Topic updated on September 21, 2023

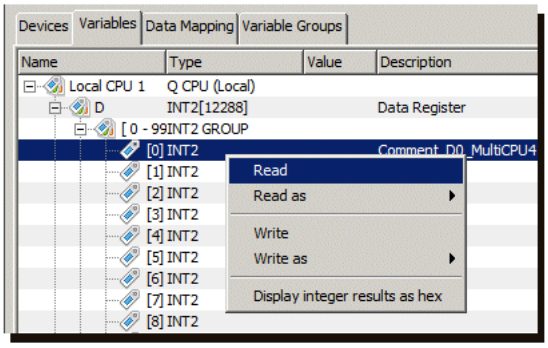
Reading the value of a device variable

The **Variables** tab provides the ability to **Read** the current value of device variables. You must have read access to view the value of a device variable.

To read the value of a device variable, follow these steps:

1. From Workbench left pane, expand the node whose device's variables you want to read.
2. Select **Devices**.
3. From the right pane, select the **Variables** tab.

   The **Variables** tab appears as the right pane.
4. From the appropriate device, select the plus sign to expand the device's internal structure and variables to locate the device variable whose value you want to read.
5. Select the device variable, display its pop-up menu, and then select **Read**.



For this example, the device variable D[0] with an INT2 data type is read. The current value of the device variable is displayed in the Value column. If the variable has comments associate with it, they are displayed in the comment column.

Alternatively, instead of displaying the pop-up menu and selecting **Read**, you can:

- Double click the device variable row to read the device variable's value
- Use the Read button at the bottom of the panel

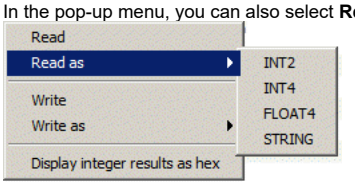
Reading multiple device variables at one time

Multiple device variable rows can be selected and read at one time by using the pop-up menu **Read** option or the **Read** button.
If non readable rows are selected, such as a Device row or a structure row, the rows are ignored and only the readable rows are actually read.

Reading device variables as a different data type

The device and its variables shown in the example support the reading of device variables as a different data type. All devices do not support this function.

In the pop-up menu, you can also select **Read as** to have the supported alternative data types displayed. In this example the data types are: INT2, INT4, FLOAT4 and STRING.



When you use the **Read as** function, the device driver reads the values of variables starting at the current variable address for the length implied by the selected data type.
For example, using **Read as** INT4 on device variable D[0] would read 2 2-byte WORDS and display the value as a 4-byte INT4. The variables read would be D[0] and D[1], each of which is a 2-byte INT2.

Understanding of the device's variable types (registers, tags, coils, inputs, and outputs are some examples of device specific terminology), the device's variables data types, and the device's variable addressing concepts is imperative when using the **Read as** and **Write as** functions of the Workbench.

Displaying integer results as hex

The **Variables** tab supports displaying integer values as hex values. This option is toggled on or off and applies to all devices variables' values.
When writing values, the value must be entered in decimal (base 10) format.
