

MANAGER TOOLKIT KNX

KEY WORDS: KNX, ADD-ON

EVOLUTIONS

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Scope of this document

The scope of this document is to describe and explain how to set-up the use of the usrmgrFalconKNX.dll.

Introduction

The usrmgrFalconKNX.dll enables to communicate with KNX network via a KNX/IP interface using **group data access**.

The DLL uses the Falcon run-time package to do so. Therefore the **Falcon run-time package** must be installed on the PcVue machine as an add-on. It is important to check that the OS installed on the machine is compatible with Falcon run-time. **Please read the chapter Falcon run time OS limitation carefully**

To get information regarding the svmgrFalconKNX task while running the application, please check the event viewer for lines starting with "svmgrFalconKNX..."

Project structure

Activating the functionality

In order to activate the task it is necessary to copy the svmgrFalconKNX.dll into the BIN directory of PcVue and to rename the file svmgrFalconKNX_UsrMgr.dat into usrmgr.dat.

If the file is missing you can simply create a text file named usrmgr.dat with the following content

```
[USRMGR\usrmgrFalconKNX]  
DLL = svmgrFalconKNX.dll
```

Configuring the task

The task is configured via a single file located in the project PER directory.

YourProjectName\PER

KNXInterfaces.ini: Used to configure the usrmgrFalconKNX.dll task.

File description

KNXInterfaces.ini

Please note that if an entry is omitted from the file or if the file is not present in the project then its default value will be applied by the task.

The file format is:

```
[TaskParameters]
AttributeNumber = 16
AssociationName =
NbInterfaces = 1
TimeOutInSec = 10
ReconnectionPeriod = 60

[Interface1]
IpAddress = 192.168.1.1
Port = 3671
NATmode = off
UseUSB = 0
SleepInterval = 200
MaxQueueSWrite= 10

[InterfaceUSB]
ConnectionString =
Device=0;Path=\\\\?\\hid#vid_0e77&pid_0112#8&9d3fd06&0&0000#{4d1e55b2-f16f-11cf-88cb-001111000030}
```

Where:

[TaskParameters]

AttributeNumber: Specify the extended attribute used for configuring a KNX variable.

Format: Number from 3 to 16. If omitted, **default is 16**

AssociationName: Specify the association name in a redundant architecture. The task is only active on the active server.

Format: String. If omitted, **default is an empty string**

NbInterfaces: Specify the number of interfaces with which the task need to communicate with.

Format: Number from 1 to 16. If omitted, **default is 0**

TimeOutInSec: Specify the timeout in second on read or write request before considering the request has time-out.

Format: Number. If omitted, **default is 5 s**

ReconnectionPeriod: Specify the period in second at which the driver try to reconnect to a failed or in error interface.

Format: Number. If omitted, **default is 30 s**

[InterfaceX]: Specify the definition of the interface X.
Format: Number from 1 to NbInterfaces specify above. The value must be contiguous.

Name: Specify the interface name for the KNX /Ip interface.
Format: String. If omitted from the file **default is InterfaceX as defined in [InterfaceX]**

IpAddress: Specify the Ip address of the KNX /Ip interface.
Format: String. If omitted from the file **default is 127.0.0.1**

Port: Specify the port used to communicate with the interface.
Format: Number
If entry omitted from the file the **default is 3671**

NATmode: Specify if the interface supports the NAT mode..
Format: String with 2 possible value **on** or **off**
If entry omitted from the file the **default is off**

UseUSB: Specify if the USB connection is to be use to connection to the interface.
Format: Number: 0: USB is not used
 1: USB is used (you must configure an additional entry [InterfaceUSB] in the file)
If entry omitted from the file the **default is 0**

SleepInterval: Specify the silence time in ms between 2 requests on the interface.
Format: Number
If entry omitted from the file the **default is 100 ms**

MaxQueueWrite: Specify the number of write that can be queued for every KNX point.
Format: Number
If entry omitted from the file the **default is 5**

[InterfaceUSB]: Specify the definition of the USB interface in required

ConnectionString: Specify the connection string used for the USB interface. Please refer to Legrand Tool to get the correct connection string.
Format: String
If entry omitted from the file the **default is an empty string**

Variable definition

To define a KNX variable in the supervisor you simply need to specify in the extended attribute (number specify in the KNXInterfaces.ini file) of the variable:

KNX#InterfaceName#GroupAddress#Format#Access

Where:

KNX: Key to consider the variable to be a KNX variable

InterfaceName: Interface name of the KNX/IP interface from which the KNX point is accessible as defined in the KNXInterfaces.ini file (please refer to Name parameter)

GroupAddress: KNX group address. The task support the 3 addressing type available on KNX.

- 3 level addressing format: ***x/y/z***
- 2 level addressing format: ***x/y***
- Free addressing format: ***x***

Format: KNX DPT format of the point

Format	Scaling available	Note
B1	No	Variable min and max specify does not trigger any scaling
F16	No	Variable min and max specify does not trigger any scaling
F32	No	Variable min and max specify does not trigger any scaling
N2	No	Variable min and max specify does not trigger any scaling
N8	No	Variable min and max specify does not trigger any scaling
U8	Yes	If you want scaling, the DPT range defined in the KNX document must be enter in the min max of the variable definition For instance DPT_Scaling: variable min = 0 variable max = 100 If you do not want to apply any scaling then the variable min and max should be variable min = 0 variable max = 255

U16	Yes	The DPT range defined in the KNX document must be enter in the min max of the variable definition For instance DPT_TimePeriod10Msec variable min = 0 variable max = 655,35 If you do not want to apply any scaling then the variable min and max should be variable min = 0 variable max = 65535
U32	Yes	The DPT range defined in the KNX document must be enter in the min max of the variable definition At present there is no DPT of U32 format that perform scaling but you could put variable min = 0 variable max = 200 If you do not want to apply any scaling then the variable min and max should be variable min = 0 variable max = 4294967295
V8	No	Variable min and max specify does not trigger any scaling
V16	Yes	The DPT range defined in the KNX document must be enter in the min max of the variable definition For instance DPT_Percent_V16 variable min = -327,68 variable max = 327,67 If you do not want to apply any scaling then the variable min and max should be variable min = -32768 variable max = 32767
V32	No	Variable min and max specify does not trigger any scaling
r2U6	No	Variable min and max specify does not trigger any scaling

Access: Specify if the variable need to be read at start up or cyclically and / or if the variable can be written. In any case the variable is refreshed on transition.

W: The variable can be written/controlled. This must be specified first in the string

R : The variable is initialized at start-up.

Rx: The variable is read cyclically every x seconds.

For instance:

#WR : the variable can be written when change occur in the application and is read once at start-up. The variable is also refresh on transition.

#R60 : the variable cannot be written but is read every minute. The variable is also refresh on transition

: The variable is also refresh on transition

~~#R60W~~ : Invalid syntax. The W must be place first. The correct syntax is #WR60

Trace

Additional trace can be triggered using the SCADA BASIC verb

```
TRACE(1/0,11,FlagBit);
```

Where

1/0 1: Turn ON the additional trace
 0: Turn OFF the additional trace
11 Default value not to be modified

Flagbit hexadecimal combination of flag
 001 To view unsolicited traffic
 400 To view read request
 800 To view write request

Example

```
TRACE(1,11,"C00"); `Turn on additional trace for read and write
```

```
TRACE(0,11,"C01"); `Turn off all traces.
```