# Short Message Service

OPERATIONAL DIRECTIONS

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TRADEMARKS

# 1 GENERAL

The Short Message Service (SMS) performs transfer of text messages, which can be up to 140 bytes long (giving, for example, 160 Latin characters). SMS is available for Cordless extensions (DECT) in the MX-ONE. Text messages can be received in any call state, that is, for example, during an ongoing call.

SMS is handled through an SMS Service Centre (SC) that is located outside the MX-ONE, see figure 1. The SMS SC store and transmit the SMS messages. An SMS session is handled as two separate calls. Part 1 the A-extension to send its message to the SMS SC, and part 2 for the SMS SC to transmit the message to the B-party, which can be one or many receiving extensions.

For SMS messages from an extension the MX-ONE acts as client and the SMS CS acts as server. When the message is sent from the SMS SC, it will act as client and the MX-ONE will act as server.

Extension sends SMS to SMS-SC (part 1). A SMS client must be defined in the MX-ONE Service Node (LIM) where the sending extension is located, (sms_client_initiate). The command defines the IP address of the SMS-SC this message will be sent to.

SMS-SC sends SMS to extension (part 2). A SMS-SC can only send to one IP-address. The IP-address to which SMS-SC will send to must be defined in MX-ONE, (sms_server_initiate). The extension number in command sms_server_initiate is used for routing the message locally in MX-ONE. The SMS is sent to that MX-ONE Service Node's IP-address. From there the SMS is sent to the B-party. Any MX-ONE Service Node can be defined as receiver of SMS, (sms_server_initiate), using one extension number per initiated server.

SMS communication is handled over two TCP ports. Port number 1815 is used for sending messages to the Service Centre. MX-ONE will listen on port number 1814 for SMS messages coming from the Service Centre. These values are the default values.

**Note:** Short Message Service can also be configured with the MX-ONE Service Node Manager.

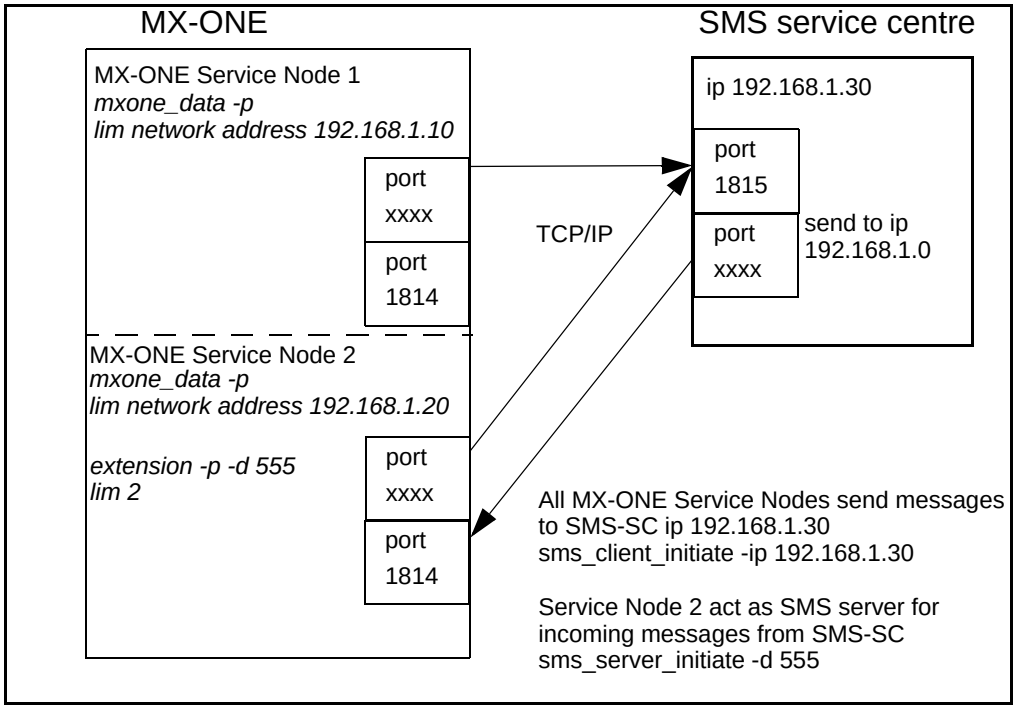
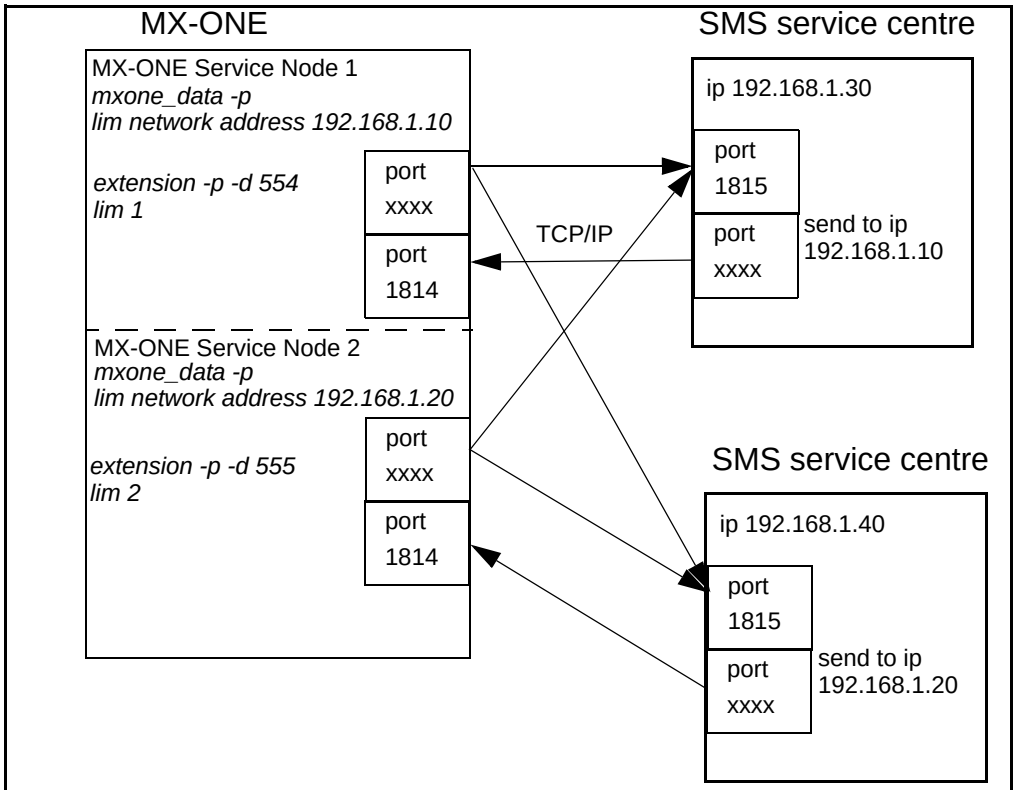


**Figure 1: Node Connected to SMS Service Centre**

**Multiple SMS-SC**

It is possible to define that a certain MX-ONE Service Node(s) (LIM) send messages to SMS-SC 1 and the other Service Node(s) (LIM) send messages to SMS-SC 2. This is defined with the LIM parameter in sms_client_initiate command. More then one SMS-SC can be defined per system as well as per MX-ONE Service Node (LIM), (sms_client_initiate). SMS messages will be load shared between all SMS-SC defined in the MX-ONE Service Node, in a round robin principle.




MX-ONE Service Node 1 sends messages to SMS-SC (30 and 40). Service Node 2 sends to SMS-SC (30 and 40), in a round robin principle.
sms_client_initiate -ip 192.168.1.30
sms_client_initiate -ip 192.168.1.40

MX-ONE Service Node 1 act as SMS server for incoming message from SMS-SC (30) and MX-ONE Service Node 2 act as SMS server for incoming message from SMS-SC (40)
sms_server_initate -dir 554
sms_server_initate -dir 555

**Figure 2: Node Connected to multiple SMS Service Centres**

**Redundancy**

Can be accomplished by that SMS-SC(40) is a copy of SMS-SC(30). When SMS-SC(30) fails or is down for service, MX-ONE Service Node 1 and 2 will block the SMS-SC (30) and send all messages to SMS-SC (40). SMS-SC(40) will return all messages to MX-ONE Service Node 2 from where it will be distributed to users in MX-ONE Service Node 1 and 2

If MX-ONE Service Node 2 fails without server redundancy all extension that either has its ULR or HLR in this server will not be able to send/receive SMS or make /receive calls.

When server redundancy is used, using bonding shall sms_server_initiate be made to the MX-ONE Service Node's alias IP address. Will SMS be possible even when one of the MX-ONE Service Node is down, but with reduced load capacity.

**Local survivability**

When the MX-ONE Service Nodes are placed on different locations with a WAN between them. MX-ONE Service Node 1 and 2 together with SMS-SC (1.30) is one SMS domain, extensions in MX-ONE Service Node 1 and 2 can send receive SMS regardless of the WAN connection. Likewise will extension in MX-ONE Service Node 3 and 4 be served by SMS-SC (2.40).

Roaming users, that is users normally belonging to MX-ONE Service Node 1 or 2 temporarily are located in MX-ONE Service Node 3 or 4 or other way around, messages sent from SMS-SC(1.40) will be distributed to the roaming users in MX-ONE Service Node 3 or 4. Answer or confirmation will sent from roaming users in MX-ONE Service Node 3 or 4 will be sent to the local SMS-SC(2.40). When roaming user send messages will the local SMS-SC handle the distribution to the MX-ONE Service Node. How local SMS-SC handles roaming user is configuration dependent in the SMS-SCs.

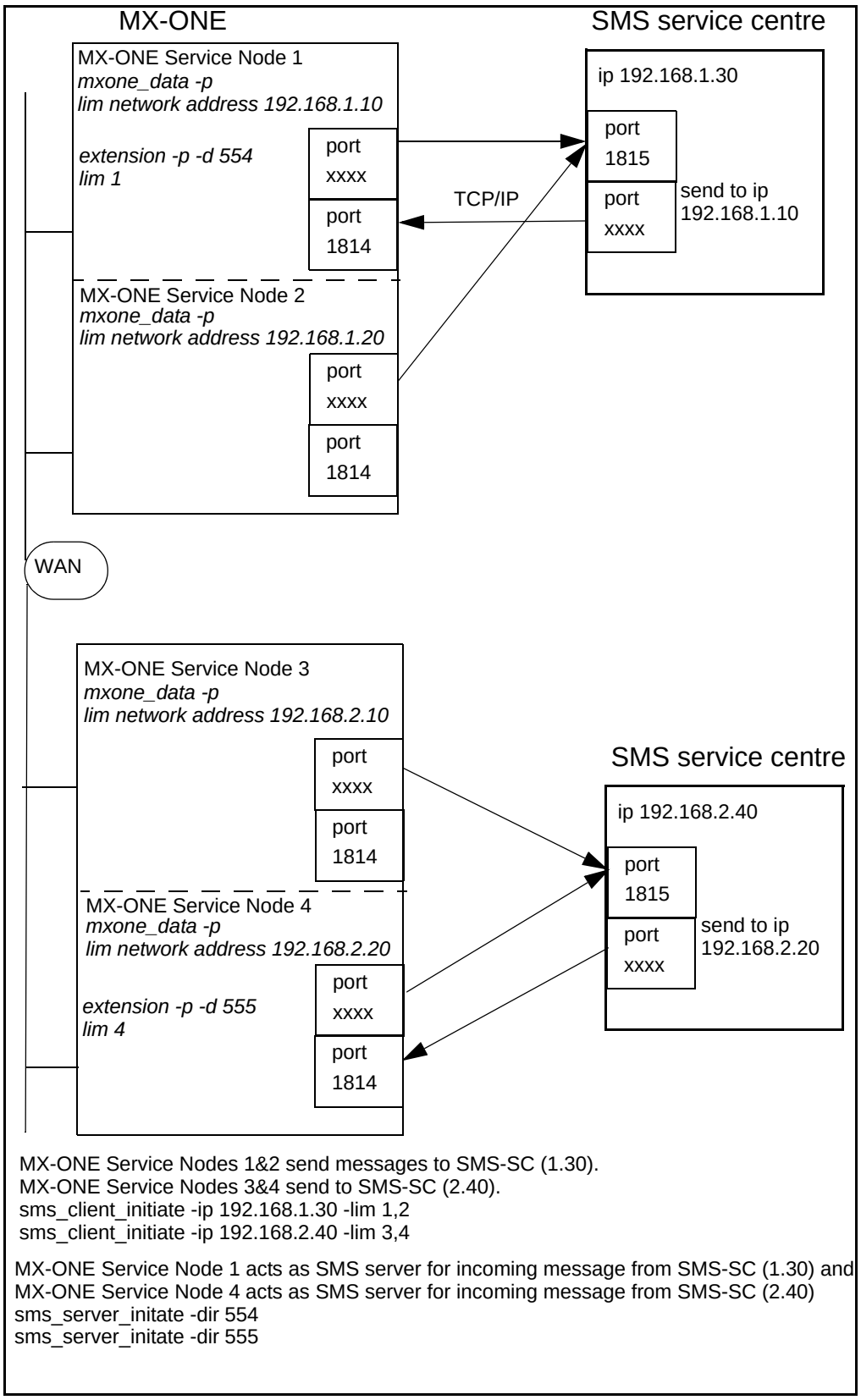



**Figure 3: Local survivability**

**Note:** That sending extension ULR and HLR must be accessible, as well as the receiving SMS-SC. The receiving extensions ULR and HLR must be accessible,

as well as the HLR of the sms_server_initiate dir and the MX-ONE Service Node the SMS-SC sends to must be accessible.

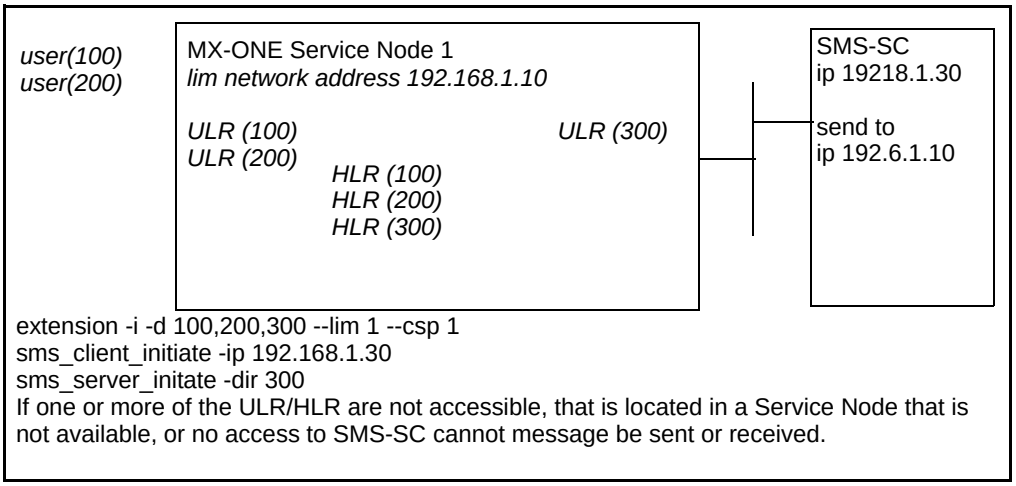



**Figure 4: Elements needed to send and receive messages.**

# 2 PREREQUISITES

The *extension* parameter *--ext-serv* must be set so that SMS service is allowed for the extensions that are to receive or send SMS messages, including the extension used in command sms_server_initiate.

# 3 PROCEDURE

The IP-address of the MX-ONE Service Node to which SMS shall be sent must be defined in SMS-SC.

At least one SMS server must be defined in MX-ONE system, sms_server_initiate. At least on SMS client must be available in all MX-ONE Service Nodes where extension with SMS capability can be located, sms_client_initiate.

# 4 EXECUTION

## 4.1 INITIATE SMS SERVER

**General**

SMS server in MX-ONE consists at least of one extension number, one IP-address and port number.

**Prerequisites**

The extension number is defined by the command *extension*, where the LIM parameter indicates the MX-ONE Service Node which the SMS-SC will connect to, (the IP-address for the MX-ONE Service Node is the default value). It is highly recommended to use only the mandatory -dir parameter in command sms_server_initiate. The IP-address for that MX-ONE Service Node that is the HLR(LIM) of the extension number and default port number will then be used.

The extension should have the parameter --ext-serv set so that SMS is allowed. See the command description for *extension_profile*.

The alias IP address of the MX-ONE Service Node shall be used when server redundancy is configured.

**Execution**

Check that message server already is assigned, use the command sms_server_print for the intended extension number.

Initiate the server by assigning an extension number. Use the command sms_-server_initiate. The default IP number is the IP-address of the HLR LIM of the extension number used. The default port number is 1814.

Verify the initiation by sms_server_print.

## 4.2 INITIATE SMS CLIENT

**General**

SMS client(s) must be defined in all MX-ONE Service Nodes from where extensions shall be able to send SMS. That is because all MX-ONE Service Nodes need to know the IP address of the SMS-SC it shall send message to.

If an MX-ONE Service Node is defined to send to more then one SMS-SC. It will send messages in a round robin principle.

**Prerequisites**

Check the IP address of the intended SMS-SC.

**Execution**

Initiate MX-ONE Service Node(s) as SMS client(s) with the intended SMS-SC IP-address, with sms_client_initiate. Default port number is “1815”. Default LIM is “all” LIMs. Use the command *sms_client_initiate*.

Verify the initiation with sms_client_print.

## 4.3 PRINT SMS CONFIGURATION

Print information on the SMS message centre servers with the command *sms_server_print* for the directory number or numbers.

Print information on the SMS clients with the command *sms_client_print*.

## 4.4 TERMINATE SMS SERVER

Verify that a message centre has been initiated. Use the command *sms_server_print* for the intended directory number.

Terminate the server. Use the command *sms_server_end* for the intended directory number.

Verify by *sms_server_print*.

## 4.5 TERMINATE SMS CLIENT

Check the message center client connection for the LIM. Use the command *sms_client_print*.

Terminate the client on the IP address. Use the command *sms_client_end*. The default port number is 1815 and the default LIM value is all LIMs.

Verify by *sms_client_print*.

# 5 TERMINATION

If directory numbers have been added or removed, inform the department or person responsible for directory information.

Make a dump to backup media if any configuration data has been altered. See the command *data_backup*.