G3 COMETH configuration guide (v1.1)

Revision log:
v1.1>support for slave device echo
>specify respond string must be terminated by char <LF>

Filename :	iotasset.txt
Location :	\user

1. Introduction

   The file 'iotasset.txt' contains the assets configuration that is required by the COMETH program to acquire data from simple serial or Ethernet devices and also pre-process for downstream IoT clients.

2. IOT asset 'KEY,VALUE' general format

   Each IOT asset is defined by using a BLOCK of 'key, value' pairs (CSV format).
   There are four COMETH key names that must be present for each IOT asset.
   These COMETH key names are reserved and cannot be used for custom key names.

COMETH KEYS	**Description**
TYPE	Define the type of COMETH communication
ADDR	Define the address of the COMETH slave device
SEND	Define the COMETH command string for query device
RECV	Define the COMETH response echo and data type

   Custom keys can be freely defined but limited to eight custom keys.
   Each asset block must include the same set of custom keys.
   Backslash (\) and double quote mark (") char cannot be used.
   Comments can be inserted by using the hash (#) sign.

   To ease parsing of different types of assets, the asset blocks need to be located between the start and end of block markers.

COMETH BLOCK MARKER	**Description**
COMETH_START	Define the start of COMETH assets
COMETH_STOP	Define the end(stop) of COMETH assets

3. IOT asset 'KEY,VALUE' setup information

TYPE, m [, i]

Argument	Value	Description
m	SER	Simple SERIAL data (RS-232/RS-485 selectable)
	TCP	Simple TCP socket (Ethernet)
	UDP	Simple UDP socket (Ethernet)
	DIN	Digital INPUT
	DIP	DIP switch
i	1, 2, 3, 4, 5,….	Poll interval for each asset. #1

#1 Optional: Argument [i] if excluded will result in default polling i=1, which polls on every interval.

Example of Poll Interval calculations with master Poll Period = 15 sec.
note: Poll Period is the time interval between polling, refer to web config 'IoT Hardware'.

Asset Poll Period	Calculation	Poll Interval (i)
1min	1*60/15	4
30min	30*60/15	120
1 hour	1*60*60/15	240
3 hour	3*60*60/15	720

ADDR, n0 DIP
ADDR, n1.n2.n3.n4 : p TCP/UDP

Argument	Value	Description	Notes
n0	1-4	DIP number	For DIP switch select
n1.n2.n3.n4:p	n1,n2,n3,n4=0-255 p=0-65535	Device IP address Device port	For TCP/UDP socket

SEND, s, t

Argument	Value	Description
s	string of characters	Command to send eg "LAUNCH"
t	LF	End char = <LF>
	CRLF	End char = <CR><LF>

RECV, u, v [, x, y]

Argument	Value	Description
u	Echo from slave device	E1=echo filter on, E0=echo filter off
v	Data Type	Data type in respond string
x	Multiplier	Value = Value*Multiplier + Adder #3
y	Adder	Value = Value*Multiplier + Adder #3

#3 Optional: for Data Type DECIMAL, **both** x & y arguments required when applied.

Slave device's respond string must be terminated by char <LF> (ASCII 010 or 0x0A).
Non-decimal chars will be removed from the respond string.

4. Data Type definitions

DATA TYPE BOOLEAN

v [Data Type]	Description
BOOL	Boolean value, ie 0 or 1

DATA TYPE DECIMAL

v [Data Type]	Description
DEC	Decimal number eg 96.51, 10.1, 2000

5. Example for IOT asset configuration

#iotasset example for SERIAL, TCP, UDP, DIN and DIP

```
COMETH_START                #start of COMETH block

TYPE, SER                   #Serial device
ADDR, 0                     #address not use in serial
SEND, TEMP, LF              #send message "TEMP<LF>"
RECV, E1, DEC               #echo filter on, respond message eg "29.5<LF>"
Unit, degC                  #Custom key1
Key, Temperature            #Custom key2, max supported=8

TYPE, TCP                   #Ethernet device (TCP socket)
ADDR, 192.168.1.101:70      #Device IP=192.168.1.101, Port=70
SEND, WIND, LF              #send message "WIND<LF>"
RECV, E1, DEC               #echo filter on, respond message eg "15.7<LF>"
Unit, kmph
Key, WindSpeed

TYPE, UDP                   #Ethernet device (UDP socket)
ADDR, 192.168.1.105:77      #Device IP=192.168.1.105, Port=77
SEND, HUMI, LF              #send message "HUMI<LF>"
RECV, E0, DEC               #echo filter off, respond message eg "75<LF>"
Unit, %
Key, Humidity

TYPE, DIN, 10               #Digital Input, poll on every 10 polling interval
ADDR, 0                     #fields not in use given 0 value
SEND, 0
RECV, 0, BOOL
Unit, status
Key, Alarm

TYPE, DIP, 10               #DIP switch, poll on every 10 polling interval
ADDR, 1                     #DIP number 1
SEND, 0                     #fields not in use given 0 value
RECV, 0, BOOL
Unit, none
Key, RunMode

COMETH _STOP                #end of COMETH block
```

6. Methods to upload ‘iotasset.txt’ file to G3

-Upload the iotasset.txt file from your computer using the ‘Upload iotasset.txt’ button in the ‘IoT Hardware’ tab.

-Put the iotasset.txt file in \user folder of USB drive (with label ‘FATBOX’).
Plug the USB drive into G3 and click the ‘Upload to FATBOX’ button in the ‘Management’ tab.

-Use SCP/Putty console or WinSCP.

<EOF>