OpenAir

Business Intelligence Connector Guide

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ORACLE NETSUITE

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Introduction to the OpenAir Business Intelligence Connector

The OpenAir Business Intelligence (BI) Connector gives you point and click access to OpenAir from existing reporting, business intelligence, workflow, and integration applications. This connection point allows you to access OpenAir saved reports as an OData V4 data feed. When the BI Connector is enabled, OpenAir saved reports can be published to OData and refreshed manually or on a schedule.

The Business Intelligence Connector workflow is to first publish a report to the OpenAir OData database, then load that information into your compatible business intelligence tool. You can then use the information in any way which your business intelligence tool allows. Administrators control user access to publishing reports with the **Publish reports** role permission.

To learn more about OData, visit the OData resource site at www.odata.org.

Note: To enable this feature, please contact your OpenAir Sales Representative. This feature does not support SAML and LDAPS users.

Features and Limitations

Use of the OpenAir Business Intelligence Connector is subject to the following:

- The OpenAir Business Intelligence Connector only supports OData V4/JSON (Open Data Protocol).
- The OpenAir Business Intelligence Connector only provides read-only access to published reports.
- Report data is stored in a separate database for performance and scaling.
- Any report in your MyReports folder can be published. Shared reports must first be saved to your My Reports folder, and then you can publish them.
- Only the **$top** and **$skip** system query options are available. See OData Query Options for more details.
- The OpenAir Business Intelligence Connector is subject to request limits — see OpenAir Business Intelligence Connector Request Limits.

OpenAir Business Intelligence Connector Request Limits

The OData Business Intelligence Connector is subject to request limits similar to the XML API limits. These limits are independent of any other data limits.

Limit Type	Default Limit
Per Minute Request Limit	500 requests per account per minute (a maximum of 500,000 data rows) A warning is triggered upon reaching 450 requests
Per 24–Hour Request Limit	10,000 requests per account per day (a maximum of 10,000,000 data rows) A warning is triggered upon reaching 8,000 requests

A warning message is sent to the account administrator once a day if a warning has been triggered during the day.

Note: To adjust your account's limits, please contact your OpenAir Sales Representative or OpenAir Support.

Publishing Your OpenAir Saved Reports to OData

The first step in the OpenAir Business Intelligence Connector workflow is to publish reports in OpenAir so that you can access their data. You can also publish shared reports if you have enabled this feature. See Publishing Your OpenAir Shared Reports To OData.

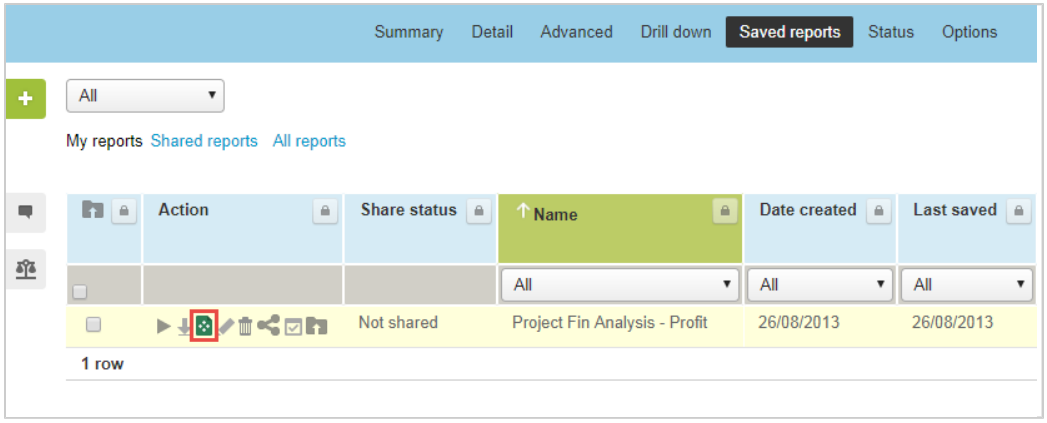
- Publishing Saved Reports to OpenAir's OData Feed
- Deleting Published OpenAir Report Data

Publishing Saved Reports to OpenAir's OData Feed

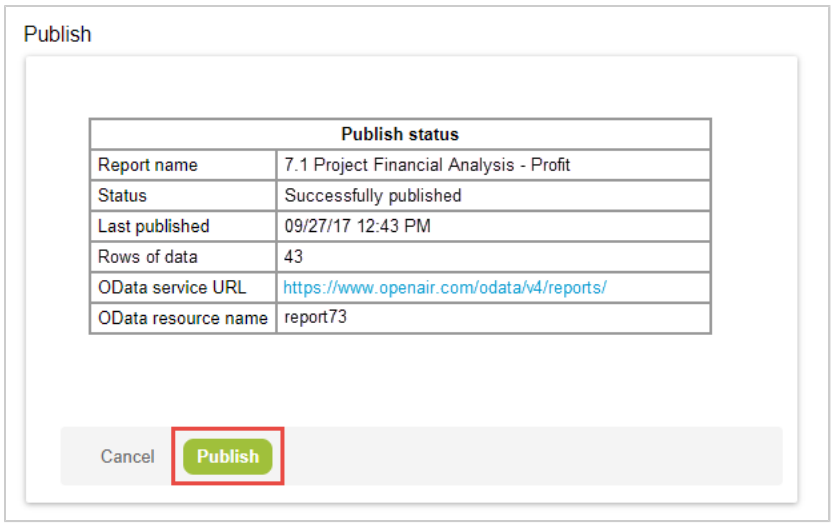
Reports can be published manually, or you can automatically publish scheduled reports using the **Publish to OData Server** option in the Schedule Report form.

To manually publish a report to OpenAir's OData feed and export the data to your Business Intelligence tool:

1. Go to Reports > Saved reports and click the **Publish** icon in the **Action** column for the report with the data you want.



2. Click **Publish** in the Publish Status window.



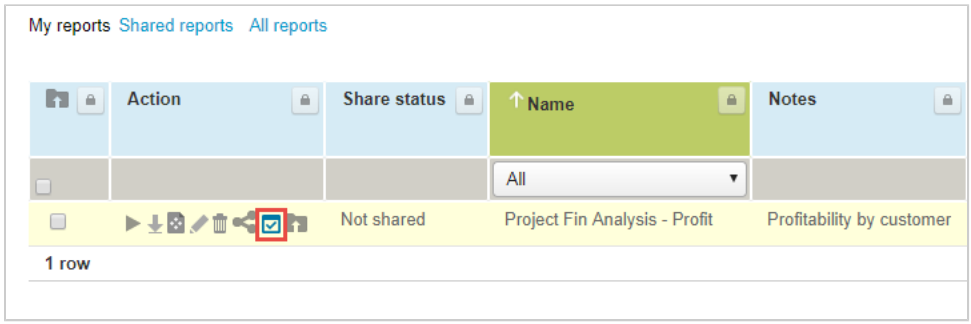
Note: The **OData resource name** indicates which report ID your published report will use (for example, **report73** in the screenshot above). The Report ID is used to identify the report in your business intelligence tool.

3. Open your Business Intelligence tool and import the data according to the tool's instructions (See Importing Your Data Into Business Intelligence Tools for examples).

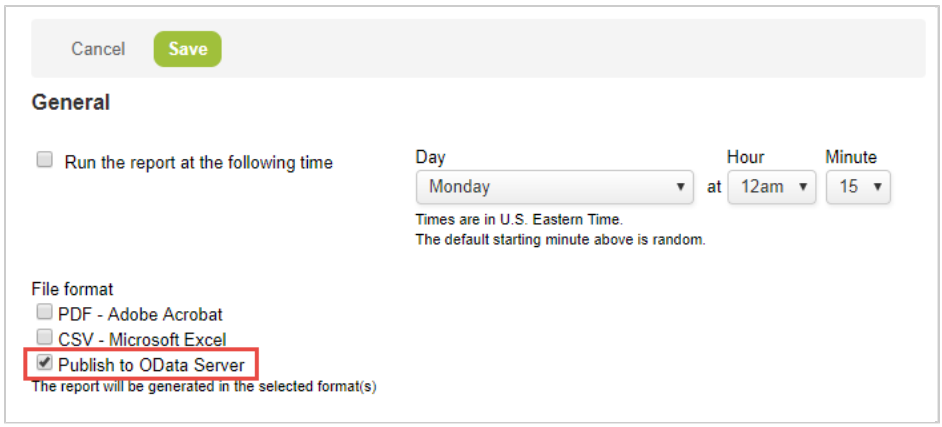
You can also automatically publish scheduled reports to OpenAir's OData feed. Scheduled reports are published at the interval you set, with a minimum interval of 24 hours.

To automatically publish a scheduled report to OpenAir's OData feed and export the data to your Business Intelligence tool:

1. Go to Reports > Saved reports and click the **Schedule** icon in the **Action** column for the report with the data you want.



2. In the General section of the Schedule Report form, select **Publish to OData Server** and click **Save**.



3. Open your Business Intelligence tool and import the data according to the tool's instructions.

Note: When publishing a report with collapsible levels (for example, with a Client column under which different Projects may roll up under), click **show all** in the report in OpenAir to include each sub-category in the published data, and **hide all** to exclude each sub-category and only include the totals for the main level.

Tip: Report data exported to a CSV file is saved as text, even if the values were numbers in OpenAir; however, reports published and accessed through OData preserve the data's original data type.

Deleting Published OpenAir Report Data

Data from published OpenAir reports is stored on your account's OData server space. To delete published data from the server space, you must delete the report from your saved reports in OpenAir.

To delete published OpenAir report data from your account's OData server space:

1. In OpenAir, go to Reports > Saved reports.
2. Click the **Delete** icon next to the saved report you want to unpublish.
3. Click **OK** to confirm the deletion.

The saved report's data will no longer be available through your OpenAir OData feed.

Note: Data which has been cached in your business intelligence tool will still be available for use; however, you will not be able to update this data once the saved report it was sourced from has been deleted.

Publishing Your OpenAir Shared Reports To OData

You can publish OpenAir Shared Reports in OpenAir.

To enable this feature, please contact OpenAir Support and request the **Publish Shared Reports using OpenAir BI Connector** feature. This feature enables the **Enable publishing of shared reports to OData service with owner's permissions** and **Enable publishing of shared reports to Odata service with recipient's permissions** role permissions, which allow users to publish shared reports.

- Publishing OpenAir Shared Reports with Business Intelligence Connector

Publishing OpenAir Shared Reports with Business Intelligence Connector

Use this feature to publish your shared reports with owner or recipient access privileges.

Shared reports can be published with the same data access privileges as the report owner, or restricted to the access privileges of each report recipient.

The report owner decides when they publish the report, and the administrator controls the publish policy with role permissions.

Note: To enable this feature, please contact OpenAir Support and request the **Publish Shared Reports using OpenAir BI Connector** feature. This feature enables the **Enable publishing of shared reports to OData service with owner's permissions** and **Enable publishing of shared reports to Odata service with recipient's permissions** role permissions, which allow users to publish shared reports.

Options for Publishing Shared Reports

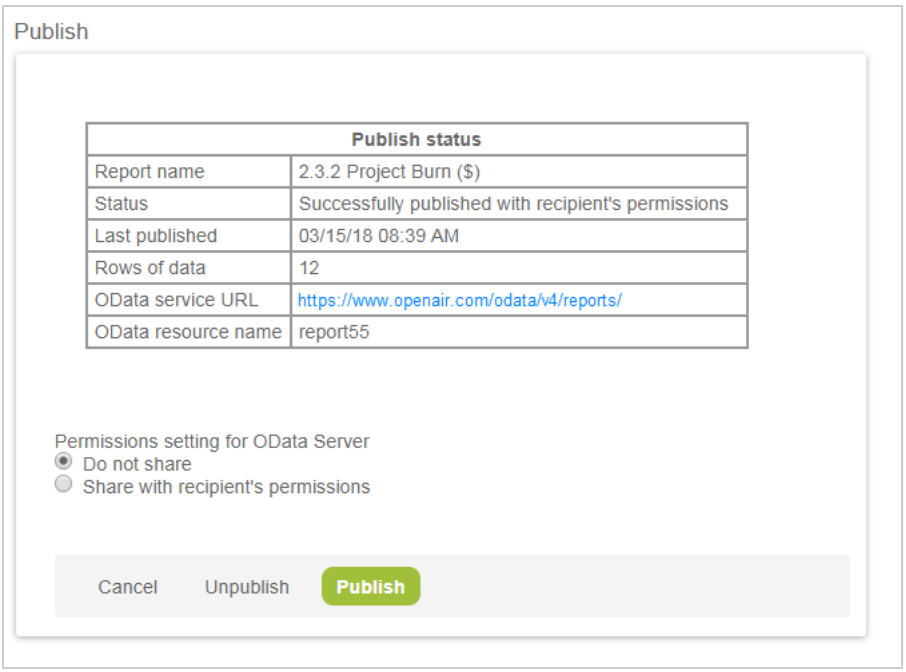
There are three options for publishing a shared report.

Do Not Share

The default option when publishing a shared report is **Do not share**, which only makes the report data accessible to the report owner through the Business Intelligence Connector. This is equivalent to publishing a report which has not been shared with other users.

To publish a shared report with the report owner's data access privileges but not share it with recipients:

1. Go to Reports > Saved Reports > Shared Reports and click the Publish icon next to the report you want to publish.
2. In the Publish window, select the **Do not share** option.
3. Click **Publish**.



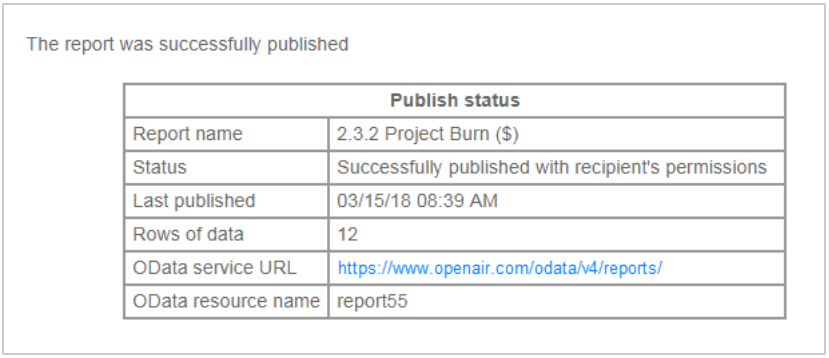
Share With Recipient's Permissions

The second option is to **Share with recipient's permissions**. If you select the **Share with recipient's permissions** option, the report data is accessible to users who can access the shared report, however, they can only see data allowed by their permissions. This is equivalent to each recipient saving a copy of the shared report and then publishing their copy. Only administrators or users with the **Enable publishing of shared reports to OData service with recipient's permissions** role permission can use this feature.

Note: With this option, each recipient must publish the shared report data from OpenAir into their business intelligence tool. To access the report, recipients must have the **Publish Reports** role permission to access the report in their business intelligence tool. The data recipients see in the business intelligence tool will be limited to what their own respective privileges allow.

To publish a shared report with recipients' privileges:

1. Go to Reports > Saved Reports > Shared Reports and click the Publish icon next to the report you want to publish.
2. In the Publish window, select the **Share with recipient's permissions** option.
3. 3. Click **Publish**.



The report was successfully published

Publish status	
Report name	2.3.2 Project Burn ($)
Status	Successfully published with recipient's permissions
Last published	03/15/18 08:39 AM
Rows of data	12
OData service URL	https://www.openair.com/odata/v4/reports/
OData resource name	report55

Share With Owner's Permissions

The third option is to **Share with owner's permissions**. This option publishes exactly the same data which the owner of the report can access.

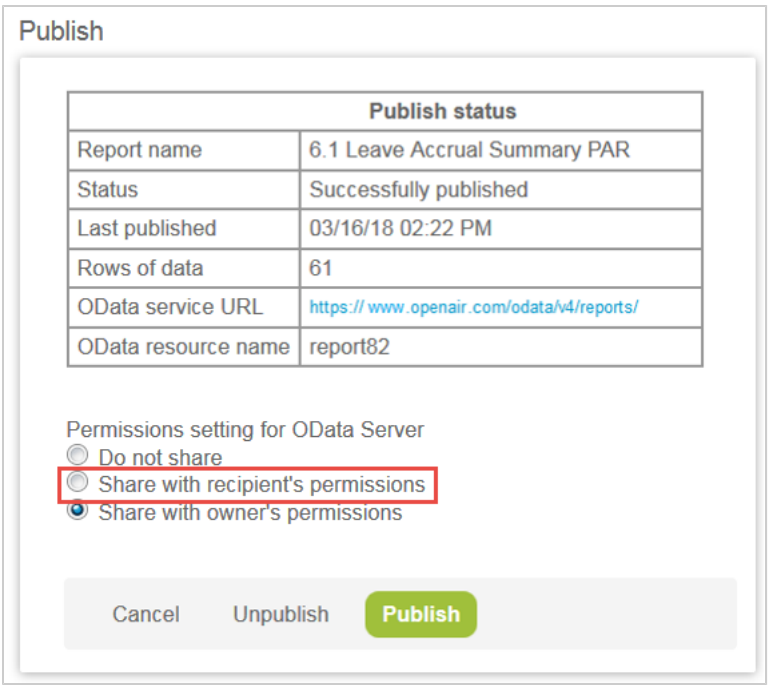
Warning: Use this option with caution as users may see data which they should not be allowed to have access to!

To access the report, recipients must have either the **Download Reports** or the **Publish Reports** permission to access the report in their business intelligence tool. They will see the data in their business intelligence tool automatically after the owner publishes the report.

This option is equivalent to the owner emailing a PDF of the report to the shared users. Only administrators or users with the **Enable publishing of shared reports to OData service with owner's permissions** role permission can use this feature.

To publish a shared report with owner's privileges and automatically share the data with recipients:

1. Go to Reports > Saved Reports > Shared Reports and click the Publish icon next to the report you want to publish.
2. In the Publish window, select the **Share with owner's permissions** option.
3. Click **Publish**.


Publish
Publish status
Report name
6.1 Leave Accrual Summary PAR
Status
Successfully published
Last published
03/16/18 02:22 PM
Rows of data
61
OData service URL
https:// www.openair.com/odata/v4/reports/
OData resource name
report82
Permissions setting for OData Server
Do not share
Share with recipient's permissions
Share with owner's permissions
Cancel
Unpublish
Publish

Importing Your Data Into Business Intelligence Tools

The following examples illustrate how to import your published report data into selected compatible business intelligence tools.

- Importing Your Published Report Data to Microsoft Excel
- Importing Your Published Report Data to Microsoft PowerBI

To import your data from OpenAir into any business intelligence tool, you will need the following login information:

Location of the data feed in your OpenAir account	https://www.openair.com/odata/v4/reports/
Location of the data feed in your OpenAir sandbox account (optional)	https://sandbox.openair.com/odata/v4/reports/
Location of the data feed in your OpenAir demo account (optional)	https://demo.openair.com/odata/v4/reports/
OpenAir User Name	COMPANY\USERID (for example, Honeycomb\mcollins)
Password	Your OpenAir password

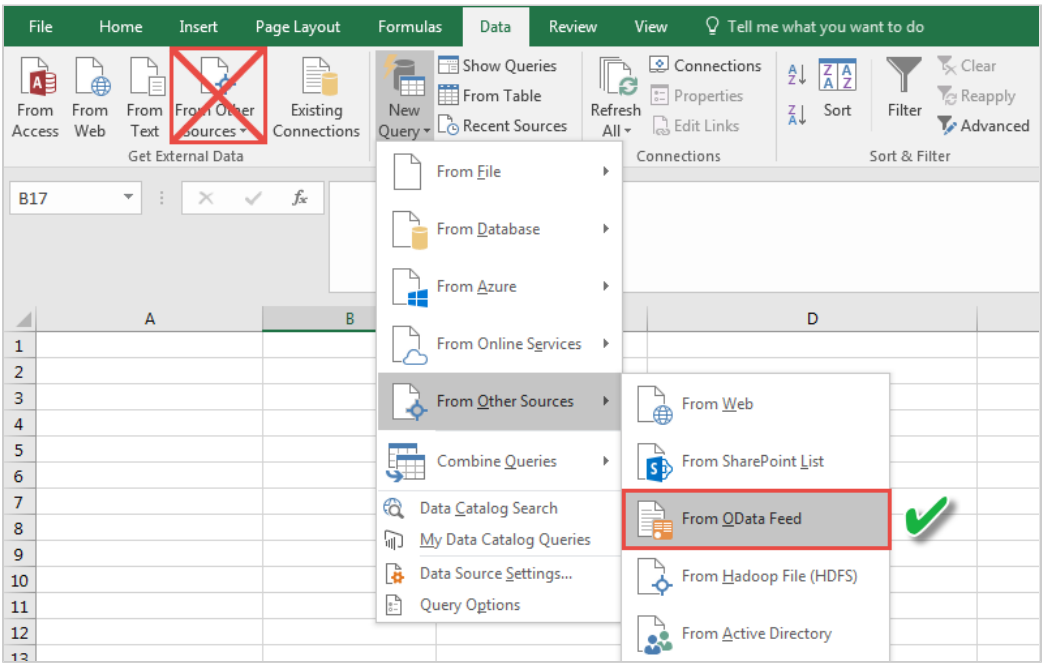
Importing Your Published Report Data to Microsoft Excel

This example uses Microsoft Excel 2016 MSO 32–bit. Other versions of Microsoft Excel may not be able to use this functionality. Please see Features and Limitations for specifications which your BI tool must meet to use the OpenAir Business Intelligence Connector.

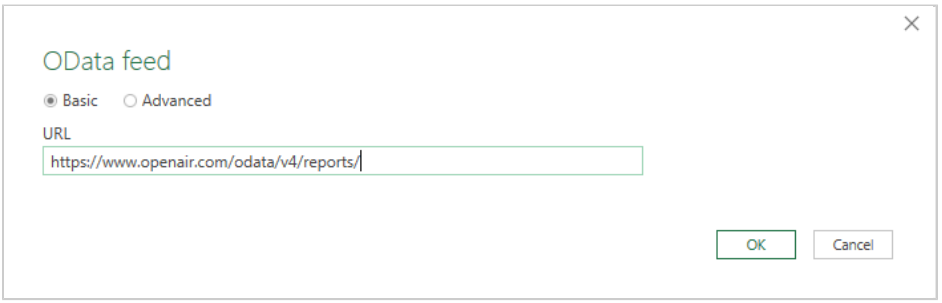
To import your published report data to Microsoft Excel:

1. In Microsoft Excel, click the **Data** tab.
2. Click **New Query**, point to **From Other Sources** and select **From OData Feed**.

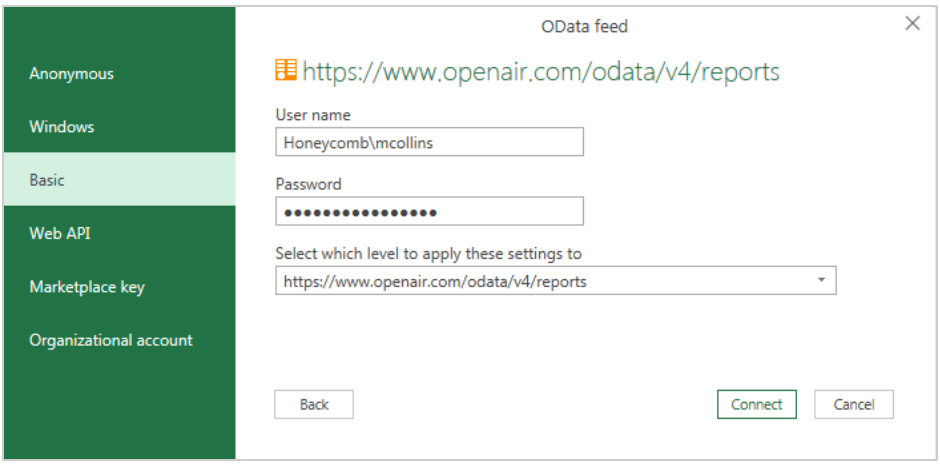
Note: You cannot import your data using the **From Other Sources** option in the **Get External Data** group in the **Data** tab.



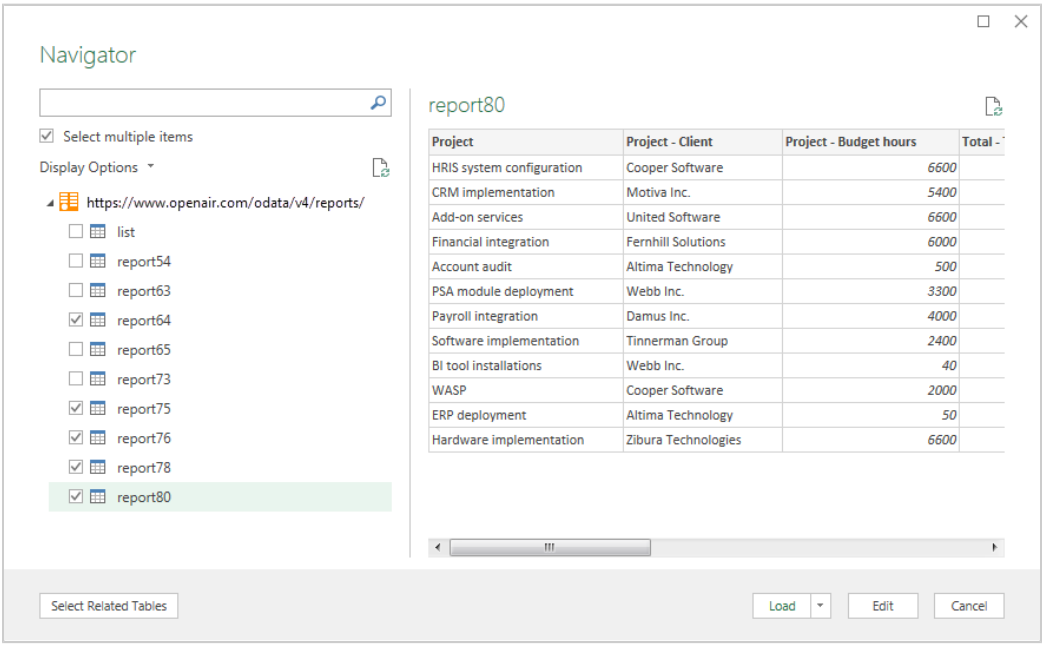
3. Select the **Basic** radio button, type the OpenAir URL for your OpenAir feed, OpenAir Sandbox feed, or OpenAir Demo feed (see Importing Your Data Into Business Intelligence Tools) and click **OK**.



4. In the OData feed window, click the **Basic** tab and type your CompanyID\UserID in the **User name** field, and your password in the **Password Field**.
5. (Optional) Change the level to apply your login settings to. You can also use the default.
6. Click **Connect**.



7. The Navigator lists the published reports from your account by their ReportID, and a list of importable reports. Click the report to load and click **Load**. To load multiple reports, select the **Select multiple items** option, select which reports you want to load and click **Load**.



Your data will now be available in Microsoft Excel. If you've loaded multiple reports, they will appear in the Workbook Queries list on the right side of the screen. Double click any report in this list to open it in the Query Editor, which you can use to copy data into Excel spreadsheets.

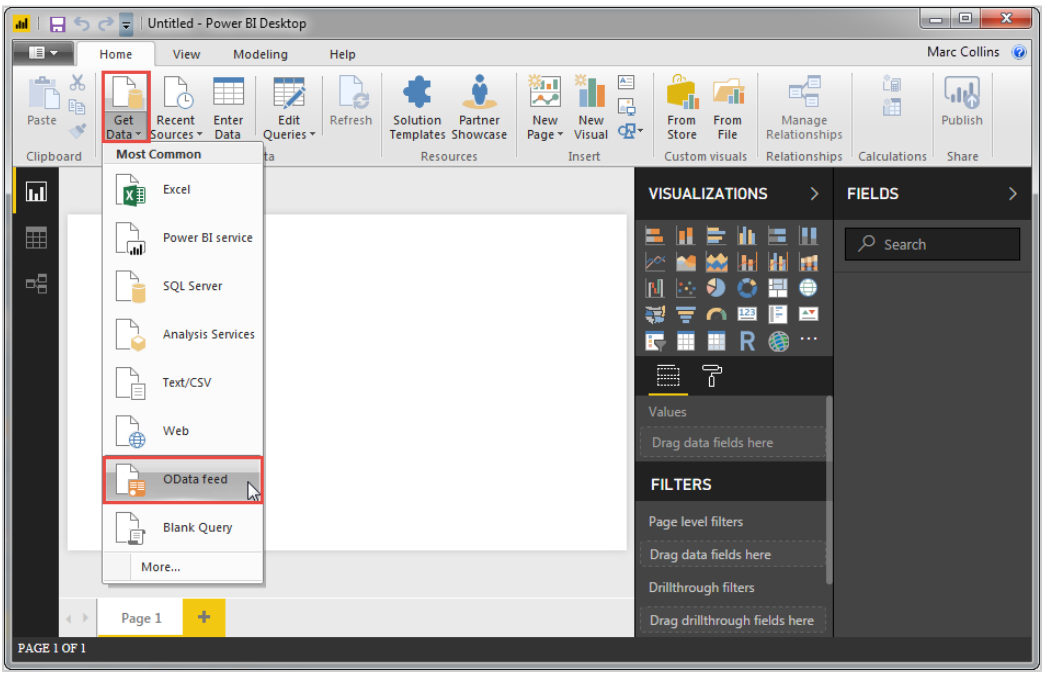
Tip: Some applications can cache the data read from an OData feed. For example, in Microsoft Excel, click the **Refresh** icon to read the latest report data.

Importing Your Published Report Data to Microsoft PowerBI

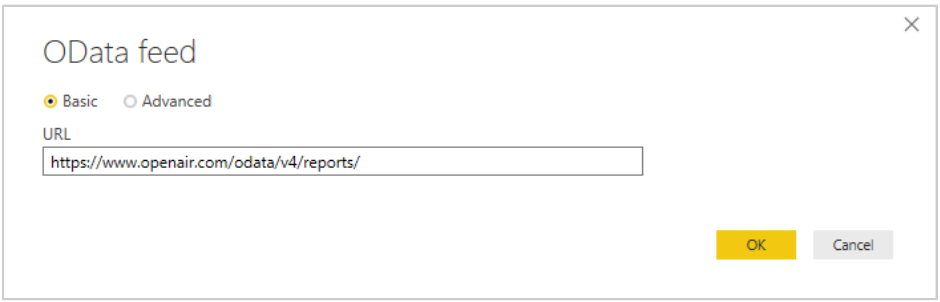
This example uses Microsoft PowerBI Desktop version 2.51.488.701 64–bit. Other versions of Microsoft PowerBI may not be able to use this functionality. Please see Features and Limitations for specifications which your BI tool must meet to use the OpenAir Business Intelligence Connector.

To import your published report data to Microsoft PowerBI:

1. In Microsoft PowerBI, click the Home tab, click **Get Data** and click **OData Feed**.

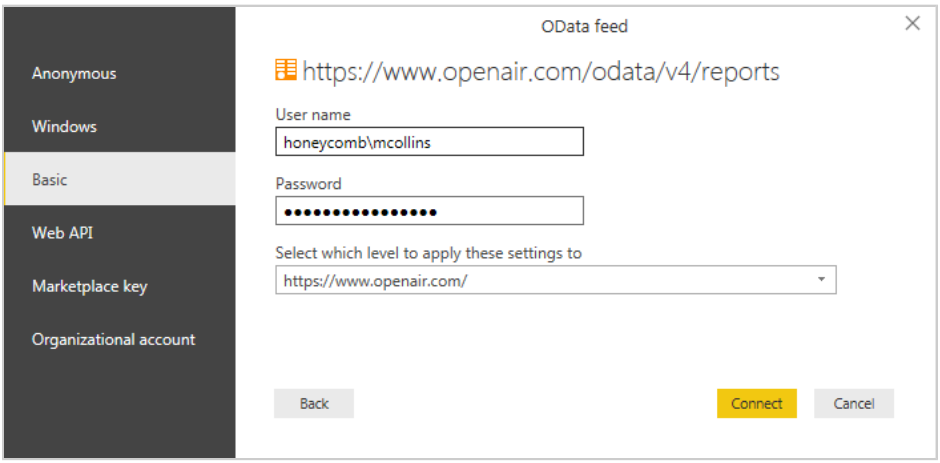


2. In the OData feed window, click the **Basic** radio button, type the OpenAir URL for your OpenAir feed, OpenAir Sandbox feed, or OpenAir Demo feed (see Importing Your Data Into Business Intelligence Tools) and click **OK**.



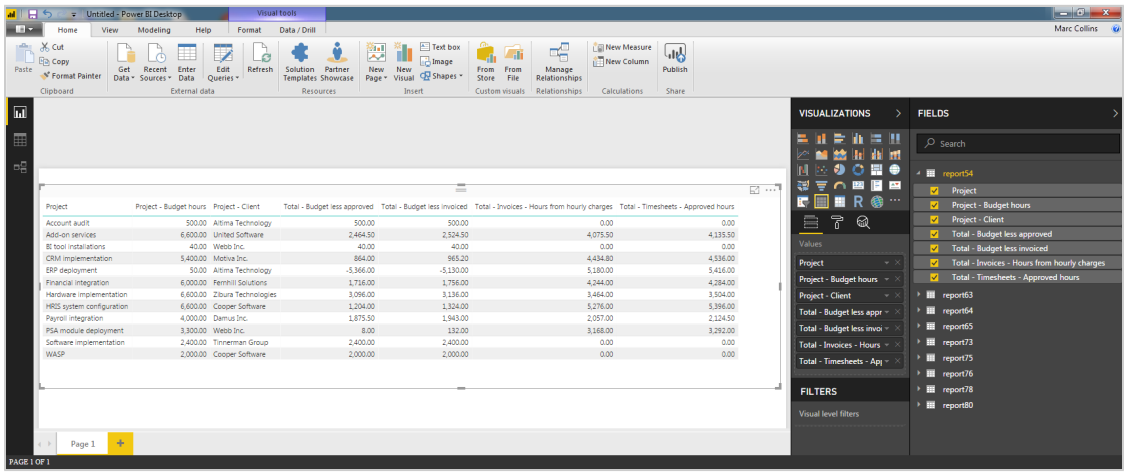
3. In the OData feed window, click the **Basic** tab and type your CompanyID\UserID in the **User name** field, and your password in the **Password Field**.

4. (Optional) Change the level to apply your login settings to. You can also use the default.
5. Click **Connect**.



6. The Navigator lists the published reports from your account by their ReportID, and a list of importable reports. As you click individual reports, a preview of the reports and data appears in the right side of the Navigator. Select the report to load and click **Load**. To load multiple reports, select which reports you want to load and click **Load**.

PowerBI will load all of your selected reports and makes them available in the **Fields** toolbar. Click on a report to open its fields, and select which fields you would like to include in your reports.



Tip: Some applications can cache the data read from an OData feed. For example, in Microsoft PowerBI, click the **More options** icon to the right of a report name or field and click **Refresh data** to read the latest report data.

OpenAir Business Intelligence Connector Advanced Functions

This chapter details advanced functions which you can use to get more out of your OpenAir saved reports data once you've published your reports to the OData database.

- Viewing Report Data in a Web Browser
- OData Query Options
- Replace Non-Alphanumeric Characters with Underscores in Column Titles and Metadata

Viewing Report Data in a Web Browser

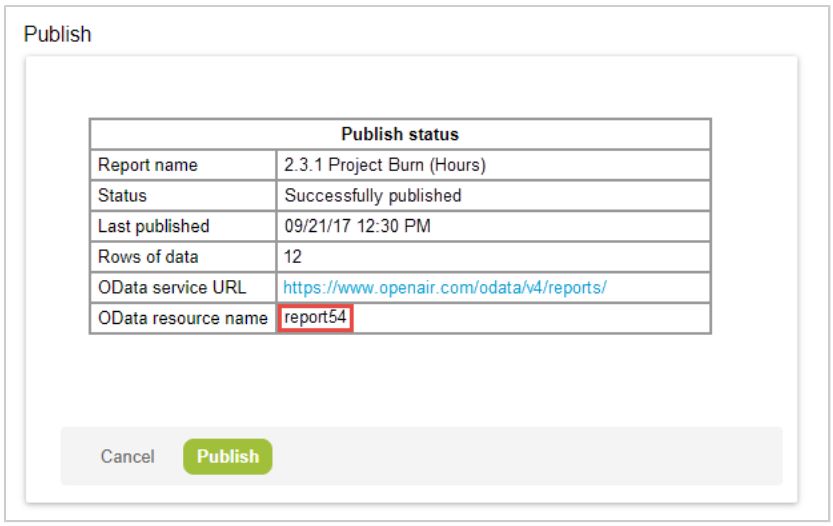
To view the report data for a published report in a web browser, type the url for your OpenAir feed, OpenAir Sandbox feed, or OpenAir Demo feed into your browser, with the report ID from OpenAir. For example:

To view the report data for a published report in a web browser:

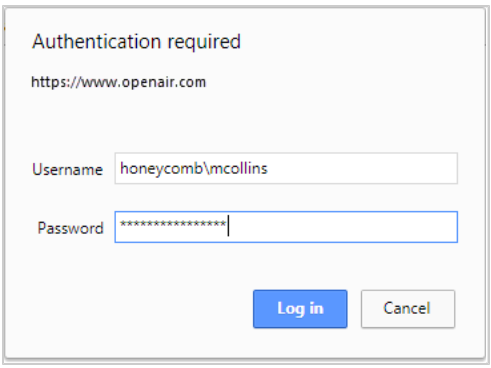
1. Type the url for your OpenAir feed, OpenAir Sandbox feed, or OpenAir Demo feed into your browser, with the report ID from OpenAir. For example:

   https://www.openair.com/odata/v4/reports/report54

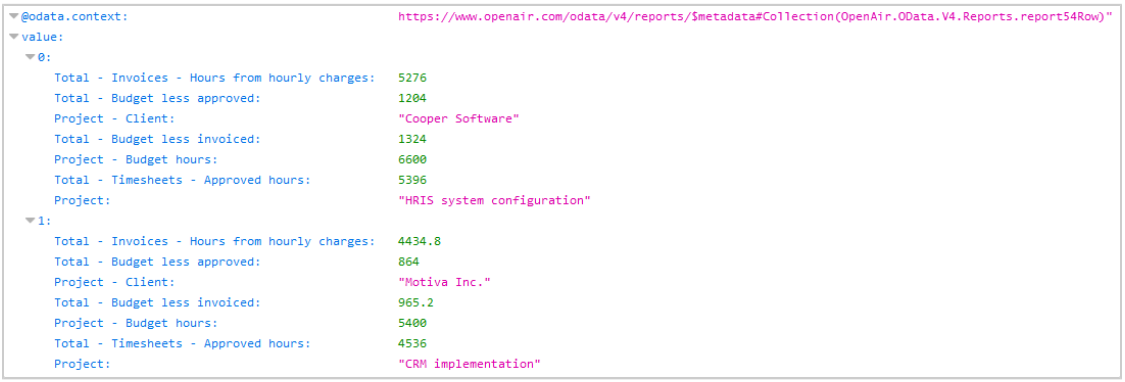
   Note: The **OData resource name** from the Publish screen in OpenAir indicates which report ID your published report will use (for example, **report54** in the screenshot below).



2. In the Authentication required window, type your companyid\username and password and click **Log in**.

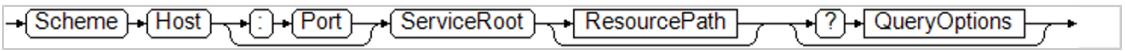


Your data will open in your browser.



OData Query Options

The OpenAir Business Intelligence Connector supports the $top and $skip query options. These options can be entered into the url to return specific numbers of records.



Query Option	What it does
$top	Specifies how many records to return
$skip	Specifies the number of records to ignore before returning records

Example

If the following URL is typed into a browser:

https://www.openair.com/odata/v4/reports/report279?$skip=10&$top=20

The browser will skip the first 10 records and return the next 20 records.

Replace Non-Alphanumeric Characters with Underscores in Column Titles and Metadata

With this feature, all non-alphanumeric characters in your data feed's column titles and metadata are replaced with underscores. When enabled, space characters in column titles are replaced with underscore characters.

Note: To enable this feature, please contact OpenAir Support and request the **Replace Non-Alphanumeric Characters with Underscores in Column Titles and Metadata** feature.

report82

User	Leave_accrual_rule	Accrual
Adams, Mary	Corporate sick days	*160*
Carr, Bill	Corporate sick days	*160*
Carter, Tom	Vacation Accrual rule	*316*
Collins, Marc	Vacation Accrual rule >5 years Tenure	*168*
Davis, Judy	Vacation Accrual rule	*316*
Ellis, Ed	Vacation Accrual rule >5 years Tenure	*199*
Foster, Tim	Vacation Accrual rule	*300*
Fox, Rebecca	Vacation Accrual rule	*320*
Garcia, Juan	Vacation Accrual rule	*296*

Other special characters are also replaced with underscores, including: **%?!@:~`+-#$^ &*()ů!§¨|**

Note: To ensure compatibility, non-alphanumeric characters from other language sets are also replaced with underscores, for example:

or **Кири ллица**

would also be replaced with underscores.

Frequently Asked Questions About the OpenAir Business Intelligence Connector

What is the OpenAir Business Intelligence Connector?

The OpenAir Business Intelligence Connector is an OData connection point supported by many reporting, business intelligence, workflow, and integration applications. This connection point lets you easily configure any compatible application to use the connection point without the need for programming. OData (Open Data Protocol) is an ISO/IEC approved, OASIS standard. See http://www.odata.org for more details on the OData standard.

What can I do with the OpenAir Business Intelligence Connector?

The OpenAir Business Intelligence Connector enables you to publish the content of your saved reports so they can be read by a compatible application. This provides a convenient way to access data presented by reports including calculated values. You can scheduled reports to automatically publish the data when the report runs.

How secure is the OpenAir Business Intelligence Connector?

The OpenAir Business Intelligence Connector follows OpenAir security best practices. You access the connector using your OpenAir security credentials and can only see the saved reports available to your OpenAir permissions settings. The OpenAir Business Intelligence Connector needs to be enabled to be available. Administraors can control access to the publish feature to users by role permissions.

What applications does the OpenAir Business Intelligence Connector support?

The OpenAir Business Intelligence Connector uses the OData V4/JSON standard and supports any compliant application. Applications that use older versions of the OData standard or do not support JSON may not be able to use the connection point.

Can I use the OpenAir Business Intelligence Connector as an API?

Yes, programmers can write applications that send requests and receive responses as defined in the OData standard. See http://www.odata.org/getting-started/basic-tutorial for more details.

What are the known limitations of the OpenAir Business Intelligence Connector?

- You need to run and publish a report to make the data available
- Only the $top and $skip system query options are available
- The Connector does not support OData versions prior to V4 and does not support ATOM

Troubleshooting the OpenAir Business Intelligence Connector

This chapter will help you to diagnose errors which you might encounter when using the OpenAir Business Intelligence Connector, and offer solutions to help you resolve them.

I can't see a "Publish reports" role permission when I go to Administration > Global Settings > Users > Roles > [Select a role]

The **Publish reports** role permission is only available if your company has purchased the use of the OpenAir Business Intelligence (BI) Connector and OpenAir Support has completed the setup for your BI Connector account.

If you cannot see the **Publish reports** role permission, first contact your OpenAir Sales Representative and ensure that you have purchased access to this feature.

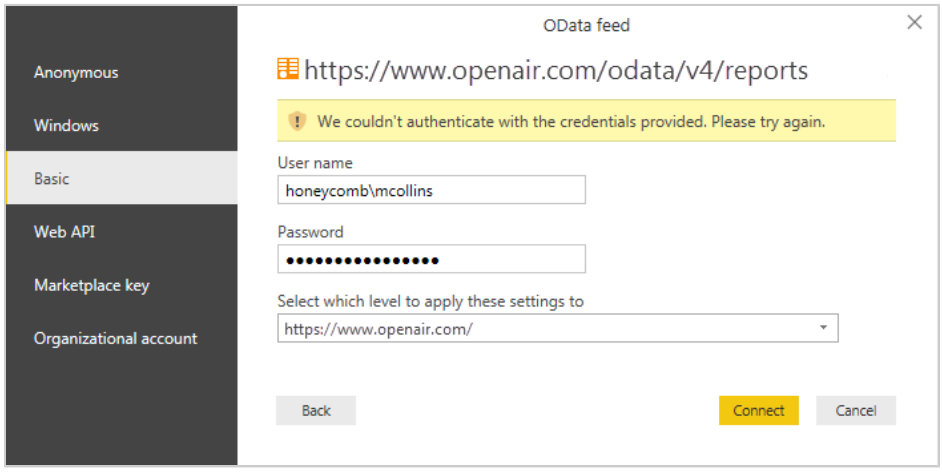
If you have confirmed that your company should have access to this feature, contact OpenAir Support and confirm that they have finished setting up the feature for your account.

There is no "Publish" icon next to my saved reports.

You won't be able to publish reports if your company's administrator hasn't assigned you the **Publish reports** role permission.

Confirm that your company's administrator has assigned you the **Publish reports** role permission.

My business intelligence tool can't authenticate my credentials.



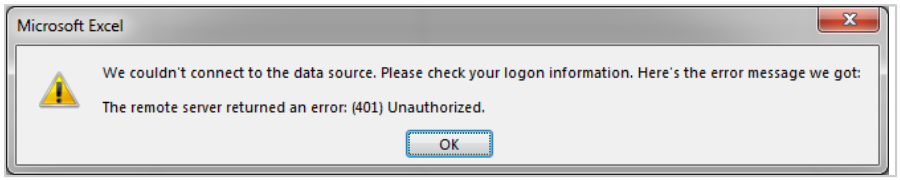
If you receive a message from your business intelligence tool saying that it cannot authenticate your credentials, you may have incorrectly typed your OpenAir OData feed's address, the Company ID and User Name, or password, or are using the wrong credentials for your OData feed.

Confirm that you have entered the correct OpenAir OData feed address, Company ID, User Name, and Password.

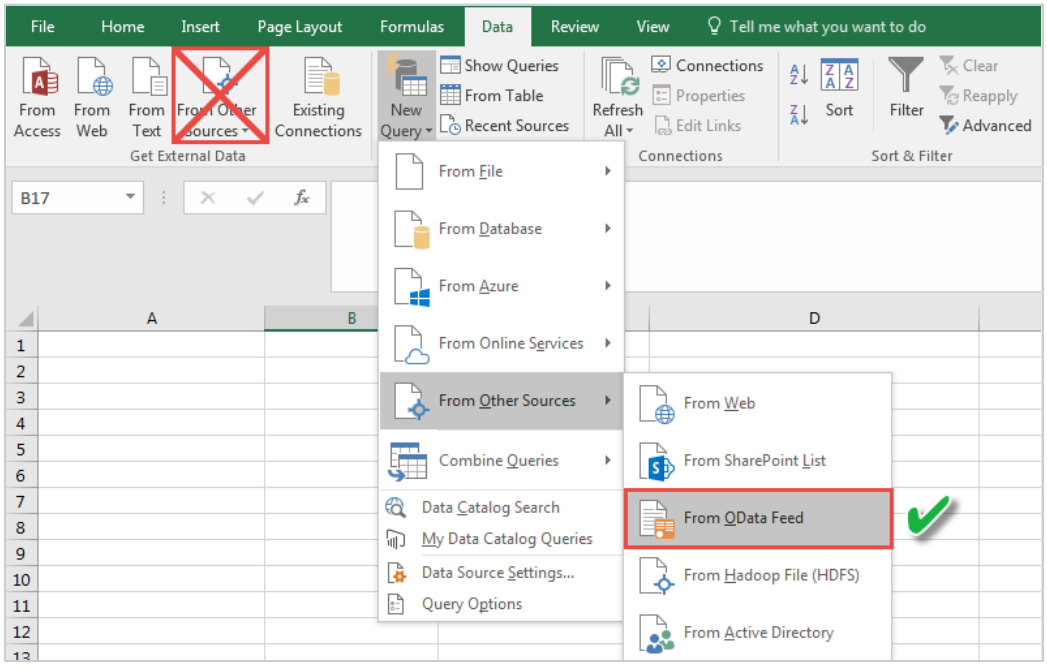
Note: Pay special attention to the slash between the Company ID and User name. You should use a **back slash (\)** and not a forward slash (/) between these two IDs.

My credentials and OpenAir OData feed's address are correct, but I still get an error message from my business intelligence tool.

This problem is known to occur with some versions of Microsoft Excel. It's possible that Excel is trying to connect to your OData feed as a V3 service and not a V4 service, and since V3 services are incompatible with the OpenAir Business Intelligence Connector, you will receive an error.

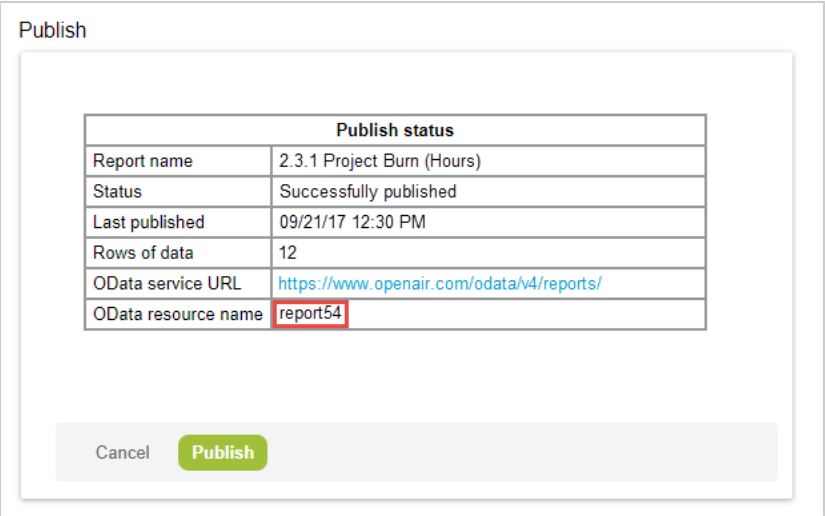


If using Microsoft Excel to connect to your OpenAir OData feed, be sure to select the feed by going to the Data tab, then clicking New Query > From Other Sources > From OData Feed. Selecting any other options for connecting to the feed will result in an error.



My report doesn't appear in the list of published reports in my business intelligence tool.

Each published report has a unique ID number which identifies it. OpenAir provides this report ID in the **OData resource name** field when you publish the report. For example, in the screenshot below, the report ID is **report54**:



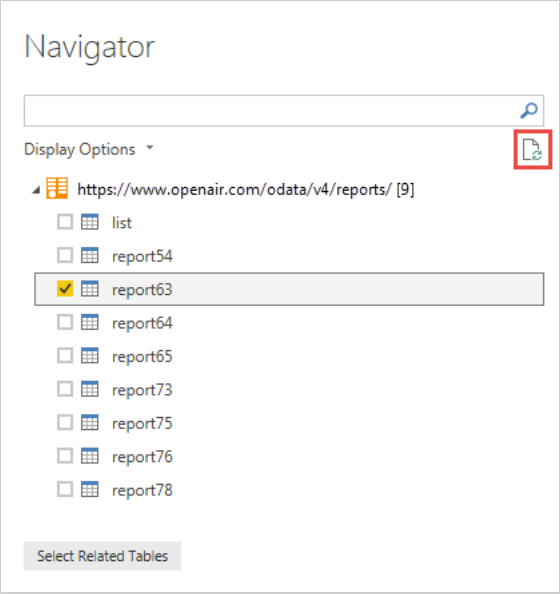
First, confirm that you are looking for the correct report ID. If the report ID is correct, confirm that you have published the report.

If the report is a scheduled report, confirm that it has been published according to its schedule.

My report data appears out of date in my business intelligence tool.

This can occur if your business intelligence tool caches report data.

To be sure that you have the latest report data, use your business intelligence tool's refresh option to pull the latest data.



Report data which I could previously see is now gone.

This can happen if a report you previously loaded was deleted.

To see the report's data, publish the report again and re-load it into your business intelligence tool.

OpenAir Business Intelligence Connector Version History

April 14, 2018

- Added ability to publish Shared reports. See Publishing Your OpenAir Shared Reports To OData.
- Added Replace Non-Alphanumeric Characters with Underscores in Column Titles and Metadata.
- Increased the Per Minute Request Limit to 500 requests per account per minute (up from 70 requests per minute). See OpenAir Business Intelligence Connector Request Limits.

October 14, 2017

- OpenAir Business Intelligence Connector introduced.
- Added ability to publish saved and shared reports to OData feed.
- Added $top and $skip query options.
- Added ability to access OpenAir OData feed data in browser.