Oracle® Cloud

Using the LinkedIn Adapter

Release 16.4

E69233-06

December 2016

This guide describes how to configure and add the LinkedIn Adapter to an integration in Oracle Integration Cloud Service.

ORACLE

Oracle Cloud Using the LinkedIn Adapter, Release 16.4

E69233-06

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

Primary Author: Larry Hoffman

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish, or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

If this is software or related documentation that is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, the following notice is applicable:

U.S. GOVERNMENT END USERS: Oracle programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, delivered to U.S. Government end users are "commercial computer software" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, use, duplication, disclosure, modification, and adaptation of the programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, shall be subject to license terms and license restrictions applicable to the programs. No other rights are granted to the U.S. Government.

This software or hardware is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications that may create a risk of personal injury. If you use this software or hardware in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy, and other measures to ensure its safe use. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software or hardware in dangerous applications.

Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

Intel and Intel Xeon are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. AMD, Opteron, the AMD logo, and the AMD Opteron logo are trademarks or registered trademarks of Advanced Micro Devices. UNIX is a registered trademark of The Open Group.

This software or hardware and documentation may provide access to or information about content, products, and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services unless otherwise set forth in an applicable agreement between you and Oracle. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services, except as set forth in an applicable agreement between you and Oracle.

This documentation is in preproduction status and is intended for demonstration and preliminary use only. It may not be specific to the hardware on which you are using the software. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to this documentation and will not be responsible for any loss, costs, or damages incurred due to the use of this documentation.

The information contained in this document is for informational sharing purposes only and should be considered in your capacity as a customer advisory board member or pursuant to your beta trial agreement only. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, and timing of any features or functionality described in this document remains at the sole discretion of Oracle.

This document in any form, software or printed matter, contains proprietary information that is the exclusive property of Oracle. Your access to and use of this confidential material is subject to the terms and conditions of your Oracle Master Agreement, Oracle License and Services Agreement, Oracle PartnerNetwork Agreement, Oracle distribution agreement, or other license agreement which has been executed by you and Oracle and with which you agree to comply. This document and information contained herein may not be disclosed, copied, reproduced, or distributed to anyone outside Oracle without prior written consent of Oracle. This document is not part of your license agreement nor can it be incorporated into any contractual agreement with Oracle or its subsidiaries or affiliates.

Contents

Preface v

Audience v
Related Resources v
Conventions v

1 Getting Started with the LinkedIn Adapter

About the LinkedIn Adapter 1-1
What Application Version Does the LinkedIn Adapter Support? 1-1
About Oracle Integration Cloud Service 1-2
About Oracle Integration Cloud Service Connections 1-2
About Oracle Integration Cloud Service Integrations 1-2
Typical Workflow for Creating and Including an Adapter Connection in an Integration 1-3

2 Creating a LinkedIn Adapter Connection

Prerequisites for Creating a Connection 2-1
Uploading an SSL Certificate 2-2
Creating a Connection 2-2
Adding a Contact Email 2-3
Configuring Connection Security 2-4
Testing the Connection 2-4
Editing a Connection 2-4
Cloning a Connection 2-5
Deleting a Connection 2-5

3 Creating an Integration

4 Adding the LinkedIn Adapter Connection to an Integration

Configuring Basic Information Properties 4-1
What You Can Do from the Basic Info Page 4-1
What You See on the Basic Info Page 4-1
Selecting an Operation 4-2
What You Can Do from the Operation Selection Page 4-2

What You See on the Operation Selection Page 4-2
Reviewing Configuration Values on the Summary Page 4-3
What You Can Do from the Summary Page 4-3
What You See on the Summary Page 4-3

5 Creating Mappings and Lookups in Integrations

6 Administering Integrations

7 Troubleshooting the LinkedIn Adapter

Unauthorized Access Response 7-1

Preface

Using the LinkedIn Adapter describes how to configure the LinkedIn Adapter as a connection in an integration in Oracle Integration Cloud Service.

Topics:

- Audience
- Related Resources
- Conventions

Audience

Using the LinkedIn Adapter is intended for developers who want to use the LinkedIn Adapter in integrations in Oracle Integration Cloud Service.

Related Resources

For more information, see these Oracle resources:

- Oracle Cloud

  `http://cloud.oracle.com`
- *Using Oracle Integration Cloud Service*
- *Using the Oracle Mapper*
- *Getting Started with Oracle Cloud*
- *Managing and Monitoring Oracle Cloud*
- Oracle Public Cloud Machine documentation in the Oracle Help Center:

  http://docs.oracle.com

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.

Convention	Meaning
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

1

Getting Started with the LinkedIn Adapter

Review the following conceptual topics to learn about the LinkedIn Adapter and how to use it as a connection in integrations in Integration Cloud Service. A typical workflow of adapter and integration tasks is also provided.

Topics

- About the LinkedIn Adapter
- What Application Version Does the LinkedIn Adapter Support?
- About Oracle Integration Cloud Service
- About Oracle Integration Cloud Service Connections
- About Oracle Integration Cloud Service Integrations
- Typical Workflow for Creating and Including an Adapter Connection in an Integration

About the LinkedIn Adapter

The LinkedIn Adapter enables you to use basic LinkedIn services in an integration in Oracle Integration Cloud Service on behalf of an authenticated user.

The LinkedIn Adapter enables you to:

- Access the user's basic LinkedIn profile.
- Access user information.
- Post status updates on LinkedIn.
- Share content on LinkedIn.
- Get updates about user activity (for example, what the user has shared recently on LinkedIn).

Note: The LinkedIn Adapter can only serve as an invoke connection when you create integrations.

What Application Version Does the LinkedIn Adapter Support?

The LinkedIn Adapter is compatible with version 1.0 of the LinkedIn REST API.

About Oracle Integration Cloud Service

Oracle Integration Cloud Service is a complete, secure, but lightweight integration solution that enables you to connect your applications in the cloud. It simplifies connectivity between your applications and connects both your applications that live in the cloud and your applications that still live on premises. Oracle Integration Cloud Service provides secure, enterprise-grade connectivity regardless of the applications you are connecting or where they reside.

Oracle Integration Cloud Service provides native connectivity to Oracle Software as a Service (SaaS) applications, such as Oracle Sales Cloud, Oracle RightNow Cloud, and so on. Oracle Integration Cloud Service *adapters* simplify connectivity by handling the underlying complexities of connecting to applications using industry-wide best practices. You only need to create a *connection* that provides minimal connectivity information for each system. Oracle Integration Cloud Service *lookups* map the different codes or terms used by the applications you are integrating to describe similar items (such as country or gender codes). Finally, the visual data mapper enables you to quickly create direct mappings between the trigger and invoke data structures. From the mapper, you can also access lookup tables and use standard XPath functions to map data between your applications.

Once you integrate your applications and activate the integrations to the runtime environment, the dashboard displays information about the running integrations so you can monitor the status and processing statistics for each integration. The dashboard measures and tracks the performance of your transactions by capturing and reporting key information, such as throughput, the number of messages processed successfully, and the number of messages that failed processing. You can also manage business identifiers that track fields in messages and manage errors by integrations, connections, or specific integration instances.

About Oracle Integration Cloud Service Connections

Connections define information about the instances of each predefined configuration you are integrating. Oracle Integration Cloud Service includes a set of predefined *adapters*, which are the types of applications on which you can base your connections, such as Oracle Sales Cloud, Oracle Eloqua Cloud, Oracle RightNow Cloud, and others. A connection is based on an adapter. A connection includes the additional information required by the adapter to communicate with a specific instance of an application (this can be referred to as metadata or as connection details). For example, to create a connection to a specific RightNow Cloud application instance, you must select the Oracle RightNow adapter and then specify the WSDL URL, security policy, and security credentials to connect to it.

Video

About Oracle Integration Cloud Service Integrations

Integrations are the main ingredient of Oracle Integration Cloud Service. An integration includes at the least a trigger (source) connection (for requests sent to Oracle Integration Cloud Service) and invoke (target) connection (for requests sent from Oracle Integration Cloud Service to the target) and the field mapping between those two connections.

When you create your integrations, you build on the connections you already created by defining how to process the data for the trigger (source) and invoke (target) connections. This can include defining the type of operations to perform on the data, the business objects and fields against which to perform those operations, required

schemas, and so on. To make this easier, the most complex configuration tasks are handled by Oracle Integration Cloud Service. Once your trigger (source) and invoke (target) connections are configured, the mappers between the two are enabled so you can define how the information is transferred between the trigger (source) and invoke (target) data structures for both the request and response messages.

Video

Typical Workflow for Creating and Including an Adapter Connection in an Integration

You follow a very simple workflow to create a connection with an adapter and include the connection in an integration in Integration Cloud Service.

Step	Description	More Information
1	Create the adapter connections for the applications you want to integrate. The connections can be reused in multiple integrations and are typically created by the administrator.	Creating a LinkedIn Adapter Connection
2	Create the integration. When you do this, you add trigger and invoke connections to the integration.	Creating an Integration and Adding the LinkedIn Adapter Connection to an Integration
3	Map data between the trigger connection data structure and the invoke connection data structure.	Mapping Integration Cloud Service Data of *Using Oracle Integration Cloud Service*
4	(Optional) Create lookups that map the different values used by those applications to identify the same type of object (such as gender codes or country codes).	Creating Lookups of *Using Oracle Integration Cloud Service*
5	Activate the integration.	Managing Integrations of *Using Oracle Integration Cloud Service*
6	Monitor the integration on the dashboard.	Monitoring Integration Cloud Services of *Using Oracle Integration Cloud Service*
7	Track payload fields in messages during runtime.	Assigning Business Identifiers for Tracking Fields in Messages and Managing Business Identifiers for Tracking Fields in Messages of *Using Oracle Integration Cloud Service*
8	Manage errors at the integration level, connection level, or specific integration instance level.	Managing Errors of *Using Oracle Integration Cloud Service*

2

Creating a LinkedIn Adapter Connection

A connection is based on an adapter. You define connections to the specific cloud applications that you want to integrate. The following topics describe how to define connections:

Topics

- Prerequisites for Creating a Connection
- Uploading an SSL Certificate
- Creating a Connection
- Editing a Connection
- Cloning a Connection
- Deleting a Connection

Prerequisites for Creating a Connection

You must satisfy the following prerequisites for creating a connection with the LinkedIn Adapter.

1. Go to the LinkedIn developer console (https://www.linkedin.com/developer/apps) to create and register an application.
   a. Click **My Apps** > **Create Application**. The Create New Application dialog is displayed.
   b. Complete the required fields, and click **Submit**.

      The client ID and client secret are provided by LinkedIn when your application is registered. The client ID and client secret are application-specific and are different for every application.
   c. Specify the authorized redirect URL when prompted using the following format:

      `https://hostname:port/icsapis/agent/oauth/callback`
2. Ensure that you have the credentials required to provide consent for access to the user's LinkedIn profile.
3. Know the scope of the access request. Scopes enable you to specify which type of access you need, for example: `r_basicprofile+r_emailaddress+w_share`.

Uploading an SSL Certificate

Certificates are used to validate outbound SSL connections. If you make an SSL connection in which the root certificate does not exist in Oracle Integration Cloud Service, an exception is thrown. In that case, you must upload the appropriate certificate. A certificate enables Oracle Integration Cloud Service to connect with external services. If the external endpoint requires a specific certificate, request the certificate and then upload it into Oracle Integration Cloud Service.

To upload a certificate:

1. From the Oracle Integration Cloud Service home page, click the **Administration** tab in the upper right corner.

   All certificates currently uploaded to the trust store are displayed in the Certificates dialog. The **Filter By** > **Type** list displays the following details:

   - **Preinstalled**: Displays the certificates automatically installed in Oracle Integration Cloud Service. These certificates cannot be deleted.
   - **Uploaded**: Displays the certificates uploaded by individual users. These certificates can be deleted and updated.

   You can also search for certificates in the **Search** field. The search results are limited to a maximum of ten records sorted by name for performance and usability reasons. To ensure that your search results are more granular, enter as much of the certificate name as possible.

2. Click **Upload** at the top of the page.
3. In the Upload Certificate dialog box, enter a unique identifier for the certificate.

   This is a name you can use to identify the certificate.

4. Click **Browse** to locate the certificate file (`.cer`).
5. Click **Upload**.
6. Click the certificate name to view details such as the subject of the certificate, the issuer of the certificate, the date the certificate was issued, and the date the certificate expires.

Creating a Connection

The first step in creating an integration is to create the connections to the applications with which you want to share data.

1. In the Integration Cloud Service toolbar, click **Designer**.
2. On the Designer Portal, click **Connections**.
3. Click **New Connection**.

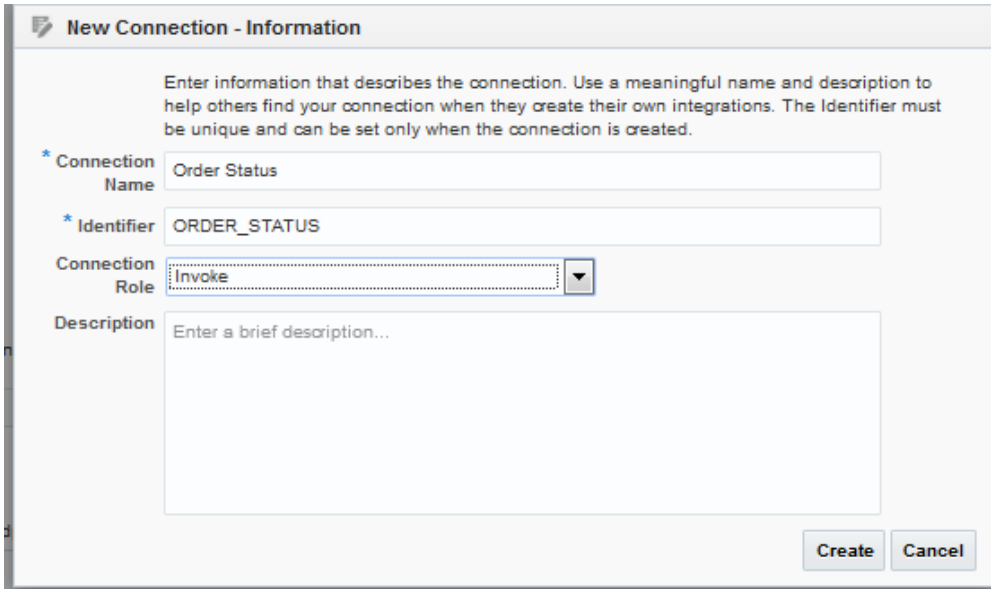
   The Create Connection — Select Adapter dialog is displayed.

4. Select an adapter from the dialog. You can also search for the type of adapter to use by entering a partial or full name in the Search field, and clicking **Search**.

   The New Connection — Information dialog is displayed.

5. Enter the information to describe the connection.

   - Enter a meaningful name to help others find your connection when they begin to create their own integrations. The name you enter is automatically added in capital letters to the **Identifier** field. If you modify the identifier name, do not include a blank space (for example, `OSC Inbound`).
   - Select the role (direction) in which to use this connection (trigger, invoke, or both). Only the roles supported by this adapter are displayed for selection. When you select a role, only the connection properties and security policies appropriate to that role are displayed on the Connections page. If you select an adapter that supports both invoke and trigger, but select only one of those roles, then try to drag the adapter into the section you did not select, you receive an error (for example, configure an Oracle RightNow Cloud Adapter as only an invoke, but drag the adapter to the trigger section).
   - Enter an optional description of the connection.



6. Click **Create**.

   Your connection is created and you are now ready to configure connection details, such as email contact, connection properties, security policies, and connection login credentials.

Adding a Contact Email

From the Connection Administrator section of the connection, you can add a contact email address for notifications.

1. In the **Email Address** field, enter an email address to receive email notifications when problems occur.
2. In the upper right corner, click **Save**.

Configuring Connection Security

Configure security for your LinkedIn connection by setting access credentials.

1. Click **Configure Credentials**.
2. Enter your login credentials.
   a. Enter the Client ID. This is a unique string provided to your client on the LinkedIn developer console (https://www.linkedin.com/developer/apps).
   b. Enter the Client Secret. This is also a unique string provided to your client on the LinkedIn developer console (https://www.linkedin.com/developer/apps)
   c. Enter the Scope. The scope of the access request. Scopes enable you to specify which type of access you need, for example: `r_basicprofile +r_emailaddress+w_share`.
3. Click **Provide Consent**.

   Prompts LinkedIn to ask consent of the user in order to authorize the application's access to the LinkedIn profile.
4. Click **OK**.

   You are now ready to test your connection.

Testing the Connection

Test your connection to ensure that it is successfully configured.

1. In the upper right corner of the page, click **Test**.

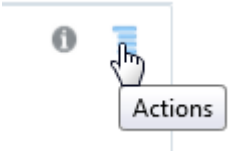
   If successful, the following message is displayed and the progress indicator shows 100%.

   ```
   The connection test was successful!
   ```
2. If your connection was unsuccessful, an error message is displayed with details. Verify that the configuration details you entered are correct.
3. When complete, click **Save**.

Editing a Connection

You can edit connection settings after creating a new connection.

1. In the Oracle Integration Cloud Service toolbar, click **Designer**.
2. On the Designer Portal, click **Connections**.
3. On the Connections page, search for the connection name.
4. Select **Edit** from the connection **Actions** menu or click the connection name.



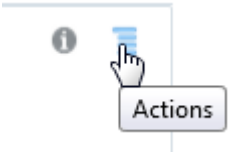
The Connection page is displayed.

5. To edit the notification email contact, change the email address in the **Email Address** field.
6. To edit the connection properties, click **Configure Connectivity**. Note that some connections do not include this button. If your connector does not include a **Configure Connectivity** button, then click the **Configure Credentials** button.

Cloning a Connection

You can clone a copy of an existing connection. It is a quick way to create a new connection.

1. In the Oracle Integration Cloud Service toolbar, click **Designer**.
2. On the Designer Portal, click **Connections**.
3. On the Connections page, search for the connection name.
4. Select **Clone** from the connection **Actions** menu.



The Clone Connection dialog is displayed.

5. Enter the connection information.
6. Click **Clone**.
7. Click **Edit** to configure the credentials of your cloned connection. Cloning a connection does not copy the credentials.

See Editing a Connection for instructions.

Deleting a Connection

You can delete a connection from the connection menu.

1. In the Oracle Integration Cloud Service toolbar, click **Designer**.
2. On the Designer Portal, click **Connections**.
3. On the Connections page, search for the connection name.
4. Click **Delete** from the connection **Actions** menu.

The Delete Connection dialog is displayed if the connection is not used in an integration.

5. Click **Yes** to confirm deletion.

3

Creating an Integration

Integrations use the adapter connections you created to your applications, and define how information is shared between those applications. You can create, import, modify, or delete integrations; create integrations to publish or subscribe to messages; add and remove request and response enrichment triggers; and create routing paths for different invoke endpoints in integrations. Click the following topic for more information.

Topics

- Creating Integrations (in *Using Oracle Integration Cloud Service*)

4

Adding the LinkedIn Adapter Connection to an Integration

When you drag the LinkedIn Adapter into the invoke area of an integration, the Adapter Endpoint Configuration Wizard is invoked. This wizard guides you through configuration of the LinkedIn Adapter endpoint properties.

Note: The LinkedIn Adapter can only be used as an invoke in integrations.

Topics

- Configuring Basic Information Properties
- Selecting an Operation

Configuring Basic Information Properties

Enter the basic information parameters.

Topics

- What You Can Do from the Basic Info Page
- What You See on the Basic Info Page

What You Can Do from the Basic Info Page

You can specify the following values on the Basic Info page. The Basic Info page is the initial wizard page that is displayed whenever you drag the LinkedIn Adapter to the invoke area.

- Specify a meaningful name.
- Specify a description of the responsibilities.

What You See on the Basic Info Page

The following table describes the key information on the Basic Info page.

Element	Description
What do you want to call your endpoint?	Provide a meaningful name so that others can understand the connection. For example, you may want to name it `LinkedInTarget_update_status`. You can include English alphabetic characters, numbers, underscores, and dashes in the name. You cannot include the following: • Blank spaces (for example, `My FTP Connection`) • Special characters (for example, `#;83&` or `righ(t)now4`) • Multibyte characters
What does this endpoint do?	Enter an optional description of the connection's responsibilities. For example: `This endpoint updates status on a user's LinkedIn timeline.`

Selecting an Operation

Select the LinkedIn operation you want to perform.

Topics

- What You Can Do from the Operation Selection Page
- What You See on the Operation Selection Page

What You Can Do from the Operation Selection Page

You can select one of the following operations to perform on the user's LinkedIn account.

- Access the user's basic LinkedIn profile.
- Access user information.
- Post status updates on LinkedIn.
- Share content on LinkedIn.
- Get updates about user activity (for example, what the user has shared recently on LinkedIn).

What You See on the Operation Selection Page

The following table describes the key information on the Operation Selection page.

Element	Description
Get Basic Profile	Gets LinkedIn basic profile fields.
Get Full Profile	Gets additional user profile fields.

Element	Description
Get Latest Shared Item by Member	Gets the most recent updates that users posted on LinkedIn or a list of the articles they "shared" with their connections.
Share	Shares content on behalf of an authenticated user. Content is shared on the user's timeline.
Status Update	Updates status on the user's LinkedIn timeline. For example, when the user writes something on their timeline.

Reviewing Configuration Values on the Summary Page

You can review the specified adapter configuration values on the Summary page.

Topics

- What You Can Do from the Summary Page
- What You See on the Summary Page

What You Can Do from the Summary Page

You can review configuration details from the Summary page. The Summary page is the final wizard page for each adapter after you have completed your configuration.

- View the configuration details you defined for the adapter. For example, if you have defined an inbound trigger (source) adapter with a request business object and immediate response business object, specific details about this configuration are displayed on the Summary page.
- Click **Done** if you want to save your configuration details.
- Click a specific tab in the left panel or click **Back** to access a specific page to update your configuration definitions.
- Click **Cancel** to cancel your configuration details.

What You See on the Summary Page

The following table describes the key information on the Summary page.

Element	Description
Summary	Displays a summary of the configuration values you defined on previous pages of the wizard. The information that is displayed can vary by adapter. For some adapters, the selected business objects and operation name are displayed. For adapters for which a generated XSD file is provided, click the XSD link to view a read-only version of the file. To return to a previous page to update any values, click the appropriate tab in the left panel or click **Back**.

5

Creating Mappings and Lookups in Integrations

You must map data between trigger connections and invoke connections in integrations. You can also optionally create lookups in integrations.

Topics

- Mapping Integration Cloud Service Data (in *Using Oracle Integration Cloud Service*)
- Creating Lookups (in *Using Oracle Integration Cloud Service*)

6

Administering Integrations

Oracle Integration Cloud Service provides you with the information and tools required to activate, monitor, and manage your integrations in the runtime environment.

Topics

- Administering Integration Cloud Service (in *Using Oracle Integration Cloud Service*)

7

Troubleshooting the LinkedIn Adapter

The following topics can help you troubleshoot problems you may encounter.

Topics

- Unauthorized Access Response

Unauthorized Access Response

If you make an API call using an invalid token, you will receive a "401 Unauthorized" response back from the server.

This might be caused by one or more of the following:

- An expired access token. Generated access tokens have a lifespan of only 60 days.
- The user might have revoked the permission they initially granted to your application.
- You have changed the member permissions (scope) your application is requesting.

To resolve the issue, you have to refresh the LinkedIn connection and ask the user to authorize your application for access the LinkedIn profile instance used in the integration.