



Number Verification Documentation (HTTP)

Deprecated Version

Interface information

tyntec's Global Number Verification (GNV) minimizes message loss and unsuccessful call attempts with real-time phone number verification, providing key information on a user's phone number, such as subscriber status and roaming data.

GNV is available with the Representational State Transfer Application Programming Interface (REST API). This interface enables quick and easy access to tyntec's Number Information Services (NIS). The communication is established via Hypertext Transfer Protocol Secure (HTTPS) connections.

The exchanged object type is JavaScript Object Notation (JSON). tyntec's application accepts and replies with "application/json" as "Content-Type" (and "charset=utf-8") in the HTTP header.

All of tyntec's Number Information Services (which also includes Global Number Portability) are accessible through the base Unique Resource Location (URL) (`{baseUrl}`):

```
https://rest.tyntec.com/nis/v1/
```

Here's a basic example showing how to resolve Global Number Verification:

```
curl -u username:password -X GET https://rest.tyntec.com/nis/v1/gnv?msisdn="+491622943176
```

Authentication is done during the setup of the REST API connection.

tyntec will provide a username (`{username}`) and password (`{password}`) to grant access to services:

```
https://{username}:{password}@rest.tyntec.com/nis/v1/
```

The Base64-encoded combination "`{username}:{password}`" is used as an authentication token for the Basic HTTP authentication and can also be given in the HTTP header, as the following:

```
Authorization: Basic {authentication-token}
```

Connection steps

1. Query information on phone number

The number information on a specific Mobile Station International Subscriber Directory Number (MSISDN) can be queried from two resources:

Resource URL	Method
<code>\${baseUrl}/gnv</code>	GET

The MSISDN is provided in the respective parameter:

```
?msisdn=$msisdn
```

In this case, tyntec's application will return the requested number information on the given MSISDN (`$msisdn`).

To prevent incurring avoidable costs due to malformed requests, tyntec's application server performs a consistency check on the provided MSISDN and `callbackUrl` before processing the request.

2. Synchronous vs asynchronous responses

The time needed to retrieve number information is typically around ~350 ms. But sometimes it can take up to several seconds to receive the number information, e.g., when operators respond very slowly. Therefore, tyntec's Global Number Verification service can be queried for a synchronous or asynchronous response. The default response is synchronous and the requested number information is given in the body of the "HTTP 200 OK" response of tyntec's application server. The asynchronous response can be triggered with the request parameter:

```
?callbackUrl=$callbackUrl
```

In this case, tyntec's application will POST the requested number information to your webserver at the given URL (`$callbackUrl`). tyntec's application will retry for a maximum of 48 hours to POST the number information after 1, 5, 10, 20, 30, 60 minutes if your server does not answer '200 OK' within two seconds.

3. Code Examples

The following code blocks give examples of how to query number information on an MSISDN.

Example for Query GNV (synchronous response):

```
curl
-u username:password
-X GET
-H "Accept: application/json"
https://rest.tyntec.com/nis/v1/gnv?msisdn=+491622943176
```

Example for Query GNV (asynchronous response):

```
curl
-u username:password
-X GET
-H "Accept: application/json"
https://rest.tyntec.com/nis/v1/gnv?msisdn=+491622943176&callbackUrl=https://rest.customer.com/inbound/
```

Response to Query GNV containing the requested number information:

```
{
  "requestId":"12-86cfafba-8677-f42b-5050-ece6af6abf01",
  "msisdn":"+491622943176",
  "nrhMCC":"262",
  "nrhMNC":"02",
  "nrhTtld":15,
  "nrhOperator":"Vodafone",
  "nrhCountry":"DEU",
  "nrhTimezone":"+0100",
  "nrhTechnology":"GSM",
  "imsiMCC":"262",
  "imsiMNC":"02",
  "imsiTtld":15,
  "imsiOperator":"Vodafone",
  "imsiCountry":"DEU",
  "imsiTimezone":"+0100",
  "imsiTechnology":"GSM",
  "hlrCC":"49",
  "hlrNDC":"162",
  "hlrMCC":"262",
  "hlrMNC":"02",
  "hlrTtld":15,
  "hlrOperator":"Vodafone",
  "hlrCountry":"DEU",
  "hlrTimezone":"+0100",
  "hlrTechnology":"GSM",
  "mscCC":"49",
  "mscNDC":"162",
  "mscMCC":"262",
  "mscMNC":"02",
  "mscTtld":15,
  "mscOperator":"Vodafone",
  "mscCountry":"DEU",
  "mscTimezone":"+0100",
  "mscTechnology":"GSM",
  "ported":"false",
  "roaming":"false",
  "presence":"true ",
  "price":0.001,
  "currency":"EUR",
  "priceEffective":"2010-11-01T00:00:00+0000",
  "errorCode":"0",
}
```

In this request, there are a number of parameters that need to be defined, while others are optional:

Parameter	Possible Values	Description
requestId	UUID according to RFC 4122	The unique identifier provided for each request.
msisdn	Phone number according to ITU E.164	The phone number of interest given in international format.
nrhMCC	UTF-8 encoded string according to ITU E.212	A representative MCC (Mobile Country Code) of the NRH's network (Number Range Holder).
nrhMNC	UTF-8 encoded string according to ITU E.212	A representative MNCs (Mobile Network Codes) of the NRH's network.
nrhTtld	integer	The respective tyntec ID of the NRH.
nrhOperator	string	Human readable name of the NRH.
nrhCountry	Country code following ISO 3166-1 alpha-3	The three-letter country code where the NRH's network is located.
nrhTimezone	+HH:mm (according to ISO 8601)	Local time zone of NRH's network relative to UTC.
nrhTechnology	UTF-8 encoded string	The technology used by NRH operator's network. Possible values are: GSM, MVNO GSM, GSM/CDMA, Satellite, CDMA, iDen, iDen/GSM, Pager, Fixed.
imsiMCC	UTF-8 encoded string according to ITU E.212	The MCC of the subscriber's IMSI (International Mobile Subscriber Identity).
imsiMNC	UTF-8 encoded string according to ITU E.212	The MNC of the subscriber's IMSI.
imsiTtld	integer	The respective tyntec ID of the subscription network operator.
imsiOperator	string	Human readable name of the subscription network operator.
imsiCountry	Country code following ISO 3166-1 alpha-3	The three-letter country code where the subscription network is located.
imsiTimezone	+HH:mm (according to ISO 8601)	Local time zone of the subscription network relative to UTC.
imsiTechnology	UTF-8 encoded string	The technology used by the subscription network. Possible values are: GSM, MVNO GSM, GSM/CDMA, Satellite, CDMA, iDen, iDen/GSM, Pager, Fixed.
hlrCC	UTF-8 encoded string according to ITU E.214	The CC (Country Code) of the responding HLR (Home Location Register).
hlrNDC	UTF-8 encoded string according to ITU E.214	The NDC (National Dialling Code) of the responding HLR.
hlrMCC	UTF-8 encoded string according to ITU E.212	A representative MCC of the HLR's operator.
hlrMNC	UTF-8 encoded string according to ITU E.212	A representative MNC of the HLR's operator.
hlrTtld	integer	The respective tyntec ID of the operator's HLR.
hlrOperator	string	Human readable name of operator's HLR.
hlrCountry	Country code following ISO 3166-1 alpha-3	The three-letter country code where the HLR is located.
hlrTimezone	+HH:mm (according to ISO 8601)	Local time zone of the HLR relative to UTC.
hlrTechnology	UTF-8 encoded string	The technology used by the HLR operator network. Possible values are: GSM, MVNO GSM, GSM/CDMA, Satellite, CDMA, iDen, iDen/GSM, Pager, Fixed.
mscCC	UTF-8 encoded string according to ITU E.214	The CC of the MSC (Mobile Switching Center).
mscNDC	TF-8 encoded string according to ITU E.214	The MSC of the NDC.
mscMCC	UTF-8 encoded string according to ITU E.212	A representative MCC of the operator's MSC.
mscMNC	UTF-8 encoded string according to ITU E.212	A representative MNC of the operator's MSC.
mscTtld	integer	The respective tyntec ID of the operator's MSC.
mscCountry	Country code following ISO 3166-1 alpha-3	The three-letter country code of the network operating the MSC.
mscTimezone	+HH:mm (according to ISO 8601)	Local time zone of the MSC relative to UTC.

mscTechnology	UTF-8 encoded string	The technology used by the MSC operator's network. Possible values are: GSM, MVNO GSM, GSM/CDMA, Satellite, CDMA, iDen, iDen/GSM, Pager, Fixed.
ported	string	Indicating the porting status true/false/unknown.
roaming	string	Indicating the roaming status true/false/unknown.
presence	string	Latest handset status (switched on/off) known by the operator (stored in respective HLR).
price	float	The price for the query.
currency	currency code following ISO 4217	The currency in which the price is given; corresponding to the currency of the invoice.
priceEffective	Date in the format "yyyy-MM-ddTHH:mm:ss"	The date when the "price" became effective.
errorCode	The reason for an unsuccessful attempts.	Possible values for error codes are given in a following table.

4. HTTP Status Codes

Error Code	Description
200 OK	Network information will be supplied within the response.
400 Bad Request	Any of the provided parameters is invalid or callbackUrl is not reachable.
401 Unauthorized	HTTP basic authentication parameters are invalid.
403 Forbidden	HTTP basic authentication parameters are missing.
405 Method Not Allowed	Request method is not support (this service only supports GET).
415 Not Acceptable	Media type is not supported.
500 Internal Error	