible]create_inventory[illegible]

[illegible]

RBAC[illegible]

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2. [illegible] — [illegible]
3. [illegible] — [illegible]
4. [illegible] — “[illegible]…”[illegible]/[illegible]

[illegible]

- [illegible] — [illegible]OmniCRM[illegible]
- [illegible] — [illegible]view_customer[illegible]delete_product[illegible]

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□□Web UI

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□□API

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□□□ `POST /auth/users`

□□□□□ `admin`

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```
{
  "username": "john.smith",
  "email": "john.smith@company.com",
  "password": "TempP@ssw0rd!",
  "first_name": "John",
  "middle_name": "D",
  "last_name": "Smith",
  "phone_number": "+61412345678",
  "role": "Support"
}
```

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```
{
  "id": 123,
  "username": "john.smith",
  "email": "john.smith@company.com",
  "first_name": "John",
  "last_name": "Smith",
  "roles": ["Support"],
  "created": "2025-01-04T10:30:00Z"
}
```

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```
{
  "username": "jane.doe",
  "email": "jane.doe@company.com",
  "password": "TempP@ssw0rd!",
  "first_name": "Jane",
  "last_name": "Doe",
  "role": "Support,Finance"
}
```

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```
POST /auth/roles/{role_id}/users/{user_id}
```

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`GET /auth/users`

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`GET /auth/users/search?search={query}&filters={"role":["Support"]}&page=1&per_page=50`

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`GET /auth/users/{user_id}`

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□□**Web UI**□

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   - □□ - □□□□□□□□□□
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5. □□□□□□□□□□□□□□□□□□□□

□□**API**□

□□□ `POST /auth/roles`

□□□□□ `admin`

□□□

```json
{
  "name": "Tier2_Support",
  "description": "Level 2 support team with elevated provisioning access"
}
```

□□□

```json
{
  "id": 45,
  "name": "Tier2_Support",
  "description": "Level 2 support team with elevated provisioning access",
  "permissions": [],
  "users": []
}
```

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□□Web UI□

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□□API□

□□□ `POST /auth/roles/{role_id}/permissions`

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```
{
  "permission_id": 123
}
```

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```
{
  "permission_ids": [123, 124, 125]
}
```

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1. □□□□□

   ```
   POST /auth/roles
   {
     "name": "Provisioning_Specialist",
     "description": "Can provision services and manage customer
   services"
   }
   ```

2. □□□□□

   ```
   POST /auth/roles/45/permissions
   {
     "permission_ids": [
       1,   # view_customer
       20,  # view_customer_service
       21,  # create_customer_service
       22,  # update_customer_service
       30,  # view_provision
       31,  # create_provision
       40,  # view_inventory
       50,  # view_product
     ]
   }
   ```

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□□Web UI□

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□□API□

□□□ `DELETE /auth/roles/{role_id}/permissions/{permission_id}`

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```
DELETE /auth/roles/45/permissions/31
```

□□□□□□□□`create_provision`□□□

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□□Web UI□

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4. □□**“□□”**

□□API□

□□□ `PUT /auth/roles/{role_id}`

```
{
  "name": "Senior_Support",
  "description": "Senior support team with full customer access"
}
```

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□□API□

`DELETE /auth/roles/{role_id}`

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□□Web UI□

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□□API□

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□□□ `PUT /auth/users/{user_id}`

```
{
  "role": "Support,Finance"
}
```

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□□□ `POST /auth/roles/{role_id}/users/{user_id}`

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`GET /auth/roles/{role_id}/users`

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`GET /auth/users/{user_id}`

□□□□`roles`□□□□□□□□□□□□□

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API□□□

1. □□□□□

□□□ `POST /auth/forgot_password`

```json
{
  "email": "user@example.com"
}
```

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2. □□□□□□□

□□□ `POST /auth/reset_password`

```json
{
  "token": "abc123...",
  "new_password": "NewSecureP@ssw0rd!"
}
```

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□□Web UI□

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□□API□

□□□ `POST /auth/users/{user_id}/admin_reset_password`

□□□□□ `admin`

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```
{
  "new_password": "TempP@ssw0rd!",
  "force_change": true
}
```

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- `new_password` - □□□□□□□□
- `force_change`□□□□ - □□□true□□□□□□□□□□□□□□□

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□□□ `POST /auth/change_password`

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```
{
  "current_password": "OldP@ssw0rd!",
  "new_password": "NewSecureP@ssw0rd!"
}
```

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OmniCRM□□□□TOTP□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□2FA□

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□□Web UI□

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□□API□

1. **□□TOTP□□□**

   □□□ `POST /2fa/enable/user/{user_id}`

   □□□

```json
{
  "totp_secret": "JBSWY3DPEHPK3PXP",
  "qr_code_url": "otpauth://totp/OmniCRM:user@example.com?secret=JBSWY3DPEHPK3PXP&issuer=OmniCRM",
  "backup_codes": [
    "12345678",
    "23456789",
    "34567890",
    ...
  ]
}
```

2. □□□□□

   □□□ `POST /2fa/verify-setup/user/{user_id}`

   ```json
   {
     "code": "123456"
   }
   ```

   □□□□□`{"verified": true}`□

2FA□□□□

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□□2FA□□

□□□ `POST /2fa/verify/user/{user_id}`

```json
{
  "code": "123456"
}
```

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- **TOTP**□□□□□□□□□□□□□□□6□□□□
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□□Web UI□

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4. □□□□□

□□API□

□□□ `POST /2fa/backup-codes/regenerate/user/{user_id}`

□□□

```json
{
  "backup_codes": [
    "98765432",
    "87654321",
    "76543210",
    ...
  ]
}
```

□□□2FA□□

□□□2FA□

□□Web UI□

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6. □□□□□□□□□□□□□2FA

□□**API**□

□□□ `POST /2fa/admin/disable/user/{user_id}`

□□□□□ `admin`

□□□□□□□□□2FA□

- □□TOTP□□
- □□□□□□
- □`is_2fa_enabled`□□□□□false

□□□□□□□□2FA□□□□□□□□□□□□

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□□□ `POST /2fa/reset-for-new-device/user/{user_id}`

```
{
  "backup_code": "12345678"
}
```

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□□**Web UI**□

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4. □□**“□□”**

□□**API**□

□□□：`PUT /auth/users/{user_id}`

```json
{
  "first_name": "Jane",
  "last_name": "Doe-Smith",
  "email": "jane.doesmith@newcompany.com",
  "phone_number": "+61498765432",
  "role": "Support,Finance"
}
```

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- `pending_email`□□□□□□□□□
- □□□□□□□□□□□□
- □□□□□□□□□□

- `email`□□□□□□□
- `email_verified`□□□□□true

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□□**Web UI**□

1. □□□□□□□□ → □□
2. □□□□□□□□
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□□**API**□

□□□ `DELETE /auth/users/{user_id}`

□□□□□ `admin`

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- `deleted`□□□□□`True`
- □□`deleted_at`□□□
- □□□□□□
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`GET /auth/users/search?filters={"deleted":[true]}`

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□□□ `PUT /auth/users/{user_id}`

```json
{
  "deleted": false
}
```

□□□□`deleted`□□□□□□□□□□□□□

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- view_* — □□/□□
- create_* — □□/□□
- update_* — □□/□□

- delete_* — □□/□□

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- `admin` — □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□
- `can_impersonate` — □□□□□□□□□□□□□□□/□□□□□□□□□□□
- `grafana_access` — □□Grafana□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□Grafana□□□□□

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  - view_customer□ create_customer□ update_customer□ delete_customer
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  - view_customer_site□ create_customer_site��� update_customer_site□ delete_customer_site
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- view_customer_contact□ create_customer_contact□ update_customer_contact□ delete_customer_contact
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- □□□□□□`□□□□ <administration_attributes>`□
  - view_customer_attribute□ create_customer_attribute□ update_customer_attribute□ delete_customer_attribute
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- □□□□□□`□□□□ <administration_tags>`□
  - view_customer_tag□ create_customer_tag□ update_customer_tag□ delete_customer_tag
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  - view_customer_service□ create_customer_service□ update_customer_service□ delete_customer_service
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  - 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`□ `update_customer_stripe_card`□`delete_customer_stripe_card`
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- □□
  - `view_customer_transaction`□`create_customer_transaction`□ `update_customer_transaction`□`delete_customer_transaction`
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  - `view_customer_invoice`□`create_customer_invoice`□ `update_customer_invoice`□`delete_customer_invoice`
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- view_communication□ create_communication□ update_communication□ delete_communication
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  - `view_inventory`□`create_inventory`□`update_inventory`□`delete_inventory`
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  - `view_inventory_template`□`create_inventory_template`□`update_inventory_template`□`delete_inventory_template`
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- `view_product`□`create_product`□`update_product`□`delete_product`

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- `view_cbc_message`□`create_cbc_message`□`update_cbc_message`□`delete_cbc_message`

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  - `view_provision`□`create_provision`□`update_provision`□`delete_provision`
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  - `view_provision_event`□`create_provision_event`□`update_provision_event`□`delete_provision_event`

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□□	`view_customer`□`view_customer_service`□`view_communication`□`view_provision`□□□□□	□□□□□□□`can_impersonate`
□□	`view_customer_invoice`□`view_customer_transaction`□`view_product`□□□`create_customer_invoice`	□□□□□□□□□□
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□□□□□□□`admin`□□□

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□□□ `GET /auth/permissions`

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□□□ `POST /auth/permissions`

□□□□

```json
{
    "name": "view_example",
    "description": "Read-only access to example objects"
}
```

□□□□

□□□ `GET /auth/roles`

□□□□

□□□ `POST /auth/roles`

□□□□

```json
{
"name": "Support",
"description": "Tier-1 support team"
}
```

□□□□□□□

□□□ `POST /auth/roles/{role_id}/permissions`

□□□□

```json
{
  "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"
}
```

□□□□□□□

□□□ `PUT /auth/users/{user_id}`

□□□□

```
{
  "role": "Finance"
}
```

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□□□ `GET /auth/users`

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- □□□ `can_impersonate`□`admin`

□□□□

□□□ `POST /auth/impersonate`

□□□□

```
{ "user_id": 42 }
```

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□□□ `POST /auth/stop_impersonation`

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OmniCRM□Grafana□□□□□□□□□□□□□□□□□□□□`grafana_access`□□□□□□□□□Grafana□
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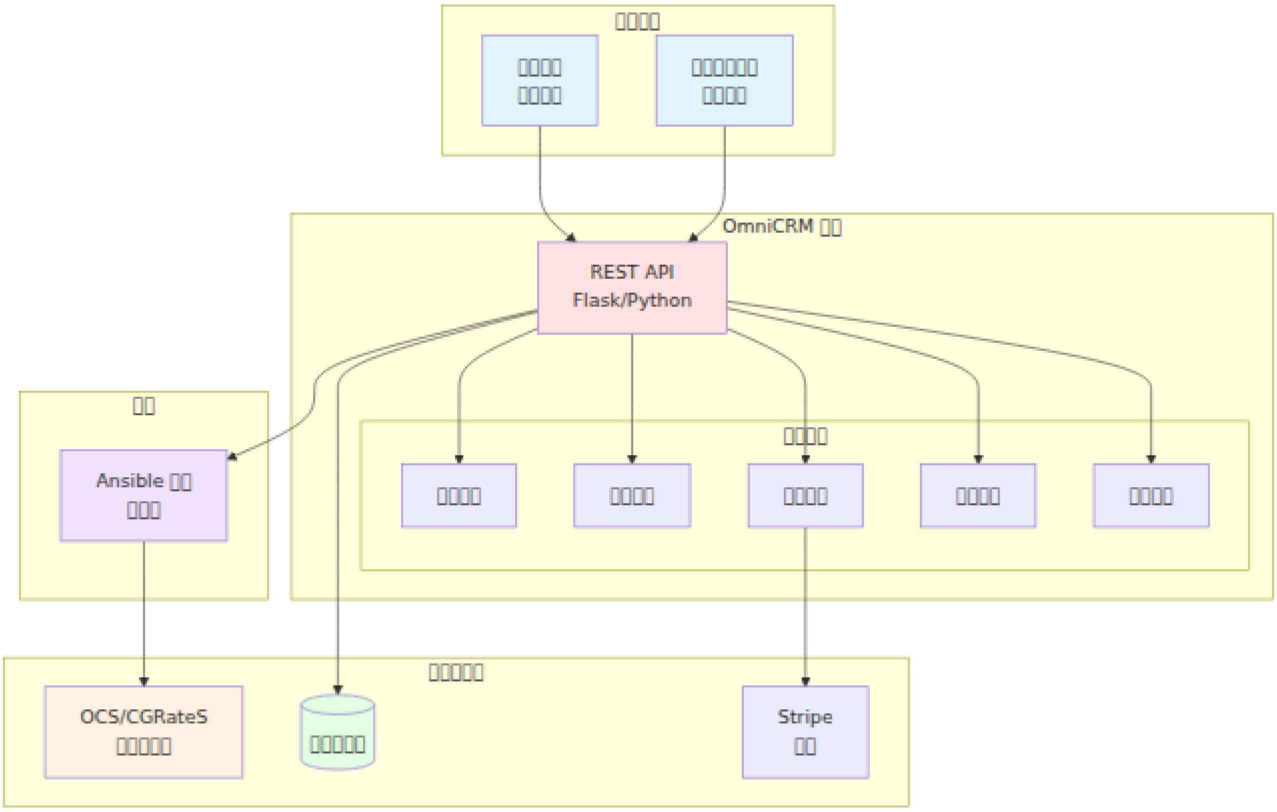

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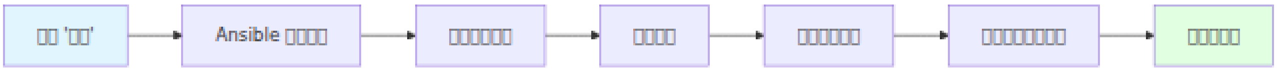

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