



A Somos Company

Number Information Services

NIS Services – Response Fields and Values

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Issue History

| Issue | Date | Reason For Issue |
|-------|----------|--------------------------------------------------------------------------------------------------------|
| 1 | 20-07-22 | Removed response fields explanations from various interface documents and placed in a single document. |
| 2 | 11-05-23 | Updates to Reason Code table |
| 3 | 29-06-23 | Added DNO fields. Updated Reason Code table to show applicable query types. |

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1 INTRODUCTION

This document describes the Response Fields and values provided in the XConnect NIS suite of services.

2 LIST OF RESPONSE FIELDS

The table below shows the response fields provided for XConnect NIS services.

Please see the ENUM and HTTP interface specifications for which fields are returned for which query services.

| Field and Example | JSON Type | Description |
|------------------------------------------|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tel=+19171234567 "tn" : "19171234567" | STRING | The original E.164 number queried. tel: in ENUM responses tn: in HTTP responses |
| "npdi" : "true" | BOOL | Number Portability Dip Indicator <ul style="list-style-type: none"> If true indicates that the Number has been queried via a number portability lookup. If false, the number has not been queried for number portability, or the number portability query failed to resolve. Routing information returned will be based on XConnect Global Number Range data. For ENUM, the NPDI indicator is not present where NP lookup is not successful. |
| "npi" : "true" | BOOL | Number Portability Indicator <ul style="list-style-type: none"> If true indicates that the number is ported. For ENUM, the NPI flag will not be present where a TN is not ported. |
| "rn" : "+19171230000" | STRING | Routing Number <ul style="list-style-type: none"> For US/Canada queries, this will be the Location Routing Number (LRN) associated with the TN. This field will not be present for the Rest of World queries. |
| "cic" : "88881394" | STRING | Carrier Identification Code <ul style="list-style-type: none"> Identifies the Service Provider associated with the queried TN. For US and Canada queries, this will be the Operating Company Number (OCN) associated with the TN. For Rest of World queries, this will be a value assigned by XC or the value provided in the national number portability database. See the XConnect customer portal for a mapping of CIC to Carrier Names and associated data. |
| "cor" : "12345" | STRING | <ul style="list-style-type: none"> Carrier of Record This is the Carrier Identification Code (CIC) value for the Carrier who owns the number range that the TN belongs to. For US and Canada queries, this will be the Operating Company Number (OCN) associated with the TN. |

| | | |
|-----------------------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | <ul style="list-style-type: none"> For Rest of World queries this will be a value assigned by XConnect, or the value provided in the national number portability database. See the XConnect customer portal for a mapping of CIC to Carrier Names and associated data |
| "cc" : "us" | STRING | Carrier Country ISO 3166-1 alpha2 code of the country. |
| "cn" : "Sprint Spectrum" | STRING | Carrier Name Name of the carrier associated with the CIC or CoR. |
| "nt" : "wireless" | STRING | Number Type Wireless, Wireline or Service number. |
| "mcc" : "310" | STRING (INT) | Mobile Country Code |
| "mnc" : "012" | STRING (INT) | Mobile Network Code |
| "rc" : "000" | STRING (INT) | Reason Code Provides additional information relating to the query response. See later sections for values of RC field. |
| "nv" : "000" | STRING (INT) | Number Validation Shows the result of screening a number against XConnect Global Number Range data e.g., the number is too short. See later sections for values of NV field. |
| "ns" : "000" | STRING (INT) | Number Status Shows the number status as returned from a LiveStatus query (typically HLR-based), e.g. Absent Subscriber. See later sections for values of NS field. |
| "ports" : "2" | INTEGER | Number of times a number has been ported in the period specified by the customer in the Port History service. |
| "lastPorted" : "26/06/2018" | DATE | The date a number was last ported in the Last Port service. |
| "phdbpcic" : "88260671" | STRING | Port History Database Previous CIC The CIC representing the previous number owner in the UK Port History service. |
| "phdbccic" : "88260589" | STRING | Port History Database Current CIC The CIC representing the current number owner in the UK Port History service. |
| "changeSeen" : "01/05/2022" | DATE | The date of the last change seen to a TN in the UK Port History service. In the case of non-porting numbers, this will be the initial date the TN was added to the UK Port History database. |
| "lastSeen" : "23/06/2022" | DATE | The date of the last query seen to a TN in the UK Port History service. |
| "acic" : "88260671" | STRING | The Alternate CIC (AltCIC). This is the CIC of an alternate Service Provider who may also serve a TN (eg an MVNO). This is only returned where a customer subscribes to the AltCIC option and is only available in certain countries. |
| "amcc" : "310" | STRING (INT) | The MCC of the AltCIC if provided. |
| "amnc" : "012" | STRING (INT) | The MNC of the AltCIC if provided. |
| "dno" : "0", | STRING (INT) | DNO Status – the result of screening the number against NIS Do Not Originate lists. See later sections for DNO values. |
| "dnot" : "1", | STRING (INT) | DNO Type -defines the source of the DNO entry. Currently applicable to US DNO only. |

2.1 Number Validation Field

The Number Validation (nv=) field shows the results when screening a queried TN against the NIS Live-Status service based on XConnect's Global Number Range database. The table below shows the current list of field values, and allows expansion for future services.

| Number Validation Values | Meaning | Comment |
|--------------------------|-----------------------------------------------|--------------------------------------------------------------------------------------------------------|
| 000 | The number is valid. | The number passes GNR check. |
| 001 | The number length is too short. | The number length is too short for the range. |
| 002 | The number length is too long. | The number length is too long for the range. |
| 003 | The number format is incorrect. | E.g. the number contains invalid characters or does not have a valid country prefix etc. |
| 004 | The number is not part of an allocated range. | I.e., the range that the number belongs to is not allocated to a Service Provider in the GNR database. |
| 005 | The number type is not valid for the service | E.g. some number types may not be valid for queries which only support wireless numbers. |

2.2 Number Status Field

The Number Status (ns=) field shows the 'status' of a number queried against the NIS Live Status service which uses MNO HLR (or MNO API) interfaces to retrieve additional information about a TN's 'status'.

The table below shows the current list of field values, and allows expansion for future services.

| Number Status Value | Meaning | Comment |
|---------------------|-----------------------------------|---------------------------------------------------------------------------------------------------------|
| 000 | HLR returned a successful status. | The number is valid. |
| 001 | HLR returned Unknown Subscriber. | |
| 002 | HLR returned Absent Subscriber. | |
| 003 | HLR returned 'other' status. | The Live query returned an HLR response code which was not unknown or absent. This may be temporary. |
| 004 | Live Query failed. | The remote query timed out or otherwise failed to return a Live status. This may be temporary. |

2.3 Do Not Originate (DNO) Field

The DNO field shows the results of screening a number against the NIS DNO lists, available for various countries.

| DNO Values | Meaning | Comment |
|------------|---------------------------------|---------------------------------------------------------------------------------------------------------------|
| 0 | The number is not on a DNO list | |
| 1 | The number is on a DNO list | Where DNO=1, and the number is US, DNOT field will also be returned. |
| 2 | The number was not screened | If a DNO list does not exist for the country queried, or if the number fails GNR validation, DNO is set to 2. |

2.4 Do Not Originate Type (DNOT) Field

The DNOT field shows the source of the DNO marking for a number which matches DNO.

Please note - this is currently only applicable to the US.

| DNO Values | Meaning | Comment |
|------------|-------------------------------------------|--------------------------------------------------------------------------------------------------|
| 0 | DNO is auto-set. | The number has been marked as DNO automatically, as the number does not exist or is invalid etc. |
| 1 | DNO is manually set. | The number has been marked as DNO by the Service Provider, or Enterprise owner. |
| 2 | US Industry Traceback Group (ITG) marked. | The number has been marked as DNO by the US ITG. |

3 REASON CODES AND MATRIX

| Reason Code | Description | Comment |
|-------------|-------------------------------|---------------------------------------------------------------------------|
| 000 | Successful Query | |
| 001 | Invalid Query Format | E.g. there is no number in the query. |
| 002 | Query Service Invalid | The query type requested is incorrect or not authorized. |
| 003 | Service Not Allowed | Customer is not authorized for the service or destination attempted. |
| 004 | Country Code Invalid | The number's country code is not valid or not supported. |
| 005 | Wrong Number Length or Format | The number is the wrong length or contains invalid characters. |
| 006 | Range Not Allocated | The number is part of an invalid or unallocated range. |
| 007 | Number Not Found - Onboard | The number cannot be found - onboard country. |
| 008 | Number Not Found - Remote | The number cannot be found - remote country. |
| 009 | Service Error | General failure of the service to resolve the query correctly. |
| 010 | Remote Timeout | The query to the remote destination timed out. |
| 012 | Customer Not Authorized | The customer is not authorized for this service. |
| 013 | Rate Limit Reached | QPS rate limit has been reached for this customer or destination. |
| 100 | Subscriber Error (Temporary) | Remote query returned a subscriber-related error – this may be temporary. |

| Reason Code | Description | Comment |
|-------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| 101 | Subscriber Error (Unknown Subscriber) | Remote query returned 'Unknown Subscriber'. |
| 102 | Absent Subscriber | Remote query returned 'Absent Subscriber'. This may be accompanied with Number Range based information. |
| 103 | Telephone Service not provisioned | Remote query returned 'Telephone Service not Provisioned'. |
| 104 | Roaming Not Allowed | Remote query returned 'Roaming Not Allowed'. |
| 105 | Subscriber Busy | Remote query returned 'Subscriber Busy'. |
| 106 | Subscriber Blocked | Remote query returned 'Subscriber Blocked'. |
| 107 | Equipment Error | Remote query returned an equipment-related error. |
| 108 | Phone Switched Off | Remote query returned 'Phone Switched Off'. |
| 109 | Destination Network Error | Remote query failed due to an error related to the destination network - this may be temporary. |
| 110 | Facility Not Supported | Remote query returned 'Facility Not Supported'. |
| 112 | No Network Response | Remote query did not get a response from the destination network - this may be temporary. |
| 113 | Destination Error | Remote query failed due to a destination error - this may be temporary. |
| 114 | Destination Network Temporarily Unavailable. | Remote query failed due to the destination network being unavailable - this may be temporary. |
| 116 | Number Not Found – UK Port History | The number is not found in the UK Port History database. |
| 120 | Internal System Error | Temporary internal system error |
| 141 | Remote Error - GNR Returned | Remote query failed; Global Number Range based response returned. |
| 150 | Name Does Not Match | |
| 151 | Name Does Not Exist | |
| 200 | Remote query failure - GNR returned | Query to a remote supplier failed - a Global Number Range response is provided. |
| 221 | Number not allocated | |
| 222 | Number not reachable | |
| 223 | SIMcheck not supported | |
| 224 | IMSI not available | |
| 300 | Absent Subscriber | Live Status query returned "Absent Subscriber" with no Live network data - a Global Number Range response is provided. |
| 301 | Unknown Subscriber | Live Status query returned "Unknown Subscriber" - a Global Number Range response is provided. |
| 302 | Live Status Unavailable | Live Status query was unable to return a Live response - a Global Number Range response is provided. |

| Reason Code | Description | Comment |
|-------------|-----------------------------|------------------------------------------------------------------------------------------------------------------|
| 303 | Subscriber Error | Live Status query returned a subscriber-related error - a Global Number Range response is provided. |
| 304 | Destination/Network Error | Live Status query returned a destination/network-related error - a Global Number Range response is provided. |
| 305 | Call Barred | Live Status query returned "Call Barred" with no Live network data - a Global Number Range response is provided. |
| 306 | Teleservice Not Provisioned | Live Status query returned "Teleservice Not Provisioned" - a Global Number Range response is provided. |
| 307 | Facility Not Supported | Live Status query returned "Facility Not Supported" - a Global Number Range response is provided. |

| Reason Code | NP Allocated | NP Available | NP GNR | NP Last Port | NP Live | NP Live Routing | NP Live Status | NP Name Match | NP Port History | NP Query | NP Reachable | NP SIM Check | NP SIM Swap | NP UK Port Hist | NP Valid |
|-------------|--------------|--------------|--------|--------------|---------|-----------------|----------------|---------------|-----------------|----------|--------------|--------------|-------------|-----------------|----------|
| 000 | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| 001 | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| 002 | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| 003 | | | X | X | X | X | X | | X | X | | | X | | X |
| 004 | X | | X | X | X | X | X | | X | X | X | | | | X |
| 005 | X | X | X | X | X | X | X | X | X | X | X | X | | X | X |
| 006 | X | X | X | X | X | X | X | X | X | X | X | | | | X |
| 007 | | | | | | | | | | X | | | | | |
| 008 | X | X | | | X | | | X | | X | | | | | |
| 009 | | X | X | | X | | X | X | X | X | | X | X | | X |
| 010 | | X | | X | X | | X | X | X | X | X | X | | | |
| 012 | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| 013 | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| 27 | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| 100 | X | | | | X | | | | | | X | X | | | |
| 101 | X | | | | X | | | | | X | X | X | | | |
| 102 | | | | | X | | | | | X | | | | | |
| 103 | | | | | X | | | | | | | | | | |
| 105 | | | | | X | | | | | | | | | | |
| 106 | | | | | X | | | | | | | | | | |
| 107 | | | | | X | | | | | | | | | | |
| 109 | X | | | | X | | | | | | X | X | | | |
| 110 | | | | | X | | | | | | | | | | |
| 112 | | | | | X | | | | | | | | | | |
| 113 | | | | | X | | | | | | | | | | |
| 114 | | | | | X | | | | | | | | | | |
| 116 | | | | | | | | | | | | | | X | |
| 120 | | X | X | X | X | | | | | X | | | | | X |
| 141 | | | | | X | | | | | | | | | | |
| 150 | | | | | | | | X | | | | | | | |
| 151 | | X | | | | | | | | | | | | | |
| 200 | | | | | X | X | X | | | X | | | | | |
| 221 | X | | | | | | | | | | X | | | | |
| 222 | | | | | | | | | | | X | | | | |
| 223 | X | | | | | | | | | | | X | | | |
| 224 | | | | | | | | | | | | X | X | | |
| 300 | | | | | | | X | | | | | | | | |
| 301 | | | | | | | X | | | | | | | | |
| 302 | | | | | | | X | | | | | | | | |
| 303 | | | | | | | X | | | | | | | | |
| 304 | | | | | | | X | | | | | | | | |
| 305 | | | | | | | X | | | | | | | | |
| 306 | | | | | | | X | | | | | | | | |
| 307 | | | | | | | X | | | | | | | | |