



International Journal of Engineering, Business and Enterprise Applications (IJEBA)

www.iasir.net

Practical Approach for Configuration of Location Routing Number for MNP

Richa Budhiraja, A Devi Priya
Amity Institute of Telecom Engineering and Management,
Amity University, Sector-125, Noida – 201301, INDIA.

Abstract: Mobile number portability (MNP) means that mobile telephone customers can keep their telephone number—including the prefix—when switching from one service provider's services to another. It encourages market competition level and ensures better service. Mobile Numbers are ported by configuring the LRN (Location Route Number) in the STP. Practical approach to assign a LRN for a number in the network is described in this paper.

Keywords: Mobile Number Portability, Mobile Subscribers, Local Route Number, Signaling Transfer Point

I. Introduction

Number Portability refers to the ability of end users to retain their telephone number when they change their network operator/service provider, their location, or their service. This is a feature that allows a mobile subscriber to use the same number across different service operators. If the subscribers are not satisfied with the services of their service provider, they can change their service provider while retaining the existing phone number thus encouraging market competition level among service providers and ensuring better service to the subscribers. It has been observed that often subscribers do not want to switch to another operator even if the competitor is offering low tariffs and better service because they do not want to change their number. The subscriber's inability to retain his mobile number when changing operators is an obstacle to competition. But now with the introduction of MNP the user has the choice to opt for any service provider without the time consuming exercise of letting the rest of the world know about the change of number. Therefore MNP aims to benefit the subscribers and increase the level of competition, reward the operators with the best customer service, coverage and service quality. As one of the development trends of the international telecommunication industry, number portability has been introduced in many countries around the world and has played an important role in stimulating the competition and development of telecommunication market. In the absence of MNP, customers have to give up their number and must adopt a new one when they switch operators. As a result, customers face switching costs associated with informing people about changing their number, printing new business cards, missing valuable calls from people that do not have the new number, etc. Based on these considerations, many regulatory authorities have imposed mandatory MNP—or are about to require its introduction—so as to reduce customers' switching costs, attempting to make mobile telecommunications more competitive.

II. MNP Classification

Number Portability is classified into following types:

- i. Service Provider Number Portability:** While having the same mobile number, service provider can be changed, called as "Operator Portability". Example: Operator A No. ported to Operator B no. or vice versa
- ii. Location Number Portability:** While having the same mobile number, service can be changed. This portability type is not permitted in India. Example: Operator A, Circle 1 no. ported to Operator B, Circle 2 No.
- iii. Service Portability:** While having the same mobile number, subscribed services can be changed. A subscriber can use the subscribed services in same way even when they are roaming. Example: Operator A CDMA no. ported to Operator B GSM No.

III. Local Routing Number

A Location Routing Number (or LRN) is a unique number that uses the format of a telephone number, but actually represents an entire telephone switch through which multiple telephone numbers are routed. The assignment of a

local routing number to telephone numbers allows for number portability. The location routing number serves as a network address. Carriers routing telephone calls to customers that have transferred their telephone numbers from one carrier to another perform a database query to obtain the location routing number that corresponds to the dialed telephone number. The database query is performed for all calls to switches from which at least one number has been ported. The carrier then would route the call to the new carrier based on the location routing number

IV. CONFIGURATION OF LRN

Configuration of LRN for ported numbers (MNP) takes place in STP. Purpose for this manual configuration arises when calls for these ported numbers are not maturing i.e., ported numbers are not able to call or receive calls from Numbers. This may be due to the fact that during porting the number the LRN may not have been configured automatically in the network.

Classified Portability of numbers for assignment of LRN is as:

- i. Ported In:** MSISDN ported in new operator from existing operator.
- ii. Ported Out:** MSISDN ported from exiting operator to new operator.
- iii. Cross Port:** Portability between other operators (without exiting operator).

Process flowchart for the configuration of LRN is shown in figure 1. Following are the 2 steps used to configure LRN. In step 1, command LST SERUATTR is used, which helps to get the Routing Number of MSISDN. When this command is executed in command window of SG7000 Maintenance System, mode and user number is required as input parameter (shown in figure 2 (a)). In step 2, command ADD SEDRUATTR is used, which is used to add LRN against a MSISDN. During the execution step of this command input parameters required are user number, service user attributer, type of number (Type 1: Ported In, Type II: Ported Out, Type III: Cross Port), routing index type and routing number of operator (shown in figure 2 (b)). Finally, portability type selection is done. After successful completion of these steps configuration of LRN is complete.

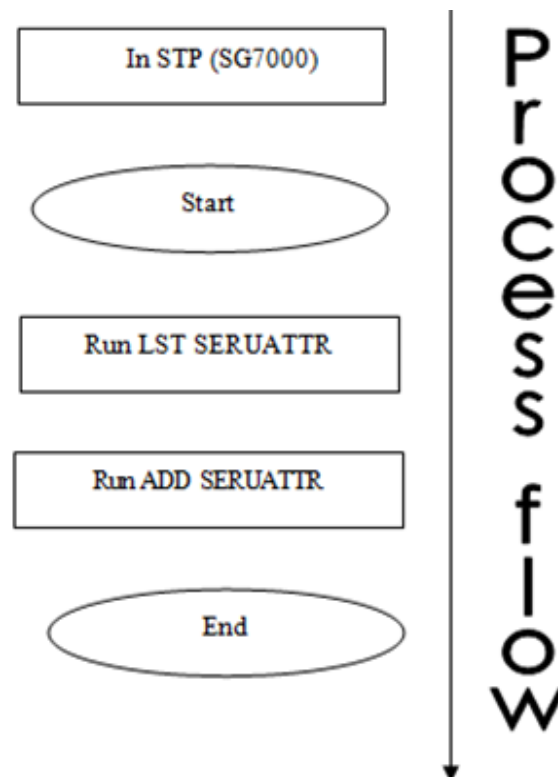


Figure 1 Process Flow for Configuration of LRN

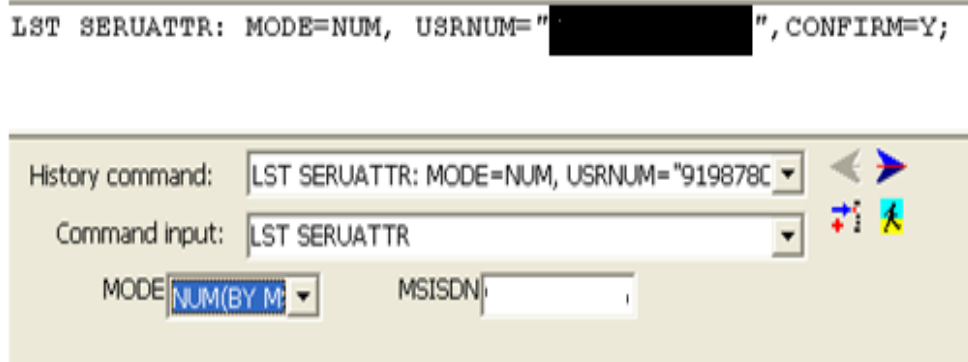


Figure 2(a) Execution of LST SERUATTR

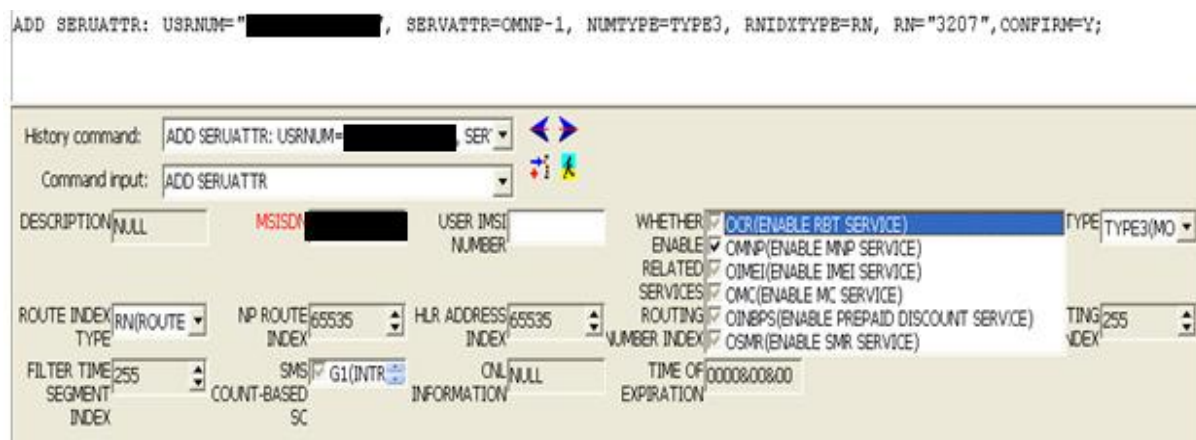


Figure 2 (b) Execution of ADD SERUATTR

V. Conclusion

MNP allows subscribers to retain their existing mobile telephone numbers when switching from one access service provider (telecom operator) to another, irrespective of mobile technology or from one technology to another, of the same or any other access service provider i.e., it enables the subscriber to retain his/her phone number, when switching subscription from one mobile service provider to another. It increases competition by allowing consumers to switch service providers, yet retaining their old mobile phone number, which help telecom operator to improve its product line and services. It can be one of the major reasons for the industry to go for corporate restructuring. Increase in rate directly affects the revenues of the service provider and increases price competition. It may put pressure on margins, as product innovation costs and marketing costs may increase. LRN is a "single-number solution" because only one number (i.e., the number dialed by the calling party) is used to identify the customer in the serving switch. Each switch has one network address - the location routing number. LRN can support location and service as well as service provider portability. Configuration of manual LRN allows proper call establishment and other services for ported numbers. The implementation of MNP has been done with a lot of foresight and long term view for the mobile market

VI. References

- [1] Suresh A.S, 'Mobile Number Portability – Opportunities and Challenges', International Journal of Management Research and Development (IJMRD), Volume 1, Number 1 January - April (2011), pp. 14-19
- [2] Partiksinh Sureshsinh Vaghela, 'Customer Preference for Mobile Number Portability'. International Journal of Management and Social Sciences Research (IJMSSR) Volume 1, No. 3, December 2012
- [3] Nishat Anjum, Prof.Rajeshvar Lal Dua, 'Evolution of Mobile Number Portability', International Journal of Engineering Research & Technology (IJERT), Vol. 1 Issue 5, July – 2012
- [4] Neeraj Jindal, ' Mobile Number Portability', International Journal of Open Scientific Research Vol.1, No. 1, 11-14, May, 2013
- [5] Nishat Anjum, 'Mobile Number Portability Solution Implementation', IJECT Vol. 3, Issue 1, Jan. - March 2012
- [6] Surabhi Jain, 'Temporary Protection and Technology Adoption: A Case of Mobile Number Portability', IJCST Vol. 2, Iss ue 2, June 2011

- [7] Ajit singh, Mainka Saharan, Geetanjali panchal, 'Parameter Effecting Mobile Number Portability And Fuzzy Logic Based MNP Decision', International Journal of Advanced Research in Computer Science and Software Engineering, Volume 3, Issue 4, April 2013
- [8] Atiya Faiz Khan, ' Mobile Number Portability: Challenges and solutions', Journal of Emerging Trends In Computing and Information Sciences, Volume 2 Special Issue, 2010-11 CIS Journal
- [9] Stefan Buehler and Justus Haucap, 'Mobile Number Portability', Working Paper No. 0303, March 2013, Socioeconomic Institute, University of Zurich\
- [10] GSM Operation Guide – Punjab, Videocon Telecommunications Limited
- [11] Switching Operation Guide, Videocon Telecommunications Limited

VII. ACKNOWLEDGMENT

We are very much thankful Videocon Mobile Services and Mr. Amit K Wondrow, Deputy Manager-NOC, Connect, Quadrant Televentures Limited, Mohali for providing essential facilities and training to complete this project.