

How to configure a GPRS connection on iRio

Subject This document explain how to configure a GRPS connection on iRio

Application Telemetry

Terminology iRio, GPRS, GSM MODEM

Summary	1 - Object.....	2
	1.1 - Conditions.....	2
	1.1.1 - Software version used.....	2
	1.2 - Requirements	2
	2 - Methodology to configure GPRS connection.....	2
	2.1 - Introduction	2
	2.2 - Configuration of connection	2
	3 - Remarks:.....	8
	4 - How to configure DYNDNS services	8

Révision	Date	Rédaction	Vérification	Approbation	Observations - Modifications
01	19/08/2016	M.Bonnefoy			Creation

1 - OBJECT

This document detailed how to configure a GRPS connection step by step on an iRio with Xflow embedded.

1.1 - Conditions.

1.1.1 - Software version used

This document has been written with using a version 5.0.1 of Xflow.

1.2 - Requirements

It's needed to have an iRio with a 2G GSM modem or 3G GSM modem, with a sim card which able to do a GRPS connection, antenna and a good level of network.

Also APN information are needed, server name, login and password.

If the contract with ISP (Internet Service Provider) is not able to attribute an fixed address IP, then it should be great to have a solution with DNS (Domain Name System) services, to be able to connect on iRio without IP address.

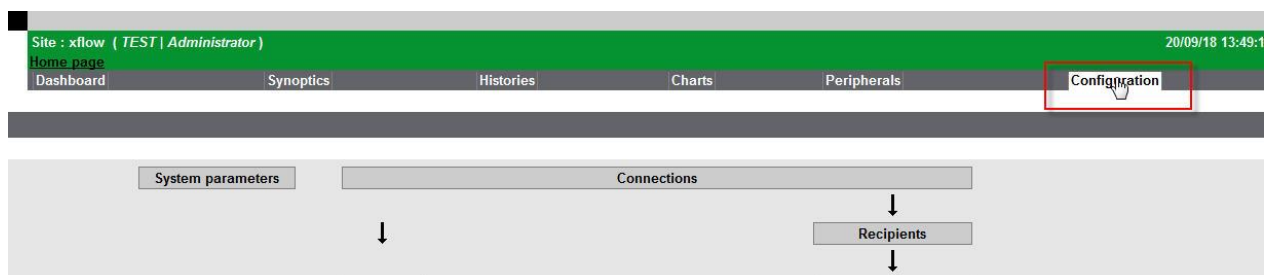
2 - METHODOLOGY TO CONFIGURE GPRS CONNECTION

2.1 - Introduction

All settings are in connection configuration. When the iRio is connected on GPRS network, we can connect on it through IP directly.

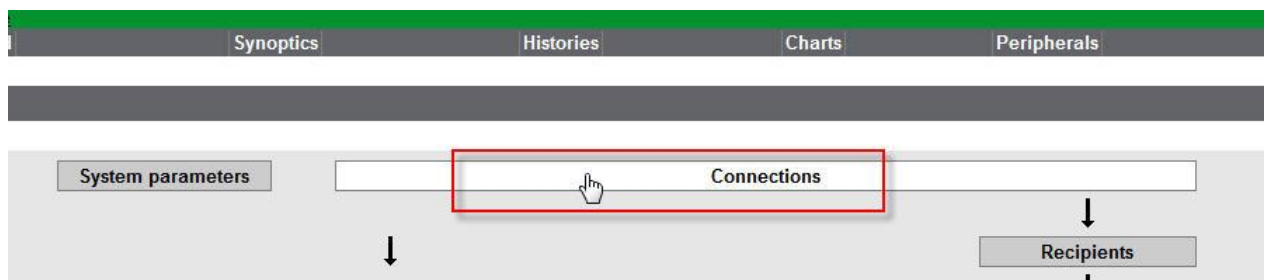
2.2 - Configuration of connection

As mentionned, all settings are in connection.

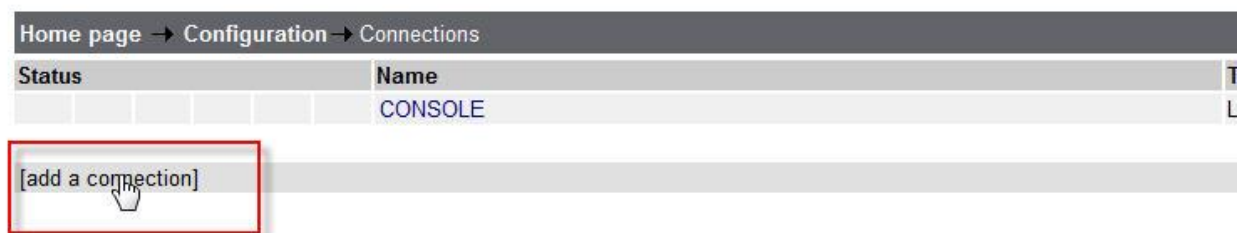


Click on "Configuration".

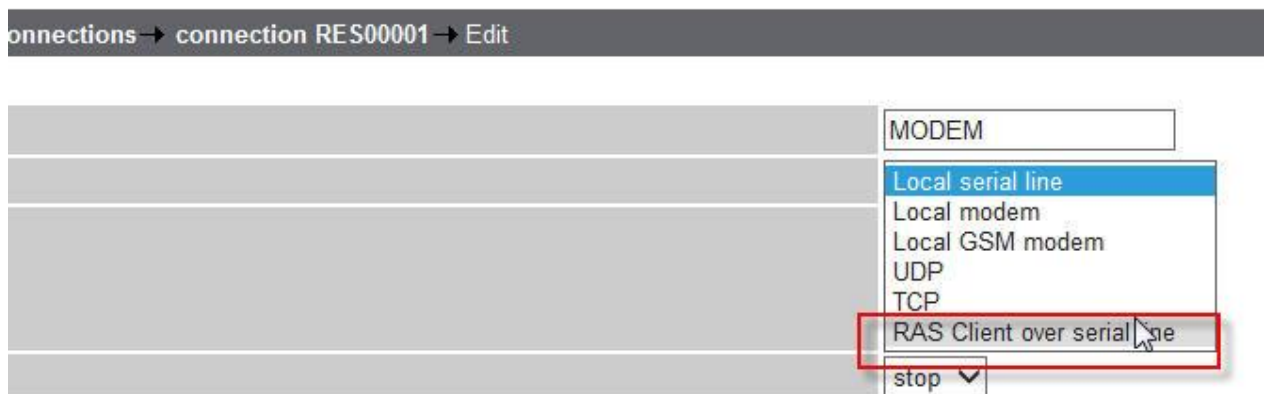
How to configure a GPRS connection on iRio



Click on “Connections” to modify settings.



If there is no connection already declared, also click on “Add a connection”.



For the name of connection, you can choice as you want.

On “Type” select “RAS Client over serial line”.



Click on “Continue” to select communication port dedicated for modem.

How to configure a GPRS connection on iRio

Connection MODEM → Edit

MODEM	
RAS Client over serial line	
stop	
COM2	▼
115200	▼
Tone	▼
10	
attempt (mn)	1
cycle (mn)	60
GSM 850/900/1800/1900	▼
No limitation	▼
No limitation	
(0) Not decoded	

Information is not yet read from the base station

*99***1#	

[modify]

continue...

You need select "COM2", only one port is dedicated for modem PSTN or GSM.

Let "115200" for the speed of communication.

Name	MODEM
Type	RAS Client over serial line
Trace	stop
Port	COM2 ▼
Default speed for the port	115200 ▼
Modem init string	
Modem dialing type	Tone ▼
PIN code	
Initialization: maximum number of attempt	10
Initialization: delay between two initialization attempt (mn)	1
Initialization: delay between two initialization cycle (mn)	60
Frequency band allowed	GSM 850/900/1800/1900 ▼
Frequency band preferred	No limitation ▼
Current frequency band	No limitation
Operator name	
Cell ID * **	
GSM base station ID (BSIC) *	
Network type	(0) Not decoded
* (0) Not decoded	
** (2G: 65535 3G: 268435455) Not available: Information is not yet read from the base station	
Internet connection (ISP)	
Access Point Name (APN)	internet-enterprise
Connection name	orange
Password	
Phone number	*99***1#

Details on parameter:

- Access Point Name: this information come from ISP.

How to configure a GPRS connection on iRio

- Connection name: this information come from ISP.
- Password: this information come from ISP.

Name	MODEM	[modify]
Type	RAS Client over serial line	
Trace	stop	
Port	COM2	
Default speed for the port	115200	
Modem init string		
Modem dialing type	Tone	
PIN code		
Initialization: maximum number of attempt	10	
Initialization: delay between two initialization attempt (mn)	1	
Initialization: delay between two initialization cycle (mn)	60	
Frequency band allowed	GSM 850/900/1800/1900	
Frequency band preferred	No limitation	
Current frequency band	No limitation	
Operator name		
Cell ID * **		
GSM base station ID (BSIC) *		
Network type	(0) Not decoded	
* (0) Not decoded ** (2G: 65535 3G: 268435455) Not available: Information is not yet read from the base station		
Internet connection (ISP)		
Access Point Name (APN)	internet-enterprise	
Connection name	orange	
Password	*****	
Phone number	*99***1#	

[Continue...](#)

Click on “Continue”.

Home page → Configuration → Connections → Connection MODEM

Name	MODEM
Status	⌚ Use in progress
Type	RAS Client over serial line
Trace	stop
Port	COM2
Default speed for the port	115200
Modem init string	+CGDCONT = 1,"ip","internet-enterprise"
Modem dialing type	Tone
PIN code	
Initialization: maximum number of attempt	10
Initialization: delay between two initialization attempt (mn)	1
Initialization: delay between two initialization cycle (mn)	60
Frequency band allowed	GSM 850/900/1800/1900
Frequency band preferred	No limitation
Current frequency band	GSM 850/900/1800/1900
Operator name	Orange F
Cell ID * **	0x3C5A - 15450
GSM base station ID (BSIC) *	12
Network type	GSM/EGPRS
* (0) Not decoded ** (2G: 65535 3G: 268435455) Not available: Information is not yet read from the base station	
Internet connection (ISP)	
Access Point Name (APN)	internet-enterprise
Connection name	orange
Password	*****
Phone number	*99***1#
Limit of outgoing calls per day	0 Modify
All outgoing calls per day	0 [reset counter]
Last outgoing call date	

During a time, the connection is “Use in Progress”, it’s the time to connect to GPRS network.

How to configure a GPRS connection on iRio

Home page → Configuration → Connections → Connection MODEM

Name	MODEM
Status	OK
Type	RAS Client over serial line
Trace <i>(No trace file found)</i>	None
Port	COM2
Default speed for the port	115200
Modem init string	+CGDCONT = 1,"ip","internet-enterprise"
Modem dialing type	Tone
PIN code	
Initialization: maximum number of attempt	10
Initialization: delay between two initialization attempt (mn)	1
Initialization: delay between two initialization cycle (mn)	60
Frequency band allowed	GSM 850/900/1800/1900
Frequency band preferred	No limitation
Current frequency band	GSM 850/900/1800/1900
Operator name	Orange F
Cell ID * **	0x3C5A - 15450
GSM base station ID (BSIC) *	12
Network type	GSM/EGPRS
* (0) Not decoded ** (2G:65535)3G:268435455) Not available: Information is not yet read from the base station	
Internet connection (ISP)	
Access Point Name (APN)	internet-enterprise
Connection name	orange
Password	
Phone number	*99***1#
Status	Disconnected
IP Address (Client RAS PPP)	
Number of bytes sent	479
Number of bytes received	3603
Number of PIN code attempts remaining	3
modem/SIM reference	Cinterion PH8-P REVISION 02.003 - SIM=21 1030 0145 4450
GSM level of reception (dB)	(-97)
Extended error code	
IMEI Code	359628042530555
Total number of bytes sent (GPRS/3G/3G+)	0
Total number of bytes received (GPRS/3G/3G+)	0
Date of last bytes counters reset	20/09/18 13:57:07

Wait that the connection is on status “OK” and “Disconnected”, after you have access to launch a connection to the network.

* (0) Not decoded ** (2G:65535)3G:268435455) Not available: Information is not yet read from the base station	
Internet connection (ISP)	
Access Point Name (APN)	internet-enterprise
Connection name	orange
Password	
Phone number	*99***1#
Status	Disconnected
IP Address (Client RAS PPP)	
Number of bytes sent	479
Number of bytes received	3603
Number of PIN code attempts remaining	3
modem/SIM reference	Cinterion PH8-P REVISION 02.003 - SIM=21 1030 0145 4450
GSM level of reception (dB)	(-97)
Extended error code	
IMEI Code	359628042530555
Total number of bytes sent (GPRS/3G/3G+)	0
Total number of bytes received (GPRS/3G/3G+)	0
Date of last bytes counters reset	20/09/18 13:57:07

[\[delete this connection\]](#) [\[connect\]](#)

Click on “Connect” and wait that iRio succeeded to have an IP address given by the APN.

How to configure a GPRS connection on iRio

During this time you can see the page below:

Home page → Configuration → Connections → Connection MODEM	
Name	MODEM
Status	 Use in progress
Type	RAS Client over serial line
Trace (No trace file found)	None
Port	COM2
Default speed for the port	115200
Modem init string	+CGDCONT = 1,"ip","internet-enterprise"
Modem dialing type	Tone
PIN code	
Initialization: maximum number of attempt	10
Initialization: delay between two initialization attempt (mn)	1
Initialization: delay between two initialization cycle (mn)	60
Frequency band allowed	GSM 850/900/1800/1900
Frequency band preferred	No limitation
Current frequency band	GSM 850/900/1800/1900
Operator name	Orange F
Cell ID * **	0x3C5A - 15450
GSM base station ID (BSIC) *	12
Network type	GSM/EGPRS
* (0) Not decoded	
** (2G:65535 3G:268435455) Not available: Information is not yet read from the base station	
Internet connection (ISP)	
Access Point Name (APN)	internet-enterprise
Connection name	orange
Password	*****
Phone number	*99***1#
Status	Connected
IP Address (Client RAS PPP)	?.?.?.?
Number of bytes sent	509
Number of bytes received	3666
Number of PIN code attempts remaining	3
modem/SIM reference	Cinterion PH8-P REVISION 02.003 - SIM=21 1030 0145 4450
GSM level of reception (dB)	 (-97)
Extended error code	The dedicated thread has been launched
IMEI Code	359628042530555

When the iRio succed to have an IP address so you can see the page below:

Status	 Connected
Type	RAS Client over serial line
Trace [Download trace file]	RollTrace
Port	COM2
Default speed for the port	115200
Modem init string	+CGDCONT = 1,"ip","internet-enterprise"
Modem dialing type	Tone
PIN code	
Initialization: maximum number of attempt	10
Initialization: delay between two initialization attempt (mn)	1
Initialization: delay between two initialization cycle (mn)	60
Frequency band allowed	All GSM and UMTS bands (no limitation)
Frequency band preferred	No limitation
Current frequency band	All GSM and UMTS bands (no limitation)
Operator name	Orange F
Cell ID * **	0x0499F98 - 4824984
GSM base station ID (BSIC) *	00
Network type	UTRAN/HSDPA/HSUPA
* (0) Not decoded	
** (2G:65535 3G:268435455) Not available: Information is not yet read from the base station	
Internet connection (ISP)	
Access Point Name (APN)	internet-enterprise
Connection name	
Password	
Phone number	*99***1#
Status	Connected
IP Address (Client RAS PPP)	90.122.246.180
Number of bytes sent	1112454
Number of bytes received	326673
Number of PIN code attempts remaining	3
modem/SIM reference	Cinterion PH8-P REVISION 02.003 - SIM=21 1030 0145 4520
GSM level of reception (dB)	 (-101)
Extended error code	
IMEI Code	359628042530001
Total number of bytes sent (GPRS/3G/3G+)	6373361
Total number of bytes received (GPRS/3G/3G+)	3729448
Date of last bytes counters reset	23/06/16 12:04:35

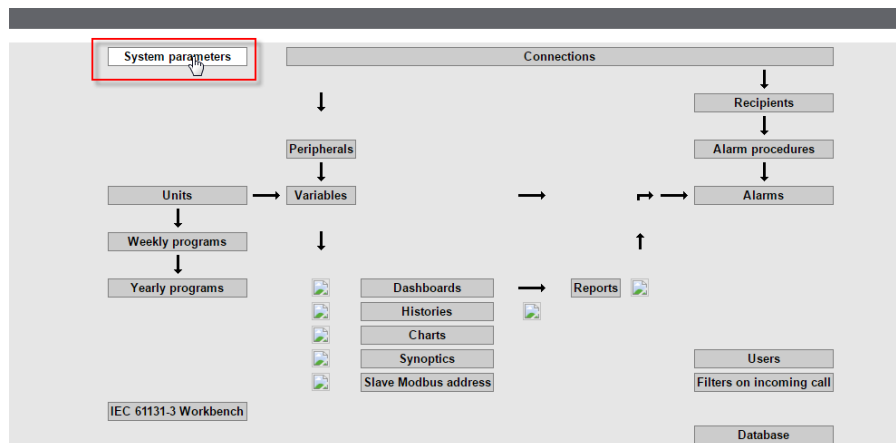
3 - REMARKS:

With the IP address, you are able to connect on iRio. If the APN is public in this case you are allow to access to the iRio from anywhere, if it's only a private APN in this case you have only an access if you are on the same network.

Most of ISP proposes services with dynamic IP address, it's why for this reason that sometimes it's needed to have a DYNDNS services, because the IP address changes periodically and it's more difficult to know the iRio IP address.

4 - HOW TO CONFIGURE DYNDNS SERVICES

As mentioned above, to configure DYNDNS, click on "configuration" in home.



After click on "System parameters".

Home page → Configuration → System parameters

Site information	
Name	LE HIVE
Phone number	
TCP/IP configuration	
HTTP port	13481
IP address	10.199.179.71
IP mask	255.255.255.0
Default gateway	10.199.179.1
primary DNS	10.199.137.33
No secondary DNS on this object	
DHCP mode	activate
the DHCP mode will be started after the next reset	
Other network parameters	
Dynamic DNS	[Go to dynamic DNS configuration]
SNTP client	[Go to SNTP configuration]
Inactivity timeout for RAS session (mn)	0
Mobile network parameters	
Timeout for network [GSM, GPRS/3G] registration (s)	20
Divers	
Slave Modbus address	10
Current date	19/08/16 16:16:45
Format specification to display date/time (Default format is French : d/m/y H.M:S)	d/m/y H.M:S
Id of the installation (Field reserved for the ADEME reports)	
save system configuration	
Active network services	
Napbus/modbus	UDP: 32136
Napbus/modbus	TCP: 502
task server :	UDP: 32160
http	TCP: 13481
xfsrv	TCP: 32161

How to configure a GPRS connection on iRio

On this page, you can see that you can fix another HTTP port, IP address is not the GRPS IP address but the IP address of Ethernet card, available on front of iRio on RJ45 connector.

To continue on DYNDNS csettings, click “Go to dynamic DNS configuration”.

Home page → Configuration → System parameters → Dynamic DNS parameters

Dynamic DNS parameters	
Server name	
HTTP Port	
User name	
Password	
Host name	
finish	
Recent update results	
Date of the last update	19/08/16 12:21:25
Last return code	good
Last response	HTTP/1.1 200 OK Date: Fri, 19

You need to complete parameters, “Server name”, “HTTP Port”, “User Name”, “Password” and “Hostname” with information completed and given with the DNS services company.

Some of free services are available but for a professional application we advise to use a non free service with a serious contract, to be sure on the availability of the server and services.

Details on parameters:

- Server name: It's the server that iRio will connect to translate numeric IP address to alphanumeric P address. This information and parameter depends on the services and company used for this function and they are given by the company.
- HTTP Port: you are able to define a different HTTP, but it must be the same set in DYNDNS services parameter.
- User Name: The user name is the login that you ave defined when you have subscribed for DYNDNS services.
- Password: The password is the password that you ave defined when you have subscribed for DYNDNS services.
- Hostname: This name will be the name that you will write when you will have acces to your iRio instead of write numeric IP address.