# Public-whois

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| Author(s) | Department | Phone | e-mail |
|---|---|---|---|
| Registry Services | REX | +49 69 27 235 272 | dbs@denic.de |

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# 1 Introduction

## What is whois?

### Introduction

The term whois denominates an information service which was first specified in RFC 812 and RFC 954 and later extended in RFC 3912 ("WHOIS Protocol Specification")[1]. It is a means for Internet users to query various types of information such as IP addresses, user data and also domain data.

DENIC too operates its own whois service that is in conformity with RFC3912. This document describes the functions of this service.

### How to Make a whois Query

Enter the corresponding whois command at a computer console or a terminal window. (Provided the whois client is installed) A connection to the DENIC whois server "whois.denic.de" will be established and a query be made:

```
whois -h whois.denic.de –T status de-example.de

Domain: de-example.de
Status: connect
```

[1] http://tools.ietf.org/html/rfc3912

### The Differences Between the Various Whois Clients

As you read through the explanations in the chapters following below, please do not forget that various different whois clients exist and that they do not all provide direct support for the parameters used by DENIC. If you find that your whois client does not support your queries in the form they are presented in this document, try setting additional parameters (preceded by two hyphens) or try loading the parameters in inverted commas or combine the two. Here are some examples:

```
whois -h whois.denic.de - -T dn domain
whois -h whois.denic.de "-T dn domain"
whois -h whois.denic.de - - "-T dn domain"
```

**Hint: DENIC advises to use the whois client of RIPE NCC.**
(http://whois.sourceforge.net/)

Please note that, due to data privacy reasons, the public-whois will not output any information about the domain holder / administrative contact. This information is output only if you use the domain information service at our website http://www.denic.de.

# Explanation of Terms

### Domain Holder

The Domain Holder is DENIC's contractual partner and thus holds the material rights to the domain. The Domain Holder may be a named natural or legal person (company, association, organisation).

**Hint: Data about the Domain Holder**
Data about the Domain Holder can only be queried via the domain query service at our website .

### Administrative Contact

The Administrative Contact (Admin-C) is the natural person appointed by the Domain Holder to act as their authorised representative and who also has the authority and duty to take binding decisions vis-à-vis DENIC in all matters concerning the domain.

**Hint: Data about the Admin-C**
Data about the Administrative Contact can only be queried via the domain query service at our website .

### Technical Contact

The Technical Contact (Tech-C) looks after the technical side of the domain. The Tech-C may be a named natural person or an abstract denominated group of persons.

### Zone Administrator

The Zone Administrator (Zone-C) looks after the name server(s) for the domain.
The Tech-C may be a named natural person or an abstract denominated group of persons.

# 2 Description of the Keywords as They are Used in the Output

## Introduction

The output of the whois server also supports non-ASCII characters such as umlauts. Unless stated differently, the output is made in UTF-8.

The value of a keyword may contain up to 255 characters.

In this chapter, you will find information about the keywords and how they are used in the output.

## Type

In this paragraph, you will find information about the types used for the output of the keywords.

| Type | Comment |
|---|---|
| normalisedString | A normalisedString contains characters (e.g. letters, digits, umlauts). Line feeds, carriage returns and tabs are removed. |
| Token | Similar to normalisedStrings, tokens comprise characters (e.g. letters, digits, umlauts, etc.). Line feeds, carriage returns, tabs and leading, trailing and multiple blanks are removed. |
| Enumeration | Enumeration means that only a defined list of elements is allowed to be used. Thus, the value will correspond to an element of the list. |

# 3 Description of the Keywords Used in the Outputs

## Output of Domain Data

### Information about the Domain Data

The keywords listed below are always output in response to a data query. Please note, that not all the keywords are output for each query. Nsentry and DnsKey, for example, are mutually exclusive.

| Keyword | Type / Length | Description |
|---|---|---|
| Domain | normalisedString / 4-63 | This is the domain's name. |
| Domain-Ace | normalisedString / 7-67 | ACE form (ACE=ASCII Compatible set) of the domain |
| Nserver | normalisedString / 4-294 | Name server entries for the domain. The keywords "Nserver" and "Nsentry" are mutually exclusive. |
| DnsKey | normalisedString / 10-730 | Dnskey entries for the domain. "Dnskey:" may only occur in connection with Nserver entries. |
| Nsentry | normalisedString / 18-275 | IN A or IN MX entries. The keywords "Nserver" and "Nsentry" are mutually exclusive. |
| Status | enumeration | "Status" describes the status of the corresponding domain.<br>connect (= registered and connected)<br>failed (= registered but not connected),<br>free (= not connected)<br>invalid (= invalid domain). |
| Changed | normalisedString / 25 | This is the time stamp of the most recent change made to the corresponding record. |

# Output of Contact Data

### Information about the Contact Data

Contact data are output only in response to recursive data queries.

| Keyword | Type / Length | Description |
|---|---|---|
| Type | enumeration | Type of contact.<br>PERSON (= natural person),<br>ROLE (= an abstract denominated group of persons (so-called<br>role account, e.g. Business Services)<br>ORG (= a legal person (such as a company, association, organisation, etc., e. g. "DENIC eG") |
| Name | normalisedString / 1-255 | This is the name of the Person, Role or Organisation |
| Organisation | normalisedString / 1-22 | The name of the organisation or company to which the Person or Role belongs<br>If a value is stated here, it is always output as part of the address. |
| Address | normalisedString / 1-255 | The street and house number recorded for the Person, Role or Organisation given as the value for "Name". |
| PostalCode | normalisedString / 1-20 | Postal code of Contact address without country code |
| City | normalisedString / 1-80 | Place of residence of the Contact |
| CountryCode | enumeration | Country code of the country in which the place of residence of the Contact is located (according to ISO-3166-1 alpha-2) |
| Phone | normalisedString / 1-254 | Phone number of the Contact |
| Fax | normalisedString / 1-254 | Fax number of the Contact |
| Email | normalisedString / 3-254 | E-mail address of the Contact |
| Sip | normalisedString / 1-255 | SIP-URI (Session Initiation Protocol-Uniform Resource Identifier) of the Contact. |
| Remarks | normalisedString / 1-255 | Here you can add any comments. |
| Changed | normalisedString / 25 | This is the time stamp of the most recent change made to the corresponding record. |

# 4 Functional Scope of the Public-whois Server

## Conventions

### Notation of Parameters and Parameter Values

For parameters (e.g. "-T") the following shall apply: Use case sensitive mode.

The parameter values (e.g. "dn") and the queried data can be stated in case insensitive mode.

### Queries Concerning IDN Domains

For IDNs (Internationalised Domain Names; also domains including umlauts and accents) the following shall apply:

- If the query is about the ACE form of a domain (example: xn--de--example-2cb96bg0a.de), the output always includes the line "domain: <domain>".
- If the query is about an IDN (example: de-îđŋ-example.de), the output always includes an additional line with the domain in its ACE form ("Domain-Ace:  <Domain-Ace.de").

### Recursive Data Queries

If you submit a recursive query, the output will contain the contact data for the roles of Technical Contact and Zone Administrator.

In case of non-recursive queries, only the domain data is output.

| **Example: recursive data query (Tech-C and Zone-C are output):** |
| --- |
| whois –h whois.denic.de [-T {dn\|domain}] [Domain] |

| **Example for non-recursive data query (only the domain data is output):** |
| --- |
| whois –h whois.denic.de [-r -T {dn\|domain }] [Domain] |

### Determining the Character sets for Inputs and Outputs

By setting the "–C" parameter, you can determine the character set for inputs and outputs.

You may use the following character set schemes:

- US-ASCII
- ISO-8859-1
- UTF-8

The default character set is UTF-8.

**Note: Invalid character set used for input and output**

Please note that a whois query is answered with an error message if the character sets of the input and the output are not compatible, e.g. if you use "-C US-ASCII -T dn,ace xn--de--example-2cb96bg0a.de" to query an IDN since the answer cannot be output in US-ASCII.

### Format for Date and Time

Dates and times are displayed as stipulated by the ISO Standard 8601. They are indicated in UCT.

- Dates are written: YYYY-MM-DD.
  Example: 2010-04-0 7
- Then follows T (for time) as a separator between date and time
  Example: 2010-04-07T
- Times are written: hh:mm:ss
  Example: 2010-04-07T13:16:00
- Then follows recommended information, the difference to the coordinated universal time (UTC). It is written: +hh:mm
  Example: 2010-04-07T13:16:00+01:0 0

# Status Queries

### Function

You can use the status query to find out the status of a domain.

### Request Parameters

To make a status query, use the following parameters:

| **Status query:** |
| --- |
| whois –h whois.denic.de [-T {st\|status }] [Domain] |

If you want to query the domain status in the ACE form, use the additional parameter value "ace":

| **Query about the status of a domain in its ACE form** |
| --- |
| whois –h whois.denic.de [-T {st,ace\|status,ace}] [Domain-Ace] |

### Example: output to a query about the status of a domain

| **Output to a query about the status of a domain** |
| --- |
| *[dharma@theswan]:~> whois -h whois.denic.de –T status* de-îđŋ-example.de<br><br>Domain: de-îđŋ-example.de<br>Domain-Ace: xn--de--example-2cb96bg0a.de<br>Status: failed |

# Data Queries

## Function

You can use the data query to find out data of a domain. It is differentiated between recursive and non-recursive queries.

If the queried domain does not exist, the response outputs the status of the domain.

## Request Parameters

To make a data query, use the following parameters:

| **Status query:** |
| --- |
| whois –h whois.denic.de [-r] [-T {dn\|domain}] [Domain] |

If you want to query the domain data in the ACE form, use the additional parameter value "ace":

| **Query about the status of a domain in its ACE form** |
| --- |
| whois –h whois.denic.de [-r] [-T {dn,ace\|domain,ace}] [Domain-Ace] |

## Example: response to a data query

| **Response to a data query:** |
| --- |

**Response to a data query:**

*[dharma@theswan]:~> whois -h whois.denic.de –r –T dn de-example.de*

Domain: de-example.de
Nserver: ns1.denic.de 81.91.170.1
Nserver: ns2.denic.de 193.171.255.36
Nserver: ns3.denic.de 87.233.175.19
Nserver: ns4.denic.net
Dnskey: 257 3 5
AwEAAdDECajHaTjfSoNTY58WcBah1BxPKVlHBz4lfLjfqMviu
m4lgKtKZL
E97DgJ5/NQrNEGGQmr6fKvUj67cfrZUojZ2cGRizVhgkOqZ9
scaTVXNuXLM5Tw7VWOVIceeXAuuH2mPliEV6MhJYUsW6
dvmNsJ4XwCgNgroAmXhoMEiWEjBB+wjYZQ5GtZHBFKVXA
CSWTiCtddHcueOeSVPi5WH94VlubhHfiytNPZLrObhUCHT6
k0tNE6phLoHnXWU+6vpsYpz6GhMw/R9BFxW5PdPFlWBgo
Wk2/XFVRSKG9Lr61b2z1R126xeUwvw46RVy3hanV3vNO7L
M5HniqaYclBbhk=
Status: connect
Changed: 2009-12-21T09:40:19+01:00

## The HELP Function

### Function

You can use the "HELP" parameter to query the syntax and all the parameter values of the whois server.

| **The HELP function:** |
| --- |
| whois –h whois.denic.de {HELP\|help\|?} |

## The ALIVE Function

### Function

You can use the ALIVE function to verify if the whois server is active.

| **The ALIVE function:** |
| --- |
| whois –h whois.denic.de alive@whois |

## ACL – Access control limit

### Function

To prevent excessive use, the number of queries per network and time interval is limited. If the permitted maximum value is exceeded, no further queries can be made until the next time interval after the time interval in which the query was started has expired.

If a RegAcc submits more queries than permitted during the time interval Z, the RegAcc will be blocked for the time interval Z and the time interval Z + 1. Instead of the normal reply to a query, the RegAcc will receive an error message. If the RegAcc submits another query during the (blocked) interval Z + 1, it will automatically be blocked for the succeeding time interval Z + 2. The automatic blocking of subsequent time intervals will be continued until the RegAcc stops to send new queries during blocked time intervals, i.e. until a blocked time interval elapses without a query being received. Only then, new queries will be answered in the respective succeeding time interval. Thus, when you receive the aforementioned error message, you should not submit any further query until an adequate waiting time

has elapsed. Submitting additional queries earlier will be considered another infringement of the limit and will extend the period during which access is blocked for you.

# Error Messages Related to Whois Queries

## Potential Error Messages

Below you find a list of the error messages you may receive.

| Error Code | Error Message | Brief Description |
|---|---|---|
| 55000000002 | Connection refused; access control limit exceeded | The maximum number of currently permitted queries has been reached. |
| 55000000007 | Request not clearly specified | The syntax of the query is not correct, e.g. you have used invalid parameters or invalid combinations of parameters. You will find further information in the paragraphs "Status Queries" and "Data Queries". |
| 55000000012 | Invalid charset for request | You used an invalid character set in the query or you stated only "-C" without specifying the parameter value.<br>At present, you may use the values US-ASCII, ISO-8859-1 and UTF-8 for the "-C" parameter. |
| 55000000013 | Invalid Charset for Response | The output cannot be displayed with the character set specified by "-C"; for example, „-C US-ASCII" was used for a recursive query for a domain and the contact data includes umlauts. |
| 55000000011 | Non bijective ace-idn convertible domain | The entered domain-ace string cannot be converted into a domain. |
| 86000000050 | Internal error | An internal error has occurred. |

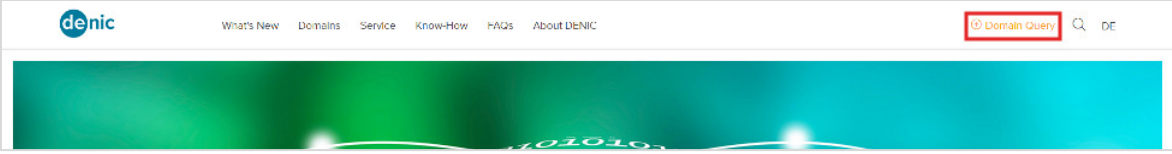
# 5 Public Web-whois

## Domain Query

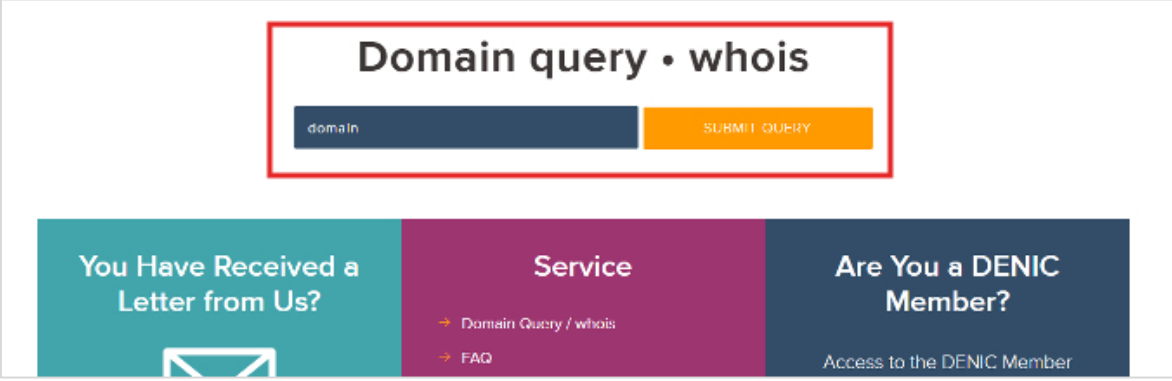
### Function

You will find the domain query service on DENIC's website at http://www.denic.de/. Here you can query domain data via web interface.

The domain query is always available at the navigation bar.



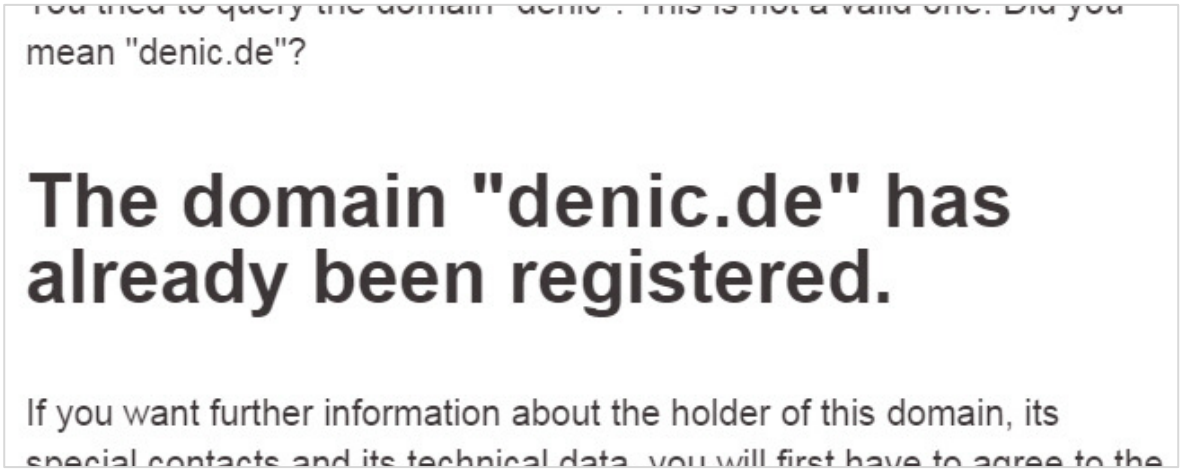

Another option for a domain query is located at the main page.



## Status Query

### Function

If you enter the domain name you will be informed about the current status of the domain.




## Data Query

### Function

When you want to query the data of a domain, you must accept the terms and conditions of use by answering a security question (i.e. decipher a so-called *C*aptcha = *C*ompletely *A*utomated *P*ublic *T*uring test to tell *C*omputers and *H*umans *A*part).

Further you have to state whether you to query the data of a domain or a signed output of the holder data of a domain.

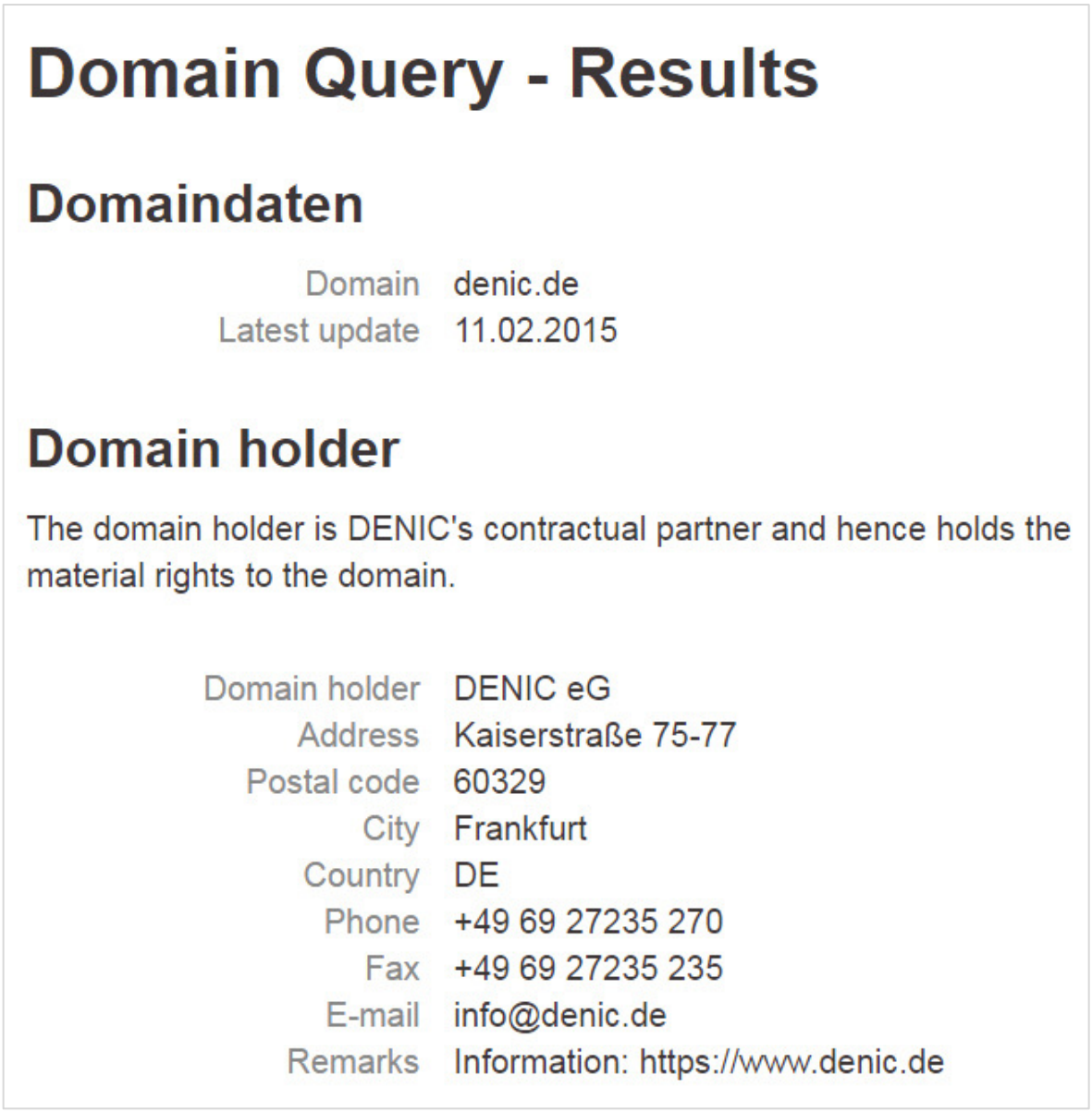
When you have successfully entered the CAPTCHA code the required data will be output.

---

**Display Domain Data**

Besides the data of the domain holder, the output you will receive will include data on the administrative and the technical contact and on the zone administrator. On top of that, the technical data of the domain will be displayed.

**(excerpt)**



# Domain Query - Results

## Domaindaten

| | |
|---|---|
| Domain | denic.de |
| Latest update | 11.02.2015 |

## Domain holder

The domain holder is DENIC's contractual partner and hence holds the material rights to the domain.

| | |
|---|---|
| Domain holder | DENIC eG |
| Address | Kaiserstraße 75-77 |
| Postal code | 60329 |
| City | Frankfurt |
| Country | DE |
| Phone | +49 69 27235 270 |
| Fax | +49 69 27235 235 |
| E-mail | info@denic.de |
| Remarks | Information: https://www.denic.de |

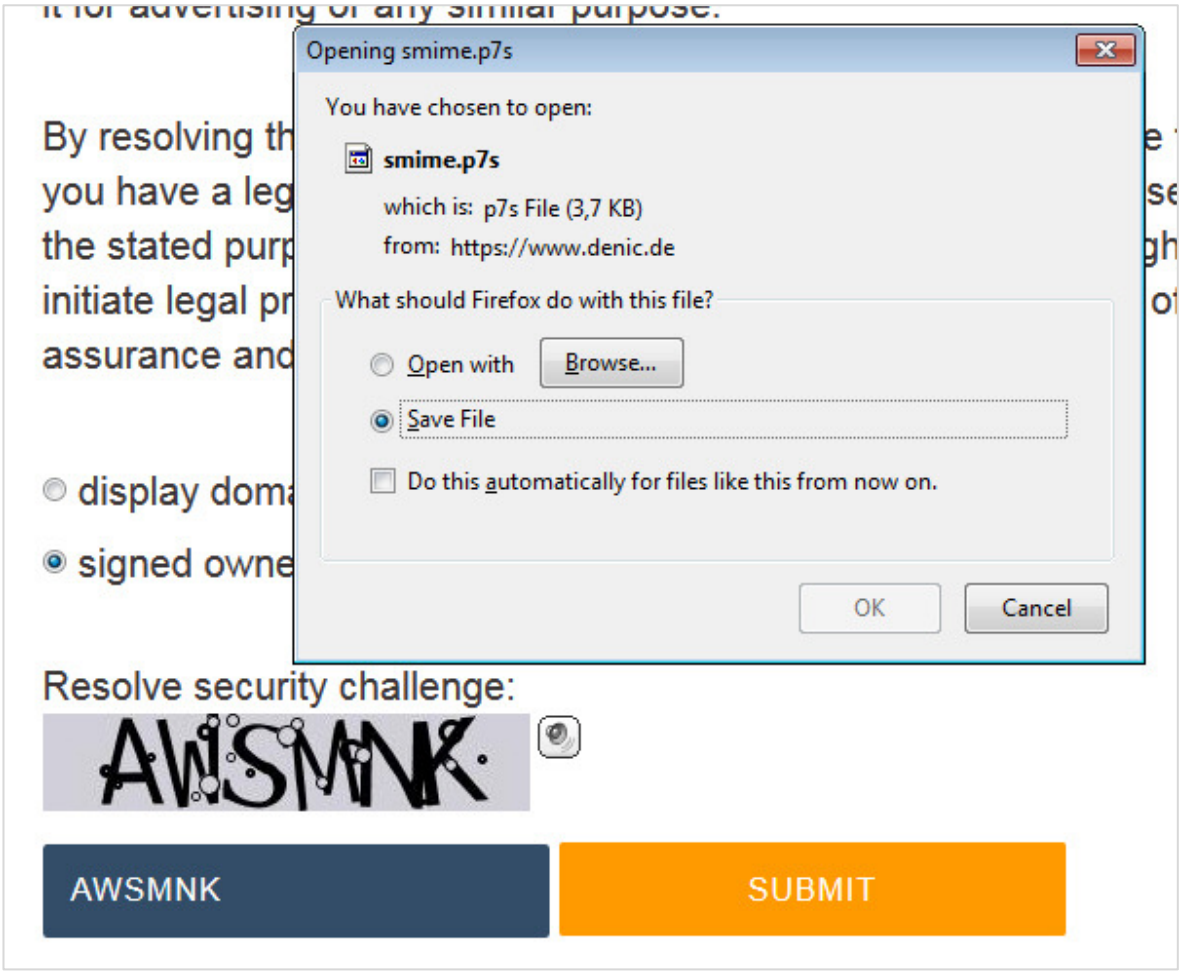
### Signed Holder Data

You can use this type of query to get a signed output of a domain's holder data from DENIC. DENIC will sign the following data:

- domain
- domain holder
- date of latest update

In addition to the above, a signed output will include the time stamp of the query

The browser offers a file (smime.p7s) for storing.



# ACL – Access Control Limit

## Function

To prevent excessive use, the number of queries per network and time interval is limited. If the permitted maximum value is exceeded, no further queries can be made until the next time interval after the time interval in which the query was started has expired.

If a RegAcc submits more queries than permitted during the time interval Z, the RegAcc will be blocked for the time interval Z and the time interval Z + 1. Instead of the normal reply to a query, the RegAcc will receive an error message. If the RegAcc submits another query during the (blocked) interval Z + 1, it will automatically be blocked for the succeeding time interval Z + 2. The automatic blocking of subsequent time intervals will be continued until the RegAcc stops to send new queries during blocked time intervals, i.e. until a blocked time interval elapses without a query being received. Only then, new queries will be answered in the respective succeeding time interval. Thus, when you receive the aforementioned error message, you should not submit any further query until an adequate waiting time has elapsed. Submitting additional queries earlier will be considered another infringement of the limit and will extend the period during which access is blocked for you.

# 6 Document History

| Version | Date | Person in charge | Changes |
|---|---|---|---|
| 2.4 | 2016-04-12 | AHI | Redesign CI |