

Quentin Sager Consulting, Inc.

[ITED™ STANDARD EDITION]

International Telephone Exchange Database reference manual

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ITED™ Standard Edition Reference Manual
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DATABASE DESCRIPTION

The International Telephone Exchange Database provides coverage of the numbering plans identified by the International Telephone Union ITU-T E.164 assigned country codes. These country codes are commonly referred to as *International Dialing Codes*.

The database identifies the telephone exchange or service, telephone number type, geographic area, time zone and other information based on the Country Code, National Destination Code, and Subscriber Number significant digits for a particular country's numbering plan.

All countries will have an ITU-T E.164 assigned country code (*International Dialing Code*). A National Destination Code (NDC) may or may not be used but a Subscriber Number is always present. This database uses the ITU country code, National Destination Code (if present in the numbering plan), and Subscriber Number *from-to* range to identify the telephone exchange or service.

Geographic references which include entities such as country, region, and city names are specified in English unless otherwise noted.

FILE FORMAT

Each file in the ITED™ database is a flat, UTF-8 text, comma-separated-value (CSV) data file. Each file has a single header row followed by one or more data rows. Each row within the file terminates with a carriage return/line feed (CR/LF) character combination. Elements or columns within a row are separated with a single comma character. Data elements or column values are encapsulated with opening and closing "Double Quotes" when the data value contains an embedded comma character.

RECORD LAYOUTS AND FIELD DESCRIPTIONS

FILE: ITED.CSV

The sequential file *ited.csv* contains the raw data used to populate the *ITED* data table. This data identifies international telephone exchanges, numbering ranges, service type, and other information based on a particular country's national numbering plan, regulatory and carrier assignments.

Field	Description
CC	International Telephone Union ITU-T Recommendation E.164 numeric country code. Commonly referred to as an <i>International Dialing code</i> , this code is the combination of one, two or three digits identifying a specific country, countries in an integrated numbering plan, or a specific geographic area.
InternationalPrefix	International prefix. The international prefix is the digit, or combination of digits, that must be dialed before a country code when dialing a call to a country other than the one from which the call is being placed.
NationalPrefix	National (trunk) prefix. The national (trunk) prefix is the digit, or combination of digits, which must be dialed before an area (city) code when dialing a call to a subscriber from inside his own country but outside his own numbering area.
NDC	National Destination Code (NDC) or significant leading digits of national (significant) number. The NDC can be a decimal digit or a combination of decimal digits (not including any prefix) identifying a numbering area within a country (or group of countries included in one integrated numbering plan or a specific geographic area) and/or network/services. Commonly referred to as an <i>International City Code</i> or <i>(Numbering Plan) Area Code</i> , the NDC is a nationally optional code field, which – combined with the Subscriber's Number (SN) – will constitute the national (significant) number of the international E.164-number for geographic areas.
SN_From	Subscriber's Number (SN) beginning range (low range) in this block assignment. In many numbering plans the subscriber number contains significant leading digits that (in addition to the NDC) further define the local exchange area and/or service. For example in the North American Numbering Plan the first 3-digits of the subscriber number are known as the <i>Central Office Code</i> or telephone exchange prefix and identify the local (city) level service area.
SN_To	Subscriber's Number (SN) ending range (high range) in this block assignment.
NDC_Length	Length of the National Destination Code or significant leading digits of the national (significant) number.
Uses_NDC	Y/N field identifying whether the current country defines geographic area codes in their National Numbering Plan. If "Y" then the values specified in the NDC field are area codes as defined in the National Numbering Plan. If "N", geographic area codes are not defined in the National Numbering Plan and the values specified in the NDC field are

	the significant leading digits of national (significant) number.
NSN_Length	Length of the National (Significant) Number
NumberType	Type of service. associated with the particular telephone exchange or number. <ul style="list-style-type: none"> • G – Geographic land line, fixed, includes POTS, WLL etc. • V – VoIP or location independent fixed land line • M – mobile, includes cellular, PCS, GSM, etc. • F – Freephone • S – Special (premium service, data, internet access, etc. which all incur a higher charge rate).
CarrierName	Name of primary telecom carrier or service provider name the numbering block is assigned to.
Language	ISO 639 language code identifying the predominate language within the service area or territory.
Country	ISO 3166-1 numeric country code
ISO	ISO 3166-1 alpha 2 country code
RegionCode	Postal abbreviation or code of the state, province, department, territory, or similar division within the country associated with the National Destination Code if any. If a standard national abbreviation does not exist for the region the value will be that specified in International Standard ISO 3166-2:2007 Codes for the representation of names of countries and their subdivisions.
RegionName	Common name of the state, province, department, territory, or similar division, if any, identified by the National Destination Code and/or National (Significant) Number. When present, RegionName agrees with those values specified in the International Standard ISO 3166-2:2007 Codes for the representation of names of countries and their subdivisions.
City	Name of the geographic area, locale, city, municipality, or service type identified by the national (significant) number.
TimeZone	Time zone the service area is located in specified using <i>Olson Time Zone Database</i> time zone ID.
UTC	Time zone specified as <i>Coordinated Universal Time</i> (UTC) offset. Format is +/-hh:mm
DST	Y/N flag indicating whether daylight savings time is recognized in this time zone.
Latitude	Latitude in decimal degree format of the locale, city, municipality, or other geographically identifiable service area of the exchange.
Longitude	Longitude in decimal degree format of the locale, city, municipality, or other geographically identifiable service area of the exchange.

SQL SCRIPTS AND SCHEMAS

MYSQL

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

DROP TABLE IF EXISTS `ited`;
CREATE TABLE `ited` (
  `CC` char(3) NOT NULL,
  `InternationalPrefix` varchar(26) DEFAULT NULL,
  `NationalPrefix` varchar(26) DEFAULT NULL,
  `NDC` varchar(15) NOT NULL,
  `SN_From` varchar(15) NOT NULL,
  `SN_To` varchar(15) NOT NULL,
  `NDC_Length` int(11) NOT NULL,
  `Uses_NDC` char(1) NOT NULL,
  `NSN_Length` int(11) NOT NULL,
  `NumberType` char(1) NOT NULL,
  `CarrierName` varchar(128) DEFAULT NULL,
  `Language` char(3) NOT NULL,
  `Country` int(3) NOT NULL,
  `ISO` char(2) NOT NULL,
  `RegionCode` varchar(10) DEFAULT NULL,
  `RegionName` varchar(128) DEFAULT NULL,
  `City` varchar(128) DEFAULT NULL,
  `TimeZone` varchar(128) NOT NULL,
  `UTC` char(6) NOT NULL,
  `DST` char(1) NOT NULL,
  `Latitude` double NOT NULL DEFAULT '0',
  `Longitude` double NOT NULL DEFAULT '0',
  KEY `exchange` (`CC`,`NDC`,`SN_From`)
) ENGINE=MyISAM DEFAULT CHARSET=utf8;
```

DATA STANDARDS, RECOMMENDATIONS, AND REFERENCES

ITU-T Rec. E.164 (02/2005), SERIES E: OVERALL NETWORK OPERATION, TELEPHONE SERVICE, SERVICE OPERATION AND HUMAN FACTORS; International operation – Numbering plan of the international telephone service

Annex to ITU Operational Bulletin No. 930 – 15.IV.2009, ITU-T TELECOMMUNICATION STANDARDIZATION SECTOR OF ITU COMPLEMENT TO ITU-T RECOMMENDATION E.164 (02/2005); List of ITU-T Recommendation E.164 assigned country codes

International Standard ISO 3166-1:2006, Codes for the representation of names of countries and their subdivisions--Part 1: Country codes, ISO 3166-1: 2006 (E/F), International Organization on Standardization (Geneva, 2006).

International Standard ISO 3166-2:2007 Codes for the representation of names of countries and their subdivisions - Part 2: Country subdivision code, ISO 3166-2: 2007 (E/F), International Organization on Standardization (Geneva, 2007).

Olson Time Zone ID; Olson time zone database

National Geospatial Intelligence Agency; NGA GEOnet Names Server (GNS); foreign geographic names

STRUCTURE OF THE INTERNATIONAL E.164-NUMBER

The international E.164-number for geographic areas is composed of a variable number of decimal digits arranged in specific code fields. The international E.164-number code fields are the Country Code (CC) and the National (Significant) Number N(S)N.

CC	NDC	SN
1 to 3 digits Country Code	Max (15 – n) digits National (<i>Significant</i>) Number	
Max 15 digits International E.164 – number for geographic areas		

CC ITU Country Code
 NDC National Destination Code
 SN Subscriber Number
 n Number of digits in the country code