



About XConnect Number Information Services

Validating Global Phone Numbers



XConnect organises the world's phone number portability, routing, and interconnection data, processing information from hundreds of different global datasets to ensure Service Providers solve routing, validation and fraud challenges in real time. .

Security at our core

To meet diverse global regulatory and data ownership requirements, our services have been built with privacy and security at their core. Keeping in mind the varying national and organisational data management requirements, we manage access, processing, storage, and sourcing for each service, customer, jurisdiction and data set.

Global presence

XConnect's proprietary hybrid cloud implementation provides a global platform with service points of presence in the US, Ireland, Germany, Singapore, India and Brazil.

Our intelligence

Authoritative data:

XConnect focuses on providing the actionable attributes of phone numbers, using the E164 global standard number format as the unique identifier to help service providers with their routing, rating and validation. Our data sets are built using information provided by authoritative sources, responsible for allocating and managing numbers.

Derived data:

Using the XConnect proprietary algorithms to identify and create additional insights such as change history, unused ranges amongst other attributes.

Analytical Data:

Additional data sets based on risk or fraud analytics can be hosted and integrated as complementary data sets.

Customer Data:

Customers provide number-based data sets that are integrated into XConnect services as a private or group resource.



Applications of our data

XConnect's data sets and services are used for a wide range of applications where information is required about a phone number. The applications generally fall into the following categories:

Validation:

Identify invalid numbers and eliminate them from traffic and transactions to reduce delivery failures, reduce costs of failed attempts, permit correction of incomplete numbers and help to identify illegitimate and fraudulent traffic.

Routing:

Determine the operator responsible for terminating, originating, or providing services for a number. Understanding the end-to-end path for number ownership and portability allows the best route to be determined, including direct routing, to enable quality and reduce cost.



Our data sets

Global Number Range

Based on regulator, number administrator and carrier provided information to identify the carrier/operator and published attributes of a number range such as type, status, length. Data categorised as Allocated, Unknown or Unallocated. Additional attributes such as national DNO (Do Not originate) are being added as they become available.

Number Portability

Covering ~105 countries that have implemented number portability and based on national number portability administration sources where available and derived from operator provided information for the remaining countries. Data identifies the current terminating operator, generally updated every 24 hours.

Live Status

Providing managed access to data from ~700 (and growing) mobile operators routing and number status information. Only permitted attributes are provided, minimising the risks of privacy or security breaches.

Our services

XConnect provides access to multiple data sets and attributes that may be used alone or combined into standard and customised services.

GNR

The Global Number Range data set may be accessed by individual query, bulk query or database download, allowing the user to identify the operator responsible for a number, or if it is unallocated, unknown or a special number. Widely used for validation and the identification of invalid numbers.

NPO

Number portability data is accessed through real-time or bulk query, and provides access to the Number Portability data, complemented by Global Number Range data for countries that do not have portability, offering a query service that will identify the terminating operator for almost every number globally.

Live Status

HLR data is accessed through a live query or bulk query, returning information from the terminating mobile operator, identifying registration status and the serving operator for the number queried.

DNO

A growing number of countries have implemented “Do Not Originate” requirements as a regulatory or industry initiative to combat nuisance and fraud traffic. We aggregate DNO data, providing access by real-time query, bulk query or download, identifying numbers that may be valid, but not permitted to originate traffic.

Port History and Last Port

Where porting data is available, History and Last Port information is offered as query or bulk query service, typically used for billing, problem resolution and some types of fraud risk identification.

Validator

A SIP redirect implementation using GNR and DNO data sets to validate the A and/or B number of a call, used to block traffic with invalid numbers.

How to access our services

We support a range of technologies, driven by user preference and the capabilities of their platform. XConnect's APIs have been implemented by many voice and messaging providers, and although proprietary, conform with the general standards of each technology. On the whole, services are accessed via the public internet, secured by IPSec or HTTPS.

HTTP API

Preferred by web application platforms but increasingly used by telecom platforms.

ENUM API

Preferred by network switches and firewalls where high performance and low processing overheads are required.

SIP API

Supporting integration into existing call flows as a redirect or proxy function, mapping the routing, status or validation information provided by the XConnect data sets into prefixes, response codes or SIP responses.

DOWNLOADS

GNR and DNO data sets are available as an SFTP download.

PORTAL

A web-based user portal allows each of the services to be queried manually for individual numbers, by a batch upload and offline processing, also supporting manual reporting and web downloads of the GNR and DNO data sets.

How we manage data

The sources that are aggregated into the XConnect data sets are very diverse, using different formats, updates and notification methodologies. Our role is to collect, validate, clean, gap fill, normalise, structure, and distribute the data to our query points of presence so that it may be accessed in real-time, on a global scale. Automated tools are complemented by many years of expertise in XConnect's numbering team to ensure data integrity, accuracy and completeness.

How we host data

Where customers have numbering data provided by their own sources or customers, XConnect integrates its data as a private, restricted, or generally available data set. Examples include where a customer might use XConnect's NPQ service to provide port corrected routing, where data is sourced by the customer, integrated as a private data source for one or more specific countries to complement the XConnect data sources. Other examples are national "Do Not Originate", RCS reachability and custom "allow" or "deny" lists that may then be accessed through XConnect's query services.

Our Managed Service

Customers use the data management, hosting, access and reporting features of the XConnect platform to build customised services exclusively for their use. Examples of managed services are dedicated HLR access for specific routing applications and customised data sources for specialised applications.

Network Tools and Solutions

XConnect provides customer specified solutions to meet their distinctive network integration needs.

SIP Validator

A SIP redirect application that accesses the GNR data set to valid both A and B numbers and returns SIP responses to reject or accept SIP Invites.

SIP Selector

A SIP proxy application to selectively route different classes of traffic based on origin and termination.

CDR Analytics

Customers may submit bulk queries for offline analysis through the customer portal

Why XConnect's Data is Different

AIT is an evolving challenge that requires up to date data intelligence for staying ahead of the fraudsters.

XConnect's data is constantly updated and covers 14,000 operators in 233 countries. In one typical 35-day period we perform a GNR data cleanse, which typically includes:

Updating between
20,000 and 100,000
number range
records

Completing a
full review of **17**
countries

Identifying and
integrating **five**
major number plan
changes

Updating **2,700+**
ranges for minor
changes

Identifying
changes in **35**
countries

Our Numbering Management team maintains this data from industry sources and constant feedback of real-time usage.

XConnect's GNR data and SIP API are carrier-grade and scalable to support billions of minutes per month. It has a track record of successfully delivering 99.999% availability when responding to queries to its database. Users can pre-validate all voice traffic to both fixed and mobile numbers and ensure that they are legitimate.

We also ensure innovation in our MNP data with more than 1million number updates every day. This includes 45 onboard databases and multiple sources of external data.

XConnect consolidates, maintains and delivers trusted telephone number intelligence to world leading telecommunication service providers. We process information from hundreds of different global datasets and ensures that customers solve routing, validation and fraud challenges in real time.

99.999%
availability

1Million
number updates
everyday

45
onboard
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XConnect
A Somos Company



XConnect's Number Information Services are used for voice and messaging routing, fraud protection and to identify and validate insights. They also support the deployment and evolution of next-generation communications, such as VoLTE and RCS.

XConnect's service is accessed through its global distributed hybrid cloud platform using simple, secure, scalable real-time protocols and APIs.

2.3bn

2.3 billion portability records

75%

Coverage across 75% of total global mobile subscribers

3.5bn

Over 3.5bn queries per month