



Plant Applications 8.2

PAXLA Excel Add-In



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Installing the Add-in for Excel 2003

To install and configure the Add-in for Excel 2003

1. To start Excel from the command line, click **Start** and click **Run**. The **Run** dialog box appears.
2. Type **excel.exe** in the **Open** box and click **OK**.
3. From the **Tools** menu click **Addins**. The **Add-Ins** dialog box appears.
4. Select the check box next to **Plant Applications Excel Add-In** and click **OK**.
5. Acknowledge the message indicating the Plant Applications Add-in has been loaded.
6. From the **Plant Applications** menu, click **Options**. The **Plant Applications AddIn Options** dialog box appears.
7. Under **Server Access**, verify the following are displayed. If not, proceed to step 8; otherwise, proceed to step 13.
 - The correct Default Server is displayed.
 - The correct User is displayed.
 - The Status is Connected.
8. Click **Edit** to configure the user details. The **Connect Server** dialog box appears.
9. Right-click the server and select **Edit** to update the Add-in connection details. The **Server** dialog box appears.
10. Click **Advanced** and ensure **Default Server** is selected (checked).
11. Click **OK**.
12. If the Add-In is not connected to the server, right-click the server, select **Connect** then click **Close**.
13. Click **Save** to update the registry settings.

Installing the Add-in for Excel 2007

To configure Excel 2007

1. To start Excel from the command line, click **Start** and click **Run**. The **Run** dialog box appears.
2. Type **excel.exe** in the **Open** box and click **OK**
3. Click the **Microsoft Office Button**, and then click **Excel Options**.
4. Click the **Add-Ins** category.
5. In the **Manage** box, click **Excel Add-ins**, and then click **Go**. The **Add-Ins** dialog box appears.
6. Select the check box next to **Plant Applications Excel Add-In** and click **OK**.
7. Acknowledge the message indicating the Plant Applications Add-in has been loaded.
8. On the **Add-ins Ribbon**, click **Plant Applications**, and then click **Options**. The **Plant Applications AddIn Options** dialog box appears.
9. Under **Server Access**, verify the following are displayed. If not, proceed to step 10; otherwise, proceed to step 15.
 - The correct Default Server is displayed.
 - The correct User is displayed.
 - The Status is Connected.
10. Click **Edit** to configure the user details. If necessary, log in with the Plant Applications Administrator user name and password. The **Connect Server** dialog box appears.
11. Right-click the server and select **Edit** to update the Add-in connection details. The **Server** dialog box appears.
12. Click **Advanced** and ensure **Default Server** is selected (checked).
13. Click **OK**.
14. If the Add-In is not connected to the server, right-click the server, select **Connect** then click **Close**.
15. Click **Save** to update the registry settings.

Installing the Add-in for Excel 2010

To configure Excel 2010

1. To start Excel from the command line, click **Start** and click **Run**. The **Run** dialog box appears. Type **excel . exe** in the **Open** box, and click **OK**.
2. Click **File**, and then click **Options**.
3. Select **Trust Center** and **Add-ins**. Ensure that none of the security options are selected. The Plant Applications add-in does not need to be signed by a Trusted Publisher.
4. Back in the Options menu, select the **Add-Ins** category. The **Plant Applications Excel Add-In** should be in the list of add-ins.
5. In the **Manage** box, click the down arrow to choose **Excel Add-ins**, and then click **Go** to display the **Add-Ins** dialog box.
6. Choose the **Plant Applications Excel Add-In**, and click **OK**. Acknowledge the message indicating that the Plant Applications Add-in has been loaded.
7. Click **Plant Applications** on the **Add-ins** ribbon, and then select **Options**. Login into the Plant Applications server if prompted to display the **Plant Applications AddIn Options** dialog box.

NOTE: *The required credentials are not for the server but are those used to log into the Plant Applications Administrator.*

8. Under **Server Access**, verify the following information:
 - Default server is correct.
 - User is correct.
 - Status is connected.

If the information is correct, proceed to step 140; otherwise, continue with step 9.

9. Click **Edit** to configure the user details. If necessary, log in with the Plant Applications Administrator user name and password. The **Connect Server** dialog box appears.
10. Right-click the server and select **Edit** to update the Add-in connection details. The **Server** dialog box appears.
11. Click **Advanced**, and ensure **Default Server** is selected (checked).
12. Click **OK**.
13. If the Add-In is not connected to the server, right-click the server. Select **Connect**, and then click **Close**.
14. Click **Save** to update the registry settings.

Using the Plant Applications Add-in

Because the Plant Applications Add-in is so flexible and can be used to get to all of your Plant Applications data, you can configure your reports in unlimited ways. Therefore, this section will show you where and how to find specific information, which you can then use to create dynamic reports with the information that you want, configured in the way you design.

Updating Links to the Add-in

To access this dialog box: From the **Plant Applications** menu, click **Options**.

You can determine if you want Excel to update the Add-in links every time a Plant Applications workbook is opened.

*When you open a workbook, you'll know immediately if you need to update the links because Excel will display a message, which will vary depending on your operating system. The important thing to know is that you should NOT have Excel update the links. So, you'll need to either click the **No** button or the **Don't Update** button.*

Update. If you regularly trade (or move) workbooks between computers, we recommend that you select this option to update the links.

Don't Update. If the majority of the time you keep your workbooks on the computer where they were created, then you can choose not to update the links.

Four Types of Information

Using the Plant Applications Add-In for Excel, you can gain access to four types of data:

- [Run Summary](#)
- [Captured](#)
- [Test](#)
- [Specifications](#)

Run Summary

Run Summary information, created by Plant Applications, summarizes key process and quality information over a product or product run. Run average values, along with key control and variation statistics, are available for each run and manufacturing variable.

Captured Data

Through the Plant Applications Operator Display, you can create a captured data set, which is a snapshot of current operating conditions for future reference. Using the Plant Applications Add-In, you can import this snapshot information into your worksheet.

For more information on using Operator Displays, please search on "operator display" in the Plant Applications Administrator's online help.

Test Data

Stored in the Plant Applications database, test data are discreet data elements that represent time- and event-based summarized process data and manually entered data. This test data typically originates from the control system or process data historian.

Specification

Specifications are operating or quality targets and limits applied to manufacturing variables in the plant. Specifications are maintained historically in order to compare historical conditions to the specification employed at a specific time.

Common Functionality

Within the Plant Applications Add-in there are certain actions that are common to many of the dialog boxes. These include selecting cells on your worksheet for input and selecting cells on your worksheet for output.

Security


Anyone can install and run the Excel Add-in because these tasks are completed from within Excel. However, any tasks that touch Plant Applications, such as searching for variables, will be affected by the security configurations in Plant Applications.

To use the functions within the Excel Add-in, you must be added as a site user in the Plant Applications Administrator. For more information, see Adding Site Users.

If security groups are configured for variables, products, specifications, and properties, only members of the security group (or the administrator) may see variables (or products, specifications, properties) in the search dialog box. Because these variables (or products, specifications, properties) are hidden from non-members, they cannot create reports for these directly. However, once reports are created, by others who have access to these variables, any user may run the reports.. However, once reports are created, any user may run the reports.



If no security as been configured for variables, products, specifications, and properties, then all the functions and features in the Excel Add-in are available to any Plant Applications site user..

Selecting Cells for Input

Typically, there are two methods to select cells in your worksheet for input into a dialog box. You can either use the **Collapse Dialog**  button or you can click in the box and then select the cell(s) on your worksheet. While the second method may be quicker, the advantage the first method has over the second is that it collapses the dialog box so you can see more of your worksheet. Depending on your monitor size and resolution, it might be difficult to see the cells you need to select.

When you select a cell as input and change the contents of the cell, Excel will automatically update the formula that references the selected cell. This works great for quickly changing start and end times, for example.

Method One

1. Open any Plant Applications Add-in dialog box. This example uses the **Plant Applications Variable Limits** dialog box.
2. Under Variable(s), click the **Collapse Dialog**  button.
3. The **Plant Applications Variable Limits** dialog box collapses so you can see more of your worksheet.
4. Select the cell or cells on your worksheet. The cell reference is automatically inserted in the collapsed dialog box. Click the **Expand Dialog**  button.
5. Your cell reference is now in the **Variable(s)** box.

Method Two

1. Open any Plant Applications Add-in dialog box. This example uses the **Plant Applications Variable Limits** dialog box.
2. Under Variable(s), click in the empty box.

3. Select the cell or cells on your worksheet. The cell reference is automatically filled in the **Variable(s)** box.
4. Click the **Plant Applications Variable Limits** dialog box to activate it.

Selecting Cells for Output

After you have found, filtered and selected the information you want to include on your worksheet, you will need to tell the Plant Applications Add-in where on your worksheet you want to put the information. You will need to select either a single cell (**Output Cell**) or a range of cells (**Output Range**). The dialog box will prompt you to let you know which you need to select.



An important thing to realize, though, is that if you are selecting a range of cells, your input will be limited by the range of cells you select on your worksheet. For example, if you have selected 20 items in a dialog box, you need to make sure you select at least 20 cells in your output range. If you select less than 20 cells, then Plant Applications will output only the number of items that will fit in the specified range.

The two methods for selecting cells for output are identical to the methods for selecting cells for input. You can either click the **Collapse Dialog** button or click directly on your worksheet. For more information, please see [Selecting Cells for Input](#).

Selecting Start and End Times

There are several tasks in the Add-in that require at least a start date, with most requiring both start and end dates. More often than not, it is better to include a time, along with a date. This allows you to focus in on a very specific time frame.

By default, if you enter only a date, the time is assumed to be midnight of that day (i.e., 12:00:00 AM).

There are three ways to provide start and end dates and times.

- You can use the **Date Selector** button to select a specific date.
- You can manually type the date and time.

- You can select cells on your worksheet that contain the start and end dates and times. For information on selecting cells for input, please see [Selecting Cells for Input](#).

Output Orientation

Depending on your search criteria, you are sometimes offered the choice of outputting your data in either columns or rows. If you select the **Columns** option, the data will be listed in a single column. If you select the **Rows** option, the data will be listed in a single row.



Automatically Fit Text to Cells

To access this dialog box: In Excel, from the **Plant Applications** menu, click **Options**.

There are two options that control how text is formatted in a cell. One option controls headers; the other option controls data. You can select one or both of these options.

These options control only the text that is input from Plant Applications. These options will not affect text that is manually typed or pasted into a cell.

Adjust header column width. Select this option to automatically size the columns to fit the header text.

Adjust data column width. Select this option to automatically size the columns to fit the data.

To set your Plant Applications Add-in Options

- From the **Plant Applications** menu, click **Options**.
- In the **Plant Applications Add-in Options** dialog box, under **Display Column Width**, select one or more of the options.
- Do one of the following:
 - To apply the changes to only the current session of Excel, click the **Apply** button and then click the **Cancel** button to close the dialog box. After you close and re-open Excel, the options will return to your previously saved settings.
 - To permanently save your changes, click the **Save** button and then click the **Cancel** button to close the dialog box.
 - To restore all the default settings, click the **Default** button and then click the **Cancel** button to close the dialog box.

Changing the User Interface Language

To access this dialog box: In Excel, from the **Plant Applications** menu, click **Options**.

You can change the language that is used for menu options and dialog box text.

To change the user interface language, under **Language**, click the drop-down arrow and select a language.

Connecting to a Server

*To access the Plant Applications AddIn Options dialog box: In Excel, from the **Plant Applications** menu, click **Options**.*

The **Plant Applications Add-In Options** dialog box displays the current server, the name of the current user, and the status of the server connection. If you click the **Edit** button, you can connect to a different server, add a new server, or delete a server.

*If your server information displays "Unknown," that typically means that you haven't performed any tasks in the Add-in. To verify that you are connected, click the **Edit** button to view server information.*

- In the **Connect Server** dialog box, right-click on a server and select a command from the pop-up menu.

To add a server

1. From the **Plant Applications AddIn Options** dialog box, click **Edit**.

The **Connect Server** dialog box appears.

2. Right-click and select **New**.

The **Server** dialog box appears,

3. Do the following:
 - a. In the **Server Name** box, type the name of the Proficy Server
 - b. In the **User** box, type the user name
 - c. In the **Password** box, type the user's password.
4. Click **Advanced** to make this the default server or to automatically connect to the server when Excel is started.
5. Click **OK**.

Displaying Headers

*To access this dialog box: In Excel, from the **Plant Applications** menu, click **Options**.*

Show header label. Select this option to include row or column headers on your worksheet.

Hide header label. Select this option if you do not want to include row or column headers on your worksheet.

Formatting Column and Row Headers

*To access this dialog box: In Excel, from the **Plant Applications** menu, click **Options**.*

You can decide whether to display headers and the color of the headers.

Displaying Headers

Show header label. Select this option to include row or column headers on your worksheet.

Hide header label. Select this option if you do not want to include row or column headers on your worksheet.

Specifying Header Color

To specify a header color, under **Color** click the drop-down arrow and select a color. If you want the header text to be in bold text, select the **Bold** option.

Handling "Blank" Values

*To access this dialog box: In Excel, from the **Plant Applications** menu, click **Options**.*

You can specify whether you want blank values to display as empty cells or to display the word "None."

No. leave blank. Select this option to display blank values as empty cells.

Yes. Substitute ’None" Select this option to display "None" for blank values.

Two Ways to Recalculate

There are basically two conditions that will cause Excel to automatically re-execute a query:

- Opening a workbook that contains Plant Applications functions
- Changing the information in a dependent cell

For example, many functions rely on start and end dates that you enter as criteria. If you change either the start date or the end date within the worksheet, Excel re-executes the query and recalculates the data based on the new date(s).

Production Event Search for Multiple Variables

In order to find time stamps for multiple variables, you must first retrieve all the time stamps for all production events within the selected time frame. This will give you a list of every time stamp for every production event that occurred during the selected time frame.

To search for production events

1. In Excel, click the Plant Applications menu, point to Event Summary and click Search Production Events.
2. The Plant Applications Event Search dialog box opens.
3. **optional:** Under Server, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the Browse button.
4. Under Production Line, click the drop-down arrow to select a production line, then click the second drop-down arrow to select a production unit.
5. Under Time Range, enter a start and end time. For more information on entering start and end dates, please see [Selecting Start and End Times](#).
6. **optional:** If you want to filter on a specific product, under **Product Filter** (or **Product Code**), select a Product Code or Product ID on your worksheet.

Whether you are required to select Product Code or Product ID is determined by the site parameter, ProdCodelsNum. For more information, see [ProdCodelsNum Site Parameter](#).

If you filter on a product, the options Original Product and Applied Product will be available. Additionally, "Original Product" and "Applied Product" will be added to the Display list.

7. **optional:** Under **Filter By**, do one or more of the following:
 - Under **Plant Order Number**, enter the plant order number.
 - Under **Customer Code**, enter the customer code.

- Under **Shipment Number**, enter the shipment number
- Under **Primary Event Number**, enter the primary event number.

Keep in mind that the results you get might not be the expected results simply because of the filters you have chosen. If you are not sure of your results, it's best to use fewer filters.

8. **optional:** Under **Crew Schedule Filter**, do one or more of the following:
- Under **Crew Description**, click the drop-down arrow to select a crew.
 - Under **Shift Description**, click the drop-down arrow to select a shift.

Notice that if you select a crew description or shift description, "Crew Description" and "Shift Description" are added to the Display list.

9. **optional:** Under **Event Status Filter**, do one of the following:
- If you do not want to filter on event status (e.g., Consumed, In Progress, Hold, etc.), select the **Do Not Filter By Event Status** option.
 - If you want to filter on event status, select the **Filter By Specific Event Status In List Below** option. Then, in the **Status To Exclude** list, select one or more of the event statuses you want to include, then click the **Move Selected** button to move the event statuses to the **Status To Include** list.
10. Under **Display**, select **Time Stamp**. This will retrieve the time stamps for all the production events within the selected time frame.
11. Under **Output Range**, select the range of cells where you want to input your production event attributes. For information on how to select cells for output, please see [Selecting Cells for Output](#).
12. Under **Output Sort**, do one of the following:
- Select the **Ascending** option to sort the statistics starting with the most recent Run Start Time (i.e., from oldest to newest).
 - Select the **Descending** option to sort the statistics starting with the earliest Run Start Time (i.e., from newest to oldest).
13. If select only one cell, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).


If you select more than one output cell, these options are not available.

14. Click the **OK** button.

Dynamic Queries

The functions within the Plant Applications Add-in are *dynamic* queries that are the foundation for creating dynamic reports that can be updated by simply changing the information in a single cell.

Build a Product Search

1. Do one of the following:
 - From the **Plant Applications** menu, click **Build Product Search**.
 - Right-click on a cell in your worksheet, and from the pop-up menu select **Build Product Search**.
2. The Plant Applications Product Search Selector dialog box opens.
3. **optional:** Under Server, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the Browse  button.
4. Under Search Type, click the drop-down arrow and do one of the following:
 - Select **Product** to search for product codes. You can retrieve all products or all products within a specific group.
 - Select **Product Group** to retrieve product groups. You can then use one of these groups as input for filtering.
 - Select **Property/Characteristic** to retrieve a specific property and all associated characteristics.
 - Select **Product Group and Prop/Char** to retrieve product groups, properties and characteristics.


*Using the **Product Group and Prop/Char** results as a filter will return results that match either the product group or the property and characteristic. In other words, it uses OR logic and not AND logic.*

5. In the **Output Cell** box, click the **Collapse Dialog** button  and select the output cell on your worksheet. For more information, please see [Selecting Cells for Output](#).

The selected output cell is where the first variable will be entered. Be sure to include an additional row or column for the headings.

6. Select either the **Columns** option or **Rows** option. For more information, please see [Output Orientation](#).
7. Click the **OK** button.

Calculating Run Data for Variables

1. From the Plant Applications menu, point to Run Summary and For Variables, and click Run Data Calculations.
2. The Plant Applications Run Data Calculation dialog box opens.
3. **Optional:** Under Server, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the Browse  button.
4. Under Variable(s), select the Variable IDs on your worksheet. For more information on selecting cells, please see [Selecting Cells for Input](#).
5. Under Time Range, enter the start date and time. If desired, enter an end date and time. For more information on entering start and end times, please see [Selecting Start and End Times](#).
6. **Optional:** If you want to filter on a specific product, under **Product Filter**, select a Product Code or Product ID on your worksheet.


Whether you are required to select Product Code or Product ID is determined by the site parameter, `ProdCodelsNum`. For more information, see [ProdCodelsNum Site Parameter](#).

7. Under **Run Statistic**, select *only one* run statistic.
8. Under **Statistic Calculation**, select one or more calculations to perform.
9. Under **Output Cell**, select the cell where you want to input your run statistics. For information on how to select cells for output, please see [Selecting Cells for Output](#).
10. If you selected only one Variable ID, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).

If you select more than one Variable ID, these options are not available.

11. Click the **OK** button.


Calculate Run Summary Statistics

1. From the Plant Applications menu, point to Run Summary and For Units, and click Run Summary Calculations.
2. The Plant Applications Run Summary Calculations dialog box opens.
3. **optional:** Under Server, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the Browse  button.
4. Under Production Line, click the drop-down arrow to select a production line, and then click the second drop-down arrow to select a production unit.
5. Under Time Range, enter the start time and end time. Entering an end time is optional. For more information on entering start and end times, please see [Selecting Start and End Times](#).
6. **optional:** If you want to filter on a specific product, under Product Filter (or Product Code), select a Product Code or Product ID on your worksheet.



Whether you are required to select Product Code or Product ID is determined by the site parameter, ProdCodeIsNum. For more information, see [ProdCodeIsNum Site Parameter](#).

7. Under **Run Statistic**, select *only one* of the statistics.
8. Under **Statistics Calculation**, select one or more of the calculations you want to perform.
9. Under **Output Cell**, select the cell on your worksheet where you want to input the statistic information. For information on selecting cells for output, please see [Selecting Cells for Output](#).
10. Under **Output Orientation**, click the **Columns** to list the statistics in multiple columns or click the **Rows** option to list the statistics in multiple rows. For more information, please see [Output Orientation](#).
11. Click the **OK** button.

Find Characteristic Attributes

1. From the **Plant Applications** menu, point to **Attributes** and click **Characteristic**.
2. The **Plant Applications Characteristic Attributes** dialog box opens.
3. **optional:** Under **Server**, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the **Browse**  button.
4. Select the Characteristic IDs on your worksheet for which you want to find the attributes.
5. Under **Attribute(s)**, select one or more of the attributes you want to include on your worksheet.




Find Product Attributes and ProdCodelsNum is set to 0 (zero)

6. Under **Output Cell**, select the cell on your worksheet where you want to import your characteristic attributes by doing one of the following:
 - Click in the box and then click the cell on your worksheet.
 - Click the **Collapse Dialog**  button, select the cell on your worksheet, and click the **Expand Dialog**  button.
7. If you selected only one Characteristic ID, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).


If you select more than one Characteristic ID, these options are not available.

8. Click the **OK** button.

Find Product Attributes and ProdCodelsNum is set to 0 (zero)

1. From the **Plant Applications** menu, point to **Attributes** and then click **Products**.
2. The Plant Applications Product Attributes dialog box opens.
3. **optional:** Under Server, click the drop-down arrow to select a different server. If you need to add a new server or if you need to connect to the selected server, click the Browse  button.
4. Under Product(s), click the Collapse Dialog  button.
5. On your worksheet, select the Product ID or Product Code of the products for which you want to find attributes and click the Expand Dialog  button.

You can select products by Product ID or by Product Code. You can not use Product Descriptions.




6. Under **Attribute(s)**, select one or more of the available attributes.
7. Under **Output Cell**, select the cell on your worksheet where you want to begin your output by doing one of the following:
 - Click the **Output Cell** field and select the output cell on your worksheet.
 - Click the **Collapse Dialog**  button and select the output cell on your worksheet.
8. If you selected only one Product ID or Product Code, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).

If you select more than one Product ID or Product Code, these options are not available.



9. Click the **OK** button.

Find Product Event Attributes and EventNumIsNumber is set to 0 (zero)

1. Do one of the following:
 - From the **Plant Applications** menu, point to **Attributes** and click **Production Event**.
 - From the **Plant Applications** menu, point to **Event Summary** and click **Production Event Attributes**.
2. The Plant Applications Product Info dialog box opens.

3. **optional:** Under Server, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the Browse  button.
4. Under Production Line click the drop-down arrow to select a production line, and then click the second drop-down arrow to select a production unit.
5. Under Event(s), click the Collapse Dialog  button, select either the Primary Event Numbers or Event IDs on your worksheet, and click the Expand Dialog  button.
6. Under Display, select one or more of the attributes that you want to include on your worksheet.






Excel limits you to selecting a maximum of 29 attributes at one time.

7. Under [Output Cell](#), click the **Collapse Dialog**  button, select the output cell on your worksheet, and click the **Expand Dialog**  button.
8. If you selected only one Primary Event Number or Event ID, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).



If you select more than one Primary Event Number or Event ID, these options are not available.

9. Click the **OK** button.

Find Product Event Attributes and EventNumIsNumber is set to 1

1. From the Plant Applications menu, point to Attributes and click Production Event.
2. The Plant Applications Product Info dialog box opens.
3. **optional:** Under Server, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the Browse  button.
4. Under Production Line click the drop-down arrow to select a production line, and then click the second drop-down arrow to select a production unit.
5. Do one of the following:
 - To use your Primary Event Numbers, under **Event Numbers(s)**, click the **Collapse Dialog**  button, select the Primary Event Numbers on your worksheet, and click the **Expand Dialog**  button.
 - To use your Event IDs, select the **Force ID** option. Then, under **Event IDs**, click the **Collapse Dialog**  button, select the Primary Event Numbers on your worksheet, and click the **Expand Dialog**  button.
6. Under **Display**, select one or more of the attributes that you want to include on your worksheet.


Excel limits you to selecting a maximum of 29 attributes at one time.

7. Under [Output Cell](#), click the **Collapse Dialog**  button, select the output cell on your worksheet, and click the **Expand Dialog**  button.
8. If you selected only one Primary Event Number or Event ID, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).

If you select more than one Primary Event Number or Event ID, these options are not available.

9. Click the **OK** button.



Find Property Attributes

1. From the **Plant Applications** menu, point to **Attributes** and click **Property**.
2. The **Plant Applications Property Attribute** dialog box opens.
3. **optional:** Under **Server**, drop-down arrow to select a different server. If you need to add a new server or connect to a different server, click the **Browse**  button.
4. Select the Property IDs on your worksheet.

You cannot select Property Descriptions.

5. Under **Attributes**, select one or more property attributes.




To change the order of the attributes, highlight an attribute and either click the minus sign (-) on your numeric keypad to move a selected attribute up or click the plus sign (+) to move a selected attribute down.

6. Under **Output Cell**, select the cell on your worksheet where you want to import your property attributes by doing one of the following:
 - Click in the box and then click the cell on your worksheet.
 - Click the **Collapse Dialog**  button, select the cell on your worksheet, and click the **Expand Dialog**  button.
7. If you selected only one Property ID, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).

If you select more than one Property ID, these options are not available.

8. Click the **OK** button.




Find Specification Attributes

1. From the Plant Applications menu, point to Attributes and click Specification.
2. The Plant Applications Specification Attributes dialog box opens.
3. **optional:** Under Server, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the Browse  button.
4. Under Specification(s), select the Specification IDs on your worksheet for which you want to find the attributes.
5. Under Attribute(s), select one or more of the attributes you want to include on your worksheet.
6. Under [Output Cell](#), select the cell on your worksheet where you want to import your specification attributes by doing one of the following:
 - Click in the box and then click the cell on your worksheet.
 - Click the **Collapse Dialog**  button, select the cell on your worksheet, and click the **Expand Dialog**  button.
7. If you selected only one Specification ID, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).



If you select more than one Specification ID, these options are not available.

8. Click the **OK** button.

Find Specification Level Limits

1. From the Plant Applications menu, point to Limits and click Specification Level.
2. The Plant Applications Variable Limits dialog box opens.
3. **optional:** Under Server, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the Browse button .
4. Under Specification(s), click the Collapse Dialog button , select the Specification IDs on your worksheet, and click the Expand Dialog  button.

You can select multiple specification IDs.

5. To see what the specification values were on a specific date, do one of the following:
 - Under **Time [Opt]**, click the **Collapse Dialog**  button and select the cell on your worksheet that contains the date.
 - Click the **View Calendar**  button and select the desired date.
6. Under **Characteristics**, select the Characteristic ID or Description on your worksheet.


You can select only one Characteristic ID or Description.

7. Under **Specifications**, select one or more of the following specifications.
 - Target
 - Lower Warning Limit
 - Upper Warning Limit
 - Lower Reject Limit
 - Upper Reject Limit
 - Lower Entry Limit
 - Upper Entry Limit
 - Upper Control Limit
 - Target Control Limit
 - Lower Control Limit
 - Effective Date
 - Expiration Date
 - Lower User Limit
 - Upper User Limit
 - Test Frequency
 - Comment
 - Transaction Comment
8. Under **Output Cell**, select the cell on your worksheet where you want to import your specifications.
9. If you selected only one Specification ID, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).

If you select more than one Specification ID, these options are not available.

10. Click the **OK** button.

Find the Parent or Child of a Production Event

1. From the Plant Applications menu, point to Event Summary and click Production Event Genealogy.
2. The Plant Applications Event Genealogy dialog box opens.
3. **optional:** Under Server, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the Browse  button.
4. Under Production Line, click the drop-down arrow to select a production line, and then click the second drop-down arrow to select a production unit.
5. Under Event Number, enter the event number. You can either type the Primary Event Number or Event ID, or you can select the Primary Event Number or Event ID from your worksheet. For information on selecting cells for input, please see [Selecting Cells for Input](#).

Whether you are required to select Primary Event Number or Event ID is determined by the site parameter, EventNumIsNumber. For more information, see [EventNumIsNumber Site Parameter](#).

6. Under Relationship Sought, select either Parent or Child.
7. Under Display, select one or more of the attributes you want to include on your worksheet.
8. Under Output Range, select the range of cells where you want to import the information on your worksheet. Keep in mind that if the number of relationships is greater than the number of cells you selected, you will get only the number of cells you select. For more information on selecting cells for output, please see [Selecting Cells for Output](#).
9. If you select only one cell, you can click either the Columns or Rows option. For more information, please see [Output Orientation](#).


If you select more than one output cell, these options are not available.

10. Click the **OK** button.

Find Variable Attributes

1. From the **Plant Applications** menu, point to **Attributes**, and then click **Variables**.
2. In the **Plant Applications Variable Attributes** dialog box, under **Variable(s)**, do one of the following:
 - On your worksheet, highlight the variables for which you want to find attributes.

You can use either Variable IDs or Variable Descriptions.




- Click the **Collapse Dialog**  button and select the variables for which you want to find attributes.
3. Under **Attribute(s)**, select the attributes you want to include on your worksheet.

You can change the order of the attributes by pressing the plus (+) or minus (-) key on your numeric keypad.



4. Under [Output Cell](#) select the output cell on your worksheet by doing one of the following:
 - Click the output cell on your worksheet
 - Click the **Collapse Dialog** button and select the output cell on your worksheet.
5. If you selected only one variable, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).

6. Click the **OK** button.

Find Variable Level Limits

1. From the Plant Applications menu, point to Limits and click Variable Level.
2. The Plant Applications Variable Limits dialog box opens.
3. **optional:** In the, under Server, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the Browse  button.
4. Under Variables, click the Collapse Dialog  button, select the variables on your worksheet, and click the Expand Dialog  button.

You can select multiple variables.

5. To see what the specification values were on a specific date, do one of the following:
 - Under **Time [Opt]**, click the **Collapse Dialog**  button and select the cell on your worksheet that contains the date.
 - Click the **View Calendar**  button and select the desired date.
6. Under **Product Code**, select the Product Code or Product ID on your worksheet.

You can select only one Product Code or Product ID.

7. Under **Specifications**, select one or more of the following specifications.
 - Target
 - Lower Warning Limit
 - Upper Warning Limit
 - Lower Reject Limit
 - Upper Reject Limit
 - Lower Entry Limit
 - Upper Entry Limit
 - Upper Control Limit
 - Target Control Limit
 - Lower Control Limit
 - Effective Date
 - Expiration Date
 - Lower User Limit
 - Upper User Limit
 - Test Frequency
 - Comment
 - Transaction Comment
8. Under **Output Cell**, select the cell on your worksheet where you want to import your specifications.
9. If you selected only one Variable ID, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).

If you select more than one Variable ID, these options are not available.

10. Click the **OK** button.

Import Just the Variable Tags

1. After you have entered your search criteria in the **Tag Mask** field, click the **Search** button.
2. Under **Search Display**, click the **Tag Names** option to display the actual tag names or click the **Tag Descriptions** option to display the short tag description.
3. In the **Found** box, do one of the following:
 - If you want to import all of the found variable tags, click the **Move All** button.
 - Select the tags that you want to import and click the **Move Selected** button.
4. Under **Output Display**, do one or more of the following:
 - Select the **Tag Descriptions** option to include the short tag description on your worksheet.
 - Select the **Engineering Units** option to include the engineering units on your worksheet.
5. To select an output cell on your worksheet, under **Output Cell**, do one of the following:
 - Click the **Collapse Dialog** button and select the output cell on your worksheet.
 - Click in the **Output Cell** box and then click the output cell on your worksheet.
6. Click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).
7. Click the **OK** button.

Import the Variable Tags and the Excel Function


By default, you can include the Excel function when you export your tags into your worksheet. By manipulating the Excel function, you can import different tags without re-opening the Plant Applications Variable Tag Search dialog box.

1. After finding and filtering the tags that you want to import into your worksheet, under **Output Display**, do one or more of the following:
 - Select the **Tag Descriptions** option to include the short tag description on your worksheet.
 - Select the **Engineering Units** option to include the engineering units on your worksheet.
2. Under [Output Range](#), do one of the following:
 - Click the **Collapse Dialog** button and select the cells on your worksheet where you want to import the variable tags.
 - Click in the **Output Range** box, then select the cells on your worksheet where you want to import the variable tags.

When you select a range of cells, you must select as many cells as the number of tags you want. If you have selected five tags, but only select four cells, then only the first four of the five selected tags will be imported into your worksheet.

3. Click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).
4. Click the **OK** button.

Perform Calculations on Test Values

1. From the Plant Applications menu, point to Variable Data and click Calculations.
2. The Plant Applications Tests Calculation dialog box opens.
3. **optional:** Under Server, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the Browse  button.
4. Under Variable(s), enter one or more Variable IDs or Variable Descriptions. For information on selecting cells for input, please see [Selecting Cells for Input](#).
5. Under Time Range, enter the start time and end time. For information on entering start and end times, please see [Selecting Start and End Times](#).
6. **optional:** If you want to filter on a specific product, under Product Filter (or Product Code), select a Product Code or Product ID on your worksheet.

*If you filter on a product, the options **Original Product** and **Applied Product** will be available.*

If you do not select a product, the information will be for all products associated with the selected variables for the specified time period.


Whether you are required to select Product Code or Product ID is determined by the site parameter, [ProdCodeIsNum](#). For more information, see [ProdCodeIsNum Site Parameter](#).

7. **optional:** Under **Crew Schedule Filter**, do one or more of the following:
 - Click the **Crew Description** drop-down arrow to select a crew.
 - Click the **Shift Description** drop-down arrows to select a shift.
8. Under **Statistic Calculation**, select one or more of the calculations you want to include on your worksheet.
9. Under **Output Cell**, select the cell on your worksheet where you want to import the information. For information on selecting cells for output, please see [Selecting Cells for Output](#).
10. If you select only one variable, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).

If you select more than one variable, these options are not available.

11. Click the **OK** button.

Perform Production Event Calculations


1. From the Plant Applications menu, point to Event Summary and click Product Event Calculations.
2. The Plant Applications Event Calculations dialog box opens.
3. **optional:** Under Server, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the Browse  button.
4. Under Production Line, click the drop-down arrow to select a production line, and then click the second drop-down arrow to select a production unit.
5. Under Time Range, enter the start time and end time. Entering an end time is optional. For more information on entering start and end times, please see [Selecting Start and End Times](#).
6. **optional:** If you want to filter on a specific product, under Product Filter (or Product Code), select a Product Code or Product ID on your worksheet.

If you do not select a product, the calculations for the selected dimension will be for all production events on the selected production unit for the specified time period.

Whether you are required to select Product Code or Product ID is determined by the site parameter, ProdCodeIsNum. For more information, see [ProdCodeIsNum Site Parameter](#).

7. Under **Run Statistic**, select *only one* of the statistics.
8. Under **Statistics Calculation**, select one or more of the calculations you want to perform.
9. Under **Output Cell**, select the cell on your worksheet where you want to input the statistic information. For information on selecting an output cell on your worksheet, please see [Selecting Cells for Output](#).
10. Under **Output Orientation**, click the **Columns** to list the statistics in multiple columns or click the **Rows** option to list the statistics in multiple rows. For more information, please see [Output Orientation](#).
11. Click the **OK** button.

Retrieve Alarm Event Summary Information

1. From the Plant Applications menu, point to Event Summary and click Alarm Summary.
2. The Plant Applications Alarm Summary dialog box opens.
3. **optional:** Under Server, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the Browse  button.
4. Under Variable, enter the Variable ID for which you want to retrieve Alarm event information. For information on selecting cells for input, please see [Selecting Cells for Input](#).
5. **optional:** Under Reasons, enter the Reason(s) and/or Action(s) you want to filter on.
6. Under Time Range, enter the start and end time during which you want to retrieve the Downtime event information. For information on entering start and end dates, please see [Selecting Start and End Times](#).
7. **optional:** If you want to filter on a specific product, under Product Filter (or Product Code), select a Product Code or Product ID on your worksheet.

If you filter on a product, the options Original Product and Applied Product will be available. Additionally, "Original Product" and "Applied Product" will be added to the Display list.

If you do not select a product, the Alarm event information will be for all products associated with the selected variable for the specified time period.

Whether you are required to select Product Code or Product ID is determined by the site parameter, ProdCodeIsNum. For more information, see [ProdCodeIsNum Site Parameter](#).

8. **optional:** Under **Crew Schedule Filter**, do one or more of the following:
9. Click the **Crew Description** drop-down arrow to select a crew.
10. Click the **Shift Description** drop-down arrows to select a shift.
11. Under **Reason Level To Report**, click the drop-down arrow and select the specific information you want summarized on your report.

Your results will depend on the reason level you select and any Reason or Action filters you entered. For example, if you want to see Reason 3 information on your worksheet, and do not filter anything, then you will get all of the Alarm events that have a Level 3 Reason. On the other hand, if you filter on a Level 1 Reason, then you will get only the Alarm events that have a Level 1 Reason and a Level 3 Reason associated with the Alarm event.


12. To retrieve information for only acknowledged alarms, select the **Get acknowledged alarms only** option.

13. Under **Display**, select one or more of the information categories to include on your worksheet.
14. Under **Output Range**, select the range of cells where you want to import the information on your worksheet. Keep in mind that if the number of reasons is greater than the number of cells you selected, you will get only the number of cells you select. For more information on selecting cells for output, please see [Selecting Cells for Output](#).
15. If you select only one cell, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).

If you select more than one output cell, these options are not available.

16. Click the **OK** button.

Retrieve Calculated Detail Data

1. From the Plant Applications menu, point to Variable Data and click Detailed Data.
2. The Plant **Applications Details Data** dialog box opens.
3. **optional:** Under **Historian**, click the drop-down arrow to select a different historian.
4. **optional:** Under **Server**, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the **Browse**  button.
5. Under **Variable Tag(s)**, select one or more variable tags. For information on selecting cells for input, please see [Selecting Cells for Input](#).
6. Under **Time Range**, enter the start and end times. For information on entering start and end times, please see [Selecting Start and End Times](#).
7. Under **Mode**, click the drop-down arrow and select **Calculated Data**.
8. Under **Interval**, enter the interval for which you want to interpolate the actual values.
9. Under **Time Unit**, click the drop-down arrow and select the unit of time for which you want to interpolate the actual values.

*To calculate values at 20-second intervals, you would enter **20** in step 7, and then select **Seconds** in step 8. This will give you what the calculated values would be every 20 seconds.*

10. Under **Calculation Type**, click the drop-down arrow and select the type of calculation you want performed on the data.
11. Under **Display**, select one or more of the attributes you want to include on your worksheet.
12. Under **Output Range**, select the cells on your worksheet where you want to import your information. For information on selecting cells for output, please see [Selecting Cells for Output](#).

Keep in mind that your output will be limited to the lesser of the detail records or the number of output cells. For example, if there are 12 detail records, but you select only 10 cells, you will get only the first 10 detail records. On the other hand, if you select 14 output cells, you will get all 12 detail records.


13. Under **Output Sort**, do one of the following:
 - Select the **Ascending** option to sort the attributes starting with the most recent estimated time stamp (i.e., from newest to oldest).
 - Select the **Descending** option to sort the attributes starting with the earliest estimated time stamp (i.e., from oldest to newest).

14. If select only one cell, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).

If you select more than one output cell, these options are not available.

15. Click the **OK** button.

Retrieve Captured Data for Variables

1. From the Plant Applications menu, point to Run Summary and For Variables, and then click Captured Data.
2. The Plant Applications Captured Data Set Data dialog box opens.
3. **optional:** Under Server, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the Browse  button.
4. Under Variable(s), select one or more variables on your worksheet. For more information on selecting cells, please see [Selecting Cells for Input](#).
5. Under Time Range, enter the start date and time. If desired, enter an end date and time. For more information on entering start and end times, please see [Selecting Start and End Times](#).
6. **optional:** If you want to filter on a specific product, under Product Filter, select a Product Code or Product ID on your worksheet.

Whether you are required to select Product Code or Product ID is determined by the site parameter, ProdCodeIsNum. For more information, see [ProdCodeIsNum Site Parameter](#).

7. Under **Run Statistic**, select one or more of the run statistics you want to include on your worksheet.
8. Under **Output Range**, select the range of cells where you want to input your run statistics. For information on how to select cells for output, please see [Selecting Cells for Output](#).


When you select your output range, you'll need to select the number of columns you want, which will determine the number of time stamps you will receive.

9. Under **Output Sort**, do one of the following:
 - Select the **Ascending** option to sort the statistics starting with the most recent Run Start Time (i.e., from oldest to newest).
 - Select the **Descending** option to sort the statistics starting with the earliest Run Start Time (i.e., from newest to oldest).
10. If you selected only one Variable ID, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).

If you select more than one Variable ID, these options are not available.

11. Click the **OK** button.

Retrieve Captured Data

1. From the Plant Applications menu, point to Run Summary and For Units, and click Captured Data Sets.
2. The **Plant Applications Captured Data Set Summary** dialog box opens.
3. **optional:** Under **Server**, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the **Browse**  button.

4. Under **Production Line**, click the drop-down arrow to select a production line, and then click the second drop-down arrow to select a production unit.
5. Under **Time Range**, enter the start time and end time. Entering an end time is optional. For more information on entering start and end times, please see [Selecting Start and End Times](#).
6. **optional:** If you want to filter on a specific product, under **Product Filter**, select a Product Code or Product ID on your worksheet.

Whether you are required to select Product Code or Product ID is determined by the site parameter, ProdCodelsNum. For more information, see [ProdCodelsNum Site Parameter](#).

7. Under **Run Statistic**, select one or more of the statistics.
8. Under **Output Range**, select the range of cells where you want to input your run statistics. For information on how to select cells for output, please see [Selecting Cells for Output](#).
9. Under **Output Sort**, do one of the following:
 - Select the **Ascending** option to sort the statistics starting with the most recent Run Start Time (i.e., from oldest to newest).
 - Select the **Descending** option to sort the statistics starting with the earliest Run Start Time (i.e., from newest to oldest).
10. If you select only one cell, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).

If you select more than one output cell, these options are not available.

11. Click the **OK** button.

Retrieve Detailed Downtime Event Information

1. From the Plant Applications menu, point to Event Summary and click Down Time Detail.
2. The Plant Applications Down Time Detail dialog box opens.
3. **optional:** Under Server, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the Browse button.
4. Under Unit, do one of the following:
 - Type the unit for which you want to retrieve Downtime event information.
 - Select the unit information from your worksheet. For information on selecting cells for input, please see [Selecting Cells for Input](#).
5. **optional:** Under **Location**, do one of the following:
 - Type the unit location for which you want to retrieve Downtime event information.
 - Select the unit location information from your worksheet. For information on selecting cells for input, please see [Selecting Cells for Input](#).
6. **optional:** Under **Reasons**, enter the Reason(s) and/or Action(s) you want to filter on.
7. Under **Time Range**, enter the start and end time during which you want to retrieve the Downtime event information. For information on entering start and end dates, please see [Selecting Start and End Times](#).
8. **optional:** If you want to filter on a specific product, under **Product Filter** (or **Product Code**), select a Product Code or Product ID on your worksheet.

Whether you are required to select Product Code or Product ID is determined by the site parameter, ProdCodelsNum. For more information, see [ProdCodelsNum Site Parameter](#).

If you filter on a product, the options Original Product and Applied Product will be available. Additionally, "Original Product" and "Applied Product" will be added to the Display list.

If you do not select a product, the Downtime event information will be for all products on the selected production unit for the specified time period.

9. **optional:** Under **Crew Schedule Filter**, do one or more of the following:
 - Click the **Crew Description** drop-down arrow to select a crew.
 - Click the **Shift Description** drop-down arrows to select a shift.
 10. Under **Display**, select one or more of the information categories to include on your worksheet.
-


Excel limits you to selecting a maximum of 11 of the 16 items in the list.

11. Under **Output Range**, select the range of cells where you want to import the information on your worksheet. Keep in mind that if the number of reasons is greater than the number of cells you selected, you will get only the number of cells you select. For more information on selecting cells for output, please see [Selecting Cells for Output](#).
 12. Under **Output Sort**, do one of the following:
 - Select the **Ascending** option to sort the statistics starting with the most recent Run Start Time (i.e., from oldest to newest).
 - Select the **Descending** option to sort the statistics starting with the earliest Run Start Time (i.e., from newest to oldest).
 13. If you select only one cell, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).
-

If you select more than one output cell, these options are not available.

14. Click the **OK** button.

Retrieve Detailed Raw Data

1. From the Plant Applications menu, point to Variable Data and click Detailed Data.
 2. The Plant Applications Details Data dialog box opens.
 3. **optional:** Under Historian, click the drop-down arrow to select a different historian.
 4. **optional:** Under Server, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the Browse  button.
 5. Under Variable Tag(s), select only one variable tag. For information on selecting cells for input, please see [Selecting Cells for Input](#).
-

When you retrieve Raw Data, you can select only one Variable Tag.

6. Under **Time Range**, enter the start and end times. For information on entering start and end times, please see [Selecting Start and End Times](#).
 7. Under **Mode**, click the drop-down arrow and select **Raw Data**.
 8. Under **Display**, select one or more of the attributes you want to include on your worksheet.
 9. Under **Output Range**, select the cells on your worksheet where you want to import your information. For information on selecting cells for output, please see [Selecting Cells for Output](#).
-

Keep in mind that your output will be limited to the lesser of the detail records or the number of output cells. For example, if there are 12 detail records, but you select only 10

cells, you will get only the first 10 detail records. On the other hand, if you select 14 output cells, you will get all 12 detail records.

10. Under **Output Sort**, do one of the following:
 - Select the **Ascending** option to sort the attributes starting with the most recent estimated time stamp (i.e., from newest to oldest).
 - Select the **Descending** option to sort the attributes starting with the earliest estimated time stamp (i.e., from oldest to newest).
11. If you select only one cell, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).

If you select more than one output cell, these options are not available.

12. Click the **OK** button.

Retrieve Detailed Alarm Event Information

1. From the Plant Applications menu, point to Event Summary and click Alarm Detail.
2. The **Plant Applications Alarm Detail** dialog box opens.
3. **optional:** Under **Server**, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the **Browse** button.
4. Under **Variable**, enter the Variable ID for which you want to retrieve detailed Alarm event information. For information on selecting cells for input, please see [Selecting Cells for Input](#).
5. **optional:** Under **Reasons**, enter the Reason(s) and/or Action(s) you want to filter on.
6. Under **Time Range**, enter the start and end time during which you want to retrieve the Waste event information. For information on entering start and end dates, please see [Selecting Start and End Times](#).
7. **optional:** If you want to filter on a specific product, under **Product Filter** (or **Product Code**), select a Product Code or Product ID on your worksheet.

Whether you are required to select Product Code or Product ID is determined by the site parameter, ProdCodeIsNum. For more information, see [ProdCodeIsNum Site Parameter](#).

*If you filter on a product, the options **Original Product** and **Applied Product** will be available. Additionally, "Original Product" and "Applied Product" will be added to the **Display** list.*

If you do not select a product, the Alarm event information will be for all products on the selected production unit for the specified time period.

8. To retrieve information for only acknowledged alarms, select **Get acknowledged alarms only**.
9. **optional:** Under **Crew Schedule Filter**, do one or more of the following:
 - Click the **Crew Description** drop-down arrow to select a crew.
 - Click the **Shift Description** drop-down arrows to select a shift.
10. Under **Display**, select one or more of the information categories to include on your worksheet.

Excel limits you to selecting a maximum of 11 of the 22 items in the list.


11. Under **Output Range**, select the range of cells where you want to import the information on your worksheet. Keep in mind that if the number of reasons is greater than the number of cells you selected, you will get only the number of cells you select. For more information on selecting cells for output, please see [Selecting Cells for Output](#).

12. Under **Output Sort**, do one of the following:
 - Select the **Ascending** option to sort the statistics starting with the most recent Start Time (i.e., from oldest to newest).
 - Select the **Descending** option to sort the statistics starting with the earliest Start Time (i.e., from newest to oldest).
13. If you select only one cell, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).

If you select more than one output cell, these options are not available.

14. Click the **OK** button.

Retrieve Downtime Event Summary Information

1. From the Plant Applications menu, point to Event Summary and click Down Time Summary.
2. The **Plant Applications Down Time Summary** dialog box opens.
3. **optional:** Under **Server**, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the **Browse**  button.
4. Under **Unit**, do one of the following:
 - Type the unit for which you want to retrieve Downtime event information.
 - Select the unit information from your worksheet. For information on selecting cells for input, please see [Selecting Cells for Input](#).
5. **optional:** Under **Location**, do one of the following:
 - Type the unit location for which you want to retrieve Downtime event information.
 - Select the unit location information from your worksheet. For information on selecting cells for input, please see [Selecting Cells for Input](#).
6. **optional:** Under **Reasons**, enter the Reason(s) and/or Action(s) you want to filter on.
7. Under **Time Range**, enter the start and end time during which you want to retrieve the Downtime event information. For information on entering start and end dates, please see [Selecting Start and End Times](#).
8. **optional:** If you want to filter on a specific product, under **Product Filter** (or **Product Code**), select a Product Code or Product ID on your worksheet.

If you filter on a product, the options Original Product and Applied Product will be available. Additionally, "Original Product" and "Applied Product" will be added to the Display list.

If you do not select a product, the Downtime event information will be summarized for all products on the selected production unit for the specified time period.

Whether you are required to select Product Code or Product ID is determined by the site parameter, ProdCodeIsNum. For more information, see [ProdCodeIsNum Site Parameter](#).

9. **optional:** Under **Crew Schedule Filter**, do one or more of the following:
 - Click the **Crew Description** drop-down arrow to select a crew.
 - Click the **Shift Description** drop-down arrows to select a shift.
10. Under **Reason Level To Report**, click the drop-down arrow and select the specific information you want summarized on your report.

Your results will depend on the reason level you select and any Reason or Action filters you entered. For example, if you want to see Reason 3 information on your worksheet,

and do not filter anything, then you will get all of the Downtime events that have a Level 3 Reason. On the other hand, if you filter on a Level 1 Reason, then you will get only the Downtime events that have a Level 1 Reason and a Level 3 Reason associated with the Downtime event.

11. Under **Display**, select one or more of the information categories to include on your worksheet.


Excel limits you to selecting a maximum of 11 of the 18 items in the list.

12. Under **Output Range**, select the range of cells where you want to import the information on your worksheet. Keep in mind that if the number of reasons is greater than the number of cells you selected, you will get only the number of cells you select. For more information on selecting cells for output, please see [Selecting Cells for Output](#).
13. If you select only one cell, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).

If you select more than one output cell, these options are not available.

14. Click the **OK** button.

Retrieve Interpolated Detailed Data

1. From the Plant Applications menu, point to Variable Data and click Detailed Data.
2. The Plant Applications Details Data dialog box opens.
3. **optional:** Under Historian, click the drop-down arrow to select a different historian.
4. **optional:** Under Server, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the Browse  button.
5. Under Variable Tag(s), select one or more variable tags. For information on selecting cells for input, please see [Selecting Cells for Input](#).
6. Under Time Range, enter the start and end times. For information on entering start and end times, please see [Selecting Start and End Times](#).
7. Under Mode, click the drop-down arrow and select Interpolated Data.
8. Under Interval, enter the interval for which you want to interpolate the actual values.
9. Under Time Unit, click the drop-down arrow and select the unit of time for which you want to interpolate the actual values.

*To interpolate values at 20-second intervals, you would enter **20** in step 8, and then select **Seconds** in step 9. This will give you what the estimated values would be every 20 seconds.*

10. Under **Display**, select one or more of the attributes you want to include on your worksheet.
11. Under **Output Range**, select the cells on your worksheet where you want to import your information. For information on selecting cells for output, please see [Selecting Cells for Output](#).

Keep in mind that your output will be limited to the lesser of the detail records or the number of output cells. For example, if there are 12 detail records, but you select only 10 cells, you will get only the first 10 detail records. On the other hand, if you select 14 output cells, you will get all 12 detail records.


12. Under **Output Sort**, do one of the following:
 - Select the **Ascending** option to sort the attributes starting with the most recent estimated time stamp (i.e., from newest to oldest).

- Select the **Descending** option to sort the attributes starting with the earliest estimated time stamp (i.e., from oldest to newest).
13. If select only one cell, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).

If you select more than one output cell, these options are not available.

14. Click the **OK** button.

Retrieve Last Run Data for Variables

1. From the Plant Applications menu, point to Run Summary, point to For Variables and click Last Run Data.
2. The Plant Applications Last Run Data dialog box opens.
3. **optional:** Under Server, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the Browse  button.
4. On your worksheet, select the variables for which you want to retrieve the selected statistics. For information about selecting cells for input, please see [Selecting Cells for Input](#).
5. **optional:** Select a Product Code or Product ID on your worksheet.


Whether you are required to select Product Code or Product ID is determined by the site parameter, ProdCodeIsNum. For more information, see [ProdCodeIsNum Site Parameter](#).

6. Under **Run Statistic**, select one or more of the statistics.
7. Under **Output Cell**, select the cell on your worksheet where you want to input the statistic information. For information about selecting cells for output, please see [Selecting Cells for Output](#).
8. If you selected only one Variable ID, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).

If you select more than one Variable ID, these options are not available.

9. Click the **OK** button.

Retrieve Last Run Statistics for Production Units


1. From the Plant Applications menu, point to Run Summary and For Units, and click Last Run Summary.
2. The Plant Applications Last Run Summary Information dialog box opens.
3. **optional:** Under Server, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the Browse  button.
4. Under Production Line, click the drop-down arrow to select a production line, and then click the second drop-down arrow to select a production unit.
5. **optional:** If you want to filter on a specific product, under Product Filter, select a Product Code or Product ID on your worksheet.

Whether you are required to select Product Code or Product ID is determined by the site parameter, ProdCodeIsNum. For more information, see [ProdCodeIsNum Site Parameter](#).

6. Under **Run Statistic**, select one or more of the statistics.
7. Under [Output Cell](#), select the cell on your worksheet where you want to input the statistic information.

8. Under **Output** Orientation, click the **Columns** to list the statistics in multiple columns or click the **Rows** option to list the statistics in multiple rows. For more information, please see [Output Orientation](#).
9. Click the **OK** button.

Retrieve Product Change Event Information

1. From the Plant Applications menu, point to Event Summary and click Search Product Changes.
2. The Plant Applications Product Change Search dialog box opens.
3. **optional:** Under Server, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the Browse  button.
4. Under Production Line, click the drop-down arrow to select a production line and then click the second drop-down arrow to select a production unit.
5. Under Time Range, enter a start time and, if you wish, enter an end time. For information on entering start and end times, please see [.Selecting Start and End Times](#)
6. If you want to filter on a specific product, under Product Filter (or Product Code), select a Product Code or Product ID on your worksheet.

Whether you are required to select Product Code or Product ID is determined by the site parameter, ProdCodeIsNum. For more information, see [ProdCodeIsNum Site Parameter](#).


If you filter on a product, the options Original Product and Applied Product will be available. Additionally, "Original Product" and "Applied Product" will be added to the Display list.

7. Under **Display**, select one or more of the attributes you want to include on your worksheet.
8. Under **Output Range**, select the range of cells where you want to input your production event attributes. For information on how to select cells for output, please see [Selecting Cells for Output](#).
9. Under **Output Sort**, do one of the following:
 - Select the **Ascending** option to sort the statistics starting with the most recent Run Start Time (i.e., from oldest to newest).
 - Select the **Descending** option to sort the statistics starting with the earliest Run Start Time (i.e., from newest to oldest).
10. If select only one cell for output, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).

If you select more than one output cell, these options are not available.

11. Click the **OK** button.

Retrieve Run Statistics for Variables by Time Frame

1. From the Plant Applications menu, point to Run Summary, point to For Variables and click Run Data By Time Frame.
2. The Plant Applications Run Data dialog box opens.
3. **optional:** Under Server, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the Browse  button.

4. Under Variable(s), select one or more Variable IDs on your worksheet. For instructions on selecting cells for input, see [Selecting Cells for Input](#).
5. Under **Time Range**, select a start date. If desired, you can also select an end date.
6. **optional:** Under Product Filter, select a Product Code or Product ID on your worksheet.

Whether you are required to select Product Code or Product ID is determined by the site parameter, ProdCodeIsNum. For more information, see [ProdCodeIsNum Site Parameter](#).

7. Under **Run Statistic**, select one or more statistics to include in your worksheet.
8. Under **Output Range**, select the cells on your worksheet where you want to import your statistics. For instructions on selecting cells for output, see [Selecting Cells for Output](#).
9. Under **Output Sort**, do one of the following:
 - Select the **Ascending** option to sort the statistics starting with the most recent Run Start Time (i.e., from oldest to newest).
 - Select the **Descending** option to sort the statistics starting with the earliest Run Start Time (i.e., from newest to oldest).
10. If you selected only one Variable ID, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).

If you select more than one Variable ID, these options are not available.

11. Click the **OK** button.

Retrieve Run Summaries by Time Frame

1. From the Plant Applications menu, point to Run Summary and For Units, and click Run Summary By Time Frame.
2. The Plant Applications Run Summary Information dialog box opens.
3. **optional:** Under Server, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the Browse button.
4. Under Production Line, click the drop-down arrow to select a production line, and then click the second drop-down arrow to select a production unit.
5. Under Time Range, enter the start time and end time. Entering an end time is optional. For more information on entering start and end times, please see [Selecting Start and End Times](#).
6. **optional:** If you want to filter on a specific product, under Product Filter, select a Product Code or Product ID on your worksheet.


Whether you are required to select Product Code or Product ID is determined by the site parameter, ProdCodeIsNum. For more information, see [ProdCodeIsNum Site Parameter](#).

7. Under **Run Statistic**, select one or more of the statistics.
8. Under **Output Range**, select the range of cells where you want to input your run statistics. For information on how to select cells for output, please see [Selecting Cells for Output](#).
9. Under **Output Sort**, do one of the following:
 - Select the **Ascending** option to sort the statistics starting with the most recent Run Start Time (i.e., from oldest to newest).
 - Select the **Descending** option to sort the statistics starting with the earliest Run Start Time (i.e., from newest to oldest).
10. If you a range of cells, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).

If you select more than one output cell, these options are not available.

11. Click the **OK** button.

Retrieve Test Data by Time Frame

1. From the Plant Applications menu, point to Variable Data and click Data By Time Frame.
2. The Plant Applications Test Data By Time dialog box opens.
3. **optional:** Under Server, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the Browse  button.
4. Under Variable(s), select the Variable ID(s) or Variable Description(s) on your worksheet. For information about selecting cells for input, please see [Searching for Variables](#).
5. Under Time Range, enter the start time and end time. For information about entering start and end dates, please see [Selecting Start and End Times](#).
6. **optional:** If you want to filter on a specific product, under Product Filter (or Product Code), select a Product Code or Product ID on your worksheet.

*Whether you are required to select Product Code or Product ID is determined by the site parameter, **ProdCodelsNum**. For more information, see [ProdCodelsNum Site Parameter](#).*

*If you filter on a product, the options **Original Product** and **Applied Product** will be available. Additionally, "Original Product" and "Applied Product" will be added to the **Display** list.*

If you do not select a product, the test data will be for all products associated with the specified variable(s) for the specified time period.

7. **optional:** Under **Crew Schedule Filter**, do one or more of the following:
 - Click the **Crew Description** drop-down arrow to select a crew.
 - Click the **Shift Description** drop-down arrows to select a shift.
8. Under **Display**, select one or more of the attributes to include on your worksheet.

If you select more than one variable, the last attribute you select will be the only attribute that is repeated for each variable.


If you select more than one variable, only the first variable's information will coordinate with the Result Time Stamp, unless the all the variables have the same time stamps.

9. Under **Output Range**, select the range of cells where you want to import the information on your worksheet. Keep in mind that if the number of reasons is greater than the number of cells you selected, you will get only the number of cells you select. For more information on selecting cells for output, please see [Selecting Cells for Output](#).
10. Under **Output Sort**, do one of the following:
 - Select the **Ascending** option to sort the statistics starting with the most recent Start Time (i.e., from oldest to newest).
 - Select the **Descending** option to sort the statistics starting with the earliest Start Time (i.e., from newest to oldest).
11. If you select only one cell, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).

If you select more than one output cell, these options are not available.

12. Click the **OK** button.

Retrieve Test Value Audit History

1. From the Plant Applications menu, point to Variable Data and click Audit History.
2. The Plant Applications Tests History dialog box opens.
3. **optional:** Under Server, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the Browse  button.
4. Under Variable, select the Variable ID or Variable Description of the variable for which you want the audit history.
5. Under Result Time Stamp, enter a valid Result date and time for the selected variable.

To find a variable's Result Time Stamp, please see [Retrieving Test Data by Time Frame](#).

6. Under **Display**, select one or more of the attributes you want to include on your worksheet.
7. Under **Output Range**, select the cells on your worksheet where you want to import your information. For information on selecting cells for output, please see [Selecting Cells for Output](#).


Keep in mind that your output will be limited to the lesser of the number of audit records or the number of output cells. For example, if there are 12 audit records, but you select only 10 cells, you will get only the first 10 audit records. On the other hand, if you select 14 output cells, you will get all 12 audit records.

8. Under **Output Sort**, do one of the following:
 - Select the **Ascending** option to sort the attributes starting with the most recent Entry Time Stamp (i.e., from newest to oldest).
 - Select the **Descending** option to sort the attributes starting with the earliest Result Time Stamp (i.e., from oldest to newest).
9. If select only one cell, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).

If you select more than one output cell, these options are not available.

10. Click the **OK** button.

Retrieve Test Values for a Specific Event

1. From the Plant Applications menu, point to Variable Data and click Data By Specific Event.
2. The Plant Applications Test Value By Event dialog box opens.
3. **optional:** Under Server, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the Browse  button.
4. Under Variable(s), select one or more Variable IDs or Variable Descriptions. For information on selecting cells for input, please see [Selecting Cells for Input](#).

If you select more than one variable, you can select only one event.

5. Under **Event Number** (or **Events**), select one or more Primary Event Numbers or Event IDs. For information on selecting cells for input, please see [Selecting Cells for Input](#).

If you select more than one Event, you can select only one variable.


Whether you are required to select Primary Event Number or Event ID is determined by the site parameter, EventNumIsNumber. For more information, see [EventNumIsNumber Site Parameter](#).

6. Under **Display**, select one or more of the attributes to include on your worksheet.
7. Under **Output Cell**, select the cell on your worksheet where you want to import the information. For information on selecting cells for output, please see [Selecting Cells for Output](#).
8. If you select only one variable, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).

If you select more than one variable, these options are not available.

9. Click the **OK** button.


Retrieve the Most Recent Test Value

1. From the Plant Applications menu, point to Variable Data and click Current Data.
2. The Plant Applications Current Test Value dialog box opens.
3. **optional:** Under Server, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the Browse  button.
4. Under Variable(s), select one or more Variable IDs or Variable Descriptions. For information on selecting cells for input, please see [Selecting Cells for Input](#).
5. Under Display, select one or more of the attributes to include on your worksheet.
6. Under Output Cell, select the cell on your worksheet where you want to import the information. For information on selecting cells for output, please see [Selecting Cells for Output](#).
7. If you select only one variable, you can click either the Columns or Rows option. For more information, please see [Output Orientation](#).

If you select more than one variable, these options are not available.

8. Click the **OK** button.

Retrieve Time-Specific Test Data

1. From the Plant Applications menu, point to Variable Data and click Data By Specific Time.
2. The Plant Applications Test Value By Time dialog box opens.
3. **optional:** Under Server, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the Browse  button.
4. Under Variable(s), select one or more Variable IDs or Variable Descriptions. For information on selecting cells for input, please see [Selecting Cells for Input](#).
5. Under Result Time, enter the result date and time for which you want to see the information.

The Result Time is the time generated by Plant Applications based on the sampling interval specified in the variable's data sheet.

If you enter only a date, the time is assumed to be 12:00 AM.

6. Under **Display**, select one or more of the attributes you want to include on your worksheet.
7. Under **Output Cell**, select the cell on your worksheet where you want to import the information. For information on selecting cells for output, please see [Selecting Cells for Output](#).
8. If you select only one variable, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).

If you select more than one variable, these options are not available.

9. Click the **OK** button.



Search for Actions

1. From the **Plant Applications** menu, point to **Search** and click **Actions**.
2. In the **Plant Applications Action Search** dialog box, click the **Event Type** drop-down arrow and select an event type.
3. Click the **Unit** drop-down arrow and select a production unit.

The units available in the Unit drop-down list will be the same if you select Waste or Alarm event types.

4. Click the **Location** drop-down arrow and select a location. The level 1 Actions will be displayed in the **Available Actions** box and will be listed in the **Action 1** drop-down box. Then, do one of the following:
 - If you want to see the level 2 Actions associated with a specific level 1 Action, go to the next step.
 - If you either don't want to see the level 2 Action, or if you haven't configured level 2 Reasons in the Plant Applications Administrator, go to step 8.

If there are no locations available, then the selected event type has not been associated with the selected unit in the Plant Applications Administrator.

5. Click the **Action 1** drop-down arrow and select the level 1 Action for which you want to view the level 2 Actions. Then, do one of the following:
 - If you want to see the level 3 Actions associated with a specific level 2 Action, go to the next step.
 - If you do not want to see the level 3 Actions, or if you did not configure level 3 Actions in the Plant Applications Administrator, go to step 8.
6. Click the **Action 2** drop-down arrow and select the level 2 Action for which you want to view the level 3 Actions. Then, do one of the following:
 - If you want to see the level 4 Actions associated with a specific level 3 Action, go to the next step.
 - If you do not want to see the level 4 Actions, or if you did not configure level 4 Actions in the Plant Applications Administrator, go to step 8.
7. Click the **Action 3** drop-down arrow and select the level 3 Action for which you want to view the level 4 Actions.
8. In the **Available Actions** box, do one of the following:
 - Select the available reasons you want to include in your worksheet, and then click the **Move Selected**  button to move the selected reasons to the **Selected Actions** box.
 - Click the **Move All**  button to move all of the available reasons to the **Selected Actions** box.
9. If you want to include all the levels associated with a selected Action, select the **Include Hierarchy** check box to include the following information:
 - Event Type
 - Unit
 - Unit ID

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- Location
- Location ID
- Action levels above the selected Actions
- Action Descriptions

If you do not select the Include Hierarchy check box, only Action Description will be included in your worksheet.

10. In the **Output Cell** box, click the **Collapse Dialog** button  and select the output cell on your worksheet.



The selected output cell is where the first Action will be entered. Be sure to include an additional row or column for the headings.

11. Click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).
12. Click the **OK** button.


Search for Characteristics

1. From the **Plant Applications** menu, point to **Search** and then click **Characteristics**.
2. In the **Plant Applications Characteristic Search** dialog box, click the **Product Properties** drop-down arrow and do one of the following:
 - Select **[All]** to retrieve a list of all characteristics
 - Select a specific product property to retrieve only those characteristics associated with the selected product property.

If you want to select more than one product property, but not all product properties, you can select a product property one after the other, and the characteristics for each product property are then added to the Selection Found box.

3. In the **Selection Found** box, do one of the following:
- Select the characteristics you want to include on your worksheet, then click the **Move Selected**  button to move the characteristics to the **Selected Characteristics** box.
 - Click the **Move All**  button to move all the characteristics to the **Selected Characteristics** box.
4. Select the **Characteristics Descriptions** check box to include characteristic descriptions on your worksheet.






If you do not select the Characteristics Descriptions check box, only the characteristic IDs (an integer assigned by Plant Applications to each characteristic) will be included on your worksheet.

5. Select the **Property Descriptions** check box to include a description of the property associated with each characteristic.
6. In the **Output Cell** box, click the **Collapse Dialog** button  and select the output cell on your worksheet.


The selected output cell is where the first Characteristic will be entered. Be sure to include an additional row or column for the headings.

7. Click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).
8. Click the **OK** button.

Search for Product Attributes and ProdCodelsNum is set to 1

1. From the **Plant Applications** menu, point to **Attributes** and then click **Products**.
2. In the **Plant Applications Product Info** dialog box, under **Server**, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the **Browse**  button. *This step is optional.*
3. Do one of the following:
 - To use your Product Codes, under **Product Code(s)**, click the **Collapse Dialog**  button, select the Product Codes on your worksheet, and click the **Expand Dialog**  button.
 - To use Product IDs, select the **Force ID** option. Then, under **Product IDs**, click the **Collapse Dialog**  button, select the Primary Event Numbers on your worksheet, and click the **Expand Dialog**  button.

You can select products by Product ID or by Product Code. You can not use Product Descriptions.

4. Under **Attribute(s)**, select one or more of the available attributes.
5. Under **Output Cell**, select the cell on your worksheet where you want to begin your output by doing one of the following:
 - Click the **Output Cell** field and select the output cell on your worksheet.
 - Click the **Collapse Dialog**  button and select the output cell on your worksheet.
6. If you selected only one Product ID or Product Code, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).


If you select more than one Product ID or Product Code, these options are not available.



7. Click the **OK** button.

Search for Products

1. From the **Plant Applications** menu, point to **Search** and click **Products**.
2. In the **Plant Applications Product Search** dialog box, do one or more of the following:
 - **Product Group:** Click the drop-down arrow to select a product group.
 - **Product Code Filter:** Enter any combination of numbers and letters to filter the products.
 - **Server:** Click the drop-down arrow to select a different server.
 - **Display:** Click the **Product Codes** check box to include product codes for the selected products. Click the **Product Description** check box to include product descriptions for the selected products.

If you do not select the Product Description option, only [Product IDs](#) will be included on your worksheet.




3. Click the **Search** button.
4. In the **Selection Found** box, do one of the following:
 - Select the product(s) you want to include on your spreadsheet, and then click the **Move Selected** button  to move the selected products to the **Selected Products** box.

- Click the **Move All** button  to move all of the products to the **Selected Products** box.
5. In the **Output Cell** box, click the **Collapse Dialog** button  to select the output cell on your worksheet. For more information, please see [Selecting Cells for Output](#).

The selected output cell is where the first variable will be entered. Be sure to include an additional row or column for the headings.

6. Click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).
7. Click the **OK** button.

Search for Property IDs

1. From the **Plant Applications** menu, point to **Search** and then click **Properties**.
2. The Plant Applications Property Search dialog box opens.
3. **optional:** If you need to select a different server, click the drop-down arrow and select a different server.
4. Do one of the following:
 - Select the product properties you want to include on your worksheet, and then click the **Move Selected** button  to move them to the **Selected Properties** box.
 - Click the **Move All** button  to move all the product properties to the **Selected Properties** box.
5. In the [Output Cell](#) box, click the **Collapse Dialog** button  and select the output cell on your worksheet.

The selected output cell is where the first variable will be entered. Be sure to include an additional row or column for the headings.

6. Click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).
7. Select the **Property Descriptions** check box to include property descriptions on your worksheet.

If you do not select the Property Descriptions option, only [Property IDs](#) will be included on your worksheet.

8. Click the **OK** button.

Search for Reasons



1. From the **Plant Applications** menu, point to **Search** and click **Reasons**.
2. In the **Plant Applications Reason Search** dialog box, click the **Event Type** drop-down arrow and select an event type.
3. Click the **Unit** drop-down arrow and select a production unit.

The units available in the Unit drop-down list will be the same if you select Waste or Alarm event types.

4. Click the **Location** drop-down arrow and select a location. The level 1 Reasons will be displayed in the **Available Reasons** box and will be listed in the **Reason 1** drop-down box. Then, do one of the following:

- If you want to see the level 2 Reasons associated with a specific level 1 Reason, go to the next step.
- If you either don't want to see the level 2 Reasons, or if you haven't configured level 2 Reasons in the Plant Applications Administrator, go to step 8.

If there are no locations available, then the selected event type has not been associated with the selected unit in the Plant Applications Administrator.

5. Click the **Reason 1** drop-down arrow and select the level 1 Reason for which you want to view the level 2 Reasons. Then, do one of the following:
 - If you want to see the level 3 Reasons associated with a specific level 2 Reason, go to the next step.
 - If you do not want to see the level 3 Reasons, or if you did not configure level 3 Reasons in the Plant Applications Administrator, go to step 8.
6. Click the **Reason 2** drop-down arrow and select the level 2 Reason for which you want to view the level 3 Reasons. Then, do one of the following:
 - If you want to see the level 4 Reasons associated with a specific level 3 Reason, go to the next step.
 - If you do not want to see the level 4 Reasons, or if you did not configure level 4 Reasons in the Plant Applications Administrator, go to step 8.
7. Click the **Reason 3** drop-down arrow and select the level 3 Reason for which you want to view the level 4 Reasons.
8. In the **Available Reasons** box, do one of the following:
 - Select the available reasons you want to include in your worksheet, and then click the **Move Selected**  button to move the selected reasons to the **Selected Reasons** box.
 - Click the **Move All**  button to move all of the available reasons to the **Selected Reasons** box.
9. If you want to include all the levels associated with a selected Reason, select the **Include Hierarchy** check box to include the following information:
 - Event Type
 - Unit
 - Unit ID
 - Location
 - Location ID
 - Reason levels above the selected Reasons
 - Reason Descriptions




If you do not select the Include Hierarchy check box, only Reason Description will be included in your worksheet.

10. In the **Output Cell** box, click the **Collapse Dialog** button  and select the output cell on your worksheet.

The selected output cell is where the first Reason will be entered. Be sure to include an additional row or column for the headings.

11. Click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).
12. Click the **OK** button.

Search for Specification Variables

1. From the Plant Applications menu, point to Search and click Specifications.
2. In the **Plant Applications Specification Search** dialog box, do one or more of the following:
 - **Product Properties:** Click the drop-down arrow to select the product property.
 - **Specification Description Filter:** Enter any combination of numbers or letters that you want to filter the selected specifications.
 - **Server:** Click the drop-down arrow to select a different server.
 - **Display:** Click the **Specification Descriptions** check box to include specification descriptions on your worksheet. Click the **Property Descriptions** check box to include property descriptions on your worksheet.
3. Click the **Search** button.
4. In the **Selection Found** box, do one of the following:
 - Select the specifications you want to include on your worksheet, and then click the **Move Selected** button  to move the selected specifications to the **Selected Specifications** box.
 - Click the **Move All** button  to move all the specifications to the **Selected Specifications** box.
5. In the **Output Cell** box, click the **Collapse Dialog** button  and select the output cell on your worksheet.

The selected output cell is where the first variable will be entered. Be sure to include an additional row or column for the headings.

6. Click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).
7. Click the **OK** button.

Search for Variable Tags

1. From the **Plant Applications** menu, point to **Search** and then click **Variable Tags**.
2. The Plant Applications Variable Tag Search dialog box opens.
3. **optional:** Click the Historian drop-down arrow to select a different historian, if necessary.
4. **optional:** If you need to select a different server, click the Server drop-down arrow and select a different server.
5. In the Tag Mask field, do one of the following:
 - If you want to retrieve a list of all variable tags, type an asterisk (*) in the **Tag Mask** field.
 - If you have a list of variable tags on your worksheet, click the **Collapse Dialog** button and select the appropriate cells on your worksheet that contain the variable tags.
 - If you want to limit the list of found tags to only tags that contain certain letters or numbers, type the letters or numbers in the **Tag Mask** field. For example, typing *p1* will find only those tags that contain the letter "p" and the number "1" *adjacent* to each other.

Set Your Add-in Options

To set your Plant Applications Add-in Options

1. From the **Plant Applications** menu, click **Options**.
2. In the **Plant Applications Add-in Options** dialog box, make your desired changes.
3. Do one of the following:
 - To apply the changes to only the current session of Excel, click the **Apply** button and then click the **Cancel** button to close the dialog box. After you close and re-open Excel, the options will return to your previously saved settings.
 - To permanently save your changes, click the **Save** button and then click the **Cancel** button to close the dialog box.
 - To restore all the default settings, click the **Default** button and then click the **Cancel** button to close the dialog box.

Plant Applications Site Parameters

There are a couple of site parameters that are set in the Plant Applications Administrator that affect the functionality of some of the dialog boxes in the Plant Applications Add-in.

ProdCodelsNum Site Parameter

The way you search for product attributes will be affected by how the site parameter, ProdCodelsNum, has been set in the Plant Applications Administrator (Plant Applications Administrator > Global Settings > Site Parameters > Edit Site Parameters). If ProdCodelsNum has a value of **1**, it tells the Plant Applications Add-in that the Product Codes are all numeric. Since Product IDs are also numeric, when you search for product attributes you will need to tell Plant Applications whether you are using Product Codes or Product IDs.

What if some Product Codes are numeric and some alpha-numeric?

If some of your Product Codes are numeric and some alpha-numeric, *and* ProdCodelsNum has a value of **1**, you can simply use your Product Codes to find the associated attributes. However, if you are using Product IDs, you will need to select **Force ID** option.

EventNumIsNumber Site Parameter

The way you search for product attributes will be affected by how the site parameter, EventNumIsNumber, has been set in the Plant Applications Administrator (Plant Applications Administrator > Global Settings > Site Parameters > Edit Site Parameters). If EventNumIsNumber has a value of **1**, it tells the Plant Applications Add-in that the Primary Event Numbers are *all* numeric. Since Event IDs are also numeric, when you search for production event attributes you will need to tell Plant Applications whether you are using Primary Event Numbers or Event IDs.

What if some Primary Event Numbers are numeric and some alpha-numeric?

If some of your Primary Event Numbers are numeric and some alpha-numeric, *and* EventNumIsNumber has a value of **1**, you can simply use your Primary Event Numbers to find the associated attributes. However, if you are using Event IDs, you will need to select **Force ID** option.

Searches

You use the Plant Applications Add-in to retrieve a variety of data. When retrieving data, you may need to provide certain information, such as variables or product IDs. Unless you happen to know the specific information you need, you can use the Search command to populate your spreadsheet with the required information. For example, if you want to view the attributes of one or more variables, you will need to provide the variable(s) for which you want to view the attributes.

Searching for Variables

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Search**, and then click **Variables**.

Using the Plant Applications Add-in, you can search for all the variables you have configured for use in Plant Applications. To help limit the number of variables returned in a search, Plant Applications provides a number of filters to help you specify the variables you want to include in your spreadsheet. You can filter on one or more of the following:

- Production line
- Production unit
- variable group
- Variable description

When you select a specific production line, the available production units are those associated with the selected production line. If you want to select from all production units, then do not select a production line. Similarly, if you want to select from all production groups, then do not select a production line or unit. However, using these filters makes it much easier for you to find the variables you need.

To search for variables

1. From the **Plant Applications** menu, point to **Search**, and then click **Variables**.
2. In the **Plant Applications Variable Search** dialog box, do one or more of the following:
 - **Production Line:** Click the drop-down arrow to select a production line.
 - **Production Unit:** Click the drop-down arrow to select a production unit. If you selected a production line, only the production units associated with the selected line will be available.
 - **Production Group:** Click the drop-down arrow to select a variable group. If you selected a production unit, only the variable groups associated with the selected production unit will be available.
 - **Variable Description Filter:** Enter any combination of numbers or letters. Keep in mind that the variables displayed will be those that contain exactly what you enter. As an example, let's say that you have the following variables:




50#Gloss, 50#Matte, 60#Gloss, 70#Matte, Alarm, Reelspeed

If you enter ...	You'll get ...
5	50#Gloss 50#Matte
A	50#Matte 70#Matte

	Alarm
E	50#Matte 70#Matte Reelspeed
At	50#Matte 70#Matte
# a	No variables will be returned.

- **Server:** If you need to select a different server, click the drop-down arrow and select a server.
- **Display:** Select the **Variable Descriptions** check box to include a description of the selected variables on your spreadsheet. Select the **Engineering Units** check box to include the engineering units (#, LF, lbs, kg) for the selected variables on your spreadsheet.

*If you do not select the Variable Description option, only the **Variable ID** and **integer assigned by Plant Applications to each variable** will be included on your worksheet.*

3. Click the **Search** button.
4. In the **Selection Found** box, do one of the following:
 - Select the variables you want to include on your spreadsheet and click the **Move Selected** button  to move the selected variables to the **Selected Variables** box.
 - Click the **Move All** button  to move all of the variables to the **Selected Variables** box.
5. In the **Output Cell** box, click the **Collapse Dialog** button  and select the output cell on your spreadsheet. For more information, please see [Selecting Cells for Output](#).

The selected output cell is where the first variable will be entered. Be sure to include an additional row or column for the headings.

6. Click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).
7. Click the **OK** button.

Searching for Products

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Search** and click **Products**.

You can use the Plant Applications Add-in to find all of the products produced in the plant. You can search for all products, or you can select a product group and find the products within the selected group. The product groups are created in the Plant Applications Administrator and are a way of logically grouping related products. If you haven't associated any products with a product group in the Plant Applications Administrator, your search will not find any products.

If your plant has more than one Plant Applications server, only the products configured on the selected server will be found.

An alternate method of searching for products can be found at [Build Product Search](#). Using the alternate method, you can search for a product group, product properties and characteristics, or a combination of product group and properties and characteristics, rather than returning a list of specific products.

[How?](#)

Build Product Search


To access this dialog: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, click **Build Product Search**.

The Build Product Search function is the only way within the Plant Applications Add-in to search for product groups, as opposed to searching for a single product. If you want to search for just a single product, you can use the [product search](#). Using this function, you can retrieve properties and characteristics, instead of having to search for them separately. What this means is that you can then use a product group as a filter, which will give you all the products within the specified group, rather than being limited to filtering on only a single product.

Another feature of this function is that it is available on a pop-up menu, which you can open by simply right-clicking on any cell in your worksheet. This lets you quickly search for a product, product group, property or characteristic.

After you use this function, you will need to re-set your automatic calculation option in Excel. How?

To build a product search

1. Do one of the following:
 - From the **Plant Applications** menu, click **Build Product Search**.
 - Right-click on a cell in your worksheet, and from the pop-up menu select **Build Product Search**.
2. The Plant Applications Product Search Selector dialog box opens.
3. **optional:** Under Server, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the Browse  button.
4. Under Search Type, click the drop-down arrow and do one of the following:
 - Select **Product** to search for product codes. You can retrieve all products or all products within a specific group.
 - Select **Product Group** to retrieve product groups. You can then use one of these groups as input for filtering.
 - Select **Property/Characteristic** to retrieve a specific property and all associated characteristics.
 - Select **Product Group and Prop/Char** to retrieve product groups, properties and characteristics.

*Using the **Product Group and Prop/Char** results as a filter will return results that match either the product group or the property and characteristic. In other words, it uses OR logic and not AND logic.*

5. In the **Output Cell** box, click the **Collapse Dialog** button  and select the output cell on your worksheet. For more information, please see [Selecting Cells for Output](#).

The selected output cell is where the first variable will be entered. Be sure to include an additional row or column for the headings.

6. Select either the **Columns** option or **Rows** option. For more information, please see [Output Orientation](#).
7. Click the **OK** button.

Searching for Specifications

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Search** and click **Specifications**.

You can search for specifications that you have configured in the Plant Applications Administrator, which are stored on the selected server. You can either search for all specifications or you can select a property and search for specifications within the selected property.

Specifications are created in the Plant Applications Administrator. If you haven't associated any specifications with a property, your search will come up empty.

[How?](#)

Searching for Property IDs

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Search** and then click **Properties**.

You can use the Plant Applications Add-in to search for properties that have been created in the Product Management module in Plant Applications Administrator.

[How?](#)

Searching for Characteristics

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Search** and then click **Characteristics**.

You can search for characteristics associated with properties that have been defined in the Product Management module in the Plant Applications Administrator.

[How?](#)

Searching for Downtime, Waste, or Alarm Reasons

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Search** and click **Reasons**.

You can search for reasons associated with Downtime, Waste, or Alarm Events that have been configured in the Plant Applications Administrator. Keep in mind that only these three event types have reasons associated with them.

[How?](#)

Searching for Downtime, Waste, or Alarm Actions

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Search** and click **Actions**.

You can search for Actions associated with Downtime, Waste, or Alarm Events that have been configured in the Plant Applications Administrator. Keep in mind that only these three event types have Actions associated with them.

[How?](#)

Searching for Variable Tags

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Search** and then click **Variable Tags**.

This Search command lets you search for all the tags in the selected historian. You can either search for all the tags, or you can search for tag names that contain specific letters and numbers.

Additionally, when you import the variable tags into your worksheet, you can import just the tag names or you can import the function that finds the variable tags. What this allows you to do is search for additional variable tags from the Excel worksheet, rather than opening the Plant Applications Variable Tag Search dialog box, by manipulating the Excel function within the cell. (For more information, see [To import the variable tags and the Excel function](#)) However, when you select this option, you must use the Tag Mask to filter any unwanted tags. You won't be able to use the **Move All** or **Move Selected** buttons.

[To search for variable tags](#)

[To import just the variable tags](#)

[To import the variable tags and the Excel function](#)

Searching for Product Change Events

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Event Summary** and click **Search Product Changes**.

You can retrieve specific information about product change events during a specified time period. You can refine your search to include information about a specific product, if you wish.


[How?](#)

Searching for Production Events

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Event Summary** and click **Search Production Events**.

You can find specific information about each production event in Plant Applications. These production events are associated with a production unit. When you search for production events, you must specify a start time. Additionally, the Plant Applications Add-in provides you with multiple filters that you can use to limit or refine your search results.

To search for production events

1. From the Plant Applications menu, point to Event Summary and click Search Production Events.
2. The Plant Applications Event Search dialog box opens.
3. **optional:** Under Server, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the Browse  button.
4. Under Production Line, click the drop-down arrow to select a production line, then click the second drop-down arrow to select a production unit.
5. Under Time Range, enter a start and end time. For more information on entering start and end dates, please see [Selecting Start and End Times](#).
6. If you want to filter on a specific product, under Product Filter (or Product Code), select a Product Code or Product ID on your worksheet. If you filter on a product, the options original product and applied product will be available.

Whether you are required to select Product Code or Product ID is determined by the site parameter, ProdCodelsNum. For more information, see [ProdCodelsNum Site Parameter](#).

If you filter on a product, the options Original Product and Applied Product will be available. Additionally, "Original Product" and "Applied Product" will be added to the Display list.

7. If the choice is available, under **Product Filter As**, select:
 - **Original Product** to filter on the original product.
 - **Applied Product** to filter on the applied product. The applied product is the final product that a particular production event is assigned. This is used to indicate a different product than the production event was originally built as. The starting or initial product is the original product.
8. Select Filter Out Non-Productive Time to exclude non-productive time from the search results. For more information on non-productive time, see the topic Non-Productive Time.
9. For information about **Force ID**, see [ProdCodelsNum Site Parameter](#).
10. Under **Filter By**, do one or more of the following:
 - Under **Plant Order Number**, enter the plant order number.
 - Under **Customer Code**, enter the customer code.
 - Under **Shipment Number**, enter the shipment number
 - Under **Primary Event Number**, enter the primary event number.

Keep in mind that the results you get might not be the expected results simply because of the filters you have chosen. If you are not sure of your results, it's best to use fewer filters.

11. Under **Crew Schedule Filter**, do one or more of the following:
 - Under **Crew Description**, click the drop-down arrow to select a crew.
 - Under **Shift Description**, click the drop-down arrow to select a shift.

Notice that if you select a crew description or shift description, "Crew Description" and "Shift Description" are added to the Display list.

12. Under **Event Status Filter**, do one of the following:
 - If you do not want to filter on event status (e.g., Consumed, In Progress, Hold, etc.), select the **Do Not Filter By Event Status** option.
 - If you want to filter on event status, select the **Filter By Specific Event Status In List Below** option. Then, in the **Status To Exclude** list, select one or more of the event statuses you want to include, then click the **Move Selected** button to move the event statuses to the **Status To Include** list.
13. Under **Display**, select one or more of the attributes you want to include on your worksheet.
14. Under **Output Range**, select the range of cells where you want to input your production event attributes. For information on how to select cells for output, please see [Selecting Cells for Output](#).
15. Under **Output Sort**, do one of the following:
 - Select the **Ascending** option to sort the statistics starting with the most recent Run Start Time (i.e., from oldest to newest).
 - Select the **Descending** option to sort the statistics starting with the earliest Run Start Time (i.e., from newest to oldest).
16. If select only one cell, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).

If you select more than one output cell, these options are not available.

17. Click the **OK** button.

Searching for Variables by Test Name

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Search**, and then click **Test Variable Name**.

You can use the variable test name to retrieve test values for one or more variables for a specific event. If a selected variable is not part of the specified event, no value will be returned. If a selected event is not an event-based variable, "Variable Not Event Based" will be displayed in the associated cell.

To retrieve the test values, you need to first search for the variable test name.


The variable test name is also known as the variable alias name in the Variable Sheet.

To search for variable test names



1. Open Excel and from the **Plant Applications** menu, point to **Search** and then click **Test Variable Name**.
2. In the **Test Variable Name Search** dialog box, do one or more of the following:
 - **Server:** If you need to select a different server, click the drop-down arrow and select a server.
 - **Production Line:** Click the down arrow to select a production line.
 - **Production Unit:** Click the down arrow to select a production unit. If you selected a production line, only the production units associated with the selected line will be available.
 - **Production Group:** Click the down arrow to select a variable group. If you selected a production unit, only the variable groups associated with the selected production unit will be available.
 - **Test Variable Name Filter:** Type any combination of numbers or letters. Keep in mind that the variable test names displayed will be those that contain exactly what you enter. As an example, let's say that you have the following variable test names:

50#Gloss, 50#Matte, 60#Gloss, 70#Matte, Alarm, Reelspeed

If you enter ?	You'll get ?
5	50#Gloss 50#Matte
A	50#Matte 70#Matte Alarm
E	50#Matte 70#Matte Reelspeed
At	50#Matte 70#Matte
# a	No variables will be returned.

3. Click the **Search** button.
4. Under **Selection Found**, do one of the following:
 - Select the variable test names you want to include on your spreadsheet and click the **Move Selected** button  to move the selected variables to the **Selected Variables**.

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- Click the **Move All** button  to move all of the variables to the **Selected Variables** box.
- 5. In the **Output Cell** box, click the **Collapse Dialog** button  and select the output cell on your spreadsheet. For more information, please see [Selecting Cells for Output](#).

The selected output cell is where the first variable will be entered. Be sure to include an additional row or column for the headings.

6. Click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).
7. Click the **OK** button.

Now that you've selected your variable test name(s), you can retrieve test values for all the variables that share the same test name (variable alias name). See [Retrieving Test Data by Test Variable Name](#).

Finding Attributes

The Plant Applications Add-in for Excel helps you find the attributes associated with the following:

- Variables
- Products
- Properties
- Characteristics
- Specifications
- Production Events

Finding Variable Attributes

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Attributes**, and then click **Variables**.

You can find specific information for each variable in Plant Applications. You can find attributes for one or more variables and choose the attributes that you want to include on your worksheet.

Make sure you have already imported variables into your worksheet before you find the variable attributes. For information about finding variables, see [Searching for Variables](#).

[How?](#)

Finding Product Attributes




To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Attributes** and then click **Products**.

You can find specific information for each product in Plant Applications. You can find attributes for one or more products and choose the attributes that you want to include on your worksheet.

Make sure you have already imported products into your worksheet before you find the product attributes. For information about finding products, see [Searching for Products](#).


This function is controlled by the site parameter, `ProdCodelsNum`, which is set in Plant Applications Administrator. For more information on this site parameter, please see [ProdCodelsNum Site Parameter](#).

To find product attributes and `ProdCodelsNum` is set to 0 (zero)

1. From the **Plant Applications** menu, point to **Attributes** and then click **Products**.
2. The Plant Applications Product Attributes dialog box opens.
3. **optional:** Under Server, click the drop-down arrow to select a different server. If you need to add a new server or if you need to connect to the selected server, click the Browse  button.
4. Under Product(s), click the Collapse Dialog  button.
5. On your worksheet, select the Product ID or Product Code of the products for which you want to find attributes and click the **Expand Dialog**  button.

You can select products by Product ID or by Product Code. You can not use Product Descriptions.






6. Under **Attribute(s)**, select one or more of the available attributes.

7. Under **Output Cell**, select the cell on your worksheet where you want to begin your output by doing one of the following:
 - Click the **Output Cell** field and select the output cell on your worksheet.
 - Click the **Collapse Dialog**  button and select the output cell on your worksheet.
8. If you selected only one Product ID or Product Code, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).


If you select more than one Product ID or Product Code, these options are not available.

9. Click the **OK** button.

To search for product attributes and ProdCodelsNum is set to 1

1. From the **Plant Applications** menu, point to **Attributes** and then click **Products**.
2. The Plant Applications Product Info dialog box opens.
3. **optional:** Under Server, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the **Browse**  button.
4. Do one of the following:
 - To use your Product Codes, under **Product Code(s)**, click the **Collapse Dialog**  button, select the Product Codes on your worksheet, and click the **Expand Dialog**  button.
 - To use Product IDs, select the **Force ID** option. Then, under **Product IDs**, click the **Collapse Dialog**  button, select the Primary Event Numbers on your worksheet, and click the **Expand Dialog**  button.

You can select products by Product ID or by Product Code. You can not use Product Descriptions.

5. Under **Attribute(s)**, select one or more of the available attributes.
6. Under **Output Cell**, select the cell on your worksheet where you want to begin your output by doing one of the following:
 - Click the **Output Cell** field and select the output cell on your worksheet.
 - Click the **Collapse Dialog**  button and select the output cell on your worksheet.
7. If you selected only one Product ID or Product Code, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).

If you select more than one Product ID or Product Code, these options are not available.

8. Click the **OK** button.

Finding Property Attributes

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Attributes** and click **Property**.

You can find specific information for each property in Plant Applications. You can find attributes for one or more properties and choose the attributes that you want to include on your worksheet.

Make sure you have already imported properties into your worksheet before you find the product attributes. For information about finding properties, see [Searching for Property IDs](#).

[How?](#)

Finding Characteristic Attributes

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Attributes** and click **Characteristic**.

You can find specific information for each characteristic in Plant Applications. You can find attributes for one or more characteristics and choose the attributes that you want to include on your worksheet.

Make sure you have already imported characteristics into your worksheet before you find the attributes. For information about finding characteristics, see [Searching for Characteristics](#).

[How?](#)

Finding Specification Attributes

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Attributes** and click **Specification**.

You can find specific information for each specification in Plant Applications. You can find attributes for one or more specifications and choose the attributes that you want to include on your worksheet.

Make sure you have already imported specifications into your worksheet before you find the attributes. For information about finding specifications, see [Searching for Specifications](#).

[How?](#)

Finding Production Event Attributes

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Attributes** and click **Production Event**.

You can find specific information for each product event in Plant Applications. You can find attributes for one or more production events and choose the attributes that you want to include on your worksheet.

Ensure you have already imported production events into your worksheet before you find the attributes. For information about finding production events, see [Searching for Production Events](#).

This function is controlled by the site parameter, EventNumIsNumber, which is set in the Plant Applications Administrator. For more information about this site parameter, please see [EventNumIsNumber Site Parameter](#).

[To find product event attributes and EventNumIsNumber is set to 1](#)

[To find product event attributes and EventNumIsNumber is set to 0 \(zero\)](#)

Targets and Limits

The Plant Applications Add-in can be used to gather the specification targets and limits at the variable level or at the specification, or central, level.

Finding Limits at the Variable Level

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Limits** and click **Variable Level**.

You can use the Plant Applications Add-in to gather specifications for every variable that belongs to a specific product. You can also select a date to see what the specifications values were on the selected date.

Before you can gather the variable specification limits, you need to first have [Variable IDs](#) and [Product Codes or Product IDs](#) on your worksheet to use as input.

[How?](#)

Finding Limits at the Specification (Central) Level

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Limits** and click **Specification Level**.

Specification variables are created at the central level and then mapped to variables at the unit level. Using the Plant Applications Add-in, you can gather the specification targets and limits for each specification variable for each characteristic.

You will need to have [Specification IDs](#) and [Characteristic IDs or Descriptions](#) on your worksheet to use as input. For information about [specification IDs](#), please see [Searching for Specifications](#). For information about [characteristic IDs](#), please see [Searching for Characteristics](#).

[How?](#)

Run Summaries

After each product change on a production unit, Plant Applications automatically calculates statistics for each variable on a production unit. Certain variable statistics are combined to calculate overall statistics for the production unit. The Plant Applications Add-in for Excel can be used to gather run summary statistics for both variables and production units.

Production unit statistics are calculated by time-weighting certain variables found on the production unit.

Retrieving Last-Run Statistics for Variables

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Run Summary**, point to **For Variables** and click **Last Run Data**.

You can use the Plant Applications Add-in to gather statistics for multiple variables from the last product run that used the variable. You can filter on a specific product, if you wish.

Before you search for run data for variables, you'll need to have a worksheet with Variable IDs to use as input. For more information, please see [Searching for Variables](#).

What Statistics Are Available?

You can select one or more of the following run statistics:

Run Statistic	Definition	
Run Start Time	When the run starts.	
Run End Time	When the run ends.	
Product Code	An abbreviated description to identify a product. Example A brewery's product management lists 55 Brew Unit as a product family. The 55 Brew Unit product family lists a product identified as 55 Dark Ale (55 Dark). <i>Where</i> <ul style="list-style-type: none"> 55 Dark Ale is the product description (55 Dark) is the product code. 	
Average	String	Value that is in the RSum table, based on the raw count of the most commonly occurring value.
	Float	Average value for the run.
	Integer	Average value for the run.
Standard Deviation	Standard deviation of the critical value (e.g. weight, length) within the last run.	
% In Warning	Percent of time the values for the variable were inside the warning limits during the time of the run, meaning above Lower Warning and below Upper Warning.	
Conformance Index	Calculated value that combines conformance to target and variation. The data quality reject features for variables and units can also be applied to the data used in the calculations. The variable reject and unit reject features apply to this data as well as to run summaries.	

Cpk	<p>Process Capability Index analyzes how closely the last run was on target and how consistent it was around its average performance.</p> <p>The Cpk targets performance between the Upper and Lower reject limits.</p> <p>Note: The further apart the reject limits are, the less likely that any item will be outside those limits.</p> <p>Possible results in the last run include:</p>		
	Result	Cpk	Cp
	<ul style="list-style-type: none"> The last run performed with minimum variation; however the item values were close to the Upper or Lower reject limits. 	Low	High
	<ul style="list-style-type: none"> Item values were on average exactly on target, but the variation in performance is high (but still lower than the tolerance band, i.e. specification interval). 	Low	High
	<ul style="list-style-type: none"> Item values are meeting the target consistently with minimum variation. 	High	High
Minimum	Minimum value within the last run.		
Maximum	Maximum value within the last run.		
Number of Samples	Number of data points within the last run.		

[How?](#)

Retrieving Variable Run Statistics by Time Frame

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Run Summary**, point to **For Variables** and click **Run Data By Time Frame**.

You can use the Plant Applications Add-in to gather statistics for multiple variables from the last product run that used the variable, within a specified time. You can filter on a specific product, if you wish. If you do not filter on a product, all products will be considered.

What Statistics Are Available?

You can select one or more of the following run statistics:

- Run Start Time
- Run End Time
- Product Code
- Average
- Minimum
- Maximum
- Standard Deviation
- % In Warning
- % In Limit
- Cpk
- Conformance Index
- Number Of Samples

[How?](#)

Retrieving Captured Data for Variables

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Run Summary** and **For Variables**, and then click **Captured Data**.

You can retrieve the captured value of one or more variables over a specific time period. You can, optionally, specify a product.

Do not use this function for multiple variables unless you're sure that all variables share the exact time stamps.

If you select more than one variable, only the captured values of first variable will correspond directly to the time stamp. The captured test values for the remaining variables will simply be the first values that match the output range limit and that fall within the specified time. For example, if you select two variables (A and B), a time range of one month, and your output range allows for 12 columns of time stamps. You will get 12 captured values for Variable A that correspond to the 12 time stamps. However, the captured values for the remaining variable (B) will be only the captured values that occurred between the start time and the end time; they will not correspond with the 12 time stamps. This means that you might have anywhere from zero to 12 variables, depending on the test frequency of the second variable.

Before you perform this function, you will need to already have Variable IDs on your worksheet. For information on finding Variable IDs, please see [Searching for Variables](#).

What Statistics Are Available?

You can retrieve the following statistics:

- Time Stamp
- Product Code

- Captured Value

[How?](#)

Calculating Run Data for Variables

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Run Summary and For Variables**, and click **Run Data Calculations**

You can perform calculations on variable statistics from product runs that occur during a specified time period.

Before you begin, you'll need to have Variable IDs available on your worksheet. For information on searching for Variable IDs, please see [Searching for Variables](#).

What Statistics are available?

You can perform calculations on the following statistics:


- Average
- Standard Deviation
- % In Warning
- % In Limit
- Cpk
- Conformance Index
- Minimum
- Maximum
- Number Of Samples

What Calculations are available?

You can choose to perform one or more of the following calculations:

- Average
- Time of Minimum
- Minimum
- Time Of Maximum
- Maximum
- Standard Deviation
- Total

To calculate run data for variables

1. From the Plant Applications menu, point to Run Summary and For Variables, and click Run Data Calculations.
2. The Plant Applications Run Data Calculation dialog box opens.
3. **optional:** Under Server, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the Browse  button.
4. Under Variable(s), select the Variable IDs on your worksheet. For more information on selecting cells, please see [Selecting Cells for Input](#).

5. Under **Time Range**, enter the start date and time. If desired, enter an end date and time. For more information on entering start and end times, please see [Selecting Start and End Times](#).
6. **optional:** If you want to filter on a specific product, under **Product Filter**, select a Product Code or Product ID on your worksheet.

Whether you are required to select Product Code or Product ID is determined by the site parameter, [ProdCodeIsNum](#). For more information, see [ProdCodeIsNum Site Parameter](#).

7. Under **Run Statistic**, select *only one* run statistic.
8. Under **Statistic Calculation**, select one or more calculations to perform.
9. Under **Output Cell**, select the cell where you want to input your run statistics. For information on how to select cells for output, please see [Selecting Cells for Output](#).
10. If you selected only one Variable ID, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).

If you select more than one Variable ID, these options are not available.

11. Click the **OK** button.

Retrieving Last-Run Statistics for Production Units

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Run Summary** and **For Units**, and click **Last Run Summary**.

You can retrieve statistics from the last time a product was run on a production unit.

If you want to filter on a specific product, you'll need to already have the Product Codes or Product IDs on your worksheet. For more information, please see [Searching for Products](#).

What Statistics Are Available?

You can retrieve one or more of the following statistics:

- Run Start Time
- Run End Time
- Duration
- Product Code
- % In Warning
- % In Limit
- Conformance Index
- Comment

[How?](#)

Retrieving Run Summaries by Time Frame for Production Units

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Run Summary** and **For Units**, and click **Run Summary By Time Frame**.

You can use the Plant Applications Add-in to gather statistics for a production unit from the last product run, within a specified time. You can filter on a specific product, if you wish. If you do not filter on a product, all products will be considered.

What Statistics Are Available?

Excel Add-In

You can select one or more of the following statistics:

- Run Start Time
- Run End Time
- Duration
- Product Code
- % In Warning
- % In Limit
- Conformance Index
- Comment

[How?](#)

Retrieving Captured Data for Production Units

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Run Summary** and **For Units**, and click **Captured Data Sets**.

You can retrieve statistics captured over a specified time period for a specific production unit. You can also filter the information to include only one product.

What Statistics Are Available?

You can retrieve the following statistics:

- Operator
- Time Stamp
- Product Code
- Comment

[How?](#)

Calculating Run Summary Statistics for Production Units

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Run Summary** and **For Units**, and click **Run Summary Calculations**.

You can perform calculations on production unit statistics from product runs during a specific time period.

What statistics are available?

You can perform calculations on the following run summary statistics:


- Duration
- % In Warning
- % In Limit
- Conformance Index

What calculations can be performed?

You can perform the following calculations on the run summary statistics:

- Average
- Time of Minimum
- Minimum
- Time Of Maximum
- Maximum
- Standard Deviation
- Total

To calculate run summary statistics

1. From the Plant Applications menu, point to Run Summary and For Units, and click Run Summary Calculations.
2. The Plant Applications Run Summary Calculations dialog box opens.
3. **optional:** Under Server, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the Browse  button.
4. Under Production Line, click the drop-down arrow to select a production line, and then click the second drop-down arrow to select a production unit.
5. Under Time Range, enter the start time and end time. Entering an end time is optional. For more information on entering start and end times, please see [Selecting Start and End Times](#).
6. **optional:** If you want to filter on a specific product, under Product Filter (or Product Code), select a Product Code or Product ID on your worksheet.

Whether you are required to select Product Code or Product ID is determined by the site parameter, ProdCodeIsNum. For more information, see [ProdCodeIsNum Site Parameter](#).

7. Under **Run Statistic**, select *only one* of the statistics.
8. Under **Statistics Calculation**, select one or more of the calculations you want to perform.
9. Under **Output Cell**, select the cell on your worksheet where you want to input the statistic information. For information on selecting cells for output, please see [Selecting Cells for Output](#).
10. Under **Output Orientation**, click the **Columns** to list the statistics in multiple columns or click the **Rows** option to list the statistics in multiple rows. For more information, please see [Output Orientation](#).
11. Click the **OK** button.

Event Summaries

You can use the Event Summary functions to retrieve information about the various Plant Applications events. These events are:

- Production
- Product Change
- Waste
- Downtime
- Alarm

Finding Production Event Attributes

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Attributes** and click **Production Event**.

You can find specific information for each product event in Plant Applications. You can find attributes for one or more production events and choose the attributes that you want to include on your worksheet.

Ensure you have already imported production events into your worksheet before you find the attributes. For information about finding production events, see [Searching for Production Events](#).

This function is controlled by the site parameter, EventNumIsNumber, which is set in the Plant Applications Administrator. For more information about this site parameter, please see [EventNumIsNumber Site Parameter](#).

[To find product event attributes and EventNumIsNumber is set to 1](#)


[To find product event attributes and EventNumIsNumber is set to 0 \(zero\)](#)

Searching for Production Events

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Event Summary** and click **Search Production Events**.

You can find specific information about each production event in Plant Applications. These production events are associated with a production unit. When you search for production events, you must specify a start time. Additionally, the Plant Applications Add-in provides you with multiple filters that you can use to limit or refine your search results.

To search for production events

1. From the Plant Applications menu, point to Event Summary and click Search Production Events.
2. The Plant Applications Event Search dialog box opens.
3. **optional:** Under Server, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the Browse  button.
4. Under **Production Line**, click the drop-down arrow to select a production line, then click the second drop-down arrow to select a production unit.
5. Under **Time Range**, enter a start and end time. For more information on entering start and end dates, please see [Selecting Start and End Times](#).

6. If you want to filter on a specific product, under **Product Filter** (or **Product Code**), select a Product Code or Product ID on your worksheet. If you filter on a product, the options original product and applied product will be available.

Whether you are required to select Product Code or Product ID is determined by the site parameter, ProdCodelsNum. For more information, see [ProdCodelsNum Site Parameter](#).

If you filter on a product, the options Original Product and Applied Product will be available. Additionally, "Original Product" and "Applied Product" will be added to the Display list.

7. If the choice is available, under **Product Filter As**, select:
- **Original Product** to filter on the original product.
 - **Applied Product** to filter on the applied product. The applied product is the final product that a particular production event is assigned. This is used to indicate a different product than the production event was originally built as. The starting or initial product is the original product.
8. Select Filter Out Non Productive Time to exclude non-productive time from the search results. For more information on non-productive time, see the topic Non-Productive Time.
9. For information about **Force ID**, see [ProdCodelsNum Site Parameter](#).
10. Under **Filter By**, do one or more of the following:
- Under **Plant Order Number**, enter the plant order number.
 - Under **Customer Code**, enter the customer code.
 - Under **Shipment Number**, enter the shipment number
 - Under **Primary Event Number**, enter the primary event number.

Keep in mind that the results you get might not be the expected results simply because of the filters you have chosen. If you are not sure of your results, it's best to use fewer filters.

11. Under **Crew Schedule Filter**, do one or more of the following:
- Under **Crew Description**, click the drop-down arrow to select a crew.
 - Under **Shift Description**, click the drop-down arrow to select a shift.

Notice that if you select a crew description or shift description, "Crew Description" and "Shift Description" are added to the Display list.

12. Under **Event Status Filter**, do one of the following:
- If you do not want to filter on event status (e.g., Consumed, In Progress, Hold, etc.), select the **Do Not Filter By Event Status** option.
 - If you want to filter on event status, select the **Filter By Specific Event Status In List Below** option. Then, in the **Status To Exclude** list, select one or more of the event statuses you want to include, then click the **Move Selected** button to move the event statuses to the **Status To Include** list.
13. Under **Display**, select one or more of the attributes you want to include on your worksheet.
14. Under **Output Range**, select the range of cells where you want to input your production event attributes. For information on how to select cells for output, please see [Selecting Cells for Output](#).
15. Under **Output Sort**, do one of the following:
- Select the **Ascending** option to sort the statistics starting with the most recent Run Start Time (i.e., from oldest to newest).
 - Select the **Descending** option to sort the statistics starting with the earliest Run Start Time (i.e., from newest to oldest).

16. If select only one cell, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).

If you select more than one output cell, these options are not available.


17. Click the **OK** button.

Calculations for Production Event

*To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Event Summary** and click **Production Event Calculations**.*

You can use the Plant Applications Add-in to perform a variety of calculations on specific dimensions for production events on a specific production unit during a specific period of time. If you want dimensions calculated for a specific product, you can specify the product.

To perform production event calculations

1. From the Plant Applications menu, point to Event Summary and click Production Event Calculations. The Plant Applications Event Calculations dialog box opens.
2. **optional:** Under **Server**, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the **Browse**  button.
3. Under **Production Line**, click the drop-down arrow to select a production line, and then click the second drop-down arrow to select a production unit.
4. Under **Time Range**, enter the start time and end time. Entering an end time is optional. For more information on entering start and end times, please see [Selecting Start and End Times](#).
5. **optional:** If you want to filter on a specific product, under **Product Filter** (or **Product Code**), select a Product Code or Product ID on your worksheet. If you do not select a product, the calculations for the selected dimension will be for all production events on the selected production unit for the specified time period.
6. Select **Filter Out Non Productive Time** to exclude non-productive time from the search results. For more information on non-productive time, see the topic Non-Productive Time.
7. For information about **Force ID**, see [ProdCodelsNum Site Parameter](#).
8. Under **Crew Schedule Filter**, do one or more of the following:
 - Under **Crew Description**, click the drop-down arrow to select a crew.
 - Under **Shift Description**, click the drop-down arrow to select a shift.

Notice that if you select a crew description or shift description, "Crew Description" and "Shift Description" are added to the Display list.

9. Under **Dimension Sought**, select *only one* of the statistics.
10. Under **Display**, select one or more of the calculations you want to perform.
11. Under **Output Cell**, select the cell on your worksheet where you want to input the statistic information. For information on selecting an output cell on your worksheet, please see [Selecting Cells for Output](#).
12. Under **Output Orientation**, click the **Columns** to list the statistics in multiple columns or click the **Rows** option to list the statistics in multiple rows. For more information, please see [Output Orientation](#).
13. Click the **OK** button.

Searching for Product Change Events

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Event Summary** and click **Search Product Changes**.

You can retrieve specific information about product change events during a specified time period. You can refine your search to include information about a specific product, if you wish.


[How?](#)

Downtime Summary Information

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Event Summary** and click **Down Time Summary**.

You can retrieve summarized Downtime event information for a particular unit during a specified time period. Additionally, you can specify the product you want to see the Downtime events for, or you can simply see all the Downtime events for the specified unit.

To retrieve Downtime event summary information

1. From the Plant Applications menu, point to Event Summary and click Down Time Summary. The Plant Applications Down Time Summary dialog box opens.
2. **optional:** Under **Server**, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the **Browse**  button.
3. Under **Unit**, do one of the following:
 - Type the unit for which you want to retrieve Downtime event information.
 - Select the unit information from your worksheet. For information on selecting cells for input, please see [Selecting Cells for Input](#).
4. **optional:** Under **Location**, do one of the following:
 - Type the unit location for which you want to retrieve Downtime event information.
 - Select the unit location information from your worksheet. For information on selecting cells for input, please see [Selecting Cells for Input](#).
5. **optional:** Under **Reasons**, enter the Reason(s) and/or Action(s) you want to filter on.
6. Under **Reason Level To Report**, click the drop-down arrow and select the specific information you want summarized on your report.

Your results will depend on the reason level you select and any Reason or Action filters you entered. For example, if you want to see Reason 3 information on your worksheet, and do not filter anything, then you will get all of the Downtime events that have a Level 3 Reason. On the other hand, if you filter on a Level 1 Reason, then you will get only the Downtime events that have a Level 1 Reason and a Level 3 Reason associated with the Downtime event.

7. Select **Filter Out Non Productive Time** to exclude non-productive time from the search results. For more information on non-productive time, see the topic Non-Productive Time.
8. Under **Time Range**, enter the start and end time during which you want to retrieve the Downtime event information. For information on entering start and end dates, please see [Selecting Start and End Times](#).
9. **optional:** Under **Crew Schedule Filter**, do one or more of the following:
 - Click the **Crew Description** drop-down arrow to select a crew.
 - Click the **Shift Description** drop-down arrows to select a shift.
10. **optional:** If you want to filter on a specific product, under **Product Filter** (or **Product Code**), select a Product Code or Product ID on your worksheet.

*If you filter on a product, the options **Original Product** and **Applied Product** will be available. Additionally, "Original Product" and "Applied Product" will be added to the Display list.*

If you do not select a product, the Downtime event information will be summarized for all products on the selected production unit for the specified time period.

*Whether you are required to select Product Code or Product ID is determined by the site parameter, **ProdCodeIsNum**. For more information, see [ProdCodeIsNum Site Parameter](#).*

11. Under **Display**, select one or more of the information categories to include on your worksheet. You can display one or more of the following:
 - The Reason Name: This is the name of the Reason assigned to Downtime.
 - Number of Occurrences: This is the number of Downtime events that were assigned this particular Reason for the specified time period
 - Total Reason Minutes: These are the total number of minutes of Downtime that were assigned this particular Reason for the specified time period.
 - Average Reason Minutes: This is the average number of minutes of Downtime assigned this Reason for the specified time period.
 - Total Downtime Minutes: This is the total number of Downtime minutes for the specified time period.
 - Total Uptime Minutes: This is the total number of Uptime minutes for the specified time period.
 - Average Uptime Minutes: This is the average number of Uptime minutes for the specified time period.
 - Total Operating Minutes: This is the total number of operating minutes for the specified time period.
12. Under **Output Range**, select the range of cells where you want to import the information on your worksheet. Keep in mind that if the number of reasons is greater than the number of cells you selected, you will get only the number of cells you select. For more information on selecting cells for output, please see [Selecting Cells for Output](#).
13. If you select only one cell, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).

If you select more than one output cell, these options are not available.


14. Click the **OK** button.

Downtime Event Detail Information

*To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Event Summary** and click **Down Time Detail**.*

You can retrieve detailed Downtime event information for a particular unit during a specified time period. Additionally, you can specify the product you want to see the Downtime events for, or you can simply see all the Downtime events for the specified unit.

To retrieve detailed Downtime event information

1. From the Plant Applications menu, point to Event Summary and click Down Time Detail.
2. The Plant Applications Down Time Detail dialog box opens.
3. **optional:** Under Server, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the Browse  button.
4. Under Unit, do one of the following:

- Type the unit for which you want to retrieve Downtime event information.
 - Select the unit information from your worksheet. For information on selecting cells for input, please see [Selecting Cells for Input](#).
5. **optional:** Under **Location**, do one of the following:
- Type the unit location for which you want to retrieve Downtime event information.
 - Select the unit location information from your worksheet. For information on selecting cells for input, please see [Selecting Cells for Input](#).
6. **optional:** Under **Reasons**, enter the Reason(s) and/or Action(s) you want to filter on.
7. Select **Filter Out Non Productive Time** to exclude non-productive time from the search results. For more information on non-productive time, see the topic Non-Productive Time.
8. Under **Time Range**, enter the start and end time during which you want to retrieve the Downtime event information. For information on entering start and end dates, please see [Selecting Start and End Time](#) .
9. **optional:** If you want to filter on a specific product, under **Product Filter** (or **Product Code**), select a Product Code or Product ID on your worksheet.

Whether you are required to select Product Code or Product ID is determined by the site parameter, ProdCodeIsNum. For more information, see [ProdCodeIsNum Site Parameter](#).

If you filter on a product, the options Original Product and Applied Product will be available. Additionally, "Original Product" and "r;Applied Product" will be added to the Display list.

If you do not select a product, the Downtime event information will be for all products on the selected production unit for the specified time period.

10. **optional:** Under **Crew Schedule Filter**, do one or more of the following:
- Click the **Crew Description** drop-down arrow to select a crew.
 - Click the **Shift Description** drop-down arrows to select a shift.
11. Under **Display**, select one or more of the information categories to include on your worksheet.

Excel limits you to selecting a maximum of 11 of the 16 items in the list.

12. Under **Output Range**, select the range of cells where you want to import the information on your worksheet. Keep in mind that if the number of reasons is greater than the number of cells you selected, you will get only the number of cells you select. For more information on selecting cells for output, please see [Selecting Cells for Output](#).
13. Under **Output Sort**, do one of the following:
- Select the **Ascending** option to sort the statistics starting with the most recent Run Start Time (i.e., from oldest to newest).
 - Select the **Descending** option to sort the statistics starting with the earliest Run Start Time (i.e., from newest to oldest).
14. If you select only one cell, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).

If you select more than one output cell, these options are not available.


15. Click the **OK** button.

Waste Event Summary Information

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Event Summary** and click **Waste Summary**.

You can retrieve summarized Waste event information for a particular unit during a specified time period. Additionally, you can specify the product you want to see the Waste events for, or you can simply see all Waste events for the specified unit.

To retrieve Waste event summary information

1. From the Plant Applications menu, point to Event Summary and click Waste Summary.
2. The Plant Applications Waste Summary dialog box opens.
3. **optional:** Under Server, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the Browse  button.
4. Under Unit, do one of the following:
 - Type the unit for which you want to retrieve Waste event information.
 - Select the unit information from your worksheet. For information on selecting cells for input, please see [Selecting Cells for Input](#).
5. **optional:** Under **Location**, do one of the following:
 - Type the unit location for which you want to retrieve Waste event information.
 - Select the unit location information from your worksheet. For information on selecting cells for input, please see [Selecting Cells for Input](#).
6. **optional:** Under **Reasons**, enter the Reason(s) and/or Action(s) you want to filter on.
7. Under **Time Range**, enter the start and end time during which you want to retrieve the Downtime event information. For information on entering start and end dates, please see [Selecting Start and End Times](#).
8. **optional:** If you want to filter on a specific product, under **Product Filter** (or **Product Code**), select a Product Code or Product ID on your worksheet.

If you filter on a product, the options Original Product and Applied Product will be available. Additionally, "Original Product" and "Applied Product" will be added to the Display list.

If you do not select a product, the Waste event information will be for all products on the selected production unit for the specified time period.

Whether you are required to select Product Code or Product ID is determined by the site parameter, ProdCodeIsNum. For more information, see [ProdCodeIsNum Site Parameter](#).

9. **optional:** Under **Crew Schedule Filter**, do one or more of the following:
 - Click the **Crew Description** drop-down arrow to select a crew.
 - Click the **Shift Description** drop-down arrows to select a shift.
10. Under **Reason Level To Report**, click the drop-down arrow and select the specific information you want summarized on your report.

Your results will depend on the reason level you select and any Reason or Action filters you entered. For example, if you want to see Reason 3 information on your worksheet, and do not filter anything, then you will get all of the Waste events that have a Level 3 Reason. On the other hand, if you filter on a Level 1 Reason, then you will get only the Waste events that have a Level 1 Reason and a Level 3 Reason associated with the Waste event.

11. Select Filter Out Non-Productive Time to exclude non-productive time from the search results. For more information on non-productive time, see the topic Non-Productive Time.

- Under **Display**, select one or more of the information categories to include on your worksheet.

Excel limits you to selecting a maximum of 11 of the 18 items in the list.

- Under **Output Range**, select the range of cells where you want to import the information on your worksheet. Keep in mind that if the number of reasons is greater than the number of cells you selected, you will get only the number of cells you select. For more information on selecting cells for output, please see [Selecting Cells for Output](#).
- If you select only one cell, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).

If you select more than one output cell, these options are not available.


- Click the **OK** button.

Waste Event Detail Information

*To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Event Summary** and click **Waste Detail**.*

You can retrieve detailed Waste event information for a particular unit during a specified time period. Additionally, you can specify the product you want to see the Waste events for, or you can simply see all the Waste events for the specified unit.

To retrieve detailed Waste event information

- From the Plant Applications menu, point to Event Summary and click Waste Detail. The Plant Applications Waste Detail dialog box opens.
- optional:** Under **Server**, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the **Browse**  button.
- Under **Unit**, do one of the following:
 - Type the unit for which you want to retrieve Waste event information.
 - Select the unit information from your worksheet. For information on selecting cells for input, please see [Selecting Cells for Input](#).
- optional:** Under **Location**, do one of the following:
 - Type the unit location for which you want to retrieve Waste event information.
 - Select the unit location information from your worksheet. For information on selecting cells for input, please see [Selecting Cells for Input](#).
- optional:** Under **Reasons**, enter the Reason(s) and/or Action(s) you want to filter on.
- Select **Filter Out Non Productive Time** to exclude non-productive time from the search results. For more information on non-productive time, see the topic Non-Productive Time.
- Under **Time Range**, enter the start and end time during which you want to retrieve the Waste event information. For information on entering start and end dates, please see [Selecting Start and End Times](#).
- optional:** If you want to filter on a specific product, under **Product Filter** (or **Product Code**), select a Product Code or Product ID on your worksheet.

Whether you are required to select Product Code or Product ID is determined by the site parameter, `ProdCodeIsNum`. For more information, see [ProdCodeIsNum Site Parameter](#).

If you filter on a product, the options Original Product and Applied Product will be available. Additionally, "Original Product" and "Applied Product" will be added to the Display list.

If you do not select a product, the Waste event information will be for all products on the selected production unit for the specified time period.

9. **optional:** Under **Crew Schedule Filter**, do one or more of the following:
 - Click the **Crew Description** drop-down arrow to select a crew.
 - Click the **Shift Description** drop-down arrows to select a shift.
10. Under **Display**, select one or more of the information categories to include on your worksheet.

Excel limits you to selecting a maximum of 11 of the 16 items in the list.

11. Under **Output Range**, select the range of cells where you want to import the information on your worksheet. Keep in mind that if the number of reasons is greater than the number of cells you selected, you will get only the number of cells you select. For more information on selecting cells for output, please see [Selecting Cells for Output](#).
12. Under **Output Sort**, do one of the following:
 - Select the **Ascending** option to sort the statistics starting with the most recent Start Time (i.e., from oldest to newest).
 - Select the **Descending** option to sort the statistics starting with the earliest Start Time (i.e., from newest to oldest).
13. If you select only one cell, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).

If you select more than one output cell, these options are not available.


14. Click the **OK** button.

Alarm Event Summary Information

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Event Summary** and click **Alarm Summary**.

You can retrieve summarized Alarm event information for a particular variable during a specified time period. Additionally, you can specify the product you want to see the Alarm events for, or you can simply see all Alarm events for the specified variable.

To retrieve Alarm event summary information

1. From the Plant Applications menu, point to Event Summary and click Alarm Summary.
2. This opens the Plant Applications Alarm Summary dialog box.
3. **optional:** Under **Server**, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the Browse  button.
4. Under **Variable**, enter the Variable ID for which you want to retrieve Alarm event information. For information on selecting cells for input, please see [Selecting Cells for Input](#).
5. **optional:** Under **Reasons**, enter the Reason(s) and/or Action(s) you want to filter on.
6. Under **Time Range**, enter the start and end time during which you want to retrieve the Downtime event information. For information on entering start and end dates, please see [Selecting Start and End Times](#).
7. **optional:** If you want to filter on a specific product, under **Product Filter** (or **Product Code**), select a Product Code or Product ID on your worksheet.

If you filter on a product, the options Original Product and Applied Product will be available. Additionally, "Original Product" and "Applied Product" will be added to the Display list.

If you do not select a product, the Alarm event information will be for all products associated with the selected variable for the specified time period.

Whether you are required to select Product Code or Product ID is determined by the site parameter, [ProdCodeIsNum](#). For more information, see [ProdCodeIsNum Site Parameter](#).

8. **optional:** Under **Crew Schedule Filter**, do one or more of the following:
 - Click the **Crew Description** drop-down arrow to select a crew.
 - Click the **Shift Description** drop-down arrows to select a shift.
9. Under **Reason Level To Report**, click the drop-down arrow and select the specific information you want summarized on your report.

Your results will depend on the reason level you select and any Reason or Action filters you entered. For example, if you want to see Reason 3 information on your worksheet, and do not filter anything, then you will get all of the Alarm events that have a Level 3 Reason. On the other hand, if you filter on a Level 1 Reason, then you will get only the Alarm events that have a Level 1 Reason and a Level 3 Reason associated with the Alarm event.

10. To retrieve information for only acknowledged alarms, select **Get acknowledged alarms only**.
11. Under **Display**, select one or more of the information categories to include on your worksheet.
12. Under **Output Range**, select the range of cells where you want to import the information on your worksheet. Keep in mind that if the number of reasons is greater than the number of cells you selected, you will get only the number of cells you select. For more information on selecting cells for output, please see [Selecting Cells for Output](#).
13. If you select only one cell, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).

If you select more than one output cell, these options are not available.


14. Click the **OK** button.

Alarm Event Detail Information

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Event Summary** and click **Alarm Detail**.

You can retrieve detailed Alarm event information for a particular variable during a specified time period. Additionally, you can specify the product you want to see the Alarm events for, or you can simply see all the Alarm events for the specified unit.

To retrieve Alarm event detail information:

1. From the Plant Applications menu, point to Event Summary and click Alarm Detail.
2. This opens the Plant Applications Alarm Detail dialog box.
3. **optional:** Under Server, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the Browse  button.
4. Under Variable, enter the Variable ID for which you want to retrieve detailed Alarm event information. For information on selecting cells for input, please see [Selecting Cells for Input](#).
5. **optional:** Under Reasons, enter the Reason(s) and/or Action(s) you want to filter on.
6. Under Time Range, enter the start and end time during which you want to retrieve the Waste event information. For information on entering start and end dates, please see [Selecting Start and End Times](#).

7. **optional:** If you want to filter on a specific product, under Product Filter (or Product Code), select a Product Code or Product ID on your worksheet.

Whether you are required to select Product Code or Product ID is determined by the site parameter, ProdCodeIsNum. For more information, see [ProdCodeIsNum Site Parameter](#).

*If you filter on a product, the options **Original Product** and **Applied Product** will be available. Additionally, "Original Product" and "Applied Product" will be added to the **Display** list.*

If you do not select a product, the Alarm event information will be for all products on the selected production unit for the specified time period.

8. To retrieve information for only acknowledged alarms, select the **Get acknowledged alarms only** option.
9. **optional:** Under **Crew Schedule Filter**, do one or more of the following:
 - Click the **Crew Description** drop-down arrow to select a crew.
 - Click the **Shift Description** drop-down arrows to select a shift.
10. Under **Display**, select one or more of the information categories to include on your worksheet.

Excel limits you to selecting a maximum of 11 of the 22 items in the list.

11. Under **Output Range**, select the range of cells where you want to import the information on your worksheet. Keep in mind that if the number of reasons is greater than the number of cells you selected, you will get only the number of cells you select. For more information on selecting cells for output, please see [Selecting Cells for Output](#).
12. Under **Output Sort**, do one of the following:
 - Select the **Ascending** option to sort the statistics starting with the most recent Start Time (i.e., from oldest to newest).
 - Select the **Descending** option to sort the statistics starting with the earliest Start Time (i.e., from newest to oldest).
13. If you select only one cell, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).

If you select more than one output cell, these options are not available.


14. Click the **OK** button.

User-defined Summary Information

*To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Event Summary** and click **User-Defined Event Summary**.*

You can retrieve summarized User-defined event information for a particular unit during a specified time period. Additionally, you can specify the product you want to see the User-defined events for, or you can simply see all the User-defined events for the specified unit.

To retrieve User-defined event summary information

1. From the Plant Applications menu, point to Event Summary and click User-Defined Event Summary. The Plant Applications User-Defined Event Summary dialog box opens.
2. **optional:** Under **Server**, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the **Browse**  button.
3. Under **Location**, do one of the following:
 - Type the unit location for which you want to retrieve User-defined event information.

- Select the unit location information from your worksheet. For information on selecting cells for input, please see [Selecting Cells for Input](#).
4. Under **Event Subtype**, do one of the following:
 - Type the event subtype
 - Select the cell on your worksheet that contains the event subtype
 5. **optional:** Under **Reasons**, enter the Reason(s) and/or Action(s) you want to filter on.
 6. Under **Reason Level To Report**, click the drop-down arrow and select the specific information you want summarized on your report.

Your results will depend on the reason level you select and any Reason or Action filters you entered. For example, if you want to see Reason 3 information on your worksheet, and do not filter anything, then you will get all of the User-defined events that have a Level 3 Reason. On the other hand, if you filter on a Level 1 Reason, then you will get only the User-defined events that have a Level 1 Reason and a Level 3 Reason associated with the User-defined event.

7. Under **Data Option**, select **Get acknowledged events only** to select only those user-defined events that have been acknowledged.
8. Select **Filter Out Non Productive Time** to exclude non-productive time from the search results. For more information on non-productive time, see the topic Non-Productive Time.
9. Under **Time Range**, enter the start and end time during which you want to retrieve the User-defined event information. For information on entering start and end dates, please see [Selecting Start and End Times](#).
10. **optional:** Under **Crew Schedule Filter**, do one or more of the following:
 - Click the **Crew Description** drop-down arrow to select a crew.
 - Click the **Shift Description** drop-down arrows to select a shift.
11. **optional:** If you want to filter on a specific product, under **Product Filter** (or **Product Code**), select a Product Code or Product ID on your worksheet.

If you filter on a product, the options Original Product and Applied Product will be available. Additionally, "Original Product" and "Applied Product" will be added to the Display list.

If you do not select a product, the User-defined event information will be summarized for all products on the selected production unit for the specified time period.

Whether you are required to select Product Code or Product ID is determined by the site parameter, ProdCodelsNum. For more information, see [ProdCodelsNum Site Parameter](#).

12. Under **Display**, select one or more of the information categories to include on your worksheet. You can display one or more of the following:
 - The Reason Name: This is the name of the Reason assigned to User-defined.
 - Number of Occurrences: This is the number of User-defined events that were assigned this particular Reason for the specified time period
 - Total Reason Minutes: These are the total number of minutes of User-defined that were assigned this particular Reason for the specified time period.
 - Average Reason Minutes: This is the average number of minutes of User-defined assigned this Reason for the specified time period.
 - Total User-defined Minutes: This is the total number of User-defined minutes for the specified time period.
 - Total Operating Minutes: This is the total number of operating minutes for the specified time period.

13. Under **Output Range**, select the range of cells where you want to import the information on your worksheet. Keep in mind that if the number of reasons is greater than the number of cells you selected, you will get only the number of cells you select. For more information on selecting cells for output, please see [Selecting Cells for Output](#).
14. If you select only one cell, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).

If you select more than one output cell, these options are not available.


15. Click the **OK** button.

User-defined Event Detail Information

*To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Event Summary** and click **User-defined Event Details**.*

You can retrieve detailed User-defined event information for a particular unit during a specified time period. Additionally, you can specify the product you want to see the User-defined events for, or you can simply see all the User-defined events for the specified unit.

To retrieve detailed User-defined event information

1. From the Plant Applications menu, point to Event Summary and click User-defined Event Details. The Plant Applications User-Defined Event Details dialog box opens.
2. **optional:** Under **Server**, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the **Browse**  button.
3. Under **Location**, do one of the following:
 - Type the unit location for which you want to retrieve User-defined event information.
 - Select the unit location information from your worksheet. For information on selecting cells for input, please see [Selecting Cells for Input](#).
4. Under **Event Subtype**, do one of the following:
 - Type the event subtype
 - Select the cell on your worksheet that contains the event subtype
5. **optional:** Under **Reasons**, enter the Reason(s) and/or Action(s) you want to filter on.
6. Under **Data Option**, select **Get acknowledged events only** to select only those user-defined events that have been acknowledged.
7. Select **Filter Out Non Productive Time** to exclude non-productive time from the search results. For more information on non-productive time, see the topic Non-Productive Time.
8. Under **Time Range**, enter the start and end time during which you want to retrieve the User-defined event information. For information on entering start and end dates, please see [Selecting Start and End Time](#).
9. **optional:** Under **Crew Schedule Filter**, do one or more of the following:
 - Click the **Crew Description** drop-down arrow to select a crew.
 - Click the **Shift Description** drop-down arrows to select a shift.
10. **optional:** If you want to filter on a specific product, under **Product Filter** (or **Product Code**), select a Product Code or Product ID on your worksheet.

Whether you are required to select Product Code or Product ID is determined by the site parameter, ProdCodeIsNum. For more information, see [ProdCodeIsNum Site Parameter](#).

If you filter on a product, the options *Original Product* and *Applied Product* will be available. Additionally, "Original Product" and "Applied Product" will be added to the *Display list*.

If you do not select a product, the *User-defined event information* will be for all products on the selected production unit for the specified time period.

11. For information about **Force ID**, see [ProdCodelsNum Site Parameter](#).
12. Under **Display**, select one or more of the information categories to include on your worksheet.

Excel limits you to selecting a maximum of 11 of the 16 items in the list.

13. Under **Output Range**, select the range of cells where you want to import the information on your worksheet. Keep in mind that if the number of reasons is greater than the number of cells you selected, you will get only the number of cells you select. For more information on selecting cells for output, please see [Selecting Cells for Output](#).
14. Under **Output Sort**, do one of the following:
 - Select the **Ascending** option to sort the statistics starting with the most recent Run Start Time (i.e., from oldest to newest).
 - Select the **Descending** option to sort the statistics starting with the earliest Run Start Time (i.e., from newest to oldest).
15. If you select only one cell, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).

If you select more than one output cell, these options are not available.


16. Click the **OK** button.

Non-Productive Time Summary Information

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Event Summary** and click **Non Productive Time Summary**.

You can retrieve summarized Non-productive Time event information for a particular unit during a specified time period. Additionally, you can specify the product you want to see the Non-productive Time events for, or you can simply see all the Non-productive Time events for the specified unit.

To retrieve Non-productive Time event summary information

1. From the Plant Applications menu, point to Event Summary and click Down Time Summary. The Plant Applications Non Productive Time Summary dialog box opens.
2. **optional:** Under **Server**, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the **Browse**  button.
3. Under **Unit**, do one of the following:
 - Type the unit for which you want to retrieve Non-productive Time event information.
 - Select the unit information from your worksheet. For information on selecting cells for input, please see [Selecting Cells for Input](#).
4. **optional:** Under **Location**, do one of the following:
 - Type the unit location for which you want to retrieve Non-productive Time event information.
 - Select the unit location information from your worksheet. For information on selecting cells for input, please see [Selecting Cells for Input](#).
5. **optional:** Under **Reasons**, enter the Reason(s) you want to filter on.

6. Under **Reason Level To Report**, click the drop-down arrow and select the specific information you want summarized on your report.

Your results will depend on the reason level you select and any Reason or Action filters you entered. For example, if you want to see Reason 3 information on your worksheet, and do not filter anything, then you will get all of the Non-productive Time events that have a Level 3 Reason. On the other hand, if you filter on a Level 1 Reason, then you will get only the Non-productive Time events that have a Level 1 Reason and a Level 3 Reason associated with the Non-productive Time event.

7. Under **Time Range**, enter the start and end time during which you want to retrieve the Non-productive Time event information. For information on entering start and end dates, please see [Selecting Start and End Times](#).
8. **optional:** Under **Crew Schedule Filter**, do one or more of the following:
 - Click the **Crew Description** drop-down arrow to select a crew.
 - Click the **Shift Description** drop-down arrows to select a shift.
9. **optional:** If you want to filter on a specific product, under **Product Filter** (or **Product Code**), select a Product Code or Product ID on your worksheet.

If you filter on a product, the options Original Product and Applied Product will be available. Additionally, "Original Product" and "Applied Product" will be added to the Display list.

If you do not select a product, the Non-productive Time event information will be summarized for all products on the selected production unit for the specified time period.

10. For information about **Force ID**, see [ProdCodelsNum Site Parameter](#).
11. Under **Display**, select one or more of the information categories to include on your worksheet. You can display one or more of the following:
 - The Reason Name: This is the name of the Reason assigned to Non-productive Time.
 - Number of Occurrences: This is the number of Non-productive Time events that were assigned this particular Reason for the specified time period
 - Total Reason Minutes: These are the total number of minutes of Non-productive Time that were assigned this particular Reason for the specified time period.
 - Average Reason Minutes: This is the average number of minutes of Non-productive Time assigned this Reason for the specified time period.
 - Total Non-productive Time Minutes: This is the total number of Non-productive Time minutes for the specified time period.
 - Total Productive Minutes: This is the total number of productive minutes for the specified time period.
 - Average Productive Minutes: This is the average number of productive minutes for the specified time period.
 - Total Operating Minutes: This is the total number of operating minutes for the specified time period.
12. Under **Output Range**, select the range of cells where you want to import the information on your worksheet. Keep in mind that if the number of reasons is greater than the number of cells you selected, you will get only the number of cells you select. For more information on selecting cells for output, please see [Selecting Cells for Output](#).
13. If you a select only one cell, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).

If you select more than one output cell, these options are not available.

14. Click the **OK** button.

Variable (Test) Data

Test data are discrete data elements stored in the Plant Applications database that represent manually entered date and time-and event-based summarized process data. The Plant Applications Add-in provides several ways to retrieve this variable, or test, data.

Retrieving Test Data by Time Frame

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Variable Data** and click **Data By Time Frame**.

You can retrieve test values for one or more variables during a specific time period. You can filter on a specific product, if you wish, as well as select a specific crew and shift. Multiple variables are returned with timestamps. Refer to the GE Intelligent support site for examples in the Knowledge Base.

If you select more than one variable, only the captured values of first variable will correspond directly to the time stamp. The captured test values for the remaining variables will simply be the first values that match the output range limit and that fall within the specified time. For example, if you select two variables (A and B), a time range of one month, and your output range allows for 12 columns of time stamps. You will get 12 captured values for Variable A that correspond to the 12 time stamps. However, the captured values for the remaining variable (B) will be only the captured values that occurred between the start time and the end time; they will not correspond with the 12 time stamps. This means that you might have anywhere from zero to 12 variables, depending on the test frequency of the second variable.

Before you retrieve test data, you'll need to have the Variable ID(s) or Variable Description(s) on your worksheet. For more information see [Searching for Variables](#).

[How?](#)

Retrieving Test Data for a Specific Time

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Variable Data** and click **Data By Specific Time**.

You can retrieve test values for selected variables based on the specified result time (based on the sampling interval specified in the Plant Applications Administrator). The returned information is based on the exact date and time that you specify. Multiple variables are returned with timestamps. Refer to the GE Intelligent support site for examples in the Knowledge Base.

If you select more than one variable, only the captured values of first variable will correspond directly to the time stamp. The captured test values for the remaining variables will simply be the first values that match the output range limit and that fall within the specified time. For example, if you select two variables (A and B), a time range of one month, and your output range allows for 12 columns of time stamps. You will get 12 captured values for Variable A that correspond to the 12 time stamps. However, the captured values for the remaining variable (B) will be only the captured values that occurred between the start time and the end time; they will not correspond with the 12 time stamps. This means that you might have anywhere from zero to 12 variables, depending on the test frequency of the second variable.

Before you perform this function, you will need to already have Variable IDs on your worksheet. For information on finding Variable IDs, please see [Searching for Variables](#).

What Attributes Are Available?

One or more of the following attributes can be selected:

- Event Indicator
- Event Status
- Product Code
- Test Value
- Test Status
- Entry Time Stamp
- Comment

[How?](#)

Most-Recent Test Values

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Variable Data** and click **Current Data**.

You can retrieve the most recent test value for selected variables. The test value returned will be the last entry made for the selected variable.

What attributes are available?

You can retrieve one or more of the following attributes:

- Event Indicator
- Event Status
- Product Code
- Test Value
- Test Status
- Entry Time Stamp
- Comment

[How?](#)

Test Values for Specific Event

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Variable Data** and click **Data By Specific Event**.

You can retrieve test values for one or more variables for a specific event. If a selected variable is not part of the specified event, no value will be returned. If a selected event is not an event-based variable, "Variable Not Event Based" will be displayed in the associated cell.

What Attributes Are Available?

You can select one or more of the following attributes:

- Event Status
- Result Time Stamp
- Product Code
- Test Value
- Test Status

Excel Add-In

- Entry Time Stamp
- Comment

Before you begin, you should have [Variable IDs or Variable Descriptions](#) and [Primary Event Numbers or Event IDs](#) on your worksheet.

[How?](#)

Test Value Audit History

*To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Variable Data** and click **Audit History**.*

You can retrieve the audit history of a variable based on a specific Result Time. The audit history shows you when the values were entered and by whom.

What Attributes Are Available?

You can select one or more of the following attributes:

- Result Time Stamp
- Entry Time Stamp
- Test Value
- Test Status
- Entered By

You should have [Variable IDs or Variable Descriptions](#) on your worksheet. For information on searching for variables, please see [Searching for Variables](#).

[How?](#)

Test Value Calculations

*To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Variable Data** and click **Calculations**.*

You can perform calculations on specific variables during a specified time period. Additionally, you can limit your search to a specific product.

What Calculations Are Available?

You can perform the following calculations:

- Average
- Time of Minimum
- Minimum
- Time of Maximum
- Maximum
- Standard Deviation
- Total
- Count

[How?](#)

Retrieving Test Data by Test Variable Name


To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Variable Data**, and then click **Data By Test Variable Name**.


You can use the variable test name to retrieve test values for one or more variables for a specific event. If a selected variable is not part of the specified event, no value will be returned. If a selected event is not an event-based variable, "Variable Not Event Based" will be displayed in the associated cell.

To retrieve the test values, you need to first [search for the variable test name](#).

The variable test name is also known as the variable alias name in the Variable Sheet.

To retrieve test values

1. From the Plant Applications menu, point to Variable Data and click Data By Test Variable Name to open the Test Data By Test Variable Name dialog box.
2. **optional:** Under **Server**, click the -down arrow to select a different server. If you need to add a new server or connect to the selected server, click the **Browse** button .
3. Under **Test Variable Name**, select the test name on your worksheet. For information on selecting cells for input, please see [Selecting Cells for Input](#).
4. Under **Time Range**, do one or more of the following:
5. Type a start date in the **Start Time** box. This date determines how far back in time data will be retrieved.
6. **optional:** Type an end date in the **End Time** box. This date determines the end date of when data will be retrieved.

Click the **View Calendar** button  to view a calendar from which you can select a specific date.

7. **optional:** If you want to filter on a specific product, under **Product Filter** (or **Product Code**), select a Product Code or Product ID on your worksheet.

If you filter on a product, the options Original Product and Applied Product will be available. Additionally, "Original Product" and "Applied Product" will be added to the Display list.

If you do not select a product, the information will be for all products.

8. **optional:** Under **Crew Schedule Filter**, select the crew or shift that you want to filter one. You can filter on one or both.
9. Under **Display**, select one or more of the attributes to include on your worksheet.
10. Under **Output Range**, select the range of cells on your worksheet where you want to import the information. For information on selecting cells for output, please see [Selecting Cells for Output](#).
11. Under **Output Sort**, choose the sort order, either Ascending (A - Z) or Descending (Z - A).
12. Under **Output Orientation**, click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).
13. Click the **OK** button.

Performing Statistical Analysis on Historical Data

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Variable Data** and click **Statistical Analysis**.

The Plant Applications Add-in includes a Statistical Analysis Wizard to lead you through selecting the variables you want to analyze, the filter criteria you want to use, and the type of analysis you want to perform.

After you use this wizard, you will need to reset your automatic calculation option. How?

[How?](#)

Using the Statistical Analysis Wizard

Follow these instructions to use the Statistical Analysis Wizard:

1. From the **Plant Applications** menu, point to **Variable Data** and click **Statistical Analysis**. A new Excel book automatically opens.
2. In the Statistical Analysis Wizard, click the Select Variables To Analyze tab, then do the following:
 - a. Under **Available Variables**, click the drop-down arrows to select a production line and production unit.
optional: To further refine your search, you can click the remaining drop-down arrows to select a location and variable group and enter search criteria in the **Search** box.
 - b. Select a maximum of twenty variables and click the **Add** button.
 - c. **optional:** Under **Selected Variables**, click any variables you want to remove and click the **Remove** button.
3. To specify how you want to filter the data, click the **Establish Filter Criteria** tab and do one or more of the following:
 - To filter your data based on time, click the **Filter By Time** tab.

NOTE: *By default, your data will be filtered on month to date.*

- To filter your data by a specific product, click the **Filter By Product** tab.
 - To filter your data by production status, click the **Filter By Status** tab.
 - To filter your data by variable values, click the **Filter By Value** tab.
4. Click the **Pick Analysis Techniques** tab to select how you want the data analyzed. You can select one or more of the following analysis types:
 - Trend Chart for Variables ?default. [Details](#)
 - Process and Product Capability (Histograms) ?default. [Details](#)
 - CuSum Analysis ? default. [Details](#)
 - Statistical Summary ?default. [Details](#)
 - Statistical Run Analysis. [Details](#)
 - Correlation By CuSum Plot. [Details](#)
 - Correlation By Scatter Plot. [Details](#)
 - Correlation By Multiple Linear Regression. [Details](#)

- Correlated Variance Analysis. [Details](#)

5. **optional:** Click the **Advanced** tab to do one or more of the following:

Correlation Analysis- The following table describes the mutually exclusive option for correlation analysis.

Do Not Synchronize Timestamp	Make no attempt to generate interpolated raw data.																						
Synchronize Timestamps With Interpolation	<p>Perform linear interpolation for the selected product. A function is used to perform raw data interpolation. If there is missing data within the entire range of raw data, the function uses interpolation to fill in the missing data. See Figure 1 below for a sample of interpolated data using this method. $R_i = R_L + (t_i - t_L) \cdot \frac{R_N - R_L}{T_N - T_L}$</p> <table border="1" data-bbox="469 741 1378 1384"> <thead> <tr> <th>Timestamps</th> <th>Results</th> </tr> </thead> <tbody> <tr> <td>20-Jan-04 15:24</td> <td>29.86</td> </tr> <tr> <td>21-Jan-04 12:28</td> <td>30.2</td> </tr> <tr> <td>21-Jan-04 12:50</td> <td>30.36</td> </tr> <tr> <td>21-Jan-04 13:12</td> <td>30.32625</td> </tr> <tr> <td>21-Jan-04 14:40</td> <td>30.19125</td> </tr> <tr> <td>21-Jan-04 15:02</td> <td>30.1575</td> </tr> <tr> <td>21-Jan-04 15:24</td> <td>30.12</td> </tr> <tr> <td>21-Jan-04 15:46</td> <td>30.09</td> </tr> <tr> <td>21-Jan-04 16:08</td> <td>30.15</td> </tr> <tr> <td>05-Feb-04 22:00</td> <td>29.74</td> </tr> </tbody> </table> <p>Sample of the "Synchronize timestamps with interpolation" interpolated data are shown in red. The interpolated value is calculated using linear extrapolation, namely,</p> <p>$R_i = R_L + (T_i - T_L) \cdot \frac{(R_N - R_L)}{(T_N - T_L)}$ where: R_i and T_i are the intermediate value (the missing value) and its timestamp; R_L and T_L are the last good value and its timestamp; R_N and T_N are the next good value and its timestamp.</p>	Timestamps	Results	20-Jan-04 15:24	29.86	21-Jan-04 12:28	30.2	21-Jan-04 12:50	30.36	21-Jan-04 13:12	30.32625	21-Jan-04 14:40	30.19125	21-Jan-04 15:02	30.1575	21-Jan-04 15:24	30.12	21-Jan-04 15:46	30.09	21-Jan-04 16:08	30.15	05-Feb-04 22:00	29.74
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05-Feb-04 22:00	29.74																						
Synchronize Timestamps With Last Good Value	<p>Performs 'Last Value' Interpolation for the selected product. See Figure 2 below for a sample of interpolated data using this method.</p> <table border="1" data-bbox="469 1805 1378 2000"> <thead> <tr> <th>Timestamps</th> <th>Results</th> </tr> </thead> <tbody> <tr> <td>20-Jan-04 15:24</td> <td>29.86</td> </tr> <tr> <td>21-Jan-04 12:28</td> <td>30.2</td> </tr> </tbody> </table>	Timestamps	Results	20-Jan-04 15:24	29.86	21-Jan-04 12:28	30.2																
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21-Jan-04 15:46	30.09												
<p>Analyze The First Variable Only, Use The Remaining Variables For Correlation</p>	<p>If checked only the first variable will be analyzed, subsequent variables, if selected, will be ignored in the following charts:</p> <ul style="list-style-type: none"> • Trend Chart For Variables • Process and Product Capability (Histogram) • CuSum Analysis • Statistical Summary • Statistical Run Analysis 												

- **Server Connection**

- Select a different server by hitting the ... button and the Connect Server dialog will come up and allow a different server to be selected.
- Click the **View Error List** button to view a log of error messages. This is the Message Log Viewer used by Plant Application Clients to allow error messages to be reviewed. In general, these messages will be best utilized by technical support and the programmers to isolate code problems. The functions that produce errors will create messages in the log.

6. Click the **OK** button.

NOTE: Variable descriptions are used for the workbook tab names. However, workbook tab names are limited to 31 characters. If the variable description exceeds 31 characters, then the variable ID will be used. If the variable ID exceeds 31 characters, then only the first 31 characters of the variable ID will be used.

Analysis-Trend Chart for Variables

The Trend Chart provides a chart of the actual data for the selected variable over the specified time range. It also includes the Target, the Warning Limits, and the Reject Limits defined for that variable for the specified Product.

Legend

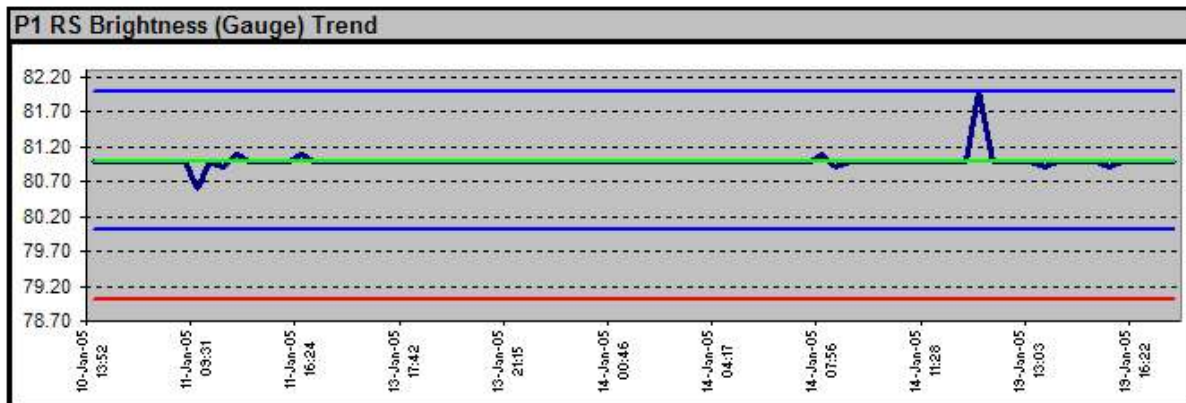
Navy- Actual Values

Green- Target Value

Blue- Upper and Lower Warning Limits

Red- Upper and Lower Reject Limits

Statistical Analysis For 'P1 RS Brightness (Gauge)' On Product '70Gloss'



Analysis-Process and Product Capability (Histograms)

Histograms

The Histogram displays data for the number of occurrences of a value in a data set. Histograms show the data in a bar format to visually show the distribution of the data. A Histogram can show a quick and qualitative view of capability against the specifications.

Variable Statistical Summary Calculations

- Basic statistics are based on data in the specified data range: Average, Minimum, Maximum, Standard Deviation, Number of Samples.
- Target deviation: The average of the individual deviations from target. The deviation is either Result – Target (if target is not blank) or Result – Average Result; where Average result is the average of results in the data range.
- Skew: Excel's "Skew" function; depicts skew-ness of the result.

Control Limit Theoretical Values

- Lower Reject = Target – 3 * standard deviation
- Lower Warning = Target – 2 * standard deviation
- Target = Target value (or average value, if target is blank)
- Upper Warning = Target + 2 * standard deviation
- Upper Reject=Target + 3 * standard deviation

Control Summary (histogram)

- Reject (%) = Actual Reject / Number of samples
- Warning (%) = Actual Warning /Number of samples
- Control (%) = Actual Control / Number of Samples

Cp and Cpk Calculations

Cp Calculation

Excel Add-In

$$Cp = (USL - LSL) / (6 * estimated\ sigma)$$

Sigma: The Sigma value estimated from the data. For more information on the methods used to calculate Sigma as well as other supporting calculations, refer to Variable Property Definitions in the main Plant Applications Help.

USL: Upper specification limit

LSL: Lower specification limit

Upper and lower specification limits (USL, LSL) are defined in the database table Var_Specs for each variable. If only one specification limit is given, Cp is not calculated.

Cpk Calculation

$$Cpk = Min (Cpu, Cpl)$$

$$Cpu = USL - XBarBar / (ProductSummarizationSigma * Estimated\ Sigma)$$

$$Cpl = XBarBar - LSL / (ProductSummarizationSigma * Estimated\ Sigma)$$

Sigma: The Sigma value estimated from the data. For more information on the methods used to calculate Sigma as well as other supporting calculations, refer to Variable Property Definitions in the main Plant Applications Help.

XBarBar: The average of subgroup means.

ProductSummarizationSigma: a customizable site parameter. It assigns a value that is used as a multiplier in Cpu, Cpl, Ppu, and Ppl calculations. If this parameter is not specified, the default is the industry standard of 3.0.

USL: Upper specification limit

LSL: Lower specification limit

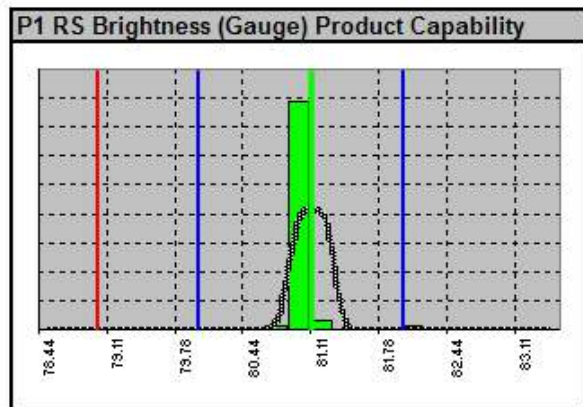
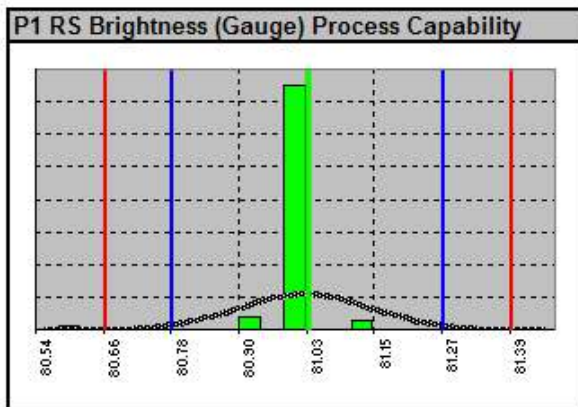
If USL is not provided, Cpk = Cpl.

If LSL is not provided, Cpk = Cpu.

If both USL and LSL are not provided, Cpk cannot be calculated.

Negative Cpk values are allowed.

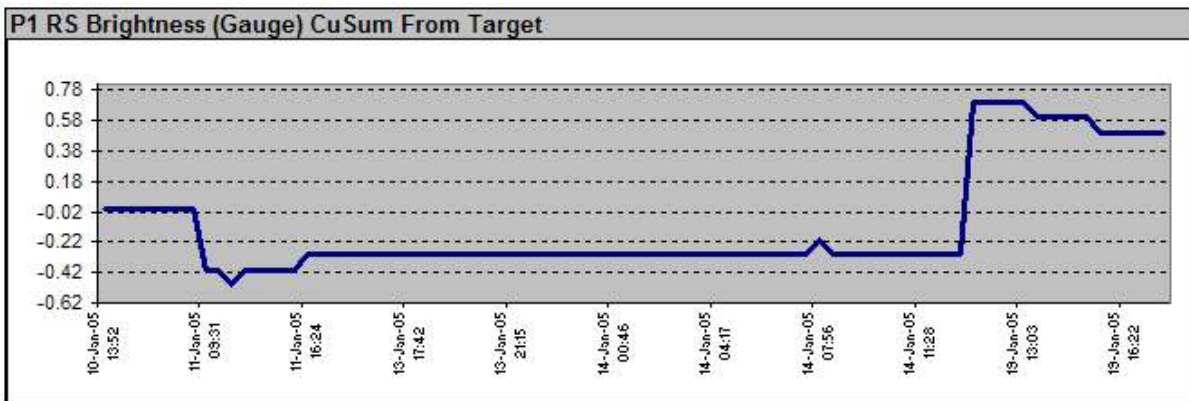
P1 RS Brightness (Gauge) Statistical Summary						
Basic Statistics	Value	Control Limits	Current	Theor	Control Summary	
Average	81.01	Target	81.00	81.00		
Minumum	80.60	Lower Warning	80.00	80.76		
Maximum	82.00	Upper Warning	82.00	81.24		
Standard Deviation	0.12	Lower Reject	79.00	80.64		
Number Of Samples	84	Upper Reject		81.36		
Normality	Value	Process Capability	Value			
Target Deviation	0.01	Cp	4.11			
Skew	6.27	Cpk	4.12			



Process Capability Histograms utilize the Theoretical Limits and Product Capability Histograms utilizes the Product Targets and Limits

Analysis-CuSum Analysis

The CuSum analysis is the cumulative sum that the actual data values are away from the target. It gives an indication of the drift of the variable over the specified time period.



Analysis-Statistical Summary

Variable Statistical Summary Calculations

- Basic statistics are based on data in the specified data range: Average, Minimum, Maximum, Standard Deviation, Number of Samples.

Excel Add-In

- Target deviation: The average of the individual deviations from target. The deviation is either Result – Target (if target is not blank) or Result – Average Result; where Average result is the average of results in the data range.
- Skew: Excel's "Skew" function; depicts skew-ness of the result.

Control Limit Theoretical Values

- Lower Reject=Target – 3 * standard deviation
- Lower Warning=Target – 2 * standard deviation
- Target=Target value (or average value, if target is blank)
- Upper Warning=Target + 2 * standard deviation
- Upper Reject=Target + 3 * standard deviation

Control Summary (histogram)

- Reject (%) =Actual Reject / Number of samples
- Warning (%) =Actual Warning /Number of samples
- Control (%) =Actual Control / Number of Samples

Cp and Cpk Calculations

Cp Calculation

$$Cp = (USL - LSL) / (6 * estimated\ sigma)$$

Sigma: The Sigma value estimated from the data. For more information on the methods used to calculate Sigma as well as other supporting calculations, refer to Variable Property Definitions in the main Plant Applications Help.

USL: Upper specification limit

LSL: Lower specification limit

Upper and lower specification limits (USL, LSL) are defined in the database table Var_Specs for each variable. If only one specification limit is given, Cp is not calculated.

Cpk Calculation

$$Cpk = Min (Cpu, Cpl)$$

$$Cpu = USL - XBarBar / (ProductSummarizationSigma * Estimated Sigma)$$

$$Cpl = XBarBar - LSL / (ProductSummarizationSigma * Estimated Sigma)$$

Sigma: The Sigma value estimated from the data. For more information on the methods used to calculate Sigma as well as other supporting calculations, refer to Variable Property Definitions in the main Plant Applications Help.

XBarBar: The average of subgroup means.

ProductSummarizationSigma: a customizable site parameter. It assigns a value that is used as a multiplier in Cpu, Cpl, Ppu, and Ppl calculations. If this parameter is not specified, the default is the industry standard of 3.0.

USL: Upper specification limit

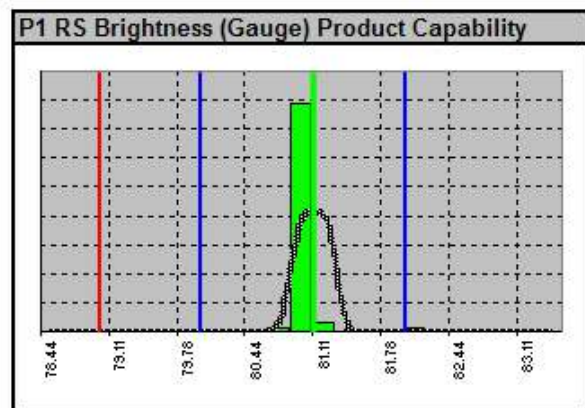
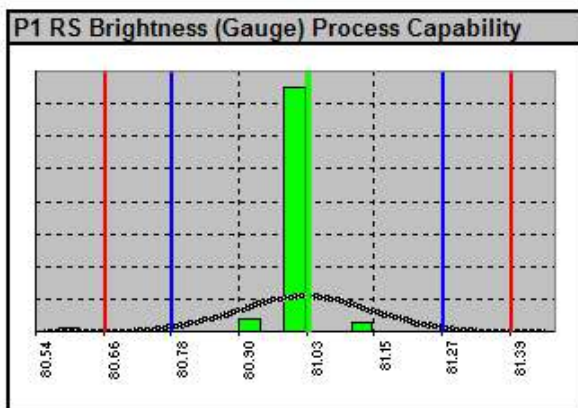
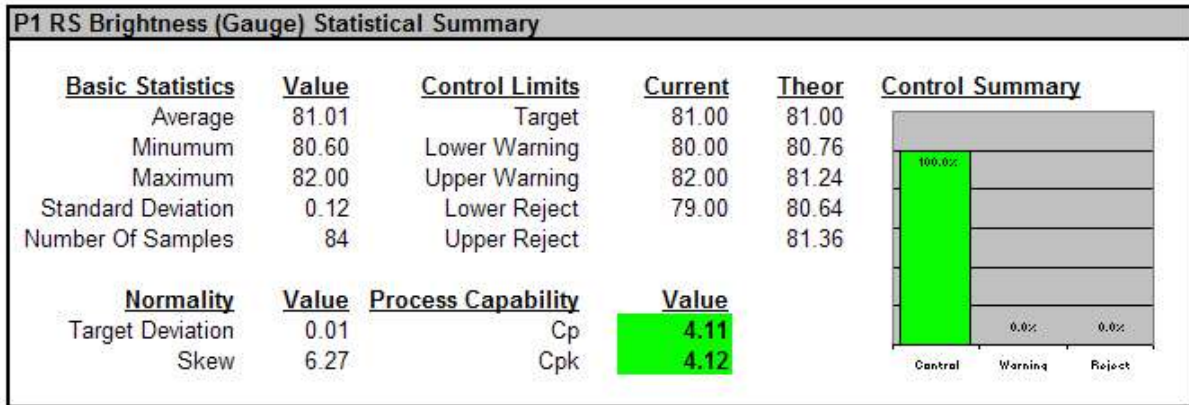
LSL: Lower specification limit

If USL is not provided, $C_{pk} = C_{pl}$.

If LSL is not provided, $C_{pk} = C_{pu}$.

If both USL and LSL are not provided, C_{pk} cannot be calculated.

Negative C_{pk} values are allowed.



Process Capability Histograms utilize the Theoretical Limits and Product Capability Histograms utilizes the Product Targets and Limits

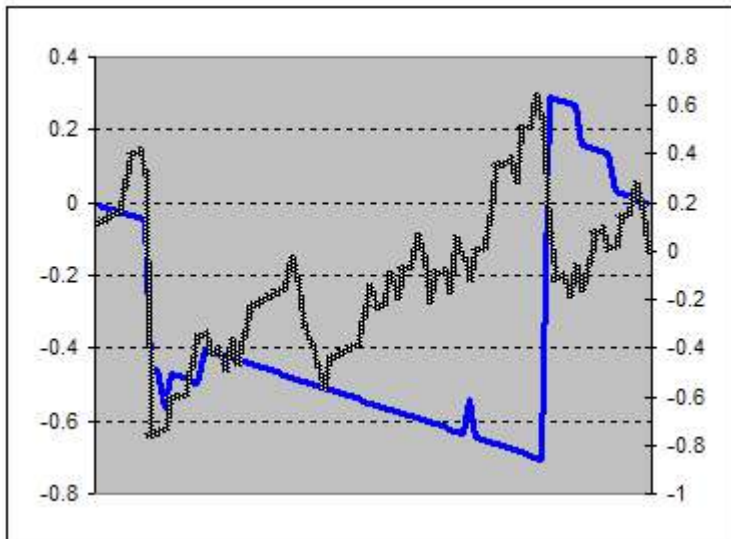
Histograms

The Histogram displays data for the number of occurrences of a value in a data set. Histograms show the data in a bar format to visually show the distribution of the data. A Histogram can show a quick and qualitative view of capability against the specifications.

Analysis-Correlation by CuSum Plot

The CuSum correlation plot shows each cumulative sum versus target of the actual data values on one plot.

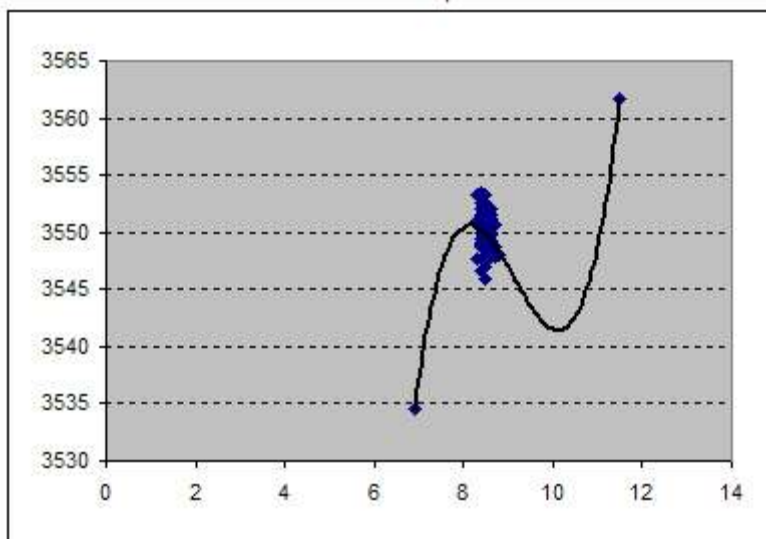
CuSum



Analysis-Correlation by Scatter Plot

Scatter Plot

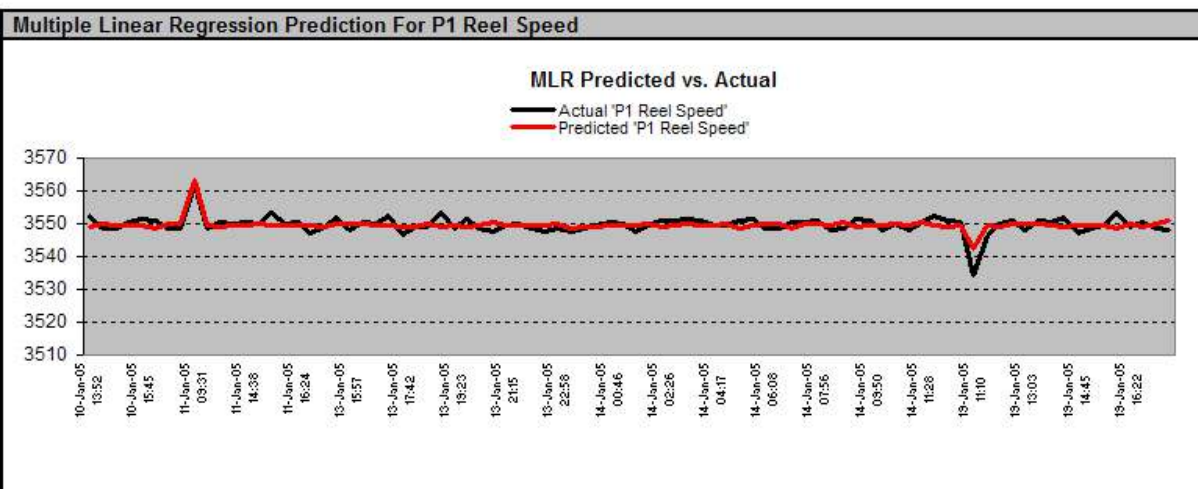
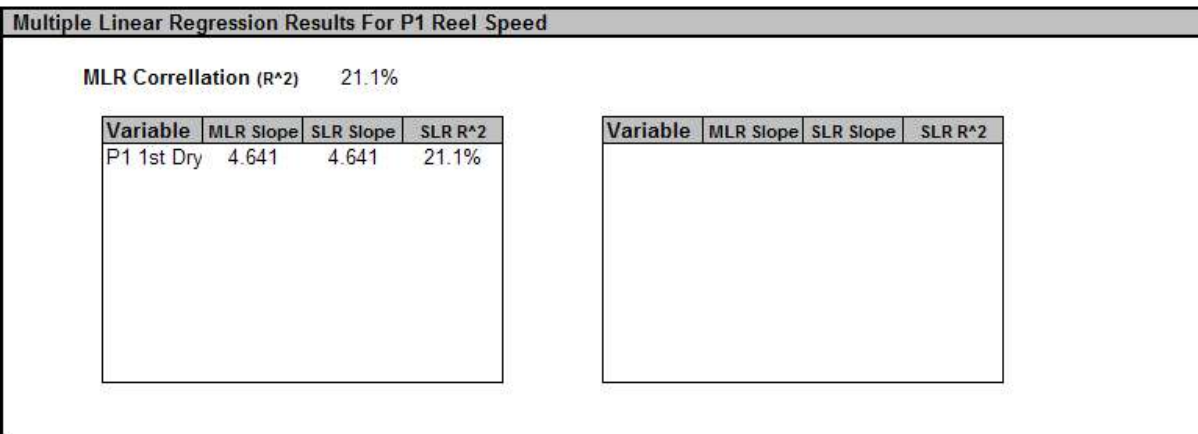
R-Squared=21.1%



Analysis-Correlation by Multiple Linear Regression

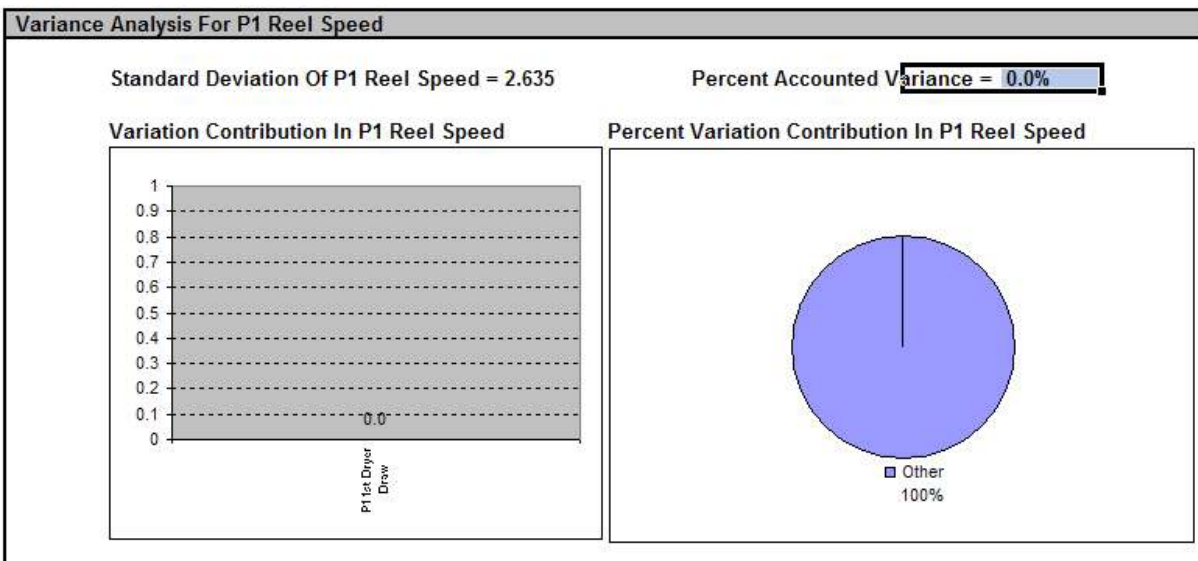
The Regression analysis is used to perform linear regression analysis by using the "least squares" method to fit a line through a set of observations. You can analyze how a single dependent variable is affected by the values of one or more independent variables.

Correlation Analysis For Product '70Gloss'



Analysis-Correlated Variance Analysis

Correlated Variance is a measure of the relationship between two ranges of data. Correlated Variance Analysis gives an indication of the amount of variation one variable has on another variable.



Analysis-Excel LINEST Function

See Excel's Help under Statistical Functions and the LINEST function. The major portion of this information is included here for convenience. Also there is an example of the LINEST function in the Excel Help that can be informative.

LINEST

Calculates the statistics for a line by using the "least squares" method to calculate a straight line that best fits your data, and returns an array that describes the line. Because this function returns an array of values, it must be entered as an array formula.

The equation for the line is:

$$y = mx + b \text{ or}$$

$$y = m_1x_1 + m_2x_2 + \dots + b \text{ (if there are multiple ranges of x-values)}$$

where the dependent y-value is a function of the independent x-values. The m-values are coefficients corresponding to each x-value, and b is a constant value. Note that y, x, and m can be vectors. The array that LINEST returns is {m_n,m_{n-1},...,m₁,b}. LINEST can also return additional regression statistics.

Syntax

LINEST(known_y's,known_x's,const,stats)

Known_y's is the set of y-values you already know in the relationship $y = mx + b$.

If the array known_y's is in a single column, then each column of known_x's is interpreted as a separate variable.

If the array known_y's is in a single row, then each row of known_x's is interpreted as a separate variable.

Known_x's is an optional set of x-values that you may already know in the relationship $y = mx + b$.

The array known_x's can include one or more sets of variables. If only one variable is used, known_y's and known_x's can be ranges of any shape, as long as they have equal dimensions. If more than one variable is used, known_y's must be a vector (that is, a range with a height of one row or a width of one column).

If known_x's is omitted, it is assumed to be the array {1,2,3,...} that is the same size as known_y's.

Const is a logical value specifying whether to force the constant b to equal 0.

If const is TRUE or omitted, b is calculated normally.

If const is FALSE, b is set equal to 0 and the m-values are adjusted to fit $y = mx$.

Stats is a logical value specifying whether to return additional regression statistics.

If stats is TRUE, LINEST returns the additional regression statistics, so the returned array is {m_n,m_{n-1},...,m₁,b;se_n,se_{n-1},...,se₁,se_b;r²,se_y;F,df;ssreg,ssresid}.

If stats is FALSE or omitted, LINEST returns only the m-coefficients and the constant b.

The additional regression statistics are as follows.

Statistic	Description
se ₁ ,se ₂ ,...,se _n	The standard error values for the coefficients m ₁ ,m ₂ ,...,m _n .
Se _b	The standard error value for the constant b (se _b = #N/A when const is FALSE).

r ²	The coefficient of determination. Compares estimated and actual y-values, and ranges in value from 0 to 1. If it is 1, there is a perfect correlation in the sample ?there is no difference between the estimated y-value and the actual y-value. At the other extreme, if the coefficient of determination is 0, the regression equation is not helpful in predicting a y-value. For information about how r ² is calculated, see "Remarks" later in this topic.
sey	The standard error for the y estimate.
F	The F statistic, or the F-observed value. Use the F statistic to determine whether the observed relationship between the dependent and independent variables occurs by chance.
df	The degrees of freedom. Use the degrees of freedom to help you find F-critical values in a statistical table. Compare the values you find in the table to the F statistic returned by LINEST to determine a confidence level for the model.
ssreg	The regression sum of squares.
ssresid	The residual sum of squares.

The following illustration shows the order in which the additional regression statistics are returned.

	A	B	C	D	E	F
1	m _n	m _{n-1}	...	m ₂	m ₁	b
2	se _n	se _{n-1}		se ₂	se ₁	se _b
3	r ₂	se _v				
4	F	d _f				
5	SS _{reg}	SS _{resid}				

Remarks

- You can describe any straight line with the slope and the y-intercept:

Slope (m):

To find the slope of a line, often written as m, take two points on the line, (x₁,y₁) and (x₂,y₂); the slope is equal to (y₂ - y₁)/(x₂ - x₁).

Y-intercept (b):

The y-intercept of a line, often written as b, is the value of y at the point where the line crosses the y-axis.

The equation of a straight line is y = mx + b. Once you know the values of m and b, you can calculate any point on the line by plugging the y- or x-value into that equation. You can also use the TREND function.

- When you have only one independent x-variable, you can obtain the slope and y-intercept values directly by using the following formulas:

Slope:

=INDEX(LINEST(known_y's,known_x's),1)

Y-intercept:

=INDEX(LINEST(known_y's,known_x's),2)

- The accuracy of the line calculated by LINEST depends on the degree of scatter in your data. The more linear the data, the more accurate the LINEST model. LINEST uses the method of least squares for determining the best fit for the data. When you have only one independent x-variable, the calculations for m and b are based on the following formulas:

$$m = \frac{n(\sum xy) - (\sum x)(\sum y)}{n(\sum x^2) - (\sum x)^2}$$

$$b = \frac{(\sum y)(\sum x^2) - (\sum x)(\sum xy)}{n(\sum x^2) - (\sum x)^2}$$

- The line- and curve-fitting functions LINEST and LOGEST can calculate the best straight line or exponential curve that fits your data. However, you have to decide which of the two results best fits your data. You can calculate TREND(known_y's,known_x's) for a straight line, or GROWTH(known_y's, known_x's) for an exponential curve. These functions, without the new_x's argument, return an array of y-values predicted along that line or curve at your actual data points. You can then compare the predicted values with the actual values. You may want to chart them both for a visual comparison.
- In regression analysis, Microsoft Excel calculates for each point the squared difference between the y-value estimated for that point and its actual y-value. The sum of these squared differences is called the residual sum of squares. Microsoft Excel then calculates the sum of the squared differences between the actual y-values and the average of the y-values, which is called the total sum of squares (regression sum of squares + residual sum of squares). The smaller the residual sum of squares is, compared with the total sum of squares, the larger the value of the coefficient of determination, r², which is an indicator of how well the equation resulting from the regression analysis explains the relationship among the variables.
- Formulas that return arrays must be entered as array formulas.
- When entering an array constant such as known_x's as an argument, use commas to separate values in the same row and semicolons to separate rows. Separator characters may be different depending on your locale setting in Regional Settings or Regional Options in Control Panel.
- Note that the y-values predicted by the regression equation may not be valid if they are outside the range of the y-values you used to determine the equation.

Using the Publish-To-Web Wizard

To access this wizard: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Publish-To-Web Wizard** and click **Create A New Template** or **Get An Existing Template**.

IMPORTANT: You must be a member of the Publish To Web security group or have Administrator rights to the Administrator security group before you can use the Publish-to-Web Wizard. For more information on configuring security, see *Configuring Security*

After you have created your reports, you can use the Publish-to-Web Wizard to create a web report, using the saved Excel workbook. With this handy Wizard, not only can you quickly create a template, you can also thoroughly test the report before you publish and schedule it. Even after it has been published, you can use the Publish-to-Web Wizard to easily modify existing templates.

After you've created and tested your template, you can use the Plant Applications Web Server to create ad-hoc reports based on the template or to schedule reports to be run at specific times. For more information, please see the Plant Applications Web Server documentation.

IMPORTANT: You can not test your Web report on the same computer where the Plant Applications Report Engine services or Plant Applications Scheduler service are running. You must test on a client computer that is connected to the Proficy Server and Web Server.

Create a New Template

IMPORTANT: You must be a member of the Publish To Web security group or have Administrator rights to the Administrator security group before you can use the Publish-to-Web Wizard. For more information on configuring security, see *Configuring Security*

You cannot test your Web report on the same computer where the Plant Applications Report Engine services or Plant Applications Scheduler service are running. You must test on a client computer that is connected to the Proficy Server and Web Server.

1. Create and save your workbook.
2. Click Plant Applications>Publish-To-Web Wizard>Create a New Template on the Excel menu bar. If you have not saved your workbook the **Publish-To-Web Wizard** will prompt you to save it.
3. In the **Publish-To-Web Wizard -- New** dialog box, enter a name and description for your new template and click the **OK** button. A Publish-to-Web Wizard dialog box opens.

Your template name must be unique. You cannot use the name of a template. If you select a duplicate template name the Wizard will alert you with a warning message.

4. Select the **Select Dialogs** tab and do the following.
 - a. Select the dialog boxes you want to use for your Web report and click the **>** button. The Web Report Engine will use the dialog boxes that you select to "walk" the user through picking input parameters before scheduling a report.
 - b. optional. Select a dialog box name and click the **Up** or **Down** button to move the selected dialog box and change its position in the dialog box order.
5. Select the **Select Parameters** tab and do the following:
 - a. Highlight each parameter that requires a cell reference and click the **Get Reference** button. The Parameter Reference dialog box opens. The parameters with a check mark have default values assigned to them. Scroll to the right to view the default values. Parameters that do not have a check mark will require you to select a cell reference on your open workbook. If none of the selected parameters have a

reference, the Wizard displays a warning message once when you display the Select parameter tab and once when you select another tab.

- b. Enter the cell(s) on your worksheet in the Parameter Reference dialog box's field and click the **OK** button.
6. Select the Select Web Page Format tab.
 - a. Do one of the following.
 - o To output the Web report as a PDF, select the **PDF Format** option.
 - o To output the Web report as HTML, select the **HTML Format** option.
 - b. Do one of the following to continue.
 - o To save the template without creating custom code to run the report, go to step 7.
 - o To create custom code to run the report and save the template, go to step 8.
 7. Save the template **without** creating custom code to run the report.
 - a. Select the **Actions** tab.
 - b. Save and/or replace the template as follows.
 - o Click the **Save** button to save the template.

When the new template is saved, the **Replace XLT** button is enabled.

- o optional. Click the **Replace XLT** button to replace the saved template.
 - c. Go to step 9.
8. Create custom code to run the report and save the template.
 - a. Select the **Actions** tab.
 - b. Check **Generate "CreateReport" macro for current template**.

The Wizard displays a Create Report Macro message box with the following message.

You have elected to write your own custom code to run this template. The Wizard will insert the "CreateReport" macro into a hidden sheet "CreateReportHiddenWorksheet." You are expected to complete this macro later. Typically, the code you write involved the extraction of the required inputs from "Parameter Object" and the generation of report when the template is run.

You should remove all cell references assigned to the required parameters. However, if you choose to retain cell references, make sure they do not interfere with your custom code. The WebEngine will first look for these references to deliver the required inputs.

- c. Click **Yes** to create the new template.

The following message displays.

The Wizard generated "CreateReport" macro successfully for this workbook "Workbook name."

Your next step is to run "Create New Template" to publish a new template from this workbook. If you decided to delay your next step, be sure to save the file for future use.

- d. Click **OK**.

Continue based on whether or not the workbook contains a macro.

- *If the workbook does not already contain the CreateReport macro:*

The message box and Publish-To-Web Wizard -- New dialog box close.

The Wizard only generates the macro for the workbook, but does not save the workbook and its configurations to the database.

- Re-open the Publish-To-Web Wizard -- New dialog box.
- Repeat Steps **3 - 8b**.
- Select the Action tab and click **Save Config** to save the new workbook.
- Go to step 9.

- *If the workbook already contains the macro:*

The Publish-To-Web Wizard -- New dialog box does not close after clicking **OK**.

- Click the **Save Config** button to save the workbook and its configurations (dialog items, parameters, and cell references).
 - Go to step 9.
- Click the **Local** button (*enabled when the template is saved*) to test the newly created template on your computer.
 - If the local test was successful, and you are ready to test the template remotely, click the **Yes** button; otherwise, if you need to do additional work on the template, or if you want to perform another local test, click the **No** button.
 - If you clicked the **Yes** button in step 10, the **Test Remote** button will be available. Click this button to test your template on the selected server.
 - If the remote test was successful and you are ready to use the report on the Web server, click the **Yes** button; otherwise, if you want to perform another remote test, click the **No** button.
 - Click the **OK** button.

[Using the Publish-To-Web Wizard](#)

Select an Existing Template

IMPORTANT: *You must be a member of the Publish To Web security group or have Administrator rights to the Administrator security group before you can use the Publish-to-Web Wizard. For more information on configuring security, see [Configuring Security](#)*

You cannot test your Web report on the same computer where the Plant Applications Report Engine services or Plant Applications Scheduler service are running. You must test on a client computer that is connected to the Proficy Server and Web Server.

- Click Plant Applications>Publish-To-Web Wizard>Get An Existing Template on the Excel menu bar. A Publish-To-Web Wizard dialog box opens with the Select Template tab enabled. The Select Template tab displays a list of templates that were [saved](#) on the Actions tab when the template was created. The Template Name and File Name columns display the name of the database template and XLT files. Each line in the dialog box contains a unique template and XLT file names. Two lines may display the same XLT filename; however, the same filename will have two versions of the XLT file stored in the database; the content of one version may be quite different from the other.
- Do one of the following on the Select Template tab.
 - **Select a template**
 - Do either:
 - Double-click a template.

- o Highlight a template, and click **Select Template**.

The Wizard displays a Publish-To-Web Wizard Select Template message box with the following message.

*The Wizard has successfully retrieved the information for the template "Template Name."
Do you want the Wizard to retrieve the XLT file for this template also?*

- b. Click either:

- Yes** Copies the XLT file from the database to your PC.
- No** Does not retrieve the XLT file from the database.
The Wizard will use your workbook for local testing.

The Publish-To-Web Wizard opens the workbook behind the Publish-To-Web Wizard dialog box. The Publish-To-Web Wizard dialog box displays the Actions tab. The Wizard retrieves the file and automatically puts it in a default location. If the Wizard has a problem using the default location, a Windows Save As... dialog box will open prompting you to select a location.

3. Do one of the following:
 - Click **Local** to test the template on your local computer.
 - Click **Remote** to test the template on the web server.
4. Select any of the other tabs to make any changes to the template.
5. (If you make any changes) select the **Actions** tab and click **Save Config**.
6. Click **OK**.

[Using the Publish-To-Web Wizard](#)

Administer Templates and XLT Files

IMPORTANT: You must be a member of the Publish To Web security group or have Administrator rights to the Administrator security group before you can use the Publish-to-Web Wizard. For more information on configuring security, see *Configuring Security*

Rename a Template

1. Click Plant Applications>Publish-To-Web Wizard>Get An Existing Template on the Excel menu bar.
A Publish-To-Web Wizard dialog box opens with the Select Template tab enabled.
2. Highlight a template.
3. Click **Rename Template**.
4. A Publish-To-Web Wizard -- Rename dialog box opens.
5. Enter a new name in the **Template Name** field.

Important: You must choose a unique name for the template.

6. Optional. Revise the template description.
7. Click **OK**. A warning message will display if you have entered a name that already exists on the Server. The Publish-To-Web Wizard dialog box displays the Select Template tab in the Publish-To-Web Wizard dialog box. The template is listed by its new name.

Delete a Template

1. Click Plant Applications>Publish-To-Web Wizard>Get An Existing Template on the Excel menu bar.

A Publish-To-Web Wizard dialog box opens with the Select Template tab enabled.

2. Highlight a template.
3. Click Delete Template.

The Wizard displays a Publish-To-Web Wizard -- Delete Template message box with the following message.

You are about to delete the template "Template Name." Its file, dialogs, parameters and relevant information will be removed from the database. Are you sure you want to delete this template?

4. Click either:

Yes	Confirm the deletion. <i>The file, dialogs, parameters and relevant information are all removed from the database.</i>
No	Cancel the deletion.

Get the XLT from the Database

There may be instances when you have a complicated XLT to which you want to make a quick change or want to use it to create a new template. The Get XLT capability enables you to do this.

1. Click Plant Applications>Publish-To-Web Wizard>Get An Existing Template on the Excel menu bar. A Publish-To-Web Wizard dialog box opens with the Select Template tab enabled.
2. Highlight a template.
3. Click **Get XLT**. The XLT that is in the database opens behind the Publish-To-Web Wizard dialog box. The tabs in the Publish-To-Web Wizard dialog box are not enabled, except the Select Template tab.
4. Do one of the following based on whether you want to replace the template currently in the database with your modified template or use it with a new workbook.
 - *Replace the template currently in the database with your modified template.*
 - a. Select the <XLT Name>.xlt worksheet in Excel.

Important: Do *not* click **OK** or **Cancel** in the Publish-To-Web Wizard dialog box at this point.

- b. Make any changes to the worksheet.
- c. Do one of the following.
 - Click Plant Applications>Publish-To-Web Wizard>Get an existing template on the Excel menu bar.
 - Click the **Publish-To-Web Wizard** button on the Excel task bar (bottom of Excel window).

Note: The **Publish-To-Web Wizard** icon displays when the Publish-To-Web Wizard dialog box is open via Get Existing Template.

The Publish-To-Web Wizard dialog box displays in front of the spreadsheet with all of the tabs enabled.

- d. Click **Replace XLT** on the Select Templates or Action tab. The modified XLT file replaces the XLT file in the database.
- *Use the modified XLT with a new workbook.*
 - a. Click **OK** in the Publish-To-Web Wizard dialog box. The Publish-To-Web Wizard dialog box closes.

- e. Make any changes to the worksheet.
- f. Optional. Use Excel's Save As menu and save the file to a location of your choice. Choose a new filename appropriate for the intended use (*highly recommended*).
- g. Click Plant Applications>Publish-To-Web Wizard>Create a new Template on the Excel menu bar. The Publish-To-Web Wizard -- New dialog box opens displaying the template name that corresponds to the XLT.
- h. Enter a new name in the **Template Name** field.
- i. Optional. Enter a new description in the **Template Description** box.
- j. Click **OK**.
- k. [Configure](#) the new template.
- l. Select the Actions tab and click **Save Config** to save the new workbook. The Wizard saves the configuration to the database as follows.
 - o The configuration (e.g. dialog boxes, parameters) is saved with the new template name.
 - o If you chose a new filename (*Step 1c above*), the XLT file is saved to the database with that name. However, if you did not choose a new filename, the XLT file is saved with the same original (Get XLT) name.
- m. Click **OK** to close the dialog box.

Replace the XLT in the Database with the Current Workbook

IMPORTANT: *Be sure to save the current workbook before proceeding. If the current workbook is not saved, the Wizard will prompt you to save it in Step 3.*

1. Click Plant Applications>Publish-To-Web Wizard>Get An Existing Template on the Excel menu bar. A Publish-To-Web Wizard dialog box opens with the Select Template tab enabled.
2. Highlight a template.
3. Click **Replace XLT**. The Wizard displays the following Publish-To-Web Wizard -- Replace XLT message.

You are about to replace the database XLT file for this template "Template Name" with your active workbook.

Since the template has not been retrieved, the Wizard is unable to determine if the critical information, such as cell references, on your workbook differ from the database file.

Proceed if you are confident of the suitability of your workbook, otherwise allow the Wizard to examine the template information first.

4. Click either:

Yes	Proceed with the replacement without checking the suitability of the workbook. You take the responsibility of validating cell references yourself.
No	Allow the Wizard to retrieve critical information before proceeding. <ul style="list-style-type: none"> • The Wizard displays a message that either: <ul style="list-style-type: none"> o Alerts you if the cell references in your workbook do not match cell references in the Wizard Selected Parameters tab and asks you to confirm replacement. o Asks you to confirm replacement. • Click either:
Yes	Proceed with replacement.
No	Cancel replacement.

Cancel	Cancel the process.
---------------	---------------------

Detailed Data from Historians

To access this dialog box: From the **Plant Applications** menu, point to **Variable Data** and click **Detailed Data**

You can retrieve detailed data from your process historian for specific variable tags over a specified period of time. For each data type, you can display the time stamp and the associated value.

You can retrieve three types of data:

- [Raw data](#)
- [Interpolated data](#)
- [Calculated data](#)

Retrieving Raw Data

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Variable Data** and click **Detailed Data**.

You can retrieve raw data for a specified period of time for a specific variable tag. The retrieved data is the actual time stamp and associated value for the specified variable tag.

Retrieving raw data is good place to start if you intend to retrieve interpolated or calculated data.

[How?](#)

Retrieving Interpolated Data

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Variable Data** and click **Detailed Data**.

You can retrieve interpolated data for a specified period of time for one or more variable tags. The retrieved values are *estimated* values based on the specified time interval.

[How?](#)

Retrieving Calculated Detail Data

To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Variable Data** and click **Detailed Data**.

You can use the Plant Applications Add-in to perform calculations on the raw historian data. Based on the specified time frame and the specified time interval, the following calculations can be performed on the historian data:

- Average
- Minimum
- Maximum
- Standard Deviation
- Total

[How?](#)

Introduction to the Plant Applications Add-In

The Plant Applications Add-In for Microsoft Excel is a tool you can use to create ad hoc reports that help you retrieve and analyze data stored in Plant Applications or in your historian. Because it is an Excel Add-in, you gain all the features and functionality of Excel, coupled with the ability to quickly and easily import Plant Applications data into your workbook. The combination of the two is a powerful assistant that helps you analyze and present information in unlimited ways.

Excel Tips & Tricks

There are a few tips and tricks that may help you use the Plant Applications Add-in. These tips and tricks deal mainly with using Excel features. If you would like additional information about using Excel, you can access Excel's online help by pressing the **F1** key.

Recalculating an Array

Ctrl + Shift + Enter. By pressing all three keys simultaneously, you can manually cause a formula you've edited to recalculate.

Copying Plant Applications Formulas

To copy formulas to other locations in the spreadsheet, you'll need to determine the part of the formula that points to a cell that should update and point to a new cell. This requires removing absolute cell references.

Formatting a Report

Using the IF and ISNUMBER functions can help improve the look of your report. You can also use date and time functions, such as:

=TODAY() This function returns the current date.

=NOW() This function returns the current date and time.

Determining Valid EOM Dates

[Click here for more information.](#)

Formatting Cells

You can use the **Format Cells** command to determine the format of your dates and to specify text alignment options. To access the **Format Cells** command, right-click on the cell you want to format and click **Format Cells** on the pop-up menu. Click the **Number** tab to select a date format. Click the **Alignment** tab to specify your text alignment options (for example, wrap text).

Selecting data from a drop-down list

You can create drop-down lists, populated with data, such as Variable IDs or Product Codes, and then use the list just like you would a cell reference. Then, all you have to do to change the data is to select a different item from the list. [Click here for more information.](#)

Setting the Plant Applications Add-in Options

*To access this dialog box: In Excel, from the **Plant Applications** menu, select **Options**.*

The Plant Applications Add-in for Excel provides you with options that you can use to customize the Add-in. You can set options that determine how your output is formatted, the language used in the dialog boxes and menus, and which server is the default server.

The saved settings are associated with the current user, so that each user can customize the Add-in to suit their needs.

Automatically Fit Text to Cells

There are two options that control how text is formatted in a cell. One option controls headers; the other option controls data. You can select one or both of these options.

These options control only the text that is input from Plant Applications. These options will not affect text that is manually typed or pasted into a cell.

Adjust header column width. Select this option to automatically size the columns to fit the header text.

Adjust data column width. Select this option to automatically size the columns to fit the data.

Changing the User Interface Language

You can change the language that is used for menu options and dialog box text.

To change the user interface language, under **Language**, click the drop-down arrow and select a language.

Handling "Blank" Values

You can specify whether you want blank values to display as empty cells or to display the word "None."

No. leave blank. Select this option to display blank values as empty cells.

Yes. Substitute 'r;None' Select this option to display "None" for blank values.

Displaying Headers

Show header label. Select this option to include row or column headers on your worksheet.

Hide header label. Select this option if you do not want to include row or column headers on your worksheet.

Specifying Header Color

To specify a header color, under **Color** click the drop-down arrow and select a color. If you want the header text to be in bold text, select the **Bold** option.

Updating Links to the Add-in

You can determine if you want Excel to update the Add-in links every time a Plant Applications workbook is opened.

*When you open a workbook, you'll know immediately if you need to update the links because Excel will display a message, which will vary depending on your operating system. The important thing to know is that you should NOT have Excel update the links. So, you'll need to either click the **No** button or the **Don't Update** button.*

Update. If you regularly trade (or move) workbooks between computers, we recommend that you select this option to update the links.

Don't Update. If the majority of the time you keep your workbooks on the computer where they were created, then you can choose not to update the links.

Server Connections

The **Plant Applications Add-In Options** dialog box displays the current server, the name of the current user, and the status of the server connection. If you click the **Edit** button, you can connect to a different server, add a new server, or delete a server.

*If your server information displays "Unknown," that typically means that you haven't performed any tasks in the Add-in. To verify that you are connected, click the **Edit** button to view server information.*

- In the **Connect Server** dialog box, right-click on a server and select a command from the pop-up menu.

Excel Limits

Excel 2002 has an array size limit of 32767 cells, while Excel 2000 and Excel 97 have an array size limit of 5460 cells.

Problems arise if a worksheet is created in Excel 2002 that has more than 5460 cells in an array and is opened with Excel 2000 or Excel 97. If this happens **#VALUE!** is displayed in each of the cells in the array.

Copying Plant Applications Formulas

To copy formulas to other locations in the spreadsheet, you'll need to determine the part of the formula that points to a cell that should update and point to a new cell. This requires removing absolute cell references.

Formatting Cells

You can use the **Format Cells** command to determine the format of your dates and to specify text alignment options. To access the **Format Cells** command, right-click on the cell you want to format and click **Format Cells** on the pop-up menu. Click the **Number** tab to select a date format. Click the **Alignment** tab to specify your text alignment options (for example, wrap text).

Formatting a Report

Using the IF and ISNUMBER functions can help improve the look of your report. You can also use date and time functions, such as:

=TODAY() This function returns the current date.

=NOW() This function returns the current date and time.

Determining Valid EOM Dates

You can use the following formulas to determine if the 30th and 31st are valid days in a month:

=IF(MONTH(\$A\$2)=2,"",C43+1)

If the month = 2, then blank out the date; otherwise add 1 day to the previous date in cell C43.

=IF(DAY(EOMONTH(\$A\$2,0))=31,C44+1,"")

The EOMONTH function returns the number of the last day of the month (located in cell A2). Then, the IF function checks if the last day of the month = 31. If it is, it looks at the date in C44 and adds one day to that date. If the last day of the month ≠ 31, it returns nothing (i.e., it blanks out the cell).

In order to use the EOMONTH function, you'll need to install the Analysis ToolPak Add-in.

Excel Add-In

=ISNUMBER(A5)

This function returns True if the value in A5 is a number, False if it is not.

```
=IF(ISNUMBER(GBGetTestData(Monthly_Operating!$D$7,Monthly_Operating!$C10,"None",0,"Any",1,1,"VAL")),GBGetTestData(Monthly_Operating!$D$7,Monthly_Operating!$C10,"None",0,"Any",1,1,"VAL"),"")
```

If the value returned by the GBGetTestData function is a number then the IF function returns the results to the cell otherwise it returns nothing to the cell.

```
=IF(TODAY()>=$C29,IF(ISNUMBER(GBGetTestData(Monthly_Operating!$D$7,Monthly_Operating!$C29,"None",0,"Any",1,1,"VAL")),GBGetTestData(Monthly_Operating!$D$7,Monthly_Operating!$C29,"None",0,"Any",1,1,"VAL"),""),"")Monthly_Operating!$D$7,Monthly_Operating!$C10,"None",0,"Any",1,1,"VAL"),"")
```

This function adds an extra IF function to determine if the date today is greater than or equal to the date in a cell and if it is then return a value for this formula otherwise return nothing.

Automatic Recalculation

Because the Plant Applications functions are dynamic, anytime Excel determines the need for a recalculation, your information is automatically updated for you.

You must have automatic calculation activated in Excel. How?

Two ways to recalculate

There are basically two conditions that will cause Excel to automatically re-execute a query:

- Opening a workbook that contains Plant Applications functions
- Changing the information in a dependent cell

For example, many functions rely on start and end dates that you enter as criteria. If you change either the start date or the end date within the worksheet, Excel re-executes the query and recalculates the data based on the new date(s).

Recalculating an Array

Ctrl + Shift + Enter. By pressing all three keys simultaneously, you can manually cause a formula you've edited to recalculate.

Lists as Cell Reference

Excel has a feature that you can use to create lists of items, and then use the list as a reference for input into other Plant Applications functions.

This functionality is lost when the report is published to the web or saved as an HTML report.

To create the list:

1. On your worksheet, retrieve the data that you want to include in your list. For example, you can retrieve product codes.
2. Highlight the items in the list.
3. From Excel's **Insert** menu, point to **Name** and click **Define**.

4. In the **Define Name** dialog box, under **Names in workbook**, enter the name of the list. Make sure you use a name that's descriptive and easy to remember.
5. Click the **OK** button.

To reference the list:

1. On another worksheet, select the cell where you want the drop-down list.
2. From Excel's **Data** menu, click **Validation**.
3. In the **Data Validation** dialog box, under **Allow**, select **List** from the drop-down list.
4. Under **Source**, enter the name of the list. Make sure the list name is preceded by an equal sign (=).

On occasion, you might have to also include the worksheet name. In that case, the list reference would be in this format: =SheetName!ListName

5. Click the **OK** button.

In order to see the drop-down arrow, you'll first have to select the cell that contains the list.

Now, you can create a report and reference the cell where the list is located. This way, all you have to do is select a different item from the list and your report will automatically update the information for you. In this example, we used product codes, but you can create lists of variables or events or any number of items.

It's best to use these lists for the functions that limit you to selecting only one item at a time, since you can not multi-select items in these lists. For example, creating a list for products when finding [variable level limits](#) or creating a list of characteristics when finding [specification level limits](#).

Creating a Drop-down List

To create the list:

1. On a separate worksheet, retrieve product codes (Search > Products).
2. Highlight the items in the list. Example:
3. From Excel's **Insert** menu, point to **Name** and click **Define**.
4. In the **Define Name** dialog box, under **Names in workbook**, enter the name of the list. Make sure you use a name that's descriptive and easy to remember.
5. Click the **OK** button.

To reference the list:

1. On another worksheet, select the cell where you want the drop-down list.
2. From Excel's **Data** menu, click **Validation**.
3. In the **Data Validation** dialog box, under **Allow**, select **List** from the drop-down list.
4. Under **Source**, enter the name of the list. Make sure the list name is preceded by an equal sign (=).

On occasion, you might have to also include the worksheet name. In that case, the list reference would be in this format: =SheetName!ListName

5. Click the **OK** button.

In order to see the drop-down arrow, you'll first have to select the cell that contains the list.

Performing Statistical Analysis on Historian Data


To access this dialog box: From the Plant Applications Excel Add-in, click the **Plant Applications** menu, point to **Variable Data** and click **Statistical Analysis**.

The Plant Applications Add-in includes a Statistical Analysis Wizard to lead you through selecting the variables you want to analyze, the filter criteria you want to use, and the type of analysis you want to perform.


After you use this wizard, you will need to reset your automatic calculation option. How?

[How?](#)

Building a Product Search

1. Do one of the following:
 - From the **Plant Applications** menu, click **Build Product Search**.
 - Right-click on a cell in your worksheet, and from the pop-up menu select **Build Product Search**.
2. The Plant Applications Product Search Selector dialog box opens.
3. **optional:** Under **Server**, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the **Browse**  button.
4. Under **Search Type**, click the drop-down arrow and do one of the following:
 - Select **Product** to search for product codes. You can retrieve all products or all products within a specific group.
 - Select **Product Group** to retrieve product groups. You can then use one of these groups as input for filtering.
 - Select **Property/Characteristic** to retrieve a specific property and all associated characteristics.
 - Select **Product Group and Prop/Char** to retrieve product groups, properties and characteristics.

*Using the **Product Group and Prop/Char** results as a filter will return results that match either the product group or the property and characteristic. In other words, it uses OR logic and not AND logic.*

5. In the **Output Cell** box, click the **Collapse Dialog** button  and select the output cell on your worksheet. For more information, please see [Selecting Cells for Output](#).

The selected output cell is where the first variable will be entered. Be sure to include an additional row or column for the headings.

6. Select either the **Columns** option or **Rows** option. For more information, please see [Output Orientation](#).
7. Click the **OK** button.

Sample Reports

Evaluating Process Capability Using Historical Data

This example demonstrates how to evaluate process capability. You can retrieve Cpk statistics for any variable and product that specification limits have been defined for. You can also retrieve Average and Standard Deviations for variables. This example will also demonstrate how to use a list as a cell reference for product codes.

To retrieve Cpk's

1. On your worksheet, enter a start time and an end time.
2. Create a drop-down list of product codes. For information on creating a drop-down list, please see the topic, [Creating a Drop-down List](#).
3. Retrieve a list of variables. For information on searching for variables, please see the topic, [Searching for Variables](#).
4. From the **Plant Applications** menu, point to **Run Summary**, then **For Variables**, and click **Run Data Calculations**.
5. In the **Plant Applications Run Data Calculations dialog box**, under **Variable(s)**, select the variables on your worksheet.
6. Under **Time Range**, select the start time and end time on your worksheet.
7. Under **Product Filter**, select the cell where you placed the list of product codes.
8. Under **Run Statistic**, select **Cpk**
9. Under **Statistic Calculation**, select **Average**, **Minimum**, and **Maximum**.
10. Under **Output Cell**, select the cell on your worksheet where you want to place the information.
11. Click the **OK** button.
12. Select a different product code from the Product drop-down list to evaluate different products.

Retrieving Production Event Data

Using a variety of functions within the Add-in, you can retrieve specific data associated with a specific production event, such as a new batch, lot or reel. These steps will show you how to find these events and then find information associated with a specific event. Specifically, this report will show the target and test values for variables during a specific production event.

Overview

There are seven steps you need to follow to create this sample report. While this might at first seem daunting, most of the work is done by the Add-in. This example is meant to demonstrate how you can dynamically update the information on your worksheet by simply changing the data in a single cell. Additionally, this example will show you how you can use multiple functions within the Add-in to build reports.

What you'll be doing is first determining the time frame of the production events for which you want to find the data. Keep in mind that this is just an example. You can use the same steps to find a variety of data.

Step 1: Enter the start and end time

In this step, you determine the time frame during which you want to search for production events. You can search either a very wide or narrow time frame. Along with specific dates, you can also enter a specific time. The information in these cells will be used as references.

Keep in mind that the information that is returned is limited to the time frame that you specify.

- On your worksheet enter the start time in one cell and the end time in another cell.

Step 2: Find production events

After you've entered the start and end time that define the time frame within which you want to search for production events, you need to search for all the production events.

1. From the Plant Applications menu, point to Event Summary and click Search Production Events.
2. In the **Plant Applications Event Search** dialog box, do one of the following:
 - If you want to find all events within a specific time frame, go to step 3.
 - If you want to find events on a specific unit, under **Production Line**, click the drop-down arrow to select a production line, then click the second drop-down arrow to select a production unit.
2. Click in the **Start Time** box and then click the cell on your worksheet that contains the start time.
3. Click in the **End Time** box, and then click the cell on your worksheet that contains the end time.
4. Under **Product Filter** (or **Product Code**), click in the box and then click an empty cell on your worksheet.
5. **optional:** Under **Filter By**, do one or more of the following:
 - Under **Plant Order Number**, enter the plant order number.
 - Under **Customer Code**, enter the customer code.
 - Under **Shipment Number**, enter the shipment number
 - Under **Primary Event Number**, enter the primary event number.

Keep in mind that the results you get might not be the expected results simply because of the filters you have chosen. If you are not sure of your results, it's best to use fewer filters.

6. **optional:** Under **Crew Schedule Filter**, do one or more of the following:
 - Under **Crew Description**, click the drop-down arrow to select a crew.
 - Under **Shift Description**, click the drop-down arrow to select a shift.

Notice that if you select a crew description or shift description, "Crew Description" and "Shift Description" are added to the Display list.

7. **optional:** Under **Event Status Filter**, do one of the following:
 - If you do not want to filter on event status (e.g., Consumed, In Progress, Hold, etc.), select the **Do Not Filter By Event Status** option.
 - If you want to filter on event status, select the **Filter By Specific Event Status In List Below** option. Then, in the **Status To Exclude** list, select one or more of the event statuses you want to include, then click the **Move Selected** button to move the event statuses to the **Status To Include** list.
8. Under Display, select Primary Event Number, Event ID, Time Stamp, Original Product, and Production Unit.

9. Under Output Range, select the range of cells where you want to input your production event attributes.
10. Click the OK button.



Step 3: Create cell reference for Event ID

Now that you've found the production events, we'll be using the Event ID as a reference.



1. In an empty cell, type "Event ID."
2. Right click on one of the Event ID cells and select **Copy** from the pop-up menu.
3. Right-click on an empty cell adjacent to the cell created in step 1 and select **Paste Special** from the pop-up menu.
4. In the **Paste Special** dialog box, under **Paste**, select the **Values** option.
5. Click the **OK** button.

Step 4: Find attributes associated with a selected event

In this step, we'll work with Sheet 2 of the workbook and reference the Event ID cell that we created on Sheet 1.




1. On a new worksheet, do one of the following:
 - From the **Plant Applications** menu, point to **Attributes** and click **Production Event**.
 - From the **Plant Applications** menu, point to **Event Summary** and click **Production Event Attributes**.
2. In the **Plant Applications Production Event Attributes** dialog box, under **Event Number(s)**, click the **Collapse Dialog**  button, select the Event ID cell on the first worksheet, and click the **Expand Dialog**  button.

*You must have the site parameter, **EventNumIsNumber**, set to a value of 1 in the Plant Applications Administrator. Using the Event ID, rather than the Event Number prevents us from having to select a Production Line and Production Unit. If the EventNumIsNumber site parameter has a value of 0 (zero), then you will have to select a Production Line and Production Unit.*

3. Under **Force Event As ID**, select the **Force ID** option.
4. Under **Display**, select the following attributes:
 - Production Event Number
 - Production Unit
 - Time Stamp
 - Event Status
 - Original Product
5. Click the **Collapse Dialog**  button, select a cell on the second worksheet, and click the **Expand Dialog**  button.
6. Click the **Rows** option.
7. Click the **OK** button.




Step 5: Find variables

In this step, we'll retrieve the variables for which we want to view target values and test values. By using the available filters, you can narrow your search results. If you want to retrieve all variables, simply click the **Search** button in the **Plant Applications Variable Search** dialog box.

1. From the **Plant Applications** menu, point to **Search**, and then click **Variables**.
2. In the **Plant Applications Variable Search** dialog box, under **Production Line**, click the drop-down arrow to select a production line.
3. Under **Production Unit**, click the drop-down arrow to select a production unit. If you selected a production line, only the production units associated with the selected line will be available.
4. **optional:** Under **Production Group**, click the drop-down arrow to select a variable group. If you selected a production unit, only the variable groups associated with the selected production unit will be available.
5. **optional:** Under **Variable Description Filter**, enter any combination of numbers or letters. Keep in mind that the variables displayed will be those that contain exactly what you enter.
6. Under **Display**, select the **Variable Descriptions** check box to include a description of the selected variables on your spreadsheet. Select the **Engineering Units** check box to include the engineering units (#, LF, lbs, kg) for the selected variables on your spreadsheet.
7. Click the **Search** button.
8. In the **Selection Found** box, do one of the following:
 - Select the variables you want to include on your spreadsheet and click the **Move Selected** button  to move the selected variables to the **Selected Variables** box.
 - Click the **Move All**  button to move all of the variables to the **Selected Variables** box.
9. In the **Output Cell** box, click the **Collapse Dialog**  button and select the output cell on your spreadsheet.
10. Click the **Columns** option.
11. Click the **OK** button.

Step 6: Find the variables' specification targets

In this step, we'll find the target value for the selected variable(s)

1. From the Plant Applications menu, point to Limits and click Variable Level.
2. In the **Plant Applications Variable Limits** dialog box, under **Variables**, click the **Collapse Dialog**  button, select the variables on your worksheet, and click the **Expand Dialog**  button.
3. Under **Time [Opt]**, click the **Collapse Dialog**  button and select the cell on your worksheet that contains the time stamp.
4. Under **Product Code**, select the **Original Product** on your worksheet.
5. Under **Specifications**, select **Target**.
6. Under **Output Cell**, select the cell on your worksheet next to the Engineering Units.
7. Click the **OK** button.

Step 7: Find the variables' test values

In this step, we'll retrieve the test values for the selected variable(s).


1. From the Plant Applications menu, point to Variable Data and click Data By Specific Event.
2. In the **Plant Applications Test Value By Event** dialog box, under **Variable(s)**, select the variables on your worksheet.
3. Under **Events**, select the **Primary Event Number** on your worksheet.
4. Under **Display**, select **Test Value**.

5. Under **Output Cell**, select the cell on your worksheet where you want to import the information.
6. Select the **Columns** option.
7. Click the **OK** button.

Retrieving Data for Multiple Events and Multiple Variables

By following these three steps, you can retrieve accurate data for multiple variables. If you select more than one attribute, only the last attribute in the group of selected attributes will be repeated for each variable.

Step 1: Search for production events

1. From the Plant Applications menu, point to Event Summary and click Search Production Events.
2. The Plant Applications Event Search dialog box opens.
3. **optional:** Under Server, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the Browse  button.
4. Under Production Line, click the drop-down arrow to select a production line, then click the second drop-down arrow to select a production unit.
5. Under Time Range, enter a start and end time. For more information on entering start and end dates, please see [Selecting Start and End Times](#).
6. If you want to filter on a specific product, under Product Filter (or Product Code), select a Product Code or Product ID on your worksheet.

Whether you are required to select Product Code or Product ID is determined by the site parameter, ProdCodelsNum. For more information, see [ProdCodelsNum Site Parameter](#).

If you filter on a product, the options Original Product and Applied Product will be available. Additionally, "Original Product" and "Applied Product" will be added to the Display list.

7. Under **Filter By**, do one or more of the following:
 - Under **Plant Order Number**, enter the plant order number.
 - Under **Customer Code**, enter the customer code.
 - Under **Shipment Number**, enter the shipment number
 - Under **Primary Event Number**, enter the primary event number.

Keep in mind that the results you get might not be the expected results simply because of the filters you have chosen. If you are not sure of your results, it's best to use fewer filters.

8. Under **Crew Schedule Filter**, do one or more of the following:
 - Under **Crew Description**, click the drop-down arrow to select a crew.
 - Under **Shift Description**, click the drop-down arrow to select a shift.

Notice that if you select a crew description or shift description, "Crew Description" and "Shift Description" are added to the Display list.

9. Under **Event Status Filter**, do one of the following:
 - If you do not want to filter on event status (e.g., Consumed, In Progress, Hold, etc.), select the **Do Not Filter By Event Status** option.
 - If you want to filter on event status, select the **Filter By Specific Event Status In List Below** option. Then, in the **Status To Exclude** list, select one or more of the event statuses you

want to include, then click the **Move Selected** button to move the event statuses to the **Status To Include** list.

10. Under **Display**, select one or more of the attributes you want to include on your worksheet.
11. Under **Output Range**, select the range of cells where you want to input your production event attributes. For information on how to select cells for output, please see [Selecting Cells for Output](#).
12. Under **Output Sort**, do one of the following:
 - Select the **Ascending** option to sort the statistics starting with the most recent Run Start Time (i.e., from oldest to newest).
 - Select the **Descending** option to sort the statistics starting with the earliest Run Start Time (i.e., from newest to oldest).
13. If select only one cell, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).

If you select more than one output cell, these options are not available.

14. Click the **OK** button.

Step 2: Search for variables




1. From the **Plant Applications** menu, point to **Search**, and then click **Variables**.
2. In the **Plant Applications Variable Search** dialog box, do one or more of the following:
 - **Production Line:** Click the drop-down arrow to select a production line.
 - **Production Unit:** Click the drop-down arrow to select a production unit. If you selected a production line, only the production units associated with the selected line will be available.
 - **Production Group:** Click the drop-down arrow to select a variable group. If you selected a production unit, only the variable groups associated with the selected production unit will be available.
 - **Variable Description Filter:** Enter any combination of numbers or letters. Keep in mind that the variables displayed will be those that contain exactly what you enter. As an example, let's say that you have the following variables:

50#Gloss, 50#Matte, 60#Gloss, 70#Matte, Alarm, Reelspeed

If you enter ...	You'll get ...
5	50#Gloss 50#Matte
A	50#Matte 70#Matte Alarm
E	50#Matte 70#Matte Reelspeed
At	50#Matte 70#Matte
# a	No variables will be returned.

- **Server:** If you need to select a different server, click the drop-down arrow and select a server.
- **Display:** Select the **Variable Descriptions** check box to include a description of the selected variables on your spreadsheet. Select the **Engineering Units** check box to include the engineering units (#, LF, lbs, kg) for the selected variables on your spreadsheet.


If you do not select the Variable Description option, only the [Variable ID](#) will be included on your worksheet.

3. Click the **Search** button.
4. In the **Selection Found** box, do one of the following:
 - Select the variables you want to include on your spreadsheet and click the **Move Selected** button  to move the selected variables to the **Selected Variables** box.
 - Click the **Move All** button  to move all of the variables to the **Selected Variables** box.
5. In the **Output Cell** box, click the **Collapse Dialog** button  and select the output cell on your spreadsheet. For more information, please see [Selecting Cells for Output](#).

The selected output cell is where the first variable will be entered. Be sure to include an additional row or column for the headings.

6. Click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).
7. Click the **OK** button.

Step 3: Retrieve test data by time frame

1. From the Plant Applications menu, point to Variable Data and click Data By Time Frame.
2. The Plant Applications Test Data By Time dialog box opens.
3. **optional:** Under Server, click the drop-down arrow to select a different server. If you need to add a new server or connect to the selected server, click the Browse  button.
4. Under Variable(s), select the Variable ID(s) or Variable Description(s) on your worksheet. For information about selecting cells for input, please see [Searching for Variables](#).
5. Under Time Range, enter the start time and end time. For information about entering start and end dates, please see [Selecting Start and End Times](#).
6. **optional:** If you want to filter on a specific product, under Product Filter (or Product Code), select a Product Code or Product ID on your worksheet.

*Whether you are required to select Product Code or Product ID is determined by the site parameter, **ProdCodelsNum**. For more information, see [ProdCodelsNum Site Parameter](#).*

*If you filter on a product, the options **Original Product** and **Applied Product** will be available. Additionally, "Original Product" and "Applied Product" will be added to the **Display** list.*

If you do not select a product, the test data will be for all products associated with the specified variable(s) for the specified time period.

7. **optional:** Under **Crew Schedule Filter**, do one or more of the following:
 - Click the **Crew Description** drop-down arrow to select a crew.
 - Click the **Shift Description** drop-down arrows to select a shift.
8. Under **Display**, select one or more of the attributes to include on your worksheet.

If you select more than one variable, the last attribute you select will be the only attribute that is repeated for each variable.

If you select more than one variable, only the first variable's information will coordinate with the Result Time Stamp, unless the all the variables have the same time stamps.

9. Under **Output Range**, select the range of cells where you want to import the information on your worksheet. Keep in mind that if the number of reasons is greater than the number of cells you selected, you will get only the number of cells you select. For more information on selecting cells for output, please see [Selecting Cells for Output](#).
10. Under **Output Sort**, do one of the following:
 - Select the **Ascending** option to sort the statistics starting with the most recent Start Time (i.e., from oldest to newest).
 - Select the **Descending** option to sort the statistics starting with the earliest Start Time (i.e., from newest to oldest).
11. If you select only one cell, you can click either the **Columns** or **Rows** option. For more information, please see [Output Orientation](#).







If you select more than one output cell, these options are not available.

12. Click the **OK** button.

Retrieving Specification (Recipe) Data

This example will demonstrate how to retrieve specification, or recipe, data for selected variables for a specified product (click here for information about [searching for products](#)) at a specific time.

To retrieve specification data:

1. On your worksheet, enter the Product Code and the time for which you want to retrieve the specification data.
2. From the **Plant Applications** menu, point to **Search** and click **Variables**.
3. In the **Plant Applications Variable Search** dialog box, select the production line
4. **optional:** Select the production unit.
5. **optional:** Select a variable group.
6. **optional:** In the **Variable Description Filter** box, enter part of the names of the variables you want to find.
7. Click the **Search** button.
8. In the **Selection Found** box, do one of the following:
 - Select the variables you want to include on your spreadsheet and click the **Move Selected** button  to move the selected variables to the **Selected Variables** box.
 - Click the **Move All**  button to move all of the variables to the **Selected Variables** box.
9. In the **Output Cell** box, click the **Collapse Dialog**  button and select the output cell on your spreadsheet.
10. Click the **OK** button.
11. From the **Plant Applications** menu, point to **Limits** and click **Variable Level**.
12. The **Plant Applications Variable Limits** dialog box opens.
13. Under **Variables**, click the **Collapse Dialog**  button, select the variables on your worksheet, and click the **Expand Dialog**  button.
14. Under **Time [Opt]**, click the **Collapse Dialog**  button and select the cell on your worksheet that contains the date.

15. Under **Product Code**, select the Product Code on your worksheet.
16. Under **Specifications**, select one or more specifications.
17. Under **Output Cell**, select the cell on your worksheet where you want to import your specifications.
18. Click the **OK** button.

Retrieving Summary Data

This example demonstrates how to retrieve run summary data for variables during specified time frame and, optionally, for a specific product. In this example, we'll find the Average for each variable and the associated Result Time Stamp.

To retrieve summary data:




1. On your worksheet, enter a start time, an end time, and a product.
2. From the **Plant Applications** menu, point to **Search** and click **Variables**.
3. In the **Plant Applications Variable Search** dialog box, select the production line.
4. **optional**: Select the production unit.
5. **optional**: Select a variable group.
6. **optional**: In the **Variable Description Filter** box, enter part of the names of the variables you want to find.
7. Click the **Search** button.
8. In the **Selection Found** box, do one of the following:
 - Select the variables you want to include on your spreadsheet and click the **Move Selected** button to move the selected variables to the **Selected Variables** box.
 - Click the **Move All** button to move all of the variables to the **Selected Variables** box.
9. In the **Output Cell** box, click the **Collapse Dialog** button and select the output cell on your spreadsheet.
10. Click the **OK** button.
11. From the **Plant Applications** menu, point to **Run Summary**, point to **For Variables** and click **Run Data By Time Frame**.
12. The **Plant Applications Run Data** dialog box opens.
13. Under **Variable(s)**, select one or more of the Variable IDs on your worksheet.
14. Under **Time Range**, select the start and end times on your worksheet.
15. **optional**: Under **Product Filter**, select the Product Code on your worksheet. If you select the product on your worksheet, your run summary statistics will be limited to the product run during the selected time frame.
16. Under **Run Statistic**, select **Run Start Time** and **Average**.
17. Under **Output Range**, select the cells on your worksheet where you want to import your statistics.
18. Click the **OK** button.

Performing Calculations on Variable Data

Excel Add-In

This example will demonstrate how to perform calculations on variables within a specific time frame. We'll also use a simple calculation to determine the end date and we'll demonstrate how you can easily recalculate the data by simply changing the information in a single cell.

To perform calculations on variables:

1. On your worksheet, do the following:
 - a. Enter a start time
 - b. Reserve a cell for the end time (we'll put a calculation in this cell later)
 - c. Enter **30** for the number of days (this is the number of days we want to add to our start time)
 - d. Enter a product code or leave the cell blank.
2. In the empty cell for the end time, enter a calculation to determine the end date based on the start time and the number of days. In our example, the calculation would be **=B1+B3**. This will add 30 days to the start date.
3. From the **Plant Applications** menu, point to **Search** and click **Variables**.
4. In the **Plant Applications Variable Search** dialog box, select a production line and unit. Optionally, you can select a variable group.
5. optional: Under **Variable Description Filter**, enter search criteria.
6. Click the **Search** button.
7. Under **Selection Found**, do one of the following:
 - Select the variables you want to include on your spreadsheet and click the **Move Selected** button  to move the selected variables to the **Selected Variables** box.
 - Click the **Move All**  button to move all of the variables to the **Selected Variables** box.
8. Under Display, select the Variable Descriptions option and the Engineering Units option.
9. In the Output Cell box, click the Collapse Dialog  button and select the output cell on your spreadsheet.
10. Click the OK button.
11. From the Plant Applications menu, point to Variable Data and click Calculations.
12. In the Plant Applications Tests Calculations dialog box, select the variables on your worksheet.
13. Under Time Range, select the cells on your worksheet that contain the Start Time and the End Time.
14. Under **Product**, select the cell that contains the product code.
15. Under **Statistic Calculation**, select one or more of the calculations.
16. Under **Output Cell**, select the cell adjacent to the first cell under the **Engineering Units** column.
17. Click the **OK** button.

Now that you have the output, you can change the number of days and see how the Add-in automatically recalculates the data for you.

Retrieving Production Counts

This example demonstrates how to retrieve production counts by using two of the Add-in functions. First, we'll search for the variable that maintains the production counts and then we'll retrieve the test values for that variable.

To retrieve production counts:

1. On your worksheet, enter and a start time and an end time.
2. **optional:** Enter a product code.
3. From the **Plant Applications** menu, point to **Search** and click **Variables**.
4. In the **Plant Applications Variable Search** dialog box, under **Variable Description Filter**, enter the name or a portion of the name of the production count variable.
5. Under **Selection Found**, select the production count variable and click the **Move Selected** button to move the variable to the **Selected Variables** box.
6. Under **Output Cell**, select the cell on your worksheet where you want to place the selected variable information.
7. Under **Display**, select the **Variable Descriptions** and the **Engineering Units** options.
8. Click the **OK** button.
9. From the **Plant Applications** menu, point to **Variable Data** and click **Data By Time Frame**.
10. In the **Plant Applications Test Data By Time Frame** dialog box, under **Variable(s)**, select the production count variable on your worksheet.
11. Under **Time Range**, select the **Start Time** and the **End Time** from your worksheet.
12. **optional:** Select the product code on your worksheet.
13. Under **Display**, select **Result Time Stamp** and **Test Value**.
14. Under **Output Range**, select the range of cells on your worksheet.
15. Click the **OK** button.

Troubleshooting

No Results Returned

If you are seeing no results returned when testing your web report using the Publish-to-Web wizard, make sure that you are not testing the report on the same computer where the Proficy Server or Web Server are installed. If you are, then you will need to stop the Proficy Server Manager service in order to test your web report. You cannot test your Web report on the same computer where the Plant Applications Report Engine services or Plant Applications Scheduler service are running. You must test on a client computer that is connected to the Proficy Server and Web Server.

SQL Connection Error

A **Reconnecting** message will appear when the Add-in attempts to execute a database command and the SQL Server connection has been interrupted. This could be because SQL Server shutdown, restarted, lost its network connection, a computer stopped responding, or cluster failover. This does not include the Client losing its network connection.

If the connection to SQL Server cannot be restored, the **SQL Connection Error** dialog box will appear. By default, reconnection will be attempted in 10 seconds. However, you can force the reconnection by clicking **Retry** or you can stop the attempt to reconnect by clicking **Abort**.

NOTE: *If you click **Abort**, all open sheets will be closed, all buffered data will be lost, and the Add-in will be closed.*

The amount of time to attempt a reconnection is controlled by the DatabaseReconnectionRetryTime site parameter.