

Quentin Sager Consulting, Inc.

[NALENND® LOCAL CALLING AREA DATABASE]

North American Local Exchange NPA NXX Database reference manual

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NALENND® Local Calling Area Database Reference Manual
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GENERAL DESCRIPTION

The NALENND® Local Calling Area Database identifies North American local exchange carriers' local calling areas by Rate Center. This local calling area data in conjunction with the NALENND® NPA NXX database can be used to determine local call status between any two North American telephone exchange (i.e. NPA NXX) combinations by cross-referencing the originating and terminating NPA NXX pair to their associated Rate Center.

NALENND® local calling data is based (largely) on those local calling areas defined by the incumbent wireline local exchange carrier. Generally a competitive local exchange carrier's local calling area will concur with the incumbent carrier's definition when serving the same basic service area but could differ.

In North America wireless telephone numbering resources (i.e. NPA NXX) are assigned by Rate Center as are standard wireline resources. Wireless to wireless local calling areas differ from wireline to wireline or wireless to wireline communications and are generally much broader in scope than conventional wireline. Wireless to wireless calling areas are defined by market area relationship rather than Rate Center relationship.

The NALENND® database provides block level information based on carrier assignment and does not provide individual consumer specific information about an individual telephone number. Thus this database does not include individual ported telephone information nor can it identify an optional extended local calling plan subscribed by a particular individual.

Each table (*file*) in the NALENND® database is delivered in flat, delimited text file format (commonly referred to as comma-separated-value or CSV format). The NALENND® database is easily imported to and accessed through most contemporary database engines including (but not limited to) MySQL, PostgreSQL, SQLite, Oracle, IBM DB2, Microsoft SQL Server, Microsoft Access, or similar tool.

The data can be imported as either US-ASCII or Unicode UTF-8 text. For each file in the NALENND® database; the first row contains field names (column headers), fields are terminated by a single comma “,” character, fields are optionally enclosed using a double quote character, and lines (rows) are terminated with a two character carriage return line feed (CR + LF) sequence.

RECORD LAYOUTS AND FIELD DESCRIPTIONS

FILE: `nalennnd_local_xref.csv`

The `nalennnd_local_xref.csv` data file contains the cross-reference required to identify the exchange index to use for each unique NPA-NXX-X combination.

Field	Description
NPA	Numbering Plan Area (NPA) Code. An NPA, also known as a telephone <i>area code</i> , is the first three digits of a 10-digit North American Numbering Plan (NANP) telephone number in the form NXX-NXX-XXXX, where N represents any one of the numbers 2 through 9 and X represents any one of the numbers 0 through 9. Valid numeric range for NPA codes is 200 through 999.
NXX	Central Office Code (COC). The COC, commonly called the telephone exchange or prefix, is the second three digits (NXX) of a 10-digit NANP telephone number in the form NXX-NXX-XXXX, where N represents any one of the numbers 2 through 9 and X represents any one of the numbers 0 through 9. Valid numeric range for NXX codes is 200 through 999.
BLOCK_ID	<p>Block identifier. Implies, represents, or identifies either the entire group of 10,000 numbers or a specific group of 1,000 numbers within the NPA NXX.</p> <p>An “A” record will be present for NPA NXX records that are “assigned” to the Code Holder per the Central Office Code Assignment Guidelines. For non-pooled numbers it identifies a 10,000-block level record and implies line assignments 0000 through 9999. For pooled numbers the “A” record is present for default routing purposes and identifies the <i>LERG Assignee</i>, numeric blocks must be referenced for actual carrier assignments.</p> <p>A numeric block (digits “0” through “9”) refers to those assignments made per Thousands Block Pooling Administrative Guidelines, it identifies a 1,000-block level record and refers to line assignments x000 through x999 where x=the block identifier.</p>
EXCHANGE	Unique exchange index used to identify the NPA-NXX-BLOCK_ID combination.

FILE: `nalennnd_local.csv`

The `nalennnd_local.csv` data file contains the originating telephone exchange to terminating telephone exchange combinations used to define local calling areas.

Field	Description
ORC_EXCHANGE	Unique originating exchange index within the Rate Center.
ORC_STATE	Originating Rate Center state, province, or territory abbreviation.

ORC_ABBR	Originating Rate Center standardized 10 character LERG abbreviation.
ORC_LATA	Originating Rate Center LATA number.
ORC_MTA	Originating Rate Center MTA number.
TRC_EXCHANGE	Unique terminating exchange index within the Rate Center.
TRC_STATE	Terminating Rate Center state, province, or territory abbreviation.
TRC_ABBR	Terminating Rate Center standardized 10 character LERG abbreviation.
TRC_LATA	Terminating Rate Center LATA number.
TRC_MTA	Terminating Rate Center MTA number.
OCN	When populated identifies the competitive local carrier who's local calling area differs from the incumbent local exchange carrier.
CALL_TYPE	<p>This free form field identifies terminating exchanges as local or expanded local in relationship to the originating Rate Center. Possible values include:</p> <ul style="list-style-type: none"> • LCA - Local Calling Area • EAS - Extended Area Service • ESA - Extended Service Area • EACS - Extended Area Calling Service • MELCS - Metropolitan Exchange Local Calling Service • ELC - Expanded Toll-Free Local Calling Service • HRC - Home Region Calling • Measured - Measured service • ECS - Extended Calling Service • ZUM1 - Zone Usage Measurement Zone 1 • ZUM2 - Zone Usage Measurement Zone 2 • ZUM3 - Zone Usage Measurement Zone 3
RATE_STEP	<p>Rate Step Indicator. Identifies mileage based distance between originating and terminating exchanges within the local service area.</p> <ul style="list-style-type: none"> • (1) 0-12 miles • (2) 13-16 miles • (3) 17-22 miles • (4) 23-30 miles • (5) 31-40 miles • (6) Greater than 40 miles

SQL SCRIPTS AND SCHEMAS

MySQL

```

CREATE DATABASE if not exists `nalennd`;
USE `nalennd`;

DROP TABLE IF EXISTS `local_xref`;
CREATE TABLE `local_xref` (
  `NPA` char(3) NOT NULL,
  `NXX` char(3) NOT NULL,
  `BLOCK_ID` char(1) NOT NULL,
  `EXCHANGE` char(8) NOT NULL,
  PRIMARY KEY (`NPA`,`NXX`,`BLOCK_ID`)
) ENGINE=MyISAM DEFAULT CHARSET=utf8;

DROP TABLE IF EXISTS `local`;
CREATE TABLE `local` (
  `ORC_EXCHANGE` char(8) NOT NULL,
  `ORC_STATE` char(2) NOT NULL,
  `ORC_ABBR` char(10) NOT NULL,
  `ORC_LATA` char(3) NOT NULL,
  `ORC_MTA` int(11) NOT NULL,
  `TRC_EXCHANGE` char(8) NOT NULL,
  `TRC_STATE` char(2) NOT NULL,
  `TRC_ABBR` char(10) NOT NULL,
  `TRC_LATA` char(3) NOT NULL,
  `TRC_MTA` int(11) NOT NULL,
  `OCN` char(4) NULL,
  `CALL_TYPE` varchar(20) NULL,
  PRIMARY KEY (`ORC_EXCHANGE`,`TRC_EXCHANGE`)
) ENGINE=MyISAM DEFAULT CHARSET=utf8;

```

Microsoft SQL Server

```

CREATE DATABASE [nalennd] ON PRIMARY
GO

USE [nalennd]
GO

SET ANSI_NULLS ON
GO

SET QUOTED_IDENTIFIER ON
GO

SET ANSI_PADDING ON
GO

CREATE TABLE [dbo].[local_xref](
  [NPA] [char](3) NOT NULL,
  [NXX] [char](3) NOT NULL,
  [BLOCK_ID] [char](1) NOT NULL,
  [EXCHANGE] [char](8) NOT NULL,
  CONSTRAINT [PK_local_xref] PRIMARY KEY CLUSTERED
(
  [NPA] ASC,
  [NXX] ASC,
  [BLOCK_ID] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON,
ALLOW_PAGE_LOCKS = ON) ON [PRIMARY]
) ON [PRIMARY]

```

GO

```
CREATE TABLE [dbo].[local](
    [ORC_EXCHANGE] [char](8) NOT NULL,
    [ORC_STATE] [char](2) NOT NULL,
    [ORC_ABBR] [char](10) NOT NULL,
    [ORC_LATA] [char](3) NOT NULL,
    [ORC_MTA] [int] NOT NULL,
    [TRC_EXCHANGE] [char](8) NOT NULL,
    [TRC_STATE] [char](2) NOT NULL,
    [TRC_ABBR] [char](10) NOT NULL,
    [TRC_LATA] [char](3) NOT NULL,
    [OCN] [char](4) NULL,
    [TRC_MTA] [int] NOT NULL,
    [CALL_TYPE] [varchar](20) NULL
) ON [PRIMARY]
```

GO

```
SET ANSI_PADDING OFF
GO
```

```
CREATE UNIQUE CLUSTERED INDEX [PK_local] ON [dbo].[local]
(
    [ORC_EXCHANGE] ASC, [TRC_EXCHANGE] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, SORT_IN_TEMPDB = OFF, IGNORE_DUP_KEY = OFF,
DROP_EXISTING = OFF, ONLINE = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON) ON [PRIMARY]
GO
```

ORACLE

```
CREATE DATABASE "nalennd";
```

```
CREATE TABLE "local_xref" (
    "NPA" CHAR(3) NOT NULL ENABLE,
    "NXX" CHAR(3) NOT NULL ENABLE,
    "BLOCK_ID" CHAR(1) NOT NULL ENABLE,
    "EXCHANGE" CHAR(8) NOT NULL ENABLE,
    CONSTRAINT "PK_local_xref" PRIMARY KEY ("NPA", "NXX", "BLOCK_ID") ENABLE
);
```

```
CREATE TABLE "local" (
    "ORC_EXCHANGE" CHAR(8) NOT NULL ENABLE,
    "ORC_STATE" CHAR(2) NOT NULL,
    "ORC_ABBR" CHAR(10) NOT NULL,
    "ORC_LATA" CHAR(3) NOT NULL,
    "ORC_MTA" NUMBER NOT NULL,
    "TRC_EXCHANGE" CHAR(8) NOT NULL ENABLE,
    "TRC_STATE" CHAR(2) NOT NULL,
    "TRC_ABBR" CHAR(10) NOT NULL,
    "TRC_LATA" CHAR(3) NOT NULL,
    "TRC_MTA" NUMBER NOT NULL,
    "OCN" CHAR(4) NULL,
    "CALL_TYPE" VARCHAR(20) NULL,

    CONSTRAINT "PK_local" PRIMARY KEY ("ORC_EXCHANGE ", " TRC_EXCHANGE ") ENABLE
);
```

Appendix A – State, province, and territory codes

United States - States and territories

AL	Alabama	NJ	New Jersey
AK	Alaska	NM	New Mexico
AZ	Arizona	NY	New York
AR	Arkansas	NC	North Carolina
CA	California	ND	North Dakota
CO	Colorado	OH	Ohio
CT	Connecticut	OK	Oklahoma
DE	Delaware	OR	Oregon
DC	District of Columbia	PA	Pennsylvania
FL	Florida	RI	Rhode Island
GA	Georgia	SC	South Carolina
HI	Hawaii	SD	South Dakota
ID	Idaho	TN	Tennessee
IL	Illinois	TX	Texas
IN	Indiana	UT	Utah
IA	Iowa	VT	Vermont
KS	Kansas	VA	Virginia
KY	Kentucky	WA	Washington
LA	Louisiana	WV	West Virginia
ME	Maine	WI	Wisconsin
MD	Maryland	WY	Wyoming
MA	Massachusetts	AS	American Samoa ¹
MI	Michigan	FM	Micronesia
MN	Minnesota	GU	Guam
MS	Mississippi	MH	Marshall Islands
MO	Missouri	MP	Northern Mariana Islands ²
MT	Montana	PW	Palau
NE	Nebraska	PR	Puerto Rico
NV	Nevada	UM	Minor Islands
NH	New Hampshire	VI	Virgin Islands

Canada - Provinces and territories

AB	Alberta	NU	Nunavut ³
BC	British Columbia	ON	Ontario
MB	Manitoba	PE	Prince Edward Island
NB	New Brunswick	QC	Quebec ⁴
NL	Newfoundland and Labrador ⁵	SK	Saskatchewan
NT	Northwest Territories	YT	Yukon
NS	Nova Scotia		

Appendix B – Country codes

Countries, islands, and territories participating in the North American Numbering Plan.

¹ COMMON LANGUAGE® abbreviation for American Samoa is AM

² COMMON LANGUAGE® abbreviation for Northern Mariana Islands is NN

³ COMMON LANGUAGE® abbreviation for Nunavut is VU

⁴ COMMON LANGUAGE® abbreviation for Quebec is PQ

⁵ COMMON LANGUAGE® abbreviation for Newfoundland and Labrador is NF

ISO 3166-1	FIPS 104-1	Country
US	US	United States
CA	CA	Canada
BS	BA	Bahamas
BB	BD	Barbados
AI	AI	Anguilla
AG	AN	Antigua and Barbuda
VG	BV	Virgin Islands, British
KY	CQ	Cayman Islands
BM	BM	Bermuda
GD	GN	Grenada
TC	TC	Turks and Caicos Islands
MS	RT	Montserrat
SX	NN	Sint Maarten
LC	SA	Saint Lucia
DM	DM	Dominica
VC	ZF	Saint Vincent and the Grenadines
DO	DR	Dominican Republic
TT	TR	Trinidad and Tobago
KN	KA	Saint Kitts and Nevis
JM	JM	Jamaica

Appendix C – United States Major Trading Areas

01	New York	27	Phoenix
02	Los Angeles-San Diego	28	Memphis-Jackson
03	Chicago	29	Birmingham
04	San Francisco-Oakland-San Jose	30	Portland
05	Detroit	31	Indianapolis
06	Charlotte-Greensboro-Greenville-Raleigh	32	Des Moines-Quad Cities
07	Dallas-Fort Worth	33	San Antonio
08	Boston-Providence	34	Kansas City
09	Philadelphia	35	Buffalo-Rochester
10	Washington-Baltimore	36	Salt Lake City
11	Atlanta	37	Jacksonville
12	Minneapolis-St. Paul	38	Columbus
13	Tampa-St. Petersburg-Orlando	39	El Paso-Albuquerque
14	Houston	40	Little Rock
15	Miami-Fort Lauderdale	41	Oklahoma City
16	Cleveland	42	Spokane-Billings
17	New Orleans-Baton Rouge	43	Nashville
18	Cincinnati-Dayton	44	Knoxville
19	St. Louis	45	Omaha
20	Milwaukee	46	Wichita
21	Pittsburgh	47	Honolulu
22	Denver	48	Tulsa
23	Richmond-Norfolk	49	Alaska
24	Seattle (Excluding Alaska)	50	Guam-Northern Mariana Islands
25	Puerto Rico-U.S. Virgin Islands	51	American Samoa
26	Louisville-Lexington-Evansville		

Appendix D – United States Telephone Number Format and Values

The telephone numbering address is a ten-digit number that consists of the following three basic parts:

- A 3-digit Numbering Plan Area (NPA) code, commonly called the area code.
- A 3-digit Central Office (CO) code referred to as the NXX code. The term Central Office, or CO, code is used in this document because of its long-standing use and because the NXX format is used for both CO Codes and NPA codes.
- A 4-digit line number previously referred to as a station number.

The format of a NANP Number is NXX-NXX-XXXX⁶ where N = digits 2 through 9 and X = any digit of 0 through 9. The digit positions in the NANP format can be identified by alphabetical characters using the following format ABC-DEF-GHIJ, where ABC is the NPA, DEF is the CO Code, and GHIJ is the Line Number.

Therefore: A United States telephone number is a ten-digit number that contains two 3-digit codes and a 4-digit line number. The values of these telephone numbers are the decimal digits 0 through 9.

When written or printed, these groups of digits should be visually separated by dashes, spaces or periods in accordance with ITU-T Rec. E.123 "Notation for national and international telephone numbers, e-mail addresses and Web addresses" in order to make them easier to recognize and remember (e.g., NXX-NXX-XXXX).

When a United States telephone number is written or printed as an international number, the number should be prefixed by "+1" and a space (e.g., +1 NXX-NXX-XXXX).

⁶ The use of the Area Code is optional in some areas that permit 7-digit local dialing.