

## LOGGING *groov* DATA TO AN EXCEL WORKSHEET

The 2251\_Logging\_groov\_Data\_to\_Excel.zip download file includes a ready-to-use Microsoft® Excel® workbook that gets data through *groov*'s RESTful API, and then logs the data to a worksheet.

A sample *groov* project containing a pre-built Data Store and gadgets is ready to load to your *groov* Server or Box. Once loaded, the Excel file needs only your *groov* IP address and API key—and then it can start logging data at the click of a button.

### WHAT YOU NEED

- A *groov* AR1 Box or *groov* Server running *groov* R3.3 or higher.
- Microsoft Excel 2007 (or higher).
- The files in this download file (also available for download from the [Opto 22 website](#)).

| Files in the zip                            | Description  |
|---|--|
| Opto22_groovRestAPI_datalogging.xlsm        | <p>A macro-enabled workbook containing two worksheets:</p> <ul style="list-style-type: none"> <li>• <b>Configure</b> (in which you enter your <i>groov</i> IP address, API key, and other information related to the data to log)</li> <li>• <b>Data Logging</b> (in which you start and stop logging, and view the logged data)</li> </ul> <p>The VBA code embedded in the workbook can be used to create your own customized logging file.</p> |
| groovProject_dataLogging_opto_opto22.tar.gz | <p>A <i>groov</i> project which includes sample data to be logged in Excel. You can manipulate the gadgets in <i>groov</i> View to watch data change as it's logged in Excel.</p>  |

### WHAT YOU NEED TO DO

Follow these steps to open the *groov* project, configure the workbook, and start logging data.

1. Download [2251\\_Logging\\_groov\\_Data\\_to\\_Excel.zip](#) from the Opto 22 Downloads webpage, and then extract the files.
2. Open *groov* Build.
3. To keep your current project (so you can restore it when you're finished using this sample):
  - a. In the menu bar, click Configure > Accounts, and then record the login credentials for your current *groov* project. (You'll need them to access the project when you've finished using this sample.)
  - b. Backup your current *groov* project (File > Backup Project to Computer).
4. Load the sample *groov* project (File > Restore Project from Computer).
5. In the folder where you extracted the zipped files, select the project file: `groovProject_dataLogging_opto_opto22.tar.gz`
6. In the Restore Project dialog box, enter these credentials. (Note they are case-sensitive.)
  - Username: `opto`
  - Password: `opto22`
7. When *groov* restarts, log in with the same credentials.
8. Configure a new Admin-level user (Configure > Accounts), and then copy the new user's API Key. (You will paste the key into Excel.)
9. Now, open the Excel workbook.
 

If prompted, click Enable Editing, and then click Enable Content.

10. In the Configure worksheet.
  - a. In cell B2, enter the IP address of your *groov* server.
  - b. In cell B3, paste the API Key.
11. In the Data Logging worksheet, click the Start Data Logging button.

Data will begin to be logged starting in row 3.

Click the Stop Data Logging button to stop.

## HOW IT WORKS

### *groov* Project

The *groov* project uses a Data Store that the Excel file reads. The project has one HMI screen that allows you to modify the Data Store variables so you can see changes as Excel logs the log.

### Excel Data Logging Sheet

Data will appear at line 3. Older data will be moved down as new data appears.

The PC's time stamp appears here.

Data will be written here in one column for each Tag ID listed on the Configure sheet.

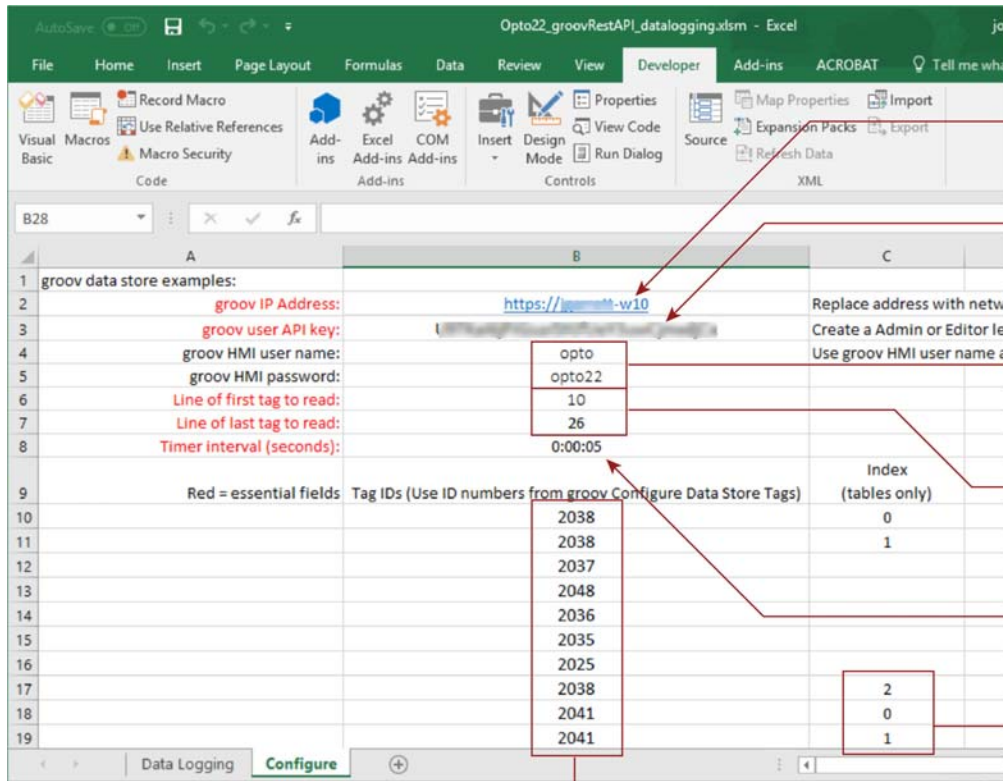
Before starting, use the Configure Tab to provide the IP Address of your *groov* server.

Do not rename these tabs unless you also rename all references to the tabs in the Visual Basic code.

## Excel Configure Sheet

The Configure sheet is set up to work with the sample project's Data Store. Tag IDs are found in *groov* Build > Configure > Devices and Tags.

In cells B2 and B3, enter your *groov* IP address and API key. The API keys are found in *groov* Build > Configure > Accounts.



Provide the IP address of the *groov* server or box that is running the *groov* project provided with this sample.

Provide the API key configured in the sample *groov* project for the user name "opto" with password "opto22".

The user name and password to the *groov* HMI are provided here for reference. These fields are not used by the programming code.

These fields indicate which consecutive lines in column B include tag IDs to be read by Excel. Change these values if you add or remove tag IDs.

Timer interval in date format. This sample is set to a 5-second interval. Use a longer interval if you expect delays contacting your *groov* server, e.g. if it's remote.

This sample gets only one value per ID (to be programmatically simple). Provide an index for any tables. Leave this field empty if the variable is not a table.

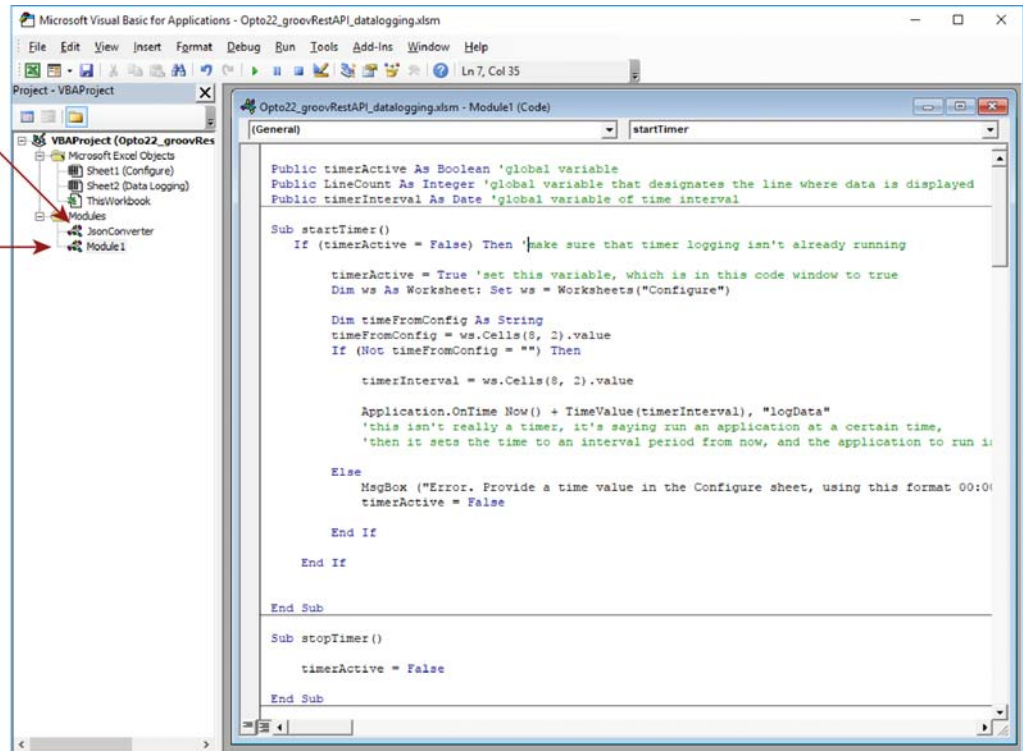
These are tag IDs from the sample *groov* project's data store. Change these to add or remove data fields from the data logging.

## VISUAL BASIC

The Visual Basic code can be viewed by opening the Developer tab and selecting Visual Basic.

JsonConverter is a module written by MIT and made publicly available. It may be used according to terms of its copyright statement.

Module 1 contains all code for configuring and logging data.



## FOR MORE INFORMATION

For more tips, help, and code samples, visit the Opto 22 Developer portal at <http://developer.opto22.com>.