

Optum Salt Lake County Interoperability APIs

Developer-friendly, standards-based APIs that enable third party applications for vendors to connect their applications or programs to access Optum Salt Lake County data.

Overview

Optum Salt Lake County Interoperability APIs enable Salt Lake County members to consent to have their data shared with third-party applications. It also allows third-party application owners to connect to provider directories, further referred to as “public non-member specific data.”

Optum Salt Lake County Interoperability APIs provide the functionality listed below:

- Enable developers to register member-facing applications
- Enable members to provide consent for an application to access their data
- Use the [HL7 Fast Healthcare Interoperability Resources \(FHIR\)](#) standard for member data
- Use the [OAuth 2.0 / Open ID Connect](#) standard for member authorization
- Use the [HL7 FHIR](#) standard for sharing public non-member specific data

Release notes

- [v1.13 \(pdf\)](#)
- [v1.12 \(pdf\)](#)

Authorization

To use the Optum Salt Lake County Interoperability API OAuth 2.0 a developer must [register their application](#). An organization must register as a user by creating a One Healthcare ID and complete the registration application through the “App Owner” section of the Vendor Portal before the ability to register applications is accessible.

A registered application is given a client ID and a client secret. The secret should only be used if it can be kept confidential, such as communication between your server and the respective Optum Salt Lake County Interoperability APIs. For insecure implementations, such as mobile apps, PKCE (Proof Key for Code Exchange) is available.

API permissions and scopes

Access tokens have scopes, which define permissions and the resources that the token can access. Scopes are primarily utilized to determine the type of data an application is requesting. Scopes must be explicitly declared; wildcards are not supported. In the current release the following [scopes](#) are available for the following types of requests:

Note: Any Scope not currently listed is not supported

Patient access

patient/Patient.read
patient/ExplanationOfBenefit.read
patient/Coverage.read

Public access

Provider Directory

public/Practitioner.read
public/PractitionerRole.read
public/Organization.read
public/OrganizationAffiliation.read
public/Network.read
public/Location.read
public/HealthcareService.read

This gives access to the correct [FHIR](#) Endpoints.

Our OAuth2 authentication screen requires members consent to share different types of data. **Your application will need to handle the return of a HTTP status codes** from the endpoints if there are authentication or configuration failures.

If the member declines to share information that your application needs, you may display a message explaining why that information is needed and request re-authorization or handle the collection of that information elsewhere within your application.

The default selection will be to share the scopes included in the initial request with your application. If a member declines a scope but later decides they want to change that selection, they'll need to re-authenticate and make a different choice from the OAuth2 screen.

Optum Salt Lake County also supports non-authenticated public directory endpoints. Please see core resources documentation section for further details.

It is important to explain to members why you need certain data

If information limited by a scope is required for your application to properly function and it is not possible to get the information in another endpoint, we recommend providing an explanation about why certain data is needed in your user flow. For example, if you use demographic information to help members autofill tedious data-entry, you might want to explain that benefit before they reach the authorization screen. **It is essential, however, that you give members the full picture.** If they do share data with your application, they should know how long you keep it and if it is used for any other purposes.

Multiple environments are available under Optum Salt Lake County

Use this table to populate the [environment] annotations in any URL below.

| Environment [id] | Description |
|------------------|---|
| Saltlake | Salt Lake County (Production Environment) |

Native mobile application support

For public clients, such as native mobile application OAuth 2.0, supports the [PKCE](#) extension and enables custom URIs as redirects.

The implementation of the [PKCE](#) specification enables developers to build mobile applications without requiring a proxy server to route redirect calls to their mobile app.

The [PKCE](#) extension provides a technique for public clients to mitigate the threat of a “man-in-the-middle” attack. This involves creating a “secret” that is used when exchanging the authorization code to obtain an access token.

[PKCE](#) uses a code challenge that is derived from a code-verifier. Optum Salt Lake County Interoperability API 2.0 supports the “S256” style code challenge.

Where the:

```
code_verifier = random, non-guessable code
```

```
code_challenge = BASE64URL-ENCODE(SHA256(ASCII(codeverifier)))
```

The following additional parameters and values are sent as part of the OAuth2.0 Authorization Request:

- code_challenge
- codechallenge_method = “S256”

URI protocol

The redirect_uri supports any URI protocol. See examples below:

- https:// protocol
- custom_uri:// protocol

The https:// format is used for secure communication and is required for all applications in the production environment unless the application is using the Mobile OAuth method for handling callbacks.

custom_uri:// protocol

The custom_uri protocol is used by mobile applications to handle communications directly with your application on a mobile device.

If you are using Mobile OAuth support for communication directly with a mobile device the custom_uri should follow this format:

```
Top-level.domain(TLD).domain-name[.sub-domain][.app_name]
```

For example, if the Optum Salt Lake County Interoperability API team created an application we might create a custom_uri of:

api.obh.com

This would then be incorporated into a redirect URI entry. Here is an example:

api.uhc.com&state=8e896a59f0744a8e93bf2f1f13230be5

The following query parameters are required:

| Response_type | Code |
|-----------------------|--|
| client_id | Provided upon client application approval. |
| scope | Space separated list of requested scopes. <ul style="list-style-type: none">• Patient access scopes• Public access scopes |
| state | A random string generated by the client which will be sent back from AuthZ to verify authenticity. |
| redirect_uri | The URI that the OAuth code request returns the user to. |
| code_challenge | Client generated random string that is SHA256 hashed and then BASE64 encoded. (See info box below) |
| code_challenge_method | S256 |

Code challenge generation

- **Create a random string to use as the code_verifier:**
eae64b84b53f479d92ab81dce7c8bbe608492951def502d84b4f0cd7
- **Create the SHA256 hash, then base64-URL-encode the string:**
hI2vVv0Er_dHX9lUJo208lbFzKxfChVyM2WcHfODLnU
- **Use the base64 url-encoded string as the code_challenge parameter value.**
- code_challenge_method will always be S256 and each code request must contain a unique code_challenge value.

Example GET Request

GET /oauth/authorize HTTP/1.1

Host: https://authz.[environment].flexobh.optum.com

response_type=code&client_id=CLIENT_ID&redirect_uri=REDIRECT_URI&scope=patient/Patient.read%20patient/ExplanationOfBenefit.read&state=1234zyx&code_challenge=CODE_CHALLENGE&code_challenge_method=S256

Upon reaching the payer endpoint, the member will be redirected to the respective OAuth2/OIDC Identity Provider (IdP) for their plan.

The member will authenticate with the IdP and will eventually be redirected back to the endpoint provided in the authorization request's redirect_uri parameter. When the member arrives back to the redirect_uri, the request will contain the following query string parameters:

- code
- state

Compare the state value to the value sent in the initial token request. The values must match or it is an indication of a potential hijack attempt.

The code value will be exchanged for an authorization token by the client application in a background POST request to the AuthZ token endpoint: [https://authz.\[environment\].flexobh.optum.com/oauth/token](https://authz.[environment].flexobh.optum.com/oauth/token)

The following POST parameters will be sent:

| Parameter name | Parameter value |
|----------------|---|
| grant_type | authorization_code |
| code | The code returned in the redirect. |
| redirect_uri | The same redirect URI sent in the code request. |
| client_id | The client secret provided during application approval. -OR- |
| code_verifier | The original random string that was used for the code_challenge parameter in the code request. Do not SHA256 hash it or base64 encode it. |

Sample token request

POST /oauth/token HTTP/1.1

Host: https://authz.[environment].flexobh.optum.com

Content-Type: application/x-www-form-urlencoded

grant_type=authorization_code&**code**=AUTH_CODE_HERE&**redirect_uri**=REDIRECT_URI&**client_id**=CLIENT_ID&**client_secret**=CLIENT_SECRET&**code_verifier**=CODE_VERIFIER

(choose either client_secret or code_verifier)

The POST response will return a JSON object with the following properties:

| | |
|---------------|---|
| access_token | The access token used for data requests. |
| refresh_token | Used to request new access tokens. |
| expires_in | The expiration time of the access token. |
| scope | The scope values the token supports. |
| patient | The patient identifier used for FHIR requests |

Sample token response

```
{
  "access_token": "RsT50jzbzRn430zqMLgV3Ia",
  "patient": "2234234234"
  "expires_in": 3600,
  "scope": "patient/patient.read",
  "refresh_token": "PiV50jzbzRn520zwCJwV3Ia"
}
```

Client credentials (system-to-system) and Public access

For system-to-system and public access authentication, the token endpoint supports the client_credentials grant. In this case, the token endpoint is requested, and a token response will be received.

POST /oauth/token HTTP/1.1

Host: https://authz.[environment].flexobh.optum.com

grant_type=client_credentials&**client_id**=CLIENT_ID&**client_secret**=CLIENT_SECRET&**scope**=public/Practitioner.read%20user/PractitionerRole.read

Refresh tokens

The access token will be short-lived, typically 5 minutes or less.

If the data request returns an HTTP 400 response, the access token has likely expired, and the refresh token must be utilized to receive a new access token.

To receive a new access token, a **POST** request to the above token endpoint with the `grant_type=refresh_token` and `refresh_token=` will return a token response with a new access token. A new refresh token will not be issued.

Refresh POST example:

```
POST /oauth/token HTTP/1.1
```

```
Host: https://authz.[environment].flexobh.optum.com
```

```
grant_type=refresh_token&refresh_token=xxxxxxxxxxx&client_id=CLIENT_ID&client_secret=CLIENT_SECRET
```

Refresh tokens must be secured. A refresh token is long-lived and may be used to issue access tokens that provide access to a member's information for the duration of the refresh token's lifetime.

Using access tokens

Resource requests to the FLEX layer require an OAuth2 authorization token provided in the HTTP Authorization header in the format if the example below:

Example request

```
curl -H "Authorization: Bearer AeT40kbzMr288gJ2ag9Fwe"  
https://fhir.[environment].flexobh.optum.com/R4/ExplanationOfBenefit
```

Core resources

Authorization Required Endpoints

Base request URL

```
https://fhir.[environment].flexobh.optum.com/R4
```

Metadata capability statement

```
https://fhir.[environment].flexobh.optum.com/R4/metadata
```

Well known configuration URL

```
https://fhir.[environment].flex.optum.com/R4/.well-known/smart-configuration
```

Authorization NOT Required Endpoints

Base request URL

```
https://public.fhir.[environment].flexobh.optum.com/R4
```

Metadata capability statement

```
https://public.fhir.[environment].flexobh.optum.com/R4/metadata
```

Well known configuration URL

```
https://public.fhir.[environment].flex.optum.com/R4/.well-known/smart-configuration
```

Non-member specific

Healthcare Service [PDEX Plan net]

The Healthcare Service resource typically describes services offered by an organization/practitioner at a location. The resource may be used to encompass a variety of services covering the entire healthcare spectrum, including promotion, prevention, diagnostics, pharmacy, hospital and ambulatory care, home care, long-term care, and other health-related and community services.

Method (read):

GET [base]/HealthcareService/[id]

Method (vread):

GET [base]/HealthcareService/[id]/_history/[vid]

Method (search):

GET [base]/HealthcareService?service-category=prov

Search parameters:

Note: Any search parameter not listed is not supported

| Name | Type |
|------------------|--------------------------|
| _count | string |
| _getpagesoffset | string |
| _id | string |
| _lastUpdated | date |
| name | string |
| organization | reference (organization) |
| service-category | token |
| specialty | token |

Examples:

GET [base]/HealthcareService?service-category=prov&name=Stewart

GET [base]/HealthcareService?service-category=prov&name=Stewart&specialty=207R00000X

Location [PDEX Plan net]

A Location is the physical place where healthcare services are provided, practitioners are employed, organizations are based, etc.

Locations can range in scope from a room in a building to a geographic region/area.

Method (read):

GET [base]/Location/[id]

Method (vread):

GET [base]/Location/[id]/_history/[vid]

Method (search):

GET [base]/Location?_id=[id]

Search parameters:

Note: Any search parameter not listed is not supported

| Name | Type |
|-----------------|--------|
| _count | string |
| _getpagesoffset | string |
| _id | string |
| _lastUpdated | date |
| address | string |
| address-city | string |

| | |
|--------------------|--------|
| address-postalcode | string |
| address-state | string |

Examples:

GET [base]/Location?address=Orlando

GET [base]/Location?address-state=CA

GET [base]/Location?address-postalcode=97035-2591

Organization [PDEX Plan net]

An organization is a formal or informal grouping of people or organizations with a common purpose, such as a company, institution, corporation, community group, or healthcare practice.

Method (read):

GET [base]/Organization/[id]

Method (vread):

GET [base]/Organization/[id]/_history/[vid]

Method (search):

GET [base]/Organization?_id=[id]

Search parameters:

Note: Any search parameter not listed is not supported

| Name | Type |
|-----------------|--------|
| _count | string |
| _getpagesoffset | string |
| _id | string |
| _lastUpdated | date |

| | |
|---------|--------|
| address | string |
| name | string |

Examples:

GET [base]/Organization?name=Utah Hospital

Network [PDEX Plan net]

A network is a type of organization search using the profile parameter.

Method (search):

GET [base]/Organization?type=ntwk

Search parameters: see Organization

Note: Any search parameter not listed is not supported

| Name | Type |
|--------------------------------|------|
| [Organization searchParameter] | ntwk |

Example:

GET [base]/Organization?type=ntwk

Organization Affiliation [PDEX Plan net]

The Organization Affiliation resource describes relationships between two or more organizations, including the services one organization provides another, the location(s) where they provide services, the availability of those services, electronic endpoints, and other relevant information.

Method (read):

GET [base]/ OrganizationAffiliation/[id]

Method (vread):

GET [base]/OrganizationAffiliation/[id]/_history/[vid]

Method (search):

GET [base]/OrganizationAffiliation?_id=[id]

Search parameters:

Note: Any search parameter not listed is not supported

| Name | Type |
|----------------------------|--------------------------|
| _count | string |
| _getpagesoffset | string |
| _id | string |
| _lastUpdated | date |
| network | reference (organization) |
| participating-organization | reference (organization) |
| primary-organization | reference (organization) |
| specialty | token |

Examples:

GET [base]/OrganizationAffiliation?specialty=230000000X

Practitioner [PDEX Plan net]

Practitioner is a person who is directly or indirectly involved in the provisioning of healthcare.

Method (read):

GET [base]/Practitioner/[id]

Method (vread):

GET [base]/Practitioner/[id]/_history/[vid]

Method (search):

GET [base]/Practitioner?_id=[id]

Search parameters:

Note: Any search parameter not listed is not supported

| Name | Type |
|-----------------|--------|
| _count | string |
| _getpagesoffset | string |
| _id | string |
| _lastUpdated | date |
| family | string |
| given | string |
| name | string |

Examples:

GET [base]/Practitioner?name=Smith

GET [base]/Practitioner?given=Scott

Practitioner Role [PDEX Plan net]

Practitioner Role describes details about a provider, which can be a practitioner or an organization. When the provider is a practitioner, there may be a relationship to an organization.

A provider renders services to patients at a location. When the provider is a practitioner, there may also be a relationship to an organization. Practitioner participation in healthcare provider insurance networks may be direct or through their role at an organization.

Method (read):

GET [base]/PractitionerRole/[id]

Method (vread):

GET [base]/PractitionerRole/[id]/_history/[vid]

Method (search):

GET [base]/PractitionerRole?_id=[id]

Search parameters:

Note: Any search parameter not listed is not supported

| Name | Type |
|-----------------|--------|
| _count | string |
| _getpagesoffset | string |
| _id | string |
| _lastUpdated | date |
| network | string |
| organization | string |
| practitioner | string |
| role (code) | string |
| specialty | string |

Examples:

GET [base]/PractitionerRole?specialty=340000000X

GET [base]/PractitionerRole?location.address-state=ID

Member specific

Patient [CARIN BB]

Demographics and other administrative information about an individual or animal receiving care or other health-related services. Optum Salt Lake County supports versioned reference resources.

Method (read):

GET [base]/Patient/[id]

Method (vread):

GET [base]/Patient/[id]/_history/[vid]

Method (search):

GET [base]/Patient?_id=[id]

Search parameters:

Note: Any search parameter not listed is not supported

| Name | Type |
|-----------------|--------|
| _count | string |
| _getpagesoffset | string |
| _id | string |

Coverage [CARIN BB]

This resource provides the coverage data that was effective as of the date of service of the claim. Optum Salt Lake County supports versioned reference resources.

Method (read):

GET [base]/Coverage/[id]

Method (vread)

GET [base]/Coverage/[id]/_history/[vid]

Method (search):

GET [base]/Coverage?_id=[id]

Search parameters:

Note: Any search parameter not listed is not supported

| Name | Type |
|-----------------|--------|
| _count | string |
| _getpagesoffset | string |
| _id | string |

Explanation of Benefit [CARIN BB]

This resource provides: the claim details; adjudication details from the processing of a Claim; and optionally account balance information, for informing the subscriber of the benefits provided. Optum Salt Lake County supports versioned reference resources.

No records dated prior to 2016-01-01 will be returned.

Method (read):

GET [base]/ExplanationOfBenefit/[id]

Method (vread)

GET [base]/ExplanationOfBenefit/[id]/_history/[vid]

Method (search):

GET [base]/ExplanationOfBenefit?patient=[id] -patient is a required parameter

Search parameters:

Note: Any search parameter not listed is not supported

| Name | Type |
|-----------------|--------|
| _count | string |
| _getpagesoffset | string |
| _id | string |
| _lastUpdated | date |

| | |
|--------------|------------|
| identifier | token |
| patient | string |
| service-date | date range |
| type | string |

Examples:

GET [base]/ExplanationOfBenefit/219

GET [base]/ExplanationOfBenefit?patient=[id]&_lastUpdated=gt2019

GET [base]/ExplanationOfBenefit?patient=[id]&type=|oral

Production API access

The process for registering production applications mimic our sandbox process above. It is highly recommended that you first register your application as a Sandbox application. Doing so will result in immediate access to mock data to test your application. Once your testing is complete, then you will need to re-register your application as a Production application.

Production application for use with Public Access API (Provider Directory) will be automatically approved. Production application requests for Patient Access APIs will require review from our security and compliance team prior to approving access. Our security and compliance team will reach out with any questions during this review process.

Patient access authentication launch URLs

Approved production applications that will be used to access member data will need to support 4 separate launch URLs. Optum Salt Lake County's Interoperability APIs requires member authentication via the IdP (identity provider), One Healthcare ID, prior to authorization.

Developer guidelines

Below are guidelines you should follow to be successful in your Optum Salt Lake County Interoperability API integration.

Your privacy policy

You will be asked to provide a URL to your privacy policy when registering your organization and your application in the Optum Salt Lake County Interoperability App Owner Portal. These links should be easy to access and understand by a member using your app.

Member revokes access

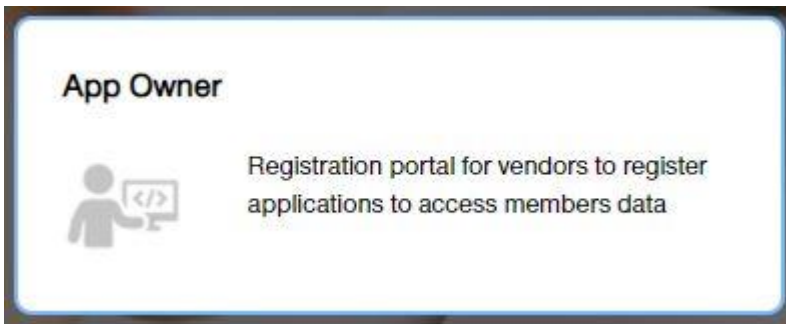
A member may revoke access to your application via their member portal. When you encounter an invalid token indicating a member has revoked access, you should make a reasonable attempt to handle that case making it easy for the member to understand what is happening with their data.

Join the developer sandbox

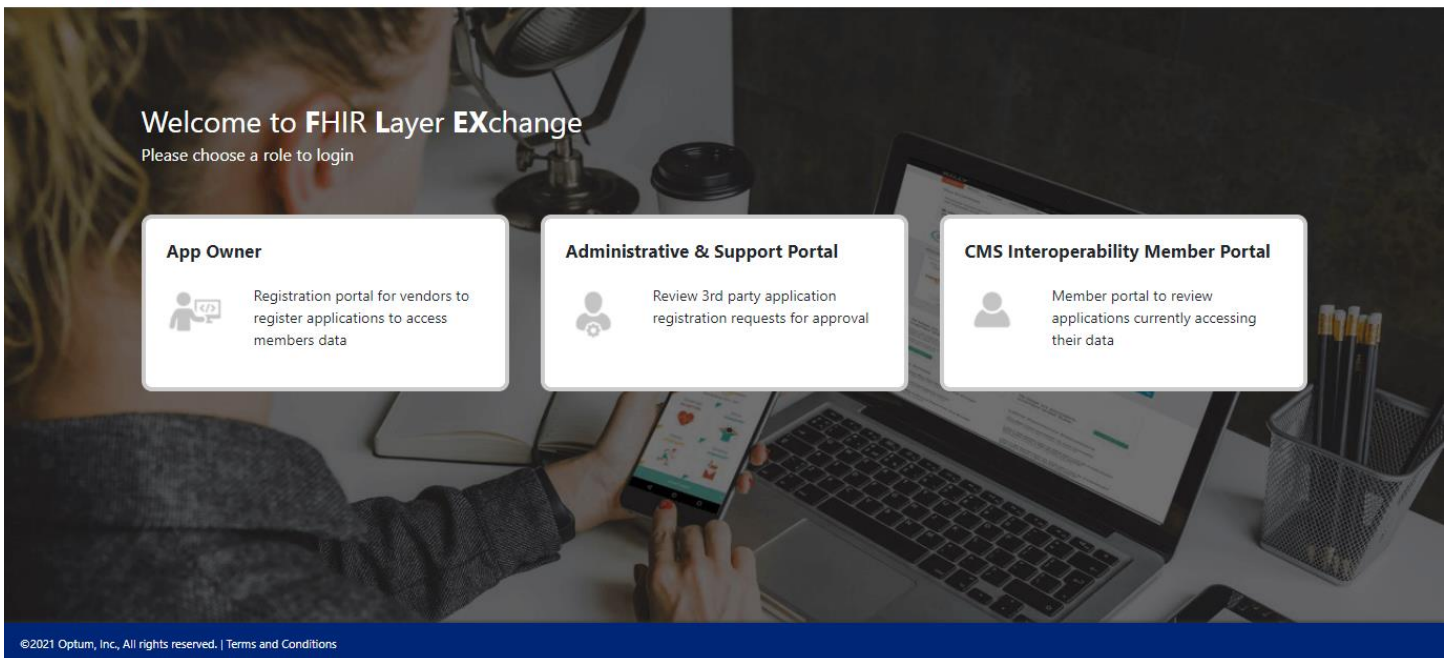
To join the developer sandbox, register a sample application and retrieve synthetic data for a sample Patient ID by calling the API, follow these four steps:

Note: Only Google Chrome and mobile browsers are supported at this time

Step 1: Register a sample application by navigating to the Optum Salt Lake County Interoperability API landing page and clicking the App Owner tile.



Screen shot of landing page below:



Step 2: Create a One Healthcare ID. All users must create a One Healthcare ID to access the App Owner portal.

SALT LAKE COUNTY BEHAVIORAL HEALTH SERVICES

Help

Sign In With Your One Healthcare ID

One Healthcare ID or email address

Password

Sign In

Additional options:
[Create One Healthcare ID](#)
[Manage your One Healthcare ID](#)
[What is One Healthcare ID?](#)

[Forgot One Healthcare ID](#) | [Forgot Password](#)

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One Healthcare ID

Step 3: Create your profile (Note: you will only see this page once at initial login.)

SALT LAKE COUNTY BEHAVIORAL HEALTH SERVICES | OPTUM

Welcome [Sign out](#)

Profile

Enter Your Contact Number *

Cancel [Proceed](#)

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Step 4: Register your organization (Note: This is a one-time process. On your next login you will default to a dashboard view of all applications).

Our security and compliance team will review your organization registration and approve or deny your ability to register applications.

Organization Registration

* All Questions are mandatory

Organization Demographics

List the name of your company *

What is the primary Mailing address of the organization offering this app? *

What is the Federal Tax ID Number or Business Identifier for this Organization *

US Number International Number

What is the Physical address of the organization offering this app? *

Privacy and Security

Have any of the named officers been convicted of felonies in the U.S. or been sanctioned by a governmental agency in the past three years? *

Do you maintain a Privacy Policy that is shared with your application users? *

Are any business offices located in any of the following regions - China, Russia, Iran, North Korea ? *

Step 5: Upon approval you will be able to log back into the App owner portal and begin registering applications.

Dashboard

Applications

Register New App

Profile

Organization Profile

Organization Profile

Name: [Redacted] [Edit](#)
TIN: [Redacted]
Mailing address: [Redacted]
Owner: [Redacted]
Email: [Redacted]
Physical address: [Redacted]
Registration Status: Approved

[View Org Registration Info](#) [View Org Attestation Info](#)

History

[Redacted] - Admin
initials of approver here
2021-06-25 10:18

Comment

Submit

< Collapse

Step 6: "Register New App" to register new application and choose sandbox as the environment (Note: Sandbox is only applicable for Patient Access apps or apps using both Patient access and Public access APIs).

- Dashboard
- Applications
- Register New App**
- Profile
- Organization Profile

< Collapse

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Register New App

App Details

App Name *

Application Access Type *

Public Patient

Application Environment *

Privacy Policy URL

Redirect URL *

App Description *

Only one re-direct URI is allowed per registration. If you support multiple platforms for your application, please complete a registration for each

Application Registration

Provide contact information for your application's support department? *

Phone *

Step 6.1: Obtain Client ID and Secret.

The screenshot shows the 'Application Registration' form with a 'Success' modal overlay. The modal contains the following text:

Success

Thank you for registering your application. Your application's access to the Public Access API is active effective immediately. The patient access portion of your application is under review. Our support team will review your application and contact you within 5 business days. Please take a moment and record your Client ID and secret for your application. If you lose or forget your credentials you can generate a new secret from the applications details page for your application. Your application's credentials to access Patient Access APIs will become active upon approval. For any questions or concerns, please reach out to the support team at flexvendorsupport@optum.com.

Client ID: [Redacted]

Secret ID: [Redacted]

OK

The background form shows fields for Phone, Email, Website, Support contact name, and a 'Continue' button.

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Authentication and authorization

URL - <https://sandbox.authz.saltlake.flexobh.optum.com/>

Base URL for Sandbox API calls <https://sandbox.fhir.saltlake.flexobh.optum.com/R4>

To test out your sandbox application with the Optum Salt Lake County Interoperability API, you will need to create a test member account via One Healthcare ID when prompted to login as part of the authentication/authorization process. Note: You can use the same One Healthcare ID that was registered to access the vendor portal and register applications.

Support and Registration Information

Optum Salt Lake County will offer the following support consistent with stated government regulations and current operational guidelines.

General support hours

General support hours are available Monday through Friday from 9:00 am to 4:00 pm CST. General support is not provided on holidays or weekends. General support hours apply to:

- Vendor registration (organization or application)
- The developer sandbox environment

System monitoring

Optum Salt Lake County regularly monitors system operations and responsiveness. The system is expected to be operational 24 hours a day, 7 days a week and 365 days a year. System functionality support is available 24 hours a day, 7 days a week and 365 days a year for:

- Vendor API Call Receipts and Responses (Support Available every day)

Registration and response times

The system will accept and respond to organizational and application registration submissions from third party application vendors as follows:

| Registration type | Estimated response time ¹ |
|---|---|
| New Organization Registration | 5 business days |
| New Application Registration (Public Access) | No approval required |
| New Application Registration (Patient Access) | 5 business days |
| Determination Appeals | 5 business days from receipt of request |

Support request response times

| Support request | Estimated response time ¹ |
|-----------------------------------|--------------------------------------|
| Developer Sandbox Support Request | 48 business hours |

Data

Data feed timeframe

Claims

1 business day from adjudication

Encounter data

1 business day from receipt of encounter

Clinical data

1 business day from receipt of data

Provider directory

30 calendar days of a payer receiving provider directory information OR an update to provider directory information

Contact Us

For any question or concerns regarding registering your organization or application please contact flexvendorsupport@optum.com.

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Disclaimers

1. Response times do not include holidays or weekends.
2. Longer timeframes may be expected in the case of a large-scale systemwide outage.