



Technical Document

NiagaraAX SMS Users Guide

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3951 Westerre Pkwy, Suite 350
Richmond
Virginia
23233
U.S.A.

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The SMS (Simple Message Service) driver is used for sending text messages to other cellular phones. The SMS driver allows retransmitting alarm information and sending general text messages.

Terminology Note

The term ‘SMS’ is used to refer to the Simple Message Service technology available on GSM devices. All SMS Niagara components are referred to as ‘Sms’ components. This follows the style and conventions used in naming Niagara components, similar to the ‘Bacnet’ driver for BACnet.

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Getting Started

Object Model

The core object that is used for sending text messages is [SmsService](#). Place this object under the 'Services' container of the station.

All messages are sent through the Sms Transport Layer. This layer is interchangeable depending on the GSM modem that is being connected to. By default, the [SerialSmsTransport](#) layer is used. This will establish a connection with a GSM modem through an available serial port.

Alarms can be retransmitted via an [SmsRecipient](#) object. The body of the alarm text can be set to reflect values from the alarm record. More general-purpose messages can be sent via the [Sms component](#).

Usage

Once the driver has been added to the system, edit the property sheet for the SmsService object and edit the serial port configuration under the serial transport object. Once the serial port has been configured, the SmsService can have its 'ping' action executed, to ensure there is communication to the device (GSM modem).

The serial transport layer will also show the signal strength of the GSM modem.

Under the AlarmService, create an SmsRecipient object and edit its property sheet. This component is very similar to the EmailRecipient and can have its body changed to whatever the user wants to transmit in the text message.

SmsService

The Sms Service is the main component used for sending text messages. The service consists of a Transport object. The Transport object is used to send an Sms text message. The Transport object can be changed via altering the 'Transport Type' property. By default, the [SerialSmsTransport](#) object is used.

All text messages are queued under the Sms Service. If there are any text messages queued when the station shuts down, they will be sent when the station next starts up.

Properties

Enabled: Enables or disables the Sms service. If this is set to 'false', no text messages will be sent.

Transport Type: change the Transport object used to send text messages.

Transport: This object is used by the service to send text messages.

Monitor: The ping monitor for the service. This can be used to disable the ping request or set its frequency.

Signal Strength: The current signal strength of the GSM modem. Typically 20% or greater is suitable for sending text messages.

Max Queue Size: The maximum size of the Sms message queue.

Queue Size: The current size of the queue.

Process Queue Interval: The interval for checking for messages to be sent.

Max Sendable Per Day: The maximum number of messages that can be sent in one day.

Number Sent Today: The total number of messages sent today. This number gets reset to zero at midnight everyday and whenever the station is started.

Last Message Sent Time: A timestamp of the last message sent

Use Escape Characters: When this property is set to 'true', some foreign characters (mostly European) will be substituted for those from the GSM character set.

Read Messages Interval: The interval for checking for unread text messages on the GSM device.

Actions

Ping: Ping the GSM modem to ensure it is connected. This will also try to update the signal strength if the ping succeeds.

Send: Send a text message!

Clear Queue: Clear the queue of all text messages waiting to be sent.

Process Queue: The queue is polled every minute or when a new message is added. Once polled, all messages in the queue will be attempt to be sent. Once a message has been sent, it will be cleared from the queue. This action sends any text messages within the queue.

Reset Number Sent Today: Reset the number of messages sent today. Please note the number of messages sent will get reset automatically at midnight everyday and whenever the station is started.

Read Messages: Reads the unread text messages from the GSM device.

Topics

Received: Fires every time a new unread text message is found on the GSM modem. If you are a developer, this is the hook for processing unread messages from the GSM device.

SerialSmsTransport

This object is used to send text messages via a serial port connection to a GSM modem. Once the serial port configuration has been completed, this object can be pinged to ensure a connection to the GSM modem has been established.

Properties

Serial Port Config: The configuration of the serial port the GSM modem is connected to.

Inter Message Delay: The delay between each command send to the GSM modem. By default this is set to zero. However, some older GSM modems may require this to be increased if there are problems with communication.

Delete Read Messages: If enabled, messages are deleted once read from the device.

SmsRecipient

This component acts as an alarm recipient for transmitting alarms via a text message. Its use is similar to the EmailRecipient component. The user is able to format the text for the SMS message within the body slot. Note the body of an SMS text message is limited to 140 characters.

Properties

Phone Numbers: A list of phone numbers the SMS message is going to be sent to. Each phone number should be separated by a semi-colon. All phone numbers must also be in international format (0044123456789).

NOTE: Starting in build 3.5.36, 3.6.36, and 3.7 or later, a phone number may contain a 'plus' sign, for example: +441403740290

The plus is used when specifying a full international phone number.

Sms component

This component is a general use Sms component to send text messages.

The phone number for the recipient must be in International format and is configured via the component's property sheet.

Properties

Phone Numbers: A list of phone numbers the SMS message is going to be sent to. Each phone number should be separated by a semi-colon. All phone numbers must also be in international format (0044123456789).

NOTE: Starting in build 3.5.36, 3.6.36, and 3.7 or later, a phone number may contain a 'plus' sign, for example: +441403740290

The plus is used when specifying a full international phone number.

Default Message: This is the default text for the outgoing message (see [Actions](#) below).

Actions

sendMessage: This action send an SMS text message via the connected GSM device. It takes a text argument used for the body of the message. If there is no text provided, the default message property is used as the body of the message.

sendDefaultMessage: This action sends an SMS text message via the connected GSM device. The default message property is used as the body of the message.

SmsService Frequently Asked Questions

- Can the service send Unicode characters?
No. The service can only send characters from the ASCII and GSM character sets. The GSM character set allows some European characters to be sent in a text message. The use of the GSM character made can be setting the use escape characters property of the SmsService to true.
- Can the service receive text messages?
Yes. The SMS Service can now receive text messages. For information, please see the [SmsService](#) section.
- What GSM modems are compatible with this driver?
The SMS driver has been tested with Siemens MC35 GSM modem. Technically the driver should work with any GSM modem providing the GSM standard has been implemented properly by the manufacturer.
- Is the driver supported on both the PC and JACE platforms?
Yes. The service is supported on both platforms.
- I cannot ping the GSM modem. What could be wrong?
The GSM modem could have unplugged the GSM modem from the JACE. Also the COM port settings could be incorrect. Please ensure the port settings are correct by editing the property sheet of the Transport component. Ensure the SIM card on the GSM device has no PIN, and you can send a text message through a standard mobile phone.
If you are still having problems with communication to the GSM modem, try connecting the modem locally to your computer's COM port and use Hyperterminal (while making sure no other applications are using the COM port - like a station). The GSM modem should respond to an AT command (followed by a carriage return) with an OK.
- I can ping the modem but I can't get a text message. What could be wrong?
It could be the firmware on the GSM modem you are using doesn't implement the specification properly. Another reason may be the GSM modem simply can't process the messages so quickly. If this is the case, try increasing the 'Inter message delay' to cater for the slow GSM modem.
- The signal strength suddenly drops to zero just after sending a text message.
When testing with some Wavecom modems, it was found the signal strength indication dropped to zero just after sending a text message. This is a bug in Wavecom's firmware.
- What does it mean when the service is down?
Typically the service is down when the device is unable to be pinged and hence non-operational.

- I continually get exception messages in my Station output complaining that a message cannot be sent. What does this mean?
If a message cannot be sent it will stay in the queue until it can be sent. It may need to be removed from the SMS Service queue if there is still a problem via the 'Clear Queue' [SmsService](#) action.

Document Change Log

- July 26, 2011: Updated to synchronize with current online docSms.jar content, and to note a 'plus sign' can be used in phone numbers starting in build 3.5.36, 3.6.36, and 3.7 or later.
- January 4, 2007: Initial document.