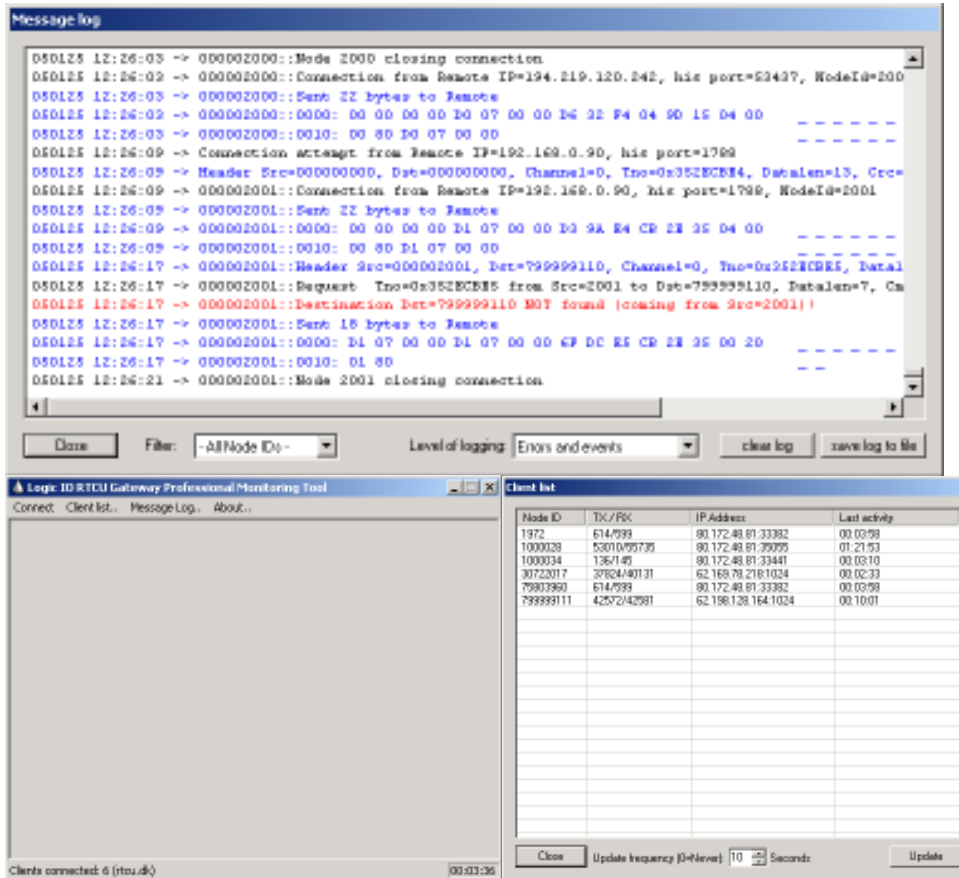


The Logic IO

RTCW Gateway Professional

Version 1.26



User and Installation Guide

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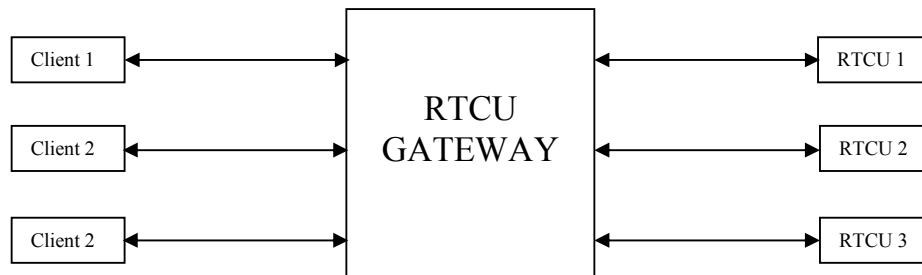
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Introduction

This document describes the RTCU Gateway Professional Package used for communicating with remote RTCU units using any TCP/IP enabled communication media (e.g. GPRS or LAN). The RTCU Gateway is a lightweight and easy installable middle-ware solution running on Windows 2000/XP/Vista/2003 Server/2008 Server/7. An important function of the RTCU Gateway is to allow access to TCP/IP connected units operating with a private and/or dynamic IP-address. The RTCU Gateway will map the private IP-address of a unit to a global IP-address accessible by the client. The RTCU Gateway also includes security functions, local/remote maintenance and logging features. The merging of SMS and TCP/IP technology is made possible with the Logic IO proprietary VSMS (Virtual SMS) technology that allows any RTCU application that uses SMS-messages to transparently send/receive messages using either SMS, TCP/IP, Data call or a cable connection *without* any changes to the software already developed.

The RTCU Gateway defined protocol is named RACP2 (Remote Access Communication Protocol REV 2) and is based on the RACP-protocol for communicating with an RTCU unit using a serial line connection (please see separate document describing the RACP and RACP2 protocols). By using a standard TCP/IP socket interface the protocol is made extremely simply and easy to implement by the clients. Logic IO offers a free software library (DLL) that implements the client side of the RACP2 protocol for use in a Microsoft Windows environment. The source code (written in C) can also be supplied.

Using the RACP2 protocol the RTCU Gateway can be illustrated:



The client is communicating with the Gateway using the RACP2 Protocol. The message sent from the client to the Gateway will be forwarded to the RTCU unit using the TCP/IP connection, again using the RACP2 protocol. The response sent from the RTCU unit to the client will in the same way be forwarded back to the client.

If the client is sending a VSMS the message can be transmitted to the RTCU unit using either the TCP/IP connection (with the RTCU Gateway) or as a normal GSM based SMS message. A VSMS message sent from the RTCU unit using either TCP/IP or SMS will in both cases be forwarded using the RACP2 protocol to the client.

It should be noted that communication between two clients and two RTCU units is also possible using the RTCU Gateway.

To use the RTCU Gateway the client and the RTCU unit needs to be supplied with the IP-address, Port number and the Password to logon to the Gateway.

The RTCU Gateway runs as a Windows service. A Windows service is a program that runs independently of the user, allowing the Gateway to run on a server without any users logged in.

The RTCU Gateway supports Encryption and Compression as described in the RACP2 protocol version 2.00.

Contents of package

The Logic IO RTCU Gateway Professional package contains the following:

ctrlGW	The Control Panel application.
guiGW	The Monitor Tool application.
GW.dll	The RTCU Gateway Professional DLL.
GWPGuard.exe	Guard service to keep the gateway running.
GWService.cfg	The Configuration file for the service.
GWService.exe	The service executive.
Logic IO RTCU Gateway - User and Installation Guide.pdf	This document.

System requirements

Operating system:	Windows 2000/XP/Vista/2003 Server/2008 Server/7.
Memory:	30 MB + 3 kB per client
Hard disk space:	2 MB.
Other:	Network card. TCP/IP network protocol. (Permanent Internet connection with fixed IP address is recommended.)

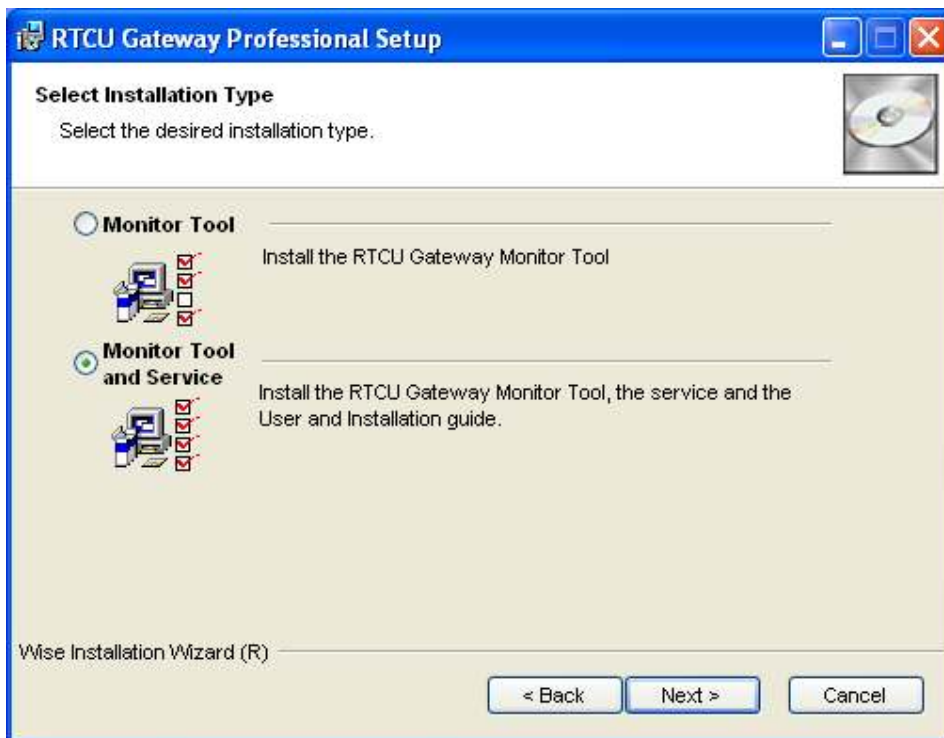
Time Service

The RTCU Gateway has an inbuilt Time Service allowing central synchronization of the Real Time Clock in the connected clients. The clients can request the local time or the UTC time for a truly universal time synchronization service. For more information, please consult the RTCU IDE on-line documentation and the RTCU Gateway Configuration section.

Installation

To install the Gateway run **GWPro.msi**. There are 2 types of installations possible: “Monitor Tool” and “Monitor Tool and Service”.

Note: Installation requires Administrator privileges.



If a previous version of the Gateway is already installed on the PC, it must be uninstalled before this new version of the Gateway can be installed.

Monitor Tool and Service

This option installs the Gateway Service and the Remote Monitor Tool and PDF manual.

Monitor Tool

This option installs the Remote Monitor Tool application and the PDF manual.

License

The Gateway supports 25 clients as default. To allow more clients to connect to the gateway a license must be purchased from Logic IO. Please contact Logic IO for more information.

When the license key file is received from Logic IO copy it into the folder where the Gateway was installed. (Default: C:\Program Files\Logic IO\RTCU Gateway Professional\)

Remember to keep a backup of the key file in case of a computer crash.

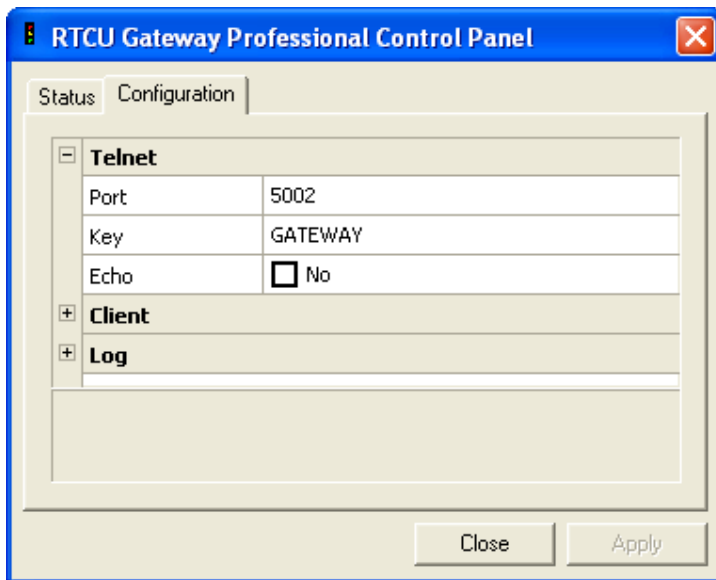
If the Gateway is running it needs to be restarted to unlock the number of clients.

Configuration

Configuration of the RTCU Gateway consists of 2 steps; the Gateway and the User interface.

RTCU Gateway Professional

To configure the RTCU Gateway, open the Control Panel application and select the Configuration tab.



The parameters for Telnet have the following meaning:

Port	The IP port that the Telnet client connects to. Used for analysis of Gateway client transactions and debugging.
Key	The access key for the Telnet client.
Echo	Enables/Disables echo of incoming data from Telnet client.

The parameters for Client have the following meaning:

Port	The IP port that the Gateway listens for clients on.
Timeout	The time without transactions before the Gateway disconnects a client. Used to clean up inactive connections that for various reasons have not been correctly closed by the network. Time is given in seconds
Encrypt	Enables/Disables encryption of data from/to clients.
Encrypt Key	The encryption key used to encrypt/decrypt data from/to clients. The key is 16 Byte long and is written in HEX numbers. Note all 32 characters must be present or the

	key is rejected.
Compress	Enables/Disables compression of data from/to clients.
Time service	Enable/Disable the Time service. Enabling the Time service will allow clients to request the local or UTC time using the gwTimeGet() function. If the disabled then 0 (zero) will be returned to the clients requesting the time.
Key1	The access key for the Gateway clients.
Key2	The access key for the Gateway clients.
Key3	The access key for the Gateway clients.
Key4	The access key for the Gateway clients.
Key5	The access key for the Gateway clients.
Key6	The access key for the Gateway clients.
Key7	The access key for the Gateway clients.
Key8	The access key for the Gateway clients.
Key9	The access key for the Gateway clients.
Key10	The access key for the Gateway clients.

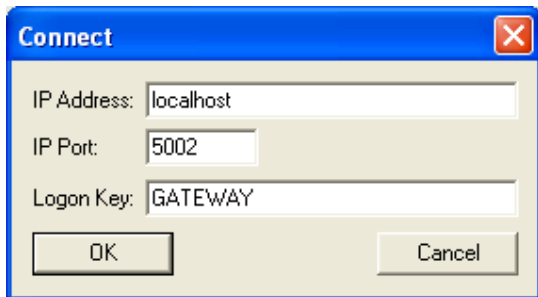
The parameters for Log have the following meaning:

Level	Initial level of logging, 0 = no logging, 1 = Errors only, 2 = Errors and events, 3 = Errors and detailed events. The level of logging can be changed with the Monitor Tool or Telnet.
Size	The maximum number of log entries in the server buffer. This parameter is only necessary when a larger or smaller max is required. The default is 50000 entries. Legal values are from 1000 to 500000.

Please note that the Gateway must be restarted after the configuration has been changed.

Monitor Tool

To configure the user interface application select Connect in the menu, which brings this dialog:



Where the parameters has the following meaning:

IP Address	This is the IP address of the Gateway. Because the Monitor tool application and the Gateway usually run on the same PC, the Default is localhost
------------	--------------------------------------------------------------------------------------------------------------------------------------------------

IP Port This is the IP port that the Gateway is expecting Telnet clients to connect to, and must mirror the Port parameter in the Telnet group in the Gateway configuration.

Logon Key This is the key send to the Gateway to gain access. This parameter must mirror the Key parameter in the Telnet group in the Gateway configuration.

When OK is pressed the user interface disconnects from the current gateway and tries to connect to the new gateway.

Using the Gateway

First time

The Gateway package has been installed and is ready to use.

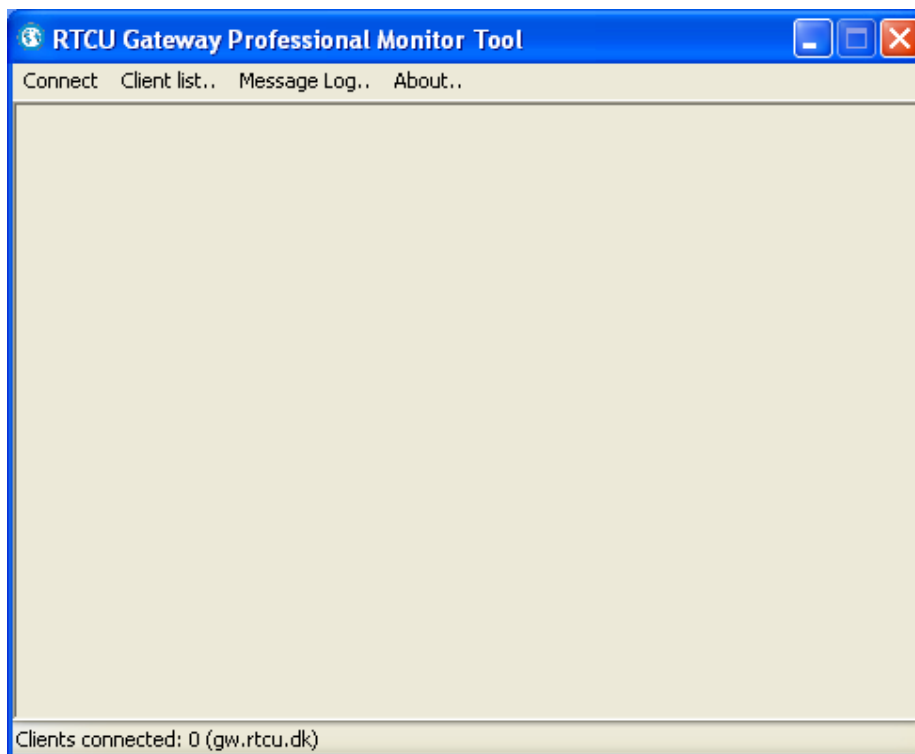
The first thing to do is to configure the Gateway. This is done by opening the Control Panel. The parameters can now be changed as described in the previous chapter.

The gateway does not start automatically until after the PC has been reset. To begin using it immediately, it needs to be started. This is done using the Control application as described below.

Note that the gateway will start automatically with windows from now on.

Monitor Tool

When the User interface application is opened, you see the main window (as shown here).



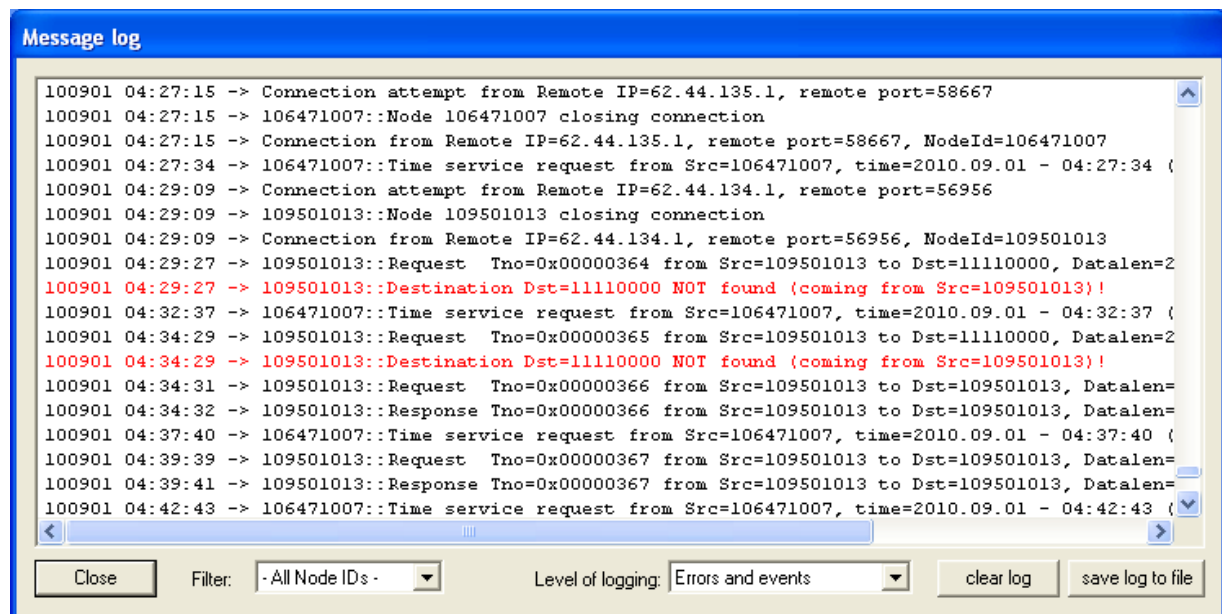
The status bar (the bottom line) has the following meaning:

Connecting...	Contacting Gateway.
Logging on	Sending access key.

Gateway not found!	Either the IP address or Port is wrong.
Wait.. Another client is already connected.	The gateway is busy. Someone else is connected to it.
Incorrect Key!	The Gateway rejected the logon key!
Clients connected: # (...)	Connected to gateway and ready.

The timer in the lower right corner shows the length of time the user interface has been connected to the Gateway.

To get the message Log dialog (Shown below) select Message Log in the menu. If the dialog is 'outside' the screen, selecting Message Log a second time will move the dialog to the center of the screen.



The List shows the complete log, and as the image above shows, the entries are color-coded. Red for Errors, Black for events and Blue for detailed events.

The filter tool is used to show only messages from or to a specific Node ID. The list of Node ID's contains all Node ID's that has been active, even after the log is cleared. The only exception to this is dynamic Node ID's that are removed from the list when they disconnects from the gateway.

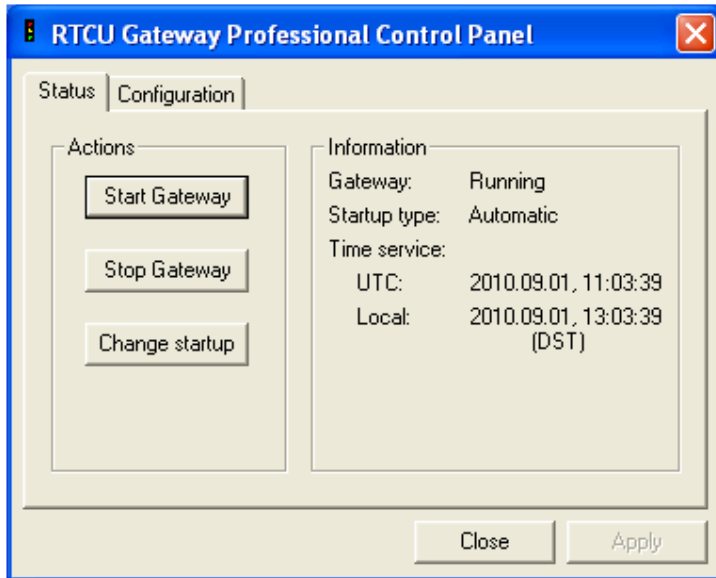
Level of Logging determines the kind of messages the gateway will log.

The available types are:

None No logging.

Control Panel

This application is used to control the Gateway.



The Actions group contains the options for changing the status for the Gateway service. The actions supported are to Start or Stop the Gateway service and to change the Startup type.

The Information group contains the status of the Gateway service. The items can have the following states:

Gateway

Running The Gateway service is started and is running.
 Stopped The Gateway service is not running.

Startup type

Automatic The Gateway service starts automatically with Windows.
 Manually The Gateway service must be started from the Control Panel.

Time service

Time The current time of the Gateway as UTC and local time. '(DST)' is added if Daylight Saving Time is in effect
 Unknown The Gateway is not running and/or no time information is available.
 Disabled The time service is disabled in the Gateway.

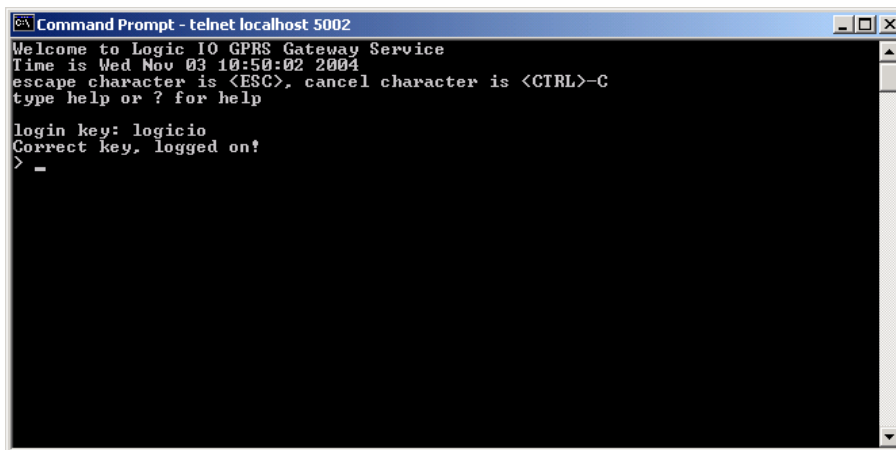
Telnet

For remote analysis and debugging a Telnet server has been implemented.

To connect via a Telnet client, select Run... in the start menu and type: telnet <IP address> <IP port>

Important: Remember to include a space in between telnet and IP address and IP address and IP port.

Note: IP address is the IP address of the Gateway, and IP port is the port number that the Gateway Telnet server is listening on (as defined by the port parameter in the Telnet group in the Gateway configuration).



```

C:\> telnet localhost 5002
Welcome to Logic IO GPRS Gateway Service
Time is Wed Nov 03 10:50:02 2004
escape character is <ESC>, cancel character is <CTRL>-C
type help or ? for help

login key: logicio
Correct key, logged on!
>

```

The Telnet server supports the following commands:

Clear log	Removes all messages from log
Close	Close the Telnet connection to the Gateway
Get Client Count	Retrieve current number of clients connected to Gateway.
Get clients	Retrieves a list of clients and their analysis data (Node Id etc.)
Get log level	Retrieves the logging level setting from the Gateway
Get log [last] [node id]	Retrieves a list of all messages in log.
[on/off]	If the switch 'last' is used only new entries are listed. If a node id is supplied, only entries for this node are listed.
	If the 'on' switch is used the gateway will send log entries as they are added instead of waiting for requests.
	If the 'off' switch is used will stop sending log entries until requested.
	The 'on' and 'off' switches cannot be used with other switches and/or node id.
Get version	Retrieves version information of the Gateway
Help	Show the supported commands with short explanation
Set echo <on/off>	Enables (on) or disables (off) echo of received text.

Set log <0..3>	Set logging level, supports levels from 0 (no logging) to 3 (Errors and detailed events)
Get clock	Retrieves the current time on the server both local time and UTC time.

The Telnet client in Win XP has local echo, while in Win2k local echo can be switched on and off. To keep reply from the Gateway readable, the echo function was disabled as default. However this means that, if local echo is disabled, the user cannot read what is written.

Service

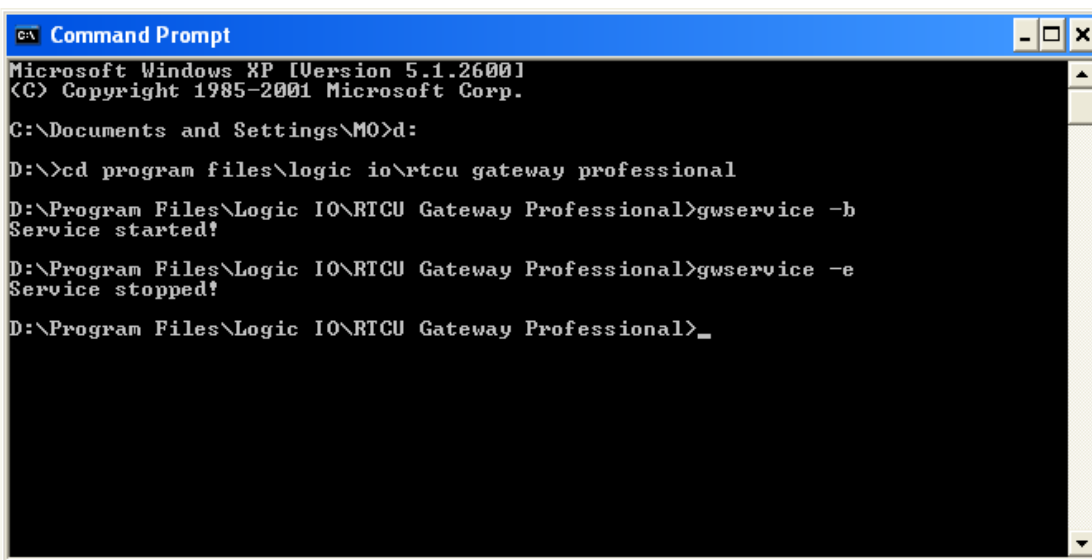
The Gateway is implemented as a Windows service.
During install the Service is registered to automatically start with windows.

The following possibilities exists in the console:

- b Start Gateway service.
- e Stop Gateway service.
- run Start the gateway as normal application.
- ? List available switches.

To change between Automatic and Manual Start/Stop, first stop the gateway, then remove the registration, and then re-register the Gateway with the desired setting.

For example, the screenshot shows the steps needed to change the Gateway from automatically start to manually start.



```
ca\ Command Prompt
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\MO>d:

D:\>cd program files\logic io\rtcu gateway professional

D:\Program Files\Logic IO\RTCU Gateway Professional>gwservice -b
Service started!

D:\Program Files\Logic IO\RTCU Gateway Professional>gwservice -e
Service stopped!

D:\Program Files\Logic IO\RTCU Gateway Professional>_
```

Appendix A: Configuration file

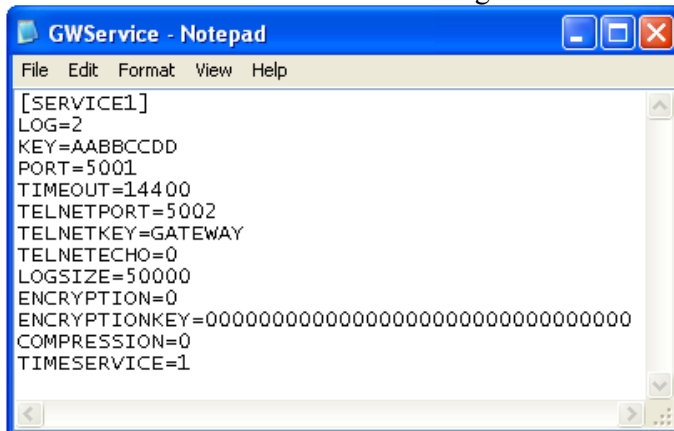
The Gateway saves the configuration in the file **GWService.cfg**, which is in ACSII text format. Usually the configuration is changed with the Control panel; however it is possible to edit the configuration file in a text editor like Notepad.

Please note that the Gateway must be restarted after the configuration file has been changed.

The configuration file has the following parameters:

Log	Initial level of logging, 0 = no logging, 1 = Errors only, 2 = Errors and events, 3 = Errors and detailed events.
Key	The access key(s) for the Gateway clients. If more than one access key is used they are separated with commas. E.g. key=SECRET1,SECRET2,SECRET3
Port	IP port that the Gateway listens for clients on.
Timeout	The time without transactions before the Gateway disconnects a client. Time is given in seconds
Telnetport	IP port that the Telnet client connects to.
Telnetkey	Access key for the Telnet client
Telnetecho	Enables/Disables echo of incoming data from Telnet client
Logsize	Maximum number of log entries in the server buffer. Legal values are from 1000 to 500000.
Encryption	Enable/Disable encryption of data from/to clients. 0 = No encryption, 1 = Rijndael encryption
Encryption Key	Encryption key used to encrypt/decrypt data from/to clients. The key is 16 Byte long and is written in HEX numbers. Note all 32 characters must be present or the key is rejected.
Compression	Enable/Disable compression of data from/to clients. 0 = No compression, 1 = Standard compression
Timeservice	Enable/Disables the time service in the Gateway.

The screenshot shows the default configuration:



```

[SERVICE1]
LOG=2
KEY=AABBCCDD
PORT=5001
TIMEOUT=14400
TELNETPORT=5002
TELNETKEY=GATEWAY
TELNETECHO=0
LOGSIZE=50000
ENCRYPTION=0
ENCRYPTIONKEY=0000000000000000000000000000000000000000
COMPRESSION=0
TIMESERVICE=1

```