



**ATIS-0300065**

**LOCATION ROUTING NUMBER (LRN) ASSIGNMENT  
PRACTICES**

Reissued with the resolution of Issue 850.

**April 20, 2018**

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## Location Routing Number Assignment Practices

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These practices are intended to assist Service Providers<sup>1</sup> as to why Location Routing Numbers (LRNs) are necessary and how to select their own LRNs. The use of LRNs is covered in the ATIS Packet Technology Systems Committee (formerly Committee T1S1) standards and the FCC North American Numbering Council Local Number Portability Administration Working Group (LNPA WG) best practices<sup>2</sup> and some of that direction is incorporated in these practices.

An LRN is a 10-digit number, in the format NPA-NXX-XXXX, that uniquely identifies a switch or point of interconnection (POI) per LATA. The NPA-NXX portion of the LRN is used to route calls to numbers that have been ported.

The following LRN assignment criteria should be considered when a service provider selects and assigns an LRN:

1. A unique LRN will be provisioned to identify each recipient switch or POI in the number portability capable network<sup>3</sup>. LRNs are to be used for routing and not for rating/billing calls. Calls are rated and billed to an end-user based on the dialed digits and not on the LRN. There is, however an Automated Message Accounting feature that records the LRN that a call is routed to in order to determine the appropriate provider serving that number for access billing purposes<sup>4</sup>.
2. A service provider will establish one (1) LRN per LATA from an assigned NXX for each recipient switch or POI in the number portability capable network. Additional LRNs may be used for internal purposes. Further, additional LRNs are not required to identify US wireline rate centers. A unique LRN may be assigned to every LNP equipped switch or POI (and potentially to each CLLI<sup>5</sup> listed in the iconectiv® LERG™ Routing Guide).

Requesting an additional NXX to establish an LRN in certain instances may be justified but precautions need to be taken to ensure number resource optimization. The following points should be considered prior to requesting a new NPA-NXX for the purpose of establishing an LRN:

- The requesting service provider uses an existing code already homed to the tandem where the LRN is needed for the POI.
- Once the NXX Code is assigned, the Code Holder must return any blocks not justified for retention in its inventory.
- When there are multiple tandems owned by different SPs in a single LATA, the requesting SP may obtain a new NXX in order to establish an LRN for each subtending POI.
- Regulatory waivers granted to ILECs to carry local calls across a LATA boundary may exist. In such instances, SPs may be justified in establishing an additional LRN to properly route calls.

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<sup>1</sup> The term "service provider" refers to a telecommunications carrier or other entity that receives numbering resources from the NANPA, a Pooling Administrator or a telecommunications carrier for the purpose of providing or establishing telecommunications service. For the purposes of this part, the term "service provider" includes an interconnected VoIP service provider (47 CFR § 52.5 (e)).

<sup>2</sup> See the LNPA WG pages at [www.numberportability.com](http://www.numberportability.com).

<sup>3</sup> ATIS PTSC Standard: ATIS-1000002, *Number Portability for Switching Systems* (documents available at the ATIS Document Center at [www.atis.org](http://www.atis.org) may have an associated fee).

<sup>4</sup> See footnote 2.

<sup>5</sup> CLLI and LERG are trademarks of Telcordia Technologies, Inc. dba iconectiv®.

3. Remote switches that have a unique, assigned NPA-NXX also may have a unique LRN assigned to the remote switches<sup>6</sup>.
4. The LRN must be selected and assigned from a valid NPA/NXX that has been uniquely assigned to the service provider by the Central Office Code Administrator and published in the LERG Routing Guide. An LRN should be selected and assigned with the following considerations:
  - Do not select and assign the LRN from an NPA/NXX that is planned to be re-homed to another switch.
  - Do not select and assign the LRN from an NPA/NXX that has a majority of the NXX numbers assigned to a single customer.
  - Do not assign the LRN from an NPA/NXX that is assigned to the local choke network.
  - Do not assign the same telephone number as both an LRN for a switch and a working number for a customer.<sup>7</sup>
  - Do not assign any TLDN or ESRD/ESRK wireless administrative number as an LRN.
  - Do not select and assign the LRN from a block that otherwise may be eligible for donation to the thousands-block number pool.<sup>8</sup>
5. An LRN may have to be changed due to any of the following:
  - switch replacements
  - code moves or LERG reassignments
  - NPA Splits (as a result of an NPA-NXX split, a service provider may have to change their assigned LRN)
  - Donation or return of the thousands-block containing the LRN
6. If a switch serves multiple NPA/NXXs, wherever possible, do not select and assign the LRN from an NPA that has been identified for area code relief.
7. The LRN will be published in the LERG Routing Guide<sup>9</sup>. LERG Routing Guide LRN records are used by some SPs for trouble shooting and network engineering purposes. Within five business days of the assignment of an NXX that is to be used for LRN purposes, or when an LRN is assigned from an NXX already in an SP's inventory, the SP should forward a CO Code Part 2 Form 7 to its AOCN for input into Business Integrated Routing and Rating Database System (BIRRDs).
8. Service providers must maintain internal records of LRNs as a separate sub-category of "Administrative" in their TN inventories (FCC 00-104 ¶36 and ¶62, see also 47 CFR § 52.15 (f) (1) (i)).
9. Shared service provider NPA-NXXs should not be used for LRN assignments.
10. For thousands-block number pooling, the LRN shall only be selected and used by the Code Holder from its assigned/retained thousand block(s).

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<sup>6</sup> See footnote 3.

<sup>7</sup> It should be recognized that there are some numbers that have been assigned as both a LRN and a working customer number, which is technically feasible. There is no requirement that those assignments be discontinued, including instances when the customer has ported the number to another service provider. See ATIS-1000002, Number Portability Switching Systems.

<sup>8</sup> An SP can avoid the donation of blocks containing administrative numbers [e.g., LRNs, Temporary Local Directory Numbers (TLDNs), Mobile Station Roaming Numbers (MSRN)], by consolidating these numbers within blocks it intends to retain. The porting of an LRN can cause call delivery failures.

<sup>9</sup> At a minimum LRNs that are associated with ported and/or pooled records in the NPAC should be published in the LERG Routing Guide. Failure to publish LRNs in the LERG Routing Guide leads to confusion and more investigation time during the resolution process to determine to whom the LRN belongs.