



# Telstra SMS Access Manager

Technical Guide

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# 01 Introduction

The purpose of this document is to provide specific details of how to interface to Telstra for submission and reception of SMS messages.

SMS Access Manager offering Short Message Peer to Peer (SMPP) will allow users to send and receive SMS messages in bulk using the SMPP protocol.

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## 02 What is SMS?

SMS stands for Short Message Service. It is a technology that allows for the sending and receiving of SMS between Person to Person (P2P) and Application to Person (A2P).

SMS is specified by 3GPP. SMS to and from a mobile is specified by 3GPP TS 23.040 (and earlier in GSM 03.40).

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## 03 What is SMS Access Manager?

SMS Access Manager provides a carrier grade access medium to Telstra's mobile network and messaging gateways. It can facilitate the rapid, reliable sending and receiving of large volumes of SMS messages using a PC or specific SMS application.

The customer must provide messaging software capable of interfacing with Access Manager to generate the SMS messages.

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# 04 SMS Access Manager Protocols

## SMPP Access

SMPP is the protocol that is available for use here.

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## 5.1 SMPP Access

This method provides access via TCP/IP. It utilises an open protocol called the Short Message Peer to Peer protocol (SMPP) to allow sending and receiving of messages with advanced delivery options.

Consider the following TCP/IP connection methods.

### Internet VPN (Client) Connection

This connection method lets you use your existing internet connection (cable, ADSL and in conjunction with the provided VPN configuration to securely connect into the SMS network.

Access is via VPN client or IPSEC LAN 2 LAN.

The VPN client is an ideal solution for customers without IPSEC capable routers or firewall devices.

The throughput of the client method is less than that of a LAN 2 LAN IPSEC solution.



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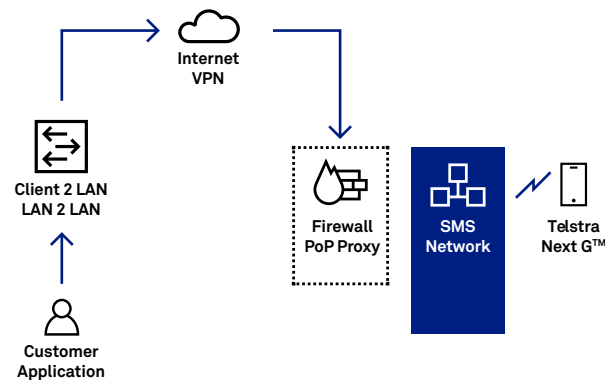
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Depending on the chosen method of access, you will require some of the following.



## 6.1 SMPP Access

Connection is via Internet VPN.

- PC/server running client software supporting the SMPP Protocol.
- IPSEC capable router or firewall device which supports IPSEC.
- VPN clients which supports IPSEC and protocols.



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## 7.1 SMPP Access

### Connection via Internet VPN

Two types of Internet VPN are available:

Client VPN	Allows a single machine to remotely access this service (client to LAN VPN) over shared infrastructure (the Internet)
IPSEC VPN	Allows a corporate intranet to access this service over (LAN to LAN VPN) shared infrastructure (the Internet)

**Note:** IPSEC VPN requires a public peer IP, the host address ranges can be private. Customers are required to Network Address Translation (NAT) behind their public interface.

### Security Details

Telstra uses the following protocols for VPN encryption and authentication:

Authentication	ESP/MD5/HMAC-128
Encryption	3DES-168
IKE Proposal	IKE-3DES-MD5

All certificate keys are 168bits.

### Access or Client VPN

Consider the following steps and system requirements:

- ensure that the appropriate ports are open to the internet with respect to firewalls rules and other network elements.
- once connected, Telstra will allocate an IP Address from its VPN Client pool
- ensure that you are not using NAT.
- configuration details and client VPN software will be provided but it is the responsibility of the customer to load and configure the client accordingly.





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## IPSEC VPN

Consider the following steps and system requirements. You will need to ensure that.

- your intranet has a connection to the Internet
- you have a static, internet routable
- IP address for each machine within the LAN wishing to access the SMS Network. Alternatively, if private addressing is used locally, NAT must be used, so that an internet routable IP address is presented to Telstra.
- you have an IPSEC capable device
- you have altered your firewall (if any)
- to allow access to all the ports used by the VPN tunnel
- you have not installed any application level proxy servers between your LAN and the Internet. Ensure that you record the following:
  - the static internet routable IP address for each machine with the LAN which will be accessing the internet VPN;
  - the IPSEC router's static, internet routable IP address;
  - the LAN's static Netmask.

## 7.2 Bandwidth Requirements

### Connection is via Internet VPN.

This table provides guidelines as to what bandwidth you need to provision between your site and the Telstra SMS network to cope with a given message transmission rate.

This message rate is not the end-to-end message rate, only the message rate between your site and the SMS Network. Actual end-to-end message rate will be affected by traffic congestion, quality of service parameters and other issues.

### Quick Reference Table

Access Method	Bandwidth (typical)	Approx. Messages per second
Internet VPN	Take any access method and allow for reduction factor	Varies according to Internet Access method



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## 8.1 SMPP

The SMPP protocol is an open standard protocol designed to provide a flexible data communications interface for the transfer of short messages. It has been specifically designed to enable applications and value added products to communicate with an access gateway. For a more comprehensive discussion of the SMPP protocol please refer to the specification at

<http://opensmpp.org/specifications.html>

Document	SMPP (Short Message Peer To Peer) Protocol Specification v3.4
Document Version	12 October 1999 Issue 12

### 8.1.1 Feature Set

The following table details the SMPP operations supported by SMS Access Manager. Please note there may be instances where the usage of unsupported features will be permitted. Please consult your Telstra Mobile Representative for further information. Features not listed here are not supported.





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#### PDU-Submit

Item	Functional Unit/Description	SMPP Ref	Support
SUBMIT-1	Is the use of different values in the service_type field allowed?	5 2 11	✗
SUBMIT-2	Is the use of default values in the source_addrfields supported?	5 2 8	✓
SUBMIT-3	Is scheduled_delivery supported?	5 2 15	✗
SUBMIT-4	Is the replace_if_present functionality supported?	5 2 23	✓
SUBMIT-5	Are pre-defined short messages supported?	5 2 23	✗
SUBMIT-6	Is the use of the validity_period field supported?	5 2 16	✓
SUBMIT-25	What is the maximum length of message_payload data supported?	5 3 2 32	140 Binary Octets or 160 ANSI Characters













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## SMS Numbering Requirements

Item	Functional Unit/Description	SMPP Ref	Support
SMSC-Num-1	SMPP Originating Address/TPOA. This must be a valid ACIF assigned number. ACIF numbers assigned to Telstra must be in the standard E164 format (e.g. 614XXX) TON/NPI set to 1/1		✓
SMSC-Num-2	Alpha Codes - Source Addresses. This is an address containing non-numeric characters - '*' and '#' are considered non-numeric characters TDN/NPI set to 5/0 See 51142		✓
SMSC-Num-3	Short Codes - Source and Destination Addresses. This is a number not in any of the assigned ACIF number ranges. TDN/NPI set to 2/0		✗
SMSC-Num-4	Extra Digits - Source and Destination Address. This is an ACIF number with up to 4 additional numeric digits on the end. This is only supported for sources and destinations within Telstra's network		✓

### Alpha Source Addresses

Alphanumeric codes are supported.

Some rules apply to the use of alpha codes

- Max of 11 characters. Over 11 characters will be rejected.
- Some special characters (standard ASCII), including space are supported.
- The code must include at least one character of the type [A-Z | a-z].
- If message destined for a PSTN destination, the alpha source will be translated into all 0's
- Reply path for Alpha Sources are not supported.

## 8.3 SMPP Toolkits

Please refer to <http://forum.smppserver.org/>

## 8.4 Consultancy Services

Telstra does not offer consultancy services to help with the development of your application.



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# 09 Frequently Asked Questions

## 9.1 Does Telstra Support DRM?

If messages are submitted with Digital Rights Management (DRM), Telstra will not alter this and deliver it to the end device. Results may vary when terminating to external carriers.

## 9.2 What should I do if the message is being rejected with invalid address?

Ensure the Mobile Subscriber Integrated Services Digital Network-Number (MSISDN) being used is in correct international format.

Ensure you have been authorised to use the Sender Address in the submission.

## 9.3 What version of SMPP should I be using?

Version 3.4 should be used.

## 9.4 Can I send messages overseas?

SMS Access Manager can be used to send messages to the countries listed here. Additional countries can be reached as required - consult your Telstra representative to confirm.

Country		
Afghanistan	Indonesia	Papua New Guinea
Algeria	Iraq	Peru
Argentina	Italy	Philippines
Austria	Japan	Russian Federation
Azerbaijan	Kazakhstan	Samoa
Bahamas	Kenya	Singapore

Country		
Bahrain	Kiribati	Slovakia
Bangladesh	Korea (Republic of)	Solomon Islands
Belgium	Kuwait	Solomon Islands
Bermuda	Lao People Democratic Republic	South Africa
Brunei Darussalam	Latvia	Spain
Burkina Faso	Madagascar	Sri Lanka
Cambodia	Malawi	Sweden
Cameroon	Malaysia	Taiwan (China)
Canada	Maldives	Tanzania
Cape Verde	Mali	Thailand
Cayman Islands	Mauritius	Timor-Leste
Chile	Micronesia	Tonga
China	Morocco	Tunisia
Colombia	Mozambique	Turkmenistan
Cote d'Ivoire	Nauru	Turks and Caicos
Cuba	Nepal	Uganda
Cyprus	New Caledonia	United Arab Emirates
Egypt	New Zealand	United Kingdom
Equatorial Guinea	Nigeria	United States
Estonia	Norfolk Island	Vanuatu
Fiji	Norway	Venezuela
Ghana	Oman	Vietnam
Guam	Pakistan	Zambia
India	Palau	Zimbabwe



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## 9.5 Are delivery receipts supported

Delivery receipts are supported when sending messages to Telstra subscribers from a MSISDN source address. They are not supported when sending messages from non-MSISDN (e.g. alpha) sources when sending outside of the Telstra network.

**Note:** Additional charges will be incurred whenever a Delivery receipt is requested on submission of message.

## 9.6 During model testing my messages are not terminating to my mobile handset?

If testing using the model network does not connect to the radio network. The intention of model testing is to test between your receiver and transmitter locally. Once migrated to production, mobile handset termination will be possible.



# 10 Glossary

The following words, acronyms and abbreviations are referred to in this document.

Term	Definition
ACIF	Australian Communications Industry Forum. An industry body overseeing agreements and standards between carriers within Australia
ADSL	Asynchronous Data Subscriber Link. A method for high-speed data transfer over PSTN lines
CIR	Committed Information Rate. Represents bandwidth allocated to a Frame Relay connection
DLCI	Data Link Connection Identifier Used to identify a connection point within a Frame Relay endpoint
DRM	Digital Rights Management
FNN	Full National Number. Used to identify a communications service
F/W	Firewall
GSM	Global System for Mobiles. One of the networks used in Australia to provide mobile phone services
HTTP	Secure Hyper Text Transfer Protocol
Internet Registered Business	An internet address which is registered on the internet but never actually used on the internet
IP	Internet Protocol
ISDN	Integrated Services Digital Network. The network used for data traffic
MSISDN	Mobile Subscriber Integrated Services Digital Network-Number
MT	Mobile Termination
NAT	Network Address Translation
PET	Paging Entry Terminal
POP	Point of Presence
PSTN	Public Switched Trunk Network. The network used for conventional voice and data traffic
PVC	Permanent Virtual Circuit

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Term	Definition
SIM	Subscriber Identity Module. A small card inserted into a device connecting to the GSM network to identify the owner.
SMPP	Short Message Peer to Peer. A protocol for sending and receiving SMS messages over a session link
SMS	Short Message Service
SMSC	Short Message Service Centre. A component of the SMS network
TCP	Transmission Control Protocol
VPN	Virtual Private Network