

Data Flow Controller DX-series

# Practices Guide SynapseSync Spreadsheet

DX100-□□□□

Practices  
Guide



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# CONTENTS

- 1. Purpose ..... 3
- 2. Setup ..... 3
  - 2.1. System Configuration..... 3
  - 2.2. Installation..... 3
- 3. Synapse Configuration ..... 5
  - 3.1. Resource Collector Settings (for Operational Verification) ..... 5
  - 3.2. Access Token Settings ..... 5
  - 3.3. Restarting the DB Query Service ..... 7
- 4. Excel Configuration ..... 8
  - 4.1. Starting Excel..... 8
  - 4.2. Data Collection Settings (Data Source)..... 8
  - 4.3. Data Collection Settings (Collector/Component)..... 10
  - 4.4. Starting Data Collection ..... 12
  - 4.5. Ending Data Collection..... 14
  - 4.6. Restricted Mode and Full Mode ..... 15
- 5. Supplementary Information ..... 16
  - 5.1. Error Message ..... 16
  - 5.2. Steps to Follow If *Synapse Sync Spreadsheet* Cannot Be Used after Installation ..... 17

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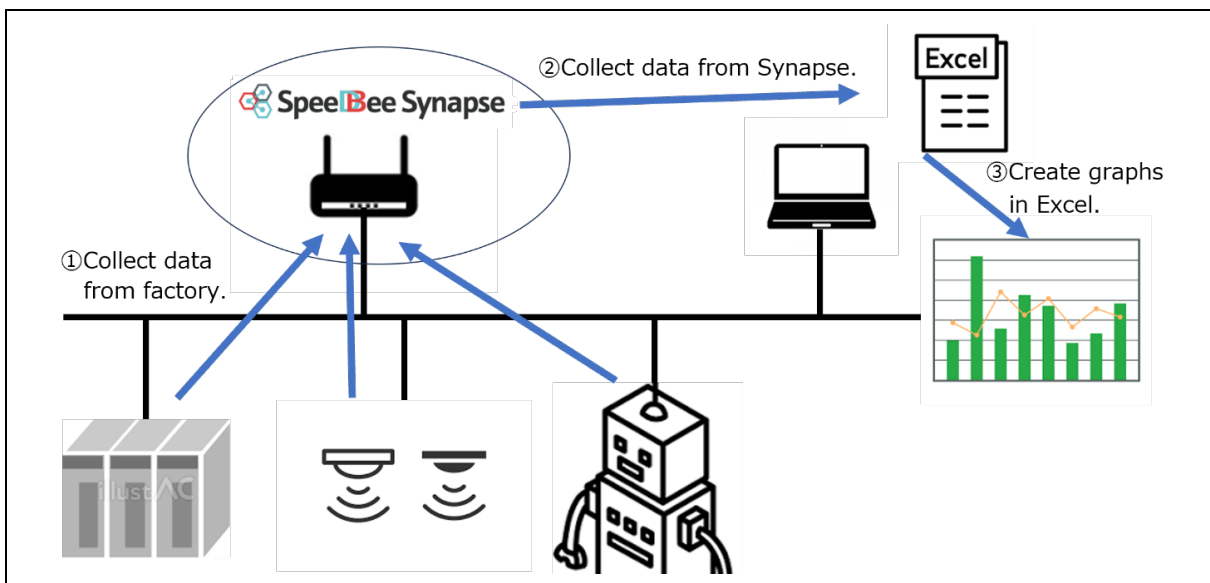
## 1.Purpose

*Synapse Sync Spreadsheet* is an add-in application for Microsoft *Excel* to import various types of data (PLC, sensor, robot, and other data) from the IoT middleware *SpeedBee Synapse* into Excel. By installing this application on a computer on which Excel is running, the Synapse access functionality is added to the Excel's toolbar as *SynapseSync*. This allows you to import PLC, sensor, robot, and other data into Excel and easily perform data aggregation, analysis, and charting. This manual covers the installation and usage of *Synapse Sync Spreadsheet*. The following sections describe the system configuration, installation procedure, and usage instructions.

## 2.Setup

### 2.1.System Configuration

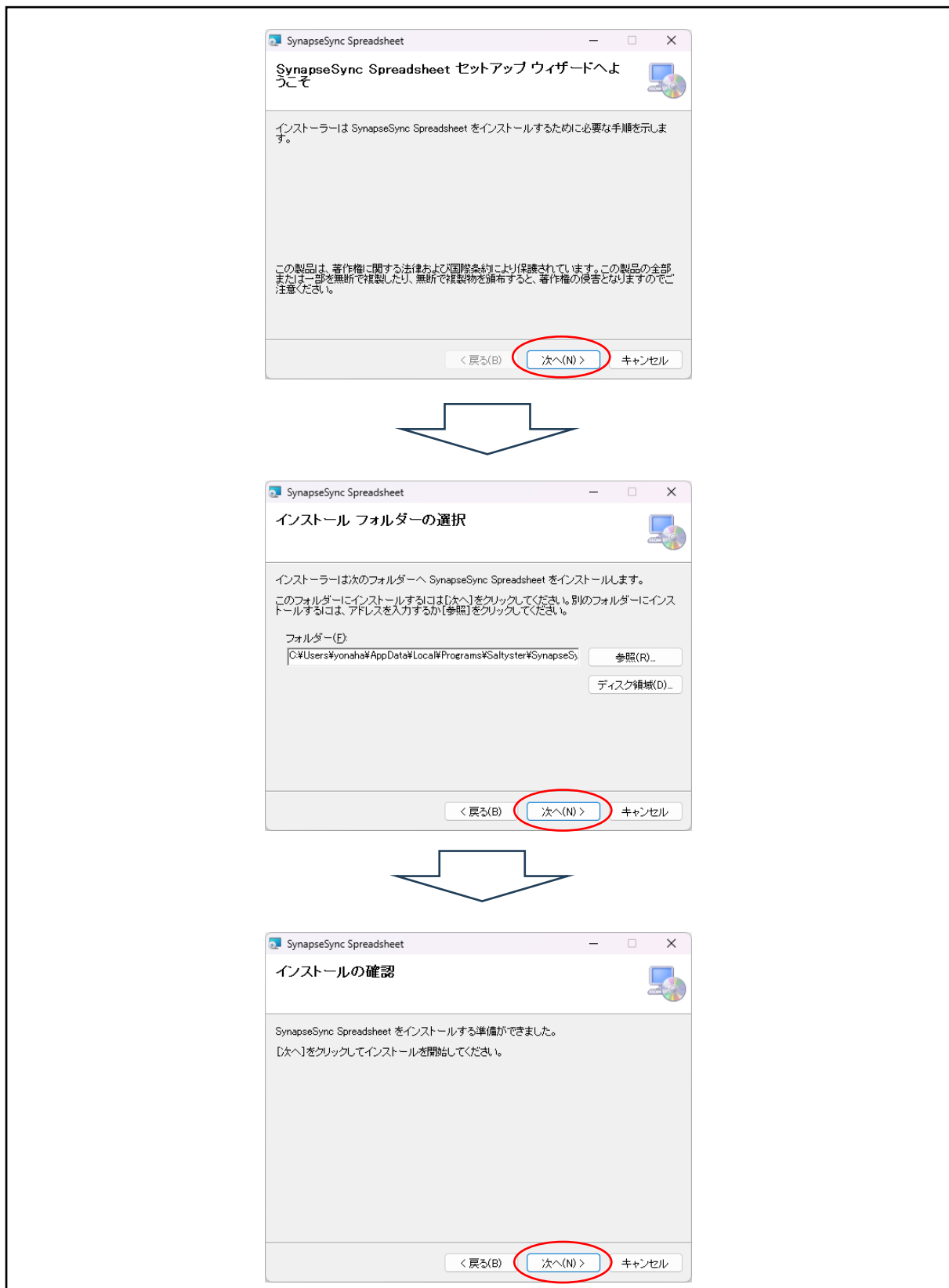
The IoT middleware *SpeedBee Synapse* collects various types of data from PLCs, sensors, robots, etc. installed at manufacturing sites and manages the data in chronological order. *Synapse Sync Spreadsheet* accesses Synapse over the network, selects the data managed by Synapse, and imports various data into Excel worksheets based on set conditions such as the collection interval, amount of data to collect, and data population position in the worksheet. In *Excel*, you can use macro and chart functions to process, analyze, and visualize the data.



### 2.2.Installation

Execute *setup.exe* for *Synapse Sync Spreadsheet*. In the Setup Wizard that starts, select **Next**. Then, confirm or select the installation folder and select **Next**. Now that you are ready for installation, select **Next**. When the dialog box asking *Allow this app to make changes to your device?* appears, select **Yes** to continue.

When the Installation Complete page is displayed, select **Close**. If an older version of the application is installed, be sure to uninstall it before performing the installation. In addition, close any instances of Excel that are running.

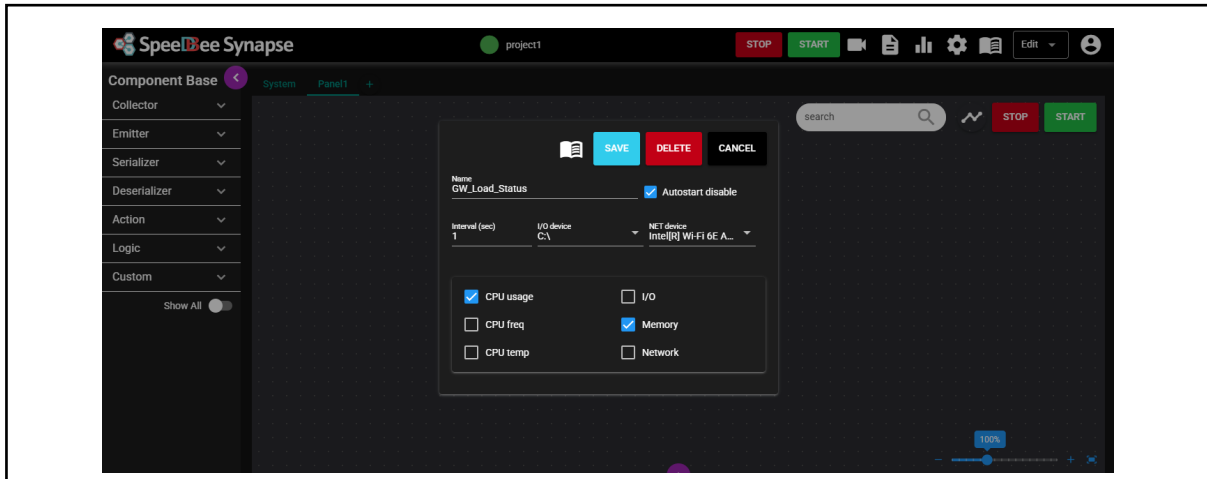


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### 3.Synapse Configuration

#### 3.1.Resource Collector Settings (for Operational Verification)

Configure the settings for the collector (GW Load Status) for monitoring the CPU and memory load status of the gateway on which *SpeedBee Synapse* is installed, as shown in the figure below.



After saving the settings, start the collector and confirm that data can be acquired using the Data Monitor.

#### 3.2.Access Token Settings

You can configure the access token settings for the collector to enhance security when accessing SpeedBee Synapse from outside, but these settings are optional.

If you choose to configure them, follow the steps below.

Select **System** panel and open the setting screen for the *DB query service* component.

To issue an access token for the *GW Load Status* collector you created, select **PUBLISH ACCESS TOKEN**. Then, enter an access token name (e.g., RasPi\_TKO) and click the **Copy** button on the far right of the screen to copy the access token to the clipboard. Be sure to save the access token. You will use them in the *Synapse Sync Spreadsheet* settings.

SAVE CANCEL

Name  
coredbquery  Autostart disable

Address 0.0.0.0 Port 8081

Token authentication **PUBLISH ACCESS TOKEN**

<input checked="" type="checkbox"/> Token name	Expiration date
<input checked="" type="checkbox"/> Excel	5/1/2026, 11:46:50 AM

1 record selected Records per page: 10 1-1 of 1



CLOSE

Token name	Expiration	Unit Date
Token name		

Token name	Expiration date
Excel	5/1/2026, 11:46:50 AM

Records per page: 10 1-1 of 1



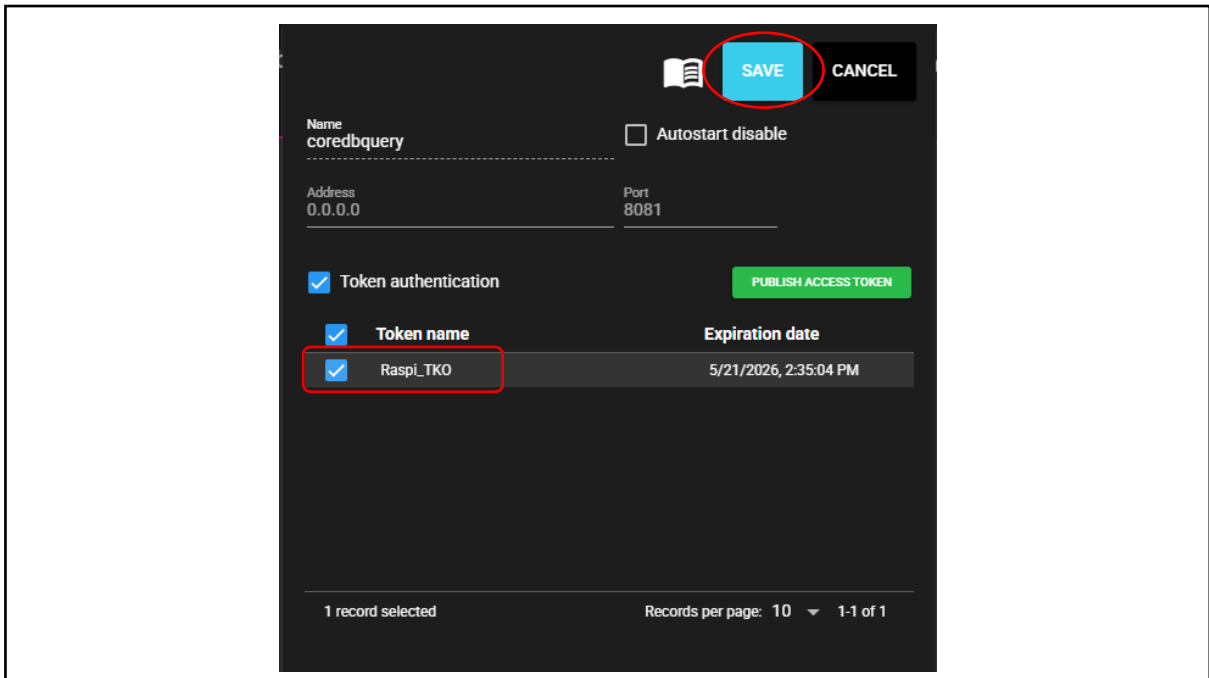
CLOSE

eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJzdWIiOiJBY2Nlc3Nub2t1bWV4IiwiaWF0Ijoi

**This access token is only displayed once.**  
Once you close this screen, you will not be able to obtain the same token,  
so be sure to copy it and keep it in a safe place.

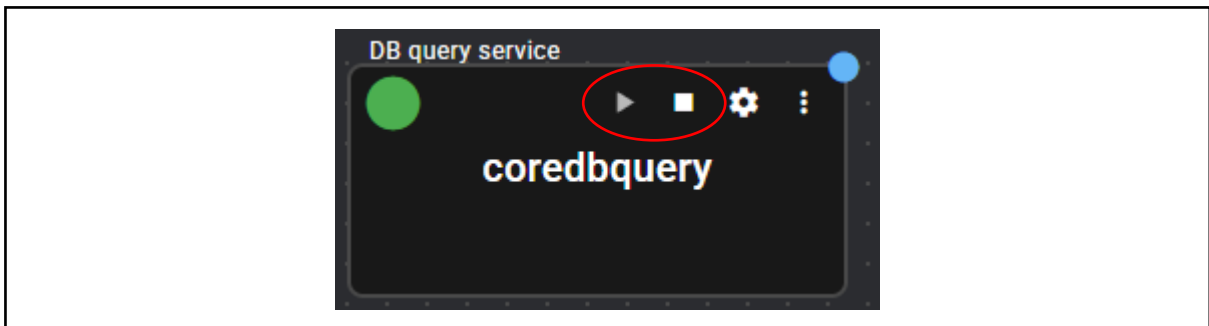
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Select the check box for *Raspi\_TKO* that you registered as a token and save the settings.



### 3.3.Restarting the DB Query Service

On the *System* panel screen, restart (i.e., stop and start) the *DB query service* component.

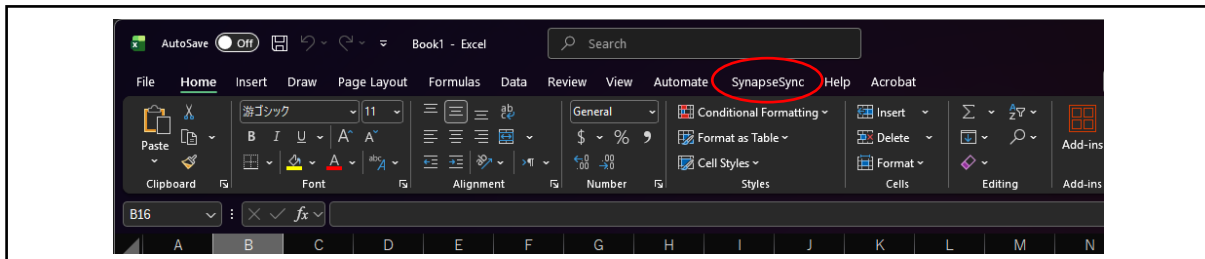


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## 4.Excel Configuration

### 4.1.Starting Excel

Start Excel and create an *empty workbook*. *SynapseSync* is displayed on the toolbar.



### 4.2.Data Collection Settings (Data Source)

Select **SynapseSync – Data collection settings** on the toolbar to display the Data collection settings screen.

Select **Data Source** to display the setting items for accessing SpeedBee Synapse.

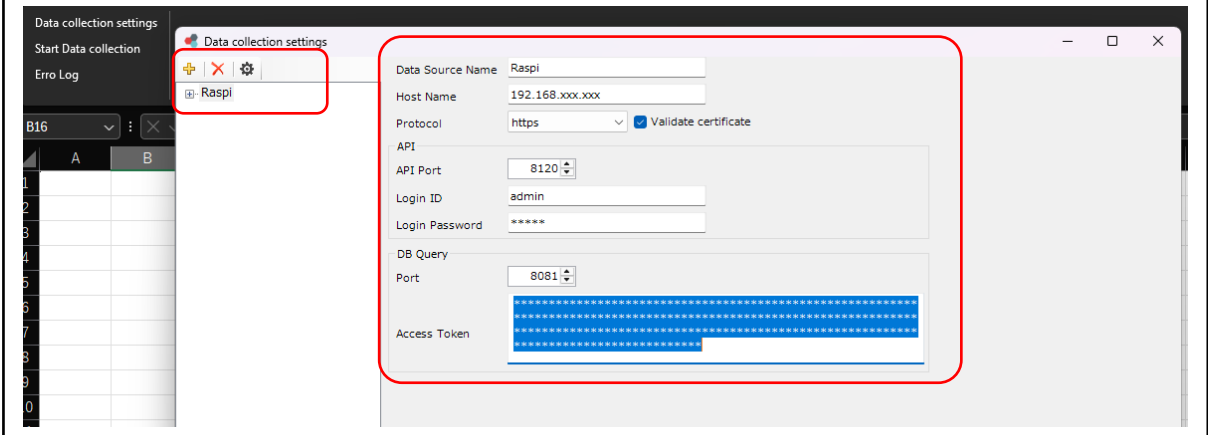
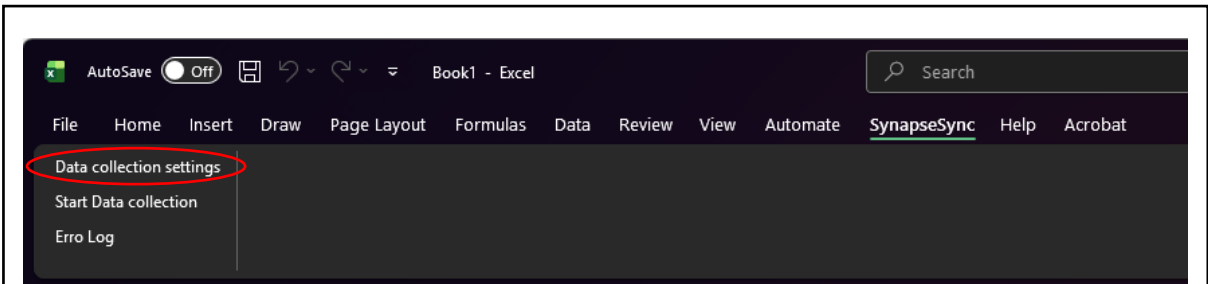
Enter each item and click **OK**.

You can register more than one data source. Click **New Data Source** (+ icon) above the data source list to create a new data source.

To delete a data source, select the data source you want to delete and click **Delete** (× icon) above the data source list, or right-click the data source and select **Delete Data Source**.

The data source setting items are as shown in the table below.

Item	Description	Required
Data Source Name	Data source name displayed in the tree	---
Host Name	Host name (IP address) of SpeedBee Synapse	✓
Protocol	Communications protocol used to access SpeedBee Synapse Select <b>http</b> or <b>https</b> according to the SpeedBee Synapse settings. (Default setting: <i>http</i> )	✓
Validate certificate	Enable or disable certificate verification when the protocol is set to <i>https</i> .	---
API	Settings related to accessing SpeedBee Synapse	
API Port	Port number used to access SpeedBee Synapse (Default value: 8120)	✓
Login ID	Login ID for SpeedBee Synapse	✓
Login Password	Login password for SpeedBee Synapse	✓
DB Query	Settings related to DB query	
Port	Port number for the DB query service (Default value: 8081)	✓
Access Token	Token issued by the DB query service * Token issued in <a href="#">3.2. Access Token Settings</a> . Access tokens are not required if token authentication for the DB query service component is disabled.	---



### 4.3.Data Collection Settings (Collector/Component)

A data source has a tree structure as shown below.

Data Source

└ Project

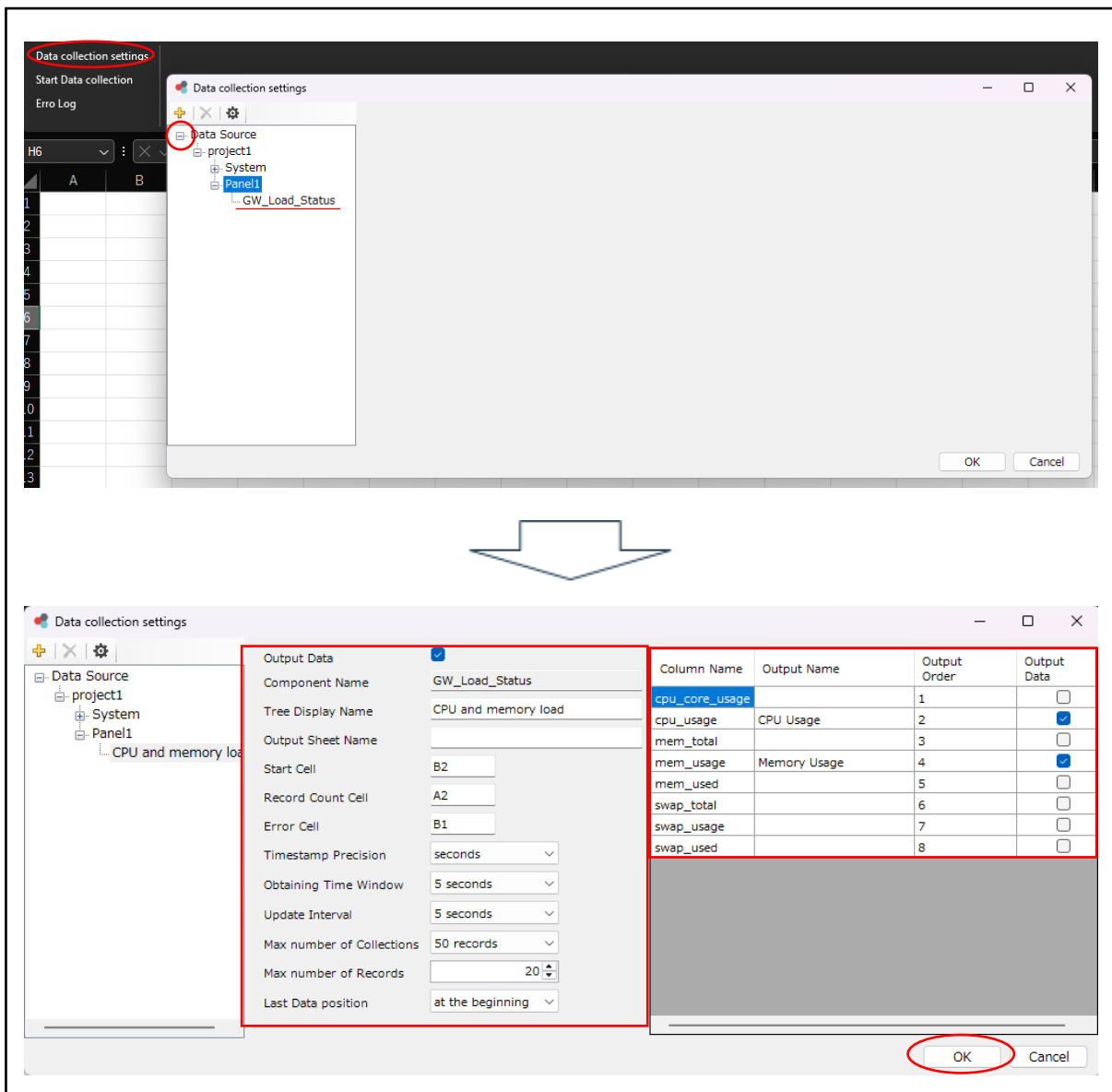
└ Panel

└ Components

Click the **+** button to expand the tree and select the component for which you want to collect data.

When there are multiple projects in a single data source, you can only expand the tree for the (active) project selected in SpeedBee Synapse.

For example, select **GW\_Load\_Status**, which you created in [3.1. Resource Collector Settings \(for Operational Verification\)](#).



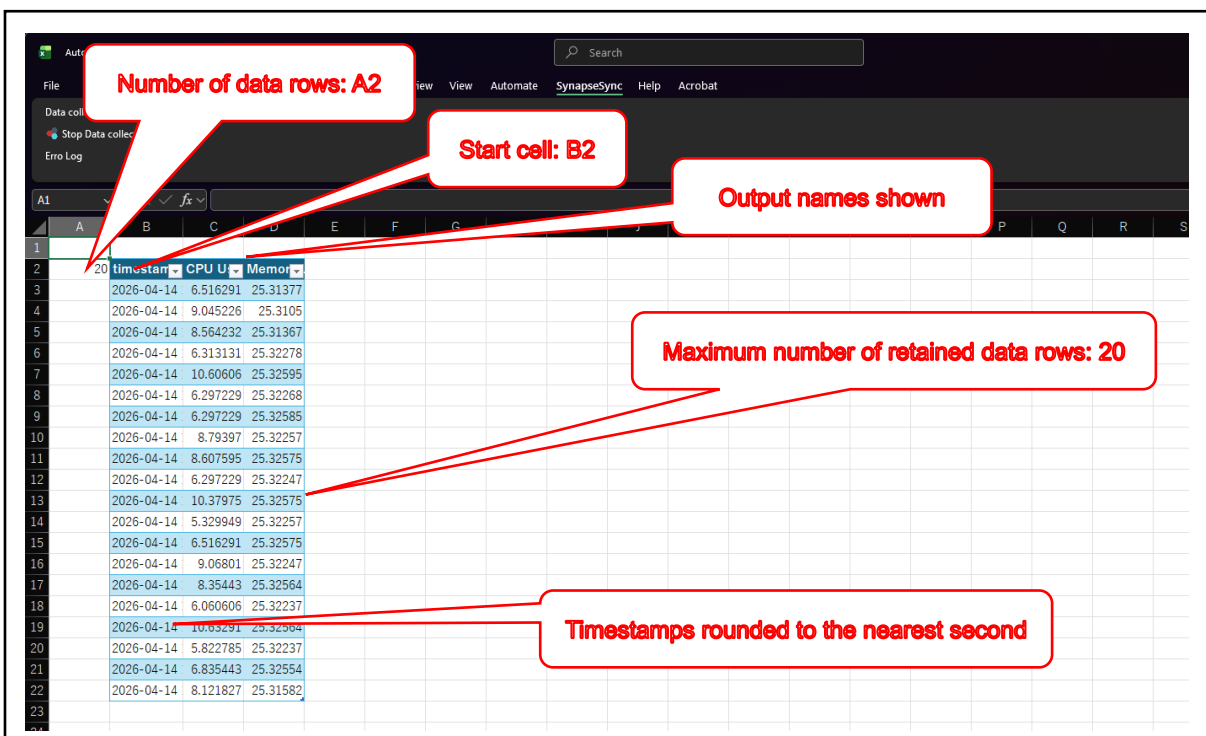
Configure settings to import data into Excel.

Item	Description	Required
Output Data	Data will not be imported unless this check box is selected.	✓
Component Name	Component name used in Synapse (e.g., collector name)	✓
Tree Display Name	Display name in the tree (component) list * If not specified, the Synapse component name will be displayed.	---
Output Sheet Name	Name of the worksheet into which to import data from Synapse * If not specified, a worksheet will be created using the tree display name.	---
Start Cell	Start position for data population (cell position)	✓
Record Count Cell	Display position for the number of data rows imported into Excel	---
Error Cell	Display position for error messages	---
Timestamp Precision	Data rounding (ms, 500 ms, 100 ms, $\mu$ s, or ns)	✓
Obtaining Time Window	Data retrieval period from Synapse (5 to 30 s, 30 min, or 24 h)	✓
Update Interval	Data retrieval interval from Synapse (None or 5 s to 1 h)	✓
Max number of Collections	Maximum number of data rows to retrieve from Synapse (None, 10 to 1000)	✓
Max number of Records	Specify the maximum number of data rows to display in Excel (1 to 10000)	✓
Latest Data position	Position at which to import data from Synapse (Start or End)	✓
Column Name	Column names managed by Synapse	✓
Output Name	Display names in Excel cells * If not specified, the Synapse's column names will be displayed.	---
Output Order	Display order of columns when populating the worksheet with data (from left to right)	✓
Output Data	Data will be retrieved from Synapse only for columns with the check box selected.	✓

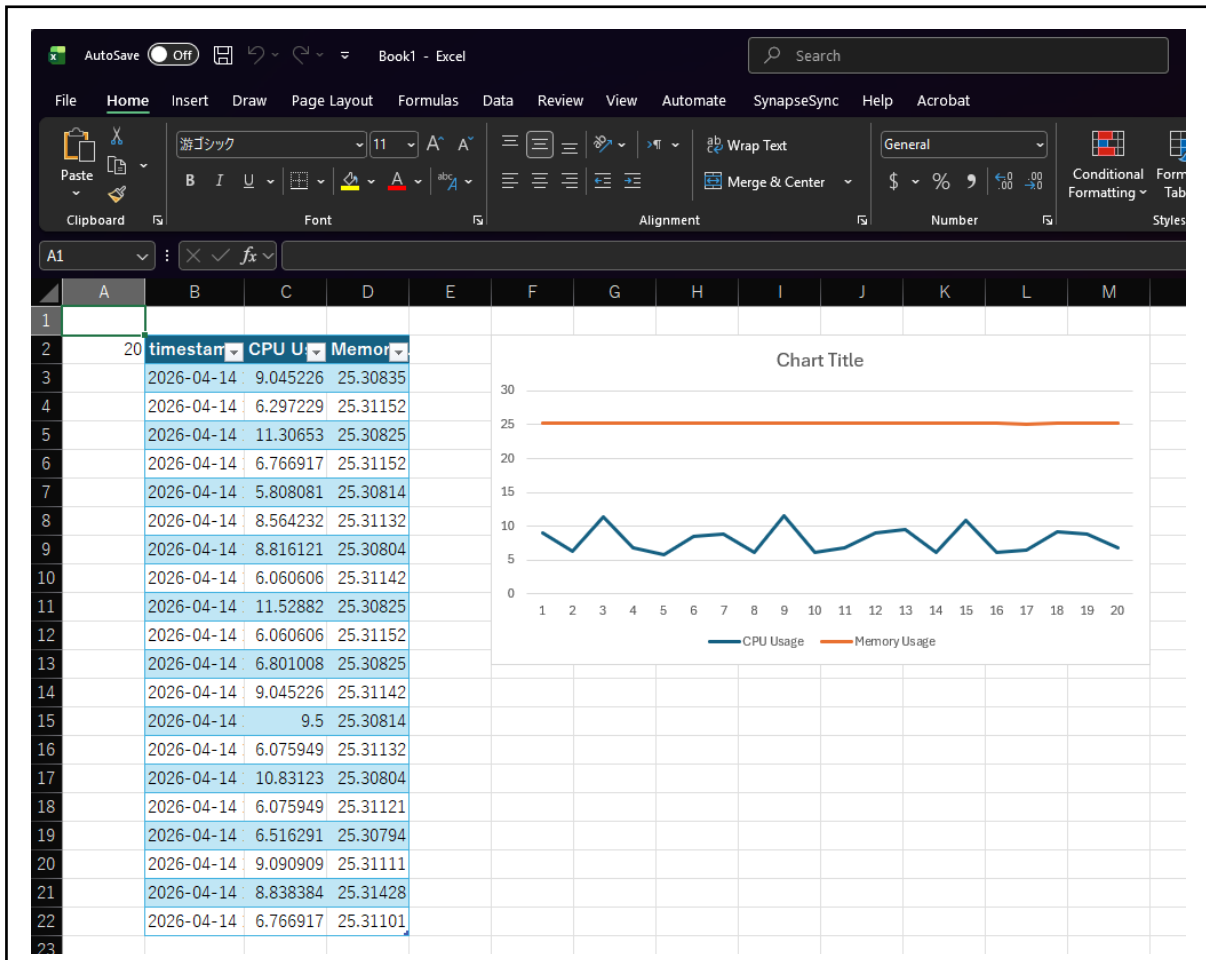
After completing the settings, select **OK**.

#### 4.4. Starting Data Collection

Select **SynapseSync** on the toolbar and then select **Start Data collection**. This automatically creates a worksheet and populate it with data from the specified location.

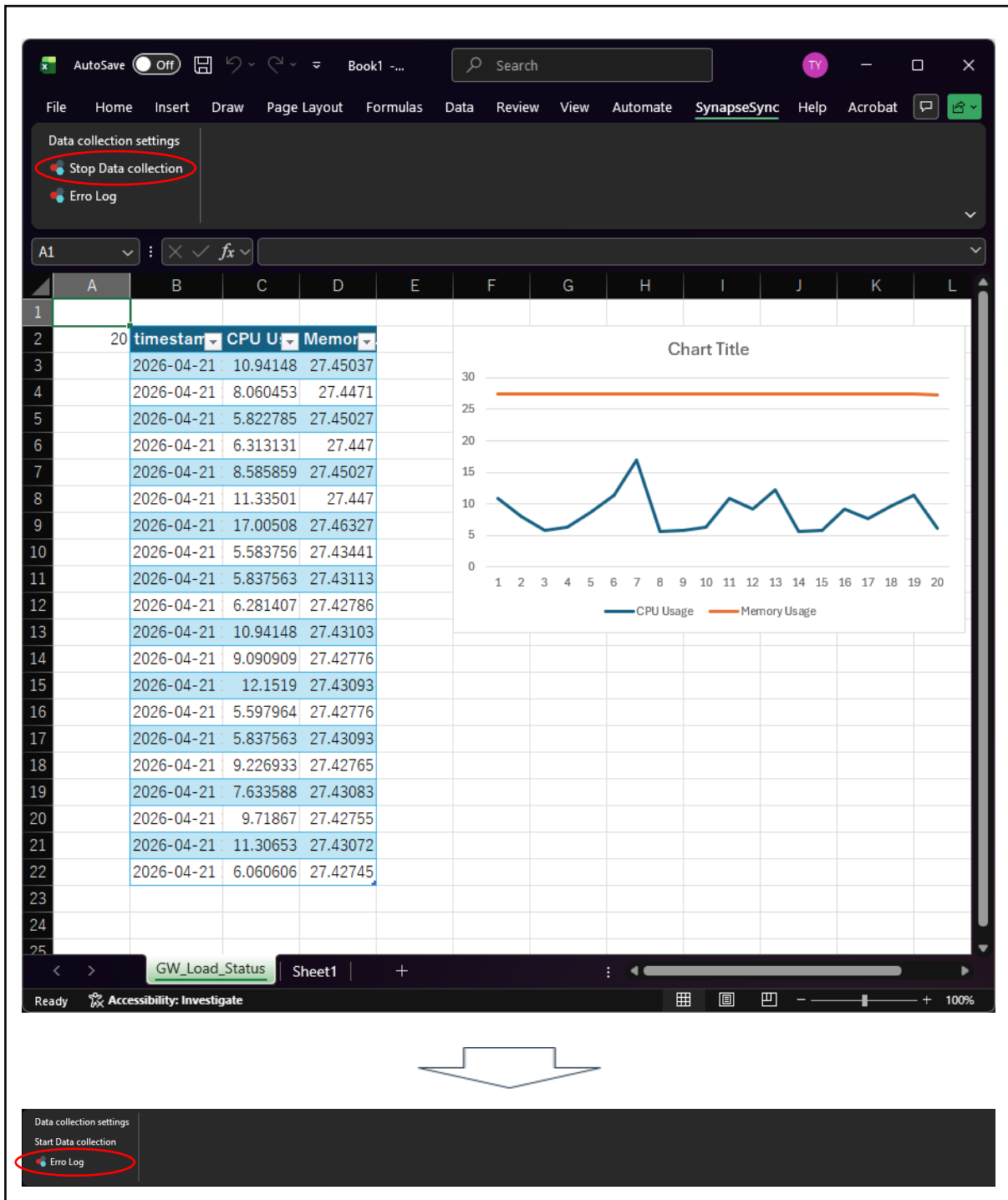


You can also create trend charts using Excel's charts functionality.



#### 4.5. Ending Data Collection

Select **SynapseSync** from the toolbar and then select **Stop Data collection** to stop importing data from Synapse. To restart importing data, select **Start Data collection**. If the system stops due to an error, an error log will be output. In such cases, select **Error Log** to check the content of the error by the occurrence date/time and message.



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#### **4.6.Restricted Mode and Full Mode**

The components added in this package operate in restricted mode on DX1 version 1.0 (Synapse 4.9.9) and can continuously run for two hours.

To use without restrictions, use DX1 version 1.1 (Synapse 4.11.4) or later.

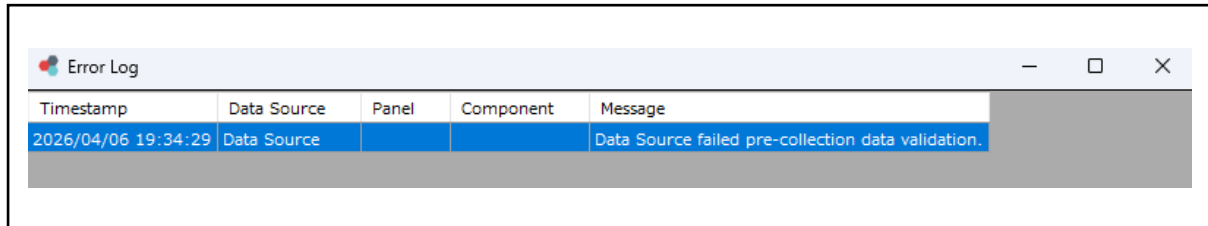
Additionally, the Synapse trial version for Windows PCs is also in restricted mode on Synapse 4.9.9.

For unrestricted use, use Synapse 4.11.4.

## 5. Supplementary Information

### 5.1. Error Message

If an error is displayed in Excel, you can select **SynapseSync** and then select **Error Log** on the toolbar to check the error content shown in the table below.



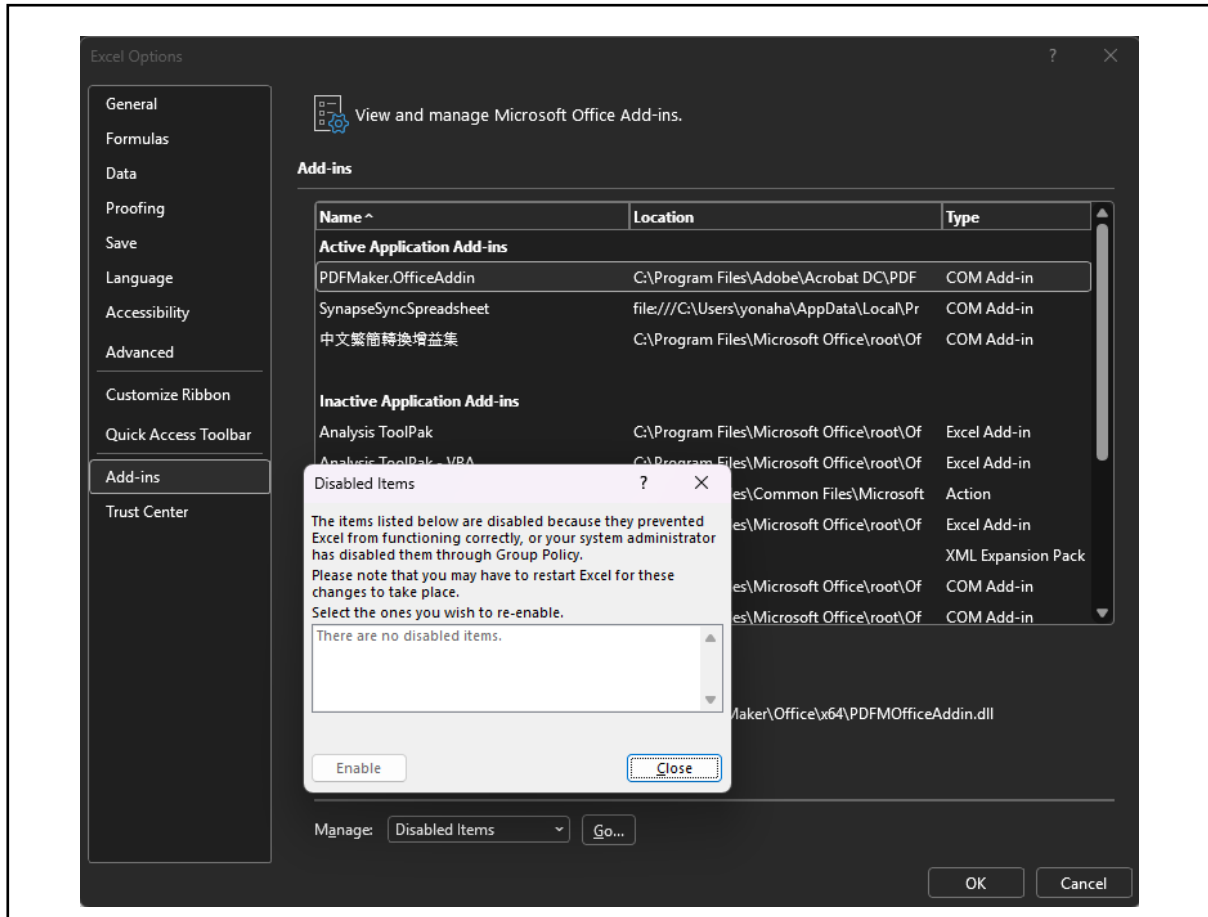
Timestamp	Data Source	Panel	Component	Message
2026/04/06 19:34:29	Data Source			Data Source failed pre-collection data validation.

Screen	Message	Description
Data collection settings	Failed to get Components list.	<ul style="list-style-type: none"> <li>• Connection with Synapse failed.</li> <li>• Synapse's IP address, DB query service component port number, and DB query service access token</li> <li>• Check if the DB query service component has been started.</li> </ul>
Data Collection	Data Source failed pre-collection data validation. (Data Source)	<ul style="list-style-type: none"> <li>• Connection check before starting data collection failed.</li> <li>• Review Synapse connection information and check if the DB query service component has been started.</li> </ul>
Data Collection	Data Source failed pre-collection data validation. (Data Source, Component)	<ul style="list-style-type: none"> <li>• Data existence check before starting data collection failed.</li> <li>• Check if the collection target component has been started and if the target columns are ready for retrieval.</li> </ul>
Data Collection	Start Cell is invalid. (Data Source, Component)	<ul style="list-style-type: none"> <li>• This error occurs when the cell specified for data output destination is empty, formatted incorrectly, etc.</li> </ul>
Data Collection	Failed to collect Data. (Data Source, Component)	<ul style="list-style-type: none"> <li>• Data retrieval after starting data collection failed.</li> <li>• This error occurs if communications with Synapse are temporarily failed, or if the component is stopped during collection.</li> </ul>

## 5.2.Steps to Follow If Synapse Sync Spreadsheet Cannot Be Used after Installation

If you cannot use *Synapse Sync Spreadsheet* even after the installation has completed successfully, follow the steps below.

1. Select **File – Options – Add-ins – Manage (A) – Disabled Items** and click **Go... (G)**.
2. Select **SynapseSyncSpreadsheet** and click **Enable**.



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**Tutorial Video**

<https://www.fa.omron.co.jp/dx1/video-manual/en/>



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Cat. No. V313-E1-01 0526