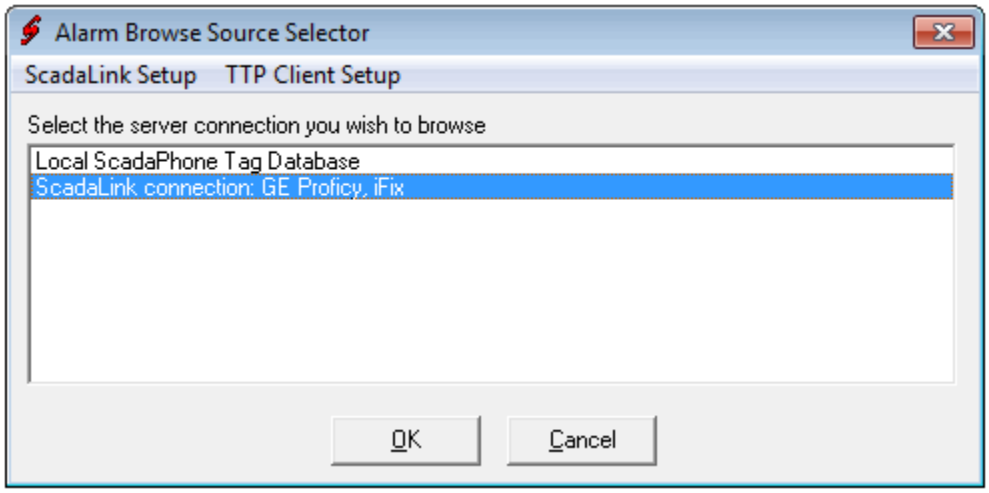
Jun 2014

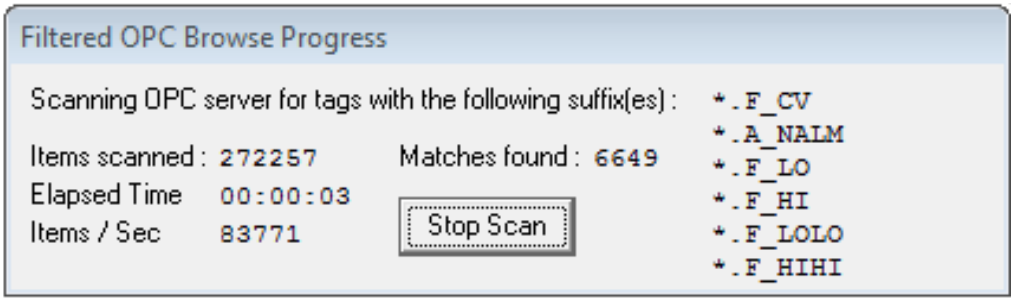
iFix Alarm Browser for ScadaPhone

If you have configured ScadaPhone's ScadaLink interface to connect to GE's iFix SCADA Server, the **Alarm Browse Source Selector** will appear as follows:



Note: Before proceeding, make sure to launch the iFix run-time environment so that ScadaPhone will be able to retrieve the tag information.

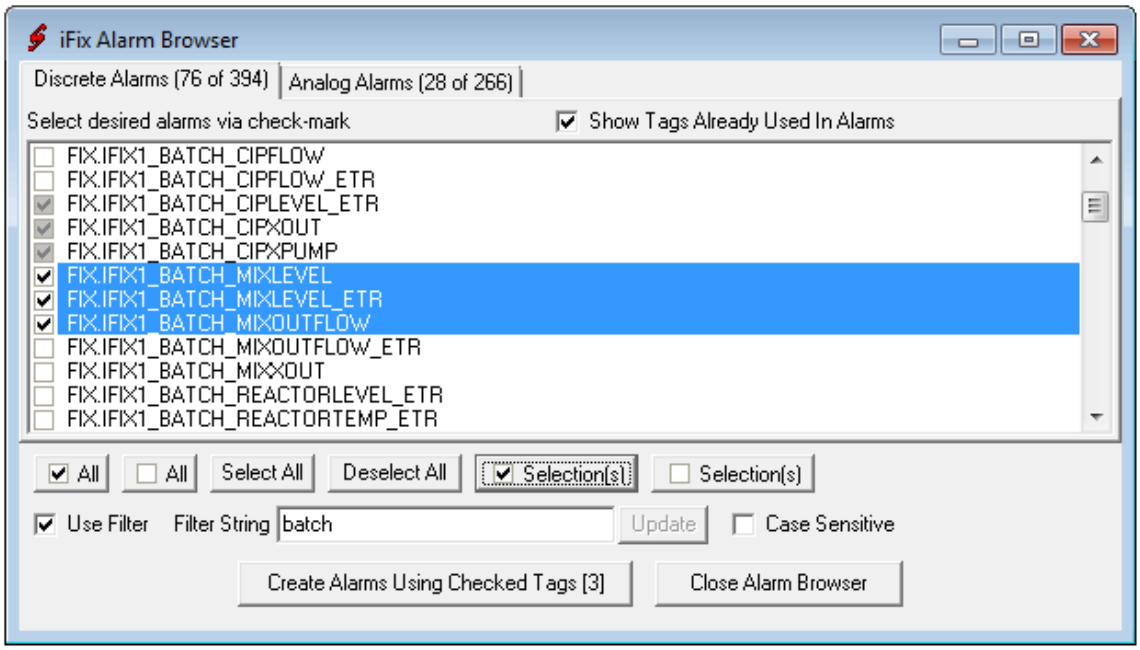
When you select the iFix connection and click OK, you will see the following progress window:



This window shows the progress of the iFix name-space browse. In this scan, ScadaPhone is compiling a list of all tags in the iFix project that have both *.F_CV and *.A_NALM suffixes: If a tag has an .A_NALM suffix defined, it is assumed to be an alarm tag.

After building a list of all iFix alarm tags, the next step is to determine whether or not the tags represent Analog Alarms or Discrete Alarms. ScadaPhone makes this determination by checking to see if there are any associated tags that have any of the following analog alarm suffixes: *.F_LO, *.F_HI, *.F_LOLO, *.F_HIHI, *.F_LOLIM, *.F_HILIM. If so, the alarms are categorized as Analog alarms in the ScadaPhone project (otherwise, they are assumed to be Discrete).

After the Alarm Types are sorted out, ScadaPhone will display the **iFix Alarm Browser** window:



This window allows the user to select which tags from the OPC browse shall be configured as alarms in the ScadaPhone project. Note that the Analog Alarms and Discrete Alarms are segregated into two tabs and the selection list can be filtered to facilitate the selection process.

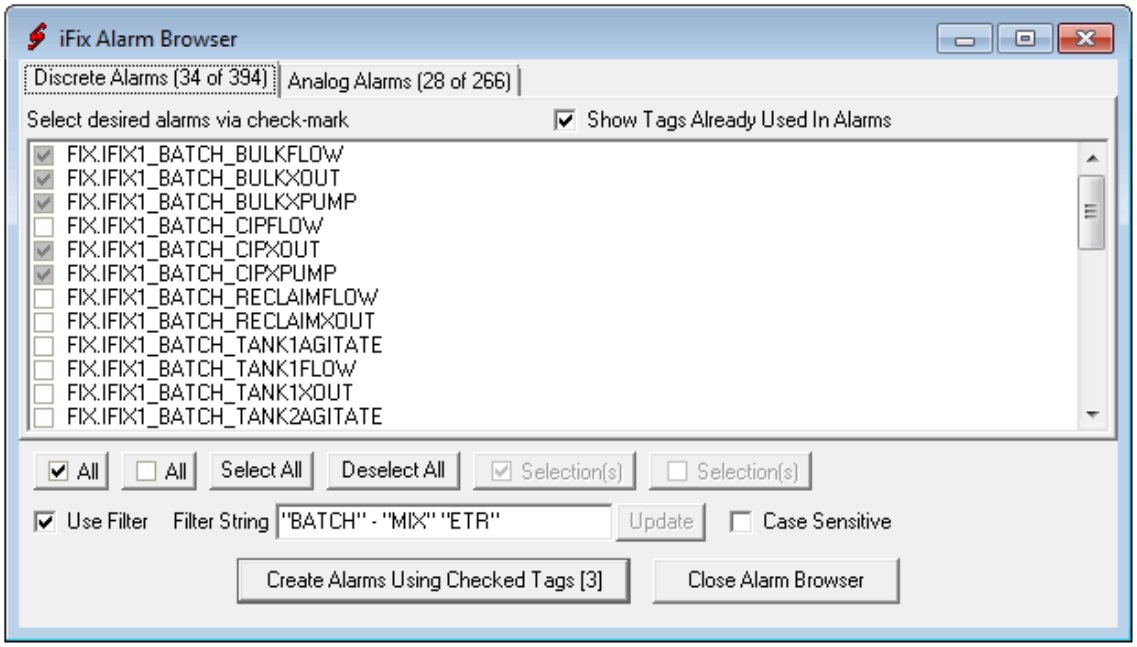
To create alarms, simply put a check-mark next to the desired tag(s) and click the Create Alarms Using Checked Tags button.

Note: Grayed-out check-marks indicate alarms that already exist in the ScadaPhone project. Existing alarms can not be affected by this browser; they can only be shown or hidden with the Show Tags Already Used In Alarms check-box option. The **Create Alarms Using Checked Tags** button only operates on items displaying black-and-white check-marks.

Tip: The **Create Alarms...** button does not cause this window to close, so you can select alarm tags in small groups, create them, and they will disappear from the list (if the Show Tags Already Used In Alarms option is not checked).

The **Filter String** can either be a simple wild-card (as depicted above: batch) or you can specify a quoted list of include-exclude strings to further refine the filter criteria. The quoted strings must be enclosed in double quotes, space delimited, with one or more Include strings at the beginning of the string, optionally followed by a dash and one or more Exclude strings.

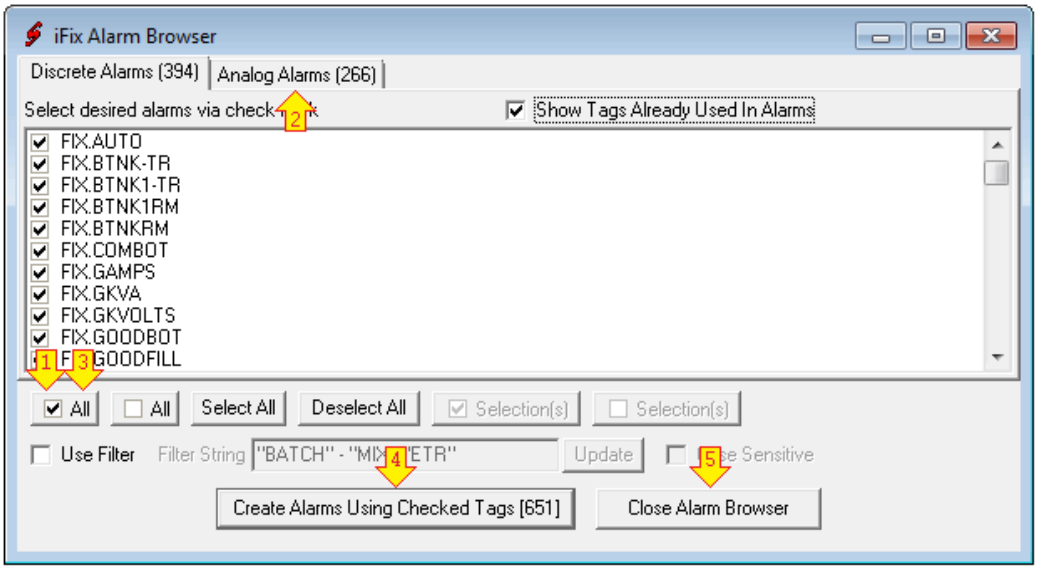
Example: “iStr1” “iStr2” - “eStr1” “eStr2”

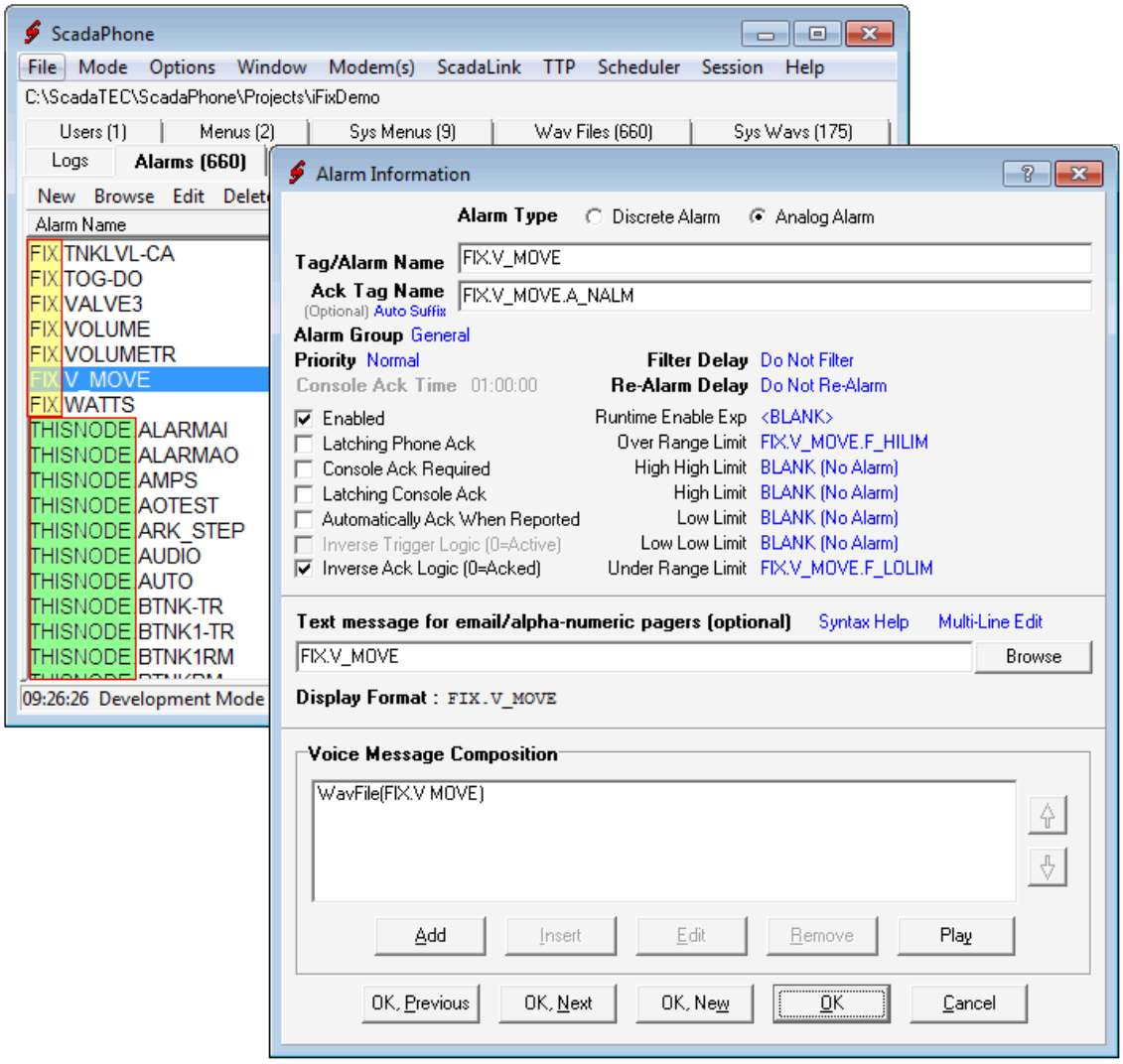


In the examples shown above, changing the wild-card from batch to **“BATCH” - “MIX” “ETR”** narrows the filtered list from 76 Discrete Alarms down to 34 (shown on the tab captions). The second list only shows alarms with **“BATCH”** in their name, but also excludes any alarms with **“MIX” or “ETR”.**

Note that the filtering doesn't affect the current selections; in both of the previous images, the **Create Alarms Using Checked Tags** button indicates that 3 alarms are checked. That's why it is a good idea to disable the Filter and review your selections (on both the Discretes and Analogs tabs) before clicking the Create... button.

Tip: If all of the alarms defined in the iFix project are desired to be in the ScadaPhone project, the whole process requires just 5 mouse clicks:





In this screen capture, note that the FIX.V_MOVE alarm has been configured as an Analog Alarm with the following properties:

- The Tag/Alarm Name is set to FIX.V_MOVE which is also declared as an Analog Tag in the ScadaPhone project. FIX.V_MOVE is actually linked to FIX.V_MOVE.F_CV (the .F_CV suffix has been removed for the sake of eliminating suffix redundancy in the alarm name list). This is done by declaring FIX.V_MOVE as a ScadaLink tag with a ScadaLink Alias (FIX.V_MOVE.F_CV). When the ScadaLink interface reads data from iFix, it uses the alias but stores the returned value under the shortened name.

- The Ack Tag Name has been set to the appropriate value FIX.V_MOVE.A_NALM which is also declared as a Discrete Tag in the ScadaPhone project. This allows bi-directional alarm acknowledgment communication between ScadaPhone and iFix SCADA.

- The Inverse Ack Logic box is checked because the iFix acknowledgment scheme requires what ScadaPhone considers to be “inverted logic”. In iFix, the .A_NALM bit is interpreted as “In Alarm State” when the bit is TRUE and “Not In Alarm State” (i.e. “Acknowledged”) when the bit is FALSE.

- The Analog Alarm Limits FIX.V_MOVE.F_HILIM and FIX.V_MOVE.F_LOLIM have been configured (.F_LOLO, .F_LO, .F_HI, and .F_HIHI limits were not found during the OPC name-space browse, so they were not configured into this alarm). Note that there is a slight clash of terminology between ScadaPhone and iFix: the iFix suffixes .F_HILIM (Floating Point High Limit) and .F_LOLIM (Floating Point Low Limit) actually correspond to ScadaPhone's Over Range and Under Range limits.

- The Alarm Message fields (both Text and Voice) have merely been set to the Alarm Name.

In the screen capture above, the Alarms tab of the Main Window is shown to illustrate an esoteric feature of the iFix Alarm Browser: If more than one Node Name is defined in the iFix project, the node names will be included in both the Text and Voice messages. As indicated by the yellow and green highlights, the iFix Demo project contains tags with multiple node names ("FIX" and "THISNODE"). If there is only one node name (e.g. "FIX"), it will not be included in the messages (for the sake of eliminating needless redundancy).

When producing the audio files that will be used to report the alarms with ScadaPhone, the system designer has two options:

- Record the WAV files manually by speaking the appropriate message into the microphone connected to the soundcard or modem.

- Use the Windows Text-To-Speech (TTS) engine to generate the WAV files.

If the WAV files are to be recorded manually, the tag-named WAV files pose no problem because uniquely appropriate messages can be recorded for each alarm; however, if the system designer intends to use TTS, the audio messages rendered from the highly-abbreviated tag names will be mostly gibberish and difficult for the alarm contact to understand. To handle this TTS problem, ScadaPhone has a WAV File Phrase Organizer which allows the system designer to convert the abbreviations into complete words so that the Text-To-Speech engine has a better chance to produce intelligible audio.

In addition to the **WAV File Phrase Organizer**, ScadaPhone also has an **Alarm Attribute Organizer** which allows the system designer to manipulate the other alarm properties (such as Alarm Group, Alarm Priority, Filter Delay, etc...) which have been set to their default by the browser. These organizers are detailed in subsequent steps of this Setup Wizard.