Bit Masked Reads

Using the Advanced Tags Plug-In

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Introduction

Overview

The purpose of this guide is to demonstrate how to use the Advanced Tags Plug-in to deliver custom encoding using Boolean tags.

Intended Audience

This guide is intended for TOP Server users who have devices that implement unique encoding patterns within their device. The document makes the assumption that you have some familiarity with Binary to Decimal conversion, understand the unique addressing within your device and have already configured the standard connection from TOP Server to your device (for assistance read Introduction to TOP Server).

Required Software

For this example, you need Software Toolbox TOP Server Version 5.0 or higher with the Advanced Tags Plug-in Installed. The Advanced Tags Plug-in must be included during the installation process:

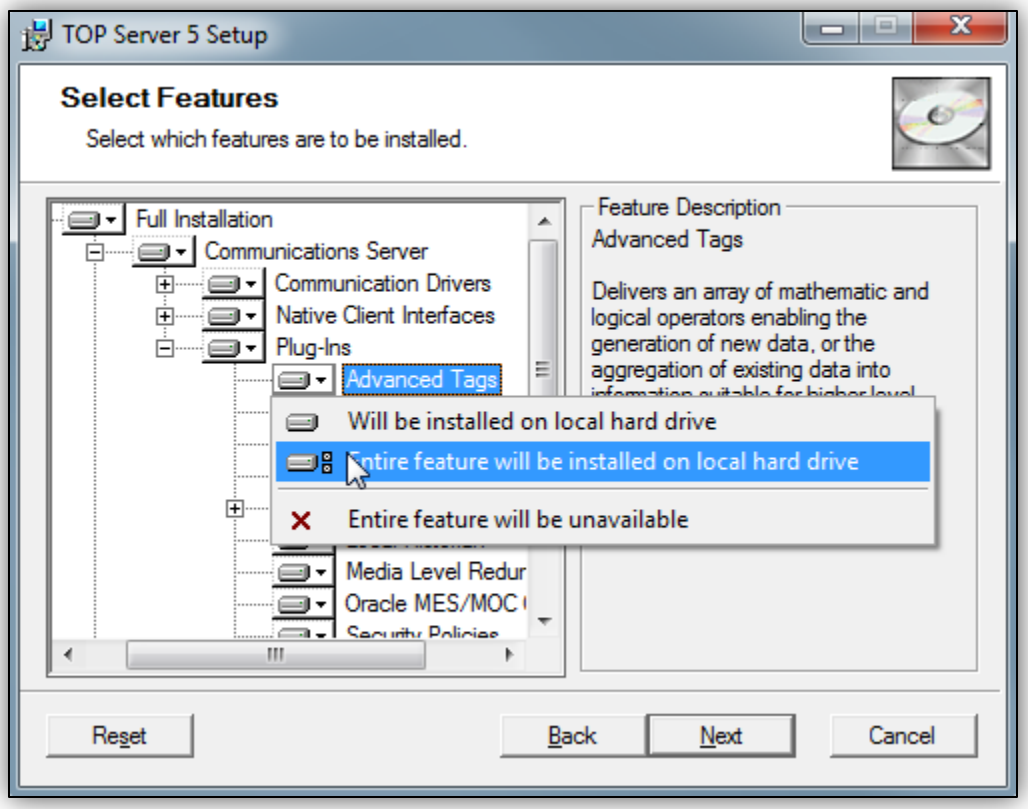

Image 1: Installing Advanced Tags

Basic Configuration of Derived Tag

Existing TOP Server Tags

In order for the server to expose register bits to the Advanced Tags Plug-in, the TOP Server will need to be configured with static tags for the Boolean addresses that you are combining.

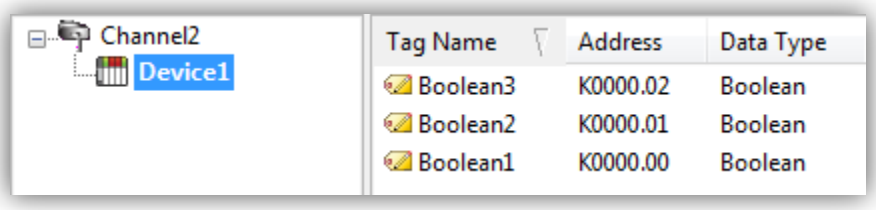

Image 2: Static Tags

Configuring Derived Tags

Begin by opening the Advanced Tags interface within the TOP Server configuration Window.

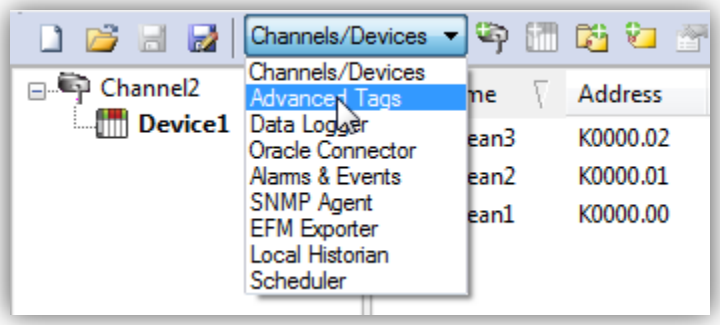

Image 3: Advanced Tags Plug-in Interface

In this example, the 3 Boolean tags (shown in Image 2) are combined into a single integer tag using a Derived tag and binary to decimal conversion. Add a new Derived tag to the TOP Server.

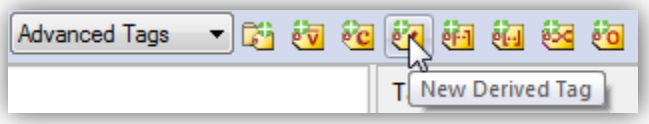

Image 4: New Derived Tag

Each Bit will need to be appropriately scaled in the resulting Derived Tag. In this example we are combining 3 bits into a single value. In order to do this we must multiply the lowest order bit by 2^0, the next bit by 2^1, the highest order bit by 2^2, and then sum the values. The resulting expression is as follows:

$$(2^2 \times BooleanTag_3) + (2^1 \times BooleanTag_2) + (2^0 \times BooleanTag_1)$$

Adding the tags to the expression can be done by either typing the fully qualified tag name or through browsing the server address space using the ellipse button.

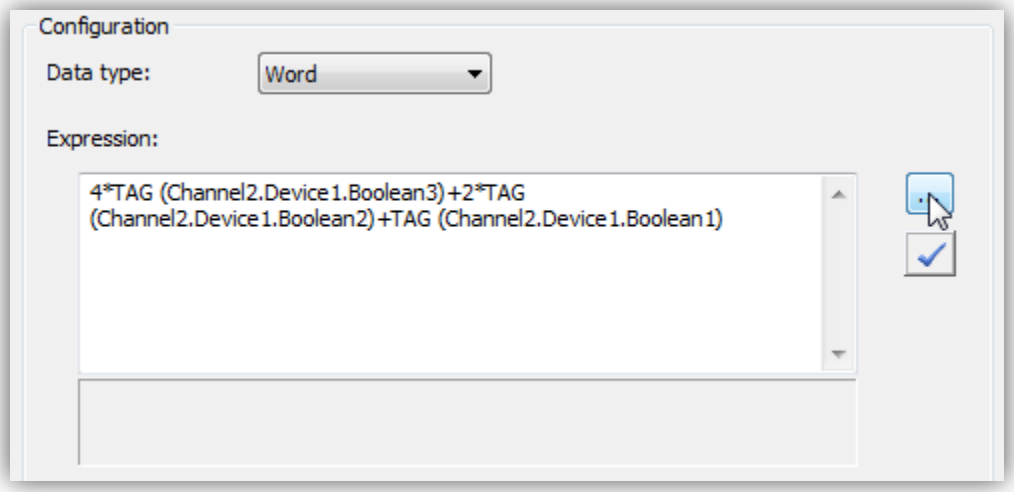

Image 5: Browse for Tags

Once you have finished adding the tags and creating the expression, set the update rate for the expression, enable the Derived Tag, click ‘Apply’, and then click ‘OK’ to close the window.

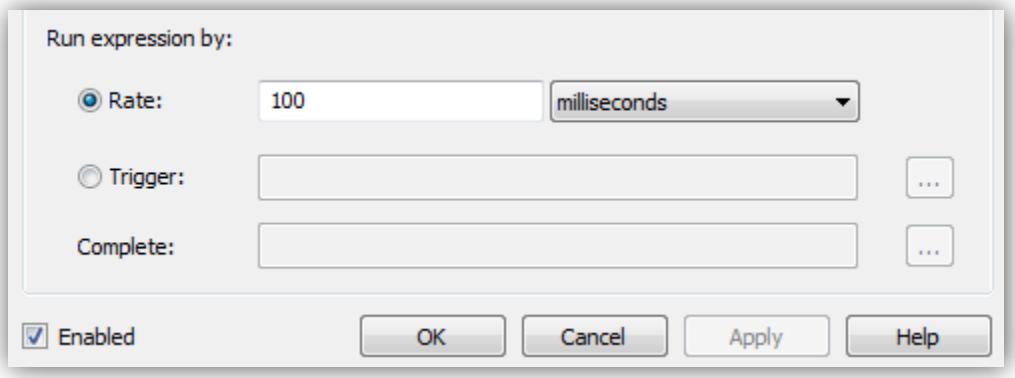

Image 6: Enabling Derived Tag

Once the changes have been applied, the new derived tag will be available under the advanced tags group. The fully qualified tag name for this group follows the convention shown below:

_AdvancedTags.<Tag Name>

Summary

This guide has demonstrated the basic steps for configuring a Derived Tag within the TOP Server to encode discrete bits into an integer value. This guide is also applicable in configuring Derived Tags with all of TOP Server’s other 70+ available device drivers.

If you do not have TOP Server but would like to evaluate what TOP Server can offer in terms of robust, reliable device data acquisition, you can download a free two hour

demonstration of TOP Server at http://www.softwaretoolbox.com/topserver. This demonstration version is fully functional, only requiring that you restart it at the end of the two hour demonstration period.

If you have further questions or need assistance, our experienced staff is here to assist you. We can be contacted in the methods outlined below.

Contact Us

If you have any questions or are seeking further information and help:

Online Support: http://support.softwaretoolbox.com

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