Oracle® Cloud

Managing Data Using Oracle Visual Builder Add-in for Excel

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Oracle Cloud Managing Data Using Oracle Visual Builder Add-in for Excel, Version 4.6

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About this Content

Managing Data Using the Oracle Visual Builder Add-in for Excel describes how to work with Excel workbooks to retrieve and modify a web application's business data and send modified data back to the application.

Audience

This document is intended for business users who work with data in Excel workbooks that integrate with enterprise applications using the Oracle Visual Builder Add-in for Excel.

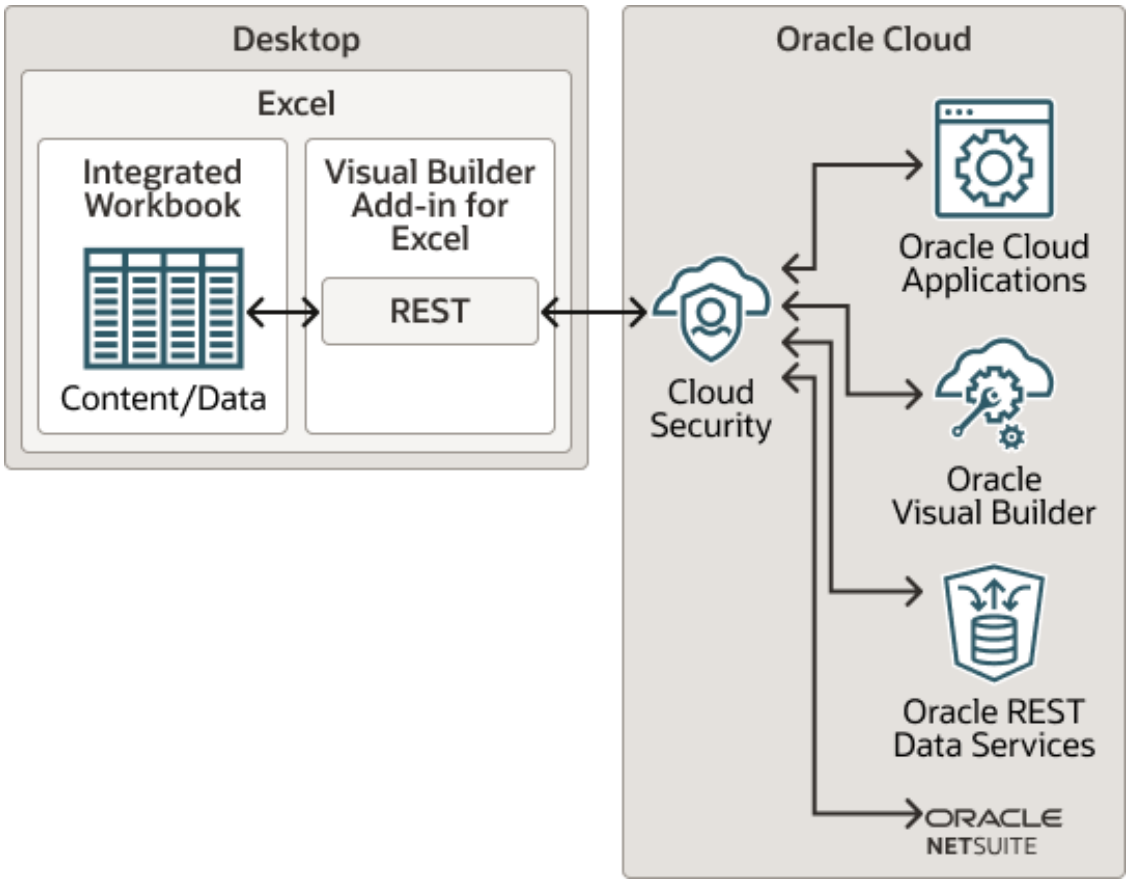
Related Resources

For more information, see the Oracle Visual Builder Add-in for Excel homepage.

1

Introduction to Oracle Visual Builder Add-in for Excel

Oracle Visual Builder Add-in for Excel integrates Excel spreadsheets with your web application to retrieve, analyze, and edit business data from the application. You download your data to an Excel spreadsheet, work with it, then upload your changes back to the service.



Key Concepts and Terms

Before you use this Excel add-in, it helps to become familiar with these key concepts, components, and terms.

Term	Description
Integrated workbook	An Excel workbook configured to work with one or more business objects via REST services.

Term	Description
Business object	A resource - like a purchase order or invoice - that has fields to hold your application's data. A business object includes a collection path, an item path, a set of fields, and other properties.
REST service	A REST-based web service that provides access to, and operations on, business objects
Web application	A business application that hosts the REST services used by the integration workbook. Please note that, while "web application" and "REST service" are distinct concepts, this book uses web application in place of REST service for simplicity.
Layout	A way to display a business object in an Excel worksheet. Each worksheet supports one of two layouts: Table or Form-over-Table. Layouts are created by workbook developers and are visible to data entry users in their workbooks.
Workbook creator	The person or team that integrated a particular workbook with a particular service (or services). The creator creates layouts, configures workbook behavior, and publishes the workbook.

Installation

To install the latest version of Oracle Visual Builder Add-in for Excel, download and run the installer.

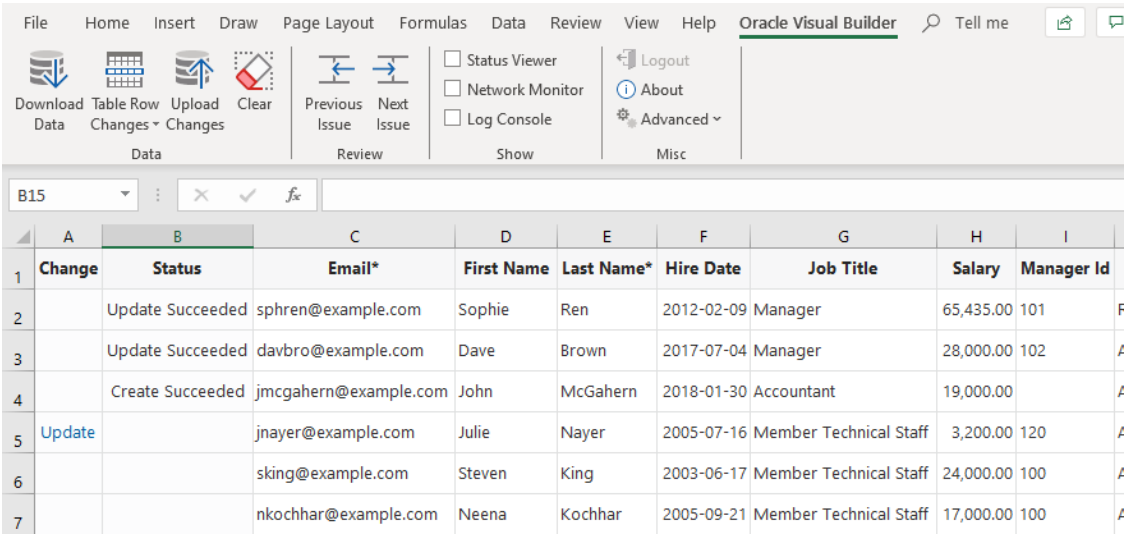
You can find the latest version of the installer at the Downloads page on Oracle.com.

For more information, refer to Install Oracle Visual Builder Add-in for Excel.

Next Steps

After you install the Excel add-in, a new **Oracle Visual Builder** ribbon tab appears in Microsoft Excel. As a business user who performs data entry, you use the options in this ribbon tab to download and work with a web application's data exposed in a workbook. You can review, modify, and create data in the workbook, then upload your changes to the web application.

This image shows a worksheet that manages employees:



	A	B	C	D	E	F	G	H	I
1	Change	Status	Email*	First Name	Last Name*	Hire Date	Job Title	Salary	Manager Id
2		Update Succeeded	sphren@example.com	Sophie	Ren	2012-02-09	Manager	65,435.00	101
3		Update Succeeded	davbro@example.com	Dave	Brown	2017-07-04	Manager	28,000.00	102
4		Create Succeeded	jmcgahern@example.com	John	McGahern	2018-01-30	Accountant	19,000.00	
5	Update		jnayer@example.com	Julie	Nayer	2005-07-16	Member Technical Staff	3,200.00	120
6			sking@example.com	Steven	King	2003-06-17	Member Technical Staff	24,000.00	100
7			nkochhar@example.com	Neena	Kochhar	2005-09-21	Member Technical Staff	17,000.00	100

In this example, the user has updated two rows and created a new row with employee data. These changes have been successfully uploaded to the web application, as indicated by

messages in the Status column. The user has also updated data in another row that has yet to be uploaded, as indicated by the `Update` message in the Change column.

2

Install Oracle Visual Builder Add-in for Excel

To install Oracle Visual Builder Add-in for Excel, download the Current User installer (`vbafe-installer-current-user.msi`) from the Oracle Downloads page and run the installer.

If any required software is missing, the installation terminates without installing the add-in. Refer to Software Dependencies in *Developing Integrated Spreadsheets Using Oracle Visual Builder Add-in for Excel* for details including information on how to check for and install required components. You can also refer to this topic for information on installing the Microsoft Edge WebView2 embedded browser. WebView2 is a Microsoft component that must be installed separately.

This installation is specific to the current Windows user profile. If multiple users on a Windows machine need the add-in, consider using the All Users installer instead. See Install Using the All Users Installer in *Developing Integrated Spreadsheets Using Oracle Visual Builder Add-in for Excel*.

> **Note**
>
> Running both the All Users installer and the Current User installer on the same machine is not recommended. If you do install the add-in using both installers, Excel loads the add-in installed in the Program Files folder ("All Users") and not the version in the current user's Windows profile ("Current User"). If you decide to switch the installation type, the best practice is to uninstall the previous add-in installation type first to avoid confusion.

To install the add-in:

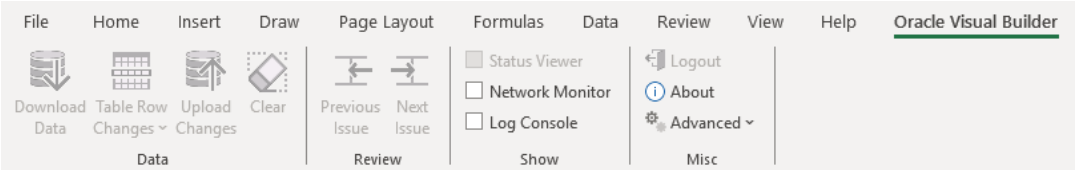
1. Quit Excel before you begin installation.
2. Double-click the `vbafe-installer-current-user.msi` file that you downloaded previously to launch the installation wizard.
3. To install the add-in without the available developer tools, click **Developer Options** and select **Disabled**.

   > **Tip**
   >
   > If you need these tools after initial installation, re-run the installer, choose the option to repair your installation, and select **Enabled**.

4. Click **Install** to install the add-in.

   When the installation is complete, click **Close**.
5. Start Excel and open a new workbook.

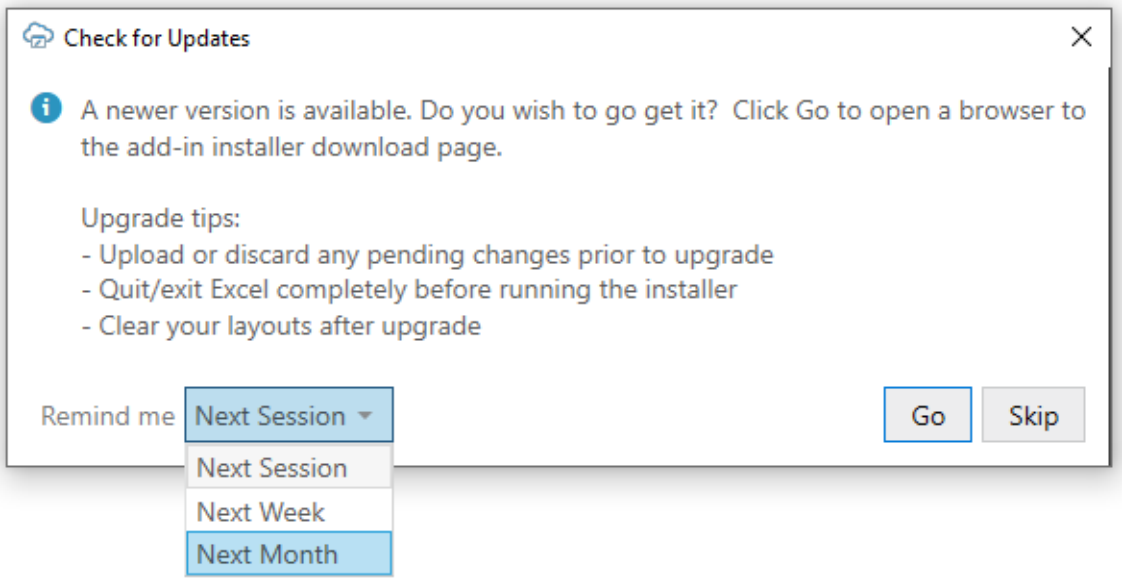
   A new Oracle Visual Builder ribbon tab appears with commands that help you download and manage data from a web application.



When you first run Excel after the current-user installation, you may be prompted to confirm the installation of the "Office customization". This prompt generally appears the first time for each profile and whenever the digital certificate (used to sign the add-in) is changed.

Check for Updates

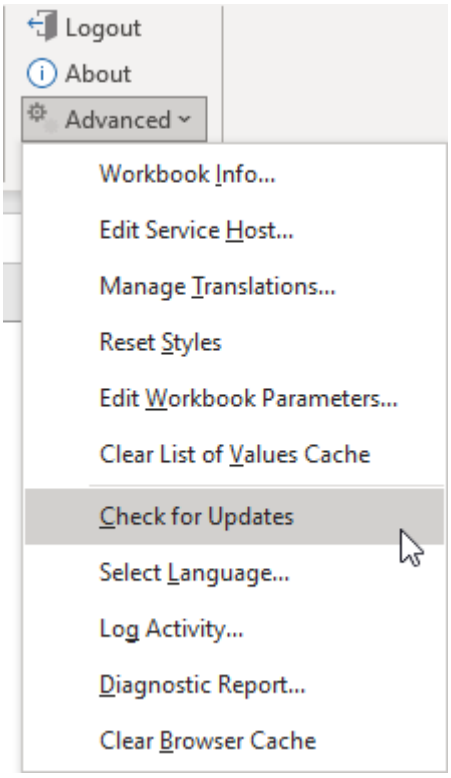
Oracle Visual Builder Add-in for Excel automatically checks for updates once per Excel session when the first integrated workbook is opened. If there is an update available, you are prompted to upgrade. You can also check for a newer version of the add-in using the **Check for Updates** command available from the **Advanced** menu. If there is a newer version, you can get the latest version of the add-in from the Downloads page.
If prompted to upgrade, you can choose to get the latest version right away or instead skip the upgrade.



If you choose to skip an upgrade, you'll be reminded again based on the duration you set in the **Remind me** list. If you select "Next Session", you'll be prompted to upgrade when you next launch Excel and open an integrated workbook.

To check for an update manually:

1. From the Advanced menu in your existing installation, select **Check for Updates**.



2. If a newer version is available, when prompted to open the downloads page in your browser, click **Go**.
3. Download the installer for the latest version, then install the update. Before you update, be sure to review best practices as described in the previous section.

Upgrade to the Latest Version

To take advantage of all the latest Oracle Visual Builder Add-in for Excel features, make sure you are running an up-to-date version of the add-in. To upgrade to a new version, simply download and run the installer.

For recommendations on when you should upgrade, check the Upgrade Policy in *Developing Integrated Spreadsheets Using Oracle Visual Builder Add-in for Excel*.

You do not need to uninstall the previous version unless the installer instructs you to do so.

To ensure a clean upgrade, follow these instructions when upgrading your installation.

1. Before you upgrade the add-in:
   a. Upload any pending changes using the current add-in version.
   b. Save changes in open workbooks, then close Excel.
2. Run the installer for the new version and follow the instructions in the wizard. The installer automatically replaces the previous version with the new version.
3. After you upgrade:
   a. Launch Excel to complete any final installation steps.
   b. Open your integrated workbook.
   c. Clear any layouts of old data and download data again as required.

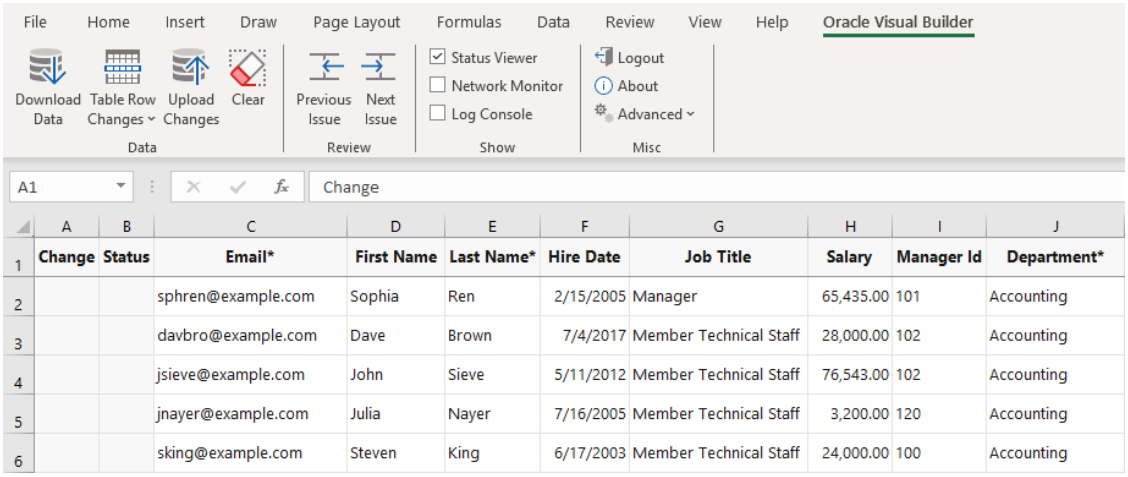
3

Manage Data in Table Layouts

In Microsoft Excel, select the **Oracle Visual Builder** tab to perform operations and work with data in a workbook.

When you open an integrated workbook for the first time, you may be prompted to redraw all layouts if the workbook was published in a different language. If you choose to redraw the workbook, any data and changes to the layouts are discarded. To keep these changes, skip the redraw. You can always manually redraw your workbook later using either the Clear Layout or Download Data icons from the **Oracle Visual Builder** tab.

> **Note**
>
> Clearing all layouts when the language changes is recommended since some data, such as lists of values, may be language sensitive. Downloading in one language and uploading in a different language may not succeed.



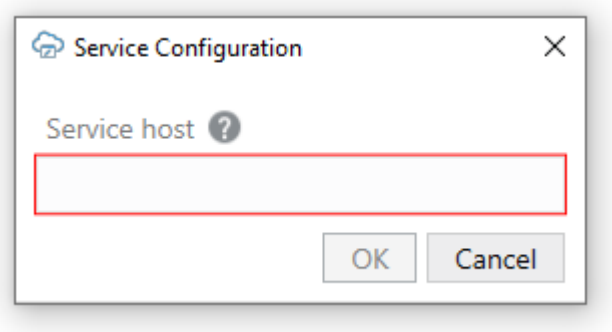
	A	B	C	D	E	F	G	H	I	J
1	**Change**	**Status**	**Email***	**First Name**	**Last Name***	**Hire Date**	**Job Title**	**Salary**	**Manager Id**	**Department***
2			sphren@example.com	Sophia	Ren	2/15/2005	Manager	65,435.00	101	Accounting
3			davbro@example.com	Dave	Brown	7/4/2017	Member Technical Staff	28,000.00	102	Accounting
4			jsieve@example.com	John	Sieve	5/11/2012	Member Technical Staff	76,543.00	102	Accounting
5			jnayer@example.com	Julia	Nayer	7/16/2005	Member Technical Staff	3,200.00	120	Accounting
6			sking@example.com	Steven	King	6/17/2003	Member Technical Staff	24,000.00	100	Accounting

For any given layout, you can:

- View existing rows
- Edit existing rows
- Create new rows
- Delete existing rows
- Perform actions on existing rows, for example, an "Approve" or "Reject" action for an Invoice business object. These kind of special actions can be performed on certain business objects depending on the context. For more information, see Perform Actions in a Layout.

> **Note**
>
> Capabilities described in this guide may not be available for all integrated workbooks. A workbook's functionality depends on how it was configured and the capabilities that the web application provides.

If your operation requires access to the web application and the service host is missing, a Service Configuration window prompts you to enter the service host value. Ask your IT administrator for the correct value to provide here. Operations that require access to the web application include the Download Data and Upload Changes commands.



> **Note**
>
> You can also access the Service Configuration window using **Edit Service Host** from the Advanced drop-down list.

General Guidelines

When working with data in the Excel workbook, remember the following guidelines:

- Never edit the Key column, the last column in the table.
- Avoid using the following Excel features with Oracle Visual Builder Add-in for Excel. The following is a sample list of Excel features that do not work well with the add-in. Other Excel features not listed may also not work well with the add-in.
  - Do not use the Protect Sheet or Protect Workbook features of Excel.
  - Do not attempt to re-arrange the layout of the integrated worksheet.
  - Do not use the Mark as Final command to make the Excel workbook read-only.
  - Do not save your workbook to the Excel 97-2003 workbook (`.XLS`) file format. Only the `.XLSX` and `.XLSM` file formats are supported.
  - Do not delete anything from the integrated worksheet using Excel's delete features, including the Delete key.
  - Do not add Excel tables, such as those created from the Excel ribbon using **Insert > Table**, to an integrated workbook. These table objects are incompatible with the table layouts used by the add-in.

- You can use Excel's Filter and Sort features to filter and sort rows in a table layout with this proviso: *Be sure to include the Key column in the range to be sorted when using the Sort feature*. Failure to do so could lead to corrupted data.
- Do not attempt to modify the Change column directly. Instead, follow the procedures described in this chapter.

You can remove all data from the workbook, including any pending changes that have not yet been uploaded to the web application by clicking the **Clear** button.

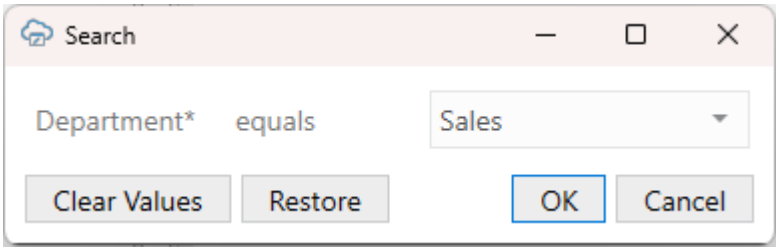
Download Data to the Workbook

Download data to the workbook using the **Download Data** button on the Oracle Visual Builder ribbon. When you connect to the web application for the first time, you may be prompted to log in. Provide your user name and password in the available fields.

If the workbook requires you to provide a bearer token for authentication, paste the bearer token value into the **Token** field, then click **Continue**. If you were not provided with a bearer token, contact your workbook developer.

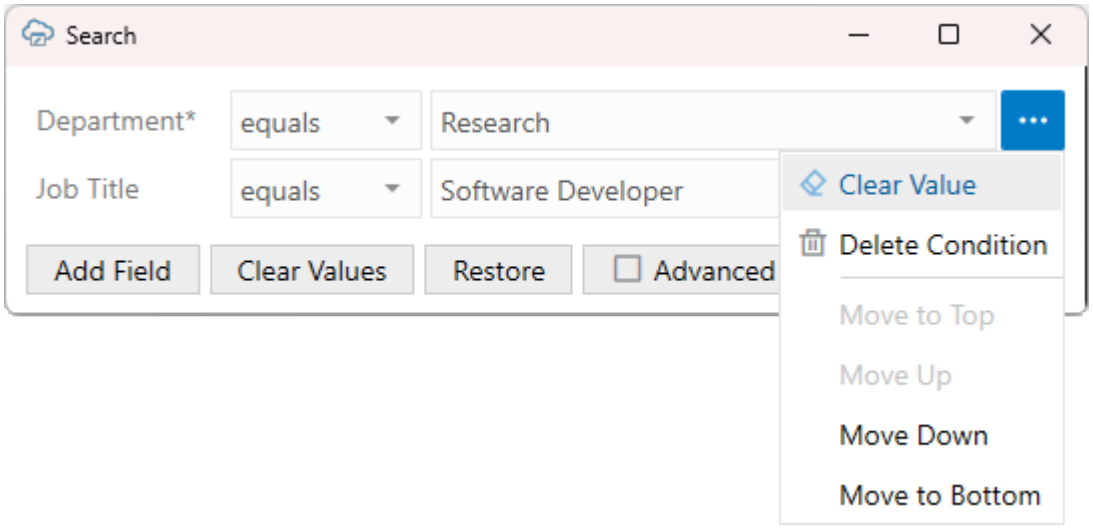
> **Note**
>
> This token is used for all subsequent requests sent during the session. If you log out, close the workbook, or quit Excel, you'll be prompted to provide the token again the next time you download or upload data.

If search options were configured for download, specify the value(s) to search on, as shown in the following example where data for the Sales department will be downloaded:



Required search fields are marked with an asterisk (*). You must provide values for these fields before you can proceed.

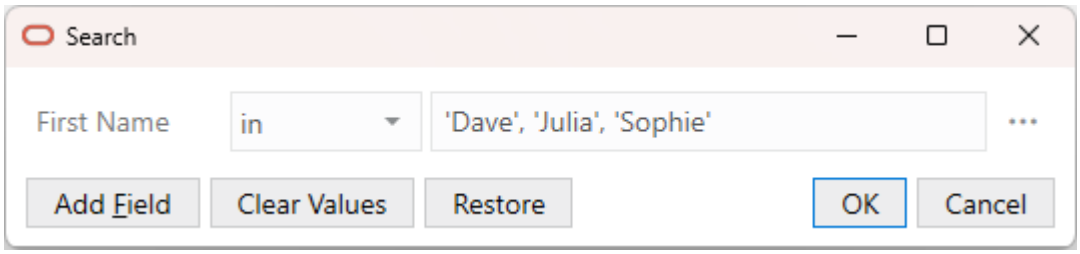
If the Search prompt is configured for editing, you'll be able to change the operator and value for a search condition. For example, to return data for all departments other than Sales, modify the Department search condition to use "not equals" for the operator and "Sales" for the value.



You can also:

- Add or delete a search condition
- Clear a value for a search condition or clear all values in the prompt
- Display or hide additional search conditions if the **Advanced** button is present
- Move search conditions up or down in the list
- Restore the Search prompt to the configured defaults. All changes are discarded and configured properties are reinstated:
  - Search condition values, including empty values, are restored.
  - Configured expression-based values are restored. Any expressions are re-evaluated and the results displayed.
  - Deleted search conditions are re-added

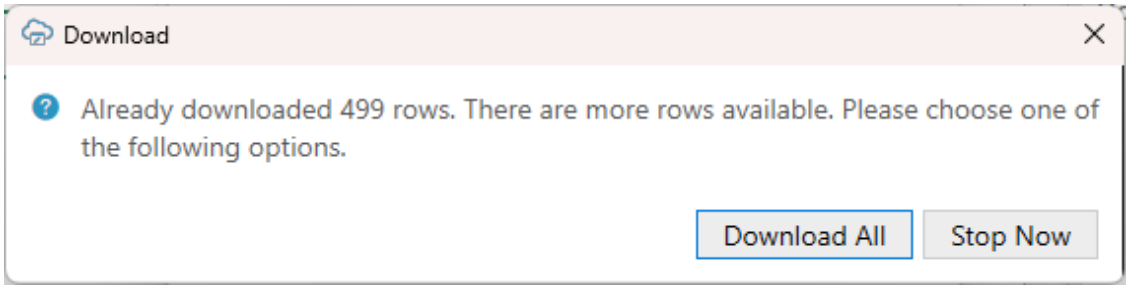
A search may be configured to use the "in" operator. This operator returns items matching any of the values in a comma-separated list. Such a search condition may look like this:



In this case, the search returns employee items where the first name matches either "Dave", "Julia", or "Sophie".

If you decide to change the values in the list, make sure you separate them with a comma (,) and enclose string values in single quotes (' '). Do not enclose integer values. If you need to enter a lot of values, you can use the Values editor. See Edit Values for an IN Operator Search.

If the search returns lots of rows, confirm if you want to continue downloading more rows:

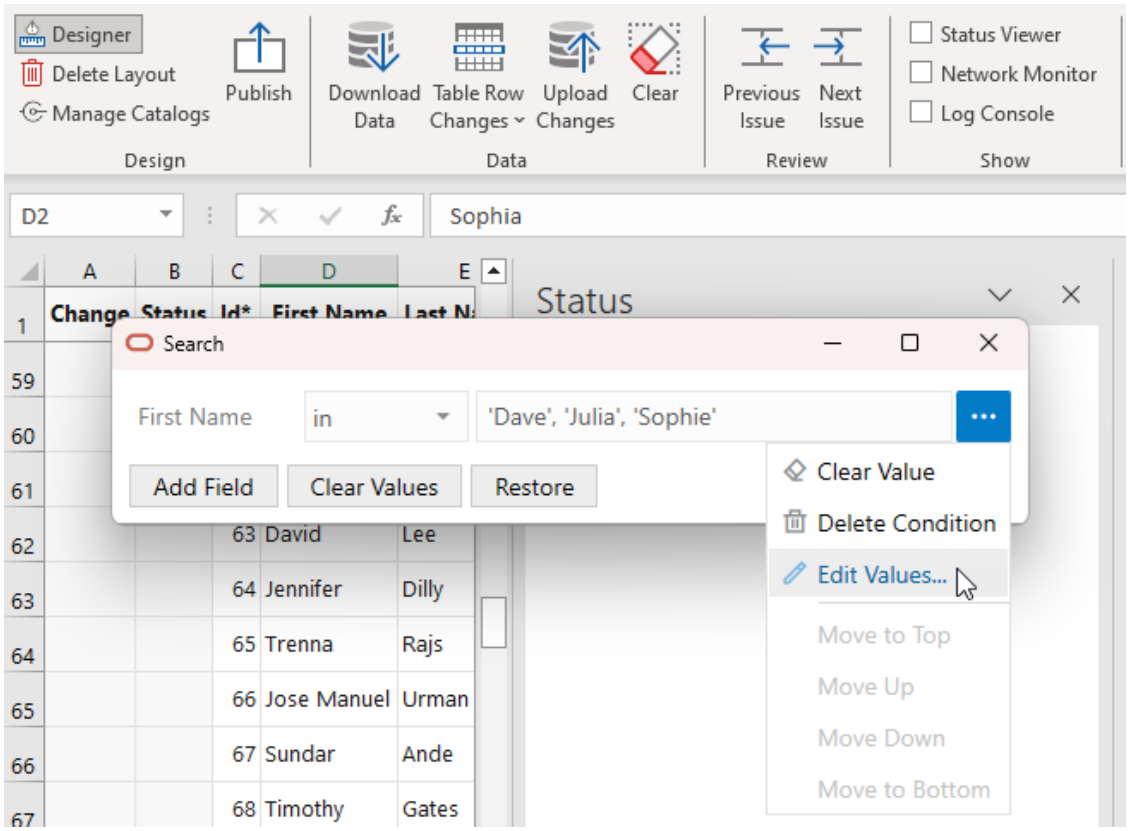


When download is complete, the add-in updates the table in the worksheet with data retrieved from the web application.

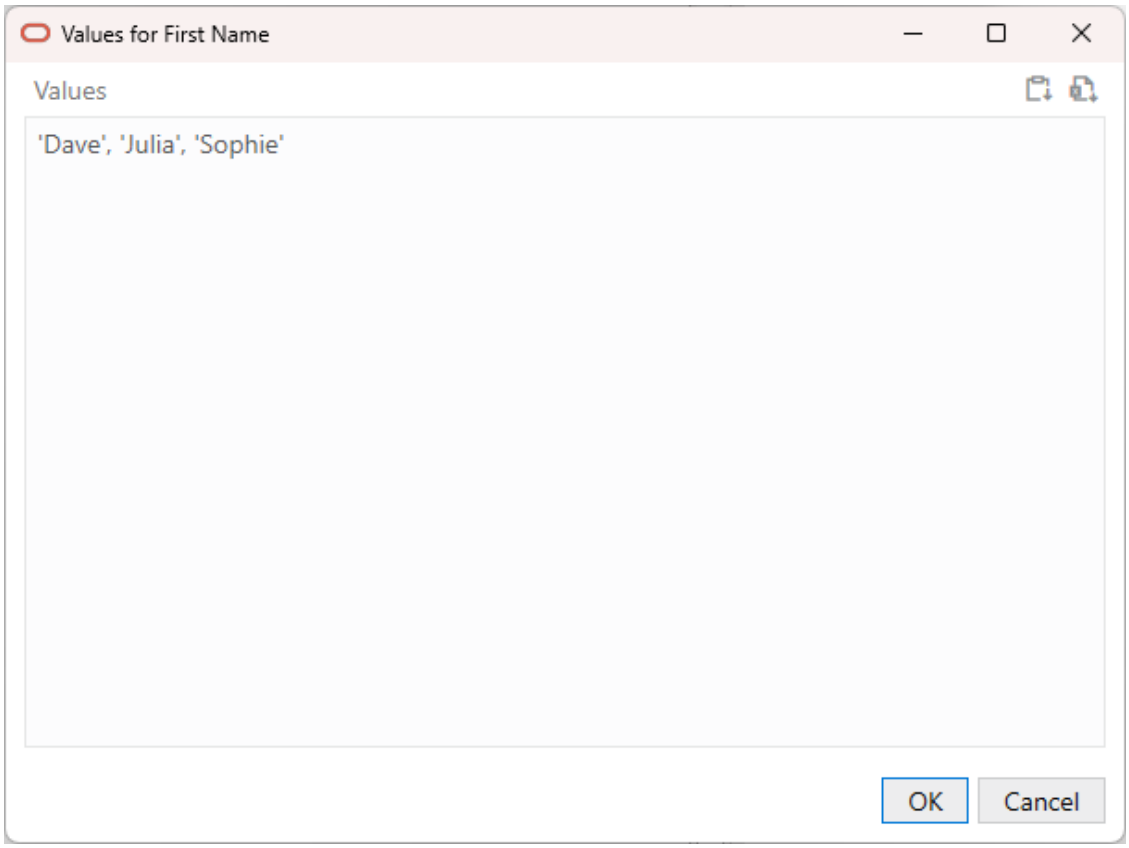
Edit Values for an IN Operator Search

In some cases, you may need to enter a large number of values for an "in" operator search. To make this easier, the add-in provides a Values editor you can use to create your comma-separated list.

Open the Values editor by clicking **More Actions**, then **Edit Values** from the Search prompt.



The add-in displays the Values editor for the search condition.



Add, edit, or delete values directly in the Values box as necessary. Make sure you separate the values with a comma (,) and enclose string values in single quotes (' '). Do not enclose integer values.

You can also use the available icons above the Values box to fetch values from the clipboard or from an Excel range in your workbook.

Fetch Values from the Clipboard

Before you copy values from an application to the clipboard, make sure your values are on separate lines or are separated by tabs. You do not have to enclose string values in single quotes: the add-in will format them for you.

To fetch values from the clipboard, click the **Fetch from the Clipboard** ( ) icon. If there are any existing values in the Values box, you'll be prompted to replace the existing values or add the copied values to the end of the set.

When you choose an option, the add-in fetches the values from the clipboard and formats them into a comma-separated list. Any empty values are discarded.

If the search condition is for a string field, the add-in encloses each value in single-quotes. If the search condition is for an integer field, the add-in tries to convert each value to an integer. If this conversion fails, the value is discarded.

Once the new values have been added, review the set to ensure it is formatted properly.

Fetch Values from an Excel Range

You can also fetch values from an Excel range address. Please note that if the range consists of multiple areas, only the first area is used.

> **Note**
>
> Excel may automatically convert non-string values to other types. To suppress this behavior, set the cell format to "Text" in Excel's Format Cells dialog. Refer to your Excel documentation for more information.

To fetch values from an Excel range, click the **Fetch from an Excel Range** () icon, then provide an Excel range. Here are some examples of supported addresses:

Address	Refers to
Q20:Q45	A set of cells in the current worksheet in column Q
Sheet2!A1:A100	One hundred cells in Column A of Sheet2
Sheet3!K:K	The entire column K (about one million cells) in Sheet3
Sheet4:A1:D50	A two-dimensional range on Sheet 4 that includes 50 rows by 4 columns (200 cells)
MyData	A named range defined in your workbook.

> **Tip**
>
> If you aren't sure about the correct form for a range of cells, you can define a named range and use the range name in the **Excel Range Address** property. To define a named range, select the range of cells you want, then right-click and select **Define name**. When defining the named range, make sure to select **Workbook** for the scope.

The add-in retrieves the values from those cells and formats them into a comma-separated values list. Empty cells are ignored. If the search condition is for a string field, the add-in treats each cell value as a string and encloses the values in single quotes. If it's for an integer field, the add-in converts each value to an integer. If this conversion fails, the value is discarded.

Edit Downloaded Data in the Workbook

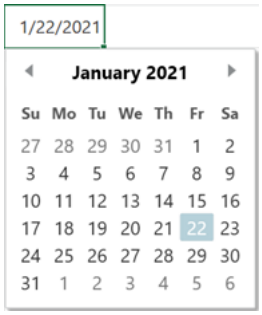
Edit data downloaded to a workbook by modifying editable cells that contain the downloaded data.

The following image shows three examples where a user has edited data in the table. The Change column for the first row displays an `Update` message that indicates the user has updated this row with required and valid values. The Change column for the second row also displays an `Update` message, but its Status column displays an `Invalid` message and a red border appears around the Hire Date* column's cell to indicate that a value is required in that cell's field. Finally, in the third row, the user attempted to input `Software` in the field for Department. As `Software` is not a valid choice for this cell's list of values, a red border appears around this cell. For more information about how the add-in validates edited data, see Understanding Data Validation.

	A	B	C	D	E	F	G	H	I	J	K
1	Change	Status	Id*	First Name	Last Name*	Email*	Hire Date*	Job Title	Salary	Manager Id	Department*
2	Update		2	Sophia	Ren	sphren@example.com	5/6/2005	Manager	65,435.00	101	Research
3	Update	Invalid	3	Dave	Brown	davbro@example.com		Member Technical Staff	28,000.00	102	Accounting
4	Update	Invalid	5	John	Sieve	jsieve@example.com	5/11/2012	Member Technical Staff	76,543.00	102	Software
			6	Julia	Naver	jnaver@example.com	7/16/2005	Member Technical Staff	3,200.00	120	Accounting

Dates

If a cell has a date format, you can enter a date by selecting the cell and choosing a date from the date picker pop-up window.

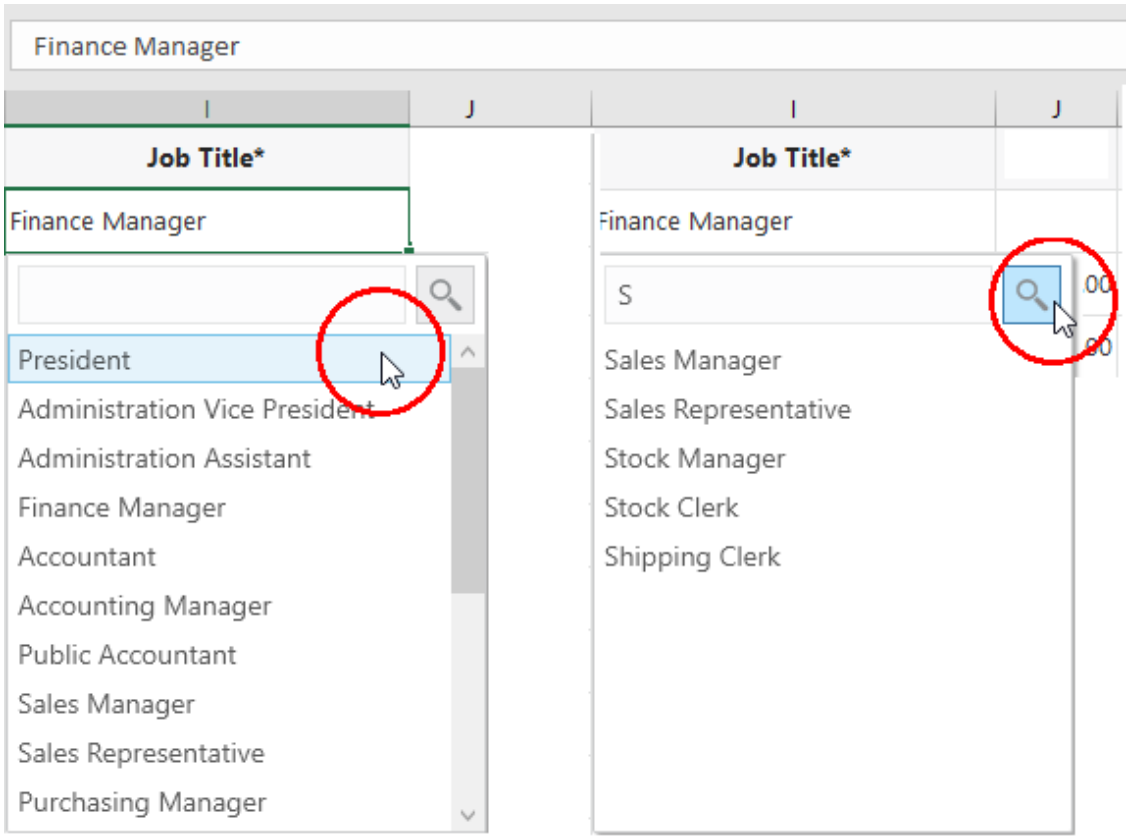


> **Note**
>
> The date picker only sets the date in a date-time field. The time value is not changed.

Lists of Values

If columns have an associated list of values, you can select a value in a search-and-select window. You can also enter one or more of the starting characters for other values, then click the Search icon to filter the values based on your input.

This image shows both these scenarios. For the latter scenario, the user entered `S` in the search box next to the Search icon to find all display values that start with `S` (`Sales Manager`, `Sales Representative`, and so on).



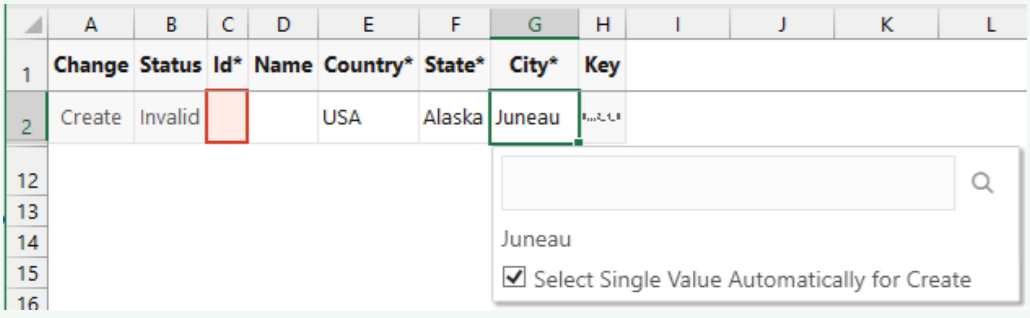
When you select the cell, the popup displays choices that were previously retrieved from the web application. When you search, the add-in sends a request to the web application to get all matching choices.

When you choose a value from the list, the Change column displays `Update`.

If a list of values has only a single value, the workbook automatically selects this value in the cell if configured to do so. This automatic selection happens only if the current value is empty for a new row.

Tip

Automatic selection may make the workbook slower when responding to data edits in the worksheet. You can turn off this behavior by clearing the **Select Single Value Automatically for Create** check box in the search-and-select window, as shown here:

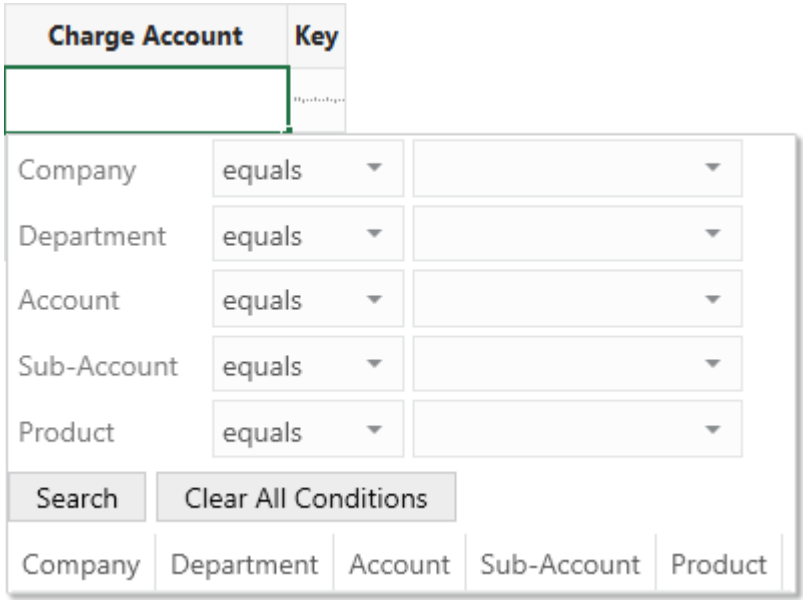


Key Flexfield Fields

If a column is associated with a key flexfield field, the add-in displays a popup window or "picker" you can use to search for and select an appropriate value for the row. Rather than having to type in an appropriate value, you can use the filters to search for the value that you need. As with a list of values, the Change column displays `Update` when you select a value.

A key flexfield is a field that includes two or more parts or "segments". The picker includes a filter area that allows you to set a filter for each segment of the key flexfield. When you click **Search**, values that match the filters are displayed in the search results area. For more information about key flexfields, see Overview of Key Flexfields.

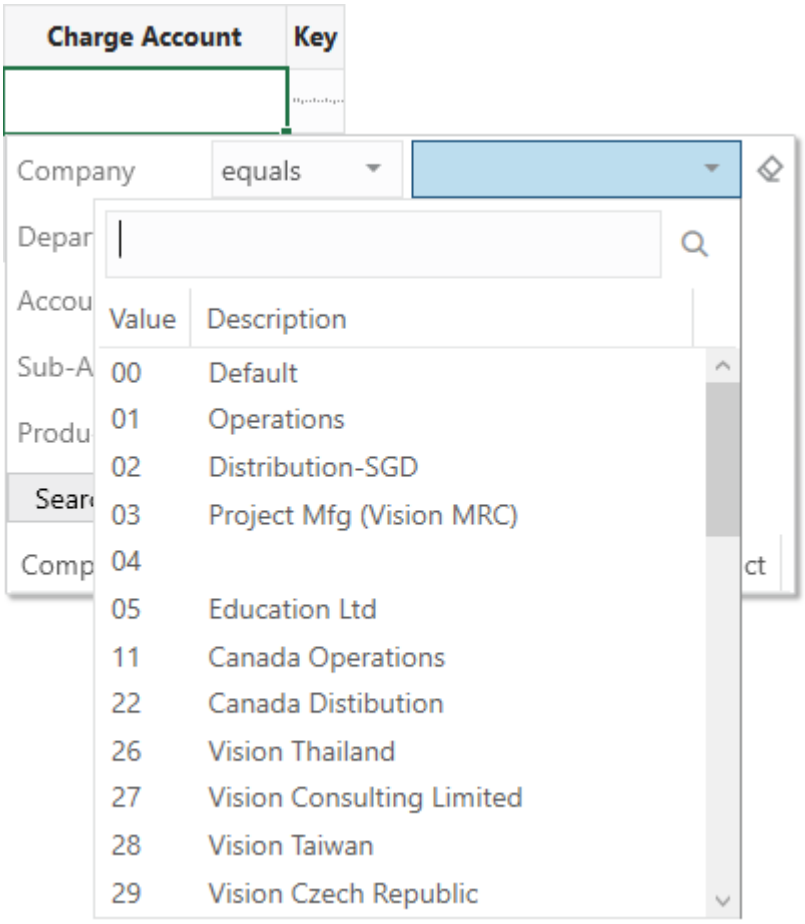
This image shows a picker for a Charge Account field. The charge account number in this case is composed on two- to four-digit codes for the relevant company, department, account, and so on. Each of these components is represented by a separate segment of the key flexfield.



To find the required charge account number:

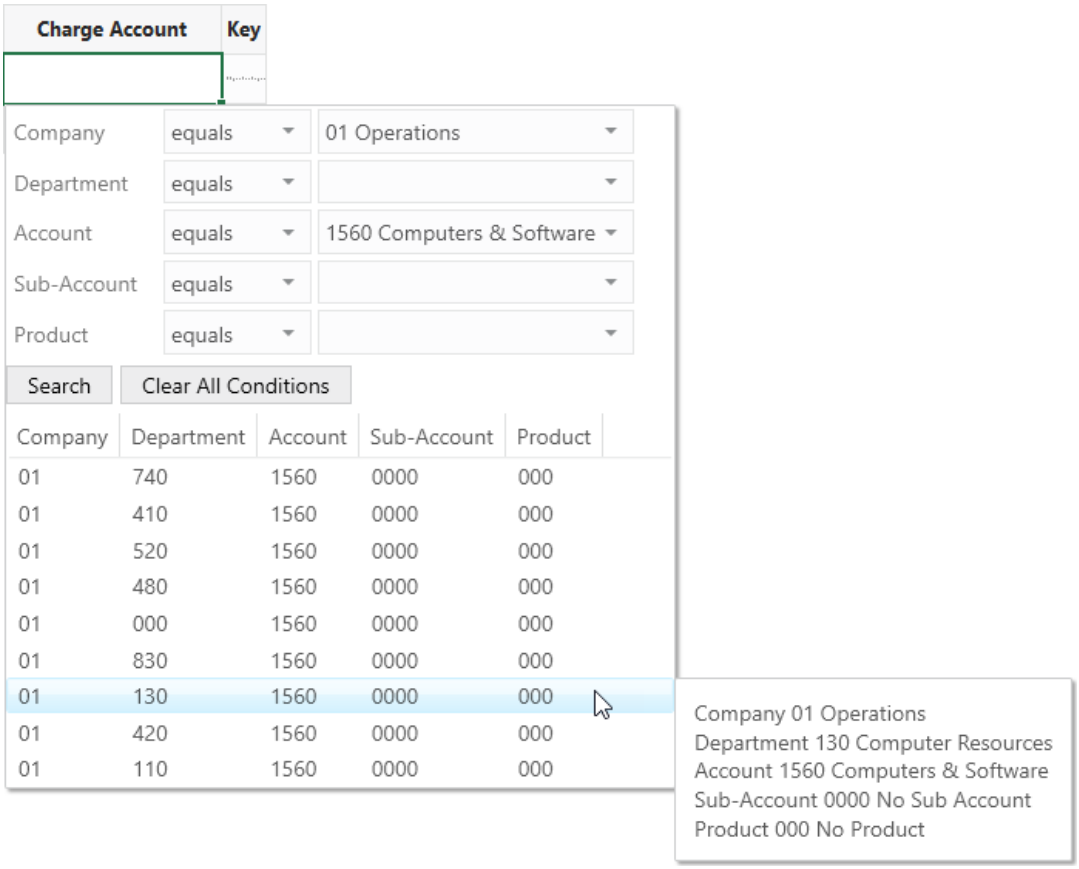
1. Select a query operator from the list beside the segment name. For example, select "equals" beside **Company** to return charge account numbers that match the company code selected from the value list or "not equals" to return account numbers with other company codes.
   The operator list also includes "starts with", "contains", and "ends with".
2. Select a value from the value drop-down list. The list of values shows two display fields, Value and Description, to help you choose the right value.

> **Tip**
>
> To filter the drop-down list, enter a value or description and click the search icon on the right.



> **Note**
>
> If required, use the **Clear** button next to each segment to clear its list selection.

3. Once you've selected a value to filter on, click **Search**.



Values that match all the filter values appear in the search results area of the picker. When you select a matching charge account number, the picker displays a tool tip displaying the segment name, code, and description for each part of the value.

4. Select the required value, then click **OK**.

Create New Rows to Upload to the Web Application

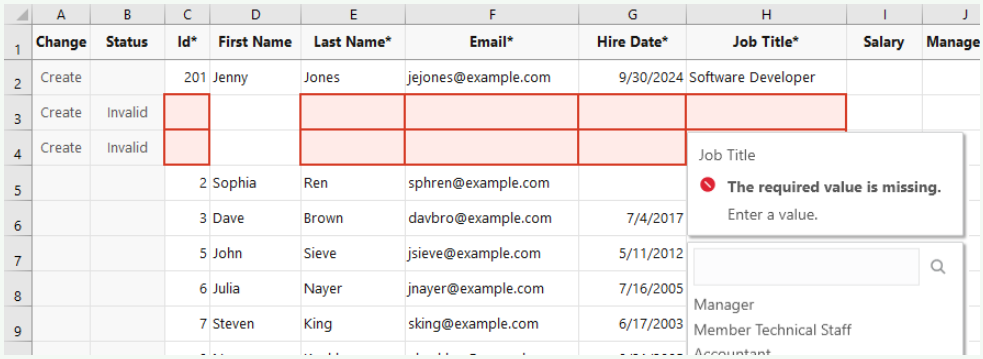
Create new rows in the table using the **Insert Rows** option in the add-in's **Table Row Changes** menu or by using Excel options to insert a full row.

You can create new rows in an empty table or after downloading data to your workbook:

- To create new rows in a table with downloaded data, click **Table Row Changes** and select **Insert Rows**, or right-click and choose **Insert** from the Excel context menu (you can choose any Excel option to insert a row). You can create new rows either at the end of the data table or in the middle.

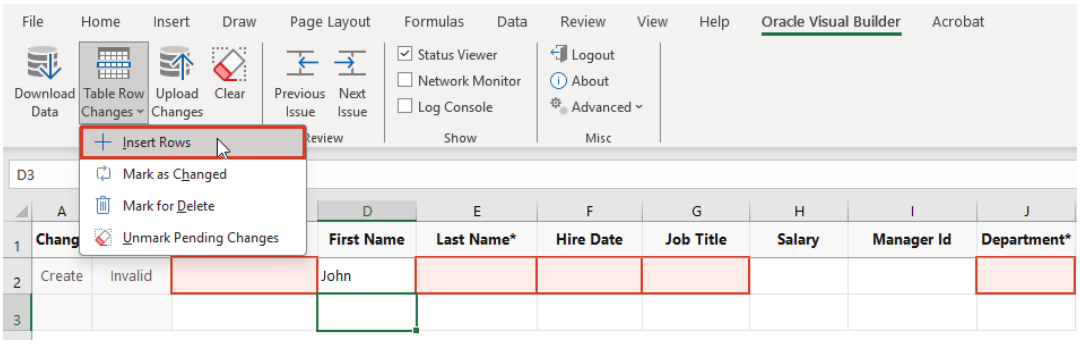
Tip

To insert multiple rows, select cells from multiple rows, then select **Table Row Changes** > **Insert Rows**. The add-in will create multiple pending Create rows for you to fill out as needed, as shown here:



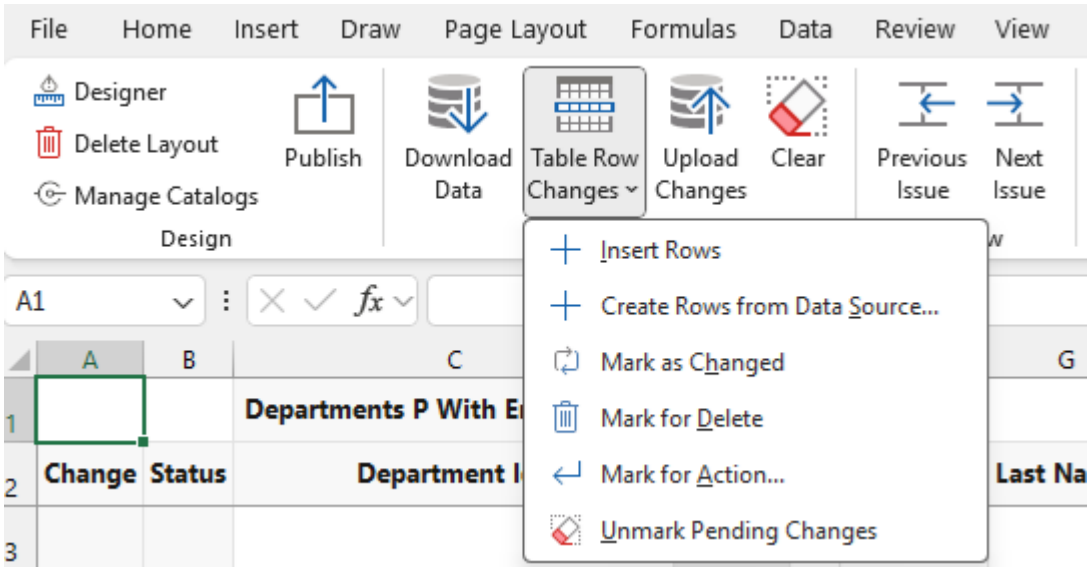
- To create several new rows without downloading data, if create is enabled for the Table, add values in the empty row that appears below the column headers. This empty row is known as the placeholder row:

Once you enter data in the placeholder row (for example, in the cell for First Name), the add-in automatically recognizes the row as a pending Create row. To insert more rows, select a cell in the first row after the table and select **Table Row Changes** > **Insert Rows**.



- To create new rows based on data from a different data source than the one used for Download, click **Table Row Changes** and select **Create Rows from Data Source**.

  You may be prompted to log in. Provide search criteria, if requested. New rows are added to the end of the table with data. Review the rows and make edits as needed.



> **Note**
>
> - This advanced option only appears in your integrated workbook if the developer of the workbook enabled the **Create Rows from Data Source** option in the source workbook.
> - If the target table is a dependent table, you may need to provide values in ancestor columns.

Click **Upload Changes** to upload the newly-created rows.

Any time a new row is created, it is validated for data entry. An `Invalid` message appears in the Status column if the row contains a cell where you are required to enter a value and have yet to do so. A red border also appears around the cell where a value is required or invalid. See Understanding Data Validation.

> **Warning**
>
> Never insert partial rows into a table layout as this can lead to data corruption. Also, never use the Excel Insert option to shift cells down or to the right.

Special Table Columns

Each table in an integrated workbook includes three special columns managed by Oracle Visual Builder Add-in for Excel: Change, Status, and Key.

If the table is read-only (Download only), the Change and Status columns do not appear.

> **Caution**
>
> These columns are required. Do not edit the cells in these columns or delete the columns from the worksheet.

The Change Column

The Change column displays the pending action for a row based on the changes that you make. If you edit an existing row that has been downloaded, the Change cell displays "Update". If you inserted a new row, it displays "Create". And so on.

This column helps you keep track of what operation will occur for each row when you perform Upload. If the Change cell is empty for a given row, that row is not included in the next upload.

When a new or changed row is successfully uploaded, the Change column cell is cleared. If the upload failed, the operation is still pending and the Change column cell is not cleared.

The Status Column

The Status column shows the result of the upload for a row. You may see values like "Create Succeeded" or "Update Failed", and so on. In the case of an update failure, select the row to see more details in the Status Viewer.

The Status column cells are cleared on download.

> **Tip**
>
> Use Excel's commands to filter the table by values in this column to focus on the rows that need the most attention.

The Key Column

The Key column is the last column in the table and is used to store internal information that allows the add-in to work as expected. This information is not intended to be viewed by users and is deliberately unreadable.

> **Note**
>
> If you sort the table using Excel's Sort command, make sure to include the Key column in the sorted range. Otherwise, you may inadvertently corrupt your data.

Understanding Data Validation

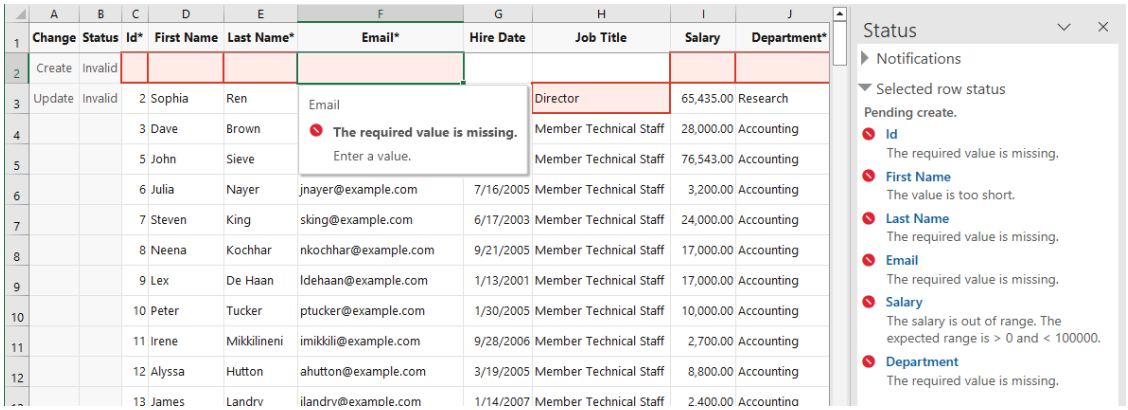
When you add a new row to a layout or enter a value in a cell, Oracle Visual Builder Add-in for Excel validates the cell's content based on the configuration of the workbook.

The add-in determines whether:

- A cell's value is consistent with the expected data type.
  For example, you can't enter a word, say, `book`, in a field that expects a number like `2,000`.
- A required cell is missing a value.

Required fields are designated by the workbook developer and must include a value for your changes to be uploaded successfully.

- The value in a cell associated with a list of values is valid for that list.
- The value complies with field validation rules.
  Your workbook may also include field validation rules that restrict the value you can enter into a cell. For example, you may have an Employee workbook where an employee's salary must be more than 0 and less than $100,000. As with other data validation errors, a cell with an invalid value (in this case, a null value) is marked with a red border.



To review data validation errors for a row, select the row and review the **Selected row status** area in the Status Viewer. Use the arrow to expand the area, if necessary.

For each selected row, the viewer lists the field or fields that caused a data validation error. The field title includes a hyperlink that you can use to jump to the cell with the error.

You can also select a cell with a red border to view a popup that provides a description of the error.

In this example, fields that require values display a message: "The required value is missing". For the First Name field, the value is shorter than the minimum length configured for the field. As for the Salary field, the value provided (null) is outside the range set by a field validation rule.

You can also use the **Previous Issue** and **Next Issue** icons in the Oracle Visual Builder tab of the Excel ribbon to navigate from one issue to the next. See Review Data Validation and Upload Issues.

Validation occurs when you complete data entry in a cell; in other words, as soon as you enter or edit a value in a cell and move on to another cell or area. Validation also occurs at other key points:

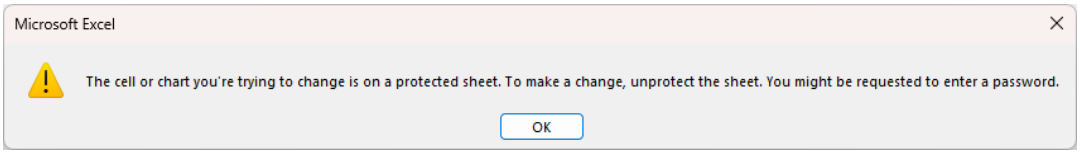
- When a new row is added to the data table
- When the **Create Form Row** option is selected from the **Form Changes** menu
- At the beginning of an upload.

Understanding Read-Only Behavior

If a particular field is considered read-only, the add-in behaves as follows:

- It applies a "read-only" style to the corresponding cells to indicate that the value cannot be changed

- The cell's value is excluded from any subsequent upload to the web application
- The data entered by the user is not validated
- If the workbook is published with worksheet protection enabled, any attempt to edit the cell results in a warning from Excel:



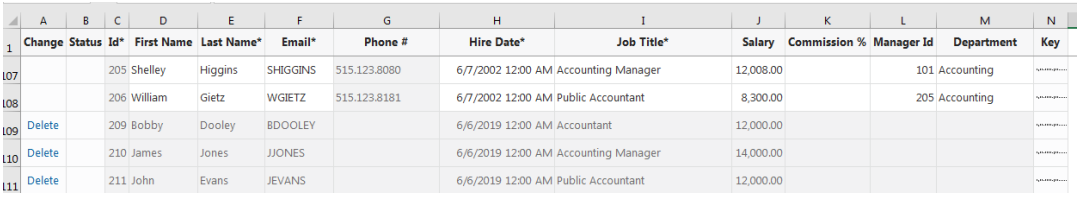
Delete Data from the Web Application

Mark rows for deletion from the web application using the **Mark for Delete** option in the **Table Row Changes** menu.

> **⚠ Caution**
>
> Do not attempt to delete rows from your worksheet using Excel commands such as **Delete Cells** or **Delete Sheet Rows**. Doing so will not remove the row from the web application.

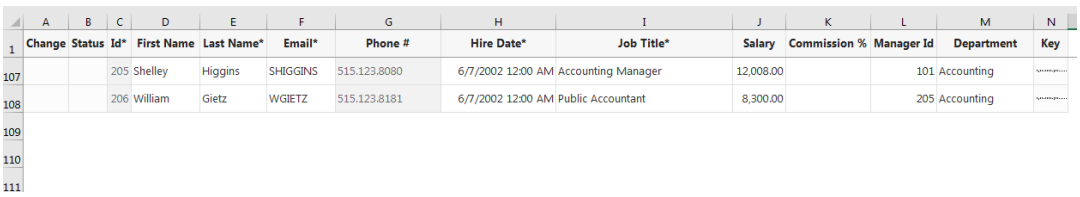
To mark a row for deletion from the service:

1. Select a cell in the table row that you want to delete from the web application. If you want to select a range of table rows to mark for deletion, hold down your keyboard's Shift key and select the first and last row in the range of table rows that you want to delete.
2. Click the **Table Row Changes** menu, then **Mark for Delete**.
   A `Delete` message appears in the Change column and the add-in changes the style applied to the data in the table rows, as shown in the following image where three rows in the table are marked for deletion:



	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Change	Status	Id*	First Name	Last Name*	Email*	Phone #	Hire Date*	Job Title*	Salary	Commission %	Manager Id	Department	Key
107			205	Shelley	Higgins	SHIGGINS	515.123.8080	6/7/2002 12:00 AM	Accounting Manager	12,008.00		101	Accounting	
108			206	William	Gietz	WGIETZ	515.123.8181	6/7/2002 12:00 AM	Public Accountant	8,300.00		205	Accounting	
109	Delete		209	Bobby	Dooley	BDOOLEY		6/6/2019 12:00 AM	Accountant	12,000.00				
110	Delete		210	James	Jones	JJONES		6/6/2019 12:00 AM	Accounting Manager	14,000.00				
111	Delete		211	John	Evans	JEVANS		6/6/2019 12:00 AM	Public Accountant	12,000.00				

3. Click **Upload Changes**.
4. When prompted to confirm pending deletions, click **Yes**.
   The add-in sends delete requests for each row that you marked for deletion. For each successful deletion, the corresponding Excel row is removed. If the deletion fails, the Excel row remains with an error message.



	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Change	Status	Id*	First Name	Last Name*	Email*	Phone #	Hire Date*	Job Title*	Salary	Commission %	Manager Id	Department	Key
107			205	Shelley	Higgins	SHIGGINS	515.123.8080	6/7/2002 12:00 AM	Accounting Manager	12,008.00		101	Accounting	
108			206	William	Gietz	WGIETZ	515.123.8181	6/7/2002 12:00 AM	Public Accountant	8,300.00		205	Accounting	
109														
110														
111														

> **Tip**
>
> If you change your mind about deleting one or more rows that you have marked for deletion, select the rows and select **Unmark Pending Changes** from the **Table Row Changes** menu. Use **Unmark Pending Changes** before you upload changes from the Excel workbook; the option does not work after the changes are uploaded.

Manage Attachments

If your integrated workbook has an attachments table layout, you can upload and download attachments as well as perform standard create, edit, and delete functions.

Attachments are often associated with a parent business object. For example, an expense report may have one or more associated attachments representing receipts. For this reason, attachment table layouts are often a child layout in a hierarchy of layouts in a workbook. In our example, a form in a Form-over-Table may display the expense report header and the child table may list the associated attachments. Keep in mind that the attachment table could be located on a separate worksheet from its parent layout. See Manage Data in Form-over-Table Layouts and Manage Data for Multi-Level Business Objects.

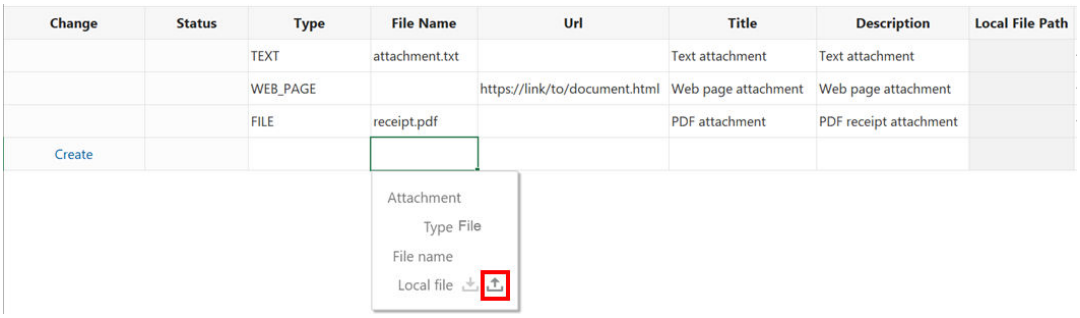
Oracle Visual Builder Add-in for Excel supports attachments of file, text, and web page types. Unknown attachment types are treated as file type attachments.

Upload Attachments

You can add URLs, as well as text and file type attachments, to attachment records and upload them to the web application.

To upload a new or revised file or text attachment:

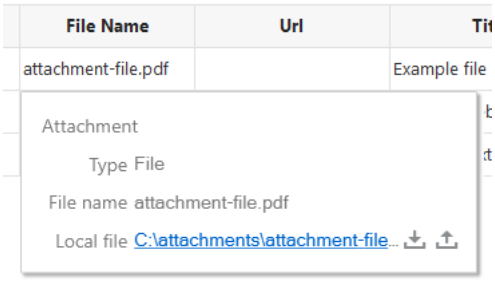
1. Select any field in a new or existing row to open the **Attachment** pop-up window.
2. From the pop-up window, click the **Upload** icon.



> **Note**
>
> The **Upload** icon is disabled when you select a field in a new row if Create is not enabled for the table layout. It is also disabled for an existing row if Update is not enabled.

3. From the **Choose a File to Attach** prompt, navigate to the location where the file is saved.
4. Select the file and click **Open**.

The local file path is displayed in the read-only **Local File Path** column. A link also appears in the pop-up. You can use this link to open the local file in the file's default program.

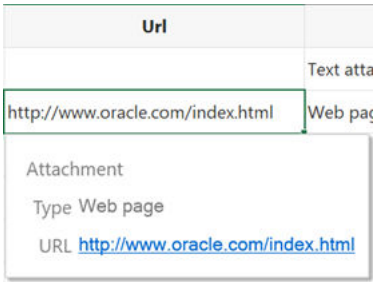


5. For new files, specify the attachment type in the **Type** field.
   The add-in recognizes `FILE`, `TEXT`, and `WEB_PAGE` as valid values for this column to represent file, text, and web page type attachments respectively. These values are case sensitive.

   The **Change** column for the row displays a `Create` or `Update` message. The attachment is now pending upload.
6. Click **Upload Changes** to upload the attachment.

To add or edit the URL for a web page:

1. Type the URL directly into the **Url** field for a new or existing row.
2. For new URLs, type `WEB_PAGE` in the **Type** field.
   The **Attachment** pop-up window is read-only in this case and provides a link for the current URL.



3. Click **Upload Changes** to upload the URL.

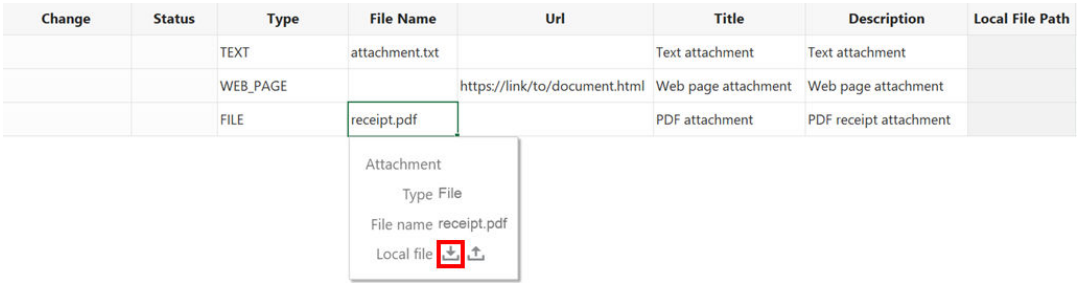
During upload:

- The attachment records are processed first without any attachment files. The upload of attachment records occurs just like any other table upload.
- For each successful row that has a pending file upload, the add-in attempts to upload the file. If the file can't be found or read at the location in the **Local File Path** column, an error is reported for that row. If the upload of the given attachment record fails, the corresponding file upload is skipped.
- If the attachment record is marked for delete, any pending file change is ignored at upload time.
- If you don't upload changes from the layout, the new attachments are never sent to the service.

Download Attachments

To download an attachment:

1. Select any field in a row with a file or text attachment to open the **Attachment** pop-up window.
2. From the pop-up window, click the **Download** icon to download a local copy of the attachment.



3. In the **Save Attachment** dialog, navigate to where you want to save the file and click **Save**.
   After successful download, a link is provided in the attachment dialog to open the file in the default program.

Limitations

- The only supported attachment types are file, text, and web page. Unknown attachment types are treated as file type attachments. The values for the attachment type file to specify each type are "FILE", "TEXT", and "WEB_PAGE" respectively. These values are case sensitive.
- The UI may appear to freeze during download for large attachment files.
- Manually editing the file path in the Local File Path column is not supported. Use the Attachment pop-up to specify the local file location.
- For some services, create may fail for text-based attachments. Ensuring all required attachment fields, such as the `Title`, are present and resubmitting the record generally resolves this issue.

Upload Changes to the Web Application

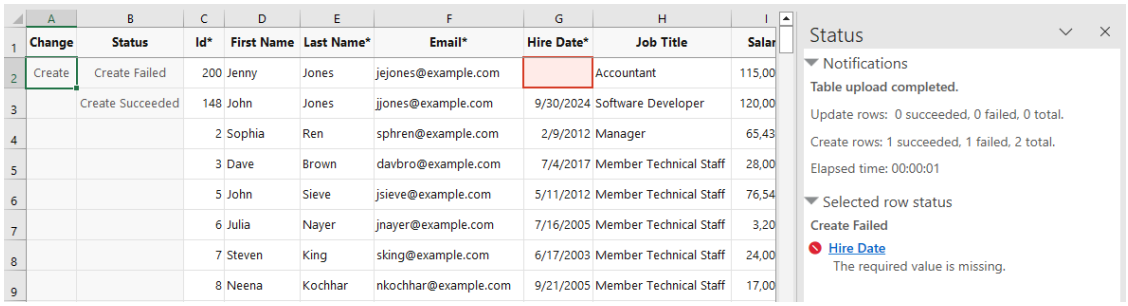
Once you make all the changes that you want to make, you are almost ready to upload all your changes to the web application.

Review the Change column in your layout. You'll see a message for each row marked for change: `Create` for new rows, `Update` for changed rows, and `Delete` for rows marked for deletion. If you have marked a row for an action, the Change cell for the row will indicate the action to be performed (such as `Approve` for an expense report) on the next upload.

> **Tip**
>
> If you change your mind about a pending change, select the row, then select **Unmark Pending Changes** from the **Table Row Changes** menu. Oracle Visual Builder Add-in for Excel won't include the row when it sends other rows back to the service for update, creation, or deletion.

When you are ready, click the **Upload Changes** button from the Oracle Visual Builder Add-in for Excel tab. The add-in performs all the requested operations, as indicated in the Change column. Rows marked for deletion are removed from the Excel worksheet.

Review the Status column in the layout to see which rows succeeded and failed. You might see status messages such as `Create Succeeded`, `Update Failed`, `Delete Failed`, and `Skipped`. `Skipped` means that a row marked for update had no changes and was not included in the upload. In this example, the Status column displays a `Create Failed` message in the cell of a row that the add-in failed to create.



	A	B	C	D	E	F	G	H	I
1	Change	Status	Id*	First Name	Last Name*	Email*	Hire Date*	Job Title	Salar
2	Create	Create Failed	200	Jenny	Jones	jejones@example.com		Accountant	115,00
3		Create Succeeded	148	John	Jones	jjones@example.com	9/30/2024	Software Developer	120,00
4			2	Sophia	Ren	sphren@example.com	2/9/2012	Manager	65,43
5			3	Dave	Brown	davbro@example.com	7/4/2017	Member Technical Staff	28,00
6			5	John	Sieve	jsieve@example.com	5/11/2012	Member Technical Staff	76,54
7			6	Julia	Nayer	jnayer@example.com	7/16/2005	Member Technical Staff	3,20
8			7	Steven	King	sking@example.com	6/17/2003	Member Technical Staff	24,00
9			8	Neena	Kochhar	nkochhar@example.com	9/21/2005	Member Technical Staff	17,00

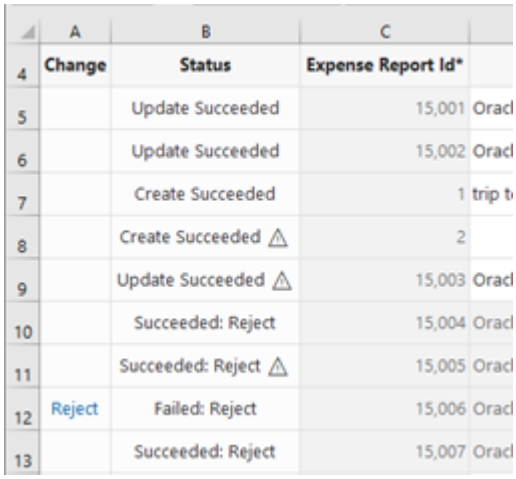
Review the Status Viewer for information about the upload operation. The **Selected row status** area displays details for each failed update or create operation. For each failed row, the viewer lists the field or fields that caused the failure. When possible, the add-in includes a hyperlink on the field title to the row cell in the layout. Here, a required value for Hire Date was not entered before the upload attempt.

To troubleshoot errors, review the Status Viewer error messages for each table and descendant table in your workbook. You can also use the **Previous Issue** and **Next Issue** buttons in the Oracle Visual Builder tab to look at issues in your workbook's tables. See Review Data Validation and Upload Issues.

Once you've fixed the errors in the pending changes, you can retry the upload operation. In this example, you'll only need to enter a hire date for the failed row before retrying the upload.

> **Note**
>
> You may have to fix and retry the upload more than once before it succeeds. The REST service may not report all errors that occur during a single upload operation.

Some web applications may issue warning messages for successfully uploaded rows. The message in the Status column contains an indication that there were one or more warnings for that row. Select a row with a warning icon to display details of the warning in the Status Viewer.

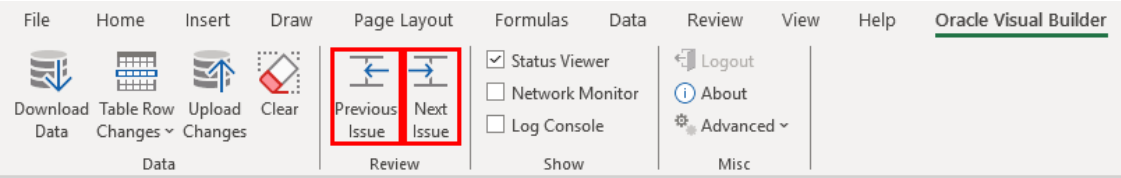


	A	B	C	
4	**Change**	**Status**	**Expense Report Id***	
5		Update Succeeded	15,001	Oracl
6		Update Succeeded	15,002	Oracl
7		Create Succeeded	1	trip t
8		Create Succeeded ⚠	2	
9		Update Succeeded ⚠	15,003	Oracl
10		Succeeded: Reject	15,004	Oracl
11		Succeeded: Reject ⚠	15,005	Oracl
12	Reject	Failed: Reject	15,006	Oracl
13		Succeeded: Reject	15,007	Oracl

> **Note**
>
> Following a successful upload, you may see a message like this: "This row may not contain the latest information from the service. Download to refresh the information for this row." If you see this message, click **Download Data** to refresh your workbook with the latest data from the web application.

Review Data Validation and Upload Issues

If you have a large number of data validation or upload issues, you can use the **Previous Issue** and **Next Issue** buttons in the Oracle Visual Builder ribbon to move backwards or forwards through the layouts to highlight issues.



When you click the **Next Issue** button, the add-in activates the next cell with an issue, moving left to right in a row, top to bottom in the table, and front to back in the workbook. If the issue does not have a specific cell associated with it, the add-in activates the Status cell of the row.

The add-in only scans issues in tables in your workbook. Issues in the form part of a Form-over-Table layout are not included.

When you reach the end of your workbook, the scanning wraps around and continues with the first layout. If no issues are found, a "No issues found" message is displayed.

The **Previous Issue** command works like the **Next Issue** command but in the other direction.

> **Note**
>
> The add-in doesn't navigate to issues in hidden table rows and columns. To ensure that you see all data validation and upload issues, clear any filter criteria on your the tables and unhide any hidden columns.

Clear Cache for a List of Values

Some fields may have associated choice lists, called **lists of values**. The choices for each list of values are stored locally (cached) in the workbook.

In some cases, the cached choices for a list of values may become stale or out of date. To start fresh with the latest values, select **Clear List of Values Cache** from the **Advanced** menu.

Data Consistency

The add-in helps prevent multiple users from overwriting each other's changes.

Consider this scenario:

1. Person A downloads information from a business object into a table in their integrated workbook.
2. Person B downloads the same information into a table in their integrated workbook, edits it, and uploads changes.
3. Person A then edits the same information (downloaded in Step 1) and uploads the changes.
4. The add-in provides the service with the necessary information to prevent Person A's changes from overwriting those changes made by Person B. Instead, when the server detects such a change, its response allows the add-in to display an error message similar to the following for any such rows in the table:

   ```
   This row has been modified by another user. Please download before editing.
   ```

   If you see this message, you'll have to discard your changes by downloading the latest data and then redoing your changes as needed.

> **Note**
>
> Some services do not support this conflict detection functionality. If the service does not, then Person A's changes will replace Person B's changes with no warning. Contact the service owner for more information.

4

Manage Data in Form-over-Table Layouts

In addition to Table layouts, an Excel workbook can use a Form-over-Table layout, when a parent-child relationship exists in the business objects used by your web application. In this case, you can manage the parent object's data as part of a form and the child object's data in a table, both of which are available in a single worksheet.

View and Edit Data in a Form-over-Table Layout

Viewing and editing data in a Form-over-Table layout is similar in many ways to viewing and editing data in a Table layout.

For example, you use the **Download Data** button to download data from the Form-over-Table layout's business objects. Much like Table layouts, you may be prompted to do a search at the beginning of a download. Unlike a Table layout, however, the Form-over-Table displays the first row found from the search, plus all the children of that first parent row.

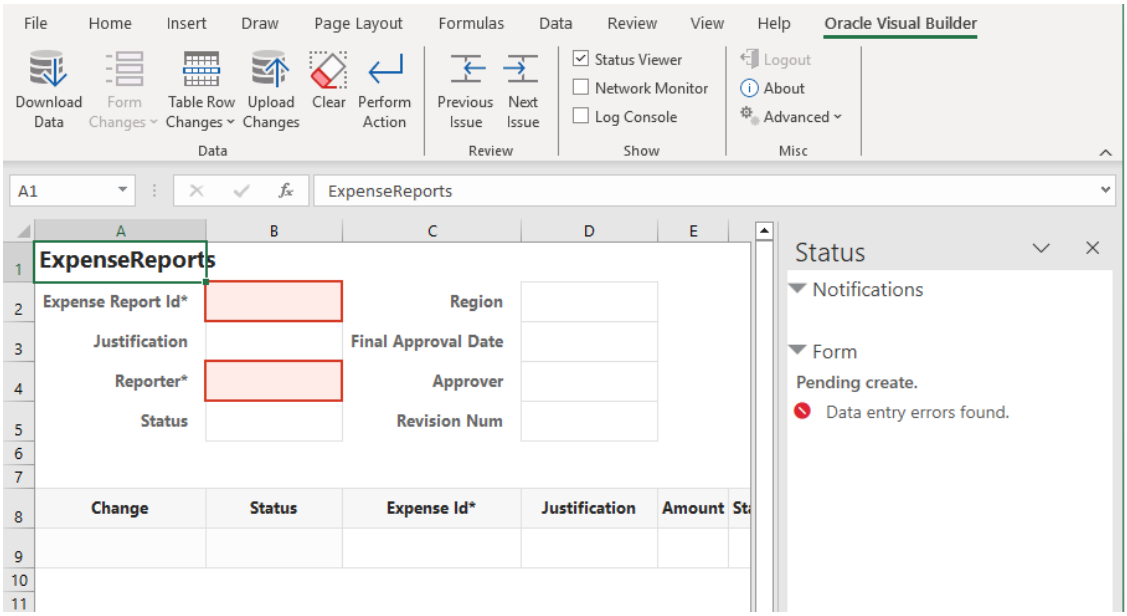
In some cases, you may be able to update the form fields in a Form-over-Table. The add-in performs data entry validation when you create a form row or update a field. Ensure that you fix any data entry errors before you attempt to upload your changes.

For a form field configured to use a list of values, the behavior is the same as described for the Table layout. That is, a search-and-select window appears when you select the form field. Read-only form fields cannot be edited (see Understanding Read-Only Behavior).

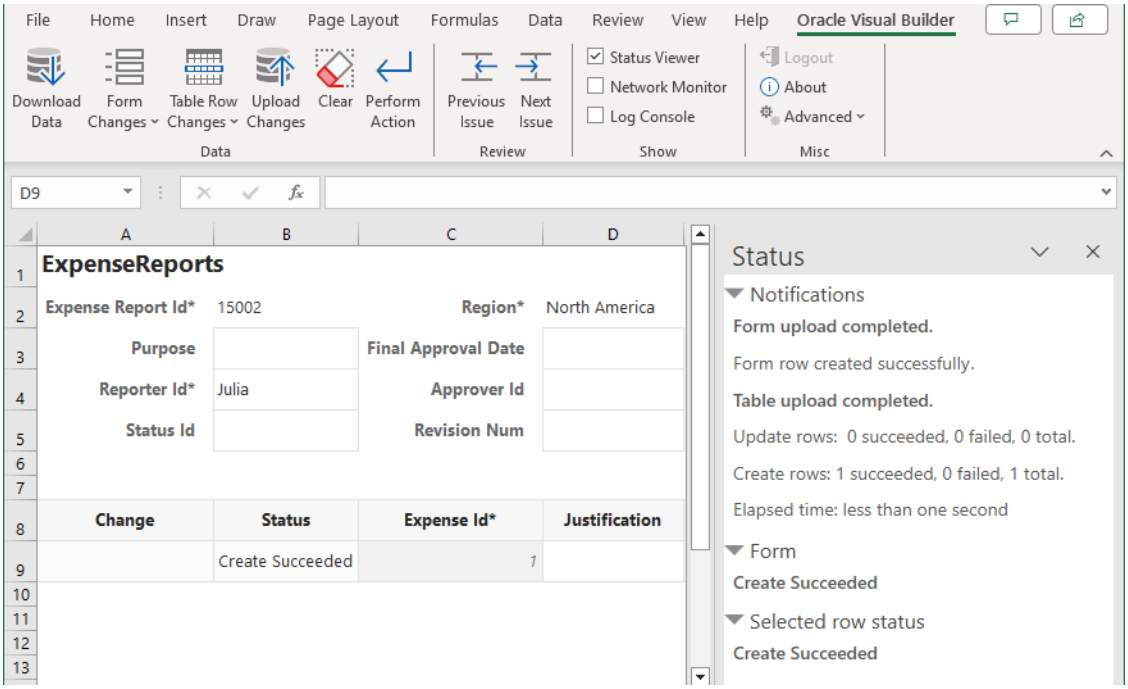
When you are ready to upload the changes you made, click **Upload Changes**. Once the upload is complete, review the notifications in the Status Viewer to see if any operations failed. For more information about error messages and troubleshooting, see Upload Changes to the Web Application.

Create a Parent Row in a Form-over-Table Layout

If create is enabled for the form, you can select **Create Form Row** in the **Form Changes** menu to place the Form-over-Table layout in create mode. When you first click **Create Form Row**, all the form fields are blank and the child table has no rows, as shown here:



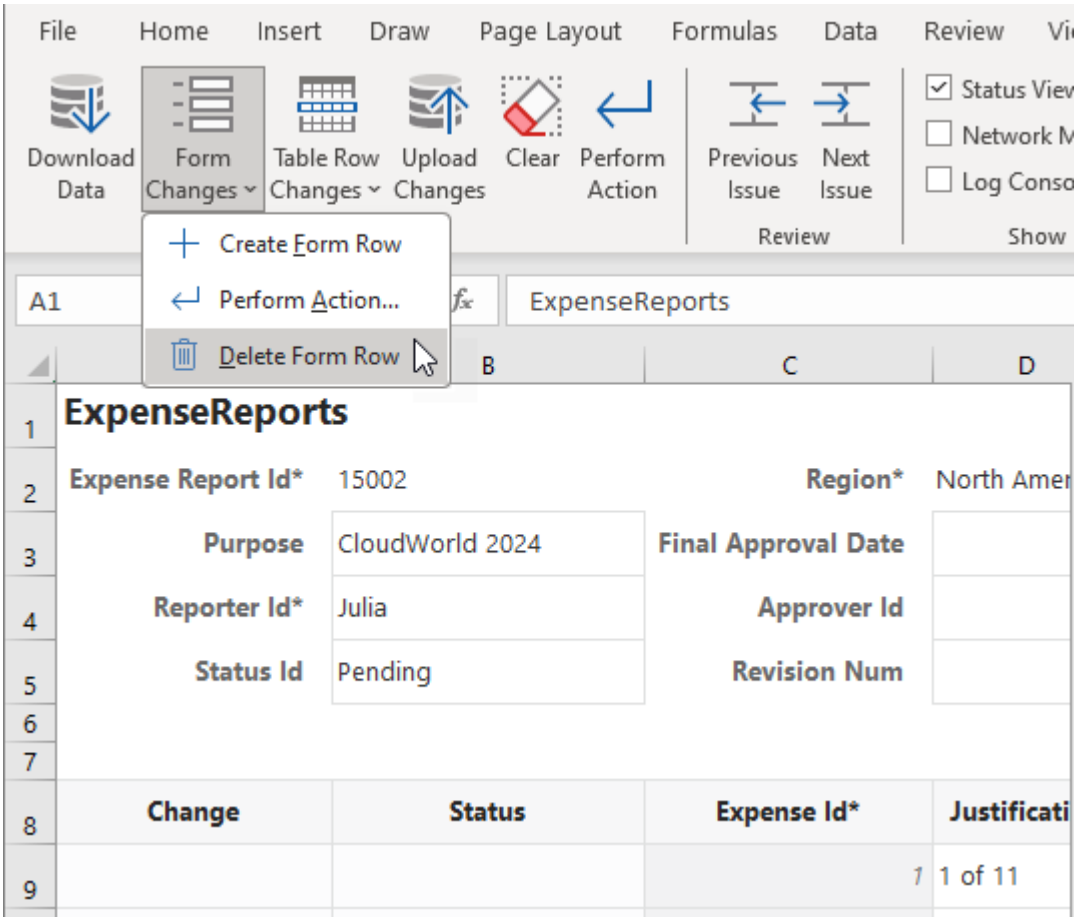
You can then enter form field values, even create new child table rows. All changes are marked as a pending create, until you click **Upload Changes**. The add-in validates the data before it attempts to upload updates; you must fix any data entry failures before the changes can be uploaded. If the upload of the form fails (applies to both Create and Update changes), the upload of the child table is skipped.



Delete a Parent Row in a Form-over-Table Layout

If delete is enabled for the form, you can use the **Delete Form Row** option in the **Form Changes** menu to delete the parent row in a Form-over-Table layout.

1. Click **Download Data** to download data from the layout's business objects.
2. If search is configured, search for the desired record.
3. In the **Form Changes** menu, select **Delete Form Row**.



You can only delete an existing form row (not a pending `Create` row).

4. When prompted to confirm the form row delete, click **Yes**.
   Once you confirm, the form row is immediately deleted (unlike a Mark for Delete action in a table that takes effect only during an upload).
5. Click **OK**.
   After the form row is deleted, your layout is cleared of data; the Status Viewer also indicates that no form row exists.

5

Perform Actions in a Layout

In addition to data entry operations such as edit, create, and delete described previously, some web applications define special operations, "custom actions", on business objects. These actions can be defined on individual rows from a business object ("item-level") or on an entire business object ("collection-level").

Let's take an example of a expense reports layout in a workbook. The web application may have a number of actions defined for this business object. Some of these actions are performed on individual expense reports, such as "Approve" and "Reject".

Other actions are performed on the entire business object. For example, you may have two actions on your expense reports layout, "Send to Auditor" and "Escalate Overdue Reports". The first one identifies all expense reports that are not in compliance and forwards them to an auditor. The second one prompts you to provide the number of days overdue and then sends an email to the assigned approver for each matching expense report.

Your workbook may also include an Action Table layout that let's you create hundreds or even thousands of pending action request rows before sending the action requests with a single click.

> **Note**
>
> These actions are just examples. The web application integrated with your workbook may have different actions available or none at all.

Perform an Action on a Row

To perform an action on a single row, select the row in either the form or table of a layout, then use the appropriate command from the Form Changes (**Perform Action**) or Table Row Changes (**Mark for Action**) menu.

For tables, you can also update a cell in the action columns as you would any other field's cell value. In the following Table layout, rows marked as `Reject` are those where the user has updated cell values corresponding to the Reason (Reject) and Notes (Reject) action columns.

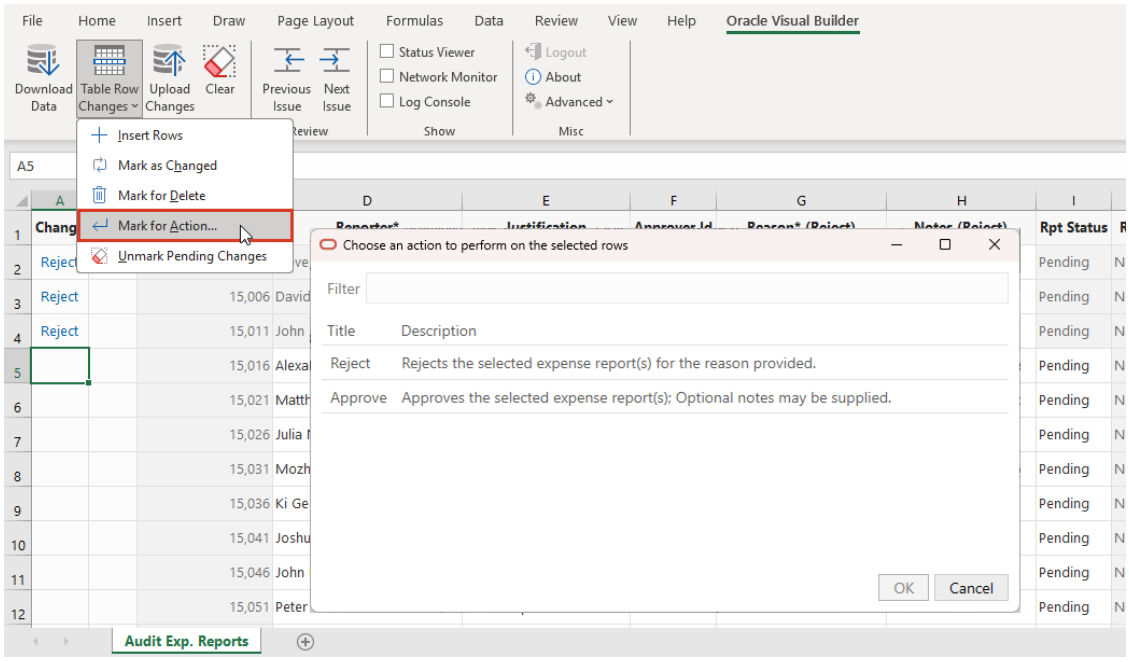
	A	B	C	D	E	F	G	H	I	J
1							Reject		Approve	
2	Change	Status	Expense Report Id*	Reporter*	Justification	Approver	Rejection Reason Code	Notes	Notes	Status
3	Reject		15601	Steven King	Conference		Other: contact approver	Details with manager		Pending
4	Reject		15602	David Austin	Conference		Missing receipt			Pending
5	Reject		15603	John Chen	Site visit		Exceeds budget guidelines			Pending
6			15604	Alexander Khoo	Oracle Open World					Pending
7			15605	Matthew Weiss	Oracle Open World					Pending

When you add or update a value in an action cell first, the row is marked for that action in the Change column. Other cells in that row that don't involve actions are grayed out and treated as read-only. But if you add or update a value first in a cell that doesn't involve an action, the row

is marked as an `Update` in the Change column and the action cells in that row are grayed out (as shown in the following image). In other words, the first change you make to a row determines what kind of pending change is applied to that row. See also Understanding Read-Only Behavior.

	A	B	C	D	E	F	G	H	I	J
1							Reject		Approve	
2	Change	Status	Expense Report Id*	Reporter*	Justification	Approver	Rejection Reason Code	Notes	Notes	Status
3	Reject		15601	Steven King	Conference		Other: contact approver	Details with manager		Pending
4	Reject		15602	David Austin	Conference		Missing receipt			Pending
5	Reject		15603	John Chen	Site visit		Exceeds budget guidelines			Pending
6	Update		15604	Alexander Khoo	Site visit					Pending
7			15605	Matthew Weiss	Oracle Open World					Pending

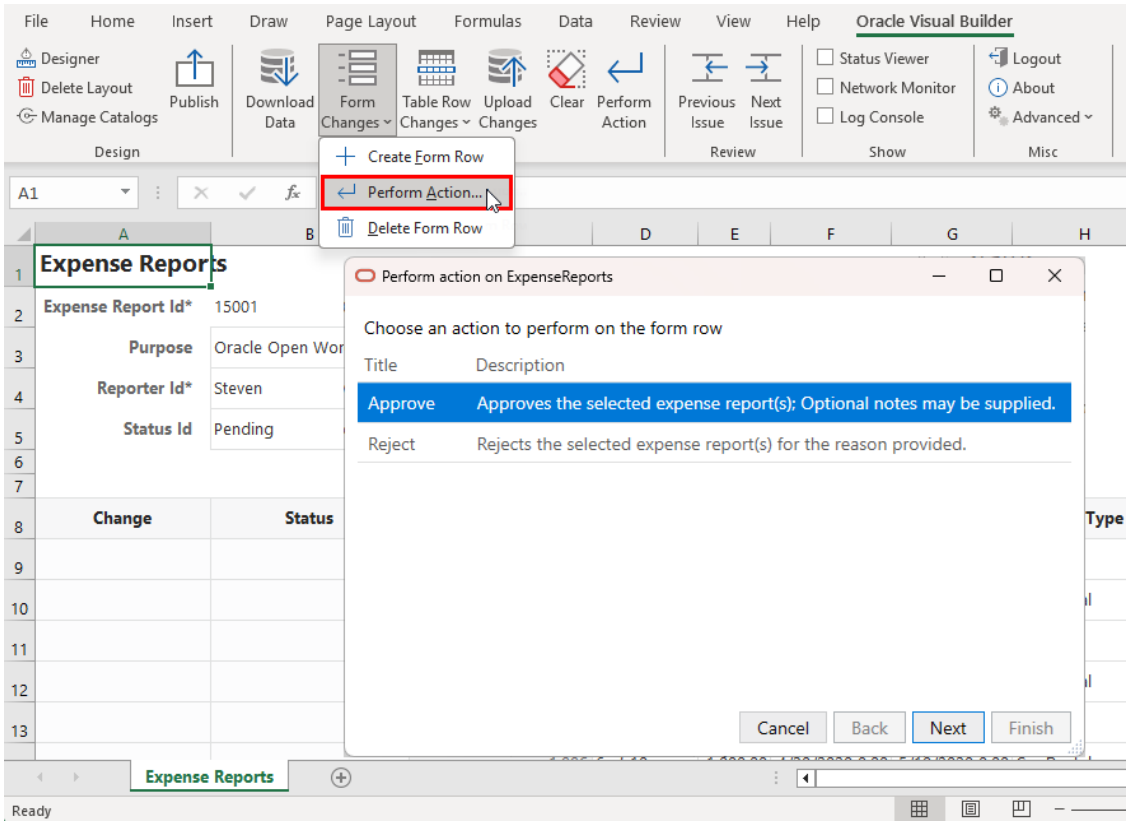
You can also mark rows for an action by selecting **Mark for Action** from the **Table Row Changes** menu. With this option, if only one action is defined, you'll be prompted to confirm. If more than one is defined, you'll be prompted to select from a list of available actions:



When a row is marked for an action, the action's fields also receive the same validation, as described in Understanding Data Validation.

The actions for these marked rows are performed during the next upload.

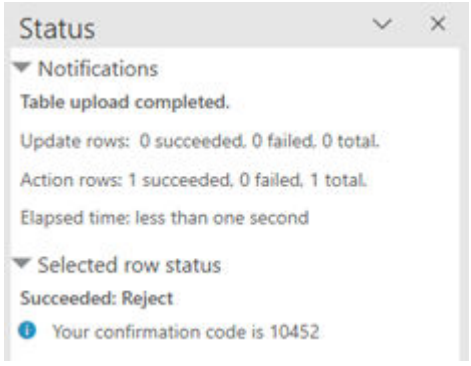
If you're working with a Form-over-Table layout, select **Perform Action** in the Form Changes menu, then follow the prompts in the wizard to perform an action on a Form row.



An action can be performed only on an existing form row (not on a pending `Create` row).

An action on a form is performed immediately, unlike one in a table (where rows are marked for actions and the actions are performed later during an upload). For best results, use **Upload Changes** to submit any changes in the table first, then **Perform Action** on the form row.

After uploading (for table rows) or performing an action (for the form), any result from the action returned by your web application is displayed in the Status Viewer. For example, after invoking the action "Reject" on an Expense Report table row, the Status Viewer shows a confirmation code as the result:



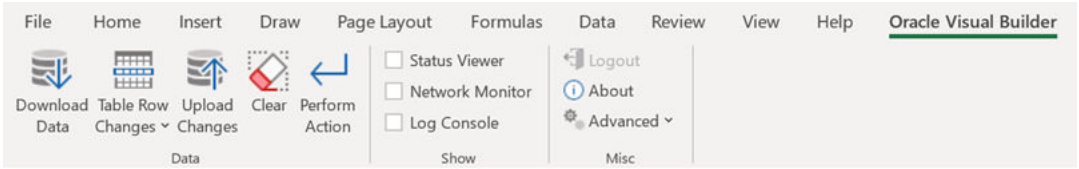
Also, form row data is not automatically refreshed after an action is performed, even if the action was successful. Click **Download Data** again to refresh data in the form row.

Perform an Action on a Business Object

Perform a business object action using the **Perform Action** button on the Oracle Visual Builder ribbon. This button launches a wizard that prompts you to select the action and provide values for any required parameters.

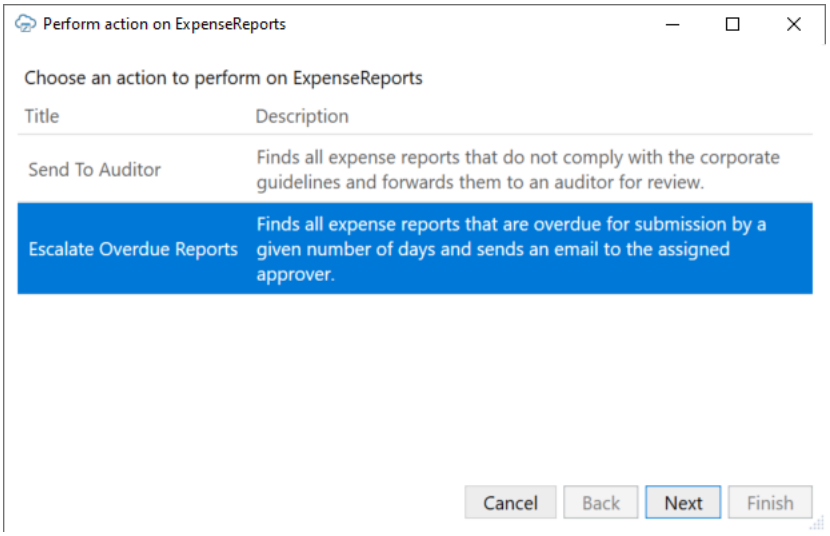
The action is performed at the scope of the entire business object. It may act on some, all, or none of the items in the business object. In particular, there may be no relationship between the items affected and those items (rows) displayed in the layout.

1. Open the layout for the business object with the defined action.
   If there are one or more business object actions defined, Oracle Visual Builder Add-in for Excel displays the **Perform Action** button on the Oracle Visual Builder ribbon.

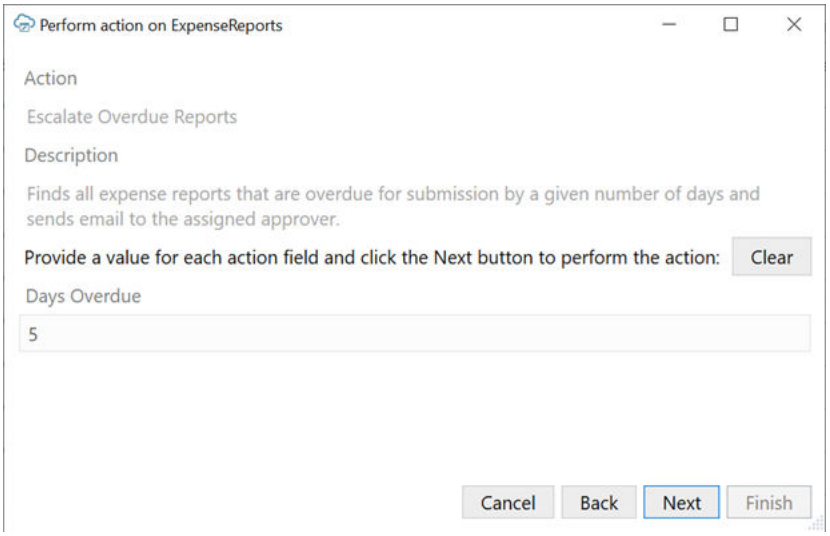


> **Note**
>
> If you do not see the **Perform Action** button, this means that the business object associated with the current layout does not have any defined actions.

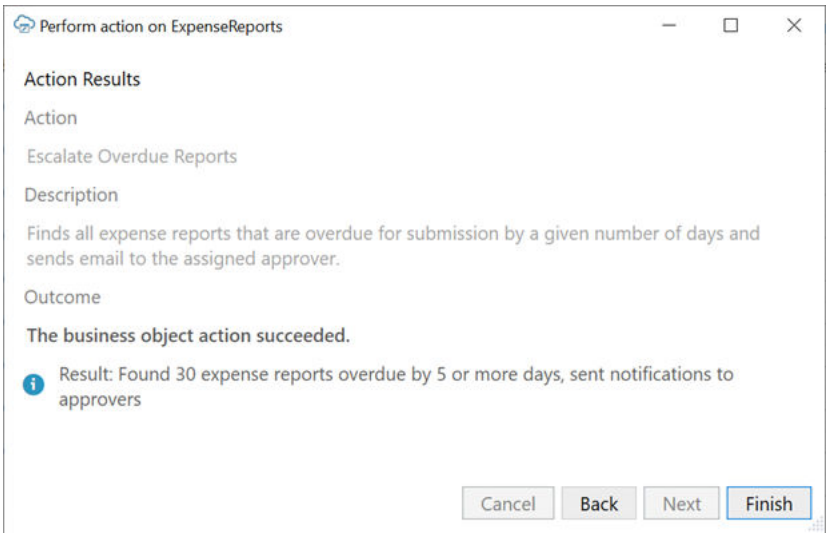
2. Click **Perform Action** to launch the Perform Action wizard.



3. Select the required action from the list, then click **Next**.



4. If required, provide values for each action field, then click **Next** to perform the action.



   The final screen of the wizard shows the results of the action.

5. Click **Finish** to close the wizard.

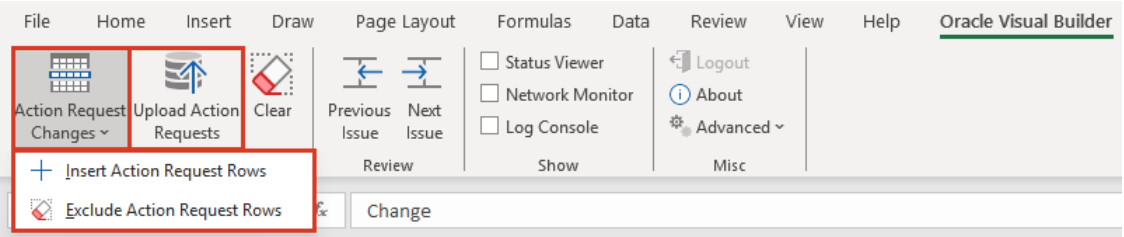
Perform Actions in an Action Table Layout

You can use an Action Table layout to create multiple pending action requests and send them with a single click.

To do this, create rows and enter payload field values into each one as you would for a Table layout. As with a Table layout, an Action Table layout can include validation rules and list of values, as well as data type and required field enforcement. Any issues you encounter are displayed in the Status Viewer. See Data Validation.

As you edit each row, it is converted into a pending action request and the Change column is set to the custom action title, such as `Apply Prepayments`. Once you have finished entering all required values, the row is set to `Pending action: <action title>` in the Status Viewer.

To help you create action request rows and upload them, the Oracle Visual Builder ribbon tab includes a couple of icons:



The **Action Request Changes** menu includes two commands:

- **Insert Action Request Rows**: Use this command to insert rows into the layout as you would in a Table layout with the **Table Row Changes > Insert Rows** command. See Create New Rows to Upload to the Web Application.
- **Exclude Action Request Rows**: Use this command to exclude a row from the upload. This command is handy if a rows fails during upload and you want to exclude it from subsequent uploads until you've fixed the issue.

When you are ready to upload your pending action requests, click **Upload Action Requests** to send all the pending rows to the web application. As with Table layouts, the result of each action request is shown in the Status cell in the corresponding table row. When this row is selected, detailed information is shown in the Status Viewer.

6

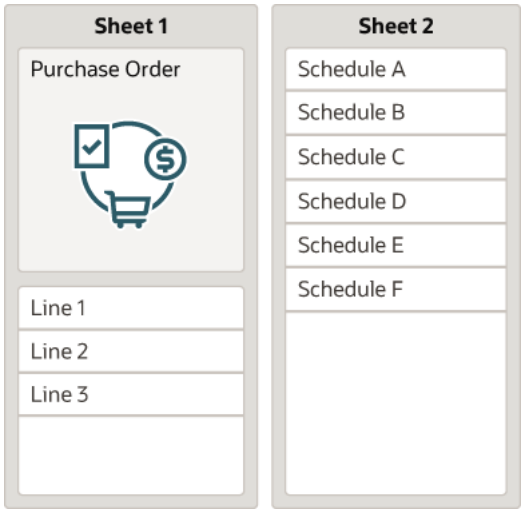
Manage Data for Multi-Level Business Objects

Sometimes business objects exist in a multi-level hierarchy. For example, a purchase order (PO) might contain a header and a set of lines. Each of these lines may contain one or more schedules and so on. For these hierarchies, Oracle Visual Builder Add-in for Excel supports operations across all "dependent" layouts.

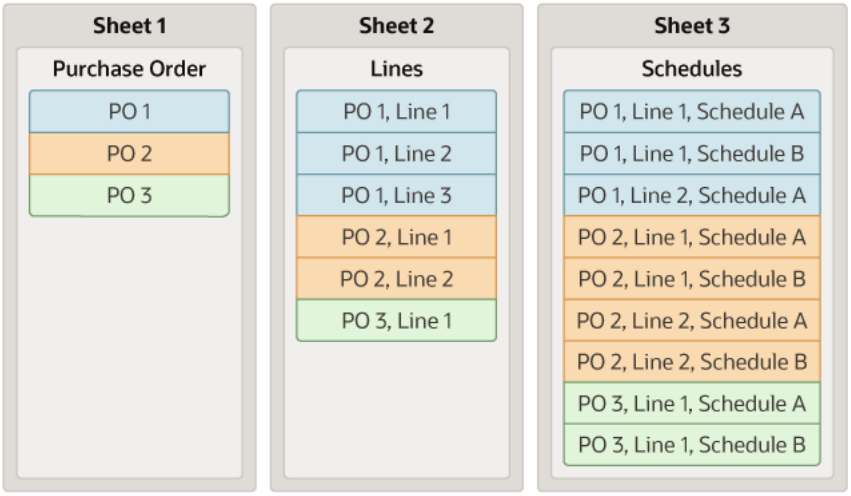
In this example, **purchaseOrders** is referred to as the "parent" business object, **lines** is the "child", and **schedules** is the "grandchild". A workbook based on this hierarchy might use a Form-over-Table layout or a Table layout as the top-level, or "primary", layout.

If the workbook uses a Form-over-Table as the primary layout, the form displays the parent business object and the table, the child business object. If the workbook uses a Table as the primary layout, the table displays the parent business object.

In this diagram, a Form-over-Table layout on Sheet 1 displays the details of a purchase order in the form and all associated lines for this purchase order in the table. An additional dependent Table layout on Sheet 2 displays all the schedules associated with the PO's lines.



If, instead, the workbook uses a Table layout as the primary layout, then each level in the hierarchy has its own Table layout on a separate worksheet. In this diagram, Sheet 1 includes a Table layout for the parent business object showing the details for three purchase orders. Sheet 2 and Sheet 3 includes dependent Table layouts for the child and grandchild business objects, respectively.



Each of these dependent layouts is linked to its direct parent layout. Check the Status Viewer for a given Table layout's parent.

When you click **Download Data**, **Upload Changes**, or **Clear** for a layout in a dependent hierarchy, the operation takes effect on all layouts in the hierarchy, starting with the primary layout, progressing to the next layout in the hierarchy, and continuing down until the last level in the hierarchy. When the operation is complete on all layouts in the hierarchy, the worksheet with the primary layout is made active again.

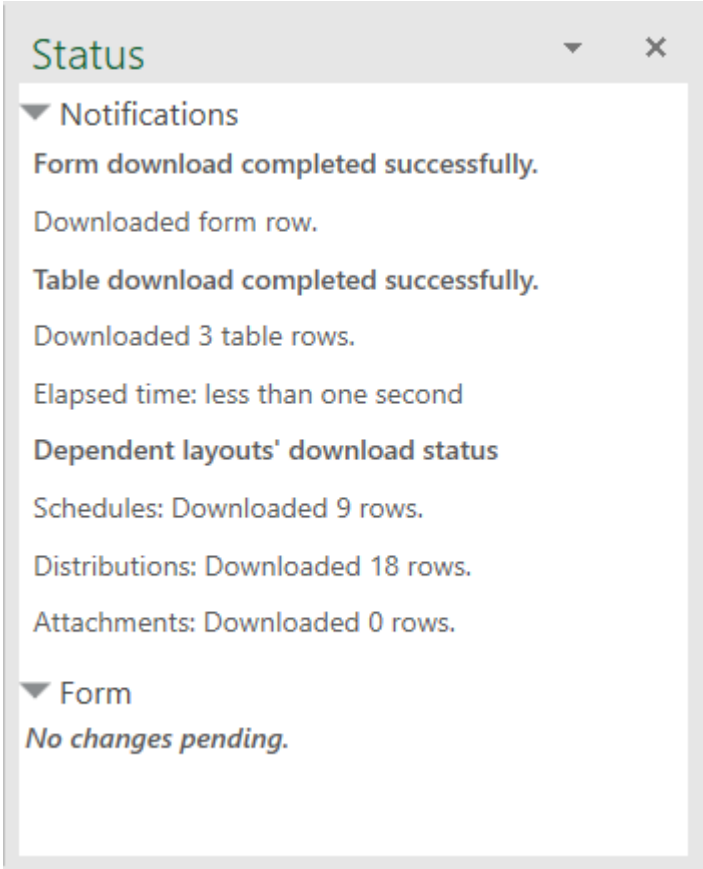
Download Data for a Set of Dependent Layouts

During a download operation, the add-in downloads matching items for each layout in the hierarchy, starting with the primary layout, progressing to the next layout in the hierarchy, and continuing down until the last level in the hierarchy.

Take the scenario where there are four layouts: a primary Form-over-Table layout for **purchaseOrders** (parent) and **Lines** (child), and three dependent Table layouts for **Schedules** (grandchild), **Attachments** (grandchild), and **Distributions** (great-grandchild). Following a download, you would see that the first worksheet with the primary layout displays the purchase order in the form that matches the query and all associated child lines (say, three Lines) that match a configured query (if applicable) in the table.

The second worksheet displays all child schedules associated with the downloaded lines again based on any configured query. If each of the three Lines had three matching child Schedules, the Schedules table would download 9 schedules. And so on for the other worksheets. You can then update all of these lines, schedules, distributions, and attachments and upload all the changes together.

Once the download is complete, the Status Viewer displays any notifications including how many rows were downloaded at each level, as shown in this example:



Following a download, edit data much as you would in a Table or a Form-over-Table layout.

> **Note**
>
> If you do not see all of the expected rows in your dependent layouts, check with your workbook developer. These layouts may have been configured with a search parameter that limits the rows that are downloaded.

Create New Rows for a Set of Dependent Layouts

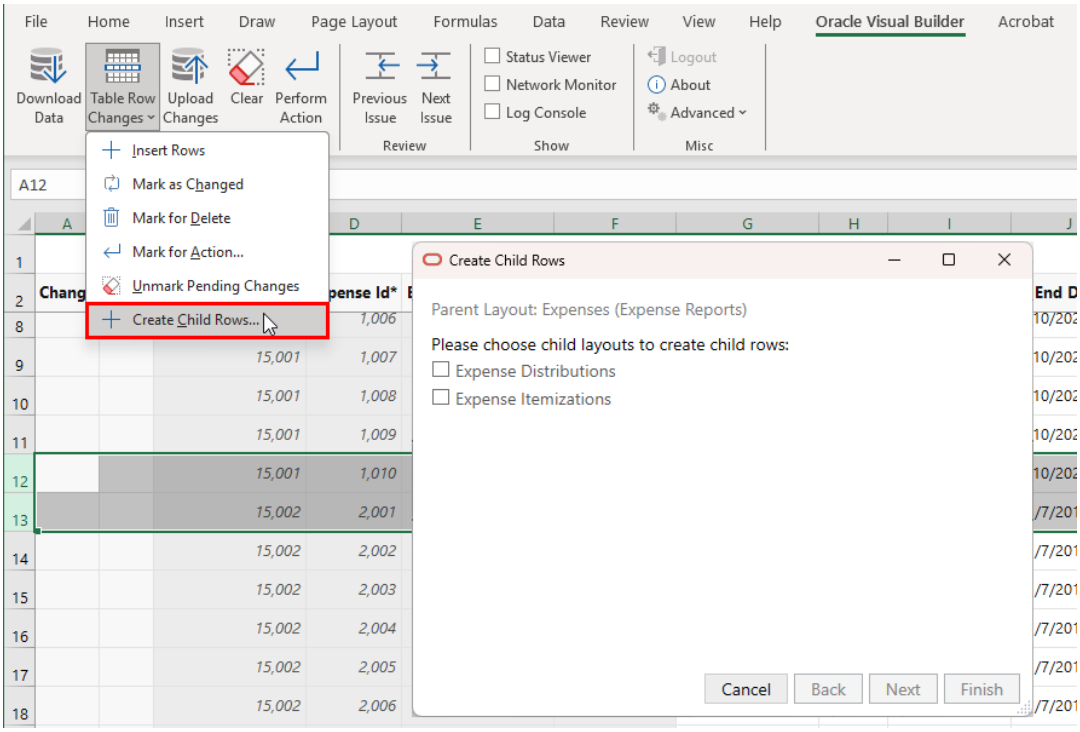
You can create new rows for the primary layout as well as the dependent layouts in a set of dependent layouts.

You create new rows for the primary layout as you would for any Form-over-Table layout or Table layout. See Create a Parent Row in a Form-over-Table Layout and Create New Rows to Upload to the Web Application.

For dependent layouts below the primary layout, start from the parent table and launch the Create Child Rows wizard. The wizard steps you through the process of creating new child rows in a child layout for the parent rows selected in the parent layout.

Let's suppose you have an **Expenses** parent business object in the primary layout and **Expense Distributions** and **Expense Itemizations** child business objects in two child layouts. When you select a row from the parent layout, the wizard prompts you to choose which child layouts you want for the new child rows.

1. Select one or more parent row you want to create child rows for. Use the Shift and Ctrl keys to select multiple rows.
2. Select **Create Child Rows** from the **Table Row Changes** menu to open the Create Child Rows wizard.

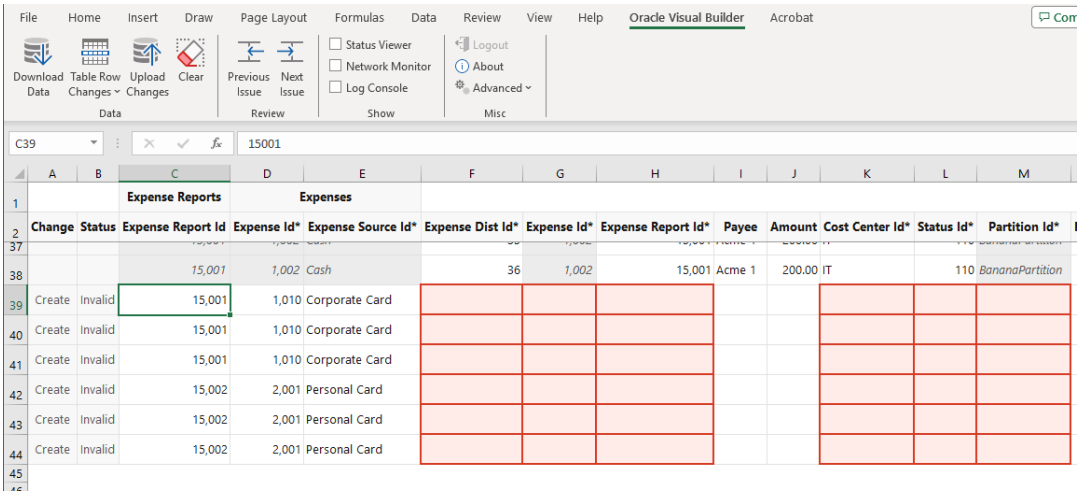


> **Note**
>
> The wizard only shows child layouts that have create enabled.

3. From the first page of the wizard, select the child layouts where you want to create new child rows, then click **Next**.
4. From the second page, enter the number of child rows you want to add to each child layout, then click **Finish**.

   The add-in activates the first child layout, appends the new child rows to the bottom of the table, and automatically populates all ancestor cells with appropriate values.

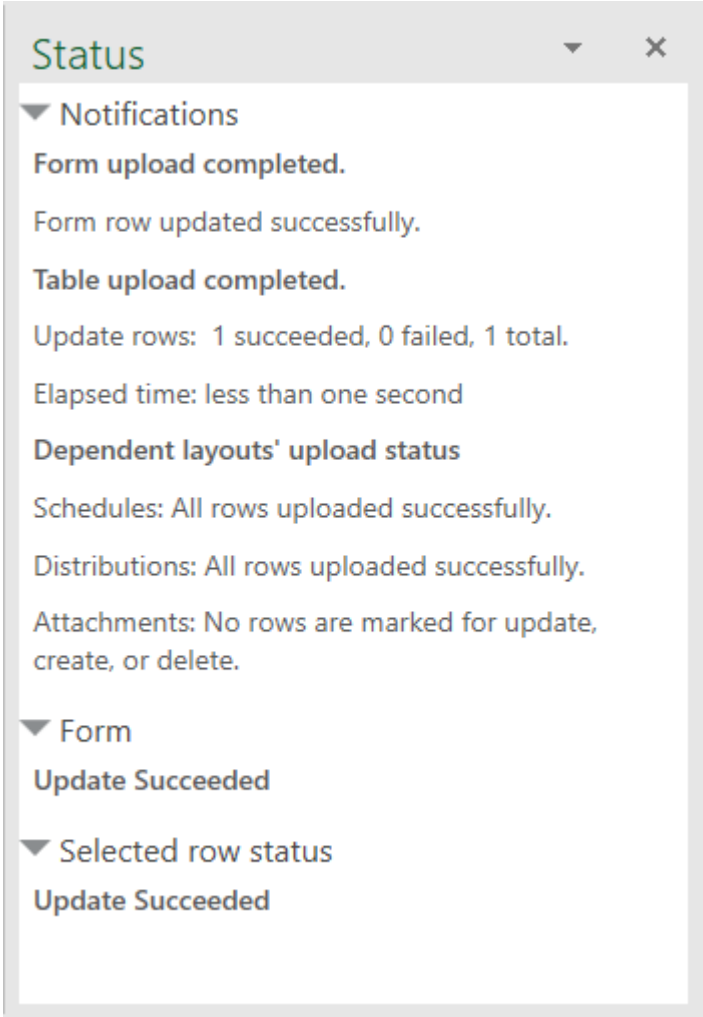
> **Note**
>
> If necessary, you can enter values and overwrite auto-populated values for grandparent and higher columns.



5. Select or type appropriate values for the new rows as required.

Upload Data from a Set of Dependent Layouts

When your changes are ready to be uploaded, the upload operation submits all pending changes across the hierarchy of layouts. Pending changes may include creation of new items, deletion and updating of existing items, and invocation of actions on items, depending on how the layouts are configured and what capabilities are supported by the business objects.
You can view details of the operation in the primary layout's Status Viewer, which shows results for the primary layout as well as a summary for each layout in the dependent hierarchy, as shown in this example:



Click each dependent layout to view additional details of the operation.

In some cases, your workbook may be configured to upload all changes to a parent row and its descendent rows (child rows, grandchild rows, and so on) in a single request. If this is the case for your workbook, then the add-in can only successfully upload your changes if there are no errors in any of the rows.

If there are one or more errors in the set of changed rows, all the rows are marked as failed. To troubleshoot the error, review the errors in the Status Viewer for each form, table, and descendant table in your workbook. Once you've fixed the errors in the pending changes, you can retry the upload operation.

> **Note**
>
> You may have to fix and retry the upload more than once before it succeeds. The REST service may not report all errors that occur during a single upload operation.

7

Troubleshoot Excel Workbooks

If you experience issues with Oracle Visual Builder Add-in for Excel, follow the steps here to identify and resolve issues. If you still can't resolve your issue, contact Oracle Support.

- Review the documentation to make sure the desired operation is supported.
- Download and run the Client Health Check Tool.
- Make sure you're on a supported platform.
- Upgrade to the latest version of the add-in.
- Apply available Microsoft updates.
- Close all workbooks, exit Excel, and try again with simple steps.
- For issues with the workbook, contact the workbook creator.
- Generate an add-in log for review. See Logging. If you contact Oracle Support, you may be asked to provide this log.
- If you are having an issue with a login page, try clearing the browser cache. See Clear the Embedded Browser Cache.
- If some **Oracle Visual Builder** ribbon commands are disabled after you open a workbook, check the Workbook Info window for details on the issue. See Resolve Workbook Issues.

> **Tip**
>
> You can copy the content of some of the add-in's windows and task panes to the clipboard by right-clicking them and selecting the option from the context menu.

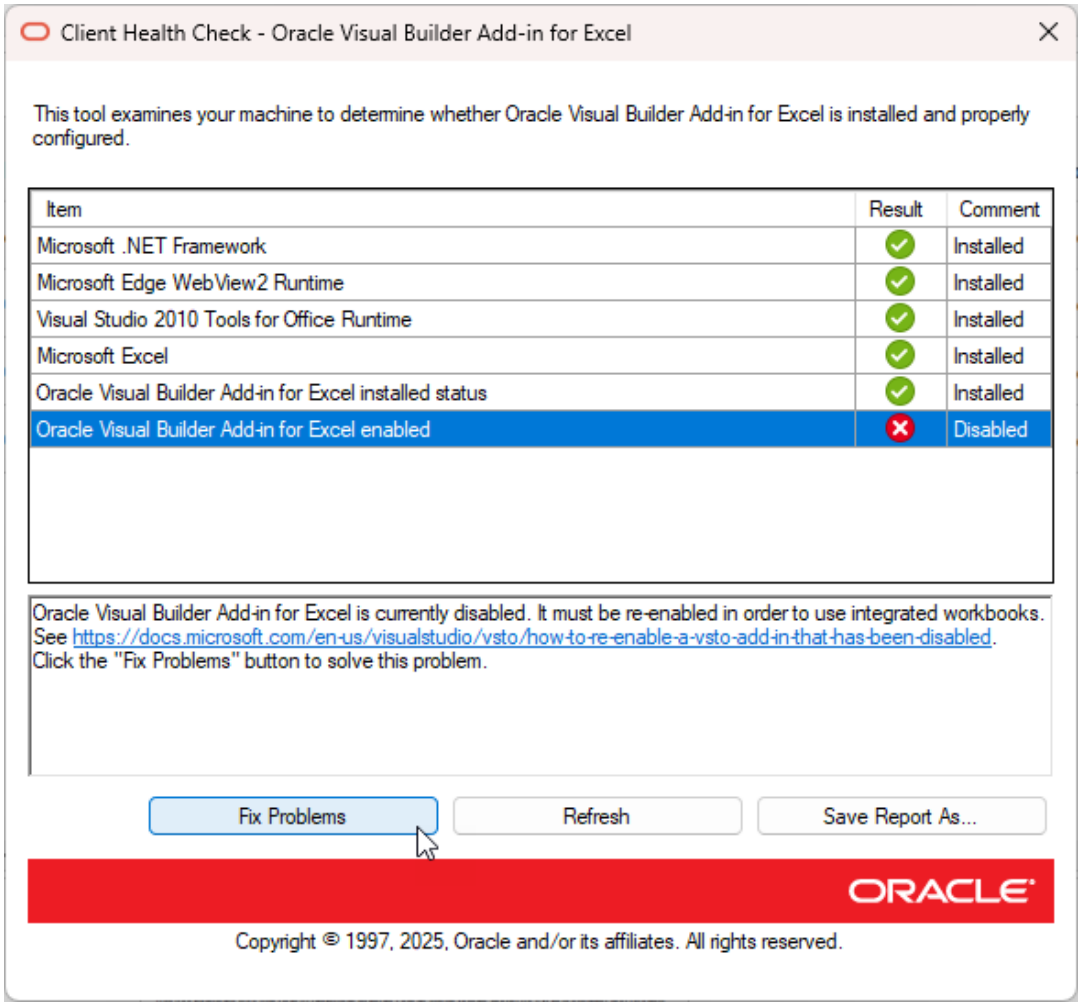
For more information about Excel, see Excel specifications and limits.

Check Your Environment

Run the Client Health Check tool to check if the desktop configuration and environment are suitable for Oracle Visual Builder Add-in for Excel and to resolve issues.

Download the latest version of the Client Health Check tool (`vbafe-health-check.exe`) from the Oracle Downloads page.

1. Run `vbafe-health-check.exe` and review the result for each examined item.



Select each failed item (⊗) to see more details, including the steps necessary to resolve the issue. If the add-in can resolve the issue, the **Fix Problems** button is enabled.

> **Note**
>
> The Client Health Check tool may also show warnings (⚠) if it finds something that is not optimal. You don't have to resolve warnings in order to use the add-in but it is recommended. Select each item with a warning to display information on how to resolve the warning.

2. Click **Fix Problems** if available or follow the instructions to resolve the issue.
3. If Oracle Support requests a copy of the report, click **Save Report As...** and choose a name and location for the report.
4. Send the report to Oracle Support.

> **⚠ Caution**
>
> This report may include personal information from your computer including, but not limited to, the computer's name and the end user's Windows profile name. Be sure to select the appropriate option when uploading files with personal information to a service request so that the file access can be restricted as needed.

Apply Microsoft Updates

When troubleshooting issues with Oracle Visual Builder Add-in for Excel, we recommend first applying all pending updates for Windows and Excel before reproducing the issue. A Microsoft patch may resolve your problem.

1. From the Windows Start menu, select **Settings**, then **Windows Update**.
2. If updates are available on the Windows Update page, review the updates and click **Install Now**.

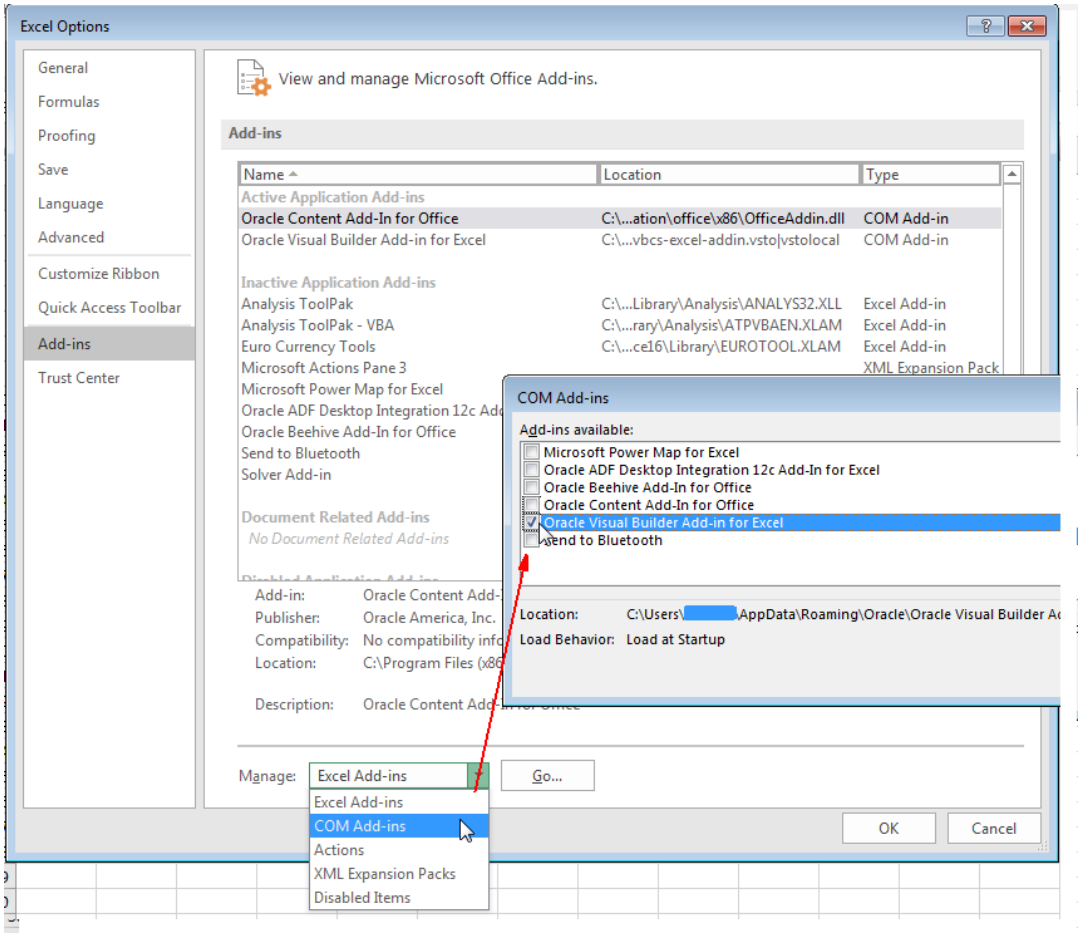
> **ⓘ Note**
>
> The details of applying Windows updates can vary from version to version and also according to your company's IT policy. Check with your system administrator for assistance, if needed.

Re-Enable Oracle Visual Builder Add-in for Excel

If your add-in becomes disabled and you are unable to use the client health check tool, you can re-enable Oracle Visual Builder Add-in for Excel through Microsoft Excel.

1. In Excel, click **File** > **Options** > **Add-Ins**.
2. Select **COM Add-ins** in the Manage drop-down list and click **Go**.
3. Deselect the **Oracle Visual Builder Add-in for Excel** check box and click **OK**.
4. Restart Excel.

5. Enable the add-in by repeating the steps and instead selecting the **Oracle Visual Builder Add-in for Excel** check box from the **Add-ins available** list in the COM Add-ins dialog.



Logging

When reporting an issue about the add-in, generate a detailed log file that captures the steps that lead to the problem you want to report.

The log file that you generate captures information about steps during an Excel session.

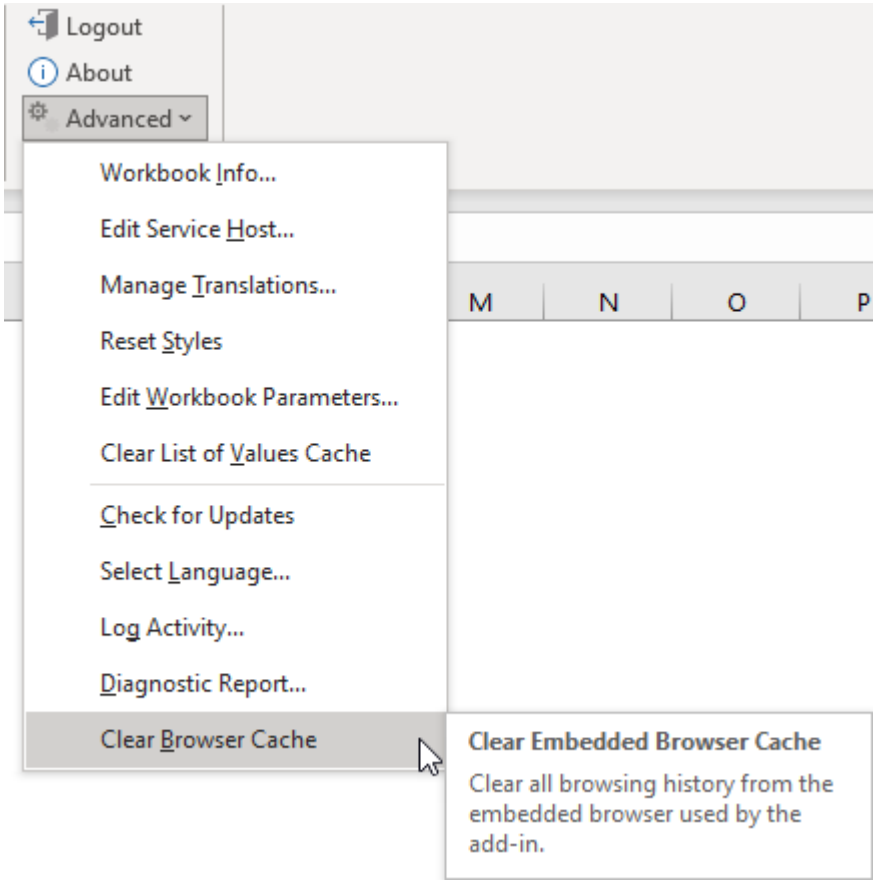
1. In Excel, click the **Oracle Visual Builder** tab.
2. Select **Log Activity** from the Advanced menu to specify a directory location and file name for the log file. This starts the logging session.
3. Repeat the steps that lead to the issue.
4. Exit Excel completely to stop the logging session and before you access the log file.

> **Note**
>
> The next time you run Excel logging will no longer be enabled.

> **⚠ Caution**
>
> Log files may include personal information from the user's computer including, but not limited to, the computer's name and the end user's Windows profile name. Be sure to select the appropriate option when uploading files with personal information to a service request so that file access can be restricted as needed.

Clear the Embedded Browser Cache

Oracle Visual Builder Add-in for Excel uses an embedded web browser to display web pages from inside Microsoft Excel. If required, you can clear the cache for the embedded browser to get rid of all browser data including profile data such as history, bookmarks, and cookies.
To clear the cache for the embedded browser, choose **Clear Embedded Browser Cache** from the **Advanced** menu.

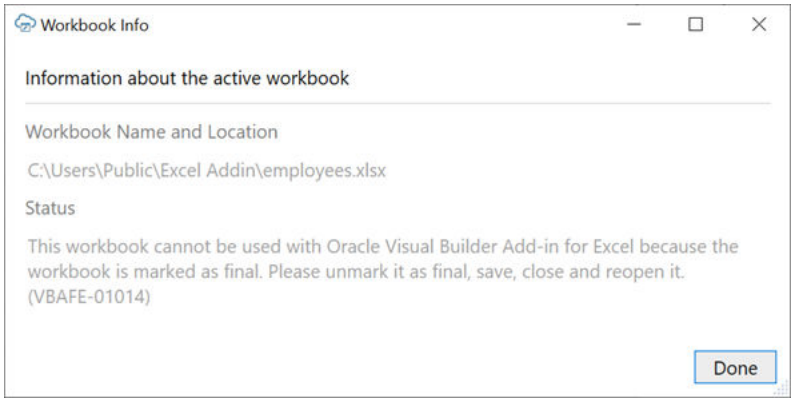


Resolve Workbook Issues

If you see an error message when you open a workbook or find that some **Oracle Visual Builder** ribbon commands are disabled, Oracle Visual Builder Add-in for Excel has detected an issue with your workbook. Use the Workbook Info window to troubleshoot these issues.

Your workbook may be unusable for a number of reasons such as if it is marked as final in Excel or has been saved to an incompatible file type.

To check the status of your workbook, open the Workbook Info viewer by choosing **Workbook Info** from the **Advanced** menu of the **Oracle Visual Builder** ribbon. This viewer shows information such as the name, location, and status of your workbook.



Check the status for the description of the issue and for any troubleshooting steps. Issue-free workbooks have a status of "Integrated". Workbooks that are not integrated with the add-in will show a status of "Not integrated".

In a scenario where a workbook is marked as "final", you'll need to clear the **Mark as Final** setting (under **File>Info>Protect Workbook**), then save and reopen the workbook.

> **Note**
>
> Do not use Excel's **Edit Anyway** button in the yellow message bar to try to edit the workbook. This command will not re-enable the **Oracle Visual Builder** ribbon.

8

Manage Language and Culture

You can change the display language for Oracle Visual Builder Add-in for Excel to any one of over 30 supported languages. If the workbook has been localized into your language, the add-in also displays your workbook's field titles and so on in the selected language.

When you open an integrated workbook for the first time, you may be prompted to redraw all layouts if the workbook was published in a different language. To keep these changes, skip the redraw. You can always manually redraw your workbook later using either the Clear Layout or Download Data icons from the **Oracle Visual Builder** tab.

If you choose to redraw the workbook, any data and changes to the layouts are discarded.

> **Note**
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> When the language changes, it is recommended that you clear all layouts and the list of values cache since some data, including values in the workbook's lists of values, may be language sensitive. Downloading in one language and uploading in a different language may not succeed.

Change the Add-in's Language

By default, Oracle Visual Builder Add-in for Excel automatically detects the user's preferred language from Microsoft Excel and uses that language where possible. If desired, you can change the language that the Excel add-in uses.

To change the add-in language:

1. In Excel, click the **Oracle Visual Builder** tab.
2. Choose **Select Language** from the **Advanced** menu.
3. From the **Add-in Language** list that appears, select the language you want to use. The list displays the languages that the add-in supports.
4. Click **OK**.
5. Clear the embedded browser cache. See Clear the Embedded Browser Cache.
6. Restart Excel to make your changes take effect.

The add-in's user interface elements (**Download Data** and so on) now use the language you selected. If the preferred language uses a right-to-left writing system, the add-in's windows appear in right-to-left mode.

> **Note**
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> Changing the add-in's language does not affect the format of the data in the cells. Data formats are determined by your Windows region settings. See Excel or Windows options to change Excel's language and formats for dates, times, and numbers. See Change the Add-in Language in *Developing Integrated Spreadsheets Using Oracle Visual Builder Add-in for Excel* for more information.

If the workbook has been localized for the preferred language, the add-in uses that localization as well. If you do not see localized column headers or form field labels, contact the workbook developer to see whether the workbook could be localized.

The language that you choose for the add-in language is stored in a local file in the Windows user profile. You can select the **Use Excel's Language Setting** option in the Add-in Language drop-down list to remove this setting for the current user.