

# MOBITEK® SMS ENGINE (ENTERPRISE EDITION)

## Manual for Software Developer and System Integrator

---

### **Table of Contents**

1. REVISION HISTORY.....	2
2. COPYRIGHT.....	3
3. TRADEMARKS.....	3
4. DISCLAIMER.....	3
5. ACKNOWLEDGEMENT.....	3
6. INTRODUCTION.....	4
7. FEATURES.....	4
8. LIMITATIONS.....	5
9. REQUIREMENTS.....	6
10. SYSTEM ARCHITECTURE.....	7
Sending SMS.....	7
Reading / Receiving SMS.....	8
11. INSTALLATION of SMS ENGINE ENTERPRISE EDITION.....	9
12. INSTALLATION of SMS ENGINE MONITOR.....	13
13. ALERT MESSAGE DISPLAYED BY SMS ENGINE MONITOR.....	14
14. OUTBOX TABLE – SEND SMS.....	16
15. INBOX TABLE – READ SMS.....	18
16. RETRY_SEND TABLE.....	19
17. FREQUENTLY ASKED QUESTIONS.....	20
18. TIPS.....	24
19. TERMS AND CONDITIONS ON SUPPORT.....	24
20. APPENDIX 1: RELEASE NOTE.....	25
21. APPENDIX 2: GUIDE TO ADD 1 OR MORE GSM MODEM TO EXISTING SMS ENGINE.....	27
22. APPENDIX 3: GUIDE TO INCREASE MODEM ACCESS LICENSE FROM 4 TO 8.....	28
23. APPENDIX 4: HOW TO SET-UP MS SQL SERVER EXPRESS.....	30

**MOBITEK** System Sdn .Bhd. (207015-D)

6th Floor, Suite 16, IOI Business Park, Persiaran Puchong Jaya Selatan, Bandar Puchong Jaya, Puchong 47170, Selangor, Malaysia.

Tel: +603-80644288 Fax: +603-80642109 Web: [www.mobitek.com.my](http://www.mobitek.com.my)

## 1. REVISION HISTORY

EDITION	ISSUED DATE	REMARK
1 <sup>st</sup>	1 <sup>st</sup> of November, 2007	Draft release
2 <sup>nd</sup>	23 <sup>rd</sup> of November, 2007	Minor correction
3 <sup>rd</sup>	5 <sup>th</sup> of December, 2007	SQL statement for sending SMS
4 <sup>th</sup>	13 <sup>th</sup> of January, 2008	Version 2 released
5 <sup>th</sup>	25 <sup>th</sup> of February, 2008	Version 2.1 released. Supports SQL and Windows authentication mode.
6 <sup>th</sup>	13 <sup>th</sup> of March, 2008	Version 3.0 released. Supports Chinese characters.
7 <sup>th</sup>	8 <sup>th</sup> of July, 2008	"FAQ" section expanded. "Feature" section expanded. "Limitations" section expanded. "System Architecture" section added.
8 <sup>th</sup>	18 <sup>th</sup> of July, 2008	Service picture added.
9 <sup>th</sup>	10 <sup>th</sup> of September, 2008	"FAQ" section updated.
10 <sup>th</sup>	9 <sup>th</sup> of October, 2008	Appendix 1 added.
11 <sup>th</sup>	29 <sup>th</sup> of October, 2008	"FAQ" section updated.
12 <sup>th</sup>	13 <sup>th</sup> of November, 2008	Appendix 1 amended. Appendix 2 added.
13 <sup>th</sup>	17 <sup>th</sup> of December, 2008	Version 3.1 released.
14 <sup>th</sup>	12 <sup>th</sup> of August, 2009	"FAQ" section updated. Appendix 1 updated.
15 <sup>th</sup>	1 <sup>st</sup> of January, 2010	Version 3.2 is released
16 <sup>th</sup>	1 <sup>st</sup> of May, 2010	Version 3.3 and Version 5.2 is released
17 <sup>th</sup>	10 <sup>th</sup> of August, 2010	<i>MS SQL Server Edition</i> is supported
18 <sup>th</sup>	2 <sup>nd</sup> of September, 2010	"REQUIREMENTS" updated
19 <sup>th</sup>	12 <sup>th</sup> of October, 2010	"ALERT MESSAGE DISPLAYED BY SMS ENGINE MONITOR" is updated
20 <sup>th</sup>	1 <sup>st</sup> of March, 2011	SMS Engine Enterprise Edition version 5.4 is released
21 <sup>st</sup>	28 <sup>th</sup> of July, 2011	<ul style="list-style-type: none"> <li>• SMS Engine Enterprise Edition version 5.5 is released</li> <li>• SMS Engine Monitor version 5.5 is released</li> <li>• "FAQ" section updated</li> </ul>
22 <sup>nd</sup>	7 <sup>th</sup> of January, 2013	<ul style="list-style-type: none"> <li>• SMS Engine Enterprise Edition version 5.8.1 is released</li> <li>• SMS Engine Monitor version 5.8.1 is released</li> <li>• "FEATURES" updated</li> <li>• "REQUIREMENTS" updated</li> <li>• "INSTALLATION OF SMS Engine - Enterprise Edition" updated</li> <li>• "OUTBOX TABLE – SEND SMS" updated</li> <li>• "APPENDIX 3: RELEASE NOTE" updated</li> </ul>
23 <sup>rd</sup>	5 <sup>th</sup> of August, 2014	<ul style="list-style-type: none"> <li>• "APPENDIX 4: HOW TO SET-UP MS SQL SERVER EXPRESS" added by Faez</li> </ul>

## 2. COPYRIGHT

**Copyright © 2007 - 2014 MOBITEK System Sdn. Bhd. All rights reserved.**

No part of this document may be reproduced, distributed, stored in a retrieval system or translated into any language, in any form or by any means, electronic, mechanical, magnetic, optical, photocopying, manual or otherwise, without the prior written permission of MOBITEK System Sdn. Bhd.

## 3. TRADEMARKS

**MOBITEK®** is a registered trademark owns by MOBITEK System Sdn. Bhd.

Product names, logos, brands and other trademarks referred in this document are the property of their respective trademark holders and are used only to directly describe the products being provided.

## 4. DISCLAIMER

MOBITEK makes no representations or warranties with respect to the contents hereof and specifically disclaims any implied warranties of merchantability or fitness for any particular purpose.

Furthermore, MOBITEK reserves the right to revise this publication and to make changes from time to time in the contents hereof without obligation to notify any person of such revision or changes.

Trademarks and Registered Trademarks Products and product names mentioned in this document may be trademarks or registered trademarks of their respective owners.

## 5. ACKNOWLEDGEMENT

We like to extend our appreciation to the following persons for their contribution in revising this manual:-

1. Mr. Muhamad Faezudin bin Hairuddin, UNIVERSITY SAINS MALAYSIA

**MOBITEK** System Sdn .Bhd. (207015-D)

6th Floor, Suite 16, IOI Business Park, Persiaran Puchong Jaya Selatan, Bandar Puchong Jaya, Puchong 47170, Selangor, Malaysia.

Tel: +603-80644288 Fax: +603-80642109 Web: [www.mobitek.com.my](http://www.mobitek.com.my)

## 6. INTRODUCTION

**MOBITEK® SMS Engine (Enterprise Edition)** is a *Windows Service* that sends and receives SMS. System integrator and software developer (SI/SD) do not need to write any code to build a SMS Gateway. The **MOBITEK® SMS Engine (Enterprise Edition)** uses *MS SQL Server* database to store incoming SMS, and to check if there is any pending SMS to be send out. SI/SD only needs to insert record into database to send out SMS, and retrieve record from database to read SMS. The **MOBITEK® SMS Engine (Enterprise Edition)** has taken care all SMS transactions.

## 7. FEATURES

1. Release – **version 5.8.1**
2. Running as **Windows Service**.
3. **MOBITEK® SMS Engine (Enterprise Edition)** will always try to initialize connection with modem, e.g. If PC/server is rebooted, the service will automatically establish connection with GSM modem.
4. **Auto-reconnection with modem** – if modem is disconnected from PC/server (for whatever reasons), and then re-connected at later stage, service will automatically establish connection with modem.
5. Works in **both Windows 32 bit and 64 bit**.
6. Uses **Microsoft SQL Server** or **MySQL Server** to store incoming SMS, and to process outgoing SMS in database. Support both *Windows* and *SQL* authentication mode.
7. **Prevention of any lost of SMS** :-
  - a) During initialization, if there are any database error, it will not send nor read SMS, therefore no message will be lost.
  - b) **Auto-reconnection with database server**.
8. Sending of SMS in alphanumeric character (text) and in **Chinese character** (Unicode).
9. **Intelligent SMS Sending Logic**:-
  - a) **Scheduling** of outgoing SMS – based on the date and time set in "datetime\_schedule"
  - b) **Prioritization** of outgoing SMS – earliest "datetime\_schedule" will be send out, and all "datetime\_schedule = null" will be last to send out
  - c) **FIFO** – if there is neither scheduling nor prioritization, then "FIFO" rule will be applied – SMS Engine will process the 1<sup>st</sup> record in the outbox until the last record.
10. Configure the **direction** of individual modem:-
  - a) 2 way send and read SMS;
  - b) 1 way read SMS; or
  - c) 1 way send SMS.
11. **Remote monitoring** of **SMS Engine Enterprise Edition Service**, modem status, and message status.
  - a) **SMS Engine Monitor** can be installed on client PC(s) to monitor;
  - b) **SMS Engine Monitor** will pop-up a balloon message to notify administrator In the event of problem encountered (refer to section 7 for more details).
12. **Load balancing** – 4 modems work together to broadcast message. It is NOT on "round-robin" basis.
13. **Dynamic queue size** – the Engine will dynamically allocate queue size, if more modems are successfully initialized then queue size will be increased.

**MOBITEK** System Sdn .Bhd. (207015-D)

6th Floor, Suite 16, IOI Business Park, Persiaran Puchong Jaya Selatan, Bandar Puchong Jaya, Puchong 47170, Selangor, Malaysia.  
Tel: +603-80644288 Fax: +603-80642109 Web: www.mobitek.com.my

14. **Configurable queue size** – the queue size can be changed, default size is 8 SMS/records per modem
15. **Routing** – sophisticated and intelligent routing logic that can be easily configured:-
  - a) Modem will send to designated prefix mobile number. Good for cost saving as SMS sent within the intra-network is cheaper than inter-network.
  - b) Modem will be or not be used.
16. **Number of retries** – can be configured. If SMS fails to be send, it will retry until the specified time.
17. **Fail-over** – if modem no.1 cannot send out the SMS, modem no. 2 will take over, and so on until modem no. 4.
18. **Supports multiple modems** – up to 4 or more **MOBITEK®** Modem (Type SGDK) or multiple **MobiGATE™**
19. **Flexible installation** – **MOBITEK® SMS Engine (Enterprise Edition)** can be installed on any one of these variations:-
  - a) **1:4:1** – install **MOBITEK® SMS Engine** on 1 server connected with 4 units of **MOBITEK®** Modem (Type SGDK) and connected to 1 database
  - b) **2:2:2** – install **MOBITEK® SMS Engine** on 2 servers; each server with 2 units of **MOBITEK®** Modem (Type SGDK); 2 **Engines** are connected to 2 different databases
  - c) **4:1:4** – install **MOBITEK® SMS Engine** on 4 servers; each server with 1 units of **MOBITEK®** Modem (Type SGDK); 4 **SMS Engines** are connected to 4 different databases

## 8. LIMITATIONS

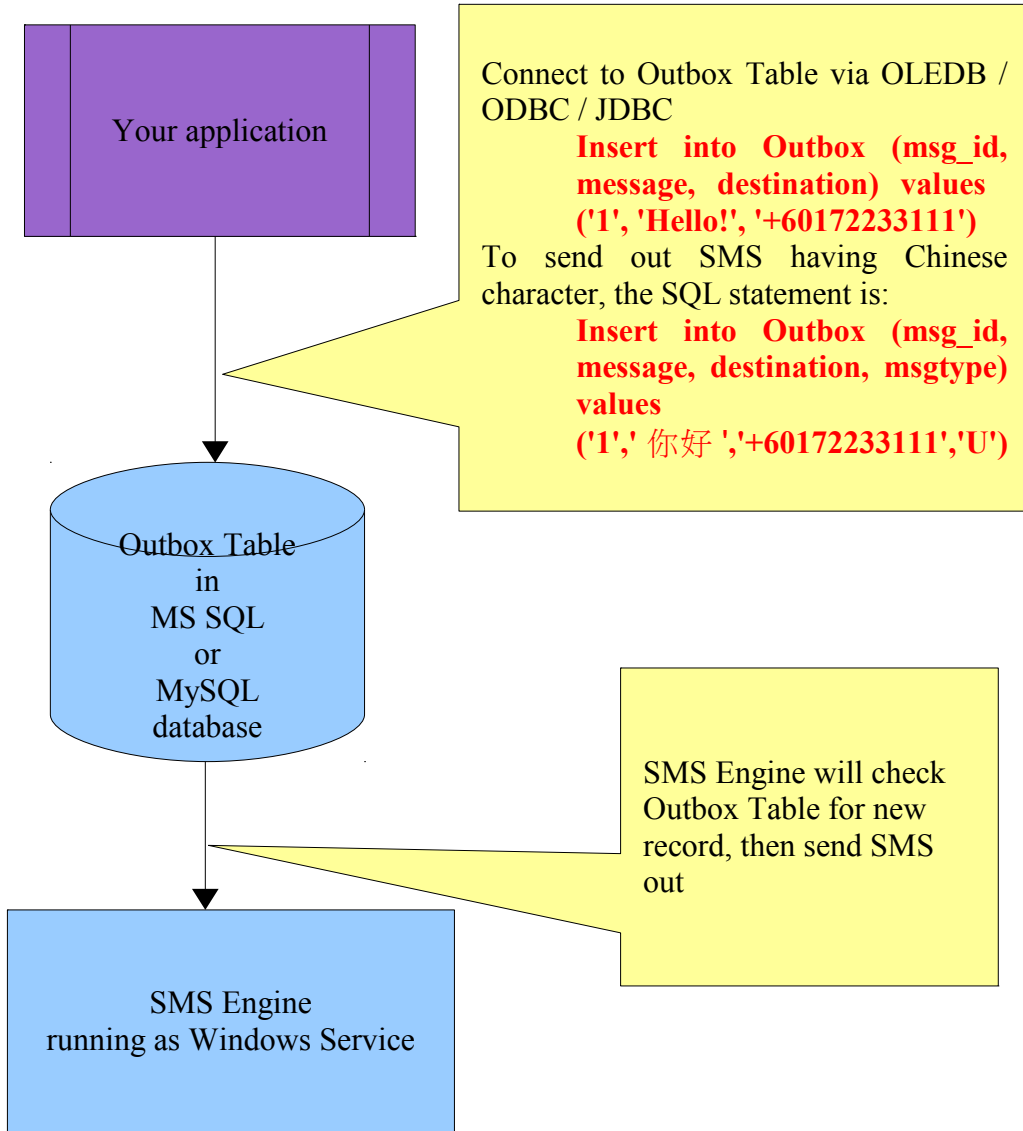
1. Sending of SMS in alphanumeric character with maximum of 160 characters length.
2. Sending of SMS in Chinese character with maximum of 70 characters length.
3. Does not support concatenate or long SMS.

## 9. REQUIREMENTS

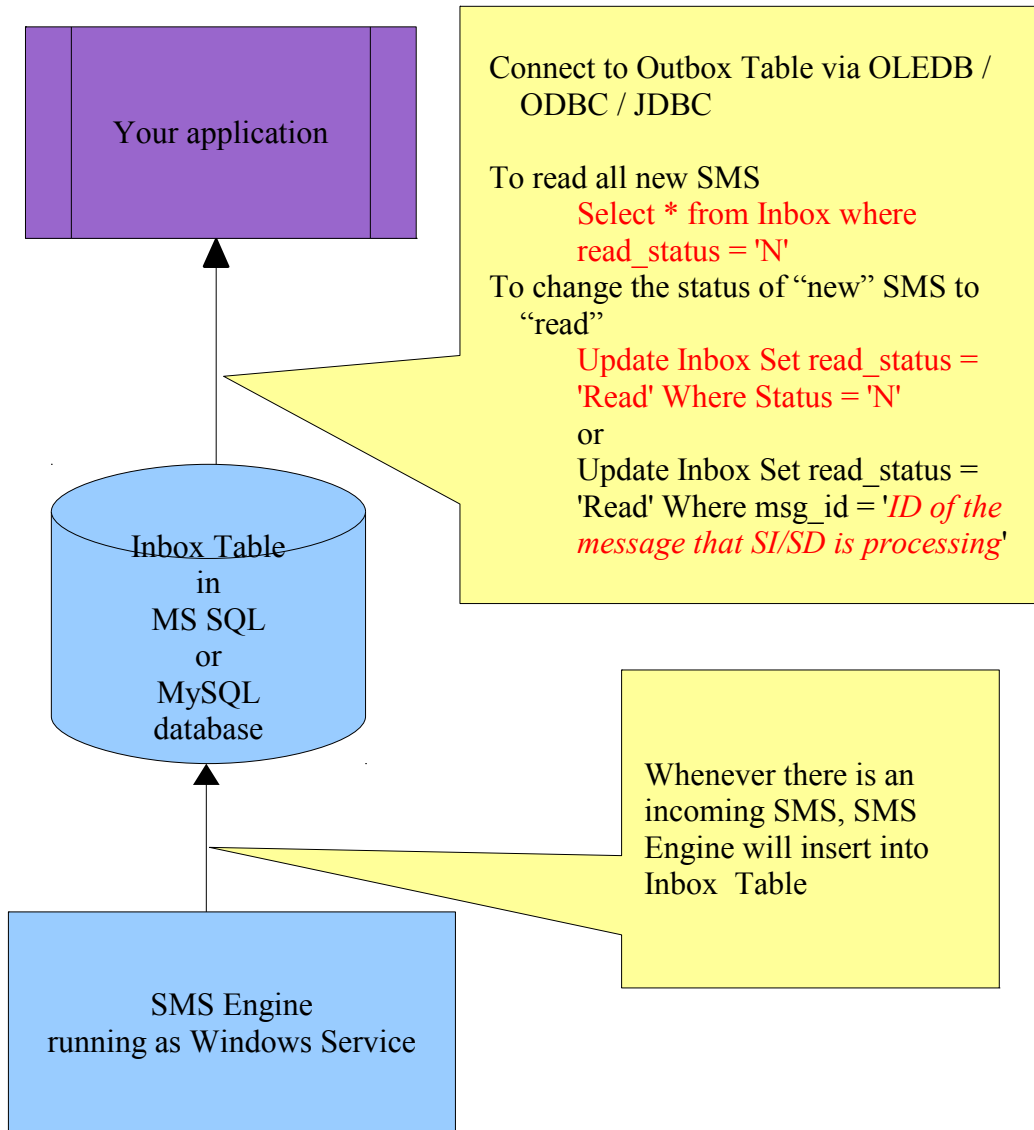
1. System integrators and software developers must possess knowledge of:
  - a) Microsoft SQL Server, Microsoft SQL Server Enterprise Manager, Microsoft SQL Server Query Analyzer;
  - b) MySQL Database Server;
  - c) Database programming
    - ODBC, ADO, ADO.net; and
    - SQL statement
  - d) Administering Windows Service
2. SMS modem **Type SGDK** supplied by MOBITEK System Sdn. Bhd.
3. SIM card(s)
4. Supported operating system: -
  - a) Windows 2000 Server 32 bit;
  - b) Windows 2003 Server 32 bit and 64 bit;
  - c) Windows 2008 Server 32 bit and 64 bit;
  - d) Windows XP Pro 32 bit and 64 bit;
  - e) Windows Vista Business Edition 32 bit and 64 bit; or
  - f) Windows 7 32 bit and 64 bit.
5. Microsoft .NET Framework Version 2.0
6. SQL Server:-
  - a) Microsoft SQL Server 2000 / 2003 / 2008 Enterprise Edition;
  - b) Microsoft SQL Server 2005 Express Edition;
  - c) MySQL version 4.1 and above with MySQL ODBC driver version 5.1 in Windows OS; or
  - d) MySQL version 4.1 and above with MySQL ODBC driver version 5.1 in Linux OS.

# 10. SYSTEM ARCHITECTURE

## Sending SMS



## Reading / Receiving SMS





## 11. INSTALLATION of SMS ENGINE ENTERPRISE EDITION

1. SMS Engine can be installed in these variations depending on your system design:-
  - d) **1:4:1** – install *SMS Engine* on 1 server connected with 4 units of *GSM Modem Type SGDK* and connected to 1 database
  - e) **2:2:2** – install *SMS Engine* on 2 servers; each server with 2 units of *GSM Modem Type SGDK*; 2 SMS Engines are connected to 2 different databases
  - f) **4:1:4** – install *SMS Engine* on 4 servers; each server with 1 units of *GSM Modem Type SGDK*; 4 SMS Engines are connected to 4 different databases

*Note: For 2:2:2 configuration and 4:1:4 configuration, the database must be separated, i.e. centralised database is not supported.*

2. To avoid confusion, we strongly recommend that you install according to **1:4:1 configuration**.
3. Install *Microsoft .NET Framework Version 2.0*
  - a) install it from the CD; or
  - b) download from (<http://www.microsoft.com/downloads/details.aspx?familyid=0856eacb-4362-4b0d-8edd-aab15c5e04f5&displaylang=en>)
4. Add a new database or use existing database.
5. Execute SQL script (in CD) to add new tables to a new database or existing database.
  - a) For MS SQL database server, the sql script is "MSSQL.sql";
  - b) For MySQL database server, the sql script is "MySQL.sql".
6. The SQL script will generate 4 tables:
  - a) inbox
  - b) outbox
  - c) modem\_state
  - d) retry\_send

*Note: Please make sure you have back-up your database before executing "smsengine.sql". We will not be held responsible for any data loss nor data corruption.*

7. Connect **MOBITEK®** SMS MODEM or MobiGATE™ with PC or server
  - a) refer to the respective installation guide
8. Determine the COM port number which the modem is connected to.
  - a) For assistance, please refer to <http://www.mobitek.com.my/support/kb/KB001.htm>
9. Install **SMS Engine - Enterprise Edition**.
  - a) Run the file "Setup\_SMSEngine5.exe" (from CD).

10. Using *Notepad*, edit the configuration file “config.xml”, located at “C:\Program Files\SMS Engine Enterprise Edition\config.xml”. The contents of config.xml is as follows:

```

<SMSConfig>
<!-- after editing this configuration file, save file, restart the service in order to
allow new setting to take effect -->
<RETRY_SEND>3</RETRY_SEND> <!-- enter a number; if "0" means no retry
-->
<ROUTING>FALSE</ROUTING> <!-- enter "TRUE" or "FALSE" -->

<MODEM_LIST>
  <MODEM>
    <ID>1</ID>
    <PORT>11</PORT>
    <ENABLED>true</ENABLED> <!-- enter "TRUE" or "FALSE" -->
    <MODE>B</MODE> <!-- enter "B" or "S" or "R" -->
    <TARGET_PREFIX>013,017</TARGET_PREFIX> <!-- use "comma" as
delimiter -->
  </MODEM>

  <MODEM>
    <ID>2</ID>
    <PORT>12</PORT>
    <ENABLED>FALSE</ENABLED>
    <MODE>B</MODE>
    <TARGET_PREFIX>013,017</TARGET_PREFIX>
  </MODEM>

  <MODEM>
    <ID>3</ID>
    <PORT>13</PORT>
    <ENABLED>FALSE</ENABLED>
    <MODE>B</MODE>
    <TARGET_PREFIX>013,017</TARGET_PREFIX>
  </MODEM>

  <MODEM>
    <ID>4</ID>
    <PORT>14</PORT>
    <ENABLED>FALSE</ENABLED>
    <MODE>B</MODE>
    <TARGET_PREFIX>013,017</TARGET_PREFIX>
  </MODEM>
</MODEM_LIST>

<DATASOURCE>
  <DBTYPE>MYSQL</DBTYPE> <!-- enter "MYSQL" or "MSSQL" -->
  <SERVER>localhost</SERVER>
  <USERNAME>root</USERNAME>
  <PASSWORD>root</PASSWORD>
  <DATABASENAME>smsengine5_1</DATABASENAME>

  <!-- only for MS SQL -->
  <AUTHMODE>WIN</AUTHMODE> <!-- enter "SQL" or "WIN" -->
</DATASOURCE>

</SMSConfig>

```

## 11. This table describe the node:

NODE	VALUE	DESCRIPTION
<RETRY_SEND>3</RETRY_SEND>	An integer, starting from 0 0: no retry 3: retry 3 times	Enter the number of retry in the event if SMS cannot be sent. The total number of sending is 1 + number of retry. This is a global setting that will affect all modems.
<ROUTING>False</ROUTING>	"True" or "False"	Enter "false" to disable routing feature. Or "true" to enable it. This is a global setting that will affect all modems. If it is set to "true", then the modem will send SMS only to numbers with prefix according to <TARGET_PREFIX>017,012</TARGET_PREFIX>.
<MODEM> ... </MODEM>	N/A	Setting of each modem. If there are 4 modems, then there must be 4 <MODEM> nodes
<ID>1</ID>	An integer, starting from 1	<ID>1</ID> this modem's ID is "1"
<PORT>9</PORT>	An integer, starting from 1	COM port of which the modem is connected. Please refer to "Device Manager > Ports" to find out the COM port numbers. COM port is NOT the numbering on the adapter which is 1, 2, 3, 4.
<ENABLED>>true</ENABLED>	"True" or "False"	To enable or disable the modem.
<MODE>B</MODE>	"B", "R", or "S"	"B" – bi-directional or two way, read and send SMS; "R" – one way read SMS only; "S" – one way send SMS only
<TARGET_PREFIX>017,012</TARGET_PREFIX>	<ul style="list-style-type: none"> <li>numeric, if multiple prefix then separate with comma</li> <li>"empty"</li> <li>"*" wild card</li> </ul>	<ul style="list-style-type: none"> <li>"017,012" – this modem will only SMS to numbers with prefix 017 and 012.</li> <li>"empty" – this modem will not send out any SMS</li> <li>"*" – this modem will send SMS to any numbers</li> </ul> <p>The routing must be set to &lt;ROUTING&gt;&gt;true&lt;/ROUTING&gt; in order for the target prefix to work, else it will be ignored</p>
<MODEM> <ID>1</ID> <PORT>9</PORT> <ENABLED>>true</ENABLED> <TARGET_PREFIX>017,012</TARGET_PREFIX> </MODEM>	N/A	Modem ID 1 is connected to COM port number 9. It is enabled, and it will only send SMS to numbers starting with 017 and 012 (provided that <ROUTING>true</ROUTING>)
<DATASOURCE> ... </DATASOURCE>	N/A	Settings for <i>MS SQL Database Server</i> or <i>MySQL Database Server</i>
<DBTYPE>MYSQL</DBTYPE>	"MYSQL" or "MSSQL"	Type "MYSQL" if database server is MySQL. Type "MSSQL" if database server is MSSQL
<SERVER>192.168.1.66</SERVER>	IP address or name of server	If <i>MS SQL Express Edition</i> is used, then add a suffix – "\SQLEXPRESS", e.g. 127.0.0.1\SQLEXPRESS
<USERNAME>sa</USERNAME>	User name	Login account of the database server
<PASSWORD>sa</PASSWORD>	Password	Login account of the database server
<DATABASENAME>SMSEE</DATABASENAME>	Name of the database	
<AUTHMODE>SQL</AUTHMODE>	"SQL" or "WIN"	"SQL" for SQL authentication mode; "WIN" for Windows authentication mode.

## 12. Save "config.xml" after all changes are made.

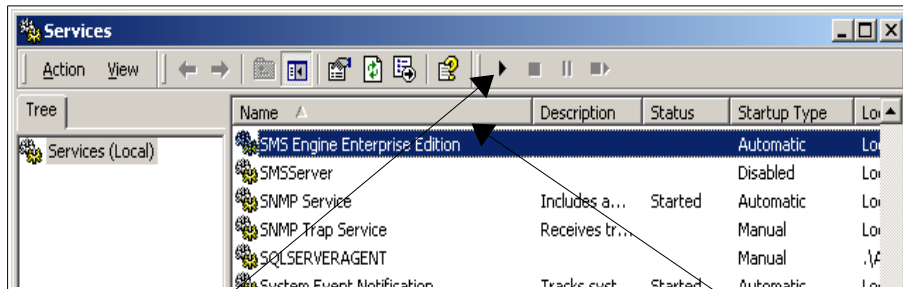
**MOBITEK** System Sdn .Bhd. (207015-D)

6th Floor, Suite 16, IOI Business Park, Persiaran Puchong Jaya Selatan, Bandar Puchong Jaya, Puchong 47170, Selangor, Malaysia.

Tel: +603-80644288 Fax: +603-80642109 Web: www.mobitek.com.my

13. Make sure that all GSM modems are powered on.

14. Start the service.



a) Go to “Administrative Tools > Services”, look for service called “SMS Engine Enterprise Edition”, and click start.

b) At later stage, you can configure the service to start automatically at “Start-up type: Automatic”.

15. Open log file to see if service is successfully started.

a) Goto “C:\Program Files\SMS Engine Enterprise Edition\log”, log file is saved as “yyyy\_mm\_dd.log”.

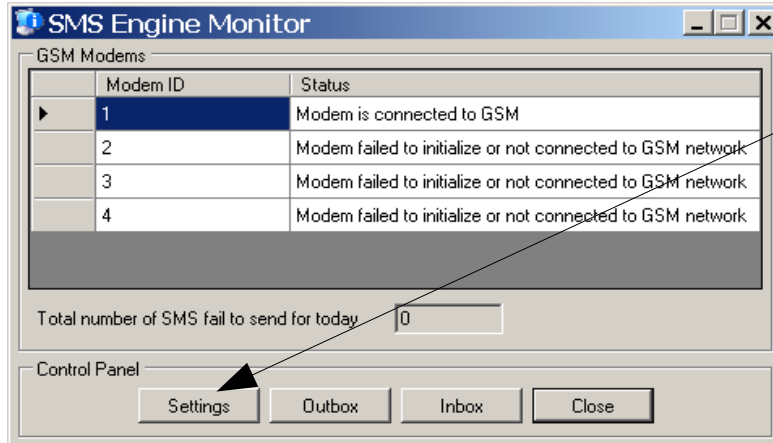
b) Open current log file. If service is successfully started, then you will see this message:

```
14:08:27 Modem with ID = 2 initialized
14:08:27 Modem with ID = 1 initialized
14:08:28 SMS Engine Enterprise Edition service started
```

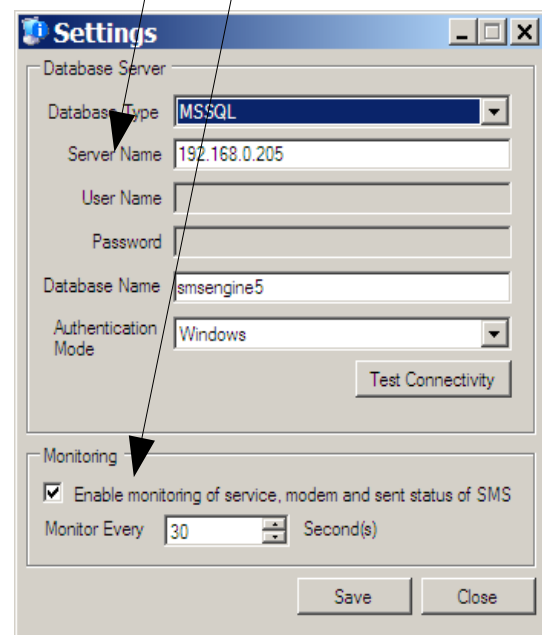
16. Please report any broken links on this section to [support2007@mobitek.com.my](mailto:support2007@mobitek.com.my)

## 12. INSTALLATION of SMS ENGINE MONITOR

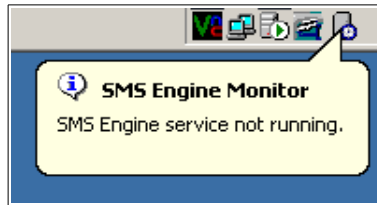
1. Make sure you have successfully installed SMS Engine - Enterprise Edition.
2. Install SMS Engine Monitor
  - a) Run "Setup\_SMSMonitor.exe"
3. Open SMS Engine Monitor



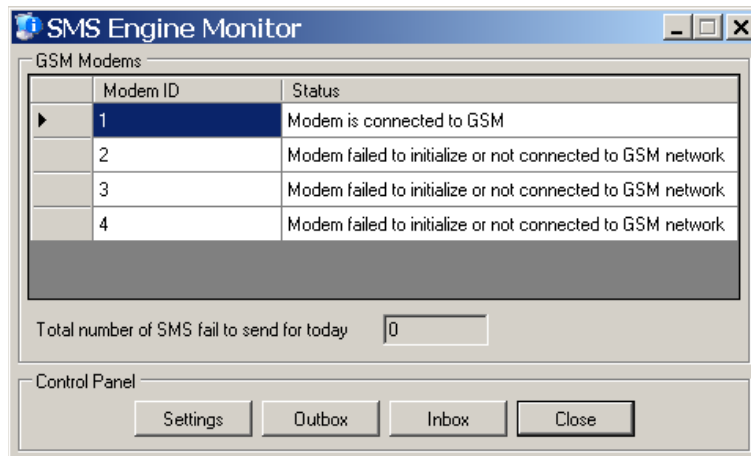
4. Click "Settings" button.
5. Configure the Database Server
6. Check to enable monitoring
7. Click "Save" button.



## 13. ALERT MESSAGE DISPLAYED BY SMS ENGINE MONITOR



ALERT MESSAGE	POSSIBLE CAUSE	SOLUTION
SMS Engine service not running.	<ol style="list-style-type: none"> <li>1. Service is not started.</li> </ol>	<ol style="list-style-type: none"> <li>1. Start the service.</li> </ol>
GSM modem failure detected.	<ol style="list-style-type: none"> <li>1. GSM modem power is not turn on.</li> <li>2. GSM modem not connected to server.</li> <li>3. GSM modem not connected at the right COM port.</li> <li>4. GSM modem not connected to GSM network due to account expire, SIM card is barred, SIM lock, etc.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check power. Check the red LED of modem, ensure it is blinking.</li> <li>2. Check the USB cable, PCI cable, or serial cable. Make sure the connection is tight.</li> <li>3. Check the COM port number.</li> <li>4. Disable SIM lock by using mobile phone. Check the credit balance, ensure the account has credit. Check the validity of the SIM, ensure it is not barred.</li> </ol>
SMS fail to send detected.	<ol style="list-style-type: none"> <li>1. One of more messages in Outbox table having sent_status = 'F'.</li> </ol>	<ol style="list-style-type: none"> <li>1. Increase the value in &lt;RETRY&gt;</li> </ol>



ALERT MESSAGE	POSSIBLE CAUSE	SOLUTION
Modem is connected to GSM	Modem is working fine.	
Modem fail to initialize or not connected to GSM network.	<ol style="list-style-type: none"> <li>1. GSM modem power is not turn on, the red LED is not lighted.</li> <li>2. GSM modem not connected to server.</li> <li>3. GSM modem not connected at the right COM port.</li> <li>4. GSM modem not connected to GSM network, the red LED is on but not blinking, due to account expire, SIM card is barred, etc.,.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check power. Check the red LED of modem, ensure it is blinking.</li> <li>2. Check the USB cable, PCI cable, or serial cable. Make sure the connection is tight.</li> <li>3. Check the COM port number.</li> <li>4. Disable SIM lock by using mobile phone. Check the credit balance, ensure the account has credit. Check the validity of the SIM, ensure it is not barred.</li> </ol>
Modem not enabled.	In "config.xml" file, the modem is set to: <code>&lt;ENABLE&gt;FALSE&lt;/ENABLE&gt;</code>	
Modem is enabled but not in use.	In "config.xml" file, the modem is set to: <code>&lt;ENABLE&gt;TRUE&lt;/ENABLE&gt;</code> but the <i>SMS Engine Service</i> is not started.	

## 14. OUTBOX TABLE – SEND SMS

To send out SMS in text mode, the SQL statement is:

**Insert into Outbox (msg\_id, message, destination) values ('1', 'Hello!', '+60172233111')**

To send out SMS having Chinese character, the SQL statement is:

**Insert into Outbox (msg\_id, message, destination, msg\_type) values ('1', '你好', '+60172233111', 'U')**

SMS Engine implements FIFO (first in first out) rule for processing messages to be send out. That is the 1<sup>st</sup> message that is inserted into the table will be the 1<sup>st</sup> message to be send out.

FILED NAME	DATA TYPE	DESCRIPTION	REMARK
msg_id	varchar (primary key)	Outgoing SMS unique identifier key.	Value required to send out SMS.
message	varchar	Outgoing message. Maximum length is 160 characters for text. If exceeded, then SMS Engine will truncate to 160 characters. Maximum length is 70 characters for Chinese.	Value required to send out SMS. If you want to send out this SMS as Chinese (Unicode) format, then you must insert a 'U' in the "msgtype" field.
msg_ref	integer	Message reference given by the SMSC.	Automatically generated by SMS Engine. Reserved. Do not modified.
datetime_queued	datetime	Date and time of outgoing SMS queued to be send. Format according to system's setting.	Automatically generated by SMS Engine. Reserved. Do not modified.
destination	varchar	Recipient's mobile number	Value required to send out SMS. The format must be '+country code then prefix then number' e.g. +60123477527 +6598770270 If you do not insert +country code e.g. 0123477527, the message can still be send out but there will not be any delivery report.
sent_status	varchar	Status of outgoing SMS 'P' – Pending 'L' – Processing 'S' – Sent 'R' – Retry 'F' – Fail to send	Default value is 'P'. Automatically generated by SMS Engine. Reserved. Do not modified.
datetime_sent	datetime	Date and time of outgoing SMS being sent.	Automatically generated by SMS Engine. Reserved. Do not modified.
delivery_status	varchar	'D' – delivered 'F' – fail to deliver 'U' – unknown status	Whenever there is a delivery status report from the network, it will be automatically inserted by SMS Engine. Reserved. Do not modified.
datetime_delivered	datetime	Date and time of outgoing SMS being delivered to recipient.	Whenever there is a delivery status report from the network, it will be automatically inserted by SMS Engine. Reserved. Do not modified.
modem_id	varchar	Modem that sends out SMS.  Correspond to the modem ID as described in "config.xml".	Automatically generated by SMS Engine. Reserved. Do not modified.
msg_type	varchar	To indicate whether to send out this SMS in text or Chinese (Unicode) format.	Default value is 'P'. Insert 'U' to send out SMS in Chinese format.
datetime_schedule	datetime	To indicate when this message/record is to be send.	Default value 'null'.  Scheduling: insert date and time if you want to schedule this message to be send out later.  Prioritization: earliest

**MOBITEK** System Sdn .Bhd. (207015-D)

6th Floor, Suite 16, IOI Business Park, Persiaran Puchong Jaya Selatan, Bandar Puchong Jaya, Puchong 47170, Selangor, Malaysia.

Tel: +603-80644288 Fax: +603-80642109 Web: www.mobitek.com.my



FILED NAME	DATA TYPE	DESCRIPTION	REMARK
			<p>"datetime_schedule" will be send out, and all "datetime_schedule = null" will be last to send out.</p>

## 15. INBOX TABLE – READ SMS

SQL Statement:

- To read all new SMS  
**Select \* from Inbox where read\_status = 'N'**
- To change the status of new SMS to "read"  
**Update Inbox Set read\_status = 'Read' Where Status = 'N'**  
 or  
**Update Inbox Set read\_status = 'Read' Where msg\_id = 'ID of the message that SI/SD is processing'**

FILED NAME	DATA TYPE	DESCRIPTION	REMARK
msg_id	varchar	Incoming SMS unique identifier key.	Automatically generated by SMS Engine. Reserved. Do not modified.
message	varchar	Incoming SMS. Maximum of 160 characters.	Whenever there is an incoming SMS, it will be automatically inserted by SMS Engine. Reserved. Do not modified.
datetime_recv	datetime	Date and time of incoming SMS received by server.	Whenever there is an incoming SMS, it will be automatically inserted by SMS Engine. Reserved. Do not modified.
receive_from	varchar	Sender Mobile number of incoming SMS .	Whenever there is an incoming SMS, it will be automatically inserted by SMS Engine. Reserved. Do not modified.
read_status	varchar	Status of incoming SMS.  'N' – New (default value)	Whenever there is an incoming SMS, 'N' will be automatically inserted by SMS Engine.  SI/SD can change the value after reading the SMS.  <u>Value can be modified.</u>
modem_id	varchar	Modem that receives incoming SMS.  Correspond to the modem ID as described in "config.xml".	Automatically generated by SMS Engine. Reserved. Do not modified.
scts	datetime	Date and time of incoming SMS received by SMS centre. It is <b>NOT</b> the date, and time of the server.	Automatically generated by SMS Engine. Reserved. Do not modified.

**MOBITEK** System Sdn .Bhd. (207015-D)

6th Floor, Suite 16, IOI Business Park, Persiaran Puchong Jaya Selatan, Bandar Puchong Jaya, Puchong 47170, Selangor, Malaysia.

Tel: +603-80644288 Fax: +603-80642109 Web: www.mobitek.com.my

## 16. RETRY\_SEND TABLE

This table is used for logging number of retries for a message.

FILED NAME	DATA TYPE	DESCRIPTION	REMARK
id	automatic increment		Automatically generated by SMS Engine. Reserved. Do not modified.
msg_id	varchar	The message ID of the outbox table. [outbox].[msg_id]	Automatically generated by SMS Engine. Reserved. Do not modified.
modem_id	varchar	The modem used for retrying  Correspond to the modem ID as described in "config.xml".	Automatically generated by SMS Engine. Reserved. Do not modified.
total_retry	integer	Number of retries done by the particular modem.  The number should be less than or equal to <RETRY_SEND>3</RETRY_SEND> as described in "config.xml".	Automatically generated by SMS Engine. Reserved. Do not modified.

For example, if a record with ID "118" has this value:-

FILED NAME	VALUE
id	118
msg_id	A3210
modem_id	1
total_retry	3

It means – modem with ID number 1 had retried 3 times to send out the message having ID "A3210".

## 17. FREQUENTLY ASKED QUESTIONS

Last updated on 28<sup>th</sup> of July, 2011

**Q: I am using U Mobile post-paid, why does the Engine's log shows “not able to connect to GSM network” and the red LED on modem is on but not blinking?**

A: U Mobile post-paid is 3G only. Therefore, the modem is unable to connect to GSM network using a 3G SIM card. Please request a 2G SIM card from U Mobile.

**Q: We are facing issue – when sending the symbol “~”, the SMS received on hand phone shows “ú” or a “square” or a “?”, what is wrong?**

A: These characters are NOT the default alphabet defined by the GSM standard:-

{ } [ ] ~ | ₩ and the Euro symbol: €

If you want to use the above character/alphabet, then you need to set "msg\_type=U" and limit your maximum number of character per SMS to 70.

**Q: The light of the first modem is not blinking but constantly on, while the rest of the 3 modems are blinking.**

A: Do the following:-

1. Make sure the SIM lock is disabled. Use your hand phone to disable the SIM lock function.
2. Remove SIM cards, use a rubber or eraser, gently rub the gold area of the SIM card to clean it.
3. The SIM card may be defective exchange for another one.
4. Check your balance or expiry date if you are using pre-paid.

**Q: I am using SIM cards having prepaid, how do I check my balance without stopping the service?**

A: You can goto the web site of the GSM network operator (TELCO/CELCO/carrier) and check the balance on-line. Here are a list of the web sites for each of the CELCO:-

<b>Hotlink</b>	<a href="http://www.hotlink.com.my/">http://www.hotlink.com.my/</a>
<b>Digi</b>	<p><a href="https://www.digi.com.my/ocs/myaccount/main/home.do">https://www.digi.com.my/ocs/myaccount/main/home.do</a></p>
<b>Xpax</b>	<a href="http://www.xpax.com.my/index.php">http://www.xpax.com.my/index.php</a>

**MOBITEK** System Sdn .Bhd. (207015-D)

6th Floor, Suite 16, IOI Business Park, Persiaran Puchong Jaya Selatan, Bandar Puchong Jaya, Puchong 47170, Selangor, Malaysia.

Tel: +603-80644288 Fax: +603-80642109 Web: [www.mobitek.com.my](http://www.mobitek.com.my)



**Q: I am using SIM cards having prepaid, I want to reload or top-up my account, how do I do so without stopping the service or removing the SIM card?**

A: You can go to the web site of the GSM network operator (TELCO/CELCO/carrier).

**Q: The log file is good for trouble shooting. Any setting for us to control the size of the file?**

A: It is good to keep log for audit and trouble shooting purposes. And nowadays, server has large hard disk capacity, so the log file hogging space is not an issue.

**Q: The service will always try to initialize with GSM modem. What about database connection? What if the service started before SQL Server started? Will the service try to re-connect with SQL server?**

A: Yes, it will. When the SMS Engine Enterprise Edition service is started, it will always try to initialize the GSM modem, and will always try to connect to SQL server.

In order that the service is not stopped (for whatever reasons), go to "Administrative Tools > Services", right click on "SMS Engine > Properties > Recovery tab".

Under "First failure:" select "Restart service"

Under "Second failure:" select "Restart service"

Under "Subsequent failures:" select "Restart service"

This will make sure that the *SMS Engine – Enterprise Edition* service is always running, and it will always attempt to initialise the GSM modem and to connect to the database.

However, if your *SQL Server* fails, then not only *SMS Engine – Enterprise Edition* will not run properly, other applications are affected as well. Therefore, it is your responsibility to ensure that *SQL Server* does not fail.

**Q: Can I modify the structure database or tables?**

A: It is important that the database schema or structure of 3 tables (inbox, outbox, modem\_state) are intact. You must not modify the fields nor data type. Otherwise the SMS Engine will fail to operate properly.

You must use the SQL script provided to create 3 tables, and you must back-up your database before you do so. We do not assume any liability if there are any data corruption or data loss.

**Q: How does the SMS Engine process each record in outbox table in order to send out SMS?**

A: The process flow is as follows

P > L > S

or

P > L > R > S

or

P > L > R > F

The final value is either 'S' or 'F'.

*Note: System Integrator must not enter any values into "sent\_status" field, doing so will disrupt the flow or will cause SMS Engine to process the record improperly.*

**Q: Do I need to enter "P" in "sent\_status" field?**

A: You do not need to enter the value 'P' for "sent\_status", it is automatically inserted. The SMS Engine will automatically update the "sent\_status" field.

**Q: May we know how to sequence the SMS Engine process the records in "outbox" table? In other words, which message is sent out first.**

A: The rule for processing record in "outbox" table is **FIFO**. The first record inserted into "outbox" table will be the 1st record sent out.

**Q: What is the delay for next retry?**

A: There is a delay of 2 seconds.

Note: if you have 3 records in outbox, if the 1st record fail to send out, it will retry until the number of times stated in <RETRY\_SEND>3</RETRY\_SEND> before moving to 2nd record, will do the same, before moving to 3rd record.

**Q: What is the purpose of "modem\_state" table?**

A: You must not touch the "modem\_state" table, it is irrelevant to your application. It used by the *SMS Engine Monitor* for reporting purpose.

**Q: Can we have a centralised database if we install the SMS Engine in a 2x2 configuration?**

A: The current SMS Engine – Enterprise Edition **does not support centralised database**. I.e. if 2 or more *Engines* are installed on different servers, then each *Engine* must have its own database.

Nevertheless, if you need a "centralised database mode", we are able to develop a special edition with a centralised queue manager. Please let us know, we will quote the license fee to you.

An alternative solution is that your application will manage the queue — you will decide whether to insert record into "database 1" or "database 2".

**Q: Will you be releasing a SMS Engine - Enterprise Edition that will work on Windows 64bit very soon?**

**MOBITEK** System Sdn .Bhd. (207015-D)

6th Floor, Suite 16, IOI Business Park, Persiaran Puchong Jaya Selatan, Bandar Puchong Jaya, Puchong 47170, Selangor, Malaysia.

Tel: +603-80644288 Fax: +603-80642109 Web: www.mobitek.com.my

A: No. But there is a solution. Install a **virtual machine** in 64 bit machine. Install Windows 32 bit inside virtual machine. Install SMS Engine – Enterprise Edition inside virtual machine. List of recommended virtual machine:

- VMware Server (<http://www.vmware.com/products/server/>)
- Microsoft Virtual PC 2007  
(<http://www.microsoft.com/windows/downloads/virtualpc/default.mspx>)
- Microsoft Virtual Server 2005  
(<http://www.microsoft.com/windowsserversystem/virtualserver/>)

Guide on using serial port on VMWare --

[http://www.vmware.com/support/ws3/doc/ws32\\_devices3.html](http://www.vmware.com/support/ws3/doc/ws32_devices3.html)

Guide on using serial port on Microsoft Virtual Server 2005 --

<http://www.microsoft.com/windowsserversystem/virtualserver/evaluation/virtualizationfaq.mspx>

Look under "Q. Is there a list of the Virtual Server 2005 R2 emulated hardware?"

**Note:-**

*1. We have not tested SMS Engine running in an environment as described above. Therefore you are responsible for configuring virtual machine and request support from the vendor of virtual machine.*

*2. A customer our ours have successfully run SMS Engine on this system configuration:-*

- *Host server -- windows 2003 Server (64 bit)*
- *Install Microsoft Virtual PC 2007 in windows 2003 server (64 bit)*
- *Install windows XP Pro (32 bit) inside virtual PC 2007*
- *Install SMS Engine in windows XP Pro (32 bit)*

Some advice on migrating SMS Engine from 32 bit to virtual machine in 64 bit machine:-

- do not migrate all data (inbox table and outbox table) over to virtual machine first
- if required, install USB driver (that comes with the USB converter) and connect the GSM modem to 64 bit machine, and configure virtual machine to see if it can detect a new "COM port" in "Device Manager > Ports"
- do not look in "Device Manager > Modems", it will not show as "modem"
- install a copy of SMS Engine in virtual machine with Win 2003 server
- run a test to see if it can send and receive SMS
- if test result is ok, then only migrate over to virtual machine

## 18. TIPS

These are import factors to ensure SMS Engine operates smoothly:

1. GSM modem with SIM card connected to server
2. config.xml properly configured
3. SQL script is executed, and 3 tables (inbox, outbox, modem\_state) are created or added to your preferred database name
4. SMS Engine service is started
5. Other factors which are beyond are our control that will also affect SMS Engine are:
  - a) whether MS SQL server is running
  - b) whether network is running, and firewall is opened for SMS Engine (if database server and SMS Engine are on separate machines)
  - c) whether there is database connection
  - d) whether PC / server / Windows is running
  - e) whether GSM network TELCO is running
  - f) whether SIM card is barred
  - g) whether SIM card has money

## 19. TERMS AND CONDITIONS ON SUPPORT

Please write to [support2007@mobitek.com.my](mailto:support2007@mobitek.com.my) with:

1. company name
2. invoice number (located at back of modem)
3. version number of the SMS Engine - Enterprise Edition (right click on "C:\Program Files\SMS Engine Enterprise Edition\SMSSvc.exe", select "Properties > Version tab")
4. attach log file (located at "C:\Program Files\SMS Engine Enterprise Edition\log")
5. attach screen capture

**MOBITEK** System Sdn .Bhd. (207015-D)

6th Floor, Suite 16, IOI Business Park, Persiaran Puchong Jaya Selatan, Bandar Puchong Jaya, Puchong 47170, Selangor, Malaysia.

Tel: +603-80644288 Fax: +603-80642109 Web: [www.mobitek.com.my](http://www.mobitek.com.my)



## 20. APPENDIX 1: RELEASE NOTE

### Version 3.1

1. dateTime\_sent -- only record time when "sent\_status = S".
2. Retry -- pause for 2 seconds before retrying. Previously, Engine will retry immediately
3. Retry Value default is 0. Previously, default value is 3.
4. dateTime\_queue -- automatically insert current date and time of the system
5. Queue Manager will not assign any record to modem that is not connected with GSM network. Effective, this will increase the speed of sending out SMS. Previously, it will, and this result in slow down of the speed.

### Version 3.2

1. Improve speed of sending out SMS. Previously, **SMS Engine** would read all incoming messages from memory of SIM card before processing records in outbox table. Now, it will only read for a maximum of 3 messages, and then process records in outbox table.

### Version 3.3

1. Do away with Windows registry for both **SMS Engine** and **SMS Monitor**.

### Version 5.1

1. Configure the direction of individual modem:-
  - a) 2 way send and read SMS;
  - b) 1 way read SMS; or
  - c) 1 way send SMS.
2. Add scheduling of message/record.
3. Previously in version 3, two separate set-up files are required for each SQL database server. In version 5, both files are combined into one set-up file that can support either MS SQL or MySQL database server.
4. Field names have been changed

TABLE	OLD FIELD NAME	NEW FIELD NAME
OUTBOX	mrf	msg_ref
OUTBOX	msgtype	msg_type

### Version 5.2

1. Do away with Windows registry for both **SMS Engine** and **SMS Monitor**.

**MOBITEK** System Sdn .Bhd. (207015-D)

6th Floor, Suite 16, IOI Business Park, Persiaran Puchong Jaya Selatan, Bandar Puchong Jaya, Puchong 47170, Selangor, Malaysia.

Tel: +603-80644288 Fax: +603-80642109 Web: www.mobitek.com.my

**Version 5.3**

1. The current matching criteria for delivery status report is "message reference" and "mobile number", change the criteria to "message reference" and the last 6 digit of mobile number.
2. Bug Fixed – **SMS Engine** has successfully initialize the modem, it did not log "Modem with ID = 1 initialized" in text file but update [modem\_state].[status] to 2, this happen if there are 2 or more modems.

**Version 5.4**

1. Bug Fixed – each modem's thread writes to a log file, but will cause I/O error if 2 or more threads try to open and write the log file at the same time.

**Version 5.5**

2. Bug Fixed – The condition "MODE = R" is not applied when "ROUTING = True".
3. Logic Corrected – in version 5.4 when "TARGET\_PREFIX" is empty, the Engine still uses that modem to send out SMS; in version 5.5 that modem WILL NOT be used to send out any SMS because there is no matching of target prefix (as it is empty).
4. SMS Engine Monitor – the default monitoring interval is set to 5 seconds (instead of 30 seconds)
5. SMS Engine Monitor – added status, "modem is enabled but SMS Engine service is not running".

**Version 5.6**

1. New Feature: wildcard – If <ROUTING>TRUE</ROUTING> and <TARGET\_PREFIX>\*</TARGET\_PREFIX> then the modem can be used to send out SMS to any destination/numbers because "\*" is a wild card
2. New Feature: PRIORITIZATION – earliest "datetime\_schedule" will be send out, and all "datetime\_schedule = null" will be last to send out
3. New Feature: when SMS Engine is initialized, if there is ODBC (database) error, it will not send nor read SMS
4. New Feature: dynamic queue size based on the number of active/enable modems. The queue or "sent\_status = L" size retrieved from "outbox" table is configurable, however the configuration is hidden.
5. New Feature: Windows OS 64 bit is supported

**Version 5.7**

1. Bug Fixed:ERROR [22007] [Microsoft][ODBC SQL Server Driver][SQL Server]The conversion of a varchar data type to a datetime data type resulted in an out-of-range value.  
By converting the ENGINE and MONITOR to be independent of the system locale/date format.

**Version 5.8**

1. Bug Fixed: change all SQL to lower case to match with the table names that are in lower case. Otherwise, MySQL running on Linux will result error -- "ERROR [42S02] [MySQL][ODBC 5.1 Driver] [mysqld-5.1.63-cll]Table 'sweetcoc\_sms.OUTBOX' doesn't exist"

**Version 5.8.1**

1. Bug Fixed: ERROR [42000] [MySQL][ODBC 5.1 Driver][mysqld-5.1.63-cll]You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'set sent\_status='L' where msg\_id='1' at line 1

## 21. APPENDIX 2: GUIDE TO ADD 1 OR MORE GSM MODEM TO EXISTING SMS ENGINE

As 1 copy of SMS Engine comes with 4 modem access license (MAL), it can only control up to 4 units of MOBITEK Q24 SMS MODEM. If you begin with 1 unit, and later you want to add 1 or more, please follow these steps:

1. Stop “SMS Engine Enterprise Edition” service.
2. Back-up your database.
3. Back-up the CD (SMS Engine – Enterprise Edition), as there is no download link on our web site. You need the CD if you want to roll-back or restore.
4. Switch off the power to all existing MOBITEK Q24 SMS MODEM..
5. Connect additional or new MOBITEK Q24 SMS MODEM to server / machine.
6. Use notepad (any text editor) to edit “config.xml” by adding 1 or more <MODEM> node. Refer to **text highlighted in yellow** at table below. Save file after changes are made.

```

<MODEM_LIST>
  <MODEM>
  <ID>1</ID>
  <PORT>5</PORT>
  <ENABLED>true</ENABLED>
  <TARGET_PREFIX></TARGET_PREFIX>
  </MODEM>

  <MODEM>
  <ID>2</ID>
  <PORT>6</PORT>
  <ENABLED>true</ENABLED>
  <TARGET_PREFIX></TARGET_PREFIX>
  </MODEM>

</MODEM_LIST>
    
```

7. Switch on power to all MOBITEK Q24 SMS MODEMs.
8. Make sure that all MOBITEK Q24 SMS MODEMs' red LED is blinking.
9. Start the service.
10. Open log file to see if service is successfully started and all modems are initialised. Goto “C:\Program Files\SMS Engine Enterprise Edition\log”, log file is saved as “yyyy\_mm\_dd.log”.

```

(time stamp) Modem with ID = 1 initialized
(time stamp) Modem with ID = 2 initialized
(time stamp) SMS Engine Enterprise Edition service started
    
```

## 22. APPENDIX 3: GUIDE TO INCREASE MODEM ACCESS LICENSE FROM 4 TO 8

This section applies if you are increasing the number of GSM modem from 4 to 8 units.

As 1 copy of SMS Engine comes with 4 modem access license (MAL), it can only control up to 4 GSM modems. To add more modem, you need to purchase 1 additional copy which will allow you to control up to 8 GSM modems ( 4 MAL x 2 ).

1. Stop SMS Engine service.
2. Back-up your database.
3. Back-up your “config.xml” file. E.g. Rename the file to “config\_backup.xml”.
4. Uninstall **SMS Engine – Enterprise Edition**.
5. Switch off the power to all GSM modems.
6. Connect 1 or more additional GSM modems to the server/PC. If your server does not have enough serial port, it is highly recommended to purchase *1 PCI to 4 serial port expansion card* from us.
7. Run the new set-up file “SMSService.exe” in the CD.
8. Rename “config\_backup.xml” to “config.xml”. This will preserve your configuration.
9. Use notepad (any text editor) to edit “config.xml” by adding 1 or more <MODEM> node. Refer to **text highlighted in yellow** at table below. Save file after changes are made.

```

<MODEM_LIST>
  <MODEM>
  <ID>1</ID>
  <PORT>5</PORT>
  <ENABLED>true</ENABLED>
  <TARGET_PREFIX></TARGET_PREFIX>
  </MODEM>

  <MODEM>
  <ID>2</ID>
  <PORT>6</PORT>
  <ENABLED>true</ENABLED>
  <TARGET_PREFIX></TARGET_PREFIX>
  </MODEM>

  <MODEM>
  <ID>3</ID>
  <PORT>7</PORT>
  <ENABLED>true</ENABLED>
  <TARGET_PREFIX></TARGET_PREFIX>
  </MODEM>

  <MODEM>
  <ID>4</ID>
  <PORT>8</PORT>
  <ENABLED>true</ENABLED>
  <TARGET_PREFIX></TARGET_PREFIX>
  </MODEM>

  <MODEM>
  <ID>5</ID>
  <PORT>9</PORT>
  <ENABLED>true</ENABLED>
  <TARGET_PREFIX></TARGET_PREFIX>
  </MODEM>

  <MODEM>
  <ID>6</ID>
  <PORT>10</PORT>
  <ENABLED>true</ENABLED>
  <TARGET_PREFIX></TARGET_PREFIX>
  </MODEM>

  <MODEM>
  <ID>7</ID>
  <PORT>11</PORT>
  <ENABLED>true</ENABLED>
  <TARGET_PREFIX></TARGET_PREFIX>
  </MODEM>

```

```
</MODEM>  
  
<MODEM>  
<ID>8</ID>  
<PORT>12</PORT>  
<ENABLED>true</ENABLED>  
<TARGET_PREFIX></TARGET_PREFIX>  
</MODEM>  
  
</MODEM_LIST>
```

10. Switch on power to all GSM modems.
11. Make sure that all the GSM modems' red LED is blinking.
12. Start the service.
13. Open log file to see if service is successfully started and all modems are initialised. Goto "C:\Program Files\SMS Engine Enterprise Edition\log", log file is saved as "yyyy\_mm\_dd.log".

```
(time stamp) Modem with ID = 1 initialized  
(time stamp) Modem with ID = 2 initialized  
(time stamp) Modem with ID = 3 initialized  
(time stamp) Modem with ID = 4 initialized  
(time stamp) Modem with ID = 5 initialized  
(time stamp) Modem with ID = 6 initialized  
(time stamp) Modem with ID = 7 initialized  
(time stamp) Modem with ID = 8 initialized  
(time stamp) SMS Engine Enterprise Edition service started
```

### 23. APPENDIX 4: HOW TO SET-UP MS SQL SERVER EXPRESS

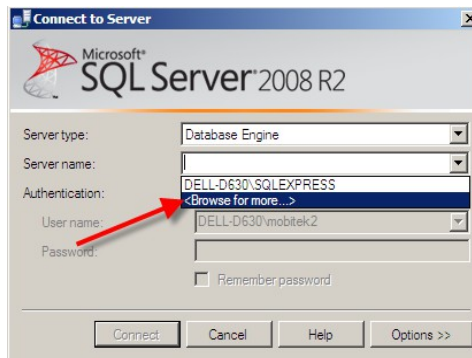
1. Install Microsoft SQL Server 2008 R2, you can get it from Microsoft official site
2. Run Microsoft SQL Server Management Studio.

3. On the first run, "Connect to Server" will pop-up

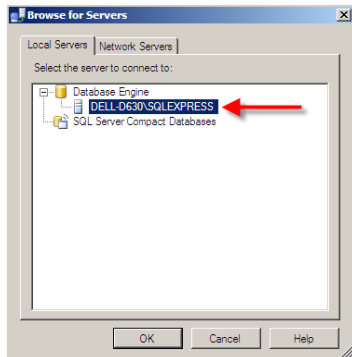


a) Choose:-

- Server type : Database Engine



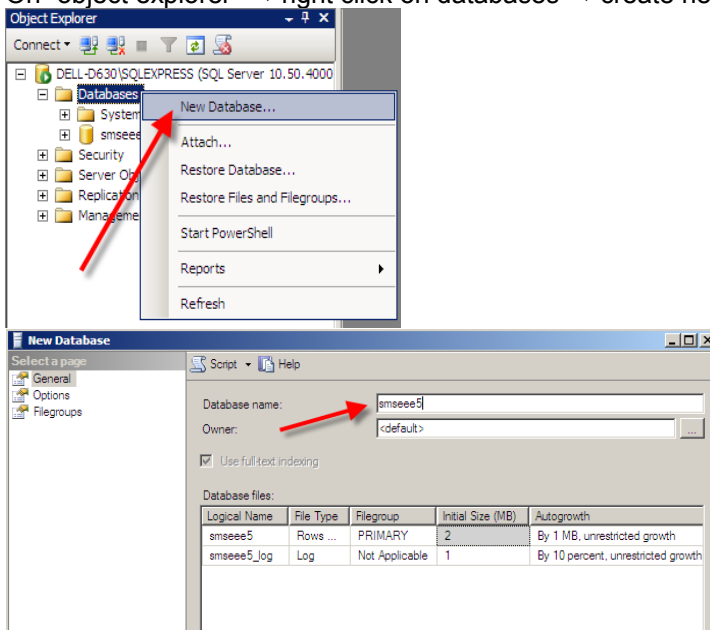
- Server name: <browse for more → local server → database engine →your pc name >



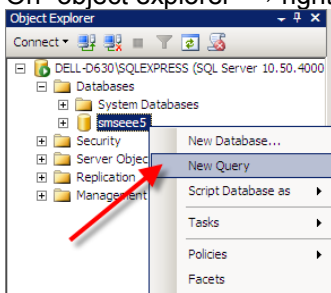
- Authentication : Windows Authentication
- Press connect.



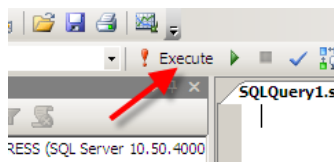
- 4. On “object explorer” → right click on databases → create new database.



- 5. Give it a name “smsee” and press OK
- 6. On “object explorer” → right click on your new created database → New Query

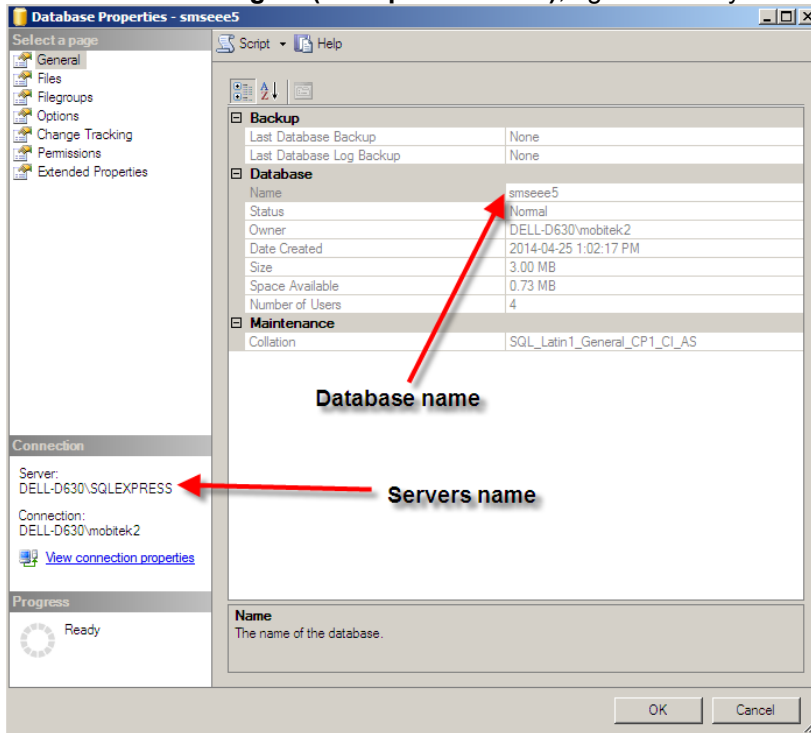


- 7. Copy and paste the sql command from “mssql.sql”



- 8. Execute the command

- The database is set up, in case you want to know about the detail of you database for further use in **MOBITEK® SMS Engine (Enterprise Edition)**, right click on your database → properties



- In “config.xml” file, edit as follows:-

```

DATASOURCE>
  <DBTYPE>MSSQL</DBTYPE>      <!-- enter "MYSQL" or "MSSQL" -->
  <SERVER>DELL-D630\SQLEXPRESS</SERVER>
  <USERNAME>abc</USERNAME>
  <PASSWORD>abc</PASSWORD>
  <DATABASENAME>smsee5</DATABASENAME>

  <!-- only for MS SQL -->
  <AUTHMODE>WIN</AUTHMODE> <!-- enter "SQL" or "WIN" -->
</DATASOURCE>
    
```